SEARCH: Screening Emergency Admissions at Risk of Chronic Hepatitis C to diagnose or "re-diagnose" infections is effective

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Background: Case detection remains a major challenge for hepatitis C virus (HCV) elimination. We have previously published results from a pilot of an emergency department (ED) semi-automated screening program, SEARCH; Screening Emergency Admissions at Risk of Chronic HCV. In this pilot, 5000 consecutive patients were screened including 4778 overseas born (targeted) from 14,093 ED presentations. HCVAb was positive in 181 patients (3.6%); 51 (1.0%) were HCV RNA positive (12 were new or recent diagnoses, 32 were "*re-diagnoses*" (aware but lost-to-follow-up [LTFU]) and 7 previously known but treatment contraindicated.

Methods: All direct costs of HCV testing until direct acting anti-viral (DAA) therapy initiation were calculated. Cost was assessed in 2018 Australian Dollars. A cost analysis of the initial program and refinements are presented. Sensitivity analysis to understand impact of variation in staff time, laboratory test cost, changes in HCV antibody (Ab) prevalence, RNA positivity percentage and rate of linkage to care was conducted. Impact of refinements (SEARCH 2) to cost is presented.

Results: The total SEARCH pilot, testing 5000 patients was estimated to cost $110,549.52 (range $92,109.79 –$129,581.24) comprising of $68,278.67 for HCV Ab testing, $21,568.99 for follow up and linkage to care of positive patients and $20,701.86 to prepare HCV RNA positive patients for treatment. Refinements resulted in a 32% cost reduction overall and reduced the cost of HCV antibody screening from $13.66 to $8.46 per test and the total cost per positive HCV Ab, positive HCV RNA and treated patient to $611.77, $2,168.64 and $3,566.11 respectively. Our sensitivity analysis indicates costs are modest so long as HCV Ab prevalence was 1% or greater.

Conclusion: ED screening is an affordable strategy for HCV case detection and elimination.

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