Sustained low prevalence of undiagnosed HIV among gay and bisexual men in Sydney, NSW coincident with increased testing and PrEP use: results from repeated bio-behavioural studies, 2014-18

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on behalf of the NSW HIV Prevention Partnership Project

Acknowledgments/disclosures

The COUNT study participants, particularly HIV-positive men

Caitlin Bambridge, peer recruiters (ACON)

Craig Cooper (Positive Life NSW)

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Kim Wilson and team (NRL)

Evelyn Lee, Tim Broady, Naveed Noor, Christopher Tumwine (CSRH)

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COUNT study reference group, NSW HIV Prevention Partnership Project

COUNT 2.0 study

- Measure the prevalence of undiagnosed HIV in a community-based sample of gay and bisexual men
    - Cross sectional bio-behavioural surveillance study
    - Questionnaire and oral fluid collection
    - Samples tested at the NRL
    - Matching of behavioural information and HIV status

- Describe the characteristics of men with undiagnosed HIV

- Assess change between 2014 & 2018

Participation

- Anonymous
  - No name or contact details
  - Test results not provided

- Confidential
  - Name, contact details, consent to receive test results

Challenges

- Difficulty recruiting because of
  - Limited benefit to PLHIV
  - Increased HIV testing & PrEP
  - Concern about 'wasting' study resources
- Large numbers needed due to low prevalence of undiagnosed HIV
- Complicated handling, labelling & storing of study materials

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SYDNEY

Sample profile – recruitment

	2014 (N=944)	2018 (N=890)	*p* value
Self-reported HIV status			ns
HIV-negative	82%	85%	
Untested/unknown	11%	10%	
HIV-positive	6%	5%	
Recruitment arm			<.001
Anonymous	27%	38%	
Confidential	73%	62%	
Recruitment location			<.001
Fair Day	47%	35%	
Social venue (bar)	42%	54%	
Sex venue	11%	12%	
% of eligible GCPS sample	*47%*	*51%*	

Sample profile – demographics

	2014 (N=944)	2018 (N=890)	*p* value
Mean age	34.4 yrs	35.2 yrs	ns
Born overseas	37%	42%	<.05
Asia	10%	12%	ns
Central/South America	2%	3%	<.01
Anglo-Australian	63%	57%	<.01
Gay-identified	89%	88%	ns
Resides in 'gay Sydney'	33%	33%	ns
University educated	58%	62%	ns
Full-time employed	80%	80%	ns

Sample profile – sex & drug use

	2014 (N=944)	2018 (N=890)	*p* value
Met men through mobile apps	46%	53%	.01
>10 male partners (last 6m)	22%	28%	<.01
Condomless sex (last 6m)			
Regular partners	40%	45%	<.05
Casual partners	24%	37%	<.001
Group sex (last 6m)	33%	38%	<.05
Party drugs for sex (last 6m)	25%	23%	ns
Any injecting (last 6m)	5%	3%	.01
Crystal use (last 6m)	14%	11%	ns
Ketamine use (last 6m)	7%	13%	<.001

Sample profile – testing, PEP/PrEP

	2014 (N=944)	2018 (N=890)	*p* value
HIV test (last 6m)	50%	56%	<.01
STI test (last 12m)	62%	69%	.001
STI diagnosis (last 12m)	14%	28%	<.001
PEP use (last 6m)	4%	5%	ns
PrEP use (last 6m)	2%	21%	<.001

60% of PrEP users participated anonymously (vs. 32% of others)

2018 sample was more:

Anonymous, venue-based, o'seas born,

sexually active, likely to be tested,

diagnosed with STIs, using PrEP

Prevalence results

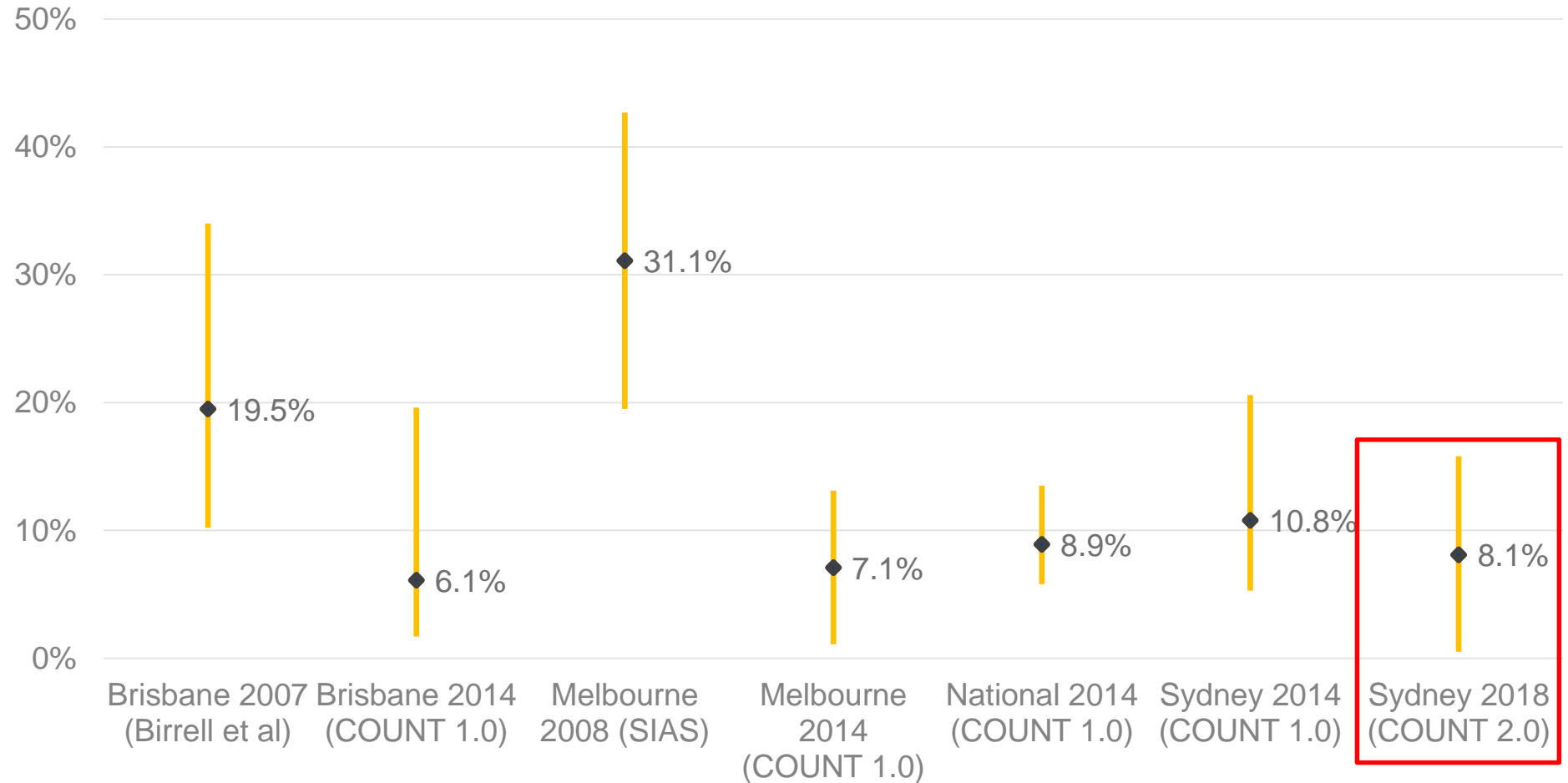| HIV status *confirmed by testing	2014 N=944 n (%)	95% CI for %	2018 N=890 n (%)	95% CI for %	*p* value
HIV-negative*	879 (93.1)	91.5–94.7	841 (94.5)	93.0–96.0	ns
HIV-positive*	65 (6.9)	5.3–8.5	49 (5.5)	4.0–7.0	ns
Previously diagnosed	58 (6.1)	4.6–7.7	45 (5.0)	3.6–6.5	ns
Previously undiagnosed	7 (0.7)	0.2–1.2	4 (0.4)	0.0–0.9	ns
Undiagnosed HIV as % of HIV-positive*	7/65 (10.8)	3.2–18.3	4/49 (8.1)	0.5–15.8	ns
HIV-negative/untested (self-reported)	7/886 (0.8)	0.2–1.4	4/845 (0.4)	0.0–0.9	ns

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Prevalence results (weighted by recruitment location)

HIV status *confirmed by testing	2014 N=944	95% CI for %	2018 N=890	95% CI for %	*p* value
HIV-negative*	93.9%	92.3–95.3	93.6%	91.9–95.2	ns
HIV-positive*	6.1%	4.6–7.6	6.4%	4.8–8.0	ns
Previously diagnosed	5.3%	3.8–6.7	6.1%	4.5–7.6	ns
Previously undiagnosed	0.8%	0.3–1.4	0.3%	0.0–0.7	ns
Undiagnosed HIV as % of HIV-positive*	13.8%	5.0–22.7	5.3%	0.5–11.1	ns
HIV-negative/untested (self-reported)	0.9%	0.3–1.5	0.4%	0.0–0.8	ns

Sydney 2018 result in context

Discussion

- Challenging to do COUNT in the context of increased HIV testing and PrEP use

- 2018 sample was more venue-based, sexually active, more tested, on PrEP

- Undiagnosed HIV fell from 10.8% to 8.1% (or 0.8% to 0.4%) between 2014 and 2018

- Findings suggest undiagnosed HIV in Sydney has fallen, as expected

- However:

  - Not possible to show statistically significant change (sample size)

  - Sampling variation may have affected the results (thus the re-analysis with weighted results)

  - Small no. of undiagnosed cases means it is difficult to identify risk factors with certainty