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HEALTH SCIENCES

# Changes in condom use with casual partners 2002-2014 in community-based surveys of NZ gay and bisexual men

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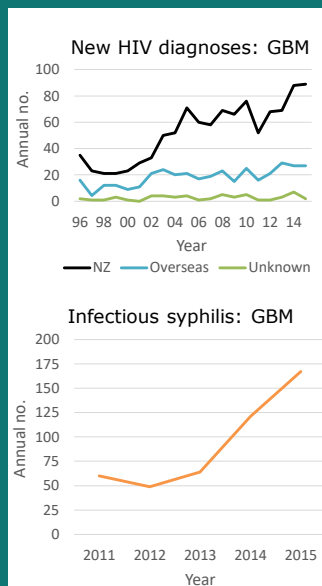AUCKLAND
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# Background

- Rise in diagnoses of HIV, syphilis, rectal gonorrhea in NZ

- Behaviours by age class, sexual activity class influence spread

- Social marketing segmentation

- Understand responses of GBM to interventions



New HIV diagnoses: GBM
Annual no.
NZ — Overseas — Unknown
Year: 96 98 00 02 04 06 08 10 12 14

Infectious syphilis: GBM
Annual no.
Year: 2011 2012 2013 2014 2015

# Slide 1

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### Epidemiological principles

$R_T = BcD$
- force of infection uneven

Incidence affected by variations within community & over time in:
- prevalence & susceptibility
- contact rates
- risk reduction
- mixing

# Slide 2

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## Background



sexual activity →

| Young, high | Older, high |
| Young, low | Older, low |

age →

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- Social marketing segmentation
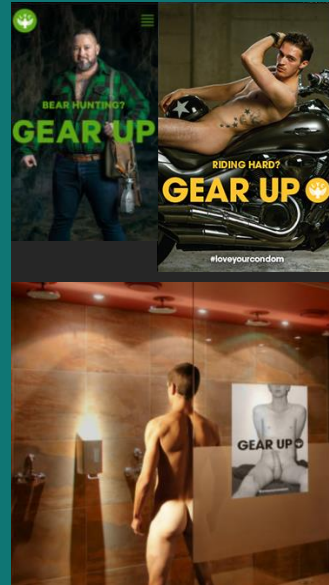
- Understand responses of GBM to interventions
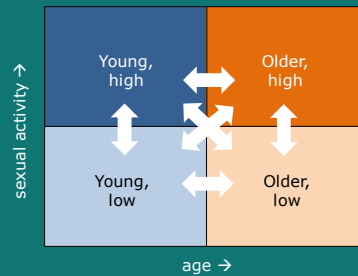
Modelling the HIV epidemic among MSM in the United Kingdom: quantifying the contributions to HIV transmission to better inform prevention initiatives

Narat Punyacharoensin[a], William John Edmunds[a], Daniela De Angelis[b], Valerie Delpech[c], Graham Hart[d], Jonathan Elford[e], Alison Brown[c], Noel Gill[c] and Richard G. White[a]

Punyacharoensin et al. AIDS 2015

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# Background

- Rise in diagnoses of HIV, syphilis, rectal gonorrhea in NZ

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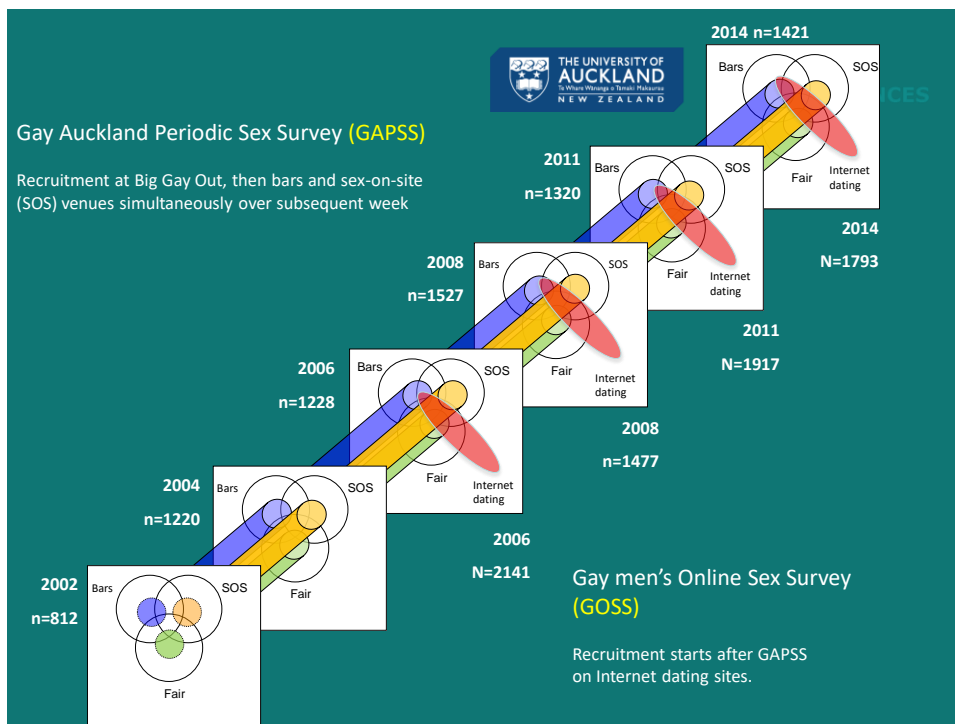- Understand responses of GBM to interventions

# Aims

Stage 1:

- Describe GBM taking part in community surveys in Auckland NZ according to age and sexual activity class

- Examine trends 2002-2014

Stage 2:

- Analyse mixing patterns

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# Measures (all <6 months)

- Casual sex (c), Anal intercourse (AI), Condomless anal intercourse (CAI)

- Age classes (<30 years; 30+)

- Sexual activity classes (up to 20; >20)

- Restricted sample to GBM last tested negative or untested

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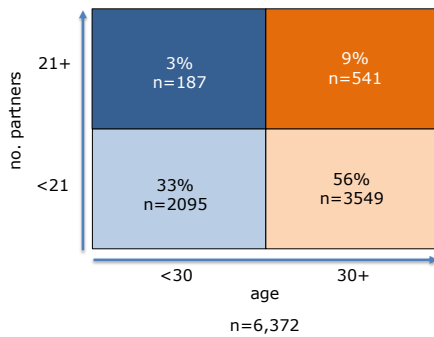**MEDICAL AND HEALTH SCIENCES**

# Sample characteristics

- n=6,372

- 85% gay identified, 11% bisexual

- 73% European, 9% Maori, 4% Pacific, 9% Asian

- 1.3% undiagnosed HIV in 2011
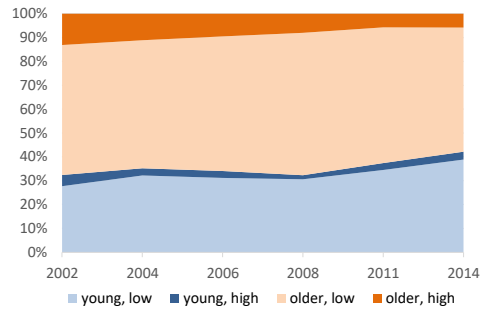  (Saxton et al. BMC Public Health 2012)

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# Age and activity class

Sample matrix by
age and activity class

Trends over time



n=6,372

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# Trends in casual sex

Casual sex <6 months

- declining trend overall



young, low activity        young, high activity
older, low activity        older, high activity

Base = total sample
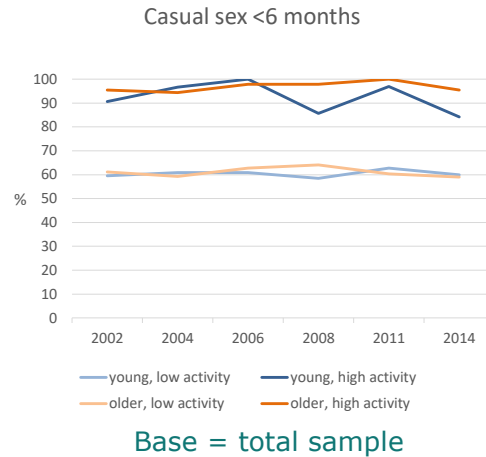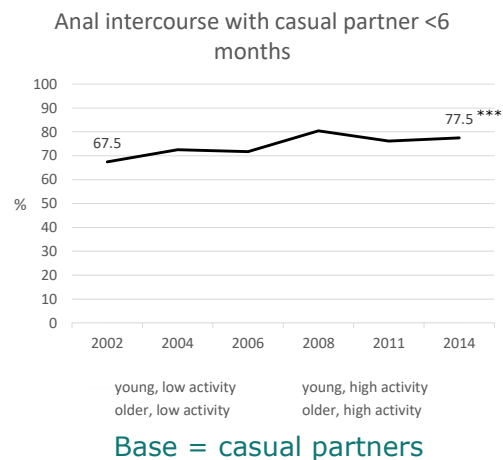
# Trends in casual sex

- declining trend overall

- more likely in high vs low activity segments
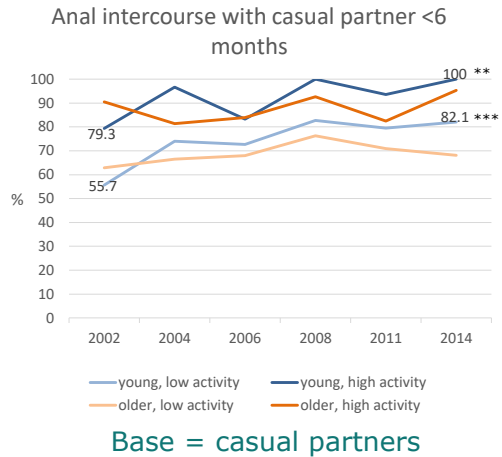
- no change for any segment

Casual sex <6 months



Base = total sample

# Trends in anal intercourse

- ↑ trend overall

Anal intercourse with casual partner <6 months



Base = casual partners

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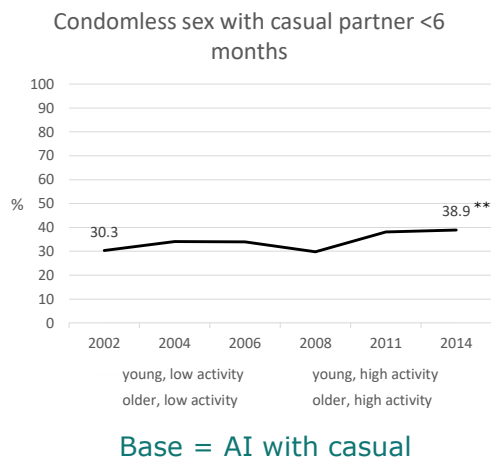# Trends in anal intercourse

- ↑ trend overall

- More likely in high activity segments

- ↑ trend in younger segments only

Anal intercourse with casual partner <6 months



Base = casual partners

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# Trends in condomless anal sex

- ↑ trend overall

Condomless sex with casual partner <6 months



Base = AI with casual

## Trends in condomless anal sex

- ↑ trend overall

Condomless sex with casual partner <6 months



Base = AI with casual

## Trends in condomless anal sex

- ↑ trend overall

Condomless sex with casual partner <6 months
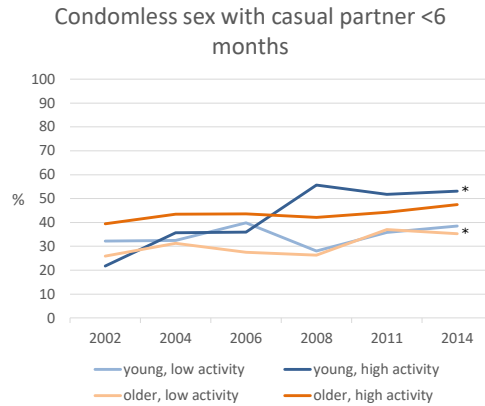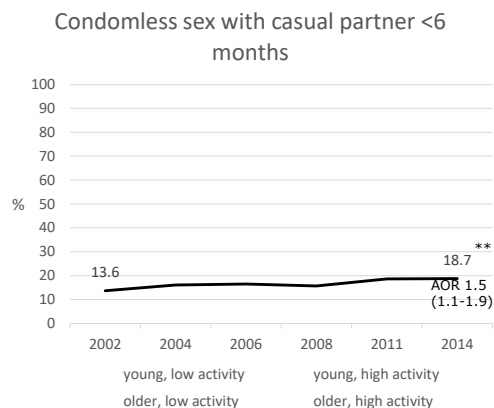


Base = total sample

# Trends in condomless anal sex

Condomless sex with casual partner <6 months

- ↑ trend overall

- More likely in high vs low activity segments

- ↑ trend in all but older, high segment

Base = total sample

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# Trends in condomless anal sex

Condomless sex with casual partner <6 months
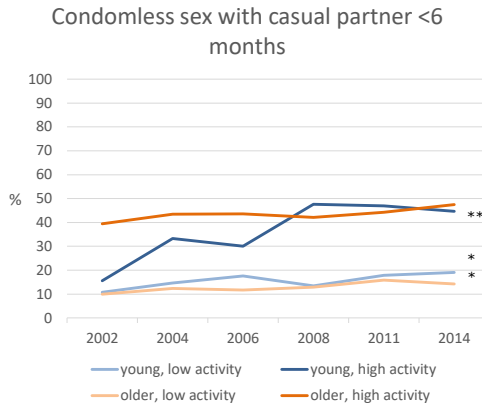
- ↑ trend overall

- More likely in high vs low activity segments

- ↑ trend in all but older, high segment

- AOR significant for younger segment only

AOR 4.5
(1.4-14.3)

44.7

19.0

AOR 2.0
(1.2-3.4)

15.6

10.7

Base = total sample

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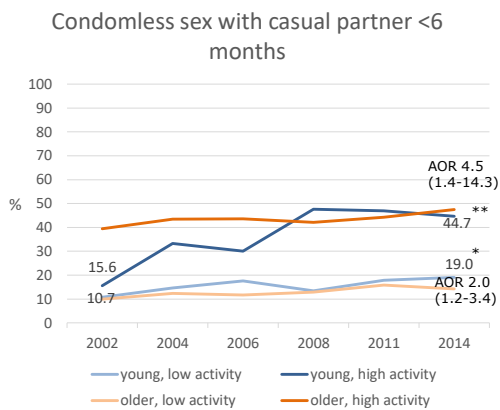
# Strengths and limitations

Strengths

- Large and diverse community sample of NZ GBM

- Consistent measures

- Monitor changes over time

Limitations

- Not generaliseable to all GBM

- Repeat analysis for other risk reduction approaches

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# Conclusions

- Highest activity segments most likely to report CAIc

- Younger GBM report greater overall increase in CAIc, regardless of sexual activity class

- Greatest among young, high activity segment

- Changes in CAIc in small but strategically important groups may have large effects on transmission

- Social research needed to understand cultural milieu

- Measure mixing behaviours to better understand HIV and STI dispersion and concentration

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## Acknowledgements

- Gay and bisexual participants and venues

**Team**
- Tony Hughes, Nigel Dickson, Adrian Ludlam

**Funding**
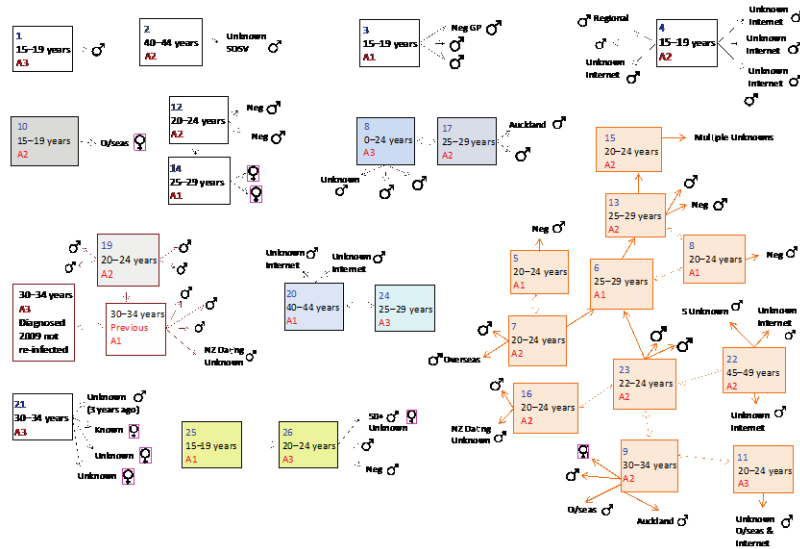- Ministry of Health
- NZAF Fellowship

**Institutions**
- University of Auckland
- University of Otago
- New Zealand AIDS Foundation

**ASHM Conference organisers and sponsors**

*Images courtesy of NZAF*

**Contact tracing diagram of syphilis cases in Christchurch Sexual Health Clinic 2012**



Coughlan et al. Sexual Health 2015