

Rapid reduction in HIV diagnoses after targeted PrEP implementation in NSW:

The EPIC-NSW Study

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Background

- PrEP highly effective in preventing HIV infection
- High efficacy maintained if at least 4 doses/week
- Mathematical models predict a substantial population effect in MSM epidemics if PrEP is introduced rapidly, with high coverage

What is the population level effect of rapid, targeted, high coverage PrEP roll-out?



EPIC-NSW:

Expanded PrEP Implementation in Communities

- Implementation study of TDF/FTC PrEP
- Targeted at those at high-risk, using local guidelines
 - condomless sex with casual partners
 - condomless sex with regular partner, detectable viral load
 - rectal STI or syphilis
 - methamphetamine use
- Commenced March 2016, initial target of 3700
 - target increased in October 2016 so that all eligible gay and bisexual men could receive PrEP as quickly as feasible
- 3-monthly follow-up with HIV and STI testing



EPIC-NSW

- Partnership
 - Implemented by Kirby Institute, funded by NSW Health

But

- oversight by Management Committee
- met F2F weekly from Q4 2015
- KI, NSW MoH, ACON, site coordinators x2
- protocol development, document review, on-going decisions including exit strategy
- larger protocol steering committee

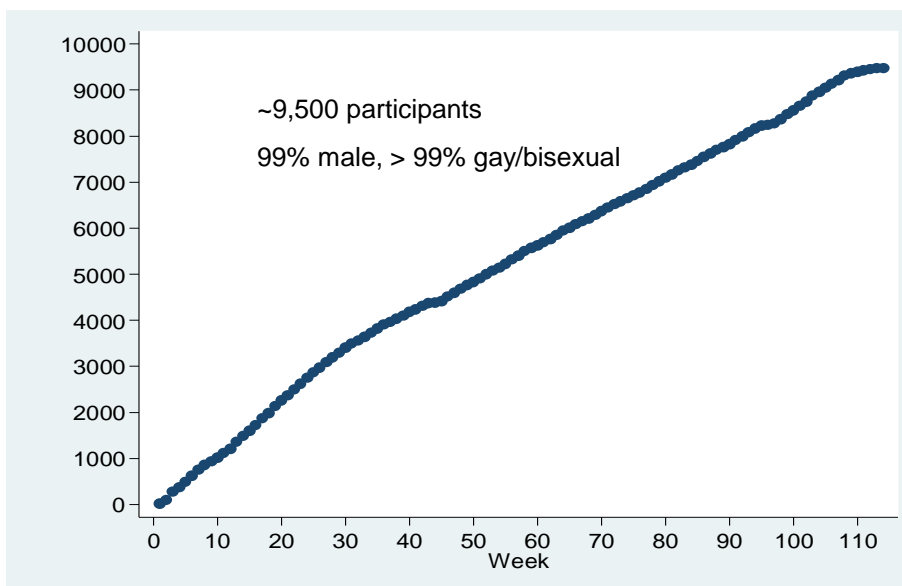


EPIC-NSW

- Implementation study of TDF/FTC PrEP
 - local, pre-existing guidelines
 - minimal data collected
 - no additional data collection for most study sites
 - enrolment “targets” for public sexual health clinics
 - nurse, and peer, led participant education
 - nurse dispensing for public clinics
 - NSW Health priority; sexual health service re-design
- Community engagement campaign - ACON
- >25 sites including s100 GP clinics



Enrolment of EPIC-NSW participants by study week 1 March '16 -30 April '18



EPIC-NSW: primary outcome 1

- 3700 participants
- expected >50 new infections without PrEP
- 2 confirmed new HIV infections
 - 1 was dispensed but never commenced PrEP
 - 1 took no PrEP for months prior to infection
- incidence rate 0.05/100 person-years (95%CI 0.01-0.20)



EPIC-NSW: primary outcome 2

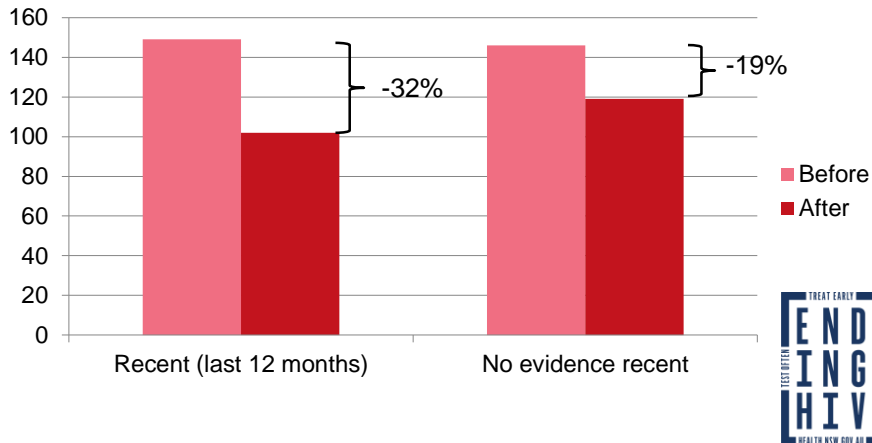
- Population-wide (effectiveness) outcome:
 - A before-after comparison
 - Change in HIV diagnoses in MSM in NSW surveillance data between
 - the twelve-months before recruitment commenced
 - the twelve-months after recruitment of 3700



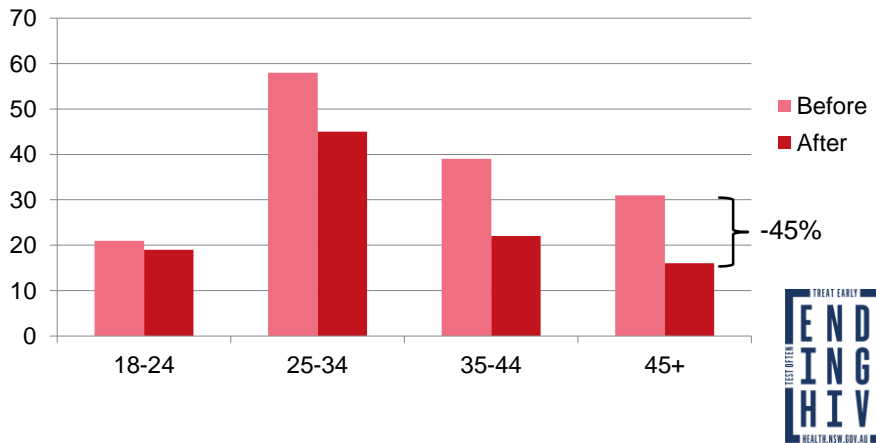
7621 recruited by 31 Oct 2017



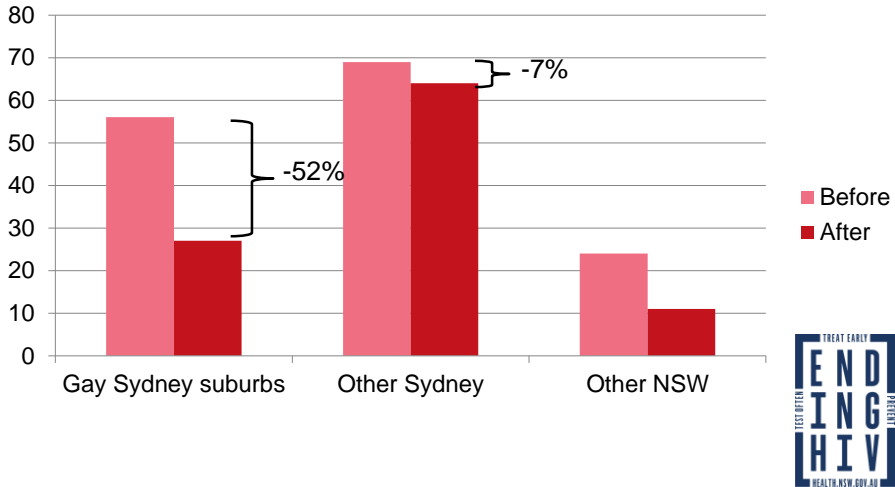
EPIC-NSW: HIV diagnoses in MSM in NSW before and after PrEP, by recency of infection



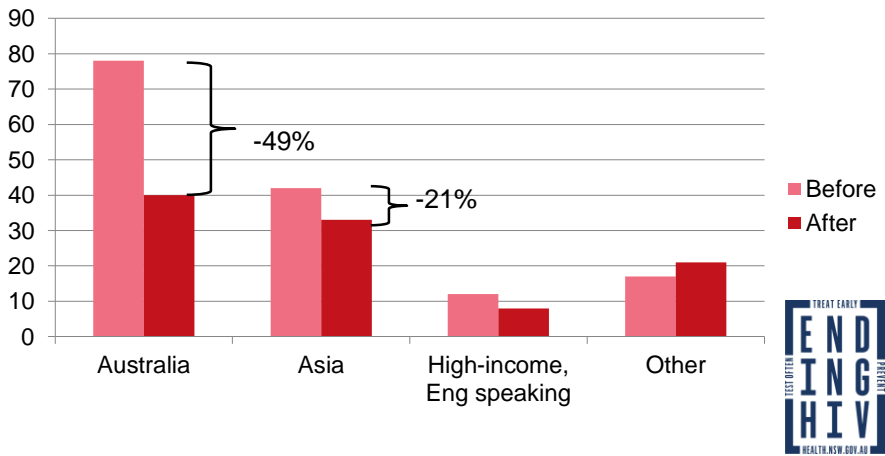
EPIC-NSW: recent HIV infections in MSM in NSW, before and after PrEP, by age in years



Recent HIV infections in MSM in NSW, before and after PrEP, by area of residence

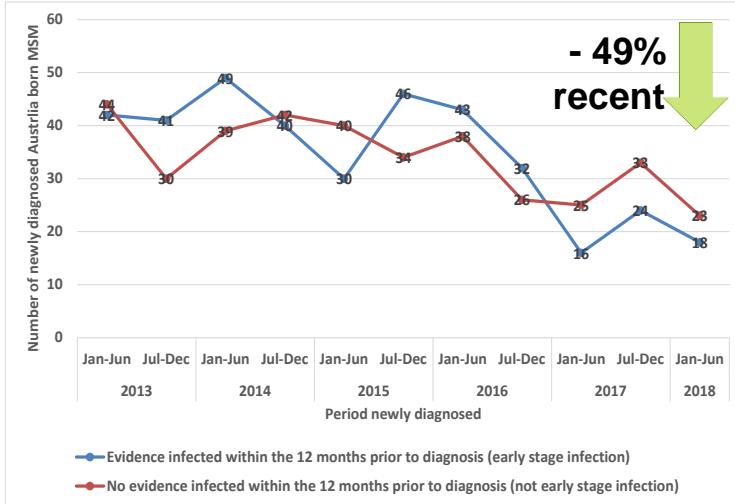


EPIC-NSW: recent HIV infections in MSM in NSW, before and after PrEP, by region of birth



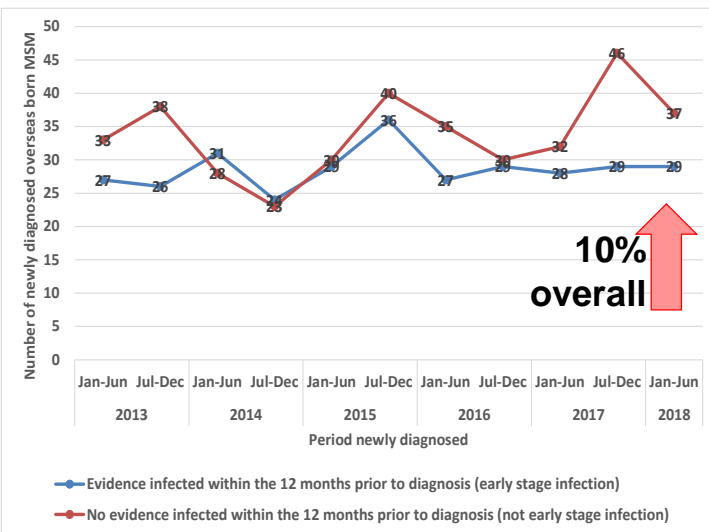
HIV notifications since 2013

New diagnoses Jan '13 - June '18 in Australian-born MSM by evidence infected within 12 months of diagnosis



HIV notifications since 2013

New diagnoses Jan '13 - June '18 in overseas-born MSM by evidence infected within 12 months of diagnosis



Conclusions: reductions in HIV diagnoses

- Targeted PrEP roll-out at scale led to a substantial decline in new HIV infections at the state-wide level
 - dropped by 32% in the year following complete recruitment
 - historically unprecedented reduction in recent infections
- Least reduction in recent infections in
 - young gay and bisexual men
 - gay and bisexual men living outside the Sydney “gay” suburbs
 - non-English speaking overseas-born gay and bisexual men



Challenges for the future

- How do we attain a more equitable response?
 - overseas born, young, outer-Sydney
- How do we best monitor uptake?
 - guided by mathematical modelling, we need to ensure 90% PrEP coverage in higher risk HIV negative men
 - intermittent / on-demand PrEP
- How do we manage increasing condomless sex?
 - HIV prevention: ensure all those who are having condomless sex with new partners are on PrEP
 - STI prevention:
 - ensure PrEP use is linked to quarterly STI testing
 - encourage strategic condom use in PrEP users



EPIC-NSW Research team

Kirby Institute	NSW Ministry of Health	Site investigators	Site investigators
David Cooper	Jo Holden	Anna McNulty	David Smith
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Daminda Weerasinghe			

The EPIC-NSW study team thanks the ~ 9,500 participants. EPIC-NSW is funded by the NSW Ministry of Health. We thank Gilead for providing a donation of Truvada for use in EPIC-NSW. Study drug is also purchased from Mylan pharmaceuticals.

EPIC-NSW Site Coordinators

EPIC-NSW Site	Site Coordinator
Albury Sexual Health Clinic	Alison Kincaid
Wagga Wagga Sexual Health Clinic	Sally-Anne Brennan
Canberra Sexual Health Centre	Shannon Woodward
Clinic 16	Brett Hadlow
Coffs Harbour Sexual Health Clinic	Nives Houlihan
Crown St Medical Centre	Airisse Cortez
Dr Doong's Surgery	Shane Hewitt
East Sydney Doctors	Melissa Benson
Fountain Street General Practice	Anne Maree O'Brien
Green Square Health	Francesca Figg
Holden Street Clinic	Michael Williamson
Holdsworth House Medical Practice, Sydney	Annabelle Caspersz
Illawarra Sexual Health Clinic	Jodie-Lee Little
Interchange General Practice	Philip Habel
Kirketon Road Centre	Michelle Styles
Lismore Sexual Health Centre	Andrew Buggie
Liverpool Sexual Health Clinic	Rachel Moss
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Newcastle Community Health Centre	Lucy Williamson
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Orange Sexual Health Clinic	Roisin Dyer
Dubbo Sexual Health Clinic	Margaret Crowley
Royal Prince Alfred Sexual Health	Brett Sinclair
Short Street Clinic	Damien Brown
St Leonards Medical Centre	Ben Andersen (PI)

MSM HIV early infections since March '14

