Professor Rebecca Guy

The Kirby Institute
FUN CHALLENGES
TO DO
WITH FRIENDS
HIV notification rate, 2007-2016, by state/territory

Source: State and territory health authorities
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HIV diagnoses in men with male-to-male sex

Stable vs 64% increase, 2007-2016

Source: State and territory health authorities
**PrEP**

- Test and treat recommended globally
- Australia achieved high coverage and likely to be responsible for stable rates
- More needed.....
- PrEP daily tablet, used for treatment
- >99% efficacy if high adherence *(Proud study)*
- State funded programs
- **Cost-effective** *(Gray, Kirby Institute)*
- PBS listing 1 April 2018
What is the potential impact of PrEP?

- 90% coverage high-risk men, 3-year scale-up, 90% adherence, no reduction in condom use

![Graph showing new infections and diagnoses in gay men](image)
How fast does PrEP need to be rolled out?

- 90% coverage high-risk men, 90% adherence, no reduction in condom use
Do we need to worry about reduced condom use?

- 90% coverage high-risk men, 90% adherence, 3-year scale-up, reductions in condom use in the overall gay population
- If high coverage is reached quickly, probably not
Do we need to worry about reduced condom use?

- 50% coverage high-risk men, 90% adherence, 3-year scale-up, reductions condom use in the overall population
- If coverage is low or plateaus, maybe
PrEP in WA

There’s a new player in town.

PrEP is Here.
## Challenges in PrEP scale up

EPIC-NSW: Decline in recent infections by age

<table>
<thead>
<tr>
<th>Age</th>
<th>Before (n)</th>
<th>After (n)</th>
<th>Percentage decline</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-24</td>
<td>21</td>
<td>19</td>
<td><strong>9.5% (95%CI 1.2-30%)</strong></td>
</tr>
<tr>
<td>25-34</td>
<td>58</td>
<td>45</td>
<td>22% (95%CI 13-35%)</td>
</tr>
<tr>
<td>35-44</td>
<td>39</td>
<td>22</td>
<td>44% (95%CI 28-60%)</td>
</tr>
<tr>
<td>45+</td>
<td>31</td>
<td>16</td>
<td>48% (95%CI 30-67%)</td>
</tr>
</tbody>
</table>

Challenges in PrEP scale up
Challenges in PrEP scale up
EPIC-NSW Decline in recent infections by region of birth

<table>
<thead>
<tr>
<th>Region</th>
<th>Before (n)</th>
<th>After (n)</th>
<th>Percentage decline</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>78</td>
<td>40</td>
<td>49% (95% CI 37-60%)</td>
</tr>
<tr>
<td>High-income English-speaking country</td>
<td>12</td>
<td>8</td>
<td>33% (95% CI 9.9-65%)</td>
</tr>
<tr>
<td>Asia</td>
<td>42</td>
<td>33</td>
<td>21% (95% CI 10-37%)</td>
</tr>
<tr>
<td>All other countries</td>
<td>17</td>
<td>21</td>
<td>+24% (95% CI +6.8-50%)</td>
</tr>
</tbody>
</table>
Challenges in PrEP scale up

EPI-NSW Decline in recent infections by area of residence

<table>
<thead>
<tr>
<th></th>
<th>Diagnoses with evidence of recent infection</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Before (n)</td>
</tr>
<tr>
<td>Gay Sydney suburbs</td>
<td>56</td>
</tr>
<tr>
<td>Other Sydney</td>
<td>69</td>
</tr>
<tr>
<td>NSW (ex Sydney)</td>
<td>24</td>
</tr>
</tbody>
</table>
Gonorrhoea in urban heterosexuals
Gonorrhoea notification rate in females by region of residence

Source: States and Territories
Gonorrhoea notification rate in females by region of residence

- **Major Cities**
- **Inner and Outer Regional**
- **Remote and Very Remote**

- Stable in remote areas
- 99% increase in regional areas

Source: States and Territories
Gonorrhoea notification rate in females by region of residence

- **Major Cities**: 415% increase in last 10 years
- **Inner and Outer Regional**: 99% increase in regional
- **Remote and Very Remote**: Stable in remote

Source: States and Territories
Gonorrhoea notification rate, non-Indigenous females in major cities, by state and territory

Increases across all major cities

Largest increase of 600% in WA

Source: States and Territories
Gonorrhoea notification rates, females, Greater Melbourne

Age-standardised notification rate per 100,000 females*

- Green: 0 - 22
- Light Green: 23 - 42
- Yellow: 43 - 110
- Orange: 111 - 271
- Red: 272 - 451
- Dark Red: > 451

*Based on the national distribution of SA3 notification rates.

Source: States and Territories
Gonorrhoea notification rates, females, Greater Perth

*Based on the national distribution of SA3 notification rates.
Next steps

• Research into possible reasons for the increase
  • Changes in sexual behaviours – dating apps, practices?
  • Lower socio-economic areas?
  • Inadequate sexual health care access?

• WA study
  • WA Health, Curtin, Kirby, clinics, University of Western Australia
  • Genotyping – local clusters, bridging from MSM?
  • Indepth interviews - context
  • Case control study – risk factors

• Enhanced testing, treatment, contact tracing
Challenges for gonorrhea control

- Concerns about multi-drug resistance (MDR)

- Ceftriaxone last line therapy for gonorrhoea

- Can we preserve ceftriaxone use?
Challenges for gonorrhea control

- Reuse older antibiotics?
  - NHMRC project grant (CI-A Whiley), 2017-20.
  - Ten sexual health services and labs
  - Novel molecular assay – SpeeDx
  - Real-time results on ciprofloxacin susceptibility
  - Approved by the TGA late 2018
  - Outcomes: Reduced ceftriaxone use, acceptability

- Use less antibiotics?
  - People presenting to sexual health clinics as contacts?
  - Asymptomatic – don’t treat immediately, wait for lab test, reduce antibiotic use by 70%
  - Applicable to areas/people where low risk of loss to follow up
STIs in remote communities
Chlamydia notification rate

- Major cities: 2 times higher
- Inner and Outer Regional: 3 times higher
- Remote and Very Remote: 5 times higher

Source: Australian National Notifiable Diseases Surveillance System
Gonorrhoea notification rate

Source: Australian National Notifiable Diseases Surveillance System
Gonorrhoea notification rate by State/Territory in Aboriginal and Torres Strait Islander people

Source: Australian National Notifiable Diseases Surveillance System. Includes jurisdictions (Australian Capital Territory, Northern Territory, Queensland, South Australia, Victoria, Western Australia and Tasmania) in which Aboriginal and Torres Strait Islander status was reported for ≥50% of diagnoses for each year.
TTANGO

- 20% young Aboriginal people in remote areas not treated (Guy et al, Sexual Health)
- Mobility, difficulties recalling, staff turnover (Hengel, Sex Health. 2015 Aug;12(4):341-7)
- Trial of chlamydia and gonorrhoea POC tests in 12 remote Aboriginal medical services
- GeneXpert POC device
TTANGO2

- AHCWA, NHS, KAMSC, WA Health, Path West, Kirby, Flinders, SAHMRI, others.
- 27 remote Aboriginal health services - 15 in WA
- Impact, sustainability, acceptability, cost-effectiveness
- POC coupled with strategies to increase testing coverage
Challenge

How to achieve 60-80% screening coverage in the community?
Summary

- Surveillance data informs programs and research
- We have many tools available to control HIV, STIs, HCV
- Optimise and scale up use
  - Identify people who are missing out/gaps
  - Understand why – social science
  - Community led
  - Adapt/design, resource interventions
  - Monitor and evaluate
Acknowledgements

- Kirby Surveillance team
- State and Territory health departments
- Office of Health Protection, Department of Health
- EPIC-NSW
- PrEPIT-WA
- TTANGO2 team/investigators
- WA Health
- AHCWA
- SIREN
Thank you and enjoy the meeting