Hepatitis C Virus Screening and Prevalence among Veterans in Department of Veterans Affairs Care in 2012

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Background

- 2.7-3.9 million Americans are living with HCV infection
- Disproportionately high prevalence of HCV infection among persons born in the mid 1940s-mid 1960s
- Over 75% of Americans with HCV are Baby Boomers
- 45-85% of those infected with HCV do not know they are infected
- Veterans have a higher prevalence of HCV exposure and infection than the general population

- Without HCV care and treatment, the Centers for Disease Control and Prevention (CDC) estimate that
  - 1.76 million Americans with HCV will develop cirrhosis
  - 400,000 will develop hepatocellular carcinoma (HCC)
  - More than 1 million will die of HCV-related disease

1 CDC, MMWR 2012;61(RR-4):1-32
3 Dominitz J et al., Hepatology, 2005;41(1):88-96
Background and Objectives

CDC (August 2012) and the US Preventive Services Task Force (USPSTF ) (June 2013 – Grade B) recommendation:
“one-time HCV screening without prior ascertainment of risk for those born between 1945 and 1965, a population with a disproportionately high prevalence of HCV infection and related disease.”

(with continued risk-based testing for everyone else)

Given the change in CDC (and USPSTF) recommendation, we sought to

1) Assess the extent to which Veterans in recent care, particularly those born between 1945-1965, have been screened for HCV
2) Assess HCV infection prevalence by birth cohort to determine if the emphasis on birth cohort screening applied to the VA population
3) Estimate the potential clinical impact of complete birth cohort screening based on our findings

1 CDC, MMWR 2012;61(RR-4):1-32
2 Moyer VA et al., Ann Intern Med epub June 25 2013
Methods

• Data source: VA’s Corporate Data Warehouse (CDW)
  – birth dates and VA laboratory tests for all Veterans with one VA outpatient visit in 2012
• VA laboratory data available from 1 October 1999 to 31 December 2012
• HCV antibody, viral load and genotype tests accepted as evidence of HCV screening
• 6,622,782 HCV lab tests
  – 90.7% with informative results
• Confirmatory HCV RNA testing rate: percentage of Veterans with a positive antibody test who had viral load or genotype testing
• HCV infection prevalence: detectable viral load or genotype among those with informative laboratory data
**Results**

**Veterans with VA Outpatient Visit in 2012**

- 5,500,392 Veterans with VA outpatient visit in 2012

<table>
<thead>
<tr>
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<th>n (%)</th>
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<tbody>
<tr>
<td><strong>Sex</strong></td>
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<tr>
<td>Male</td>
<td>5,139,483 (93.4%)</td>
</tr>
<tr>
<td>Female</td>
<td>360,879 (6.6%)</td>
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<tr>
<td><strong>Race/ethnicity</strong></td>
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<tr>
<td>American Indian/Alaskan Native</td>
<td>38,586 (0.7%)</td>
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<tr>
<td>Asian</td>
<td>44,511 (0.8%)</td>
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<tr>
<td>Black</td>
<td>823,406 (15.0%)</td>
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<tr>
<td>Native Hawaiian/Pacific Islander</td>
<td>36,753 (0.7%)</td>
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<tr>
<td>Hispanic</td>
<td>313,480 (5.7%)</td>
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<tr>
<td>White</td>
<td>3,593,765 (65.3%)</td>
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<tr>
<td>Other/mixed/unknown</td>
<td>649,891 (11.8%)</td>
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<td><strong>Birth cohort</strong></td>
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<tr>
<td>Born before 1945</td>
<td>2,056,132 (37.4%)</td>
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<tr>
<td>Born 1945-1965</td>
<td>2,541,033 (46.2%)</td>
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<tr>
<td>Born after 1965</td>
<td>902,608 (16.4%)</td>
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*30 Veterans with invalid sex values; 619 with invalid birth dates*
Results
HCV Screening Rates 2012
National

• 3,009,918 of the 5,500,309 Veterans in care in 2012 had been screened for HCV
Results
HCV Screening Rates 2012
National and Birth Cohort

- VA HCV screening rate was highest for the Veterans born between 1945 and 1965

- Nevertheless, 34.8% of Veterans born 1945-1965 (n=908,971) did not have VA HCV screening
Results
HCV RNA Confirmatory Testing Rates

- 215,354 Veterans with positive HCV antibody result
- 204,749 (95.1%) with viral load or genotype test
- Rates similarly high across birth cohorts
  - Born <1945 88.6%
  - Born 1945-1965 95.8%
  - Born >1965 94.1%

- High rate of confirmatory testing confirms success of VA efforts with reflex testing
- Increases confidence in observed HCV infection prevalence
• Informative laboratory results on 2.9 million Veterans in care in 2012

• HCV infection prevalence (6.1%) is higher in Veteran population than estimates for the general US population (1.2%)\(^1\)

1 CDC, MMWR 2012;61(RR-4):1-32
Results
HCV Infection Prevalence 2012
National and Birth Cohort

- Confirms 1945-1965 birth cohort as having highest HCV infection prevalence
- HCV infection prevalence in the 1945-1965 Veteran cohort is higher than estimates for the 1945-1965 general population (2.5%)\(^1\)

1 CDC, MMWR 2012;61(RR-4):1-32
Results
HCV Infection Prevalence Among Veterans in Care in 2012 Born 1945-1965 Based on Year of First HCV Screening

- HCV infection prevalence declined from 33.2% for those first screened in 1999 to 5.7% for those first screened in 2012
- Extrapolating the most recent 1945-1965 cohort HCV infection prevalence (5.7%) to those Veterans in the birth cohort not yet screened suggests that up to 51,000 additional Veterans could be identified with complete birth cohort screening.
Summary

• VA HCV screening rates among Veterans in VA care were highest among those born 1945-1965 (64.2%). A substantial number of Veterans in this birth cohort still require HCV screening to meet the CDC/USPSTF recommendations.

• HCV infection prevalence was markedly elevated among those born during 1945-1965 compared to those born before or after this birth cohort which supports the CDC/USPSTF emphasis on screening this birth cohort.

• HCV infection prevalence in the Veteran population in VA care was higher than prior national VA estimates and higher than estimates of prevalence in the general population.

• Full implementation of birth cohort screening could reveal a substantial numbers of Veterans with previously undiagnosed HCV infection.