

**Module D**

## OUTBREAKS AND SAFE INJECTION PRACTICES IN DENTAL SETTINGS

Statewide Program for Infection Control and Epidemiology (SPICE)  
UNC School of Medicine

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### OBJECTIVES

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

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### UNSAFE INJECTION PRACTICES CONSEQUENCES




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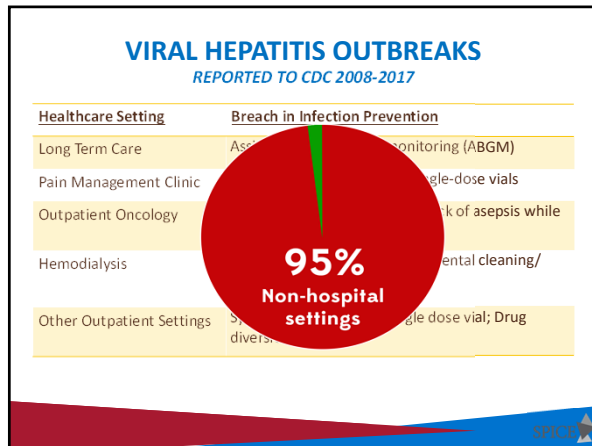
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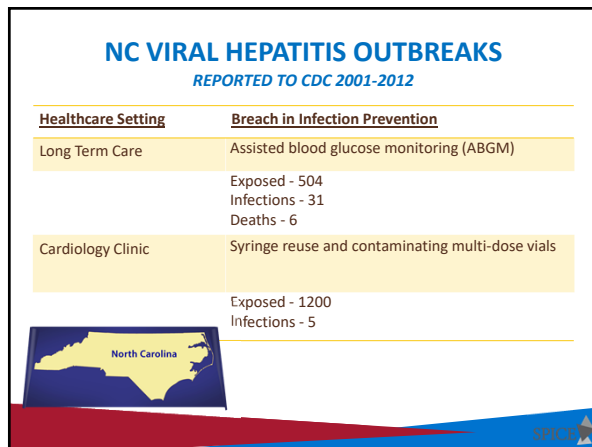
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### DENTAL OUTBREAKS

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

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### 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.

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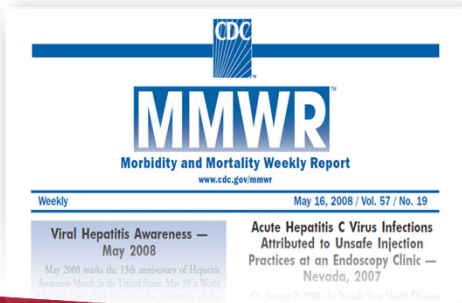
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### WHY DO OUTBREAKS HAPPEN




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### 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)

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## 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




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## SYRINGE RE-USE

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




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## 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



Weekly May 16, 2008 / Vol. 57 / No. 19

**Viral Hepatitis Awareness — May 2008**  
 May 2008 marks the 13th anniversary of Hepatitis Awareness Month in the United States. May 19 is World Hepatitis Day, which recognizes the importance of global commitments to prevent liver disease and cancer.

**Acute Hepatitis C Virus Infections Attributed to Unsafe Injection Practices at an Endoscopy Clinic — Nevada, 2007**  
 On January 2, 2008, the Nevada State Health Division (NSHD) contacted CDC concerning surveillance reports




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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!




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### 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




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### 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](http://www.cdc.gov/injectionsafety/CDCposition-SingleUseVial.html)




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### 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

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### 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

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### NEW JERSEY – ONCOLOGY OFFICE



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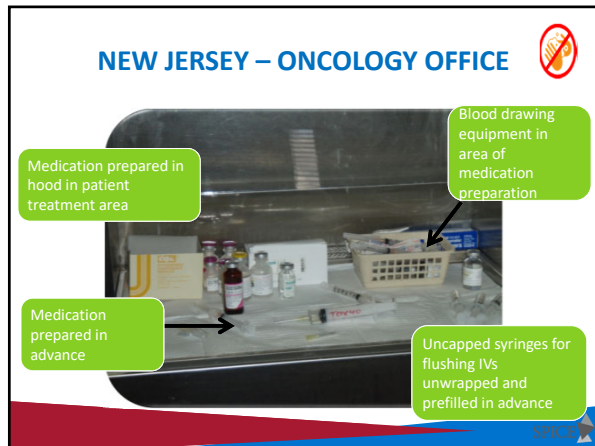
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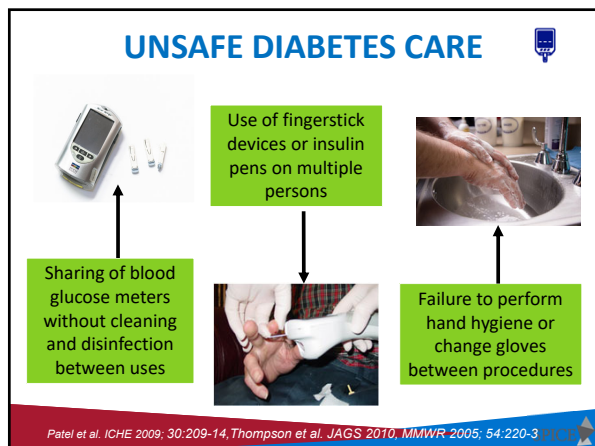
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### SAFE INJECTIONS: BEST PRACTICES



#### 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

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### 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

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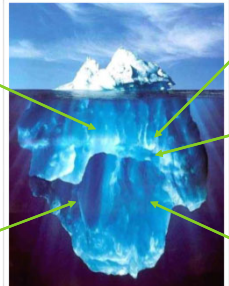
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### MOST OUTBREAKS ARE NEVER DETECTED



Asymptomatic infection

Long incubation period; difficult to identify single healthcare exposure

Under-reporting of cases

Under-recognition of healthcare as risk

Barriers to investigation, resource constraints

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### 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




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### 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%




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### BEST PRACTICE

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




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### KNOWLEDGE CHECK

- Which of the following statements is false?
  - Syringes can be used on more than one patient if the needle is changed.
  - Single dose vials can be used more than one time if it has not been contaminated
  - Blood glucose meters do not have contact with patients and do not need to be cleaned
  - If there is no visible blood the syringe is safe to reuse.
- ☒ All of the above

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### 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

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### ONE AND ONLY CAMPAIGN

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## CAMPAIGN RESOURCES

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





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## North Carolina

### News & Events

**Patient Safety Awareness Week**

Patient Safety Awareness Week is March 11-17. We're all patients, and our healthcare and safety matter. Healthcare providers can ensure patient safety by practicing frequent hand hygiene and injection safety, use a new needle and new syringe for each injection. Patients can take charge of their health by maintaining a healthy lifestyle and following the below recommendations.

### CONTACT INFORMATION

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 CDC / NC DHHS, Division of Public Health  
 Phone: (919) 540-1705  
 E-Mail: jennifer.macfarquhar@dhhs.nc.gov

### YOU CAN PROTECT YOURSELF FROM HAIs BY BEING A SAFE, INFORMED PATIENT (HEALTHCARE-ASSOCIATED INFECTIONS)

**1. SPEAK UP**  
 Share your condition, healthcare concerns, and what they are doing to protect you.

**2. KEEP HANDS CLEAN**  
 To keep your hands clean, wash with soap and water for 20 seconds before, after, and during healthcare.

**3. BE ANTIBIOTICS AWARE**  
 Antibiotics are powerful medicines that can help you get better, but they can also harm you if you don't use them right.

**4. KNOW INFECTION SIGNS**  
 Tell your healthcare provider if you have a fever or other signs of infection, such as chills, sweating, or a sore throat.

**5. CHECK FOR DIARRHEA**  
 Tell your healthcare provider if you have loose or watery stools, or if you have blood or mucus in your stool.


**6. PROTECT YOURSELF**  
 Get vaccinated against the flu and other infections to avoid health complications.

### DRUG DIVERSION POST ON CDC SAFE HEALTHCARE BLOG

**URGENT INFORMATION:** CDC's Safe Healthcare Blog recently featured guest author Paula Davies-Edwards, RN, MS, CARN, discussing the need for colleagues to report signs of drug abuse among fellow providers. She argues this would protect both providers and patients. Paula cites her firsthand experience with those who test low on tests and are troubled.

Sign the Patient Safety pledge

[WWW.ONEANDONLYCAMPAIGN.ORG/PARTNER/NORTH-CAROLINAYCAMPAIGN.ORG](http://WWW.ONEANDONLYCAMPAIGN.ORG/PARTNER/NORTH-CAROLINAYCAMPAIGN.ORG)




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## QUESTIONS?






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