Population-based PrEP implementation in NSW, Australia

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Second Asia Pacific AIDS and Co-infections Conference, Hong Kong, June 2017
Disclosures

• Research funding
  • Gilead, Viiv, Sequirus
  • In-kind research support
    • Gilead (partial support for Truvada for EPIC-NSW)
    • Hologic

• Membership of advisory board
  • Viiv
• Convincing policymakers that PrEP is required

• The “high risk” approach to PrEP roll-out

• Educating the community and building demand

• EPIC-NSW design

• Will it work?
Convincing policymakers
PrEP in gay and bisexual men (GBM): evidence

- **iPREX**: Americas, South Africa, Thailand
  - 44% risk reduction, poor adherence to medication
  - Zero infections in those taking 4 or more tablets per week

- **PROUD**: England
  - 86% (95% CI 58-96%) risk reduction
  - Infections only occurred in men not taking PrEP

- **iPERGAY**: France
  - 86% (95% CI 40-99%) risk reduction
  - Infections only occurred in men not taking PrEP

*PrEP is close to 100% effective in adherent GBM*

Key questions that policymakers ask

So PrEP works: but what is its place in the HIV prevention response?

• What is our goal in HIV prevention?

• What do we want PrEP to do?

• How are we doing without PrEP?
  – Do we really need PrEP?
  – Isn’t behavioural prevention plus treatment as prevention enough?
A strategy with ambitious goals is critical.

NSW HIV STRATEGY 2016-2020

ENDING HIV

STRATEGY AT A GLANCE

OUR GOALS

How we will succeed:

[TEST OFTEN] + [TREAT EARLY] + [PREVENT] = END 2020

To virtually eliminate HIV transmission in NSW by 2020

Sustain the central role of condoms in preventing the transmission of HIV

Reduce sharing of injecting equipment among
Strong community support and leadership

Everything has changed. We can end HIV.

\[
\begin{align*}
\text{Test More} + \text{Treat Early} + \text{Stay Safe} &= \text{Ending HIV}
\end{align*}
\]

ENDINGHIV.ORG.AU
How are we doing without PrEP?
New HIV diagnoses, Australia, 1984-2015

- Stable number of notifications since 2016

The current prevention mix is not enough

Source: State and Territory health authorities
Stable HIV diagnoses, despite huge increases in HIV testing since 2012 (NSW)

Figure 17: Number of HIV serology tests performed in South Eastern Sydney Local Health District Publicly Funded Sexual Health Clinics per quarter 2012 to 2015

Data source: South Eastern Sydney Local Health District
Stable HIV diagnoses, despite increases in early treatment post START....
..and evidence that treatment effectively reduces HIV transmission from PARTNER and Opposites Attract.
Stable HIV diagnoses, despite an HIV diagnosis/care cascade approaching 90/90/90

<table>
<thead>
<tr>
<th>Year</th>
<th>Living with HIV</th>
<th>Living and diagnosed with HIV</th>
<th>Retained in care</th>
<th>Receiving antiretroviral therapy</th>
<th>Suppressed viral load</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>23507</td>
<td>20768</td>
<td>19729</td>
<td>16471</td>
<td>14696</td>
</tr>
<tr>
<td>2014</td>
<td>24452</td>
<td>21772</td>
<td>20683</td>
<td>17821</td>
<td>16255</td>
</tr>
<tr>
<td>2015</td>
<td>25313</td>
<td>22694</td>
<td>21560</td>
<td>19051</td>
<td>17544</td>
</tr>
</tbody>
</table>
Prevention without PrEP is not enough to end HIV

• Australia is approaching the 90/90/90 goals
  – Despite this, new diagnoses are not decreasing

• TasP **on its own** is unlikely to lead to substantial reductions in HIV incidence in gay and bisexual men

• PrEP is close to 100% effective if taken daily

• **PrEP targeted at high-risk HIV negative men** will be *required* to end the epidemic
The high risk approach to PrEP roll-out
Local PrEP demonstration projects have an important role

- Since 2014, 500+ high-risk participants in
  - NSW (PRELUDE, 300),
  - Victoria (VicPREP, 150) and
  - Queensland (QPrEP, 50)

- Important lessons learned
  - **PrEP quickly attracts very high-risk gay men**
  - **High levels of adherence** proven by biological testing at 6 and 12 months follow-up
  - Very high rates of sexually transmissible infections
  - No HIV seroconversions seen in about 500 person-years

*S Vaccher et al, Durban AIDS conference*
The high-risk approach to initial PrEP roll-out

- Australia has a concentrated epidemic, 70-80% of new diagnoses in gay and bisexual men

- Prevalence
  - 0.1% in the general population
  - 5-15% in gay men in large urban centres

- Most PrEP impact, for lowest cost, by targeting high risk gay men first
A targeted, high-risk approach to PrEP roll-out

Overall HIV incidence in gay men in Sydney is 0.9/100py

<table>
<thead>
<tr>
<th>High Risk behaviour in last 6 months</th>
<th>Incidence per 100py*</th>
<th>95% CI</th>
</tr>
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<tbody>
<tr>
<td>Condomless sex with HIV positive regular partner</td>
<td>5.4</td>
<td>2.8-10</td>
</tr>
<tr>
<td>Receptive condomless sex with casual HIV-positive/status unknown partners</td>
<td>2.3</td>
<td>1.5-3.6</td>
</tr>
<tr>
<td>Rectal gonorrhoea</td>
<td>7.0</td>
<td>2.3-21</td>
</tr>
<tr>
<td>Rectal chlamydia</td>
<td>3.6</td>
<td>1.3-9.5</td>
</tr>
<tr>
<td>Methamphetamine use</td>
<td>1.9</td>
<td>1.3-2.8</td>
</tr>
</tbody>
</table>

*Incidence from the Health in Men cohort study, Sydney 2001-07

Modelling of PrEP population-level effectiveness

- Assume 90% of high risk gay men on PrEP
- Lower levels of roll out lead to much lower reductions in incidence
- Goal is to saturate high-risk groups
- Herd protection is important

R Gray et al, in preparation
Scale-up should be rapid to maximise impact

R Gray et al, in preparation
Educating the community and building demand
HERE FOR PrEP
COMMUNITY FORUM

[TEST OFTEN] + [TREAT EARLY] + [STAY SAFE] = ENDING HIV 2020

PrEP
A TALE OF TWO CITIES

Prof. Robert Grant
EPIC-NSW

A once a day pill that keeps you HIV negative

[TEST OFTEN] + [TREAT EARLY] + [STAY SAFE] = ENDING HIV 2020

BE IN CONTROL
A once a day pill that keeps you HIV negative

[TEST OFTEN] + [TREAT EARLY] + [STAY SAFE] = ENDING HIV 2020

Targeted Promotion to Gay and bisexual men of diverse ethnicities
I DO IT EVERY DAY

Choosing daily PrEP keeps me HIV negative. How do you do it?

ENDHIV.ORG.AU/YOUCHOOOSE
EPIC NSW design features
Key design features of EPIC-NSW

• An implementation research project conducted within a clinical trial framework, commencing March 2016
• State-wide, in both public and private clinics
• Initial aim was to start all men at high HIV-risk on PrEP by end 2016 – 3700 men in a 10 month period
• Simple for clinics: HIV/STI outcomes collected through electronic medical record systems
• Co-primary outcomes (12 months after full recruitment):
  – HIV incidence in the cohort and
  – HIV diagnoses in the state
Figure 15: Enrolment of participants in EPIC-NSW, by study week, from 1 March to 31 December 2016

Table 1: Demographic data for EPIC-NSW participants enrolled between 1 March and 31 December 2016

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>No.</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sex</strong>*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>4337</td>
<td>99.2</td>
</tr>
<tr>
<td>Female</td>
<td>4</td>
<td>0.1</td>
</tr>
<tr>
<td>Transgender, male-to-female</td>
<td>22</td>
<td>0.5</td>
</tr>
<tr>
<td>Transgender, female-to-male</td>
<td>7</td>
<td>0.2</td>
</tr>
<tr>
<td>Other</td>
<td>2</td>
<td>0.1</td>
</tr>
<tr>
<td><strong>Sexual identity</strong>*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gay/Homosexual</td>
<td>4152</td>
<td>95.0</td>
</tr>
<tr>
<td>Bisexual</td>
<td>179</td>
<td>4.1</td>
</tr>
<tr>
<td>Heterosexual</td>
<td>14</td>
<td>0.3</td>
</tr>
<tr>
<td>Other</td>
<td>27</td>
<td>0.6</td>
</tr>
<tr>
<td><strong>Age at enrolment (years)</strong>#</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Median (IQR)</td>
<td>36 (29 to 45)</td>
<td>-</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt; 20</td>
<td>25</td>
<td>0.7</td>
</tr>
<tr>
<td>20-29</td>
<td>894</td>
<td>25.8</td>
</tr>
<tr>
<td>30-39</td>
<td>1221</td>
<td>35.3</td>
</tr>
<tr>
<td>40-49</td>
<td>818</td>
<td>23.6</td>
</tr>
<tr>
<td>≥50</td>
<td>505</td>
<td>14.6</td>
</tr>
</tbody>
</table>
Service innovations

Several clinics have > 500 men on PrEP

• Peer-led education pre-consent sessions

• Same-day PrEP

• Nurse led dispensing
  – Only required to be reviewed by a doctor once a year

• Innovation is required to relieve greatly increased workload
Facilitators of rapid recruitment

- Policymaker support, driven by ambitious targets
- Community education and mobilisation
- A highly functional primary health care system, at low cost to consumer
  - State-wide network of free-to-consumer sexual health centres
  - Subsidised visits to gay-friendly general practitioners
- An implementation study within a research framework
  - TDF/FTC was not licensed for prevention at study start and is free to consumer within the study
Will PrEP work in ending HIV?
• 23% decline in HIV diagnoses in NSW in the second half of 2016
PrEP: next steps in Australia

- Other states
  - EPIC continues to recruit, extended to ACT
  - Other large-scale roll-out studies in Victoria and Queensland
  - WA/SA have joined studies led by the Kirby Institute and the Burnett Institute

- National roll out requires federal government subsidy

- An application for funding for generic TDF/FTC as PrEP will be considered by the Pharmaceutical Benefits Advisory Committee in July 2017
The EPIC-NSW Team thanks the over 3600 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. The Kirby Institute is affiliated with the Faculty of Medicine, University of New South Wales and funded by the Australian Government of Health and Ageing. The views expressed in this presentation do not necessarily represent the position of the Australian Government.

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<thead>
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<tbody>
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<td>Catherine O'Connor</td>
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<td>Mark Bloch</td>
<td>Nathan Ryder</td>
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