Kirby **I**nstitute

Advanced HIV diagnoses among gay and bisexual men in Australia 2007-2016

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Phillip Keen | 24th September 2018, Australasian HIV Conference, Sydney

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Disclosure of interest

- I have no conflicts of interests to declare

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Definitions

- **Advanced** HIV infection (CD4+ <200 cells/μl)
    - ~8 years following seroconversion (*Lodi, CID, 2011*)

- **Late** HIV diagnoses (CD4+ = 200-349 cells/μl)
    - ~4 years following seroconversion (*Lodi, CID, 2011*)

- Excludes cases with evidence of primary HIV infection (<12 months) and seroconversion illness

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Why focus on gay and bisexual men (GBM)?

Advanced HIV diagnoses by exposure category
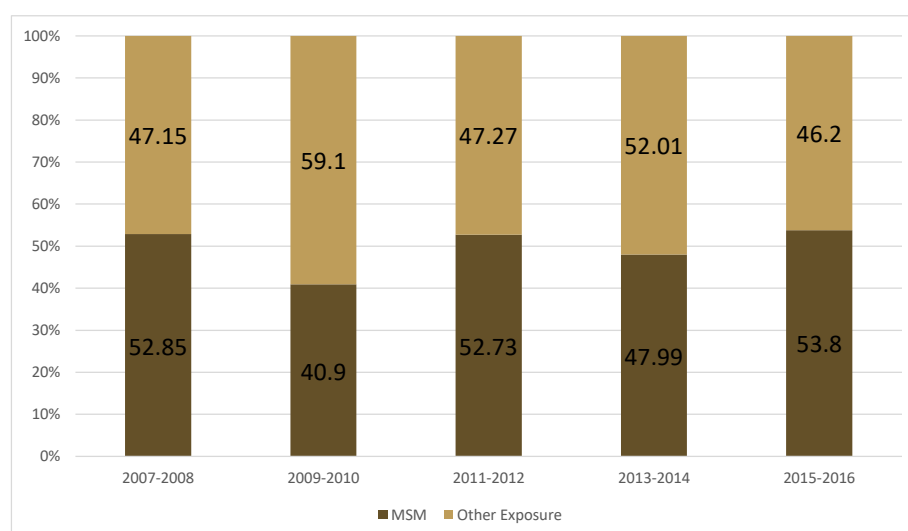
~50% of advanced diagnoses are among GBM

Late and Advanced HIV Diagnoses - Impacts

- Strongly linked to increased mortality and morbidity, and reduced life expectancy *(Mocroft, PLOS 2013; Nakagawa, AIDS, 2012; Sabin, Stocle, HIV Medicine 2012)*

- Higher costs to health systems *(NAT, Commissioning HIV Testing Services in England 2014)*

- People with undiagnosed HIV infections may unwittingly transmit to others

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Barriers to testing

- Low perceived risk of infection *(Opstal, AIDS and Behav. 2018; Gianacas, Kirby Institute 2013)*

- Fear of an HIV diagnosis *(Opstal, AIDS and Behav. 2018; Gianacas, Kirby Institute, 2013)*

- Missed clinical opportunities for HIV diagnosis *(Opstal, AIDS and Behav. 2018; Mallitt 2015)*

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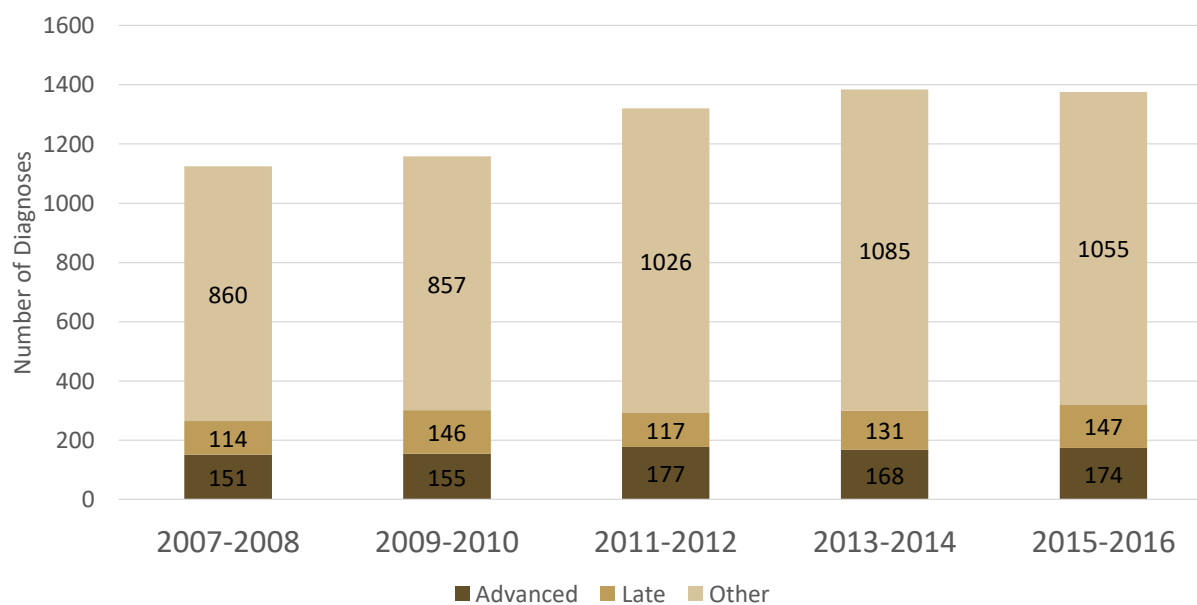## Methods

- National HIV surveillance data 2007-2016
  - Gay and bisexual men (MSM)

- A multivariate logistic regression model was used to identify the factors associated with advanced diagnoses (<200 CD4+ cells/µl)

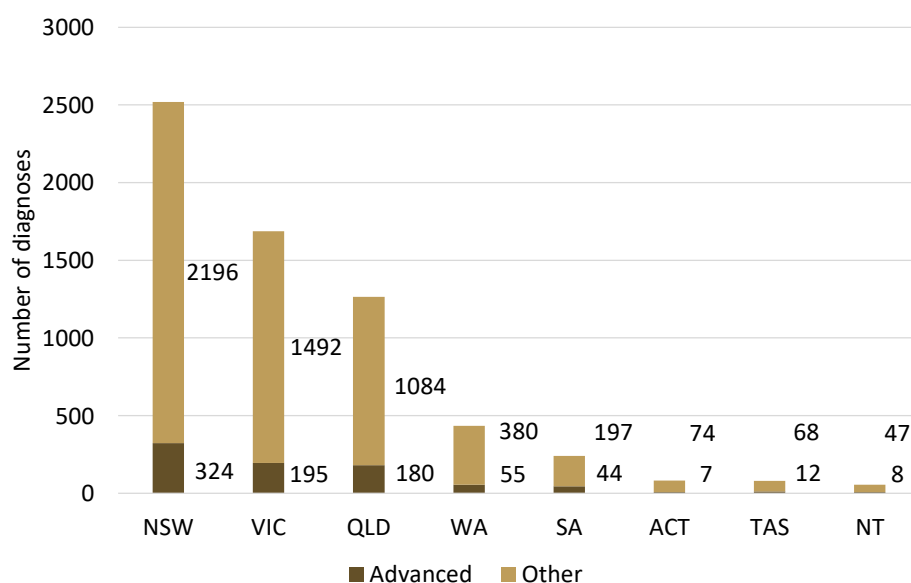- Population-attributable risk analysis of contributions to advanced diagnoses
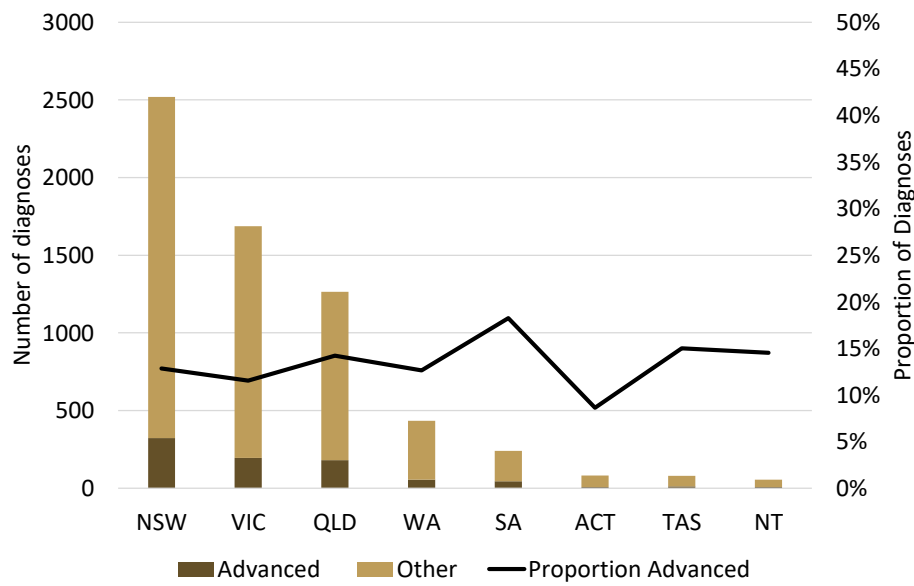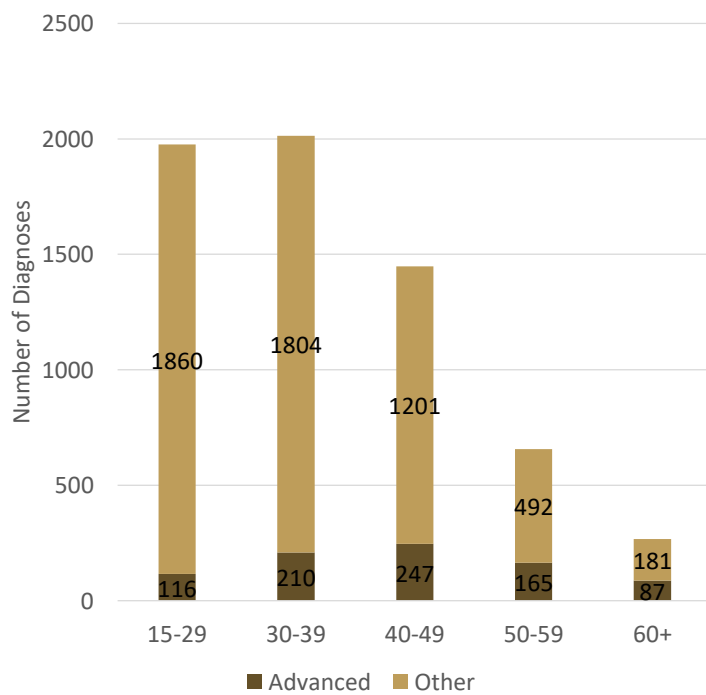
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Year of diagnosis

No significant trend

Stacked bar chart — Number of Diagnoses by year of diagnosis

Year	Advanced	Late	Other
2007-2008	151	114	860
2009-2010	155	146	857
2011-2012	177	117	1026
2013-2014	168	131	1085
2015-2016	174	147	1055

Legend: Advanced, Late, Other

State/Territory

Bar chart — Number of diagnoses by State/Territory

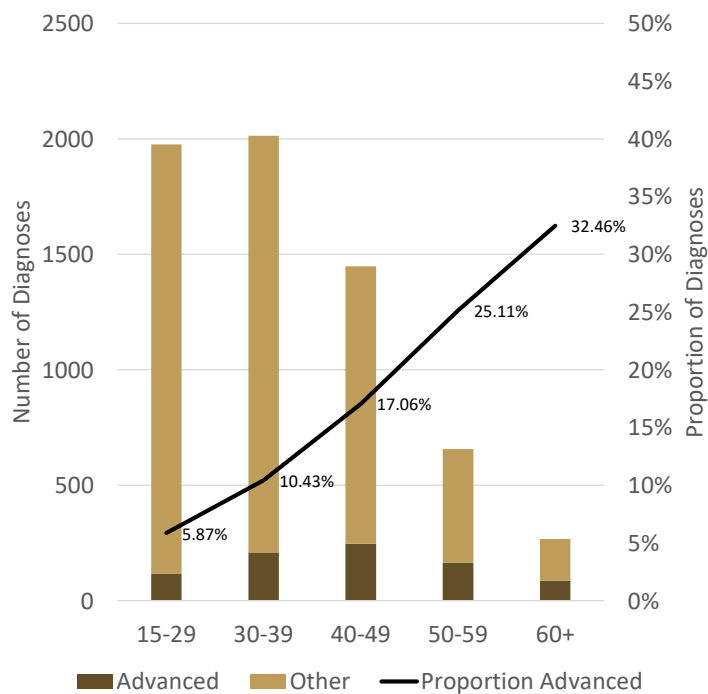| State	Advanced	Other
NSW	324	2196
VIC	195	1492
QLD	180	1084
WA	55	380
SA	44	197
ACT	7	74
TAS	12	68
NT	8	47

Legend: Advanced, Other

State/Territory

Not significant in multivariate analysis

Age

Age

Advanced HIV diagnoses by age
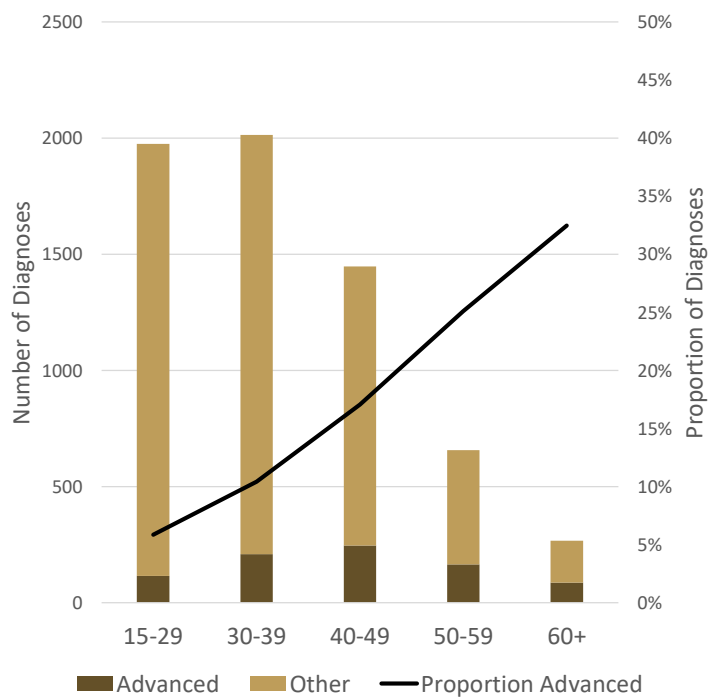
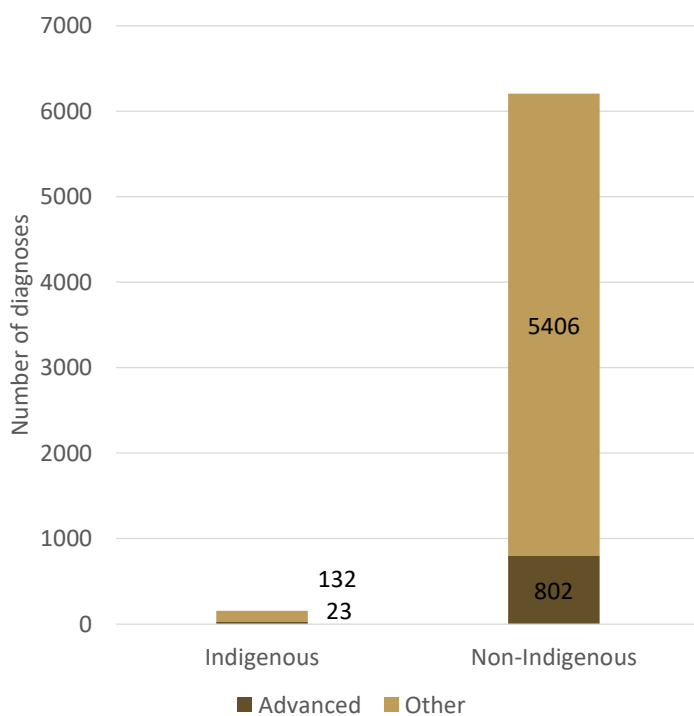| Age	aORs
30-39	1.89
40-49	3.49
50-59	5.78
60+	8.43

Indigenous Status
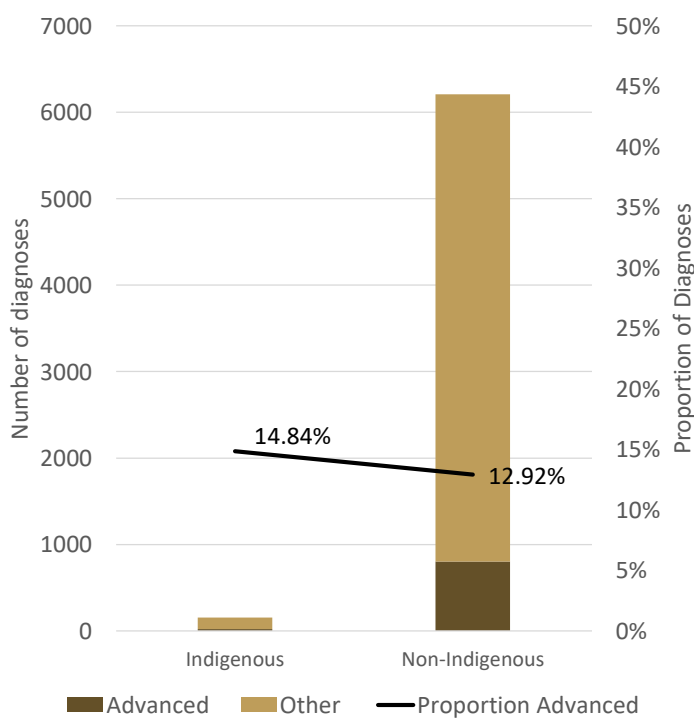
Indigenous Status

Indigenous status	aOR
Indigenous	1.17

Not significant in multivariate analysis

HIV Exposure

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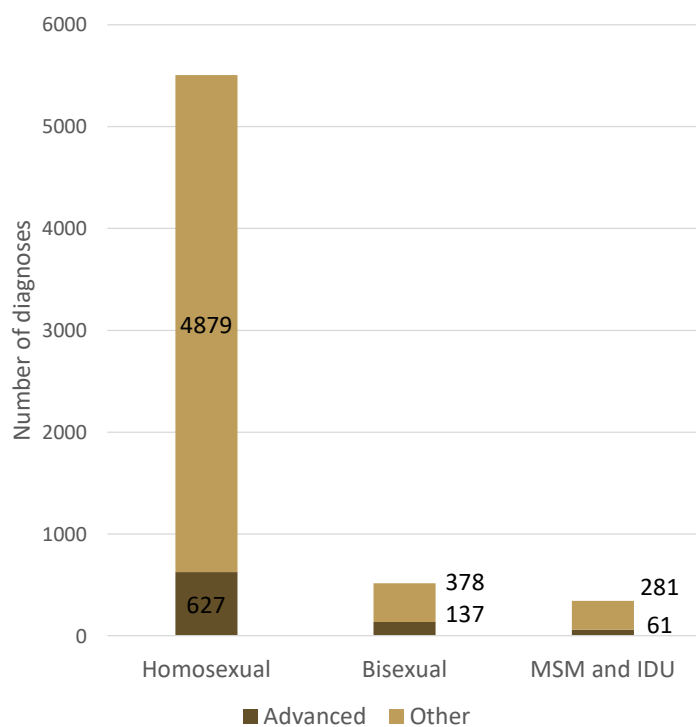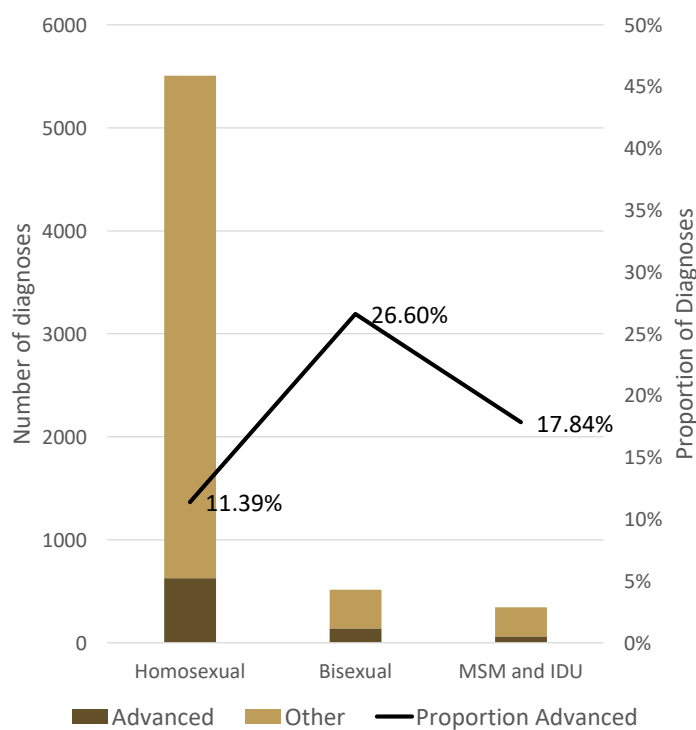
HIV Exposure

Exposure	aORs
Bisexual	2.41
MSM + IDU	1.76

Region of birth
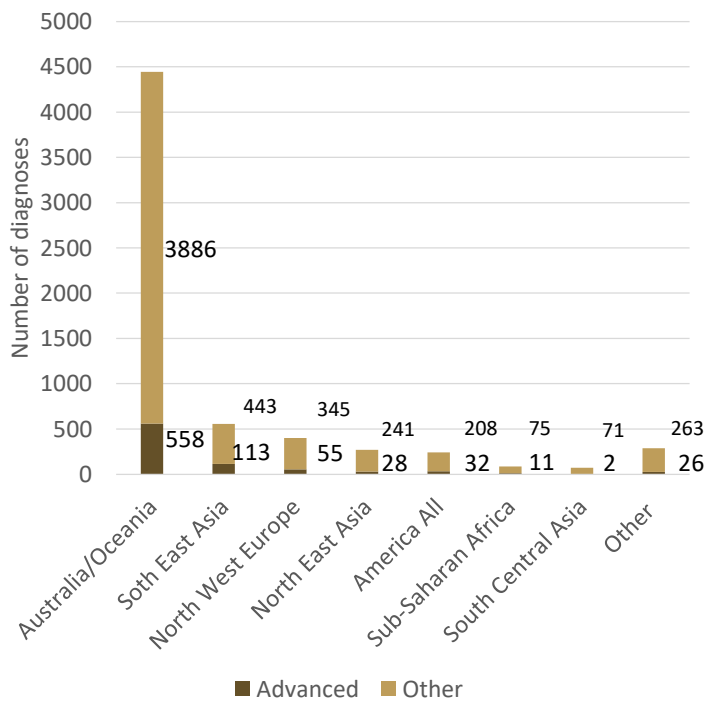
Region of birth
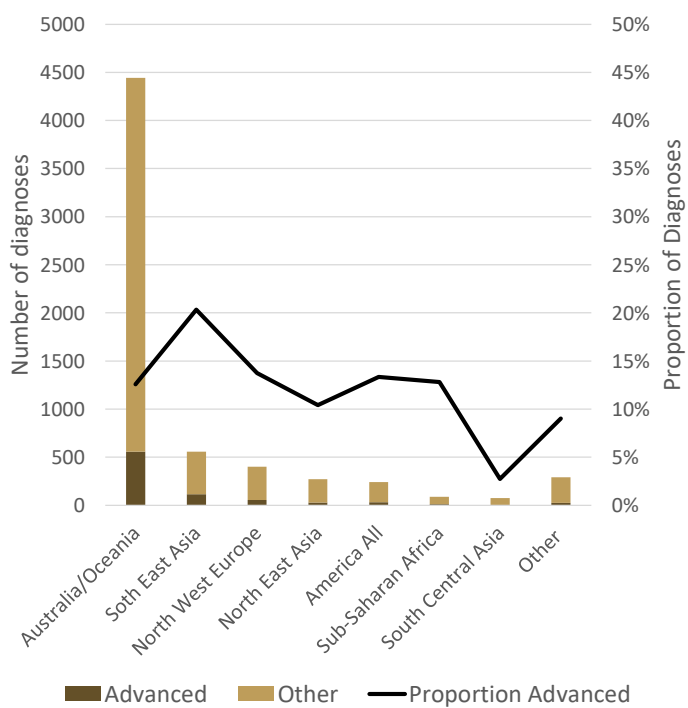
Region	aORs
SE Asia	2.63
NE Asia	1.35
SC Asia	0.20

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Population-attributable risk

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Results – Population-attributable risk

- 70% of advanced HIV diagnoses were associated with factors significant in the multivariate analysis

  - Age

  - Exposure

  - Region of birth

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Conclusions (1)

- Advanced HIV diagnoses among GBM are associated with a small number of factors:
    - Age: 30-39, 40-49, 50-59, 60+
    - Exposure: Bisexual, MSM + IDU
    - Region of birth: South East Asia and North East Asia
- Men with these characteristics account for most advanced infections among GBM

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Conclusions (2)

- Year of diagnosis was not associated with advanced diagnoses; advanced diagnoses are stable and persistent.

- Testing strategies should tailored to reach the sub-populations most at risk of advanced HIV diagnosis.

- Greater attention to clinical opportunities for HIV diagnosis; clinicians *offering* HIV testing.

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Limitations

- State/territory of residence was based on the residence of a person at the time of testing, and does not reflect where HIV was acquired.

- Prior to 2014/15 data on the date of CD4+ count and clinical status at diagnosis are incomplete in the National HIV Registry.

- Bisexual exposure may be under-reported.

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Results - Multivariate analysis

Factor	Advanced HIV Diagnosis		
	Adjusted Odds Ratio	95% CI	p-value
Age			
15-29	1	-	-
30-39	**1.89**	**1.49-2.40**	**<0.001**
40-49	**3.49**	**2.74-4.43**	**<0.001**
50-59	**5.78**	**4.43-7.55**	**<0.001**
60+	**8.43**	**6.05-11.74**	**<0.001**
HIV exposure			
Homosexual	1	-	-
Bisexual	**2.41**	**1.92-3.01**	**<0.001**
MSM + IDU	**1.76**	**1.30-2.38**	**<0.001**
Region of birth			
Australia/Oceania	1	-	-
South East Asia	**2.63**	**2.07-3.33**	**<0.001**
North West Europe	0.91	0.76-1.25	0.562
Americas All	1.36	0.92-2.02	0.127
North East Asia	**1.35**	**0.89-2.05**	**0.025**
South Central Asia	**0.20**	**0.05-0.82**	**0.025**
Sub-Saharan Africa	1.03	0.53-1.99	0.933
Others	0.66	0.44-1.01	0.058