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Measuring undiagnosed HIV among gay men in Sydney over time: results from the COUNT study

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COUNT

- Field-based bio-behavioural surveillance among gay and bisexual men
- Sample collection for HIV testing, matching of participant characteristics and behavioural data

Presentation overview

- COUNT aims, methods and results
- Comparison of findings from COUNT 1.0 (2014) and COUNT 2.0 (2018)
- Challenges for bio-behavioural surveillance

Background

- Importance of measuring and reducing the prevalence of undiagnosed HIV infection
- NSW HIV Strategies
 - Scaling up HIV testing, treatment prevention
 - Improving monitoring and evaluation

NSW HIV Prevention Partnership Project

- NHMRC partnership project
- Additional Funding: NSW Health, UNSW
- Kirby, NSW Health, ACON, Positive Life NSW, CSRH, ASHM





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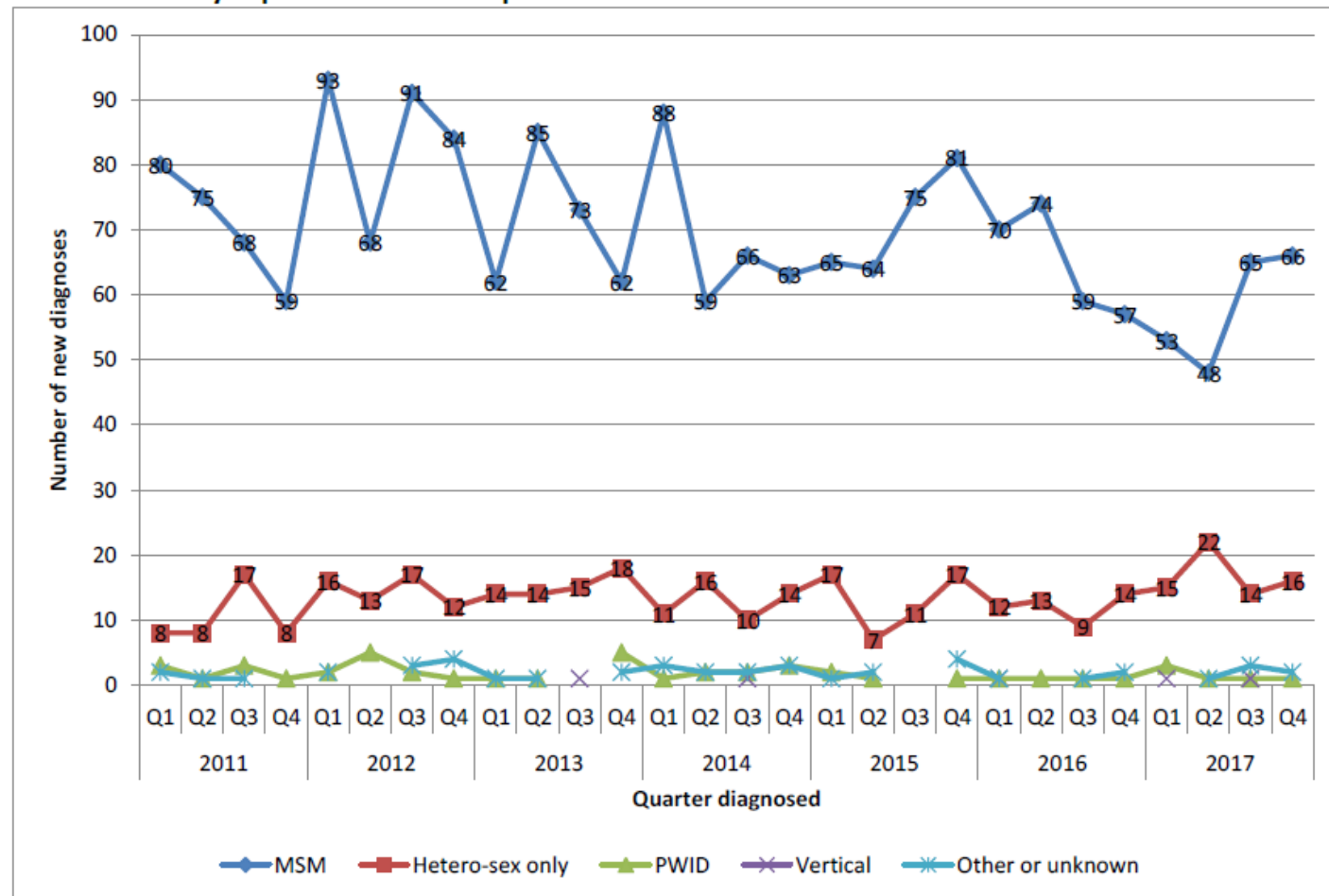


NSW HIV Prevention Partnership Project

- Monitoring and evaluation of the *NSW HIV Strategy 2016-2020*
- Funding to re-run COUNT study



Figure 2: Number of NSW residents notified with newly diagnosed HIV infection per quarter in 2011 to 2017 by reported HIV risk exposure



Data source: Notifiable Conditions Information Management System, Health Protection NSW, extracted 5 February 2018

COUNT study aims

- Measure prevalence of undiagnosed HIV in a community-based sample of gay and bisexual men
- Describe the characteristics of men with undiagnosed HIV

Methods

- Cross sectional bio-behavioural surveillance study
- Questionnaire and oral fluid collection
- Matching of behavioural information and HIV status



Recruitment

- COUNT run in conjunction with the Sydney Gay Community Periodic Survey
- Recruitment at SGLMG Fair Day, gay bars and sex on-premises venues
- ACON: recruitment, training, rostering of peer recruiters



Participation

- **Anonymous**
 - No name or contact details
 - Test results not provided
- **Confidential**
 - Name, contact details, consent to receive test results



Testing algorithm

- Samples tested by National Reference Laboratory (NRL)
- GACELISA (anti-HIV-1 IgG antibody capture enzyme linked immunosorbent assay)
- GACELISA repeated if reactive
- Western blot if reactive GACELISA

Results

- NRL results matched to consent form and SGCPS data by participant ID
- SMS message:
 - HIV-negative test results
 - Previously diagnosed HIV-positive men
- Phone calls to undiagnosed men, men with indeterminate results
 - Linked to clinic for confirmatory testing

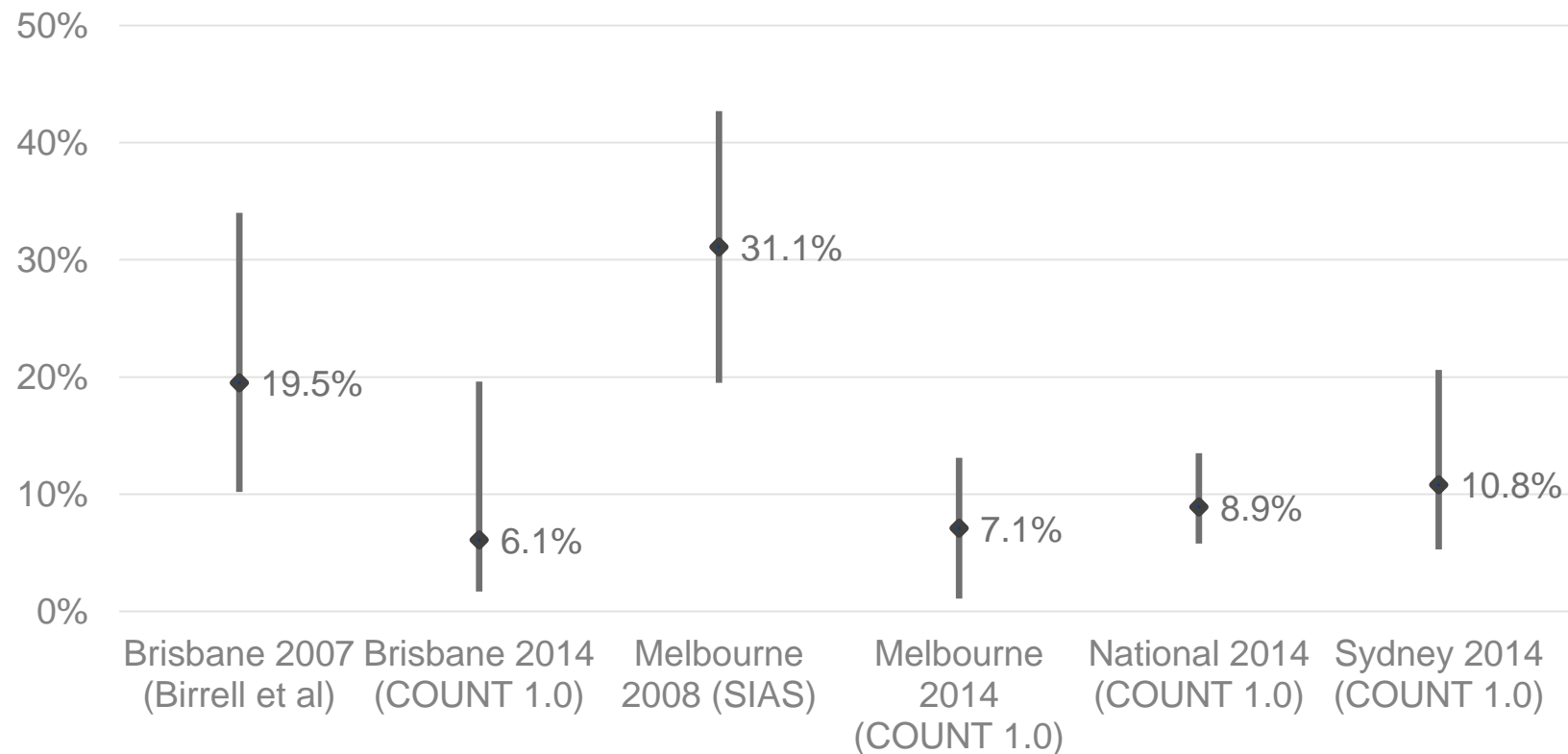
Challenges



Challenges

- Difficulties recruiting
- Refusals
 - Increased HIV testing
 - PrEP
 - Concern about 'wasting' study resources
- Large numbers needed due to low prevalence of HIV and undiagnosed HIV
- Complicated handling, labelling & storing study materials in the field

Undiagnosed HIV, Australian GBM



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)	<i>p</i> 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

Sample was more:

Anonymous, venue-based, o'seas born, sexually active,
likely to be tested, diagnosed with STIs, using PrEP

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

Prevalence results

HIV status *confirmed by testing	2014 N=944 n (%)	95% CI for %	2018 N=890 n (%)	95% CI for %	<i>p</i> value
HIV-negative*	879 (93.1)	91.5–94.7	841 (94.5)	93.0–96.0	ns

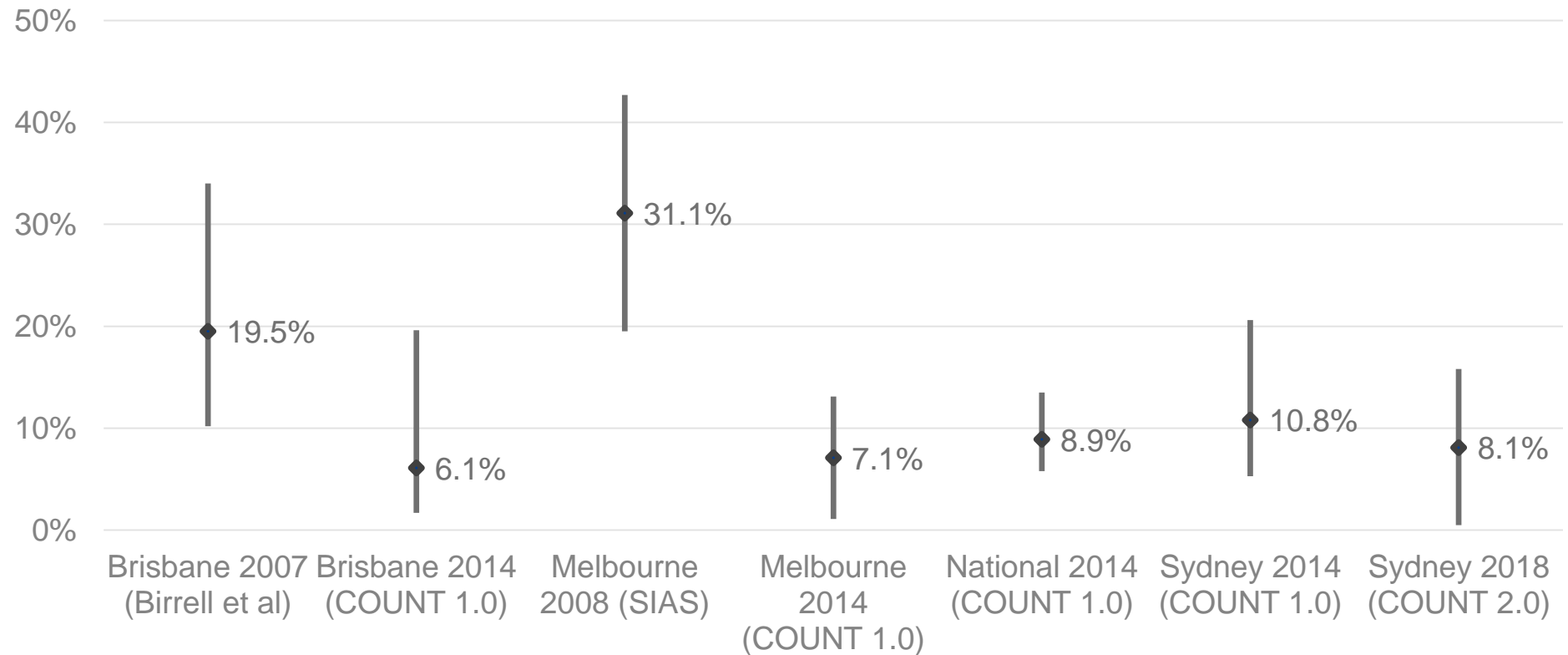
Prevalence results

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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

Prevalence results

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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)	7/885 (0.8)	0.2–1.4	4/845 (0.4)	0.0–0.9	ns

Sydney 2018 result in context



Previously undiagnosed cases

- 2 anonymous, 2 confidential
- 1 from Fair Day, 3 from bars
- Aged 28-37
- All gay-identified, socially engaged
- 3 Anglo-Australian, 1 South American (3 overseas born)
- 2 reported condomless sex with regular & casual partners in last 6m (2 did not)
- All reported group sex (last 6m)
- 1 reported monthly party drugs for sex (GHB & ketamine) & weekly injecting
- 1 reported monthly crystal use
- All reported recent HIV testing (2-4 tests in last 6m)
- 2 reported STI testing & syphilis diagnoses (last 12m)
- No PEP use last 6m
- 1 reported PrEP use in last 6m

Discussion

- Challenging to do COUNT in the context of increased HIV testing and PrEP use
 - Slightly reduced participation of diagnosed HIV-positive men affects % undiagnosed
 - 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 has fallen, as expected
- However:
 - Not possible to show statistically significant change (sample size)
 - Sampling variation may have affected the results (adjustment/weighting may be possible)
 - Small no. of undiagnosed cases means it is difficult to identify risk factors with certainty

Thanks to

COUNT study participants

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Jason Asselin, Mark Stoové (Burnet Institute)

COUNT study reference group, NSW HIV Prevention Partnership Project

