Hepatitis C treatment engagement and success among clients of a medically supervised injecting room in Melbourne, Australia

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Burnet
reach for the many

I would like to proudly acknowledge the Wurundjeri People of the Kulin Nations as the traditional custodians of the land on which this research was conducted and where I present to you now. I pay my respects to elders past and present and extend that respect to all first nations people who may be attending today.

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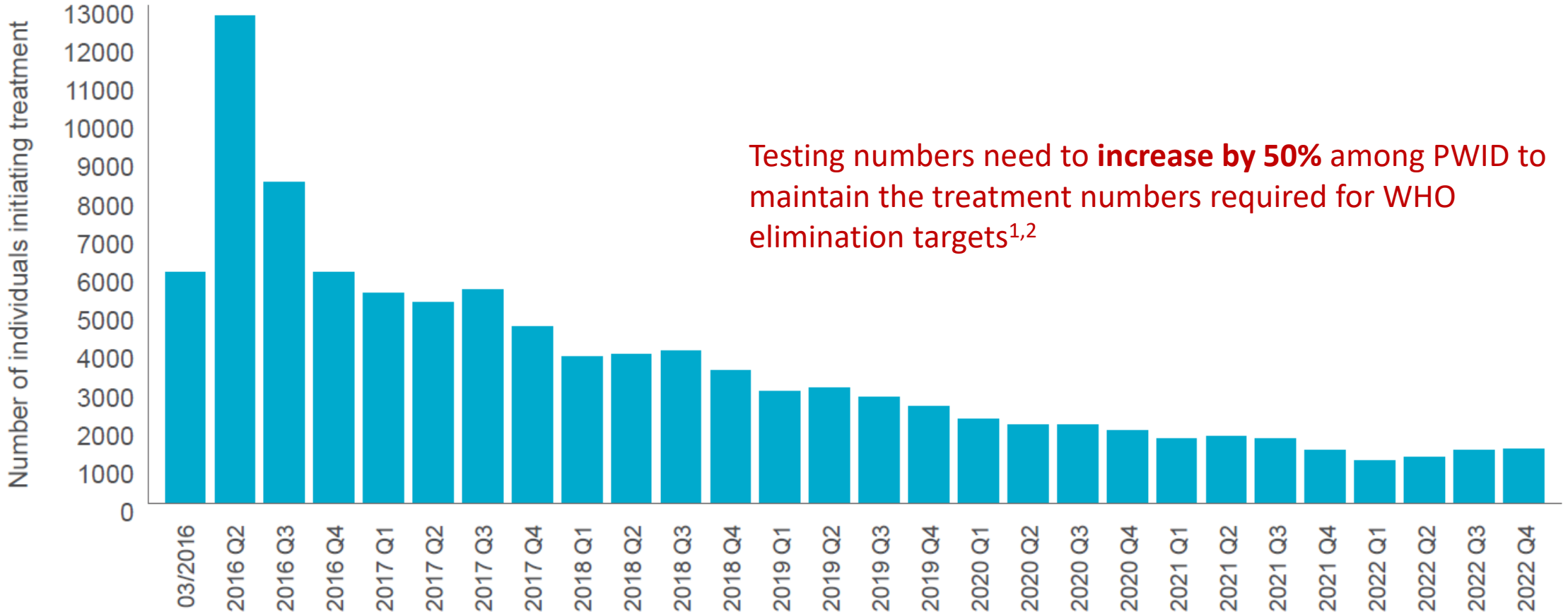
- Shepherd Foundation
- Gilead Sciences – provided funding for consumables Xpert cartridges, machine
- Department of Health & Human Services, Victorian Government – clinic staffing

No funding received for this analysis

Treatment numbers in Australia

Figure 1: Number of individuals initiating DAA treatment in each quarter during 2016 to 2022 in Australia



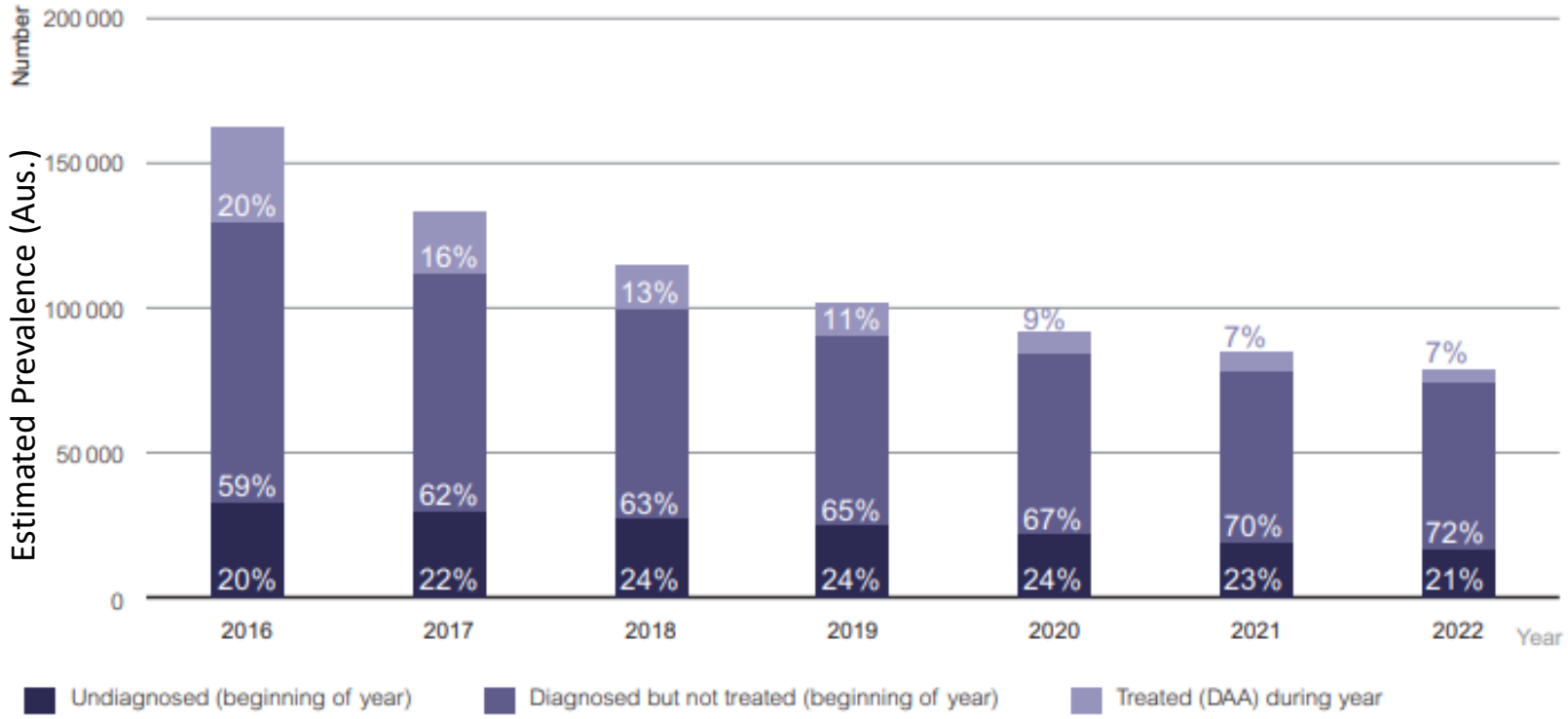
Testing numbers need to **increase by 50%** among PWID to maintain the treatment numbers required for WHO elimination targets[1,2]

Kirby Institute. Monitoring hepatitis C treatment uptake in Australia. Issue 13, July 2023

Diagnosis and treatment initiation gaps

Australian HCV Prevalence: ↓ 60%,
est. 188,690 (2015) – 74,400 (2022)

Figure 19 The hepatitis C diagnosis and care cascade gaps, 2016 – 2022



- Those 'willing and able' to be treated diminishing
- Proportion of people who are diagnosed but not treated has been increasing
- Est. 1 in 5 people with Hep C remain undiagnosed

*A growing majority of HCV +ve people require support to test and treat

King, J., McManus, H., Kwon, J., Gray, R., & McGregor, S. (2023)

Standard Care Pathway

SCREENING + TESTING

Routine Ab Screening

Ab Result

Ab -ve

Ab +ve

HCV RNA Testing

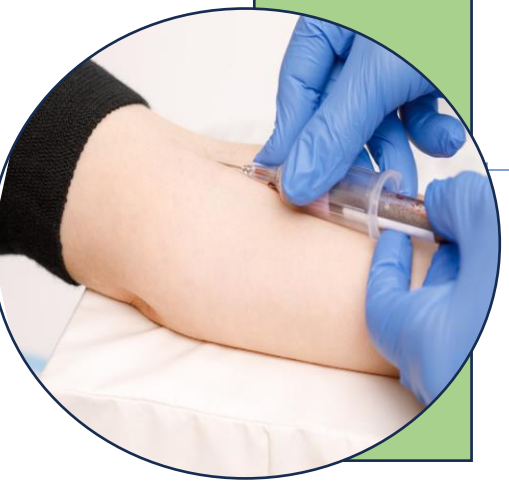
RNA Result

RNA -ve

RNA +ve

Linkage to Care

EXIT Pathway



Specialist Assessment (if required)

TREATMENT

Treatment Prescribed

Monthly Pharmacy Pickup

Post-Treatment Assessment

Final Results

RNA -ve

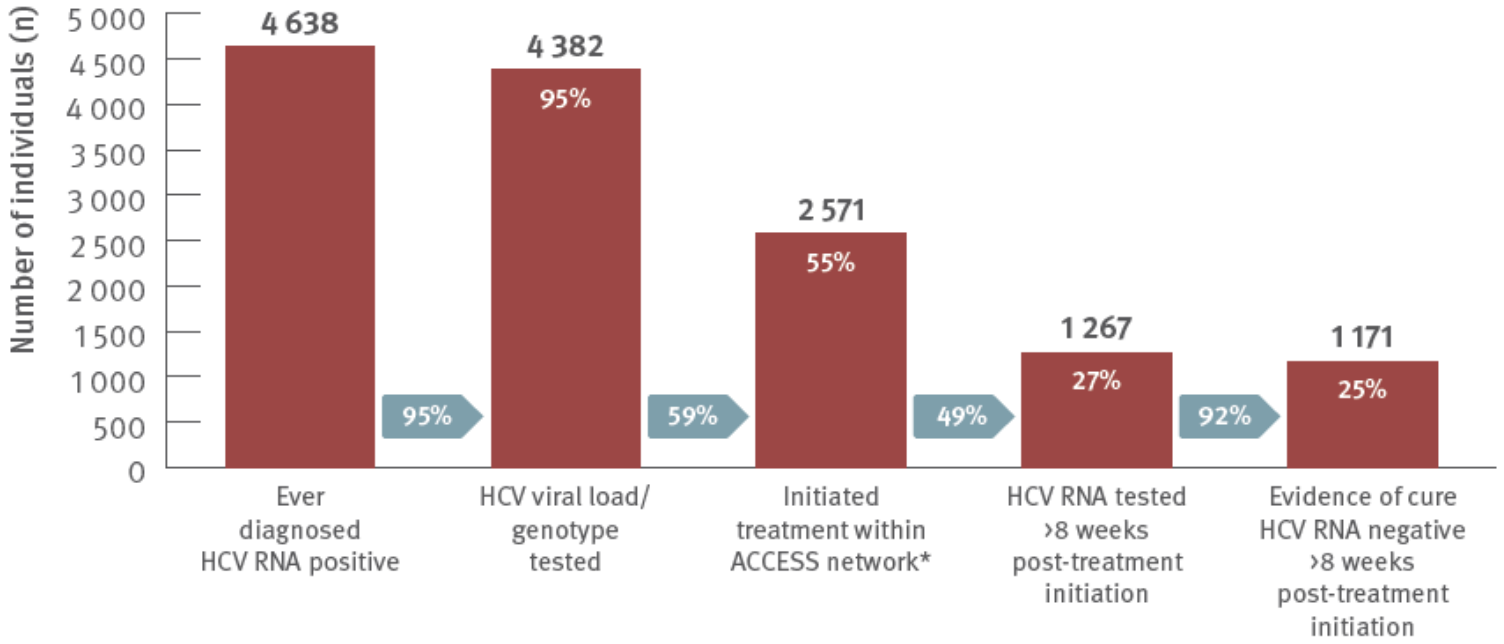
RNA +ve

Retreatment

EXIT Pathway

HCV Care Cascade in Australia

Figure 32. Hepatitis C treatment cascade at ACCESS primary care clinics: number of individuals hepatitis C diagnosed, number and proportion of individuals who initiated treatment, and tested for HCV RNA post-treatment initiation, 2016–2022

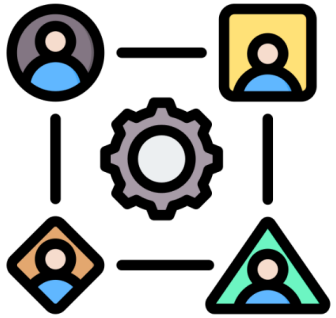


- Sentinel surveillance of primary care clinics
- Helpful Aust. benchmark for each step of the cascade
- Indicates high attrition from diagnosis to end of treatment

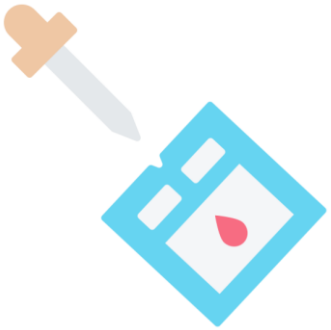
ACCESS, 2020; Traegar, Pedrana, van Santen et al., 2020

Test & Treat Models

Integrated Care



Multidisciplinary / Shared Care



Point-of-care (POC) Testing

Relevant Community Settings:

- Needle and Syringe Programs
- Drug Treatment Clinics
- Outreach and social services
- **Supervised Injecting Facilities***

Supervised Injecting Facilities

Harm reduction measure

- prevent overdose and transmission of BBV
- staffed by clinical practitioners and AOD workers

Consistent contact with high-risk population:

- Unstable housing, first nations, frequent injecting, previous incarceration

Scarce literature hepatitis C test and treat models

- Toronto Drug Consumption Service
- **Melbourne's Medically Supervised Injecting Room (MSIR)***

Medically Supervised Injecting Room (MSIR), Richmond VIC

Van den Boom et al., 2021; Wood et al., 2005; Levengood et al., 2021; Lettner et al., 2023

MSIR Test & Treat Models

24-month intervention

Venepuncture testing
GP Prescribing

- 7% MSIR clients tested
- 45% RNA+ve
- 72% HCV diagnosed commenced DAA therapy

Macisaac et al., 2023

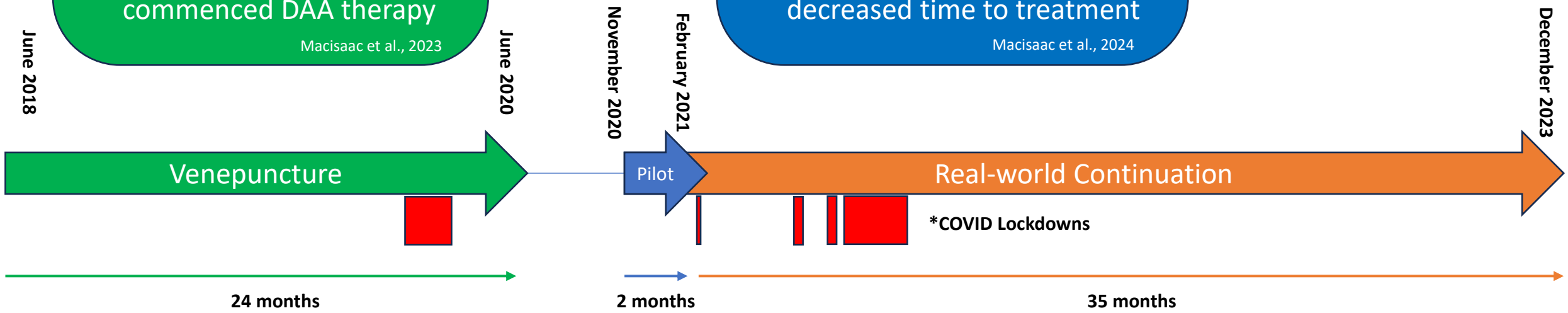
2-month pilot

POC diagnostic testing
On-site hepatologist prescriber

- Testing rates doubled (14%)
- ↓ RNA prevalence (29%)
- DAA uptake increased (94%) + decreased time to treatment

Macisaac et al., 2024

High participant satisfaction + acceptability with POC



Aims

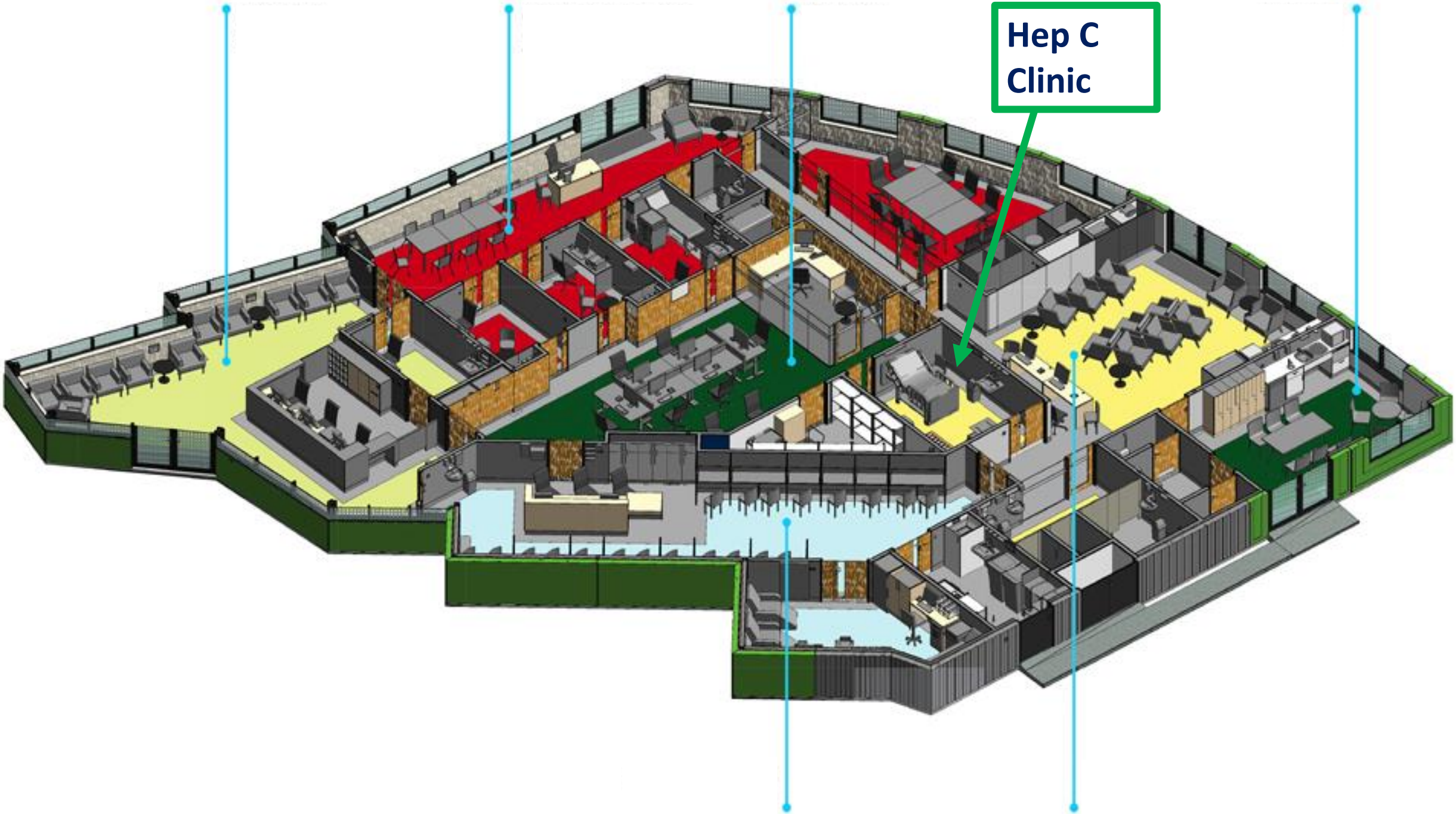
1. Measure participation of HCV diagnosed individuals within the care cascade of MSIR test and treat model:
   - diagnosis, treatment initiation, post-treatment testing

2. Assess rates of treatment success:
   - Post-treatment outcome and sustained virological response (SVR) rates

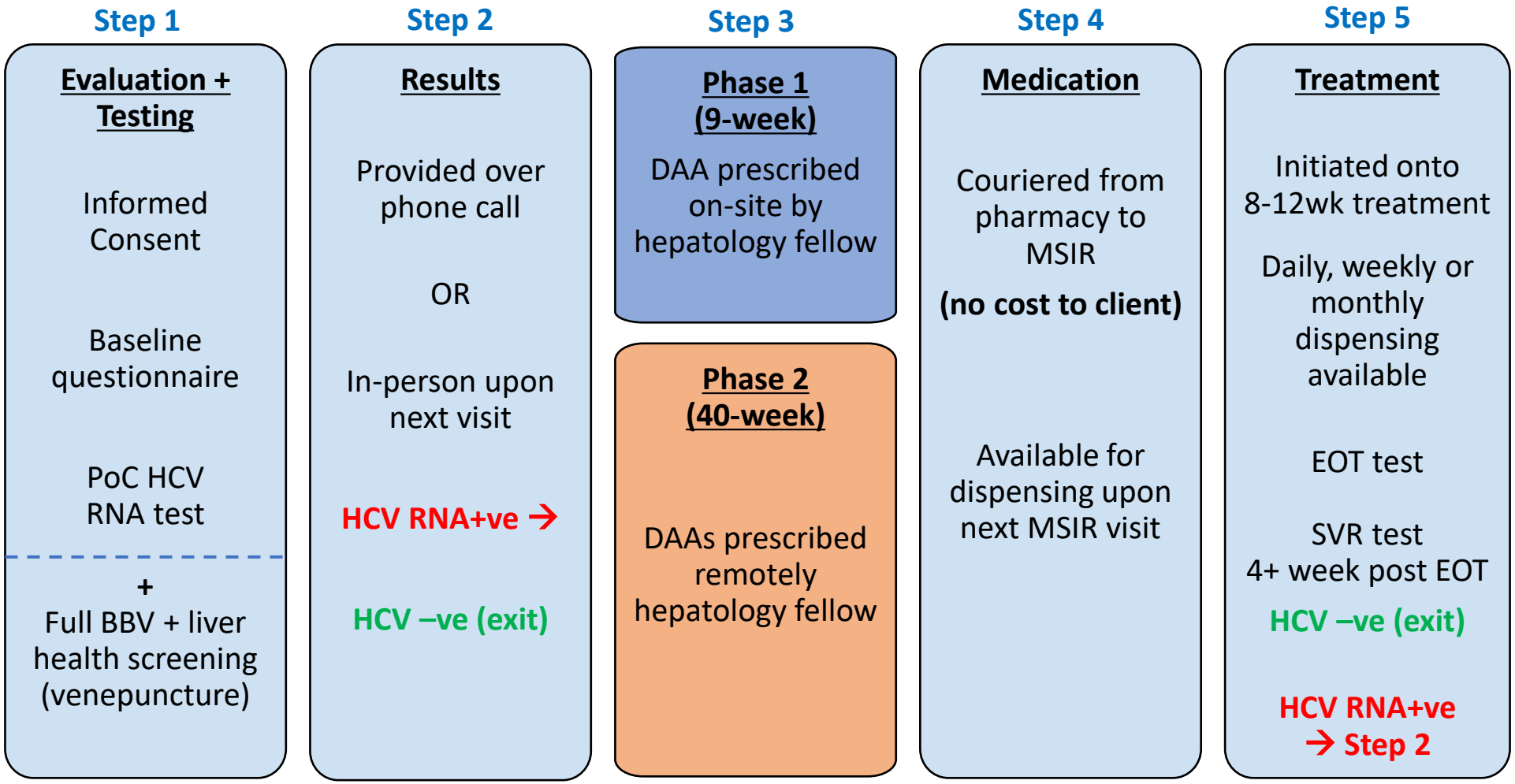
3. Evaluate factors associated with treatment initiation and cascade completion within a novel environment

Methods

- Cohort evaluation of participants diagnosed with hepatitis C over 37-months of a novel test and treat model of care within the MSIR
- Analysis includes results from:
  - **Pilot phase**: specialist-led, 2 nurses
  - **Real-world continuation phase**: nurse- and harm reduction practitioner-led, off-site prescriber


Hep C
Clinic

Test & Treat Model of Care



*** Reimbursements provided at various checkpoints and annual follow-up**

Methods – Data Analysis

Only **baseline data** used for:

- demographics, risk factors, health + HCV history

Participants' **first treatment** regimen included in analysis

- Re-treatments/re-infections not included

Simple Cascade

Cascade Completion simplified to undergoing **final stage testing** regardless of result

We conducted **logistic regressions** to determine factors related to:

- Treatment initiation (treatment start)
- Cascade completion

Results

1,157 unique participants were tested within 37-month period

Frequency of testing per participant ranged from 1 (63%) – 6 (0.3%)

Analysis Group

291 participants (25%) tested RNA +ve

Frequency of HCV diagnosis per participant ranged from 1 (82%) – 5 (0.1%)

Table 1: Testing and hepatitis C diagnosis

Maximum Tests		
Number	**Frequency**	**%**
1	729	63.01%
2	283	24.46%
3	113	9.77%
4	22	1.90%
5	7	0.61%
6	3	0.26%
Total	**1,157**	**100.00%**

*Tests to determine treatment outcome not included in these results

Demographics + HCV Risk

Predominantly male and middle-aged cohort

High Representation of high-risk populations

High Representation of highly frequent and predominantly opioid injectors

Table 2: Demographics + Risk	N = 291
Age, median [IQR]	43 [38 – 50]
Male gender, n (%)	225/288 (78%)
Aboriginal and/or Torres Strait Islander, n (%)	62/289 (22%)
Unstable Housing, n (%)	108/247 (44%)
Previous Incarceration	215/269 (80%)
Last Release within 12 months	68/218 (31%)
Heavy EtOH, n (%) (≥4 STD on ≥4 days/wk)	62/284 (22%)
Daily/almost daily IV use	134/282 (48%)
Drug most commonly injected <6 months, n (%) Opioids Methamphetamine	 243/277 (88%) 34/277 (12%)

* Self-reported responses from baseline

HCV History + Coinfection

Prior diagnosis is high (76%)

Prior treatment much lower (37%)

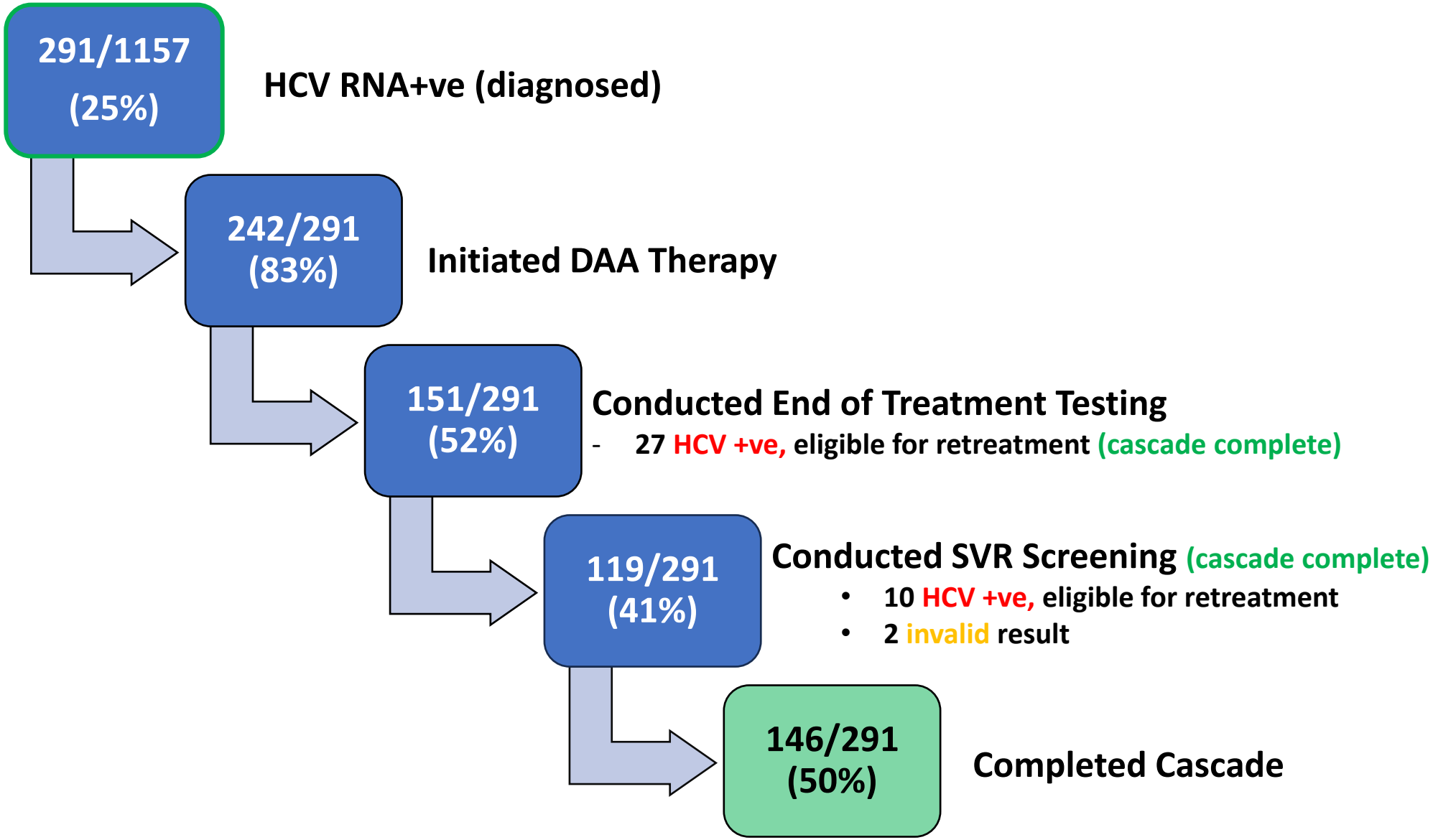
Over half (52%) the participants were known to be HCV +ve but were not receiving treatment

Co-infection with other BBVs not a factor in this analysis

Table 3: HCV History + Coinfection	N = 291
Prior HCV test, n (%)	**268/285 (94%)**
Prior HCV diagnosis	217/285 (76%)
Prior Treatment DAA Therapy	103/282 (37%) 90/103 (87%)
Previous Treatment Success	65/92 (71%)
Currently known HCV Infection	113/219 (52%)
Known HBV infection	Nil
Known HIV infection	Nil

* Self-reported responses from baseline

Cascade Results and Cohort Grouping



Care Cascade

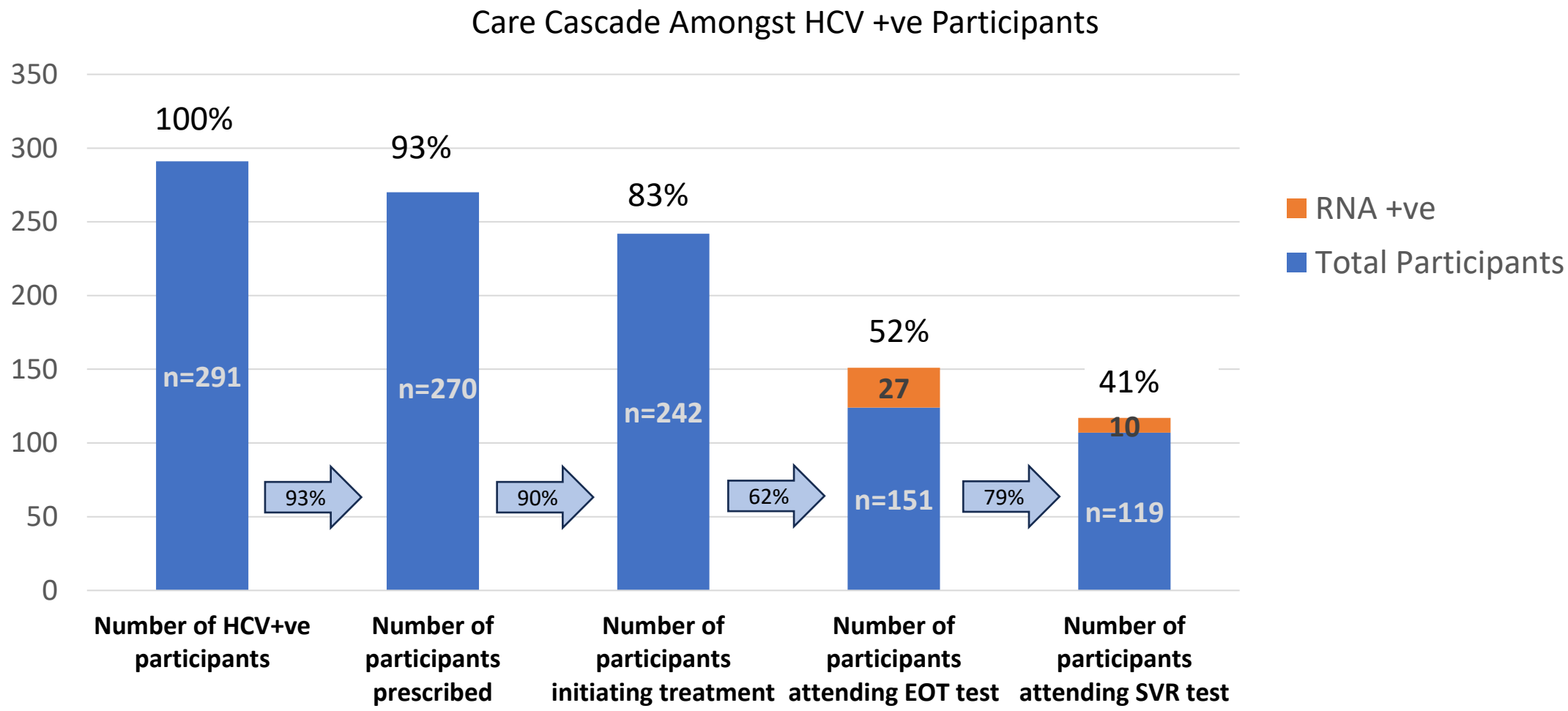
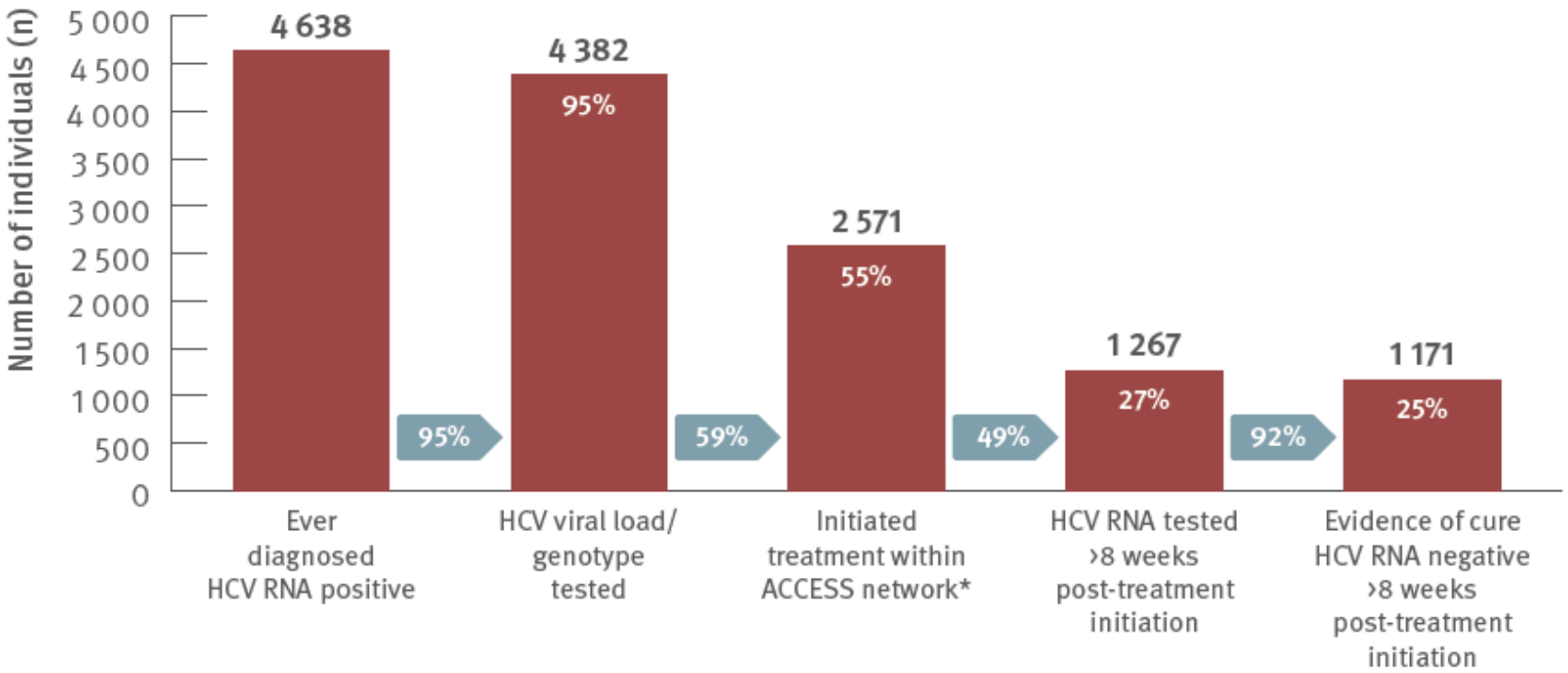
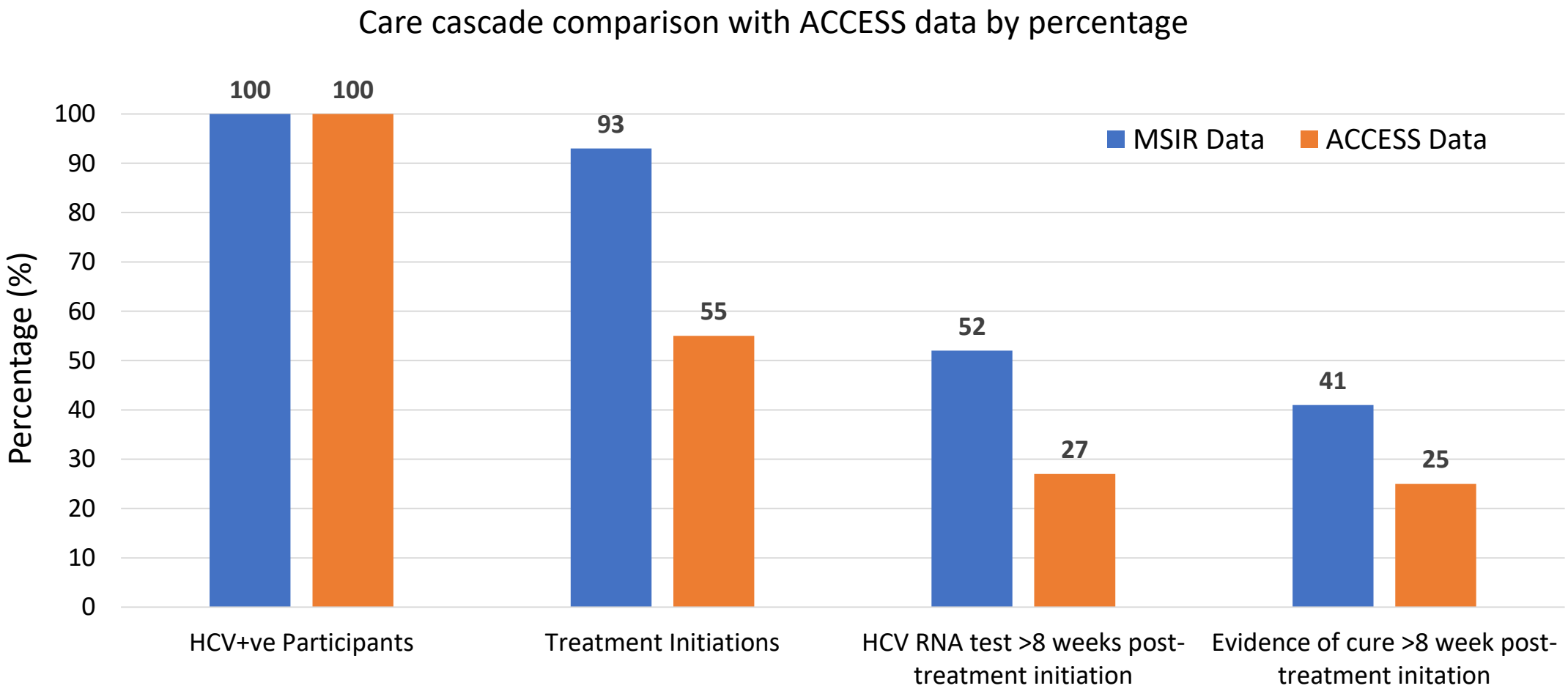


Figure 32. Hepatitis C treatment cascade at ACCESS primary care clinics: number of individuals hepatitis C diagnosed, number and proportion of individuals who initiated treatment, and tested for HCV RNA post-treatment initiation, 2016–2022



ACCESS, 2020; Traegar, Pedrana, van Santen et al., 2020

Comparative Care Cascade



Logistic Regression – Treatment Initiation

Table 4: Logistic regressions examining factors associated with initiation of hepatitis C treatment				
Variables	Unadjusted OR (95% CI)	p-value	Adjusted OR (95% CI)	p-value
Age (Continuous)	1.00 (0.96, 1.03)	0.840	1.01 (0.96, 1.06)	0.619
Male (Ref: Non-male categories)	0.67 (0.30, 1.52)	0.341	0.63 (0.21, 1.87)	0.408
Aboriginal and/or Torres Strait Islander	1.49 (0.66, 3.36)	0.340	1.41 (0.51, 3.89)	0.503
Unstable Accommodation	1.08 (0.56, 2.07)	0.822	1.11 (0.48, 2.54)	0.810
Previously Incarcerated	0.86 (0.38, 1.99)	0.732	0.56 (0.17, 1.88)	0.347
Prior Hepatitis C Treatment	0.57 (0.30, 1.08)	0.084	0.70 (0.31, 1.57)	0.388
Injection Frequency ≥15 Days within last month	1.24 (0.66, 2.31)	0.503	1.25 (0.54, 2.88)	0.604
Methamphetamine Most Frequently Injected	0.50 (0.22, 1.15)	0.104	0.28 (0.10, 0.74)	0.010
High alcohol consumption (Ref: Low)	0.87 (0.39, 1.96)	0.746	1.17 (0.38, 3.64)	0.788

* 34 participants

Logistic Regression – Cascade Completion

Table 5: Logistic regressions examining factors associated with successful completion of simple cascade				
Variables	Unadjusted OR (95% CI)	p value	Adjusted OR (95% CI)	p value
Age (Continuous)	1.02 (0.99, 1.04)	0.225	1.03 (0.99, 1.06)	0.119
Male	1.15 (0.66, 2.01)	0.624	1.25 (0.61, 2.57)	0.547
Aboriginal and/or Torres Strait Islander	1.53 (0.86, 2.69)	0.145	1.84 (0.90, 3.77)	0.096
Unstable Accommodation	0.80 (0.48, 1.33)	0.391	0.75 (0.41, 1.37)	0.348
Previous Incarceration	0.92 (0.51, 1.67)	0.784	0.62 (0.28, 1.37)	0.241
Prior Hepatitis C Treatment	0.66 (0.40, 1.07)	0.09	0.65 (0.35, 1.20)	0.169
Injection Frequency ≥15 Days within last month	1.58 (0.98, 2.54)	0.062	2.09 (1.10, 3.95)	0.024
Methamphetamine Most Frequently Injected (Ref: Opioids)	0.40 (0.18, 0.85)	0.017	0.56 (0.23, 1.39)	0.21
High Alcohol Consumption (Ref: Low)	1.00 (0.54, 1.84)	0.986	1.00 (0.45, 2.19)	0.992

Discussion

High-risk participant group – consistent with evidence of SIFs

Strong participation in the care cascade compared with Australian primary care

Very few factors showed an association with treatment disengagement

- Frequent methamphetamine use = potential barrier
- Frequent injecting = potential enabler

Flexible test & treat models in safe injecting facilities help reduce barriers and improve engagement by meeting people where they are

SIFs an important component of hepatitis elimination

Limitations

Classification of cascade completion may be over simplistic

- not including medication adherence, persistent infection

No data gathered on MSIR use, drug treatment, mental health or income

No exploration of subsequent changes over time

- Risk factors, reinfection, further treatment

Difficult to control for LTFU

- custody, rehabilitation, geographical movement, death

Key Takeaways and Actions

Advocate for safe injecting facilities' potential for healthcare provision and BBV treatment — not just transmission and overdose prevention

Leverage multidisciplinary expertise across the community to improve treatment and developmental pathways

Learn from those still facing challenges to accessing flexible treatment programs – there's always something we've missed

Spotify

For more information

NRCH podcast episode (38min). URL: https://www.podbean.com/ew/pb-975ra-12eec65

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Thank you