

Hepatitis C testing among people with HIV: the yield from frequent and targeted testing

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Background

- Hepatitis C (HCV) testing is critical for diagnosis, treatment and prevention of further viral transmission (1).
- People with HIV at higher risk of HCV acquisition and a key population for HCV micro-elimination in Australia (1,2).
- HCV micro-elimination requires sustained high rates of testing and direct-acting antiviral treatment among at risk groups such as men who have sex with men (3,4).
- HCV testing among people with HIV is recommended annually (5), but levels of testing and treatment have declined (6).
- Lacking national guidance on the optimal number of tests and populations of interest to maintain current levels of HCV testing.

Aim

Investigate the frequency and yield of HCV testing at a metropolitan tertiary hospital in Melbourne, Australia.

Methods

Retrospective audit

- Electronic medical records, and pathological data from the Victorian HIV Service and Clinic appointments (Alfred Infectious Diseases Outpatient Clinic) were examined spanning 11 years (January 2013 to December 2023)
- Included adult patients with a HIV diagnosis and engaged in care (with care provided for ≥ 1 clinic appointment during study period)
 - Excluded patients with a prior HCV diagnosis before January 2013

Primary study outcomes

Determine the proportion of people who had:

- An HCV test event (antibody or RNA test),
- A complete HCV test event (antibody and RNA test within 12-months after the first positive Ab test result)
- A positive HCV test event (antibody positive or RNA positive)

Complete HCV test event:

Defined as: a negative Ab result or the first positive HCV antibody result with subsequent RNA test (within 12-months of their first positive antibody result)

- Excluded people missing or unknown Ab test results

Results

Cohort summary

Cohort Characteristics

- 2,008 people with HIV at the Alfred Infectious disease clinic (Figure 1).
- Characteristics of cohort summarised in Table 1
- Mean age of people who at least one HCV test was 53 years, slightly younger than other groups
- Cohort mostly male (86.7%) where over half reported HIV sexual exposure from same sex (men) (58.6%)
- Per person year of follow-up, people with at least one HCV test attended 3 appointments, had 1 HCV test, had 1 HCV antibody test and 1 RNA HCV test

HCV testing outcomes

- 92.9% (1374 of 1478) had complete HCV testing (Figure 1).
- 60.7% (34 of 56) had a positive RNA result.
- 74 excluded due to unknown antibody test result (n=11), or only had HCV RNA test (n=30), or had no subsequent RNA test if HCV Ab positive (n=33)

HCV testing over time

- Number of people undergoing HCV testing ranged from 478 in 2013 to 364 in 2022 (Figure 2A)

HCV antibody tests

- Proportion of HCV antibody tests is stable across the study period ranging from 99% (415 of 478) in 2015 to 93.9% (395 of 504) in 2017

HCV RNA tests

- Of the people with positive Ab test results, the number of subsequent RNA tests observed to decline over study period. (Figure 2B)
- The number of people with a subsequent RNA test hovered between 10 in 2014 to 1 in 2020 and 2022
- Proportion of positive RNA test results ranged from zero in 2020, 2022 and 2023 to 66.7% (6 of 9) in 2013.

Table 1: Characteristics of patients living with HIV at the Alfred Infectious Disease Clinic (n=2008)

Characteristics ¹	At least one HCV test N = 1,478	No HCV test, N = 317	Prior HCV diagnosis, N = 213
Age ²	53 (43 - 63)	57 (48 - 66)	56 (50 - 62)
Gender (Male)	1,275 (89%)	272 (93%)	194 (92%)
Ethnicity ³			
Australian	474 (32%)	99 (31%)	73 (34%)
Other	419 (28%)	62 (20%)	52 (24%)
HIV sexual exposure from same sex (men) ³			
Yes	890 (62%)	172 (59%)	116 (55%)
No	245 (17%)	38 (13%)	82 (39%)
Intravenous drug use ³			
Yes	201 (14%)	17 (5.4%)	86 (40%)
No	184 (12%)	10 (3.2%)	10 (4.7%)
Events (per person year of follow-up)³			
Appointment attendance	3 (0.6 - 8.8)	3 (0.6 - 8.8)	3 (0.6 - 8.8)
HCV test	1 (0.03 - 5.6)	NA	1 (0.03 - 5.6)
HCV Ab test	1 (0.03 - 5.6)	NA	0 (0 - 3.7)
HCV RNA test	0 (0 - 3.7)	NA	1 (0.03 - 5.6)

¹ Median (IQR); n (%); Not Available (NA)

² Mean (95% CI)

³ Missing data for ethnicity (n=533), HIV sexual exposure (n=463), intravenous drug use (n=1500)

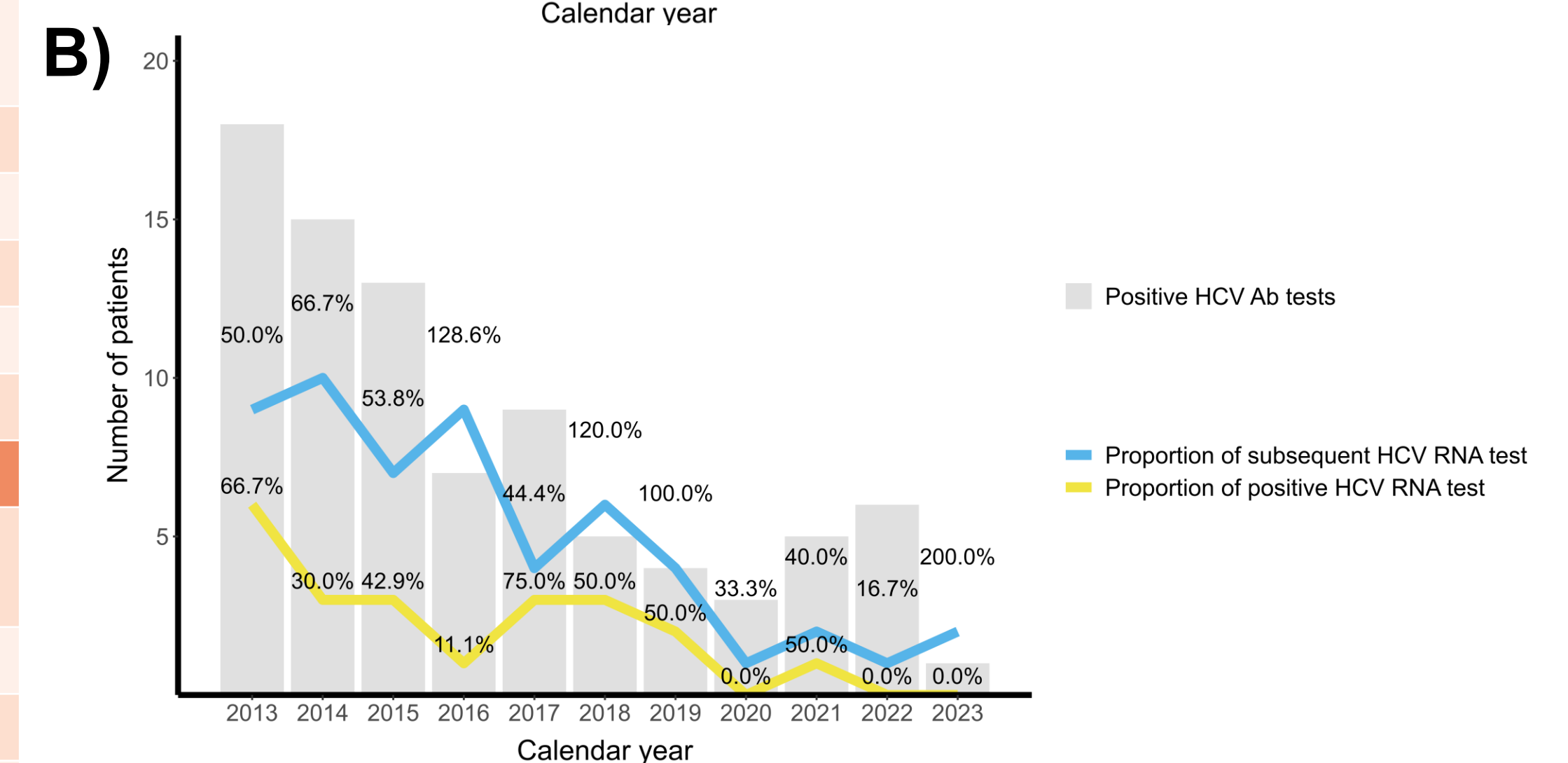
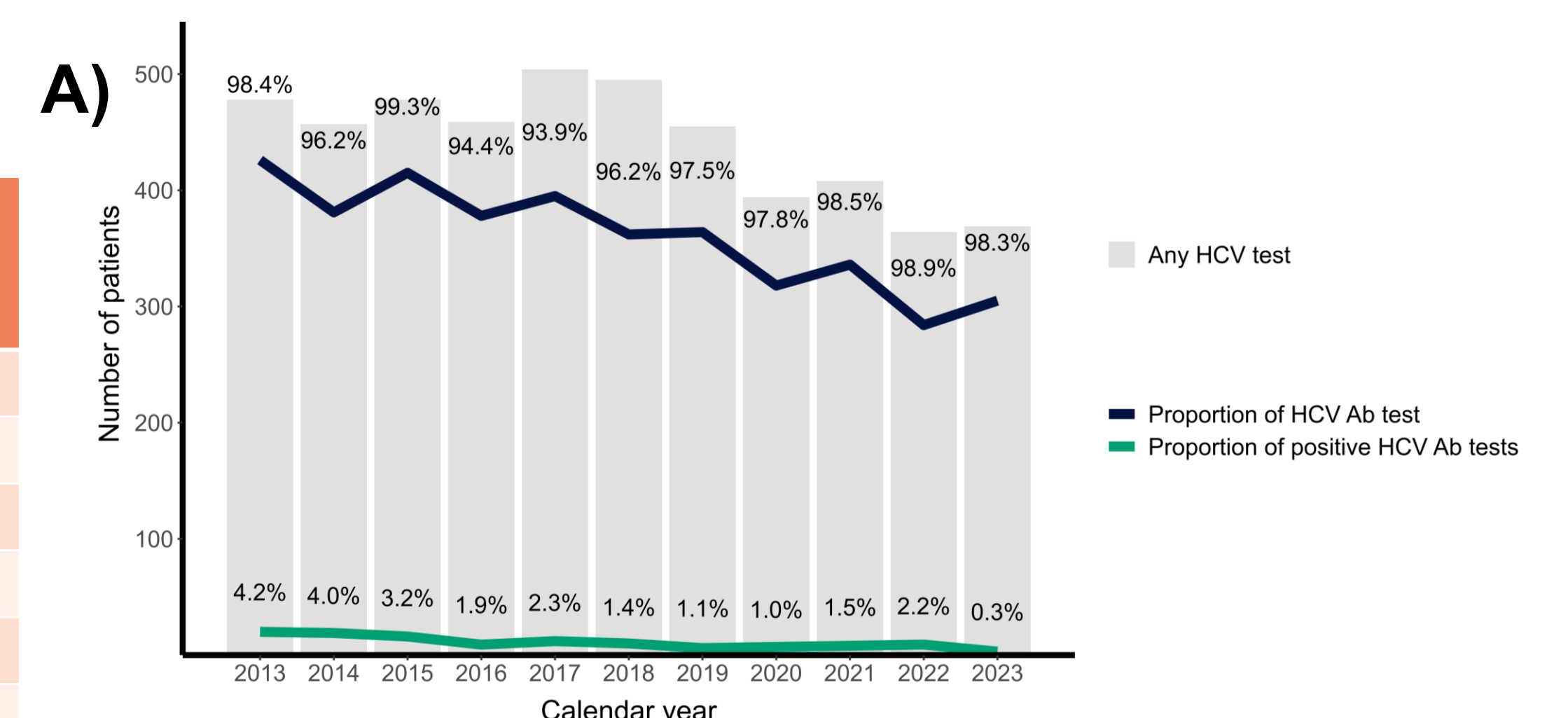


Figure 2A & 2B: Proportion of people with HIV engaged in care at the Victorian HIV Service (n=1481) who had an HCV Ab test (dark blue) and their first positive Ab test result (green) in Figure 2A. Figure 2B depicts the proportion of people a positive Ab test who had a subsequent RNA test (light blue), and of those, the proportion of positive RNA test results (yellow). Proportions more than 100% represent people who had an HCV RNA test in the next calendar year within 364 days.

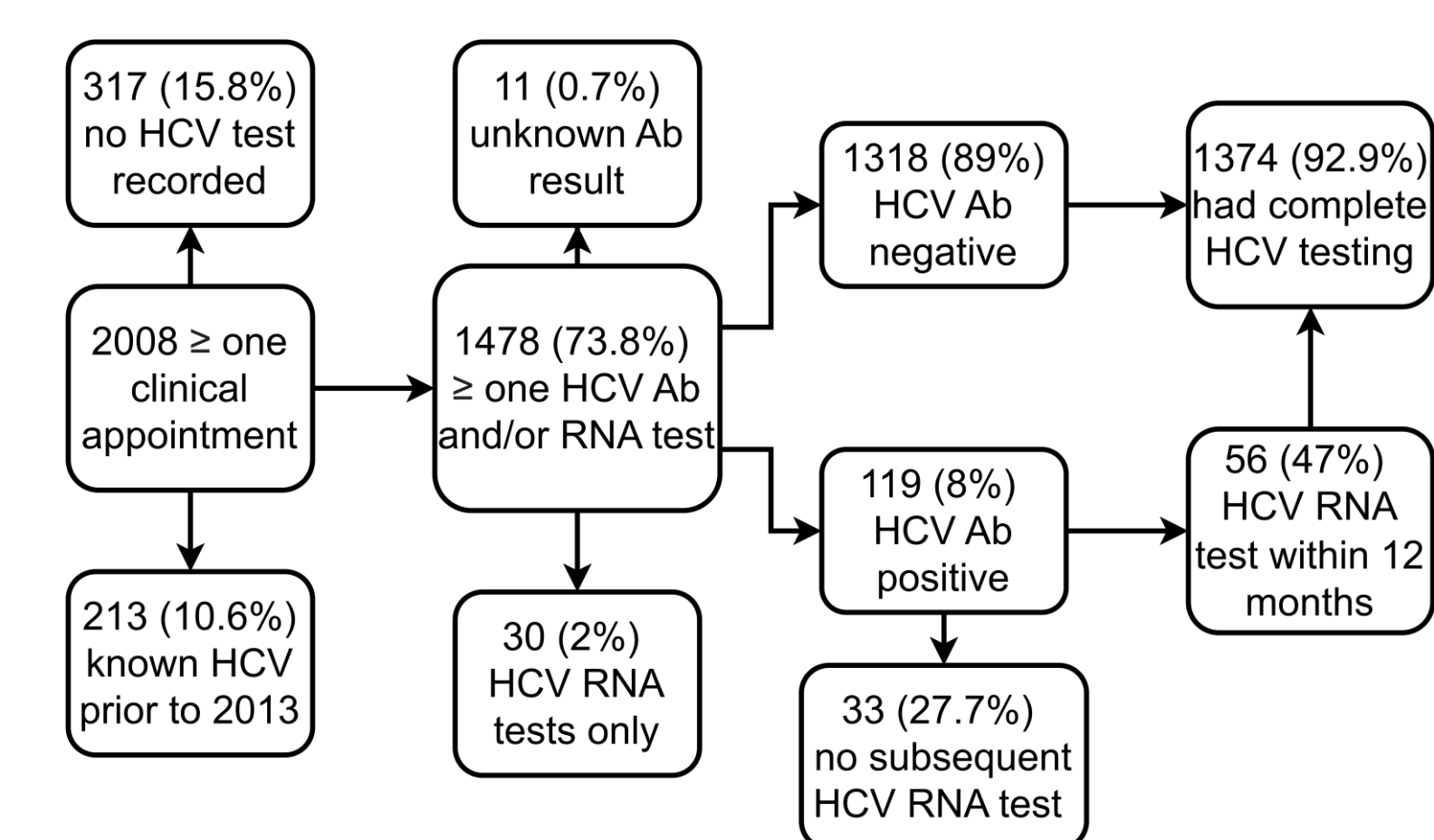


Figure 1: Flowchart of patients living with HIV at the Alfred Infectious Disease Clinic (n=2008)

Conclusion

- Most people with HIV underwent complete HCV testing
- Analysis is still ongoing to quantify changes in the proportion of people undergoing HCV antibody or RNA testing

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