

Cost and cost-effectiveness of interventions to enhance testing and linkage to treatment for Hepatitis C infection: a systematic review

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Background: Despite evidence supporting the effectiveness of interventions to enhance testing and treatment for hepatitis C virus (HCV) infection, there is little systematic synthesis and appraisal of economic evidence for such interventions. We conducted a systematic review on economic evaluation of interventions to enhance HCV testing and treatment uptake for people at risk of HCV infection.

Methods: We searched nine core bibliographic databases of medical journals and economic evaluation registry for studies published until October 2023. Inclusion criteria considered studies assessing costs and economic evaluation of interventions or policies enhancing HCV testing and treatment among people living with or at risk of HCV infection. Outcomes included HCV testing uptake, diagnosis, treatment uptake, life-years, and quality-adjusted life-years (QALY) and costs in US\$.

Results: In total, 160 peer-reviewed articles reported data eligible for analysis, of which 106 (66%) were model-based analyses and 54 (34%) were trial-based analyses from observational/interventional studies. A high degree of heterogeneity was evident in the target population, study setting, and type of intervention. Among trial-based economic analyses, 16 studies reported incremental cost-effectiveness ratios (ICER) by QALY, enabling comparison of economic values across interventions, populations, and settings. Using each study's respective value judgement threshold, all interventions were either cost-saving with QALY gained (dominant) or cost-effective (ICERs reported), including two test-and-treat in primary care (dominant - US\$450/QALY), one DBS testing (dominant), three education or promotion activities (dominant – US\$23,466/QALY), two point-of-care testing (US\$975 – US\$13,674/QALY), one pharmacist-led treatment (US\$5,362/QALY), one on-site testing (US\$11,536/QALY), two scale-up or routine testing (US\$9,188 - US\$13,400/QALY), one financial incentives to providers (\$12,746/QALY), one medical chart reminders (US\$10,096/QALY), one nurse-led care coordination (US\$16,694/QALY), and one HCV core-antigen testing (US\$21,045/QALY).

Conclusion: Based on preliminary results from the trial-based analyses, all interventions assessed by cost-utility analyses were value for money. However, most trial-based analyses were cost-outcome description without a comparator.

Disclosure of Interest Statement: No funding or conflict of interest to be disclosed.