**Perinatal Hepatitis C:**

Testing Recommendations, Linkages, and Care

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December 2, 2020

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**2020 CDC/USPSTF Hepatitis C Screening Recommendations**

CDC Recommendations for Hepatitis C Screening Among Adults — United States, 2020

Universal Screening Recommendations:

1. Hepatitis C screening at least once in a lifetime for all adults aged ≥18 years, except in settings where the prevalence of HCV infection (HCV RNA-positivity) is <0.1%
2. Hepatitis C screening for all pregnant women during each pregnancy, except in settings where the prevalence of HCV infection (HCV RNA-positivity) is <0.1%

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**Prevalence of hepatitis C positivity among all adults and among pregnant women, by state**

HCV screening in FY 2020-2021 AA

- Recommended only in high risk women as per previously: NO CHANGE
- Stay posted for future changes to AA

Outline of Presentation

- What is Hepatitis C (HCV)?
- Epidemiology of HCV in North Carolina
- Screening for and Diagnosing HCV
- Management of +HCV during pregnancy
- Management of +HCV over life course
- North Carolina HCV Management Resources

HCV Infection

- RNA virus
- Blood-borne transmission primarily
- Incubation: 2-12 weeks
- Under-reported as many are asymptomatic
- CDC Case definition: An illness with discrete onset of any sign or symptom consistent with acute viral hepatitis (e.g., fever, headache, malaise, anorexia, nausea, vomiting, diarrhea, and abdominal pain),
  AND (a) jaundice OR (b) peak ALT level >200

HCV Transmission

- Most commonly transmitted:
  - Injection drug use (prevalence up to 50%)
  - Congenital transmission
- Also transmitted:
  - Sexual activity
  - Sharing personal items (e.g. razor, toothbrush)
  - Health care procedures (e.g. injections)
  - Unregulated tattoo
  - Blood or organ receipt (rare since 1992)
  - Healthcare associated needle-stick injury

CDC, https://www.cdc.gov/hepatitis/hcv/hcvfaq.htm

Consequences of HCV

- Most common bloodborne infection in US
  - 50% undiagnosed
  - 15,713 US deaths attributed to HCV in 2018
- 75% will develop a chronic infection
- 5%-25% of all those infected will develop cirrhosis within 10-20 years
  - 3%-6% annual risk of hepatic failure
- Other manifestations: hepatocellular carcinoma, diabetes, kidney disease, and hematologic diseases
- 90% of those can be treated with current regimens regardless of genotype(s)

CDC, https://www.cdc.gov/hepatitis/hcv/hcvfaq.htm#ref02

Hepatitis C in United States and North Carolina

- HCV infections are rising in US
  - Acute HCV cases in 2018*: 3,621 (a 4-fold increase since 2010)
  - Estimated new cases, 2018*: 50,300 (95% CI: 39,800-171,600)
  - Increase associated with rising rates of injection drug use and improved case detection
  - Greatest rise in acute HCV occurred among the 20-39 age group
- CDC estimates that 2.4 million people are living with HCV in the US
- NC estimate: 150,000 people are living with HCV (1.8 per 100,000)
- Chronic HCV in NC at the end of 2019: 62,831 people


Acute HCV Rates in North Carolina and United States, 2000-2019

- Case definition for HCV changed in 2016.
- Data Source: North Carolina Electronic Disease Surveillance System (NC EDSS) (data as of August 2, 2020) and Surveillance for Viral Hepatitis, United States, 2000-2016 CDC reports (https://www.cdc.gov/hepatitis/statistics/index.htm) and CDC DVH Quarter 5 Hepatitis Reports (June 2019).
Acute HCV Rates by Gender in North Carolina and United States, 2000-2019

- NC Rate-Men
- NC Rate-Women
- US Rate-Men
- US Rate-Women

*Case definition for HCV changed in 2016.

Data Source: North Carolina Electronic Disease Surveillance System (NC EDSS) (data as of August 2, 2020) and Surveillance for Viral Hepatitis, United States, 2000-2018 CDC reports (https://www.cdc.gov/hepatitis/statistics/index.htm) and CDC DVH Quarter 5 Hepatitis Reports (June 2019).

Age Distribution of Acute HCV Cases by Gender in North Carolina, 2019

- Men
- Women

Data Source: North Carolina Electronic Disease Surveillance System (NC EDSS) (data as of August 2, 2020).

Acute HCV Rates by Race/Ethnicity North Carolina 2013-2019

- American Indian/Alaskan Native
- Asian/Pacific Islander
- Black/African American
- Hispanic/Latina
- White/Caucasian

*HCV case definition changed in 2016.
### Acute HCV Cases by Self-Reported Risk

**North Carolina 2015-2019**

- **Year of Diagnosis**
- **Risk:**
  - IDU
  - Sexual Contact
  - Unknown
  - Other
  - Missing

#### Data Source:
North Carolina Electronic Disease Surveillance System (NC EDSS) (data as of August 2, 2020).

### Acute HCV County Rates in North Carolina 2019

- **Rate per 100,000 population**
- **County Rates**

#### Data Source:
North Carolina Electronic Disease Surveillance System (NC EDSS) (data as of August 2, 2020).

### Chronic HCV Rates in North Carolina and United States, 2016^-2019

- **NC Rate**
- **US Rate**

#### Data Source:
North Carolina Electronic Disease Surveillance System (NC EDSS) (data as of August 2, 2020) and Surveillance for Viral Hepatitis, United States, 2000^-2018 CDC reports (https://www.cdc.gov/hepatitis/statistics/index.htm) and CDC DVH Quarter 5 Hepatitis Reports (June 2019).
Age Distribution of Chronic HCV Cases by Gender in North Carolina, 2019

Data Source: North Carolina Electronic Disease Surveillance System (NC EDSS) (data as of August 2, 2020).

Chronic HCV County Rates in North Carolina 2019

Data Source: North Carolina Electronic Disease Surveillance System (NC EDSS) (data as of August 2, 2020).

Perinatal HCV

- Given the rise in HCV among younger women, there is concern for more perinatal HCV cases
  - Currently 1,700 cases per year in the US
- Vertical transmission risk for HCV viral RNA positive mothers: 5%-7%
  - NC numbers not available
- CDC now recommends universal screening in every pregnancy with reflex to HCV RNA if positive as well as repeat screening in people with continuing risk factors
USPSTF Screening Recommendation

- Recommends screening for HCV infection in adults aged 18-79
  - Pregnant women should be screened; consider screening pregnant women less than 18
  - Most adults need to be screened only once
  - Those with ongoing risk factors should be screened periodically

CDC HCV Screening: Universal

- Hepatitis C screening at least once in a lifetime for all adults aged 18 years and older, except in settings where the prevalence of HCV infection (HCV RNA-positivity) is less than 0.1%*
- Hepatitis C screening for all pregnant women during each pregnancy, except in settings where the prevalence of HCV infection (HCV RNA-positivity) is less than 0.1%*

CDC HCV Screening: One-time

- One-time hepatitis C testing regardless of age or setting prevalence among people with recognized conditions or exposures:
  - HIV
  - Ever injected drugs
  - People who ever received maintenance hemodialysis or have persistently abnormal ALT
  - Prior recipients of transfusions or organ transplants, including before 1992
  - Healthcare, emergency medical, and public safety personnel after needle sticks, sharps, or mucosal exposures to HCV-positive blood
  - Children born to mothers with HCV infection
CDC HCV Screening-Other

- Routine periodic testing for people with ongoing risk factors, while risk factors persist:
  - Injection drug use
  - Maintenance hemodialysis
- Any person who requests hepatitis C testing should receive it, regardless of disclosure of risk, because many people may be reluctant to disclose stigmatizing risks

HCV Screening Process

- Universal screening in pregnancy
  - Timing not specified
- If positive test, obtain HCV RNA test
  - Reflex testing of HCV+ screens at state lab
  - +RNA test→ HCV
  - -RNA test→ no active HCV
**HCV Testing Interpretation**

<table>
<thead>
<tr>
<th>SEROSTATUSES</th>
<th>INTERPRETATION</th>
<th>FUTURE ACTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>HCV antibody reactive</td>
<td>RNA measurable</td>
<td>Positive treatment with appropriate counseling and multidisciplinary care and management.</td>
</tr>
<tr>
<td>HCV antibody reactive</td>
<td>No RNA measurable</td>
<td>No further action required.</td>
</tr>
<tr>
<td>HCV antibody nonreactive, HCV RNA detected</td>
<td>Current HCV infection</td>
<td>Positive treatment with appropriate counseling and multidisciplinary care and management.</td>
</tr>
<tr>
<td>HCV antibody nonreactive, HCV RNA nondetected</td>
<td>No current HCV infection</td>
<td>No further action required in most cases.</td>
</tr>
</tbody>
</table>

CDC, [https://www.cdc.gov/hepatitis/HCV/PDFs/hcv_graph.pdf](https://www.cdc.gov/hepatitis/HCV/PDFs/hcv_graph.pdf)

**HCV screening counseling**

- Patients should at least verbally consent and may opt out
- Can treat HCV testing under general consent similar to HBV and HIV testing
- Positive testing associated with high risk of past or current injection drug use
Prevention of Perinatal Transmission

SMFM Guidelines 2017

- No vaccine, prophylaxis or treatment available in pregnancy
- Choose amniocentesis over chorionic villous sampling
- Cesarean delivery should not be chosen solely for the indication of Hepatitis C
- Internal fetal monitoring, prolonged rupture of membranes and episiotomy should be avoided
- Breastfeeding is encouraged

Perinatal Transmission Prevention

- All babies born to HCV+ mothers should be tested at 18 months of age or older for perinatal transmission
- 20%-50% of babies with HCV+ mothers are currently appropriately tested for HCV
- Rates are much lower among Black babies than white babies
- “Cascade to Care”
  - Universal screening in pregnancy ➔ HCV viremic ➔ linked to care ➔ infants tested at 18 months ➔ HCV+ infants linked to care

Viral Hepatitis Care Cascade
Prevention of liver disease

• Active hepatitis A and B outbreaks are occurring in NC
• Combined infection increases risks associated with HCV infection
• Hepatitis A/B vaccination is strongly recommended in HCV+ patients during pregnancy
• Twinrix is available for all patients without documentation of prior full HBV series

Hepatitis A (HAV)- North Carolina

• As of October 7, 2020:
  • 346 cases
  • 65% hospitalized
  • 2 deaths

Acute HBV County Rates in North Carolina 2019

Data Source: North Carolina Electronic Disease Surveillance System (NC EDSS) (data as of August 2, 2020).
Long-term management of HCV

- Direct-acting antiviral treatments (DAAs) NOT FDA approved in pregnancy but will treat 95%-98% of infections
  - Care linkage postpartum is important
  - GI v. trained primary care physicians
  - Reinfection possible

- Secondary Prevention strategies
  - Abstain from alcohol for life
  - Safe sex practices including condoms, lube and avoiding rough sex/fisting
  - Harm reduction for injection drug use
  - Substance use disorder treatment

MPW coverage

- Per Medicaid HCV treatment and GI referral should be covered by MPW (communication 10/2020)

- Use appropriate Pregnancy-related ICD-10 codes:  O98.4 Viral hepatitis complicating pregnancy, childbirth and the puerperium
  - O98.411 …… first trimester
  - O98.412 …… second trimester
  - O98.413 …… third trimester
  - O98.43 Viral hepatitis complicating the puerperium

HCV+ Counseling

- Explain what results mean;
  - HCV is treatable (95%-98% will respond to DAA)
  - Limited mother-to-child transmission
  - You can still breastfeed
  - Treatment approved for children 3 and up

- Ask about other resources mom might need?
  - Limit stigmatizing language
  - Mom’s might be resistant to talk about drug use; offer a variety of services from harm reduction to food services to housing resources to counsel

**Viral Hepatitis Counseling**

### Viral Hepatitis

<table>
<thead>
<tr>
<th>Type</th>
<th>Transmission Route</th>
<th>Vaccine</th>
<th>Cure</th>
</tr>
</thead>
</table>
| A    | Food/Oud           | Yes     | Aspiration results in hepatitis |}
| B    | Blood to blood & sexual contact | Yes | No |
| C    | Blood to blood | No | Curable |

**Viral Hepatitis Prevention**

### Hepatitis A:
- **VACCINE**
- Hand washing
- Condom use
- Dental dams
- Safe injection and drug use practices

### Hepatitis B:
- **VACCINE**
- Safer sex practices
- Safer drug use practices

### Hepatitis C:
- Safer sex practices: prevention around rough sex/fisting
- Lube is your friend!
- Safer drug use practices

**Harm Reduction and Viral Hepatitis**

<table>
<thead>
<tr>
<th>HIV</th>
<th>Hepatitis B</th>
<th>Hepatitis C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transmitted through blood, semen, vaginal secretions, and breast milk</td>
<td>Transmitted through blood, semen, and vaginal secretions</td>
<td>Transmitted through blood to blood contact</td>
</tr>
<tr>
<td>Virus lives outside of body only a few hours</td>
<td>Virus lives outside of body for up to 7 days, and as long as 3 months in a closed container</td>
<td>Virus lives outside of body for up to 7 days, and as long as 3 months in a closed container</td>
</tr>
<tr>
<td>Baseline infectivity (1x)</td>
<td>100x</td>
<td>10x</td>
</tr>
<tr>
<td>No Vaccine</td>
<td>Vaccine Available</td>
<td>No Vaccine</td>
</tr>
</tbody>
</table>
Harm Reduction

- Viral Hepatitis can be spread by sharing:
  - Drugs themselves
  - Water
  - Cottons
  - Cookers
  - Syringes and Ties
  - Blood on surfaces, will later contaminate other items
  - Bloody fingers
  - Syringes and Ties

Harm Reduction: A few sample messages

- Try to use different methods to take drugs:
  - Can you snort it?
  - Can you smoke it?
  - Take it orally?
  - Take it intra-anally?

- Never share: this goes for all works, especially cotton and water
  - Other options: water, ethanol, hand sanitizer

- Wash hands, use hand sanitizer to clean off fingers

- Utilize Syringe Exchange Programs

Non-stigmatizing language

<table>
<thead>
<tr>
<th>Term</th>
<th>Non-stigmatizing Language</th>
</tr>
</thead>
<tbody>
<tr>
<td>Addict</td>
<td>Person with opioid use disorder (OUD) or person with opioid addiction [when substance in use is opioids]</td>
</tr>
<tr>
<td>User</td>
<td>Person in recovery or long-term recovery/person who previously used drugs</td>
</tr>
<tr>
<td>Substance or drug abuser</td>
<td>Person with opioid use disorder (OUD) or person with opioid addiction [when substance in use is opioids]</td>
</tr>
<tr>
<td>Junkie</td>
<td>Person-first language. The change shows that a person “has” a problem, rather than “is” the problem. The terms avoid eliciting negative associations, punitive attitudes, and individual blame.</td>
</tr>
<tr>
<td>Former addict</td>
<td>Person-first language. The change shows that a person “has” a problem, rather than “is” the problem. The terms avoid eliciting negative associations, punitive attitudes, and individual blame.</td>
</tr>
<tr>
<td>Habit</td>
<td>Substance use disorder - Drug addiction - Person in recovery or long-term recovery/person who previously used drugs</td>
</tr>
<tr>
<td>Abuse</td>
<td>For illicit drugs: Use - For prescription medications: Misuse, used other than prescribed</td>
</tr>
<tr>
<td>Clean</td>
<td>Not currently or actively using drugs - Stays on one supply</td>
</tr>
<tr>
<td>Dirty</td>
<td>Person who uses drugs - Tested positive for drugs</td>
</tr>
<tr>
<td>Addicted baby</td>
<td>Baby born to mother who used drugs while pregnant - Baby with signs of withdrawal from prenatal drug exposure - Baby with neonatal opioid withdrawal/neonatal abstinence syndrome</td>
</tr>
</tbody>
</table>

- Babies cannot be born with addiction; they are simply born manifesting a withdrawal syndrome. Using person-first language can reduce stigma.
North Carolina Resources for HCV

- Bridge Program: counsellors connect patients with resources and treatment once tested positive
- Viral Hepatitis Prevention Nurse: follow kids with perinatal exposure
- CHAMP: program connecting prescribing providers with GI mentors at two academic institutions to improve access to treatment

Bridge Counselors: Referral Process

- Referrals: Local Health Department (LHD), private provider, community-based organization (CBO), self-referral
- Outreach:
  - Call three times,
  - Send letter
  - Follow up after one year if not ready or not reached
- Bridging session appointment with counsellor: Offer comprehensive care resources
  - Social services
  - Housing
  - Food stability
  - Syringe services and harm reduction
  - Primary care
  - SUD treatment/MAT
  - Wound care
  - Hepatitis B/C, HIV and syphilis testing
  - HCV treatment
- First appointment with HCV treater
- Bridge Counselor Follow up through 12-week treatment
- Follow up for Sustained Viral Response (SVR) or cure
- 1 year reinfection check in

Hepatitis C Bridge Counselor Contacts

Region 1:
Sally Sutton
Home base: Jackson Co HD
Phone: (828)587-8291
Email: sallysutton@jacksonnc.org

Region 2:
Michelle Goyeau
Home base: CCWNC- Asheville
Phone: (828)348-2190
Email: mgoyeau@ccwnc.org

Region 5:
Rebecca Morgan
Home base: New Hanover Co HD
Phone: (910)795-8316
Email: remorgan@nhcgov.com

Statewide:
Morgan Culver
Home base: Raleigh, NC
Phone: (919)546-1014
Email: morgan.culver@dhhs.nc.gov

Region 10 and Statewide Support:
Kayla Ellis
Home base: Raleigh, NC
Phone: (919)546-1009
Email: kayla.ellis@dhhs.nc.gov
Viral hepatitis Prevention Nurse

- Testing for baby- Viral Hepatitis Prevention Nurse
  - Delay testing for baby until 18 months or older to ensure that mom’s antibodies are not detected
  - Surveillance for all babies born to HCV+ moms
  - DAAs FDA approved for children over three years of age
  - Contact Dianne Brewer to alert her to babies exposed perinatally so she can add them to her list of follow-up
    - Phone (for HIPPA)
    - Email: Dianne.brewer@dhhs.nc.gov

Linkage

- DAA use is not FDA approved during pregnancy
  - Mom may be linked to first appt, or bridge counselor

- Infant testing:
  - Recommended at >18 months to ensure antibodies detected are not moms
  - If positive: DAAs approved in children over three years of age. Referral may occur to pediatric GI, or pediatrician may choose to monitor care
  - For testing reminder, contact Viral Hepatitis Prevention Nurse (Dianne.brewer@dhhs.nc.gov)