All Hands on Deck!
Treating Hepatitis C in Primary Care

DARRYL ADAMS, ANP-C
COASTAL FAMILY HEALTH CENTER
Objectives

1. Discuss the prevalence of Hepatitis C and screening opportunities in special populations.

2. Differentiate between modern and non-specialty treatment options.

3. Discuss options for consultation, referral, and educational resources to learn to treat Hepatitis in the primary care setting.

4. Discuss barriers to treatment of Hepatitis C in the primary care setting.
Prevalence of HCV in the US

Estimates from 2013-2016

~4.1 million adults 18 and older with current or past HCV infection

~2.4 million had evidence of current infection (RNA positive)

WHO goal is to eliminate hepatitis C by 2030
New cases are increasing

HEPATITIS C IS CURABLE!

Source: Centers for Disease Control and Prevention. Division of Viral Hepatitis. Statistics and Surveillance.
Hepatitis C Virus (HCV) in the US: Gaps in Current Practice

Some estimates suggest that as much as 75% HCV is undiagnosed in US
Compare with HIV 21%, HBV 65%

HCV-related deaths

*Current information indicates these data represent a fraction of deaths attributable in whole or in part to chronic HCV

Source: Centers for Disease Control and Prevention. Division of Viral Hepatitis. Statistics and Surveillance.
Natural history following initial HCV infection

- Normal Liver
- Chronic Hepatitis
- Cirrhosis
- HCC & ESLD

- HCV Infection: 55-85%
- Cirrhosis: 20-30%
- HCC: 1-4% per year
- ESLD: 2-5% per year
Screening: Who’s at risk?

History of IV or intranasal drug use

Unregulated tattoo

Baby Boomers

Blood transfusion or solid organ transplant before 1992

Clotting factor before 1987

Healthcare worker with needle stick

Current/past hemodialysis

HIV infection

...and more
Figure 4.3. Rates of reported acute hepatitis C, by age group — United States, 2002–2017

Source: CDC, National Notifiable Diseases Surveillance System.
From 2004-2014, HCV and Opioid Injection Drug Use Increased Significantly Among People Aged 18-39 Years\(^1,2\)

The national increase in acute HCV infection is associated with the nation's opioid epidemic.\(^1\)

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Course of progression over time

- Normal Liver
- Chronic Hepatitis
- Cirrhosis
- 20-25 years
- 25-30 years
- HCC
- ESLD (End Stage Liver Disease)
- Death

HCV Infection

https://www.hepatitisc.uw.edu
We can help!

- Hepatitis C can be treated in primary care
- Patients have more contact opportunities with their PCPs than specialists
- Patients have an established relationships with their PCPs
- We can treat patients where they are...in our clinic rooms
PCP or specialist: similar results

A community based study in Washington DC measure the efficacy and adherence to therapy when treated by nonspecialists and specialists.

<table>
<thead>
<tr>
<th>Patients</th>
<th>N=600</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years)</td>
<td>58.7</td>
</tr>
<tr>
<td>Male, n (%)</td>
<td>416 (69)</td>
</tr>
<tr>
<td>Black, n (%)</td>
<td>578 (96)</td>
</tr>
<tr>
<td>HIV/HCV, n (%)</td>
<td>138 (23)</td>
</tr>
<tr>
<td>Cirrhosis, n (%)</td>
<td>121 (20)</td>
</tr>
<tr>
<td>Treatment-naïve, n (%)</td>
<td>494 (82)</td>
</tr>
<tr>
<td>DAA regimen for 12 weeks, n (%)</td>
<td>539 (90)</td>
</tr>
</tbody>
</table>

DAA, direct-acting antiviral

SVR12 by Provider Type (Per Protocol)
Step 1: Education

Step 2: Develop your process of screening and treatment

Step 3: Develop your process for treatment

Step 4: Know where to find your support

Step 5: Identify your barriers

Step 6: Know your limitations and when to refer to the specialist

I’m in! So how do I get started?
Step 1: Education
Hepatitis C Online
https://www.hepatitisc.uw.edu/alternate
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Hepatitis C Online
https://www.hepatitisc.uw.edu/alternate

<table>
<thead>
<tr>
<th>Lesson 1</th>
<th>Self-Study Module 1</th>
<th>Self-Study Module 2</th>
<th>Self-Study Module 3</th>
<th>Self-Study Module 4</th>
<th>Self-Study Module 5</th>
<th>Self-Study Module 6</th>
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<tbody>
<tr>
<td>Lesson 2</td>
<td>CME ✓</td>
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<td>CME ✓</td>
<td>CME ✓</td>
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<td>CME ✓</td>
<td>CME ✓</td>
<td>CME ✓</td>
</tr>
<tr>
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<td>CME ✓</td>
<td>CME ✓</td>
<td>CME ✓</td>
<td>CME ✓</td>
<td>CME ✓</td>
</tr>
<tr>
<td>Lesson 6</td>
<td>CME ✓</td>
<td>CME ✓</td>
<td>CME ✓</td>
<td>CME ✓</td>
<td>CME ✓</td>
<td>CME ✓</td>
</tr>
<tr>
<td>Lesson 7</td>
<td>CME ✓</td>
<td>CME ✓</td>
<td>CME ✓</td>
<td>CME ✓</td>
<td>CME ✓</td>
<td>CME ✓</td>
</tr>
</tbody>
</table>
Step 1: Education

HCV Guidance: Recommendations for Testing, Managing, and Treating Hepatitis C
https://www.hcvguidelines.org
Step 2: Develop your process for screening

Remember those screening opportunities

- History of IV or intranasal drug use
- Baby Boomers
- Unregulated tattoos
- History of solid organ transplant or blood transfusion before 1992
- History of clotting factors before 1987
- Men who have sex with men
- HIV infection
- ...and many more
**Recommended Testing Sequence for Identifying Current Hepatitis C Virus (HCV) Infection**

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

* 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.

After confirmed positive

HCV RNA (viral load)  
HCV genotype  
HBV sAg, HBV cAb, HBV sAb (screens for immunity), HAV Ab  
HIV  
CBC  
CMP  
AFP  
PT/INR  
Fibrosure or Fibrotest  
UDS  
Serum ETOH  
Pregnancy test
Step 3: Develop your process for treatment

What you’ll need to know to choose your medication therapy:

- Confirm positive for HCV
- Treatment naïve or experienced, and what medication failed
- Genotype
- Rule out coinfection with HBV or HIV
- Fibrosis stage
- Cirrhosis? Compensated or decompensated?
Metavir Stages of Fibrosis

STAGE 0: No Fibrosis
STAGE 1: Portal Fibrosis – No Septa
STAGE 2: Few Septa
STAGE 3: Numerous Septa
STAGE 4: Cirrhosis

Determining Fibrosis Stage

\[ \text{APRI} = \frac{\text{AST Level}}{\text{AST (Upper Limit of Normal)}} \times 100 \]

\[ \text{FIB-4} = \frac{\text{Age (years)} \times \text{AST (U/L)}}{\text{Platelet Count (10}^9/\text{L}) \times \sqrt{\text{ALT (U/L)}}} \]
## Determining Fibrosis Stage

<table>
<thead>
<tr>
<th>Proprietary labs</th>
<th>Radiographic methods</th>
</tr>
</thead>
<tbody>
<tr>
<td>◦ Fibrosure</td>
<td>◦ Tansient elastography (Fibroscan)</td>
</tr>
<tr>
<td>◦ Fibrotest</td>
<td>◦ Shear wave elastography (ShearWave)</td>
</tr>
</tbody>
</table>
<pre><code>                                                             | ◦ MRI elastography                                         |
                                                             | ◦ Hepatic ultrasound – could confirm cirrhosis, screen for portal HTN, ascites or HCC |
</code></pre>
My patient has cirrhosis...can I treat?

**Compensated Cirrhosis**
- Asymptomatic
- No esophageal varices
- No jaundice
- No ascites
- No hepatic encephalopathy

**Treat**

**Decompensated Cirrhosis**
- Esophageal varices
- Jaundice
- Ascites
- Hepatic encephalopathy

**Refer to Specialist**
Classifications for Cirrhosis
Child-Pugh

<table>
<thead>
<tr>
<th>Clinical and Lab Criteria</th>
<th>Points*</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Encephalopathy</td>
<td>None</td>
</tr>
<tr>
<td>Ascites</td>
<td>None</td>
</tr>
<tr>
<td>Bilirubin (mg/dL)</td>
<td>&lt; 2</td>
</tr>
<tr>
<td>Albumin (g/dL)</td>
<td>&gt; 3.5</td>
</tr>
<tr>
<td>Prothrombin time</td>
<td>&lt;4</td>
</tr>
<tr>
<td>Seconds prolonged or</td>
<td>&lt;1.7</td>
</tr>
<tr>
<td>International normalized ratio</td>
<td></td>
</tr>
</tbody>
</table>

*Child-Turcotte-Pugh Class obtained by adding score for each parameter (total points)

**Class A** = 5 to 6 points
**Class B** = 7 to 9 points
**Class C** = 10 to 15 points

https://www.hepatitisc.uw.edu
Classifications for Cirrhosis

MELD (Model for End-Stage Liver Disease)

![Bar Graph Showing MELD Score and 3-Month Patient Mortality](https://www.hepatitisc.uw.edu)
There’s an app for that!
Choose your weapon!

Your choice of medication depends on:

- Treatment naïve or experienced and which medication failed
- Genotype
- Cirrhosis status

Remember to check for drug interactions, depends on the medication choice.

- Some of the meds interact with:
  - PPI or H2 blocker
  - Statin
  - Anticonvulsants
<table>
<thead>
<tr>
<th>Drug Combination</th>
<th>Brand Name</th>
<th>Prescribing Information</th>
<th>Clinical Trials</th>
<th>References</th>
<th>Slide Deck</th>
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<tr>
<td>Daclatasvir</td>
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<td>Elbasvir-Grazoprevir</td>
<td>Zepatier</td>
<td><a href="#">link</a></td>
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<td>Glecaprevir-Pibrentasvir</td>
<td>Mavryret</td>
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<td>Ledipasvir-Sofosbuvir</td>
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<td>Ombitasvir-Paritaprevir-Ritonavir and Dasabuvir</td>
<td>Viekira Pak</td>
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<td>PegIntron</td>
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<td>Ribavirin</td>
<td>Copegus, Rebetol, Ribaphere</td>
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<td>Sofosbuvir</td>
<td>Sovaldi</td>
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<tr>
<td>Sofosbuvir-Velpatasvir-Voxilaprevir</td>
<td>Vosevi</td>
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</tbody>
</table>
## Treatment-Naive Genotype 1a With Compensated Cirrhosis

### Recommended and alternative regimens listed by evidence level and alphabetically for: Treatment-Naive Genotype 1a Patients With Compensated Cirrhosis

<table>
<thead>
<tr>
<th>RECOMMENDED</th>
<th>DURATION</th>
<th>RATING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daily fixed-dose combination of elbasvir (50 mg)/grazoprevir (100 mg) for patients without baseline NS5A RASs(^b) for elbasvir</td>
<td>12 weeks</td>
<td>I, A</td>
</tr>
<tr>
<td>Daily fixed-dose combination of glecaprevir (300 mg)/pibrentasvir (120 mg)(^c)</td>
<td>12 weeks</td>
<td>I, A</td>
</tr>
<tr>
<td>Daily fixed-dose combination of ledipasvir (90 mg)/sofosbuvir (400 mg)</td>
<td>12 weeks</td>
<td>I, A</td>
</tr>
<tr>
<td>Daily fixed-dose combination of sofosbuvir (400 mg)/velpatasvir (100 mg)</td>
<td>12 weeks</td>
<td>I, A</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ALTERNATIVE</th>
<th>DURATION</th>
<th>RATING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daily fixed-dose combination of elbasvir (50 mg)/grazoprevir (100 mg) with weight-based ribavirin for patients with baseline NS5A RASs(^b) for elbasvir</td>
<td>16 weeks</td>
<td>Ila, B</td>
</tr>
</tbody>
</table>

\(^a\) For decompensated cirrhosis, please refer to the appropriate section.

\(^b\) Includes genotype 1a resistance-associated substitutions at amino acid positions 28, 30, 31, or 93 known to confer antiviral resistance.

\(^c\) This is a 3-tablet coformulation. Please refer to the prescribing information.
There’s an app for that!
Monitoring during & after treatment

During treatment
Monitor viral load and liver enzymes during treatment

Sustained viralologic response (SVR12), or “none detected” at 12 weeks after treatment is completed = CURE!

After treatment:
Remind patient that the HCV Ab will be positive for life, but the viral load will only be positive if they become re-infected. Re-screen as needed.

If cirrhosis, the patient will need surveillance liver ultrasound every 6 months and periodic EGD
Monitoring during & after treatment

Sustained Virologic Response

HCV RNA (IU/ml)

Baseline    | Treatment Period | Follow-Up

Baseline     | Treatment Period | Follow-Up

End of Treatment

SVR12

SVR4

SVR24
Step 4: Know your barriers

Screening rates low?
- Find ways to remember to screen for HCV
  - Annual wellness visits
  - STD screening
  - Identified drug use

Workflow issues
- Consider setting aside dedicated hepatitis C appointments for availability

Obtaining the medication
- Uninsured patients?
  - Patient assistance foundations with the pharmaceutical companies
- Insured patients?
  - Formulary requirements and prior authorizations (specialty pharmacies may help)
  - Other requirements may include 6-month sobriety or specialist consult
**Step 5: Know where to find your support**

<table>
<thead>
<tr>
<th>Clinical support</th>
<th>Specialty support</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Behavioral Health</strong></td>
<td><strong>Develop relationships with local specialists for referrals if needed</strong></td>
</tr>
<tr>
<td>◦ Assess for mental health barriers</td>
<td>◦ Medical science liaasons from pharmaceutical companies are often helpful</td>
</tr>
<tr>
<td>◦ Counseling and followup if needed</td>
<td>◦ Hepatitis C specialty consultation and education with Project ECHO</td>
</tr>
<tr>
<td>◦ Substance abuse counseling</td>
<td></td>
</tr>
<tr>
<td><strong>Social Workers</strong></td>
<td><strong>Hepatitis C specialty consultation and education with Project ECHO</strong></td>
</tr>
<tr>
<td>◦ Help to identify barriers such as financial or transportation</td>
<td></td>
</tr>
<tr>
<td>◦ Help to identify programs the patient may qualify (eg: Healthcare for the Homeless, vouchers for imaging)</td>
<td></td>
</tr>
<tr>
<td>◦ Help patient complete patient assistance applications for the medication</td>
<td></td>
</tr>
</tbody>
</table>
Telehealth-like model of specialty consultation, guides the provider in the delivery of hepatitis C treatment

Free of charge...all you need is a computer and internet connection!

Short didactic instruction and presentation of case studies by yourself and/or the other participants

CME is provided for free

Primary care provider retains responsibility of the patient

Primary care provider can present more difficult cases which could eliminate delays in treatment or costly referrals.

Patients who are presented in the case studies receive specialty consultation without the need to travel to specialist or pay for a specialist visit
In the U.S. and around the world, people are not getting access to the specialty care they need, when they need it, for complex and treatable conditions.

Moving Knowledge, Not Patients
Through technology-enabled collaborative learning, ECHO creates access to high-quality specialty care in local communities.

Hub and spoke knowledge-sharing networks create a learning loop:
- Community providers learn from specialists.
- Community providers learn from each other.
- Specialists learn from community providers as best practices emerge.

Doing More for More Patients

PATIENTS
- Right Care
- Right Place
- Right Time

PROVIDERS
- Acquire New Knowledge
- Treat More Patients
- Build Community of Practice

COMMUNITY
- Reduce Disparities
- Retain Providers
- Keep Patients Local

SYSTEM
- Increase Access
- Improve Quality
- Reduce Cost

Changing the World, Fast

NEW MEXICO
- More than 300 community clinic sites
- 77,000 CME credits provided for free via ECHO-operated clinics

NATIONAL
- Operating in 30 states and growing
- 45 complex conditions

GLOBAL
- Operating 86 hubs in more than 13 countries and growing
- Goal of touching 1 billion lives by 2025

Are you a part of the ECHO? For inquiries about participation in HCV TeleECHO in MS contact: salbrecht@umc.edu
1. **Where can I go to learn more about the ECHO model and how to participate?**
   You can learn more about Project ECHO on the UNM website at [http://echo.unm.edu/](http://echo.unm.edu/).

2. **How can I get started? How do I connect with my local hub?**
   For further questions or to express interest to discuss the potential to participate in UMMC’s TeleECHO program, please contact: Svenja Albrecht, MD at [salbrecht@umc.edu](mailto:salbrecht@umc.edu)
Step 6: Know your limitations

Refer to specialist
- Decompensated cirrhosis
- Coinfection with hepatitis B or HIV

Seek out consultation if treatment is questionable
“Every American who has been cured of hepatitis C is living proof that ending this epidemic is possible. Hundreds of thousands of Americans have already been cured. In order to achieve our goal, we must commit to ensuring that everyone living with hepatitis C is tested and treated.”

Dr. Robert R. Redfield, CDC Director
November 6, 2018
All hands on deck!

We can all make this possible!

Screen patients when you have them in your clinic
Discuss treatment and potential for cure
Learn to treat hepatitis C in your primary care setting
Link patients to treatment

Be part of the cure!