

IMPLEMENTING HEPATITIS C POINT-OF-CARE TESTING IN AUSTRALIAN PRISONS: PERSPECTIVES FROM A NATIONAL PROCESS EVALUATION USING NATURAL LANGUAGE PROCESSING FOR SENTIMENT ANALYSIS

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Background: Prisons are critical settings for hepatitis C virus (HCV) elimination efforts, yet testing and treatment are shaped by operational, spatial, governance, and continuity-of-care constraints. This study aimed to identify factors that enabled, constrained, or conditionally shaped the implementation of point-of-care HCV testing in Australian prisons.

Methods: We conducted a multilevel qualitative process evaluation of the Australian HCV Point-of-Care Testing Program informed by the Consolidated Framework for Implementation Research (CFIR). Data sources included program meeting records, documentation, and semi-structured interviews. Prison-relevant excerpts were manually identified, reviewed for relevance, and refined. We used an offline transformer model for NLP-guided sentiment analysis to generate sentiment scores on a scale from -2 (strong negative) to +2 (strong positive). Sentiment scores informed a human reviewer classifying determinants as constraining, mixed/conditional, or enabling. Determinant spread was calculated based on the diversity of stakeholders, sectors, jurisdictions, and source types.

Results: We analysed 28 program documents, 124 meeting records, and 28 interviews with 30 stakeholders. Prison-relevant excerpts were identified in 17 interviews and 9 meetings. We used thematic analysis to identify 55 implementation determinants across all five CFIR domains and grouped these into eight categories: funding and resources; governance and policy; IT, data, and continuity; operational fit and workflow; partnerships and leadership; planning and scale-up; recipient experience and unmet need; and social attitudes and stigma. Most determinants were constraining (67%), with fewer enabling (27%) or mixed/conditional (5%). Constraining determinants commonly related to funding and resource limitations, governance and policy complexity, and IT and data continuity. Enabling determinants frequently reflected partnerships and leadership, with mixed/conditional signals predominantly in operational fit and workflow.

Conclusion: Prison-specific evidence from this process evaluation suggests HCV point-of-care testing can help address timeliness, access, and continuity-of-care constraints in prisons, but implementation remains shaped by operational, spatial, governance, and resource constraints, requiring tailored local alignment.

Disclosure of Interest Statement: JG is a consultant/advisor for and has received research grants from AbbVie, Abbott, bioLytical, Camurus, Cepheid, Gilead Sciences, Hologic, MedMira, and Roche. GF has received speaker fees from AbbVie, and hospitality from AbbVie and Gilead. ADM has received research grants from Gilead. The Australian Hepatitis C Point of Care Testing Program is funded by the Department of Health and Aged Care, NSW Health, the National Health and Medical Research Council, Medical Research Future Fund, Cepheid, Gilead Sciences, and AbbVie.