# Decentralisation of hepatitis c virus care into community settings

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*Published in:*
Liver International

*DOI:*
10.1111/liv.15229

*Publication date:*
2022

# Decentralisation of hepatitis c virus care into community settings: a key approach on the path to elimination.

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**Word count**

1,292

As we rapidly approach the final years in attempting to meet the World Health Organization (WHO) viral hepatitis elimination goals, only 11 high-income countries are on track to eliminate hepatitis c virus (HCV) as a public health threat by 2030.[1,2] Most countries are almost 20 years from achieving this milestone based on current estimates. Approximately only 21% of those estimated to be infected with HCV globally have been diagnosed and, of those, only 62% have been treated with highly-effective Direct Acting Antivirals (DAA).[3] Complementary strategies, such as micro-elimination, have been proposed to improve implementation of elimination initiatives and novel models of care (MoC) are important tools to achieve this, however several heavily-burdened countries have not yet published an elimination strategy aligned to the WHO targets.[4,5] Further, even in multiple European countries where elimination progress is on track, implementation of WHO-aligned elimination strategies is suboptimal.[6] Consequently, it is imperative to trial and share effective MoC which optimise patient outcomes in key populations, while minimising attrition through the clinical pathway for HCV.

To this end, we read with interest the paper presented by *Harney et al*,[7] who present the findings of a community-embedded nurse-led model of HCV care (MoC) for those attending Alcohol and Other Drugs (AOD) services in Melbourne, Australia. The study pathway embedded routine nurse visits to AOD services in greater metropolitan Melbourne to provide testing and conduct pre-treatment assessments for HCV-RNA positive individuals. In non-complicated cases of infection – i.e. non-cirrhotic – on-site general practitioners (GPs) or nurse practitioners prescribed DAA treatment in line with national guidelines. Those prescribed treatment were followed-up by nurses to support adherence and test for Sustained Virologic Response at 12 weeks post treatment ($SVR_{12}$).

The study team engaged 640 people in care and tested 518 (81%) of those for HCV RNA. Among those tested, the incidence of infectivity was high with 381 (74%) RNA positive. Treatment uptake was similarly high (n=281; 74%), however, there was a critical point of attrition with only 57.3% (n=161) returning for $SVR_{12}$ testing. Among those tested for $SVR_{12}$, most achieved a cure (n=157, 97.5%). Critically, most participants were treatment naïve

(n=318; 83.5%) and reported recent injection drug use (IDU) (68.5%), suggesting the MoC reached a new and high-risk population. Statistical analysis suggested that receipt of Opioid Agonist Therapy (OAT) was associated with increased odds of treatment initiation, whilst unstable housing was associated with decreased likelihood of engagement. Meanwhile, receiving treatment from a specialist, and recent IDU, was associated with increased odds of $SVR_{12}$ testing. The results presented are comparable with other nurse-led programmes and again suggest that HCV testing and treatment uptake in decentralised AOD settings can be high. Increased patient-provider contact can facilitate treatment initiation, whilst further tailored interventions are required to improve service traction with unstably housed persons and $SVR_{12}$ testing uptake.

Clearly, this timely study – underpinned by the safety and efficacy profile of DAAs – encourages reflection on the design of care pathways for HCV and suggests that decentralization should be a core tenet of service design to accomplish relative elimination targets. Again, this work fundamentally highlights the critical need in ensuring appropriate care for the right individual in the right place, as we continue to plan and refine our public health responses to HCV globally. It is well recognised that DAAs are highly effective across populations, and there are multiple clinically validated diagnostic tools available for use in devolved environments. It is now necessary to shift the focus from *what tools to use,* to *how to use* them best for patient benefit, i.e. patient-centred care.[8]

This study provided interesting insights into the various professionals involved in the care network within Australia, and so the generalisability of the MoC for those looking to replicate this community-based approach. Whilst hospital specialists can provide a key role in delivering integrated HCV care, hospital referrals should be reserved for complex cases with considerable challenges and, therefore, a more nuanced role for secondary care ought to be encouraged. Where decentralisation of tasks conventionally performed by a clinician cannot be achieved, telehealth can play a critical role in diminishing the requirement for hospital visits for vulnerable patient groups. For example, Jiménez Galán and colleagues successfully

implemented a telehealth approach to eliminate HCV in a Spanish prison, achieving cure rates of 97%, despite a high HIV co-infection burden (43%).[9] Satisfaction with the MoC was high at 67% among inmates and clinical staff. Telemedicine in the prison context has been reported as cost-saving[10] and ensures equity of access to specialist care for prisoners if required.

Where decentralisation of tasks such as diagnosis and DAA prescription can be undertaken, support from a multi-disciplinary team (MDT) for complex cases could be considered. This can be facilitated by teleconferencing. A randomised trial in Scotland which compared pharmacist-led dried blood spot test diagnosis and pharmacist DAA prescribing for OAT clients – with MDT support sought under guidance of a decision matrix – led to higher rates of diagnosis and cure than conventional hospital care.[11] An international randomised trial of nurse-led point-of-care RNA diagnosis and DAA treatment – nurses facilitated DAAs according to an algorithm in UK sites, with MDT support if required – for OAT clients also reported positive preliminary results.[12] These reports align with a recent systematic review which found that decentralisation and integration of HCV care into community sites delivered comparable care to specialist-led care irrespective of patient population.[13] Enfranchising members of wider care teams who can routinely deliver HCV care in the community, e.g. general practitioners (GP); nurses, healthcare assistants, into diagnostic and treatment activities can be a useful strategy to simplify patient pathways and minimise attrition by moving toward a test-and-treat model. In Dundee, Scotland, rapid HCV diagnosis and treatment scale-up, underpinned by decentralised nurse-led care, nonmedical DAA prescribing, community outreach, and patient in-reach in critical settings such as prisons, remote towns, and pharmacies, led to regional elimination of HCV in 2020.[14] An interesting observation within the *Harney et al* cohort is the prevalence of cirrhosis (~14.5%) which, given the age profile, seems slightly higher than expected. Previous work suggests that approximately 10-20% of patients will develop cirrhosis within 20-30 years.[15] More recently evidence suggested significantly less advanced disease in younger cohorts, although here the mean age here is 44 (std 9) therefore slightly older.[16,17] Additionally, 16% of the cohort is noted to ingest >6 drinks/day, although this is not adjusted

for ABV(%), but there is strong correlation between alcohol ingestion of >40g/day in those with HCV and more aggressive fibrogenesis.[18,19] This is important, as it may allow for improved stratification of those with least risk of advanced fibrosis proceeding direct to treatment. Invariably, there will be subsets of patients that will benefit from standard non-invasive measurements of fibrosis e.g. FIB4, and thereby minimise need for referral for transient elastography (TE) or specialist review. Understanding these determinants allows for streamlined service configurations, which minimise costs and maximise access to care and treatment uptake.

Globally, models of care need to reflect recent therapeutic and diagnostic advances if WHO 2030 commitments on HCV elimination are to be met. *Harney et al* provide a valuable example of integrated interdisciplinary HCV care in AOD sites and highlight an important emerging challenge to elimination around successful follow-up for $SVR_{12.}$ Such post-treatment follow-up may not be required to clinically validate successful response to DAA treatment,[20] however post-treatment monitoring of re-infection, a critical threat to long-term elimination, is important, and future research examining models of care which maximise follow-up for re-infection would be valuable. There are of course likely to be elements of each treatment pathway which can be simplified further for patients, in an effort to maximise engagement and reduce potential for treatment fatigue. Local engagement and iterative approaches to identification and treatment of HCV among those hardest to reach are likely to yield better overall outcomes.

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