Viral Hepatitis Prevention

Regional Training for
Local Health Departments and
Regional Epidemiologists
2015 - 2016

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WEST VIRGINIA Department of Health & Human Resources
BUREAU FOR PUBLIC HEALTH

Viral Hepatitis: Why Should We Care?

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- **West Virginia ranks #1 in the United States in incidence of acute hepatitis B**

- **West Virginia ranks #2 in the United States in incidence of acute hepatitis C**

www.cdc.gov/hepatitis/statistics/2014/surveillance

Healthy

Fatty

NASH

Fibrosis

Cirrhosis

HCC

Jaundice

Edema

Red Palms

Ascites

Baby at risk

Biopsy

Viral Hepatitis Action Plan

May 2011, the U.S. Department of Health and Human Services (DHHS) released the first Viral Hepatitis Action Plan which was revised in 2014 and is titled:

"COMBATING THE SILENT EPIDEMIC of VIRAL HEPATITIS
Action Plan for the Prevention,
Care & Treatment of Viral Hepatitis"

The plan has six priority areas and more than 150 actions to be undertaken between 2014 and 2016. The plan was organized by following the 2010 Institute of Medicine (IOM) recommendations.

www.hhs.gov/ash/initiatives/hepatitis

Viral Hepatitis Action Plan Continued

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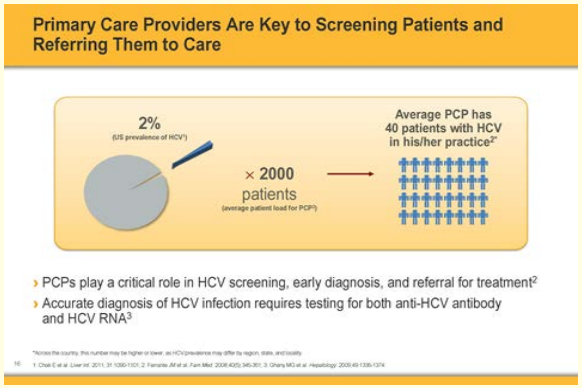
1. Educate providers and communities to reduce health disparities.

"Confront viral hepatitis by breaking the silence."

- Educational/Behavioral/Medical Interventions
  - Interventions providing information, enhancing risk reduction skills, motivating behavior change if at risk
  - Educating the public, medical providers , pharmacies, educational system, behavioral health, addiction counselors, social services, faith-based, first responders, law enforcement, people who inject drugs (PWID) or snort drugs
  - Link to care and prevention services for all PWID
  - HAV and HBV vaccination
  - HBV, HCV and HIV testing
  - Eliminate mother to child transmission of HBV
  - Reduce the number of new cases of HCV infection by 25%



Viral Hepatitis Action Plan Continued

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2. Improve testing, care, and treatment to prevent liver disease and cancer.

"Take full advantage of existing tools"

- Effective treatment for HBV

www.webmd.com/hepatitis/digestive-diseases-hepatitis-b

- Viral hepatitis is a leading infectious cause of death, claiming 12,000 to 18,000 Americans die each year
- Increase persons aware of their HBV infection from 33% to 66%
- Increase persons aware of their HCV infection from 45% to 66%
- Now higher cure rates for HCV but costly

3. Strengthen surveillance to detect viral hepatitis transmission and disease.

"Collect accurate and timely information t get the job done"

Viral Hepatitis Action Plan Continued

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4. **Eliminate transmission of vaccine-preventable viral hepatitis.**

   "Take full advantage of vaccines that can prevent hepatitis A and B."

5. **Reduce viral hepatitis caused by drug-use behaviors.**

   "Stop the spread of viral hepatitis associated by drug use."

   - *National* Survey of 9,690 PWID: participants who knew their HCV status and the HCV status of their last injection partner were more likely to change behaviors of sharing injection equipment

6. **Protect patients and workers from healthcare-associated viral hepatitis.**

   "Quality health care is safe health care."

Persons at Risk for Hepatitis B and C

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Hepatitis B	Hepatitis C
Infects born to infected mothers	Infects born to infected mothers
Diagnosed with HIV/AIDS positive	Diagnosed with HIV/AIDS positive
Past or present injection drug users Sharing drug paraphernalia	Past or present drug users Sharing drug paraphernalia
Hemodialysis patients	Hemodialysis patients
Occupational exposure to blood	Occupational exposure to blood
Household contact of infected persons	Household contact of infected persons
Multiple sex partners, sex with an infected person, persons with a STD, MSM	Anal sex, multiple sex partners
Residents and staff of facilities for developmentally disabled people	Blood transfusion or organ transplant before 1992
Unsterile Tattoos or body piercing	Unsterile Tattoos or body piercing
Travelers to regions with high rates of HBV (HBsAg prevalence of >2%)	People born between 1945 to 1965 Recipients of a clotting factor before 1987

www.cdc.gov/hepatitis/riskassessment/index.htm

HBV and HCV Testing in LHD-STD Clinics

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- Individuals seen in LHD-STD clinics can have HBV and HCV testing if determined he/she is at risk

- Individuals needing indigent HBV or HCV testing
  - Refer to Office of Laboratory Services (OLS) Hepatitis Testing Protocol

- Testing changed on October 1, 2015

Hepatitis B #1 Prevention Vaccine

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Vaccination – the best prevention for all individuals especially high risk individuals

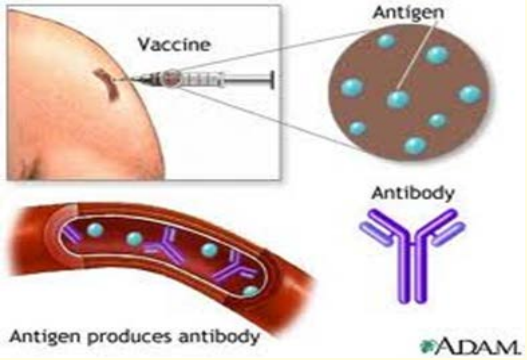
www.cdc.gov/vaccines/pubs/pinkbook/

Vaccine – 1989:

- 3 intramuscular doses for series completion
- typical schedule 0, 1, and 6 months
- no maximum time between doses
- no need to repeat missed doses or restart series

Vaccine Protection:

- 30%-50% - dose 1
- 75% - dose 2
- 96% - dose 3



Referral: Link to Care

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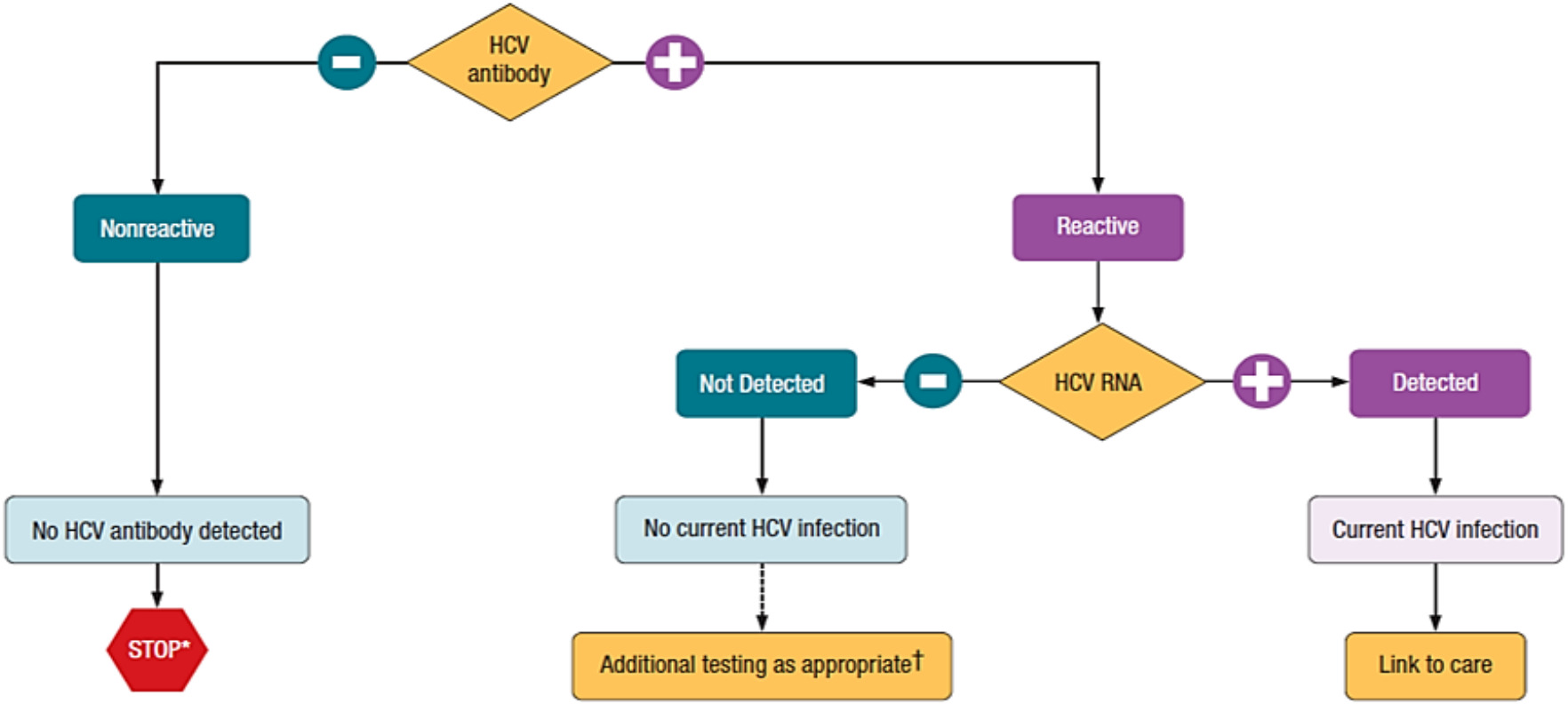
CDC: Refer all patients with HCV antibody lab results to a PCP for RNA confirmatory test. www.guidelines.org/full-report-view

- normal alanine aminotransferase (ALT) levels or the absence of symptoms does not warrant delay of referral
- approximately 76% of HCV patients with normal ALT have evidence of liver disease

A Guide to Comprehensive Hepatitis C Counseling and Testing
www.dhhr.wv.gov/oeps/std-hiv-hep/hepatitis/

Viral Hepatitis Serology Training
www.cdc.gov/hepatitis/resources/professionals/training/serologystart

Recommended Testing Sequence for Identifying HCV



* For persons who might have been exposed to HCV within the past 6 months, testing for HCV RNA or follow-up testing for HCV antibody is recommended. For persons who are immunocompromised, testing for HCV RNA can be considered.

† To differentiate past, resolved HCV infection from biologic false positivity for HCV antibody, testing with another HCV antibody assay can be considered. Repeat HCV RNA testing if the person tested is suspected to have had HCV exposure within the past 6 months or has clinical evidence of HCV disease, or if there is concern regarding the handling or storage of the test specimen.

www.orasure.com/products-infectious/products-infectious-oraquick-hcv

www.cdc.gov/hepatitis/hcv/pdfs/hcv_flow.pdf

Education and Counseling

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Patient Counseling

- Prevent HCV transmission
  - do not share household items (toothbrushes, razor, etc.)
  - do not share drug paraphernalia for snorting or IDU
  - keep wounds covered, dispose of bandages properly
  - avoid sex when blood is exchanged and use condoms
  - if diabetic, do not share glucometer equipment/lancets/syringes and dispose of sharps properly
- Avoid alcohol and illicit drugs
- Review all current medications and herbal agents with PCP
  - over the counter and prescribed
- Support sources (social, financial, emotional)
- Link to care: PCP, free community clinics, specialist
- Remind patients that HCV can be cured; may be an important motivating factor and may improve necessary lifestyle changes
- No insurance, visit **www.healthcare.gov/**

Other Lab Test and Sample Referral Form

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Primary Care Provider Referral to a Specialist for Hepatitis C Treatment Evaluation

Directions: Primary care providers referring a patient to a specialist for HCV treatment evaluation should provide the following medical information to the specialist prior to the first appointment. Information may be placed on the form or provided via attachment or excerpt from the medical record.

Referring Physician:
Office Address/ Phone:
Date of Referral:

Patient				**Date**	
Address					
Phone				Mobile	
Allergies				**DOB**	
Height		Weight		BMI	

CONCOMITANT MEDICAL DIAGNOSES	**CURRENT MEDICATIONS**

HEALTH MAINTENANCE		
1.	Smoking	
2.	Use of alcohol	
3.	Substance use	
4.	Mental health assessment	
5.	Pregnancy/ Contraception	

RECCOMENDED LABROATROY TESTING PRIOR TO INITIAL APPOINTMENT WITH SPECIALIST					
HCV Genotype		ALT	Date:	Creatinine	
HCV RNA	Date:	AST	Date:	Platelet Count	
Albumin		Total bilirubin		Hemoglobin	

ASSESSMENT OF LIVER (COMPLETE IF AVAILABLE)		
Test performed	**Date**	**Findings/ Results**
Liver biopsy		
Ultrasound		
Transient Elastography		

OTHER RECOMMENDATIONS/REFERRALS

Other tests that may be requested:

- prothrombin time (PT)
- international normalized ratio (INR)
- direct bilirubin
- total protein
- alkaline phosphatase (ALP)
- CBC
- platelets
- creatinine
- HAV and HBV screening or vaccine

www.dhhr.wv.gov/oeps/std-hiv-hep/hepatitis/

Barriers to HCV Screening and Referral

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Provider	Patient
41.7% of providers indicate being unfamiliar with American Association for the Study of Liver Disease	reliability of risk behaviors due to concerns of stigma
less than half of providers ask risk factor questions	fear or misconception about HCV treatment
limited knowledge and experience of hepatitis B and C serology and treatment	transportation issues and/or access to regular healthcare
liver enzymes screening misses 50% of chronic cases	continues to consume alcohol and/or illicit drugs
limited access to a specialist	does not keep appointment or non-compliant with medication regimen
perception that treatment is not effective or needed	inadequate health insurance
reimbursement issues	

www.aasld.org/

Medicaid Criteria for HCV Treatment

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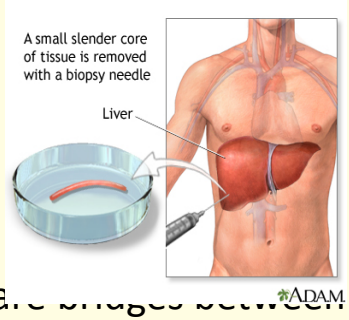
DHHR has four criteria for HCV treatment with new medication.

www.dhhr.wv.gov/bms/



1. Severity of fibrosis of stage 3
   - Stage 0 indicates no fibrosis
   - Stage 1 indicates enlargement of the portal areas of fibrosis
   - Stage 2 indicates fibrosis extending out from the portal areas with rare bridges between portal areas
   - **Stage 3 indicates many bridges of fibrosis that link up portal and central areas of the liver**
   - Stage 4 indicates cirrhosis

Medicaid Criteria for HCV Treatment Continued

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2. Treatment provided by a specialist

   (Infectious Disease, Gastroenterologist, or Hepatologist)

3. Sobriety for 6 months from alcohol and/or illicit drug use

4. Person's physical/mental condition to comply with medication regimen

www.fda.gov/Drugs/ResourcesForYou/Consumers/
www.fda.gov/NewsEvents/Newsroom/PressAnnouncements/
www.hepatitisc.uw.edu/page/treatment/drugs
www.wv.bom.wv.gov
www.aasld.org/

Hepatitis C Treatment

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West Virginia Medicaid Hepatitis C Drug Coverage

- HCV treatments require prior authorization through Medicaid (authorization: criteria and forms)

www.dhhr.wv.gov/bms/Pharmacy/

Old Regimen: Ribavirin (Copegus, Rebetol, Ribasphere) with Peginterferon G1a or 1b

New Regimens approved by DHHR's BMS:

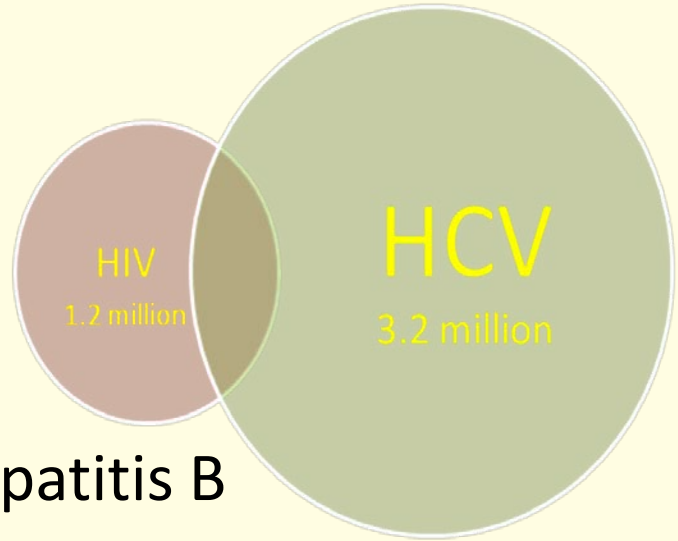
- Sovaldi (Sofosbuvir) new 2014 with either ribavirin or with interferon for genotypes 1, 2, 3, 4
- Olysio (Simeprevir) new 2014 with ribavirin & interferon, G1
- Harvoni (Ledipasvir 90 mg/Sofosbuvir 400 mg) new Oct 2014, G1 w/o ribavirin unless patient has cirrhosis
- Viekira Pak (ombitasvir/paritaprevir/ritonavir + dasabuvir) 2015 with or w/o ribavirin for G1a, G1b, HIV co-infected, post transplants

New HCV treatment medications FDA approved on Aug 3, 2015

- Daklinza with Sovaldi for G3
- Techinvie with ribavirin for noncirrhotic G4

HIV/Hepatitis Co-Infection

- 50%-90% of individuals with HIV who inject drugs are co-infected
- HCV may affect the treatment of HIV infection but does not increase HIV progression
- However, HIV increases HCV progression resulting in faster development of:
  - cirrhosis
  - end-stage liver disease
  - hepatic cellular carcinoma
- Vaccinate against hepatitis A and hepatitis B



www.cdc.gov/hiv/Resources/factsheets/coinfection

Documentaries

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www.nbcnews.com/video/rock-center/48085618#48085618

Rock Center July 05, 2012 *Addicted mom "It's all my fault"*

- Pregnant HCV positive women: 6 out of 100 infants become infected
- Testing of infants for HCV antibody should be performed no sooner than age 12 months

www.hesback.com/

"*Wrestling with the Monster: Living with Hepatic Encephalopathy*"

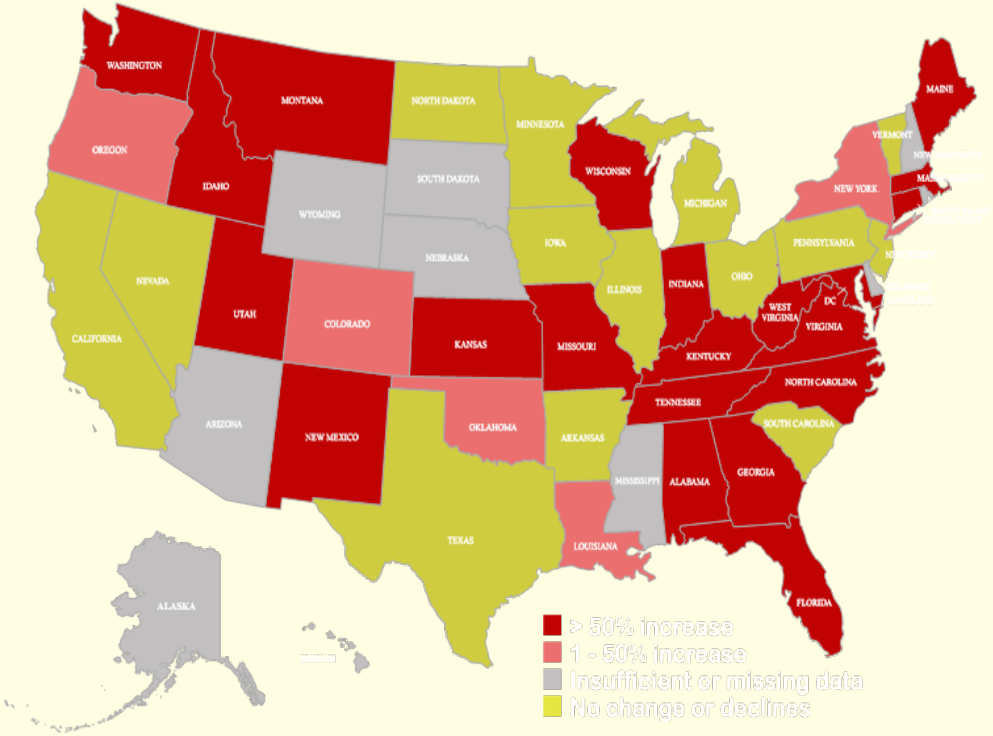
Hepatitis C Increases in Appalachian Region

Appalachian Region consists of KY, NC,TN, VA, WV

West Virginia is the only state entirely in the Appalachian Region

www.nastad.org/docs/Fact%20Sheet%20NASTAD%20YPWID%20and%20HCVaids.gov/pdf/hcv-and-young-pwid-consultation-report.pdf

HCV Case Reports 2007-2012



Red >50% increase in HCV Case reports

Pink 1-50% increase

Grey Insufficient or mission data

Green no change or declines

- Young people who inject drugs (PWID) (18-29 year old)
- Predominantly white
- Equally female to male
- Rural, suburban areas
- Antecedent prescription opioid misuse

Paintsil et al. Survival of Hepatitis C Virus in Syringes: Implication for Transmission among Injection Drug Users. *JID*, 2010

Doerrbecker et al. Inactivation and survival of hepatitis C virus on inanimate surfaces. *J ID*, 2011

Doerrbecker et al. Transmission of Hepatitis C Virus Among PWID: Viral Stability and Association With Drug Preparation Equipment, *JID*, 2012

Opioid Prescriptions

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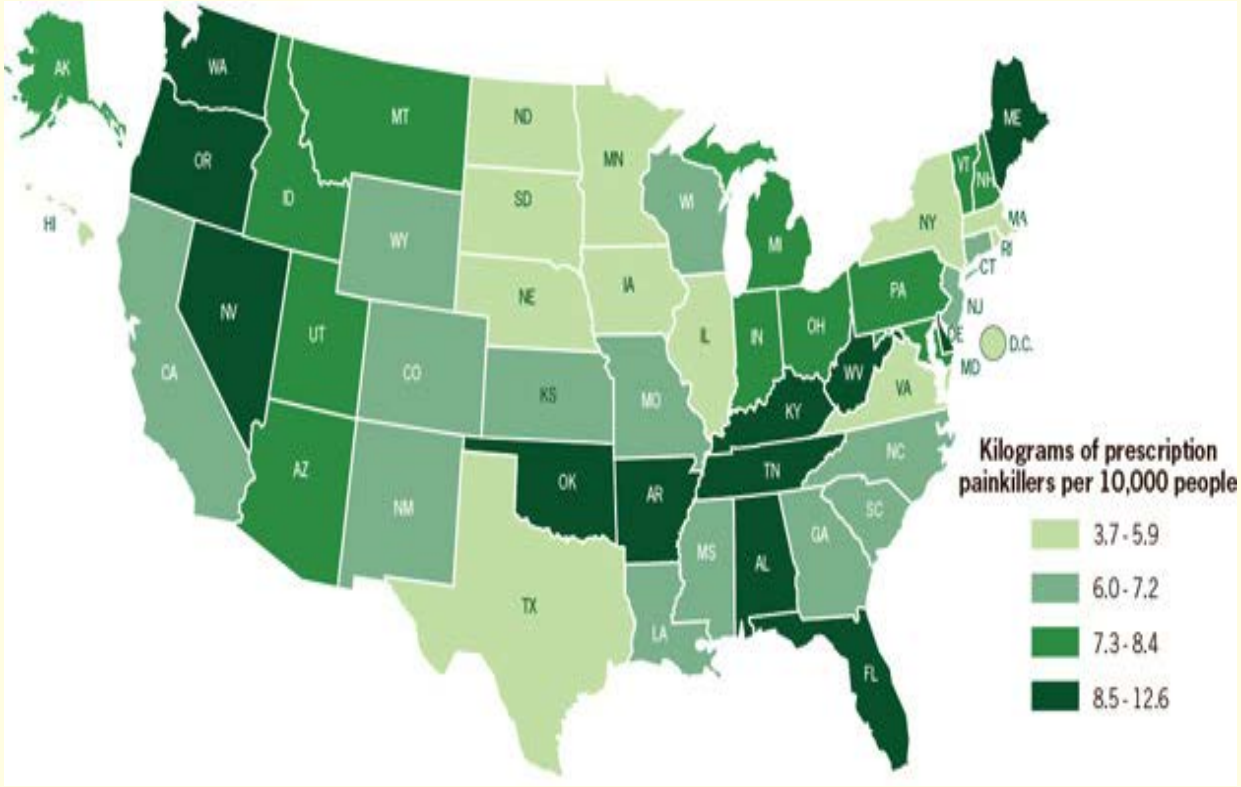
Prescription Opioids (PO)
(kilograms of opioid analgesics prescribed
***per 10,000 persons*)**



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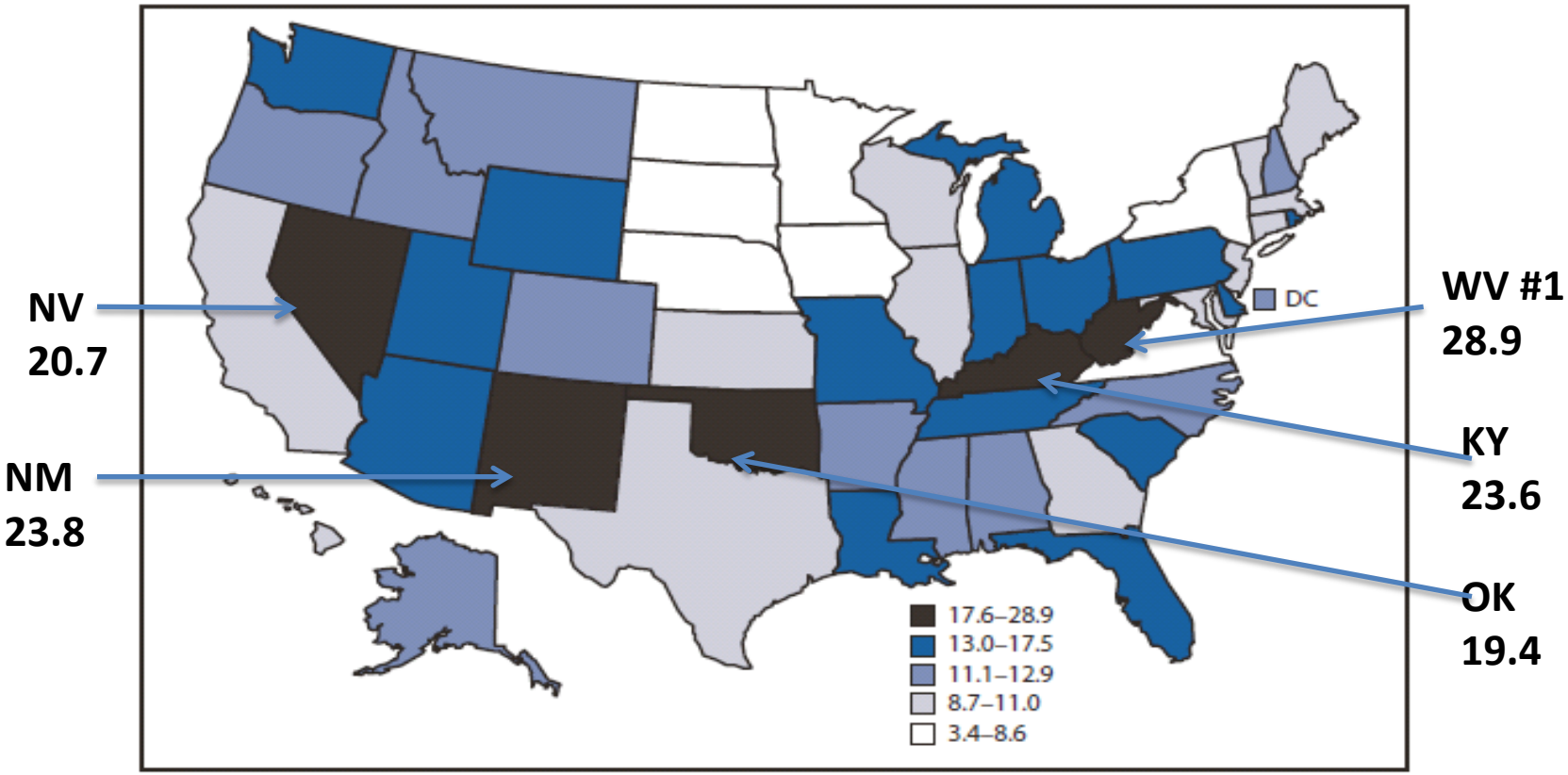
Doerrbecker et al. Transmission of Hepatitis C Virus Among PWID: Viral Stability and Association With Drug Preparation Equipment, *JID*, 2012

West Virginia Ranks #1

- In 2012, drug overdose ranged from 3.4 to 28.9 per 100,000 population
- United States rate 12.3, five states higher than national rate



Apicwv.org

(CDC data, 2/12) & APIC

Hepatitis C in Appalachia

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Increases in Hepatitis C Virus Infection Related to Injection Drug Use Among Persons Aged ≤30 Years — Kentucky, Tennessee, Virginia, and West Virginia, 2006–2012 Weekly May 8, 2015 / 64(17); 453-458
www.cdc.gov/mmwr/preview/mmwrhtml/mm6417a2

- 2006–2012 largest increases of acute HCV infection occurring in central Appalachia
- IDU is the primary risk factor
- Young persons (aged ≤30 years) from non-urban areas contributed to the majority of cases
- 73% citing IDU as a principal risk factor

CDC Study

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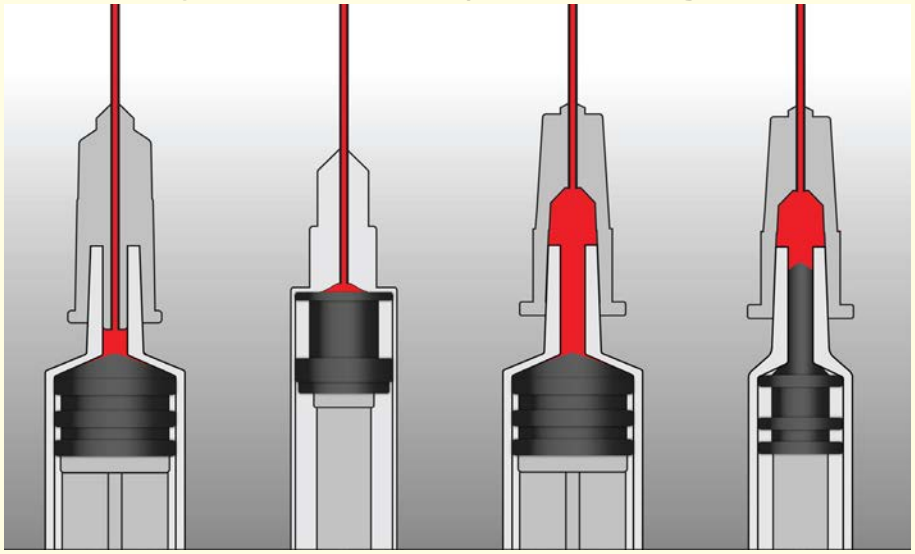
Viral Infectivity of HCV persists for People Who Inject Drugs (PWID)



Up to 63 days
in syringe barrel and dead space.

Up to 21 days
in water from a plastic container.

Up to 14 days
on inanimate faces (cookers and injection surfaces).

Up to 24 hours in filter and 48 hours when foil-wrapped.

HCV-contaminated solution needs to be heated for almost 90 seconds and reach temperatures of 144 degrees Fahrenheit for infectivity to be at undetectable levels.

Resource: Paintsil et al. Survival of Hepatitis C Virus in Syringes: Implication for Transmission among Injection Drug Users. *JID,* 2010, Doerrbecker et al. Inactivation and survival of hepatitis C virus on inanimate surfaces. *J ID,* 2011 Doerrbecker et al. Transmission of Hepatitis C Virus Among PWID: Viral Stability and Association With Drug Preparation Equipment, *JID*, 2012

HCV Presents a Set of Behavioral Risks for PWID

These viral characteristics transform every piece of injecting equipment into a primary transmission vector.

alcohol swabs

tourniquet

filters

cookers

surfaces

rinse/mixing water

bloody fingers

syringes

fingers in cookers

fishing for a vein

aintsil et al. Survival of Hepatitis C Virus in Syringes: Implication for Transmission among Injection Drug Users. *JID,* 2010
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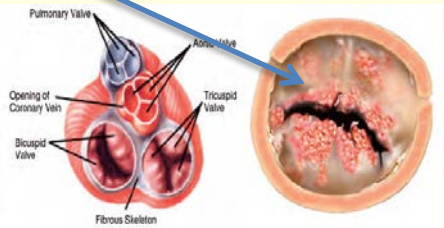
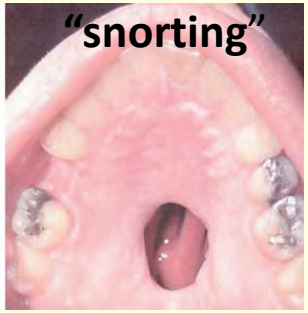
Drug Use Related Infections – IDU or Intranasal

Bacterial, Viral and Other Infections

- abscess
- cellulitis
- dirty blood poisoning (Septicemia)
- emboli
- endocarditis
- hepatitis A, B, C and HIV
- injection related injuries tracking & bruising
- necrotizing fasciitis
- tetanus
- vein collapse
- wound botulism





Methamphetamine, cocaine and crack use compiled by the West Virginia Chapter of the Association for Practitioners in Infection Control

Skin Infections in Injection Drug Users

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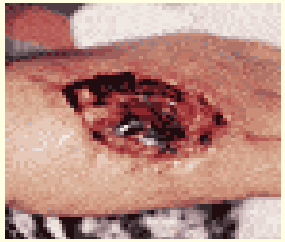
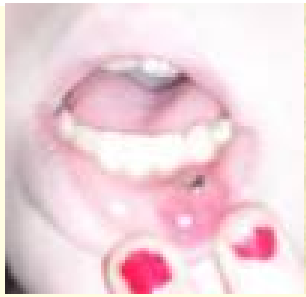
Skin and soft tissue bacterial infections are common due to:

- injection of drugs into the fatty layer under the skin (*skin popping*)
- leakage of drugs out of veins during the injection (*extravasation*)
- tissue death (*necrosis*) due to toxic materials in drugs
- increased numbers of bacteria on the skin surface



Cocaine Abuse Will Affect You Mentally and Physically

HCV Transmission

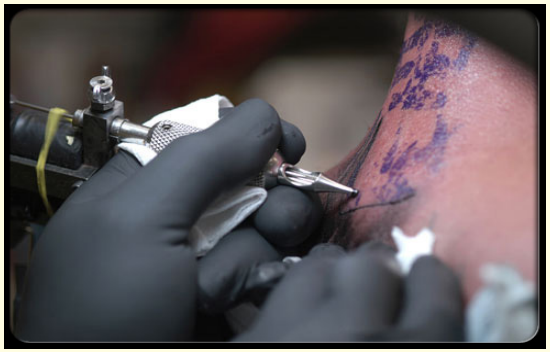


-Only get a body piercing at licensed shops. Ask if equipment is sterile.

-Nail and hair salons clean equipment properly after each use.

-Open sores due to non-sterile tattooing.

-Only get tattoos at a licensed facility. Ask if all equipment is sterile and ink in the ink wells is one-time use.



HCV Transmission Continued

Emergency responders, such as emergency medical services and law enforcement, can be at risk for blood exposure when responding to accidents, confrontations, domestic disputes, etc.

www.heart-intl.net/HEART/Hepatitis/Comp/HepatitisCandPoliceWork

Syringe Service Program (SSP) and Harm Reduction

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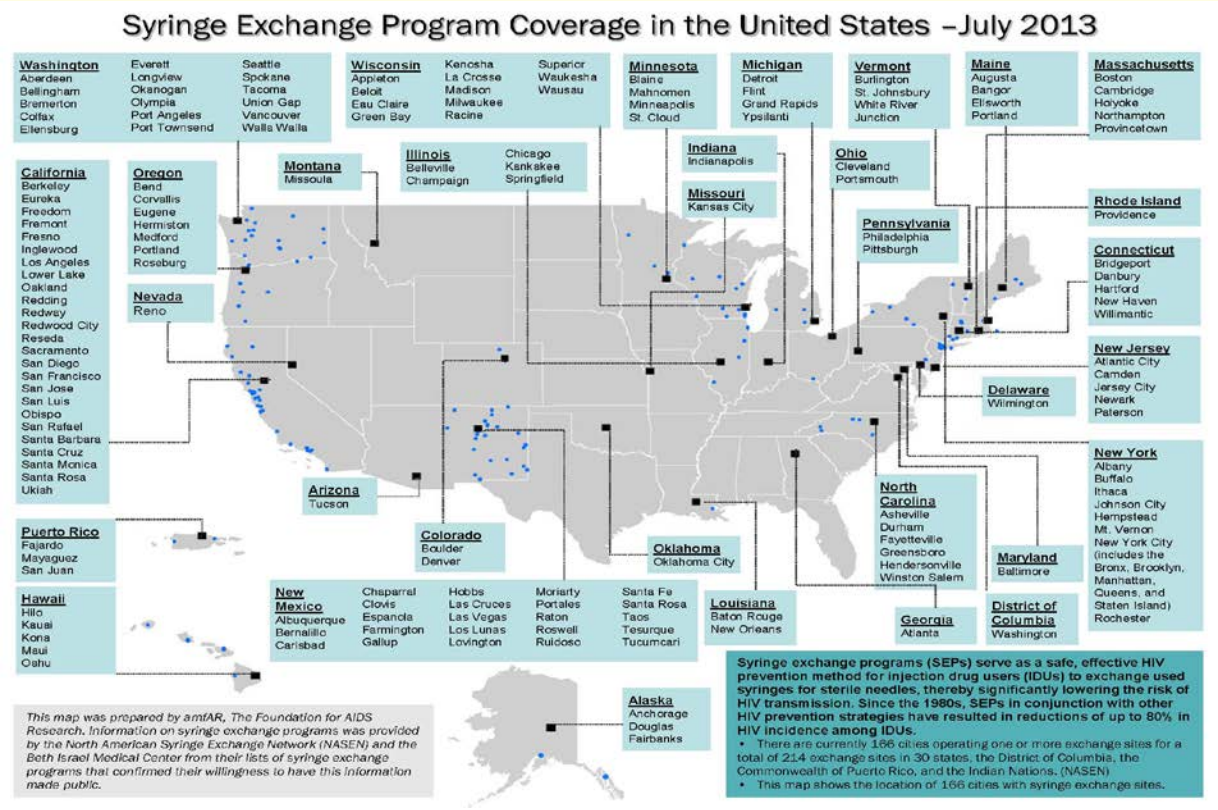
Formerly known as: SEP (Syringe Exchange Program) and also known as Syringe Access Services (SAS)

- SSP is inclusive of syringe/needle access, exchange, disposal and education
- Harm Reduction Program integration with SSP:
  - incorporates referral and linkage to care
  - includes hepatitis & HIV prevention services
  - includes substances abuse treatment, medical, dental and mental health care
  - provides tools, resources, and education to enable people who inject drugs to protect themselves and their communities

www.harmreduction.org/about-us/principles-of-harm-reduction

SSP and Harm Reduction Continued

- Delivering harm reduction and syringe service programs dramatically decreases the spread of HIV, HCV, HBV and other infectious diseases among PWID.
- The programs also save money, increase public safety, and help drug users get into treatment.



Healthcare Associated Infections (HAI)

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- Has the potential to transmit HBV and HCV to:
  - healthcare workers and patients
- Primarily as a result of:
  - drug diversion
  - unsafe injection practices
  - fingerstick devices
  - reuse of needles and syringes
  - other lapses in infection control

www.cdc.gov/hepatitis/outbreaks/healthcareinvestigationguide

HAI Continued

The One and Only Campaign is a public health campaign, led by the Centers for Disease Control and Prevention (CDC) and the Safe Injection Practices Coalition (SIPC), to raise awareness among patients and healthcare providers about safe injection practices. The Campaign aims to eliminate infections resulting from unsafe injection practices.

www.oneandonlycampaign.org/

HAI Continued

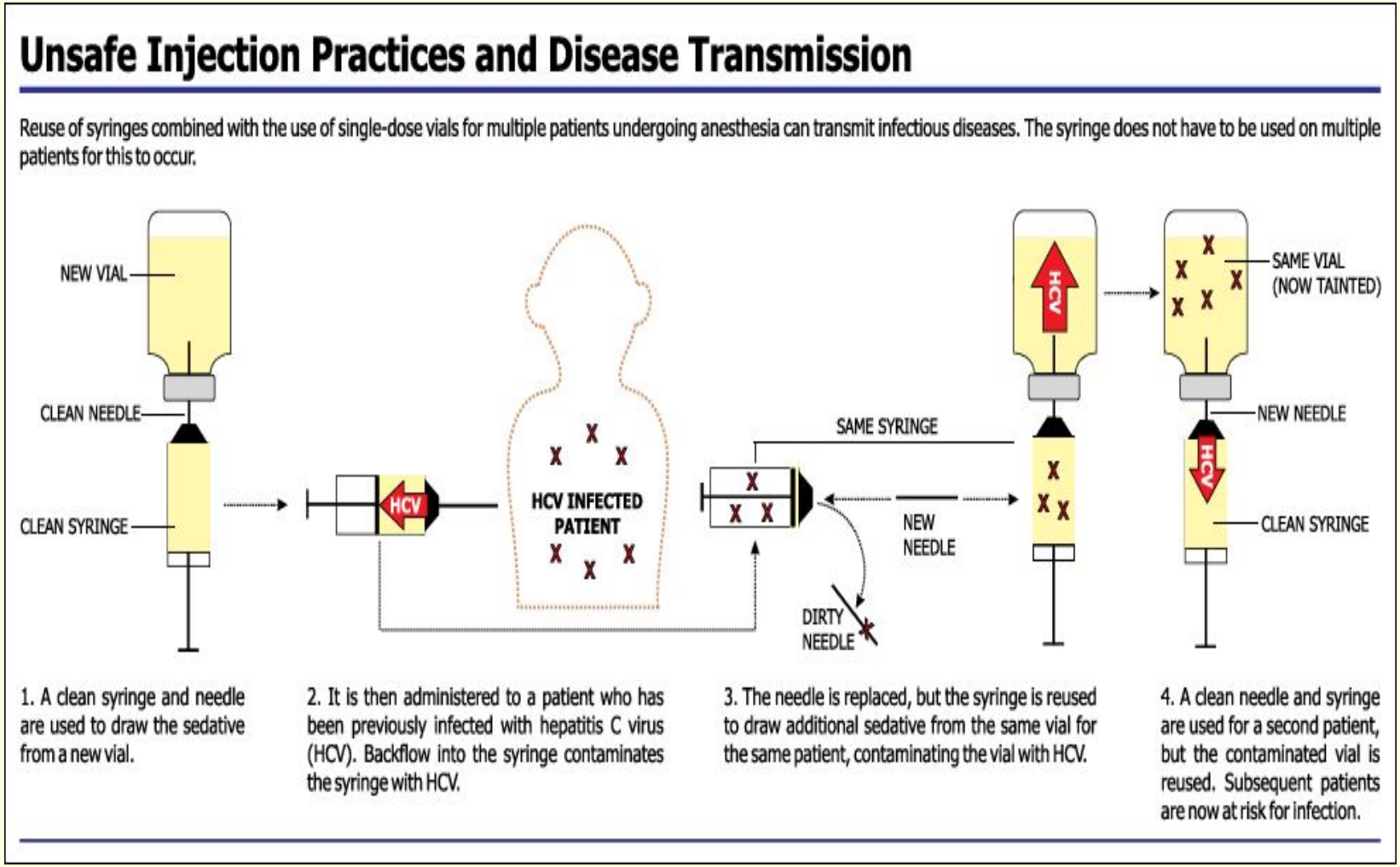

FIGURE. Unsafe injection practices and circumstances that likely resulted in transmission of hepatitis C virus (HCV) at a clinic — Las Vegas, Nevada, 2007. Source CDC MMWR 2008 May 16.

HBV Vaccine for Adults with Diabetes

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MMWR December 23, 2011 / 60(50); 1709-1711

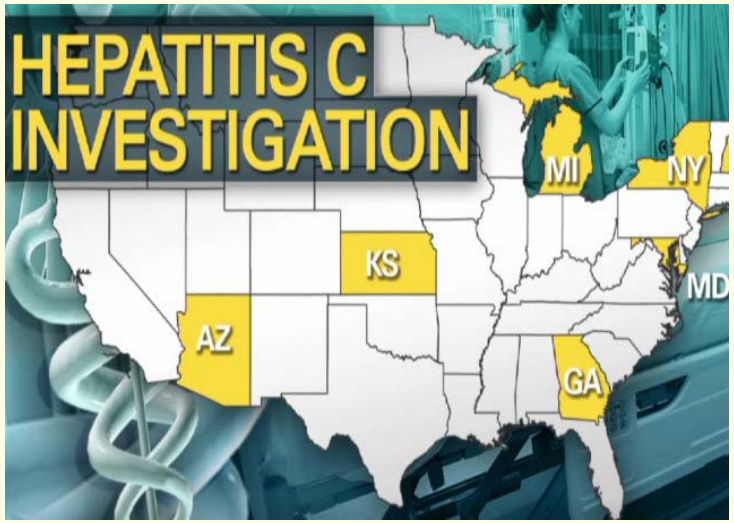
October 25, 2011, Advisory Committee on Immunization Practices (ACIP) recommended use of HBV Vaccine for Adults with Diabetes Mellitus because:

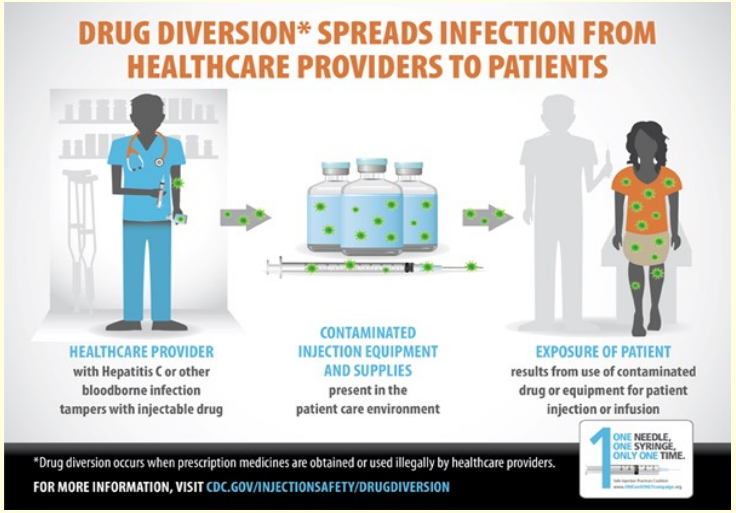
- Since 1996, a total of 29 outbreaks of HBV infection was reported to Centers for Disease Control and Prevention (CDC) from long term care facilities
- 25 of the 29 outbreaks were linked to sharing glucometers among diabetic patients

HAI Continued

Drug Diversion: (CNN 11/29/2012): A federal grand jury in New Hampshire has indicted a former hospital worker on fraud and product-tampering charges in connection with an outbreak of hepatitis C that sickened more than 30 people. Investigators reported a 33-year-old man injected himself with syringes of fentanyl, a powerful painkiller, that he stole from patients who were scheduled for surgery. He refilled the syringes with saline.

www.cnn.com/2012/11/29/health/hepatitis-infections-indictment/





www.cdc.gov/injectionsafety/drugdiversion/

HAI Continued

Drug Diversion: AP Photo/January 2010, DENVER (CBS/AP): A surgery technician infected 36 people with HCV and possibly exposed thousands more. Refilling syringes with saline after administering the pain medication to herself, she has been sentenced to 30 years in prison.

HAI: Source: By *Sun Staff* Wednesday, Feb. 27, 2008 | 2:41 p.m.:
An Endoscopy Center in Nevada notified 40,000 patients that may have been exposed to hepatitis C after 5 cases stemmed from anesthesia procedure in the clinic. After investigation, identified 77 cases potentially linked to the clinic.

HAI: CNN July 1, 2010: More than 1,800 veterans were possibly exposed to Hepatitis and HIV at a Missouri Veterans Administration Hospital due to improperly cleaned dental tools.

HAI Continued

Press Release June 5, 2010, Journal News, by Jenni Vincent)

- July 2009, the OEPS Hepatitis B Epidemiologist received a phone call from a LHD nurse to report "*something is going on*"
- 5 acute HBV cases in one week, investigation began
- Cases linked to mobile dental clinic in West Virginia

(June 20, 2010, Journal News reported)

- Letters were sent to 1,137 patients and 826 volunteers from the dental clinic offering free hepatitis B and C and HIV testing at a mass clinic.
- Only 181 individuals attended the clinic for testing and 115 accepted the free hepatitis B vaccine.
- Another 370 individuals were tested at private providers or LHDs.
- No additional HBV reported, also no HCV or HIV reported.

CDC HAI Checklist

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www.cdc.gov/HAI/settings/outpatient/checklist/outpatient-care-checklist.

An infection prevention checklist, developed by CDC, to ensure employees are adhering to infection control practices.

Section I. Administrative Policies and Facility Practices

- To ensure that the facility has appropriate infection prevention policies and procedures in place and supplies to allow healthcare personnel to provide safe care.
- To systematically assess personnel adherence to correct infection prevention practices. (Assessment of adherence should be conducted by direct observation of healthcare personnel during the performance of their duties.)

Summary: CDC Injection Safety Guidelines

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- Never administer medications from the same syringe to more than one patient, even if the needle is changed.
- After a syringe or needle has been used to enter or connect to a patent's IV, it is contaminated and should not be used on another patient or to enter a medication vial.
- Never enter a vial with a used syringe or needle.
- Never use medications packaged as single dose vials for more than one patient.
- Assign medications packaged as multi-dose vials to a single patient whenever possible.
- Do not use bags or bottles of intravenous solution as a common source of supply for more than one patient.
- Follow proper infection control practices during the preparation and administration of injected medications.
- Wear a surgical mask when placing a catheter or injecting material into the spinal canal or subdural space.

Needlestick Injury Reporting

West Virginia Legislative Rule 64CSR82 and West Virginia Code § 16-36 establish specific standards and procedures concerning needlestick injury prevention in the following facilities:

- all hospitals
- all nursing homes
- every local health department
- every home health agency

Compliance with these rules is a condition of licensure.

www.dhhr.wv.gov/oeps/prevention/

Needles and Other Sharps

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What to do if you are accidently stuck by a used needle or other sharp:

- Wash the exposed area immediately with water and soap or use a skin disinfectant (antiseptic) such as rubbing alcohol or hand sanitizer.
- Do not squeeze "milk" the injured area.
- Seek immediate medical attention by calling your physician or local hospital.
- Occupational injury; report to employer immediately.
- Clinical consultation center recommendations of care after sharp or blood borne pathogen exposure 1-888-448-4911.

CLINICIAN CONSULTATION CENTER

www.nccc.ucsf.edu/clinical-resources/pep-resources/pep-quick-guide/

Clean Surfaces

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- Clean surfaces with 1 part household bleach to 10 parts water; prepare new solution every 24 hours.
  {note: this procedure does not adequately clean injection drug use paraphernalia}
  www.osha.gov/pls/oshaweb/owadisp.show

- Bleach stored at room temperature (~70F) has a shelf life of one year.
  www.clorox.com/dr-laundry/shelf-life/#OOHQ2RVcgqGR1SIW.99

- Hydrogen peroxide solution typically has a shelf life of at least one year if the bottle is unopened, but only lasts 30-45 days once the seal has been broken. As soon as you expose the peroxide solution to air, it starts to react to form water. www.chemistry.about.com/b/2013/07/09/hydrogen-peroxide-shelf-life.htm

- Household guide for the proper disposal of syringes and sharps.
  www.wvdhhr.org/wvimw/pdf/syringe_disposal.pdf

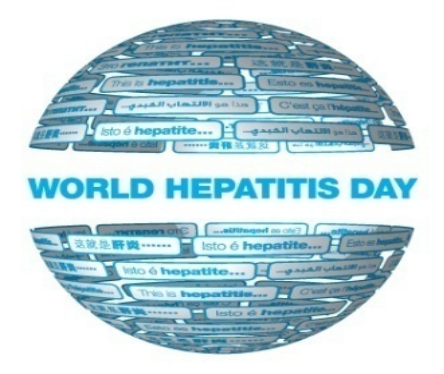
- Needles and other sharps (Safe Disposal Outside of Health Care Settings) www.fda.gov/MedicalDevices/ProductsandMedicalProcedure/htm.

Viral Hepatitis Prevention Dates

May is Hepatitis Awareness Month

May 19 is National Hepatitis Testing Day

July 28 is World Hepatitis Day



Learn More About Viral Hepatitis

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Federal partners engaged in implementing the Action Plan offer more detailed information on the prevention, care and treatment of hepatitis B and C.

Visit these specific sites for resources you can use:

CDC's Division of Viral Hepatitis

CDC's Know More Hepatitis Campaign

Food and Drug Administration

HHS Office of Minority Health

HHS Office on Women's Health

NIH: Hepatitis Health Information

U.S. Department of Veteran's Affairs

Vaccines.gov

AIDS.gov: HIV and Viral Hepatitis Coinfection

Contact

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