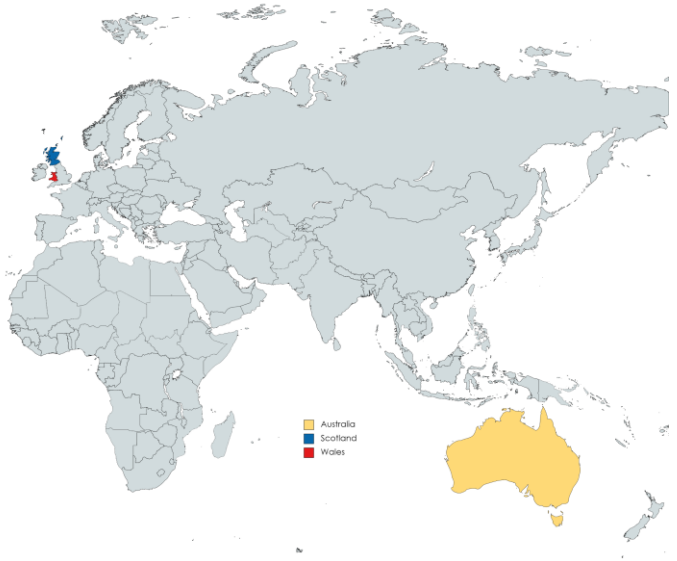
Reaching People Receiving Opioid Agonist Therapy Attending Community Pharmacies with Hepatitis C Virus (Reach)

An international cluster randomised controlled trial

Byrne C[1 2] Radley A[3] Inglis SK[2] Beer L[2] Palmer N[4] Pham MD[5 6] Allardice K[6] Wang H[7] Hermansson M[8] Semizarov D[8] Healy B[4] Doyle JS[5 6] Dillon JF[1 9]

[1]Division of Molecular and Clinical Medicine, School of Medicine, University of Dundee, Ninewells Hospital and Medical School, UK.
[2]Tayside Clinical Trials Unit, School of Medicine, University of Dundee, Ninewells Hospital and Medical School, UK.
[3]Directorate of Public Health, NHS Tayside, Kings Cross Hospital, Dundee, UK.
[4]Department of Microbiology and Infectious Diseases Cardiff, Public Health Wales, UK.
[5]Department of Infectious Diseases, the Alfred and Monash University, Melbourne, Australia.
[6]Disease Elimination Program, Burnet Institute, Melbourne, Australia.
[7]Division of Population Health and Genomics, School of Medicine, University of Dundee, UK.
[8]AbbVie Ltd, AbbVie House, Vanwall Business Park, UK.
[9]Department of Gastroenterology, NHS Tayside, Ninewells Hospital and Medical School, Dundee, UK.



Disclosures & acknowledgements

AbbVie were involved in a collaborative, iterative process to develop the study protocol alongside the study Investigators as part of the AbbVie Investigator Initiated Scheme. AbbVie provided input to the protocol with regards to safety measures and reporting; the participant journey; and HCV medication guidance. AbbVie representatives provided feedback and input to this presentation but were independent of the data analysis and interpretation. AbbVie funded the study and provided the study medication free of charge. No honoraria or payments were made for authorship. The study was jointly sponsored by NHS Tayside/University of Dundee (UK) and The Burnet Institute (Aus).

CB, SKI, NP, MDP, KA, HW, no disclosures. AR reports he has received research grants from Gilead, Bristol Myers Squibb, Abbvie and Roche and has received honorariums from Gilead and personal fees from Abbvie, outside this work. LB reports grants from the UK National Institute for Health Research (NIHR) during the conduct of the study, outside this work. DS and MH are employees of AbbVie and may hold stock in AbbVie. BH reports personal fees and other from Abbvie, personal fees and other from Gilead, outside this work. JSD reports grants and personal fees from AbbVie, grants and personal fees from Gilead Sciences, grants from Merck, from Bristol Myers Squibb, outside the submitted work. JFD reports grants and personal fees from Abbvie; grants and personal fees from Gilead, grants and personal fees from MSD outside this work.

The authors wish to acknowledge the study research nurse team: Eilidh Fergus (NHS Tayside), Linda Johnston (University of Dundee), Shirley Cleary (University of Dundee), Nicki Palmer (Public Health Wales), Kerry Rockey (Public Health Wales), Kate Allardice (Burnet Institute), and Kico Chan (Burnet Institute), for their key role in the successful delivery of the study under challenging circumstances. We further acknowledge Emma Robinson (NHS Tayside) for her assistance in initially setting up the study in Tayside.

The researchers acknowledge and thank the people who inject drugs who have generously participated in this research.

Background

- Approximately 58 million people living with chronic Hepatitis c virus (HCV) infection globally.[1]
- People who inject drugs (PWID) at high risk of acquiring HCV.
- Low rates of confirmatory RNA testing among antibody positive PWID, and high levels of chronic HCV.[2–4]
- Following injection drug use (IDU) many PWID engaged on opioid agonist therapy (OAT), often in pharmacies.
- Up to 43% may experience concurrent opioid substance use.[5]
- Previous work showed community pharmacists in stores with high volume of OAT clients can effectively test and treat for HCV.[6]
- Evidence gap on models for smaller/geographically isolated pharmacies.

1. World Health Organization. (2021) Global progress report on HIV, viral hepatitis and sexually transmitted infections, 2021. Geneva: World Health Organization. Retrieved 03 August 2021, from: https://www.who.int/publications/i/item/9789240027077
2. Iversen J, Grebely J, Catlett B, Cunningham P, Dore G, Maher L. Estimating the cascade of hepatitis C testing, care and treatment among people who inject drugs in Australia. International Journal of Drug Policy. 2017;47:77-85.
3. Tsui J, Miller C, Scott J, Corcorran M, Dombrowski J, Glick S. Hepatitis C continuum of care and utilization of healthcare and harm reduction services among persons who inject drugs in Seattle. Drug and Alcohol Dependence. 2019;195:114-120.
4. London Joint Working Group on Substance Use and Hepatitis C (LJWG). HCV testing in NSP (Needle and Syringe Provision) Community Pharmacies Pilot (Phase 2) [Internet]. 2019. Available from: http://ljwg.org.uk/wp-content/uploads/2019/09/LJWG-HCV-phase-2-report-FINAL.pdf
5. Eastwood B, Strang J, Marsden J. Continuous opioid substitution treatment over five years: Heroin use trajectories and outcomes. Drug and Alcohol Dependence. 2018;188:200-208.
6. Radley A, de Bruin M, Inglis S, Donnan P, Hapca A, Barclay S et al. Clinical effectiveness of pharmacist-led versus conventionally delivered antiviral treatment for hepatitis C virus in patients receiving opioid substitution therapy: a pragmatic, cluster-randomised trial. The Lancet Gastroenterology & Hepatology. 2020;5(9):809-818.

Aims

- Assess the effectiveness of a roving nurse-led model which offered point-of-care HCV RNA testing plus DAA treatment to OAT clients in community pharmacies.
- Analyse testing uptake, treatment initiation, completion, and levels of cure, for a population of OAT clients at risk of HCV infection

Methods

- International (Scotland, Wales, Australia) cluster-randomised controlled trial of outreach point-of-care HCV RNA testing and DAA treatment versus conventional care for OAT clients at pharmacies.
- Ran from 08 October 2019 – 14 January 2021.
- Pharmacies were randomised 1/1 to intervention or control arm.
- Pharmacists opportunistically discussed HCV with OAT clients and sign-posted to HCV testing.
- HCV testing in pharmacies in intervention sites, or community clinics (UK) and GPs (Aus) in control sites.
- DAAs arranged by nurses in UK under Patient Group Direction, and clinician or GP in Aus.
- DAAs dispensed by pharmacists alongside OAT.

Methods *(cont'd)*

- RNA testing with Genedrive platform in pharmacy consultation rooms. 90 minutes to result.
- Conventional venepuncture; 30µl of plasma.[7]

Kico – Australian nurse on site.
Image shared with permission.

7. Llibre A, Shimakawa Y, Mottez E, Ainsworth S, Buivan T, Firth R et al. Development and clinical validation of the Genedrive point-of-care test for qualitative detection of hepatitis C virus. Gut. 2021;64:2017-2024.

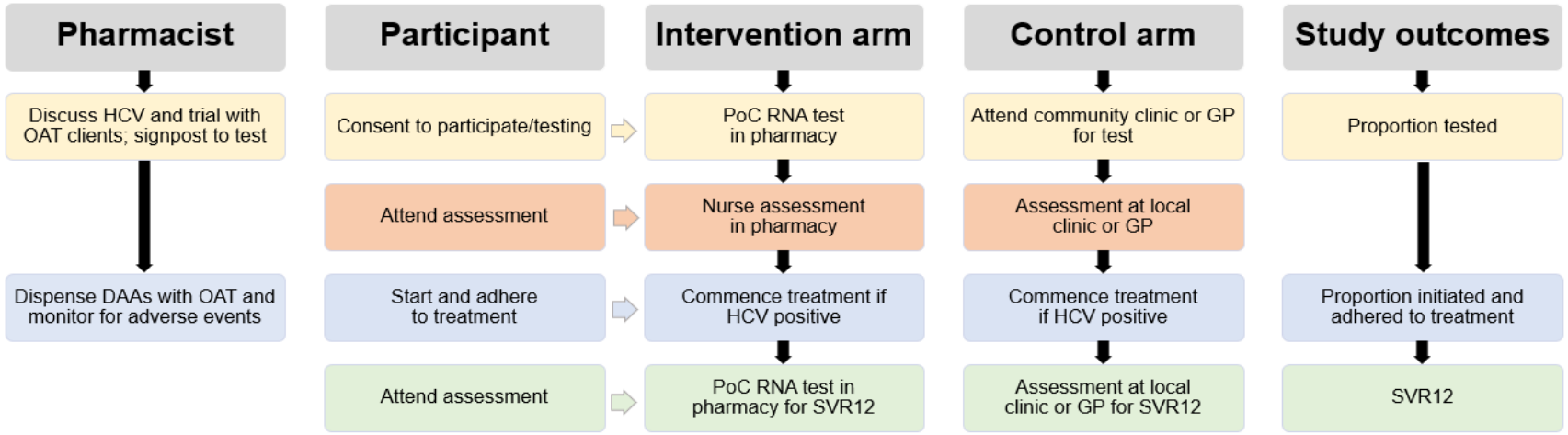
Outcomes and analysis

Sample size required: approximately 140 HCV RNA positive participants.

Primary outcome: Proportion who achieved SVR12 in each arm. Analysed using mixed effects logistic regression in the intention to treat population (all OAT clients).

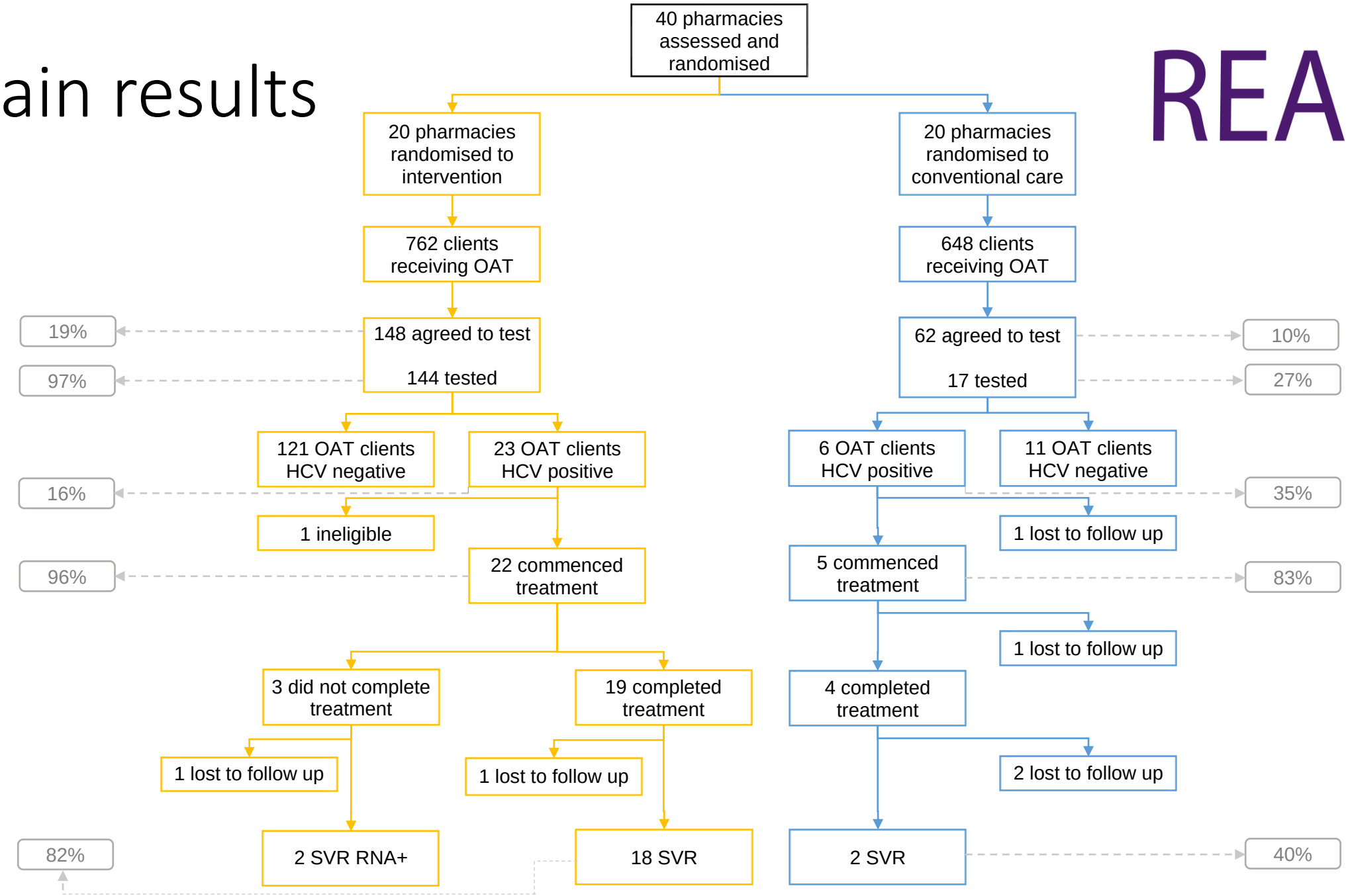
Secondary outcomes:

- Proportion tested, initiated treatment, completed treatment, in ITT population.
- Proportion tested, initiated treatment, completed treatment, and SVR12 in HCV RNA-positive population.
- Proportion of individuals who required extended DAA treatment (8+ weeks).



Overview of intervention and control pathways with related study outcomes.

Main results



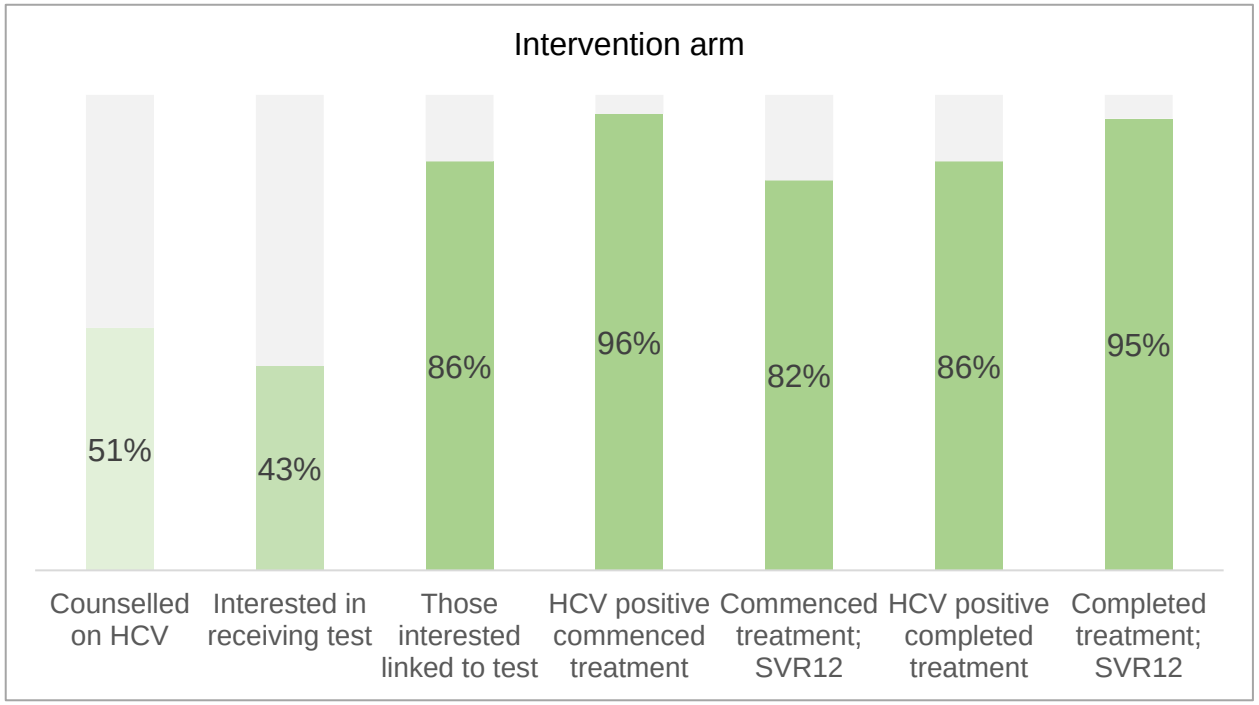
Main results *(cont'd)*

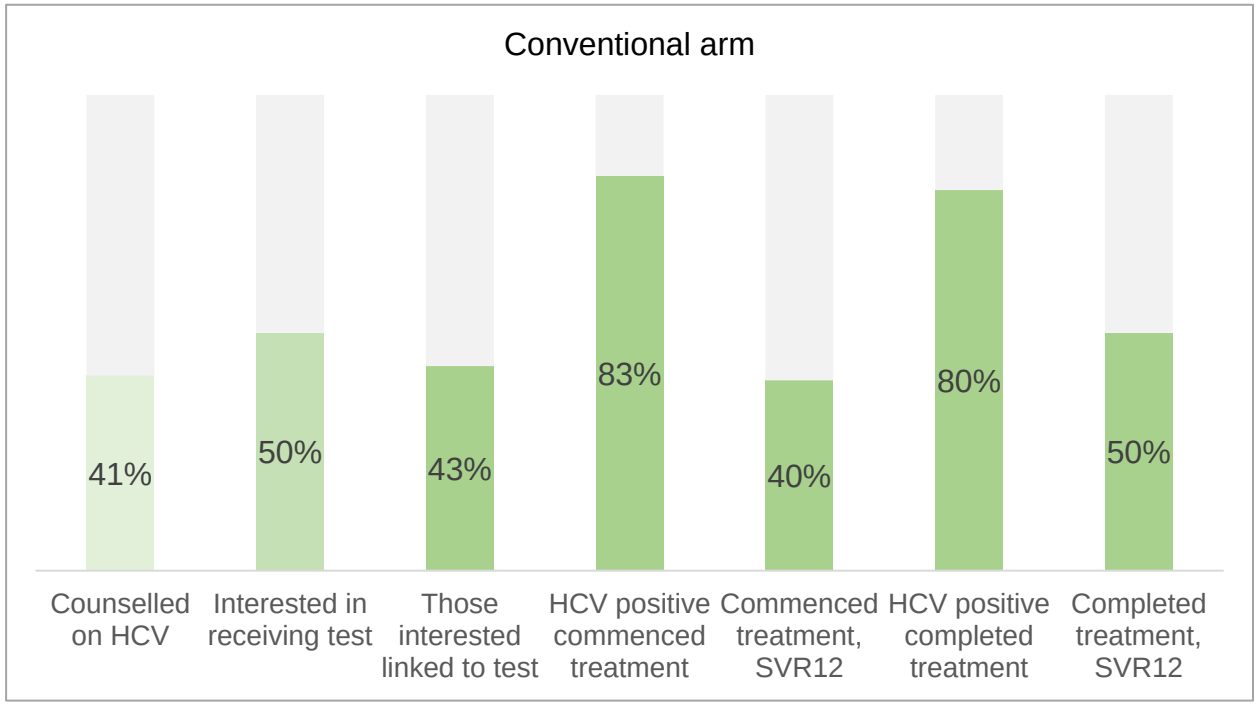
Outcomes of primary, secondary analyses, and post-hoc estimates, in the intention-to-treat population (n=1,410).				
Outcome	Intervention pathway (n=762)	Conventional pathway (n=648)	OR (95% CI)	*p*
HCV tested	144	17	16.95 (7.07 – 40.64)	<0.0001
Initiated treatment	22	5	4.29 (1.43 – 12.92)	0.010
Completed treatment	19	4	4.53 (1.39 – 14.71)	0.012
SVR12	18 (2%)	2 (0.3%)	8.64 (1.82 – 40.91)	0.007
Diagnosed population (cure rate)	23 (78%)	6 (33%)	..	..
Estimated infected population† (cure rate)	137 (13%)	117 (2%)	..	..

Abbreviations: OR, odds ratio**;** HCV, hepatitis c virus; SVR, sustained virologic response.
†Estimated infected population calculated at a rate of 18%, in line with overall proportion of those tested in both arms of the study who were RNA positive.

Other results

- Statistical comparisons in the HCV RNA-positive population not feasible, BUT descriptive differences in cascade of care observed.
- 5/27 (19%) prescribed extended treatment; 4 due to cirrhosis (FIB-4 >3.25), 1 due to prior treatment.
- 7 adverse events (AE) were recorded, and 1 serious adverse event (SAE) was recorded. None related to study participation.





Conclusions

- Findings suggest nurse-led model to integrate point of care HCV RNA diagnosis into small pharmacies is feasible and can increase the proportion of OAT clients who:
  - ❖ Are tested for HCV
  - ❖ Initiate treatment for HCV
  - ❖ Complete that treatment
  - ❖ …and obtain SVR12.
- Leveraging pharmacist-client relationship to support DAA treatment is a useful strategy.
- This model can help close the HCV diagnosis gap and increase linkage to treatment for PWID in smaller and geographically isolated pharmacies.
- Low burden of liver disease in population suggests decentralising HCV diagnosis and DAA treatment to community feasible. Nurses can lead this.
- This pathway can facilitate local HCV elimination.
- Findings limited as pre-specified sample of actively infected participants was not obtained.

Thank you.

c.x.byrne@dundee.ac.uk