

Infectious syphilis test uptake and positivity among Australian women ever prescribed opioid agonist therapy

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Australasian Sexual & Reproductive Health Conference

September 17 2025



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reach for the many

Acknowledgement of Country



The Burnet Institute acknowledges that the *Australian Collaboration for Coordinated Enhanced Surveillance of STIs and BBVs (ACCESS)* takes place on First Nation's Country throughout Australia and we pay our respects to all Aboriginal and Torres Strait Islander peoples involved in this project.

Infectious syphilis, Australia, 2023

- **Total:** 6,390 notifications (↑ from 2,020 in 2014)
- **Sex:**
 - 20% female (↑ 8% of all notifications in 2014; 700% increase in female notification numbers)
 - Infectious syphilis rate among females = 10.2 per 100,000 pop. (↑ 580% since 2014 from 1.5 cases/100k pop.)
- **20 CS cases nationwide** (↑ from 2 in 2014) – highest recorded number of cases/year, 50% mortality rate (high – typically <30% since 2015)
- **Aboriginal and Torres Strait Islander status:** 16% Indigenous (3.8% of Australian pop. in 2021), ↑ 13% in 2014
- **Age:** 36% 25–34 y-o's (overall median age = 34)
- **Geographical area:** 76% major cities, 14% regional, 7% remote, 3% u/k.



Image source: Wikipedia

Why investigate syphilis among women who inject drugs?

- ***‘We can’t be blind to the social determinants of health in our response’*** – Australian CMO, 15 Sep 2025
- Women who inject drugs are among the most marginalised groups of people, yet limited attention has been paid to their SRH needs generally & re: STIs, syphilis (despite evidence indicating a greater risk of STI acquisition)
- Very limited data/research on epi., prevalence of syphilis among people who inject drugs, testing coverage, gaps in healthcare service provision
- Recent sys. lit. review (Price et al., Drug Alc Depend, 2025) investigated STI prevalence and testing coverage among people who inject drugs:
 - Global syphilis prevalence among this group = 3.2% (95%CI: 2.3–4.6)
 - Global past-year STI test uptake: 8–62%
 - Only 1 study included from Australasia re: STI testing coverage (of n=786, 64% reported a lifetime sexual health check-up, 24% in last six months)
 - One additional Australian study estimated syphilis prevalence among people who inject drugs = 1.9%.

Australian STI testing guidelines for people who use drugs

“The optimal frequency for STI screening (chlamydia, gonorrhoea, syphilis) for people who use drugs will depend on factors other than their drug use, and should be guided by sexual history. People who use drugs, especially stimulants, in the context of sex will likely require 3-monthly STI screening. People who use drugs differently, for example people who use opioids and not in the context of sex, may need STI screening less frequently, such as annually. Annual HCV and HIV testing is recommended for people who use drugs and this provides an opportunity for a full STI screen for those who are sexually active.

“Testing for HIV, hepatitis C and syphilis (and hepatitis B if not immune) should be offered to all people who inject drugs, men who have sex with men, and people who participate in sexualised drug use”.



<https://sti.guidelines.org.au/populations-and-situations/people-who-use-drugs/>

Study objectives

Using data from the national ACCESS project, determine:

- *Test uptake, proportion positive* for syphilis among females attending primary care services 2014–24 and ever prescribed opioid agonist therapy (OAT – proxy for injecting drug use), compared to those never prescribed OAT.
- If women ever prescribed OAT had greater odds of testing positive for syphilis than those never prescribed OAT.

Methodology

- Consultation, OAT history and syphilis test data extracted from **25** GP, community health, AOD ACCESS services for females aged 15–55 b/wn 2014–24 (patients with sex as ‘male’ or ‘other’ excluded)
- OAT used as a proxy for ever injecting drugs (limitations assoc. with this)
- Calculated the below by history of OAT prescription overall and year:
 - **Test uptake** (number patients tested/num. attending);
 - **Proportion positive** (num. patients diagnosed/num. attending).
- Associations b/wn test positivity and OAT prescription were explored using logistic regression, adjusted for age, Indigenous status and jurisdiction.



25 primary care
services

Results: Sample selection

2014–2024

Total clinic attendees
N=505,466



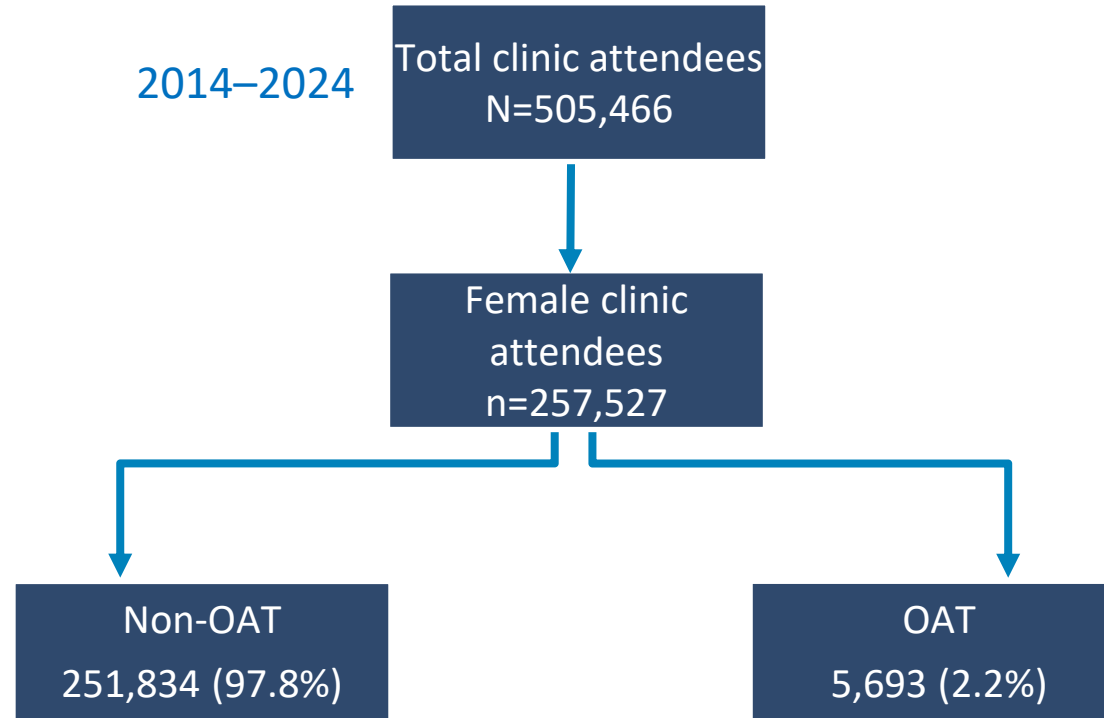
Female clinic
attendees
n=257,527

Females = approx. 51%



25 primary care
services

Results: Sample selection



Results: Overall test uptake, sample characteristics

Test uptake

- Of all female clinic attendees (n=257,527), **34,041** tested for syphilis 1+ time/s (**13%** of all female clinic attendees)
 - 49,629 total visits
 - Median num. of syphilis tests = 1, mean = 1.5 (IQR: 1–20)
 - 73% tested only once, 17% twice, 10% tested 3+ times (13% of OAT group vs 10% of non-OAT group)
- **Overall test uptake was sig. ↑ among women ever vs. never prescribed OAT (20% vs 13%, respectively; $\chi^2(1)= 233.9, p<0.001$)**

Sample characteristics of females tested for syphilis

- At first visit:
 - Median age = 29, mean = 30.1 (IQR = 15–55)
 - Jurisdiction of service at first visit: VIC (62.8%); NSW (20.5%); SA (13.0%); QLD (2.9%); ACT, TAS, WA (all <1%)
- 3.7% identified as Aboriginal and/or Torres Strait Islander (BUT missing data for 21.8%).

Results: Yearly test uptake

OAT group \approx 4–8%
Non-OAT group \approx 6–12%

- However, women never prescribed OAT generally had higher test uptake each year vs OAT group (non-OAT group range \approx 6–12% vs \approx 4–8% for OAT group) – different to overall trend
- OAT group typically had \uparrow attendances overall than non-OAT group, meaning they were only counted in the numerator and denominator of the overall test uptake calculations once, but counted in more yearly numerators (more likely to be repeat visitors).

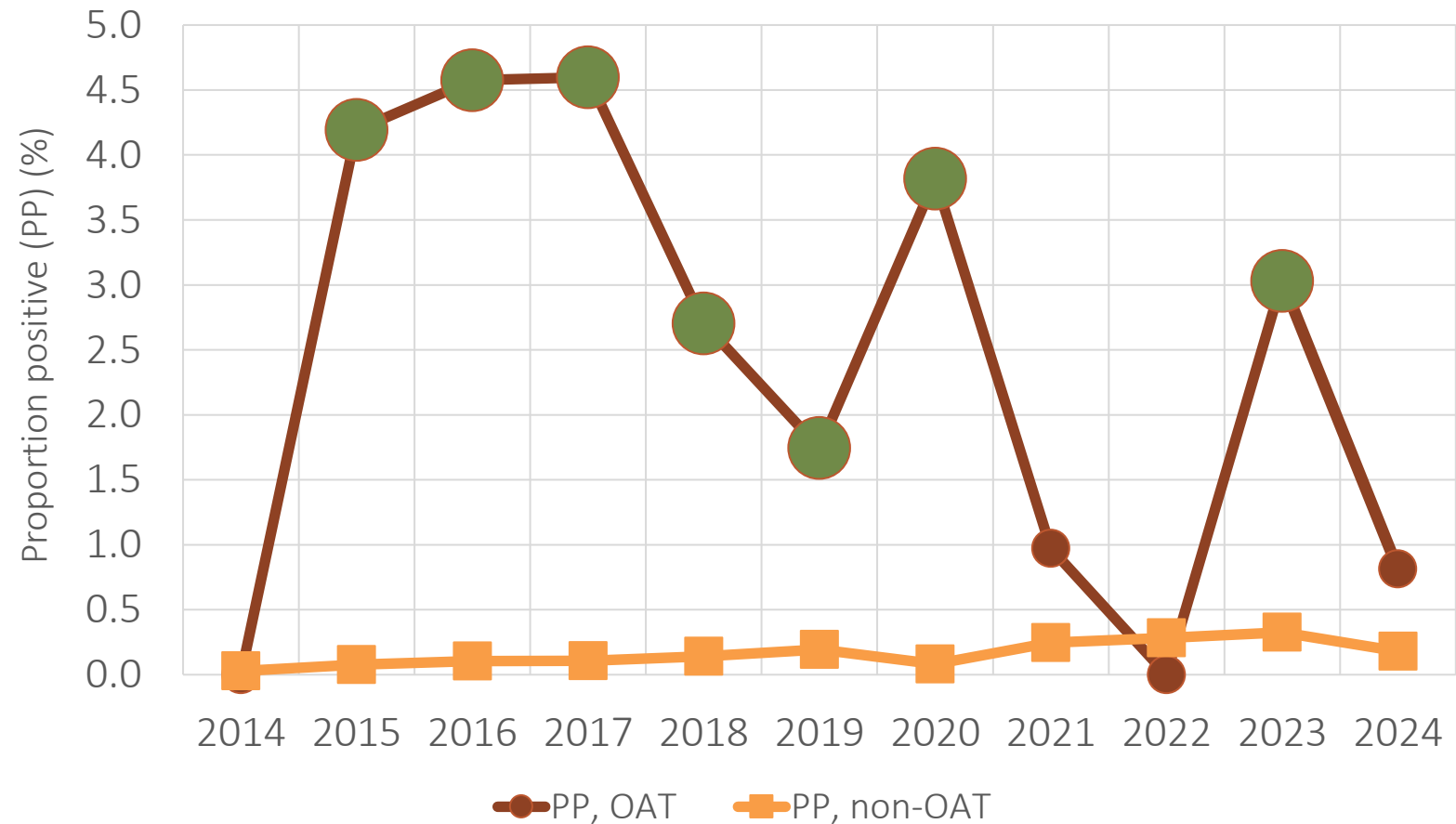
| Year | OAT (%) | Non-OAT (%) |
|------|---------|-------------|
| 2014 | 7.6 | 7.4 |
| 2015 | 6.6 | 7.6 |
| 2016 | 5.7 | 7.1 |
| 2017 | 6.1 | 7.1 |
| 2018 | 6.4 | 7.5 |
| 2019 | 6.1 | 7.4 |
| 2020 | 4.6 | 5.9 |
| 2021 | 3.8 | 5.8 |
| 2022 | 3.9 | 6.6 |
| 2023 | 5.2 | 8.3 |
| 2024 | 6.1 | 11.5 |

Results: Overall test positivity

- Total num. of positive syph tests = **121** (0.4% of all females tested for syphilis)
- Proportion positivity by OAT status:
 - **Sig. greater % of women ever prescribed OAT tested positive for syphilis vs. those never prescribed OAT: 3.8% vs 0.2%, $p < 0.001$**
- No reinfections recorded; however, 56 (46%) patients with infectious syphilis did not return to participating ACCESS clinics after testing positive;
 - A sig. higher % of the OAT group did not return after testing positive vs the non-OAT group (1.8% vs 0.1%).

Results – Proportion positivity by year by OAT status

A sig. ↑ percentage of women ever prescribed OAT tested positive for syphilis in 7 of 11 years assessed



Results – Logistic regression analysis

- *Explored whether history of OAT prescription (y/n) was associated with testing positive for syphilis (y/n)*
- Controlled for: Indigenous status, state/territory at first test, age at first test
 - ACT and Tasmania excluded from analyses due to small numbers;
 - Sig. missing data re: Indigenous status (n=7,412/34,041 patients – 22%).

Results – Logistic regression analysis (MV results)

| | OR | 95% CI | aOR | 95% CI |
|--|------|------------|------|-----------|
| History of OAT prescription | 16.5 | 11.3, 24.1 | 12.4 | 7.8, 19.8 |
| Age (years) | | | | |
| 15–24 | 1 | - | 1 | - |
| 25–34 | 0.9 | 0.6, 1.6 | 0.9 | 0.5, 1.7 |
| 35–44 | 2.3 | 1.4, 3.8 | 1.6 | 0.9, 2.9 |
| 45+ | 3.3 | 1.8, 6.0 | 2.1 | 1.0, 4.1 |
| Aboriginal &/or Torres Strait Islander | 5.5 | 3.4, 8.9 | 3.0 | 1.8, 4.9 |
| Jurisdiction | | | | |
| NSW | 1 | - | 1 | - |
| Queensland | 3.6 | 1.2, 10.5 | 1.8 | 0.5, 6.0 |
| S. Australia | 1.7 | 0.7, 4.1 | 2.7 | 1.1, 6.7 |
| Victoria | 3.0 | 1.5, 5.7 | 1.7 | 0.8, 3.5 |
| W. Australia | 18.3 | 6.2, 54.0 | 14.0 | 4.5, 43.0 |

Summary (1)

- 2.2% of female clinic attendees (2014–24) had a history of OAT prescription

Test uptake low

- *Despite increasing syphilis notifications among Australian women over study period, yearly test uptake among women ever prescribed OAT ranged from \approx 4–8% (\approx 6–12% for women never prescribed OAT)*
 - Suggests at least some women engaging in injecting drug use are not getting tested as per Australian STI guidelines
 - More work needs to be done with clinicians to increase testing rates for women, including those on OAT?

Concerns exist regarding ‘successful’ patient follow-up, treatment

- 46% of women who tested positive had no record of returning to ACCESS clinics.

Summary (2)

Higher syphilis test positivity among women ever prescribed OAT

- Women ever prescribed OAT had sig. higher overall test positivity vs. those never prescribed OAT (3.8% vs 0.2%)
 - Women ever prescribed OAT and tested for syphilis had >12 times higher odds of testing positive for syphilis than women never prescribed OAT
- These findings suggest:
 - A need for improved integration of SH in models of care for people who use drugs
 - Identification, implementation of prevention, health promotion interventions for this group (e.g., doxyPEP?)
 - A focus on people who use/inject drugs in jurisdictional and federal SH (and related) policy documents.

Limitations (1)

- History of OAT prescription not a perfect indicator of injection drug use
 - Figures likely an under-representation given it's skewed towards people injecting opioids, also it is possible OAT history not recorded/reported by clinicians
 - Recency of OAT prescription wasn't considered in analyses (will be explored in future analyses); i.e., some women wouldn't have been prescribed OAT (or injecting) when tested for syphilis
- Patients might have attended other services for syphilis (and other BBV and STI) testing and treatment during the study period.

Limitations (2)

- Substantial missing data, esp. re: Indigenous status, may have affected findings
- Reasons for visiting services largely unknown, esp. important re: antenatal care (work being undertaken with ACCESS to amend this)
 - Work is being undertaken with other Burnet Institute projects to explore the impact of other factors such as mental ill-health, homelessness, on the sexual health of people who inject drugs, e.g., SuperMIX cohort.



<https://www.burnet.edu.au/our-work/projects/injecting-drug-use-in-melbourne-supermix-cohort-study/>

Acknowledgements

- ***Study co-authors:*** Jason Asselin, Anna Wilkinson, Brendan Harney, Nyssa Watson, Samara Griffin, Louise Owen, Eric Chow, Jason Ong, David Baker, Sharon Chen, Sherelle Iuretigh, Christopher Carmody, Charlotte Bell, Philip Read, Caroline Lade, David Templeton, Donna Mak, Jenny McCloskey, Eugene Athan, Nathan Ryder, Vincent Cornelisse, Htein Linn Aung, Basil Donovan, Belinda Hengel, Rebecca Guy, Margaret Hellard, Mark Stoové, Michael Traeger
- ***ACCESS project team members across collaborating organisations:*** The Burnet Institute, Kirby Institute, National Reference Laboratory
- ***Individuals (patients, clinic attendees) contributing de-identified data and ACCESS clinics and site investigators***
- ***ACCESS Advisory Committee***
- ***ACCESS funders:*** Australian Government Department of Health & Ageing, certain jurisdictional Health Departments
- ***Winston Churchill Trust***

Thank you

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