Estimating changes in HCV RNA positivity after broad access to HCV treatment using routinely collected clinical data from a national clinical surveillance network

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Background: Monitoring hepatitis C virus (HCV) burden is vital for tracking elimination progress, yet incidence measures require repeat testing and prevalence estimates require resource-intensive surveys. Routinely collected electronic health record (EHR) data offer a scalable alternative. Using EHR data, we estimated annual HCV RNA positivity and trends among individuals with and without opioid agonist treatment (OAT) after the introduction of direct-acting antivirals.

Methods: We used de-identified EHR data from the Australian ACCESS surveillance network of participating primary care clinics. Individuals aged ≥18 years with at least one HCV RNA or antibody-negative test, 2015–2024, were included. Only diagnostic tests were analysed; tests occurring 1–180 days after treatment prescription were classified as on-treatment and excluded. Individuals contributed ≤1 test per year, prioritising RNA tests when multiple were available. Annual RNA positivity was the proportion of RNA-positive tests among all RNA and antibody-negative tests, overall and stratified by ever receiving OAT (proxy for injecting drug use), and temporal trends were assessed using log-binomial generalised estimating equations.

Results: Among 270,203 individuals (63% male; median age 33 years [IQR 26–44]), 21,442 (8%) had an RNA test and 3% had received OAT. Overall RNA positivity declined from 7.2% in 2015 to 0.7% in 2024, a 23% annual reduction (prevalence ratio [PR] 0.77; 95%CI 0.76–0.78). Among those without OAT, positivity fell from 4.3% to 0.5% (22% annual reduction; PR 0.78; 95%CI 0.77–0.79). Among those receiving OAT, positivity declined from 62.9% to 8.7% (20% annual reduction; PR 0.80; 95%CI 0.79–0.81).

Conclusion: EHR data from >270,000 individuals showed a sustained annual decline in HCV RNA positivity from 2015–2024, with consistent reductions among those with and without OAT. Despite higher baseline positivity in the OAT group, both improved markedly. Further research should validate OAT as an EHR-based proxy for injecting drug use.

Disclosures of interest statement

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