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Abstract

OBJECTIVES: The prevalence of hepatitis C virus (HCV) infection among young adults is rising in Wisconsin. We examined the prevalence of HCV infection among male and female inmates entering two Wisconsin prisons and evaluated existing and alternate risk-based strategies for identifying HCV infection at intake.

METHODS: We added HCV testing to the intake procedures for all 1,239 adults prison entrants at the Wisconsin Department of Corrections (WDOC) from November 3, 2014, to January 31, 2015. We identified risk factors associated with HCV infection during the routine intake examination and calculated the sensitivity and specificity of risk-based testing strategies for identifying HCV infection.

RESULTS: The prevalence of HCV antibody among prison entrants was 12.5% (95% confidence interval [CI] 10.7, 14.4) overall and was almost two times higher at the women's facility (21.3%, 95% CI 15.4, 27.2) than at the men's facility (11.0%, 95% CI 0.0, 12.9) (p<0.001). The sensitivity and specificity of the WDOC risk-based criteria were 88% (95% CI 83, 93) and 80% (95% CI 78, 83), respectively. Adding a new criterion, the 1945-1965 birth cohort, to the risk-based criteria improved the sensitivity to 92% (95% CI 88, 96) and lowered the specificity to 71% (95% CI 68, 74). Compared with entrants without these risk factors, HCV antibody prevalence was significantly higher among prison entrants who had the following risk factors: injection drug use (prevalence ratio [PR] = 9.9, 95% CI 7.4, 13.2), liver disease (PR=9.7, 95% CI 7.8, 12.0), and elevated levels of alanine transaminase (PR=3.6, 95% CI 2.7, 4.9).

CONCLUSION:
The WDOC risk criteria for HCV testing identified 88% of HCV infections among prison entrants. Including the 1945-1965 birth cohort as a criterion along with the other WDOC risk criteria increased the sensitivity of targeted testing to 92%. These findings may be informative to jurisdictions where universal HCV testing is not feasible because of resource limitations.