

# CDC's Evidence-Based Recommendations for the Identification of Hepatitis C Virus (HCV) Infection among Persons Born during 1945-1965 in the United States

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## BACKGROUND

- Persons in the 1945-1965 birth cohort are 4 times more likely to be anti-HCV+ than other adults
  - Anti-HCV prevalence in the birth cohort = 3.25%<sup>1</sup>
- 76.5% of all chronic HCV infections are in the 1945-1965 birth cohort
  - 68% have medical insurance
- Infected population has modifiable disease co-factors
  - 58% consume ≥ 2 alcoholic drinks/day
  - 80% lack Hep A/B vaccination
- Represents 73% of all HCV-associated mortality
- HCV-related deaths doubled from 1999-2007 to over 15,000/year

## Rationale for the Birth Cohort Recommendation

- There are significant barriers to HCV testing<sup>2-5</sup>
  - Physician knowledge and experience is limited
  - Patient recall of long-past risk behavior and concerns of stigma is poor
- ALT screening misses more than 50% of chronic cases<sup>6</sup>
  - 20%-30% of persistently normal ALTs develop advanced liver disease
- 45%-85% of infected persons are unidentified<sup>7-9</sup>
- Testing persons born during 1945-1965 is cost effective

## METHODS

- GRADE framework
  - Methodology adopted by over 60 organizations including WHO, federal advisory committees (e.g., ACIP), and the Cochrane Collaborative
  - Assess quality of the evidence for critical patient-important outcomes
  - Determine the strength of the recommendations
- Staged review
  - 1<sup>st</sup> stage: select targeted birth cohort
  - 2<sup>nd</sup> stage: evaluate the benefits and harms of testing persons born 1945-1965 on patient-important outcomes
- A systematic review and meta-analysis, conducted using MEDLINE, EMBASE, CINAHL, the Cochrane Library, Sociological Abstracts, and DARE, examined the development of HCC among HCV-infected persons at all stages of fibrosis or with advanced liver disease (Metavir F3-F4 or Ishak 4-6) achieving SVR or not responding to treatment.
- English-language, observational studies targeting an adult population and with an average follow-up of at least two years were included.
- Two independent investigators reviewed and abstracted full articles.
- Pooled estimates (hazard ratios and incidence rates) were obtained through random-effects meta-analysis using the inverse-variance method.

## Key Outcomes of Evidence Review

### Harms

- Effect of protease inhibitors on Serious Adverse Events
  - There are serious adverse events associated with Boceprevir- and Telaprevir-based regimens that lead to discontinuation of treatment (RR 1.34, 95% CI 0.95, 1.87).
- Insurability, HCV transmission, false positives, false negatives
  - No studies evaluated these potential harms related to HCV testing and the birth cohort

### Benefits

- Effect of Telaprevir- and Boceprevir-based therapies on sustained viral response (SVR)
  - Protease inhibitor-based treatment regimens increase the possibility of achieving SVR by 50% (RR 0.53, 95% CI 0.47, 0.6)
- SVR and HCC
  - Treatment-related SVR associated with a reduced risk of HCC of 75% (0.24; 95% CI=0.18, 0.31)
- SVR and all-cause mortality
  - Treatment-related SVR associated with reduced risk of all-cause mortality among persons diagnosed with HCV infection of 50% (RR=0.46; 95% CI=0.41, 0.51)
- Effect of clinician-directed intervention on alcohol use
  - Meta-analysis found decline of alcohol use >38% for >1 year follow-up; indirect evidence for HCV-infected populations

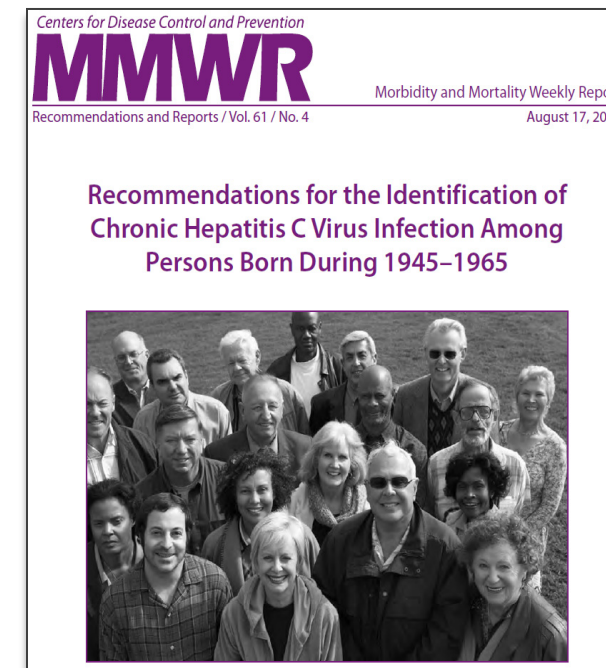
## Health and Cost Impact of HCV Testing of Persons Born 1945-1965

Outcome	Birth Cohort Testing with DAA Therapy PegIFN-Riba + TVR
Additional Identified Cases	809,000
Cirrhosis cases averted	203,000
Decompensated cirrhosis cases averted	74,000
Hepatocellular carcinoma cases averted	47,000
Transplants averted	15,000
Deaths from hepatitis C virus averted	121,000
Medical costs averted	\$2.5b
Cost/QALY gained (Societal)	\$35,700

## Recommendations

Adults born during 1945 through 1965 should receive one-time testing for HCV without prior ascertainment of HCV risk factor. (strong recommendation, moderate quality of evidence)

All persons with identified HCV infection should receive a brief alcohol screening and intervention as appropriate, followed by referral to appropriate care and treatment services for HCV infection and related conditions as indicated. (strong recommendation, moderate quality of evidence)



## Implementation

- Launch Know More Hepatitis campaign for public and providers
- Expand capacity for HCV testing and care referral (e.g., FY 12 PPHF)
  - \$5.0M available; > 100 applications
- Enhance surveillance to monitor implementation and impact
- Collaborate with other federal agencies to support testing (e.g., AHRQ, HRSA, CMS)
- Engage stakeholders
  - Professional societies (e.g., IDSA, ACP, AASLD, CSTE, AMA leadership)
  - Providers (Health systems, insurers, laboratories)

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