Enhancing Hepatitis C Testing and Care, United States

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Centers for Disease Control and Prevention
Hepatitis C Virus (HCV) Infection
Prevalence, Morbidity, and Mortality

- **Prevalence of Chronic HCV**: 1.3%, 3.2M (2.7-3.9)\(^1\)
  - Persons who inject drugs (PWID): 60% of incident cases
  - Birth cohort 1945–1965: prevalence 5 x higher than other adults

- **Leading cause of liver transplants and hepatocellular carcinoma (HCC)**\(^2\)

- **HCV-related deaths doubled between 1999–2007 to over 15,000/year**\(^4\)
  - Expected to increase to over 35,000/year without intervention\(^5\)

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HIV/HCV Co-infection

- Prevalence of HCV infection among HIV-infected: 25–30%
- Prevalence in subpopulations\(^1-2\):
  - PWID: 80%
  - Men who have sex with men (MSM): 2-14%
- Reports of HCV transmission among HIV-infected MSM with high-risk sex and non-injection drug use\(^3\)
- HIV/HCV co-infected at 3 times higher risk of cirrhosis and decompensated liver disease

3. MMWR 22 Jul 2011 Vol 60/ No. 28
Age-adjusted Mortality Rates of HIV and Hepatitis C: United States, 1999–2010

~ 3 million persons living with HCV

- 1.6 M (50%)
- 1.2 M (38%)
- 750,000 (23%)
- 360,000 (11%)
- 200,000 (6%)

Measures to Enhance Testing and Care Overview

1. Broaden testing recommendations
2. Simplify testing algorithms
3. Educate communities and training providers
4. Update Hepatitis C Treatment Guidelines
5. Build capacity for testing and linkage to care
6. Develop and expand effective care models
7. Leverage health care reform policy
8. Develop hepatitis C performance measures with electronic specification and clinical decision support tools
Limited Effectiveness of Risk-based Testing Strategies: Broaden HCV testing recommendations

- CDC recommendations since 1998 included
  - Injection drug use
  - Blood transfusion before 1992
  - HIV
- Many clinicians not aware of HCV testing guidelines
- Clinicians may be reluctant to ask about risks
- Patients may be reluctant to disclose or fail to recall risks
  - 45-85% are unaware of their HCV infection
Broader National HCV Testing Recommendations

- One time test for adults born during 1945–1965 without prior ascertainment of risk
  - CDC (2012)
  - U.S. Preventive Services Task Force (USPSTF) (2013)
- Based on higher prevalence and benefits of therapy in reducing
  - Liver cancer risk: 70%
  - All-cause mortality: 50%
## Health Impact of Birth Cohort Recommendations

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Birth Cohort Testing with Therapy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Additional identified cases</td>
<td>809,000</td>
</tr>
<tr>
<td>Cirrhosis cases averted</td>
<td>203,000</td>
</tr>
<tr>
<td>Decompensated cirrhosis cases averted</td>
<td>74,000</td>
</tr>
<tr>
<td>Hepatocellular carcinoma cases averted</td>
<td>47,000</td>
</tr>
<tr>
<td>Transplants averted</td>
<td>15,000</td>
</tr>
<tr>
<td>Deaths from hepatitis C virus averted</td>
<td>121,000</td>
</tr>
<tr>
<td>Medical costs averted</td>
<td>$2.5B</td>
</tr>
<tr>
<td>Cost/QALY gained</td>
<td>$35,700</td>
</tr>
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</table>

Know More Hepatitis

- National Multi-Media Campaign launched in summer 2012
- Goals:
  - Increase awareness of hepatitis C
  - Encourage testing of those born 1945-1965
- Audiences
  - Providers
  - Consumers (Born from 1945 to 1965)
Know More Hepatitis Campaign Strategies

National Educational Campaign

- News/Media Advocacy
- Opinion Leader Outreach
- Professional Education
- Partnership Engagement
- Social Media
- Broadcast (Radio/TV Public Service Advertising)
- Digital Media
Airport Diorama Placements – Miami, FL
Total Impressions: 26.5 million
Total Clicks: ~100,000
Click Rate: 0.40%
Industry Average: 0.03-0.05%
Social Media - Twitter

- Over 18,000 followers
- **Activities**
  - Educate & raise awareness
  - Conduct chats
  - Engage partners
  - Promote awareness days
  - Promote patient & professional resources
- In May 2013, mentions of CDC on topic of viral hepatitis generated ~ 29.7 million impressions
Educating Providers

- Support academic organizations in education
  - University of Washington
  - University of Alabama

- Web-based clinical tools

- Social media & digital outreach

- Professional ads
  - Journals
  - Newsletters

- Professional partner engagement
Sample Provider Materials

Hepatitis C Online Course

Welcome to this self-study, interactive course on Hepatitis C infection. The content is intended for medical providers and will consist of 4 Modules. At this time, Modules 2, 3, and 4 are active; additional Modules will be posted as they are completed. The project is brought to you by the University of Washington and includes Antiviral Society-USA (AAS-USA). Free CME is offered throughout the site.

Funded by a grant from the Centers for Disease Control and Prevention

Expert Presentation

CDC Recommendations for the Identification of Chronic HCV Infection Among Persons Born During 1945–1965

John W. Ward, MD
Director, Division of Viral Hepatitis
Centers for Disease Control and Prevention (CDC)

Recommended Testing Sequence for Identifying Current Hepatitis C Virus (HCV) Infection

CDC recommendation:
Test everyone born from 1945–1965 for Hepatitis C

Recommended testing for people born from 1945–1965 is currently recommended to identify clinical disease. Additional testing is appropriate for evaluation of risk factors and assessment of disease activity.
Recommended Testing Sequence for Identifying Current Hepatitis C Virus (HCV) Infection

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

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* 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.

Revision of AASLD (2009) HCV Treatment Guidelines

- IDSA\(^1\) & AASLD\(^2\) panel to revise guidance for testing, managing, and treating HCV by January 2014

- Web-based guidance with ongoing updates

- CDC participating in development of testing and linkage to care section
  - Supporting evidence review and writing

1. Infectious Diseases Society of America
2. American Association for Study of Liver Disease
Early Identification and Linkage to Care Capacity Building CDC Initiative: 9/2012 –9/2014

- Target disproportionately affected population
- Settings providing services to PWID (10)
  - Street outreach, drug treatment, needle exchange programs, primary care
- Community Health Centers (7)
  - Emphasis on at risk (birth cohort)
- Other settings (e.g., public health HIV/STD clinics, University hospitals with liver clinics)
- Settings to strengthen care and treatment
  - Project ECHO expansion in two states
Trainees Identifying and Linking to Treatment for Hepatitis C (TILT-HEPC): Grady Memorial

- 1,000 bed urban, safety-net, teaching hospital, Atlanta
- Underserved, largely African American population
  - ~50% uninsured, 45% public insurance
- Medical residents in primary care test birth cohort
- Seamless linkage to care at the Grady Liver Clinic
- Staffed by general internists, after initial training by GI
- Treatment through pharmaceutical patient assistance programs
TILT-C testing and linkage to care: October 2012-August 2013

2,634 – HCV Ab ordered

1,762 – HCV Ab drawn

123

HCV Ab Positive (7.0%)

101

HCV RNA positive

83

Scheduled for linkage visit (82%)

73

Attended linkage visit to date (72%)

Data: Courtesy of Lesley Miller, MD. Principal investigator
Extension for Community Health care Outcomes (ECHO)

- Expand primary care capacity in HCV management of rural and underserved populations
- Use videoconferencing
- Share “best practices
- Case based learning
- Secure centralized database to monitor outcomes
## Outcomes of Treatment for Hepatitis C Virus Infection by Primary Care Providers

Sanjeev Arora, M.D., Karla Thornton, M.D., Glen Murata, M.D.,

<table>
<thead>
<tr>
<th>Outcome</th>
<th>21 ECHO Sites</th>
<th>Univ. of New Mexico HCV Clinic</th>
<th>p value</th>
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</thead>
<tbody>
<tr>
<td>SVR (all genotypes)</td>
<td>152 (58.2)</td>
<td>84 (57.5)</td>
<td>0.89</td>
</tr>
<tr>
<td>Any serious adverse event (AE)</td>
<td>18 (6.9)</td>
<td>20 (13.7)</td>
<td>0.02</td>
</tr>
<tr>
<td>Treatment-related AE</td>
<td>13 (5.0)</td>
<td>15 (10.3)</td>
<td>0.02</td>
</tr>
<tr>
<td>AE leading to treatment discontinuation</td>
<td>11 (4.2)</td>
<td>13 (8.9)</td>
<td>0.05</td>
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</table>
Prevention Education and Treatment of Hepatitis C via Telemedicine in Opiate Agonist Therapy (PET-C)

- CDC initiative to implement ECHO model in care of HCV-infected persons in opioid treatment program in New York
  - Except direct patient interaction by specialists
  - Expanding capacity through participation by physician extenders

- Staff and patient education on testing & treatment, and behavioral intervention for active PWID

- Assessment of intervention and model effectiveness
Health Care Reform
Impact on Hepatitis C Care

- Expansion of coverage to uninsured
- Insurance for persons with preexisting conditions
- Testing without cost sharing
- Prescription drugs likely more affordable
- Incentive for adoption of health information technology and demonstrate meaning use
  - Reporting on selected performance measures
### American Medical Association-Physician Consortium for Performance Improvement (PCPI) Measures

<table>
<thead>
<tr>
<th>IOM¹ Aims</th>
<th>Clinical Quality Measures²</th>
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<tbody>
<tr>
<td>Desired outcomes</td>
<td>• Sustained Virologic Response (SVR)</td>
</tr>
<tr>
<td>Underuse of effective services</td>
<td>• Confirmation of Hepatitis C viremia</td>
</tr>
<tr>
<td></td>
<td>• Hepatitis A vaccination</td>
</tr>
<tr>
<td></td>
<td>• Hepatitis B vaccination</td>
</tr>
<tr>
<td></td>
<td>• Counseling regarding risk of alcohol consumption</td>
</tr>
<tr>
<td>Effective and efficient services</td>
<td>• Hepatitis C RNA testing before initiating treatment</td>
</tr>
<tr>
<td></td>
<td>• HCV genotype testing prior to treatment</td>
</tr>
<tr>
<td></td>
<td>• HCV RNA testing between 4-12 weeks after treatment start</td>
</tr>
<tr>
<td></td>
<td>• Discontinuation of antiviral therapy if inadequate response</td>
</tr>
<tr>
<td></td>
<td>• Screening for HCC in patients with Hepatitis C cirrhosis</td>
</tr>
</tbody>
</table>

¹ Institute of Medicine aims for quality improvement
² yellow = newly developed measures
### PCPI Hepatitis C Performance Measures

<table>
<thead>
<tr>
<th>Type of Focus</th>
<th>Clinical Quality Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient-centered care</td>
<td>• Discussion and shared decision making surrounding treatment options</td>
</tr>
<tr>
<td>Timely care</td>
<td>• One-time screening: patients at risk&lt;sup&gt;1&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>• Annual HCV screening: patients who are active injection Drug Users</td>
</tr>
<tr>
<td></td>
<td>• Referral to treatment for patients identified with HCV Infection</td>
</tr>
</tbody>
</table>

<sup>1</sup> Injection drug use ever, blood transfused prior to 1992, or born during 1945–1965
Utilize Electronic Health Records to Prompt Hepatitis C Testing and Enhance Care

- Developing electronic specifications of clinical quality measures
  - Testing and validation for performance in health systems

- Developing corresponding clinical decision support tools
  - Physician reminders
  - Standing orders
Summary

- Broader testing recommendations, risk based and birth-cohort, can improve HCV detection
- Multiple efforts underway to increase uptake
  - Education
  - Capacity building in settings caring for populations at risk
  - E-specification of testing performance measures
- Models based on collaboration among specialist and primary care improve access to care
- Better linkage to care crucial to realize full potential of advances in treatment
  - Health care reform holds promise to improve access
Acknowledgment

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  - Dr. Cynthia Jorgensen, Team Lead, Education and Training Team, Prevention Branch
  - Alycia Downs, Health Education Specialist, Education and Training Team, Prevention Branch
  - Gilberto Ramirez, Team Lead, Program Operations Team, Prevention Branch
  - Dr. Jon Zibbell, Health Scientist, Prevention Research Evaluation Team, Prevention Branch
  - Dr. Bryce Smith, Team Lead, Prevention Research Evaluation Team, Prevention Branch
  - Dr. Deborah Holtzman, Associate Director for Science, Office of the Director
  - Dr. Philip Spradling, Medical Officer, Research Team, Epidemiology and Surveillance Branch
  - Dr. Francisco Averhoff, Associate Director for Global Health