



STI trends in a cohort of high-risk gay and bisexual men before and after rapid scale up of HIV pre-exposure prophylaxis in New South Wales-Australia: the EPIC-NSW study

McManus H¹, Grulich AE¹, Amin J^{1,2}, Watchirs-Smith L¹, Selvey C³, Zablotska I⁴, Vaccher S¹, Jin F¹, Holden J³, Price K⁵, Yeung B¹, Levitt G¹, Ogilvie E¹, McNulty A⁶, Smith D⁷, Cooper DA¹, Guy R¹ on behalf of the Expanded PrEP Implementation in Communities New South Wales (EPIC-NSW) research group

1. The Kirby Institute-UNSW Sydney-Sydney-Australia
2. Department of Health Systems and Populations-Macquarie University-Sydney-Australia
3. NSW Government-Ministry of Health-NSW-Australia
4. Westmead Clinical School-Sydney University-Sydney-Australia
5. AIDS Council New South Wales-NSW-Australia
6. Sydney Sexual Health Centre-Sydney-Australia
7. North Coast HIV/Sexual Health Services-Lismore-Australia



Background:

- PrEP use may lead to ↑ STIs:
 - ↑ increased transmission (↓ condom use)
 - ↑ contact rate (↑ sex)
 - ↑ probability of contact with infectious person
- Factors to consider when assessing this:
 - pre-existing trends
 - effect of ↑ testing on observed changes



Objectives:

- Measure changes in STIs before and after PrEP in high risk GBM in EPIC
- Measure trends in STIs before and after PrEP



Methods: Data (EPIC-NSW)

- March 2016 EPIC-NSW: Rapid roll out of PrEP in GBM at high-risk of HIV in NSW
- routine HIV & STI testing data network of 31 clinics
(mostly from a surveillance network called ACCESS)
- Longitudinal data with linked id across clinics



Methods: Inclusion criteria

- Use enrolments 1-Mar-2016 to 31-Oct-2016
- no PrEP use in the 3 months prior to enrolment
- 2+ tests in year prior to PrEP commencement



Methods: Statistical analysis

- Baseline = enrolment date +/- 45 days (1 quarter)
- Include data from prior & subsequent 4 quarters
- Outcome: positivity = positive /tested each quarter
- Change in positivity by:
 - STI (chlamydia, gonorrhoea, infectious syphilis)
 - site of infection(anorectal, urethral, pharyngeal)



Results: Inclusion process

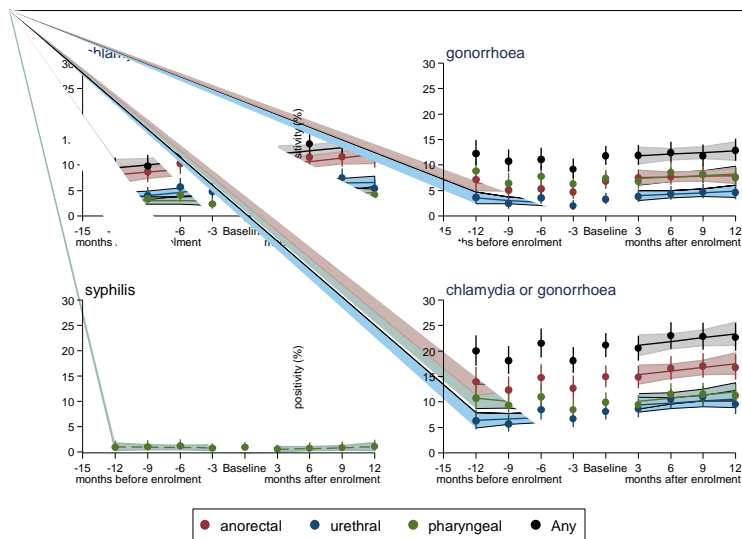
Enrolled participants	3,700
Complete records	3,487
no PrEP in 3 months prior to enrolment	3,081
≥ 2 tests over 30 days apart in year prior to enrolment	1,218



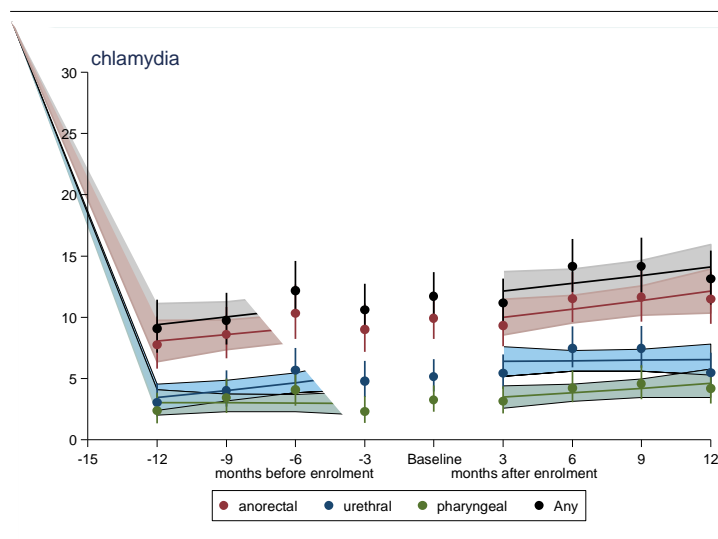
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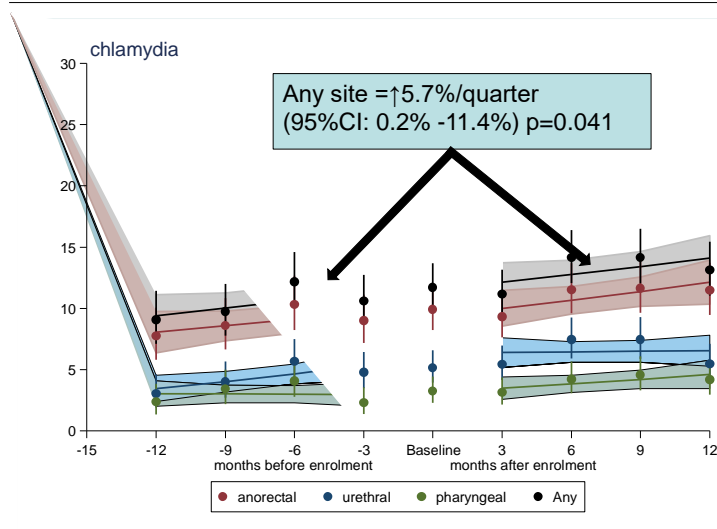
Results overview: Positivity by disease and site of infection



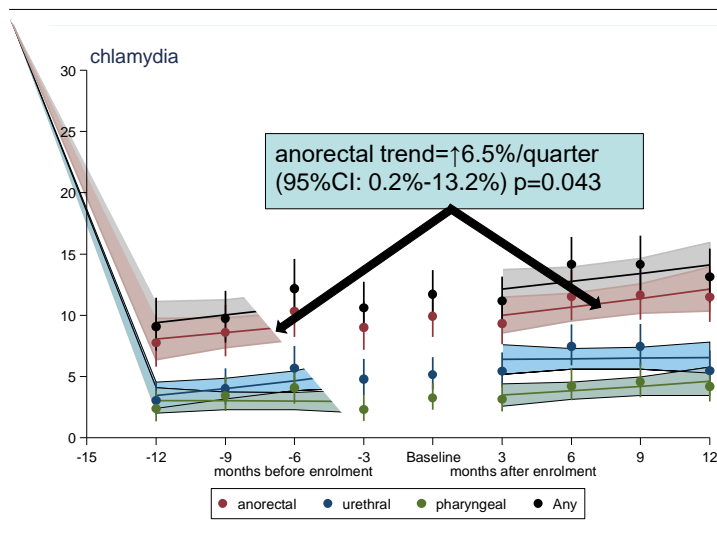
Results detail: Chlamydia positivity



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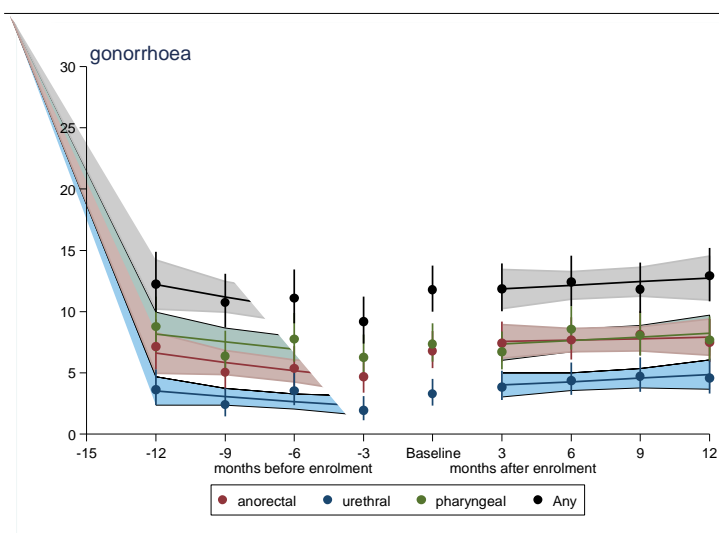


Results : Change in positivity chlamydia¹

Disease	Site	Upward shift after PrEP RR (95% CI), p	Change in trend RR (95% CI), p
CT	Anorectal	0.91 (95%CI: 0.65-1.27) p=0.587	1.00 (95%CI: 0.89-1.13) p=0.968
	Pharyngeal	1.08 (95%CI: 0.61-1.92) p=0.781	1.11 (95%CI: 0.90-1.36) p=0.343
	Urethral	1.01 (95%CI: 0.67-1.54) p=0.952	0.87 (95%CI: 0.73-1.03) p=0.107
	Any	0.95 (95%CI: 0.71-1.27) p=0.741	0.99 (95%CI: 0.89-1.10) p=0.789
	Any		

1. Based on maximum of 1 positive and 1 test per participant per quarter

Results: Gonorrhoea positivity



Results : Change in positivity gonorrhoea¹

Disease	Site	Upward shift after PrEP RR (95% CI), p	Change in trend RR (95% CI), p
NG	Anorectal	1.85 (95%CI: 1.18-2.90) p=0.008	1.15 (95%CI: 0.97-1.36) p=0.102
	Pharyngeal	1.20 (95%CI: 0.80-1.82) p=0.374	1.13 (95%CI: 0.98-1.30) p=0.106
	Urethral	1.87 (95%CI: 1.04-3.39) p=0.037	1.23 (95%CI: 0.99-1.53) p=0.061
	Any	1.33 (95%CI: 0.98-1.81) p=0.064	1.12 (95%CI: 0.995-1.25) p=0.060

1. Based on maximum of 1 positive and 1 test per participant per quarter

Limitations

- Selection of potentially higher risk cohort
- No behavioural data
- May not have captured all/representative testing data
(infectious syphilis from public clinics)



Summary

- High overall positivity in high risk GBM who enrolled in EPIC before & after PrEP commencement (~20%/quarter)
- Different patterns of trend by infection & site of infection
 - continuing pre-existing trend for CT
 - upward shift in positivity for NG (anorectal & urethral)
- Further follow-up needed to assess change.

Kirby Institute	NSW Ministry of Health	Site investigators	Site investigators (cont)
David Cooper	Jo Holden	Anna McNulty	Nathan Ryder
Andrew Grulich	Christine Selvey	David Baker	David Smith
Rebecca Guy	Heather-Marie Schmidt	Mark Bloch	Emanuel Vlahakis
Jeff Jin	Dale Halliday	Katherine Brown	Rohan Bopage
Janaki Amin	Kerry Chant	Christopher Carmody	Nick Doong
Iryna Zablotska	Bill Whittaker	Andrew Carr	David Townson
Barbara Yeung	Community Organisations	Kym Collins	Bradley Forssman
Ges Levitt	Nic Parkhill	Robert Finlayson	Daniel Chanisheff
Erin Ogilvie	Craig Cooper	Rosalind Foster	Gia Han Thai
Mo Hammoud	Scott McGill	Eva Jackson	Sarah Martin
Denton Callander	Matt Vaughan	David Lewis	Tuck Meng Soo
Lucy Watchirs-Smith Tobias Vickers	Karen Price	Josephine Lusk	Ben Anderson
Stefanie Vaccher		Debbie Allen	David Templeton
Shawn Clackett Brian Acraman Patrick McGrath		Catherine O'Connor	Catriona Ooi
Nila Dharan		Phillin Read	Don Smith