Submitting Hepatitis C Samples to NC State Laboratory of Public Health
North Carolina Division of Public Health
Communicable Disease Branch

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objectives

- Understand the hepatitis C disease process
- Understand the process of submitting hepatitis C tests to the State Lab
- Discuss next steps after an HCV diagnosis
- Discuss hepatoprotective behaviors
- Describe how to prevent transmission
Hepatitis C virus (HCV)

- Viral infection that directly attacks the liver
- Most common blood borne infection in the US
- Severity of disease ranges
- Diagnosed:
  - Acute hepatitis C
    - Short term, 0-6 months
  - Chronic hepatitis C
    - If unresolved, life long infection
- No vaccine is available
Hepatitis C virus Transmission

- Primarily through exposure to infectious blood
  - Injection drug use (IDU)
  - Receipt of blood, blood products, organs
  - Needle stick injuries
  - Perinatal (Child born from a Hepatitis C infected mom)

- Infrequently through
  - Intercourse
  - Sharing personal items
  - Invasive healthcare procedures
Recommended Testing Sequence for Identifying Current Hepatitis C Virus (HCV) Infection

1. **HCV antibody**
   - **Nonreactive**
     - No HCV antibody detected
       - STOP*
   - **Reactive**
     - **HCV RNA**
       - **Not Detected**
         - No current HCV infection
           - Additional testing as appropriate†
       - **Detected**
         - Current HCV infection
           - Link to care

* 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.

### Hep C

<table>
<thead>
<tr>
<th>RNA+</th>
<th>RNA -</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ab +</td>
<td>Current infection</td>
</tr>
<tr>
<td>Ab -</td>
<td>?acute infection</td>
</tr>
</tbody>
</table>

No commercially available IgM for hep C
Hepatitis C

30-40% all liver transplants are due to HCV-cirrhosis and hepatocellular carcinoma

Chronic Hepatitis C, compensated cirrhosis (life expectancy 10-13 years)

Chronic Hepatitis C, decompensated cirrhosis (life expectancy 1-3 years)

Hepatitis C infection

Acute infection, 20-30% with symptoms

Clearance of HCV RNA, 15%-25%

Fulminant hepatitis, Rare

Chronic infection, 75%-85%

Extrahepatic Manifestations

Chronic active hepatitis

Cirrhosis, 10%-20% over 20 years

 Decompensated cirrhosis, 5-year survival rate of 50%

HCC, 1%-4% per year
Hepatitis C evaluation

- Ascertain host factors
  - Drug/alcohol use?
  - Obese? Diabetic?
  - Ever treated for Hep C?
- Get more information about virus (likely not through LHD)
  - Genotype (1-4 what we see here in US)
  - Viral load (matters for treating genotype 1)
- Stage liver disease
Staging liver disease

- Liver biopsy: don’t do very often; gold standard; F score from histology
- Fibroscan: sound wave, time to return is measure stiffness liver, correlates to F-score
- Fibrosure: 7 blood factors/chemistries, gives F score
- APRI and FIB 4: calculated from AST/ALT, platelets and age; likelihoods of fibrosis
Staging liver disease
Infection Control

- Hep C blood exposure
  - No sharing personal hygiene equipment
    - Toothbrushes, nail clippers/scissors, razors
  - No sharing works, nasal straws
  - Sexual transmission possible
    - Condoms
  - Lives outside body 16 hr-4 day
    - 1:10 bleach dilution
Hep C

- HIV test
- Vaccinate Hep A/B, pneumonia, influenza
- Counsel on risk reduction
  - Alcohol, weight loss, ongoing substance abuse
  - Coffee (1-2 cups/day) are GOOD for your liver
- Refer to appropriate services
  - Substance abuse
  - Medical home
  - Syringe exchange
NC Hepatitis C Test, Link, Cure (TLC)
Two Epidemics

- **Historic Epidemic**
  - Chronic HCV
  - 150,000+
  - Baby boomers born b/w 1945 - 1965 are 5X more likely to have HCV
  - Doubling of liver cancer rates during past 10 years

- **Emerging Epidemic**
Two Epidemics

**Historic Epidemic**

**Emerging Epidemic**

- Acute HCV
  - Increasing
  - Associated with IDU epidemic
  - Mostly among younger, white and rural persons in poorer communities
NC Hepatitis C – Test, Link, Cure (TLC)

- Surveillance
- Community Outreach
- Screening and Testing
- Linkage to Care
HCV Screening

- Screening/Testing campaign for high risk populations
  - PWID (past or present)
  - HIV
  - Baby Boomers (persons born between 1945-1965)
Linkage to Care

- NC Carolina Hepatitis Academic Mentorship Program (CHAMP)
  - http://www.med.unc.edu/champ
Prevent the spread of HCV

*Everyday contact is not risky

- **Cover** any cuts or blisters to prevent others from coming in contact with your blood

- Carefully dispose of any used bandages, tissues, tampons, sanitary napkins or anything else with your blood on it.

- Wash your hands, and any object that has come in contact with your blood, thoroughly with soap and water

Prevent the spread of HCV

- Clean spilled blood from surfaces - including dried blood - use household bleach & water. Make a cleaning solution of (one part bleach : ten parts water) Ex. 1 cup : 10 cup or ½ cup to 5 cup

- Do not share personal items like your razor, nail clippers, toothbrush, or anything else that might have blood on it.

- Continue to breastfeed your baby unless your nipples become cracked and bleed.
  - Remember: Hepatitis C in not spread through breast milk!
- Do not donate blood, organs or sperm
- Do not share needles or other equipment with anyone else

Submitting HCV Samples to NC State Public Health Laboratory
Supply List for Packaging & Shipping HCV Samples to SLPH

- Mailer Tubes
- Specimen Bags
- Full 3 ml of serum
- Completed T1535 HIV/HCV Test Request Form
- Cardboard to prevent the HIV/HCV Forms from folding
- Manila envelopes for HIV/HCV Forms and Cardboard-
  (Securely tape the mailer tubes to the manila envelopes and/or place in a large Plastic bag for transport to the SLPH.)
Sample Collection Requirements

- Same sample collection procedure as for HIV testing—**Both tests (HIV & HCV) can be performed on one sample.**
- 3 ml serum in plastic screw-capped vial—**(No grossly hemolyzed samples)**
- Serum sample labeled with first and last names and one other identifier (DOB, SS# or other unique identifier)
- Make sure the names and second ID are not cut off the label on the serum tube.
**DHHS T1535 Form-HIV/Hepatitis C Testing Request Form**

### Last Name

<table>
<thead>
<tr>
<th>First Name</th>
<th>Age</th>
<th>Gender</th>
<th>Race (mark all that apply)</th>
<th>Ethnicity</th>
<th>Region</th>
<th>Test Requested</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>HIV, Hep C</td>
</tr>
</tbody>
</table>

### Bloodborne Pathogen Exposure

- CMV
- HAV
- HBV

### HIV/HBV Test

- HIV-1
- HIV-2

### Hepatitis C Test

- Hepatitis C

### Sample Type

- Serum
- Plasma

### Laboratory

- DHHS T1535 (Rev 08/16)
- State Laboratory of Public Health (Rev 08/17)

### Reference:

- Specimen Collection
- Specimen Handling
- Specimen Transport
Completing the HIV/HCV Test Request Form

- Make sure the first and last names are complete.
- Make sure all identifiers match the form and the serum sample.

**Check the test request box!!!!!**

- Do not make copies of the forms as forms are put through a scanner at the SLPH and data may be distorted!!!!
- Do not fold the test request forms.
Harm Reduction Messages

According to the Harm Reduction Coalition:

“Harm Reduction is a set of practical strategies and ideas aimed at reducing negative consequences associated with drug use. Harm reduction is also a movement for social justice built on a belief in, and respect for, the rights of people who use drugs.”
Harm Reduction Messages

- Realistic
- Meet people where they are at
- Low barrier
- Free of judgement
- Not abstinence-based
- Not always about illegal substances

“What is the most immediate, realistic option to prevent harm or promote wellness for this patient?”
Harm Reduction Programs

Do:
• Reduce HIV / Hep C transmission
• Prevent overdose
• Reduce needle waste
• Serve as a gateway to healthcare & resources

Do Not:
• Encourage or enable drug use
• Increase criminal behavior
• Exist at odds with 12-step or abstinence based programs
Safer injection Practices

• The #1 cause of new hepatitis C infections is shared injection equipment.
• Hepatitis C is usually spread by sharing:
  • Drugs
  • Water
  • Cottons
  • Cookers
  • Syringes and Ties
  • Blood on surfaces, will later contaminate other items
  • Bloody fingers
Harm Reduction Practices

1. Try to use less risky methods to take drugs

2. Never share: this goes for all works, especially cotton and water

3. Clean surfaces with 10% bleach before and after*

4. Wash hands, use hand sanitizer to clean off fingers

5. Utilize Needle Exchanges
Syringe Exchange in North Carolina

18 Exchanges covering 18 counties

24 exchanges expected by July, anniversary of the law

Source: North Carolina Division of Public Health, February 2017
Analysis: Injury Epidemiology and Surveillance Unit
NC Safer Syringe Initiative

- Website
  - NC DHHS, Division of Public Health
  - http://www.nchrc.org/syringe-exchange

- Toolkit
  - Overview
  - FAQs
  - Law
  - Logistics
  - Funding options, case studies
  - Sample documents
  - Resources, referrals...and so much more!

- Technical Assistance
  - 1-on-1
  - Trainings and webinars