

Sexually transmitted infection in Australia:

Recent epidemiological findings

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August 2012

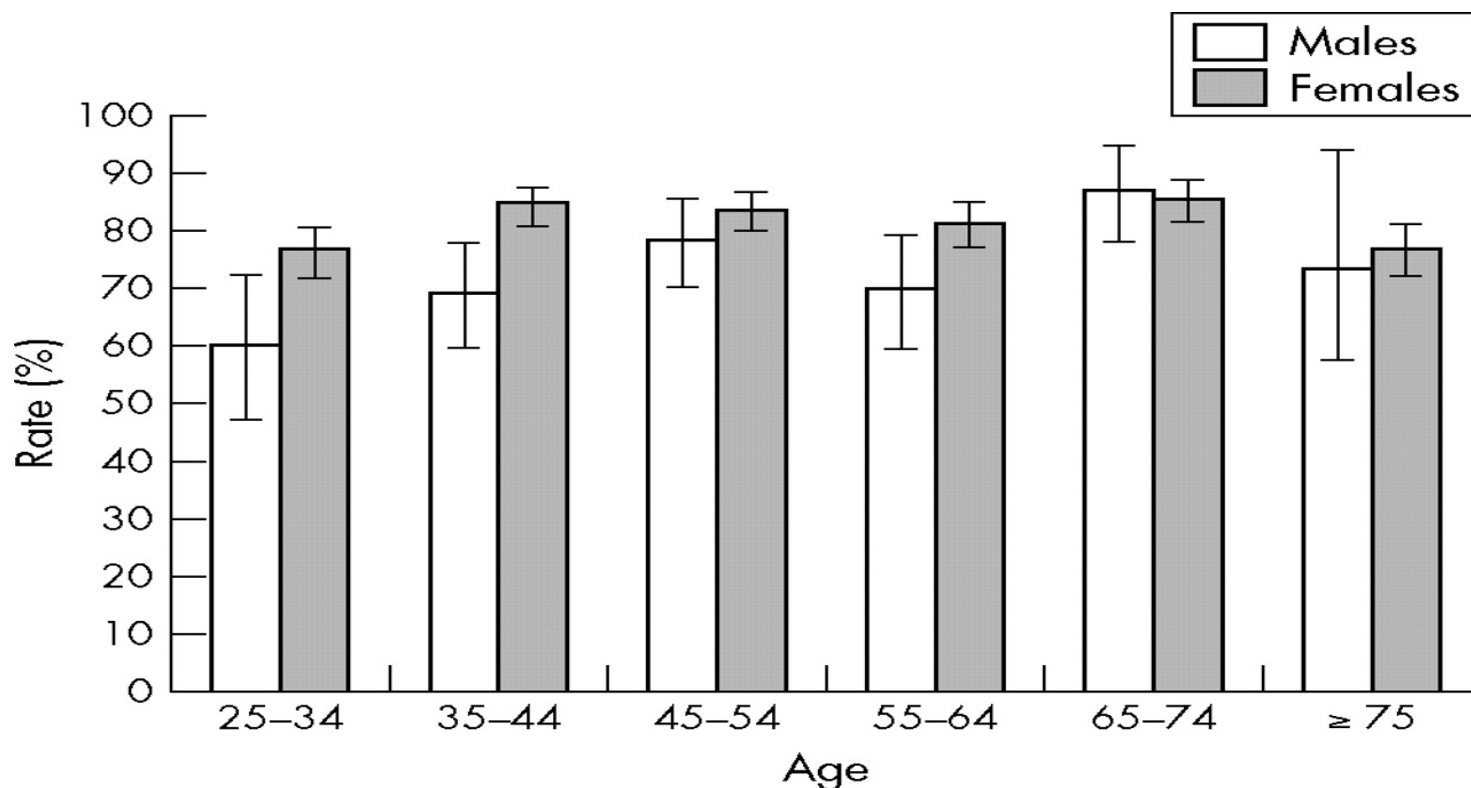
The epidemiological questions

- How much infection is there?
- How much disease is there?
- Which populations are affected?
- What is changing over time?
- Are the known interventions in place?
- Are they working?

Sexually transmitted infection in Australia

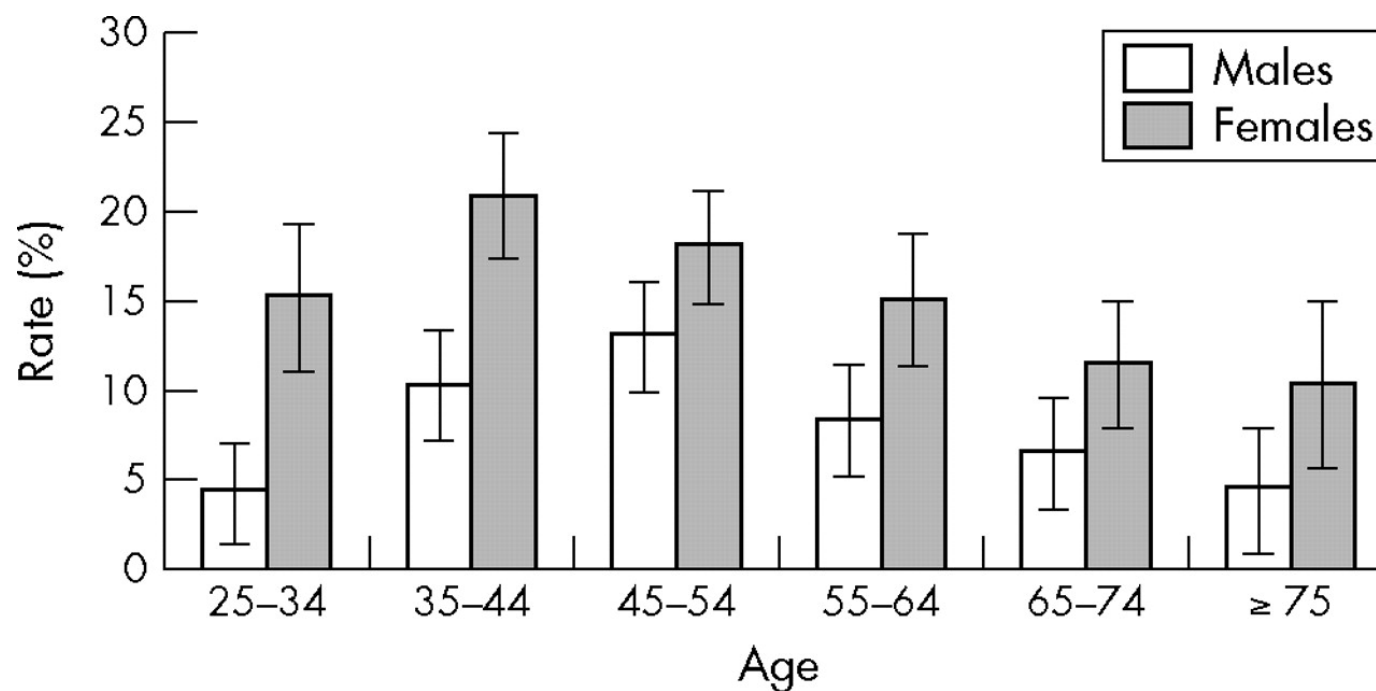
STI	Notifications 2010	New infections	Number living with infection	Current trends	Populations at risk
HIV	1 043	650	21 000	Flat	gay men African born
Gonorrhoea	7637			increase	gay men Remote Aboriginal
Chlamydia	74 305			increase	Young people
Infectious syphilis	1 098			Increase decrease	gay men Remote Aboriginal
Donovanosis	1			decrease	Remote Aboriginal
Trichomonas	2886 NT only				Remote women
HPV	Not notifiable			Decrease	Young people
HSV-1, 2	Not notifiable			Unknown	Young people
Mycoplasma Genitalium	Not notifiable			Unknown	

Seroprevalence of HSV-1 in Australia



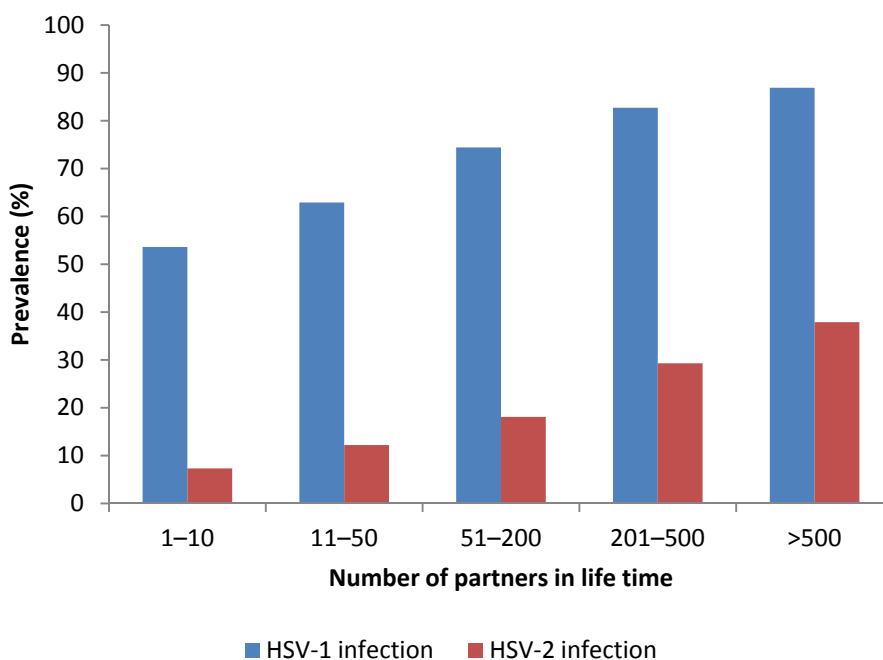
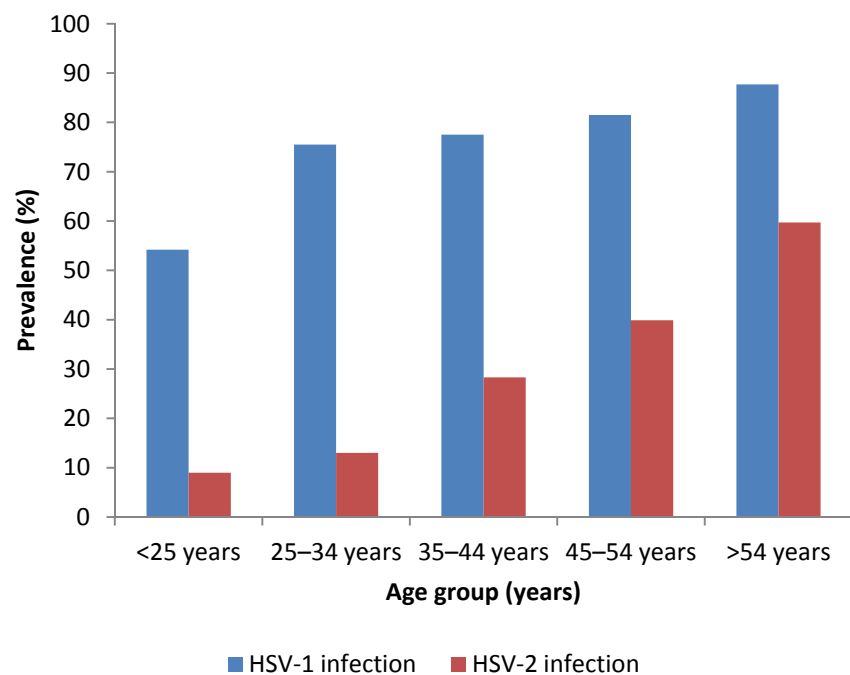
Cunningham AL, Taylor R, Taylor J, Marks C, Shaw J, Mindel A. Prevalence of infection with herpes simplex virus types 1 and 2 in Australia: a nationwide population based survey. *Sex Transm Infect.* 2006 Apr;82(2):164-8.

Seroprevalence of HSV-2 in Australia

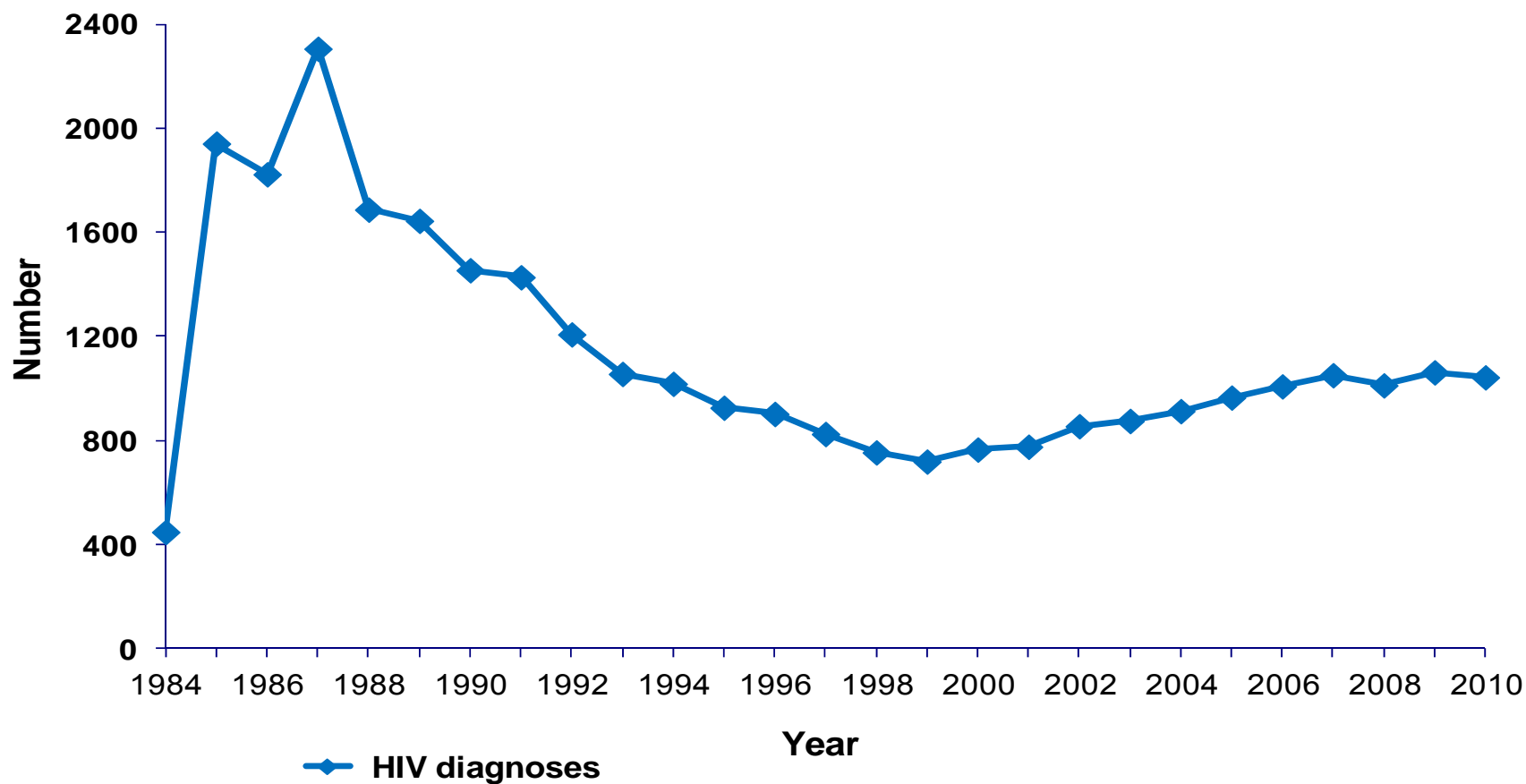


Cunningham AL, Taylor R, Taylor J, Marks C, Shaw J, Mindel A. Prevalence of infection with herpes simplex virus types 1 and 2 in Australia: a nationwide population based survey. *Sex Transm Infect.* 2006 Apr;82(2):164-8.

Risk factors for HSV in HIV negative gay men, Sydney

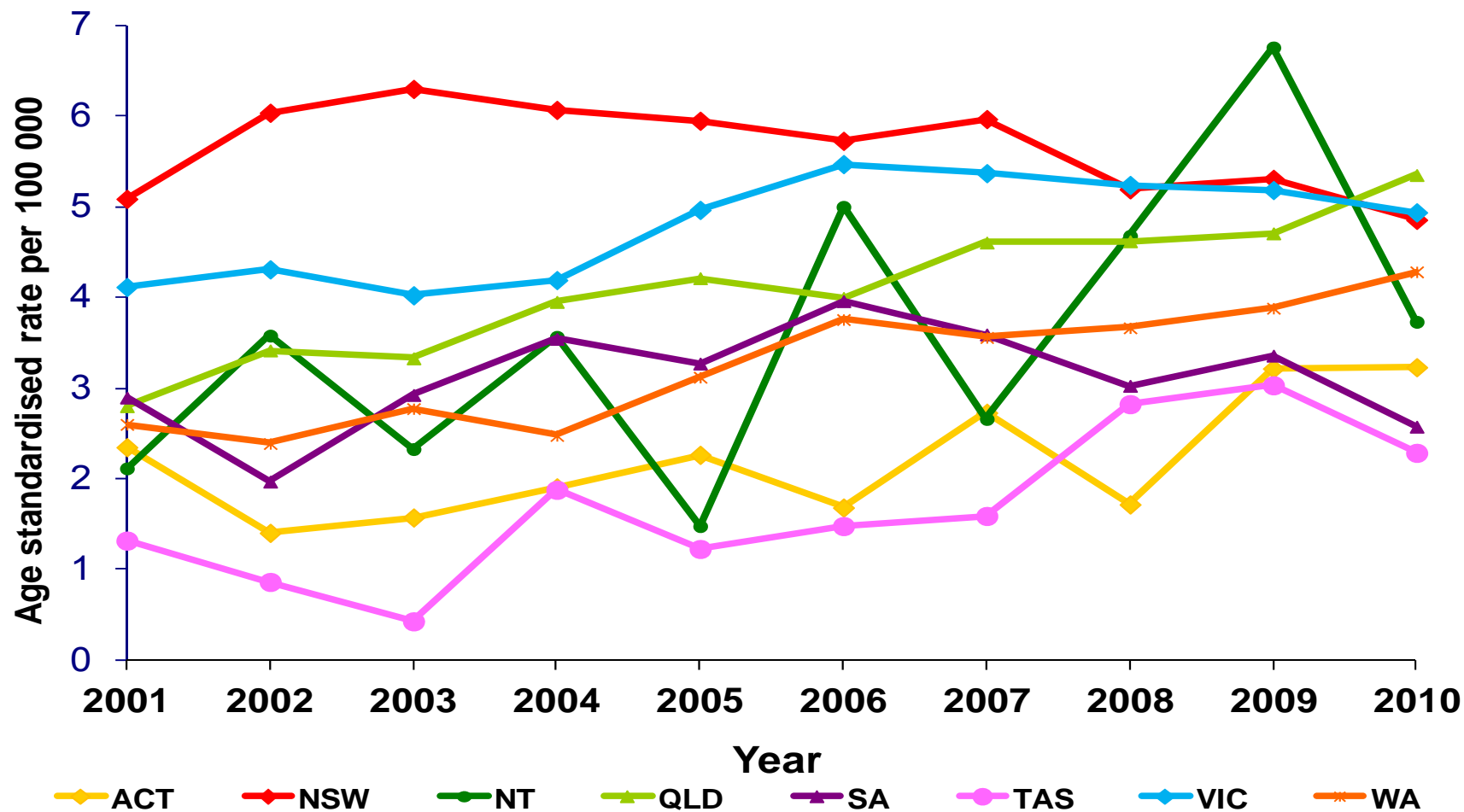


HIV Notifications in Australia



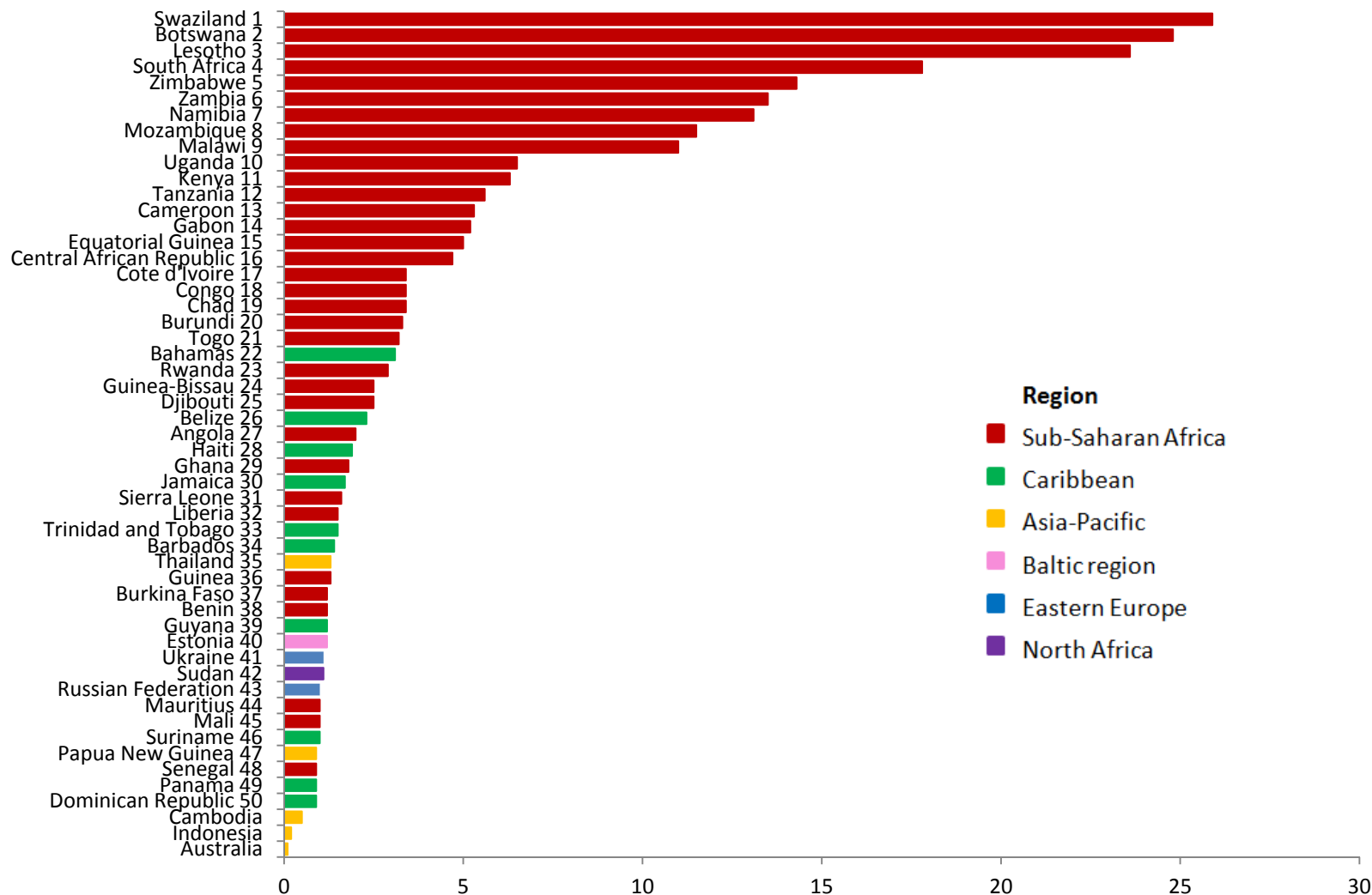
Source: State and Territory health authorities

HIV Newly diagnosed infection in Australia

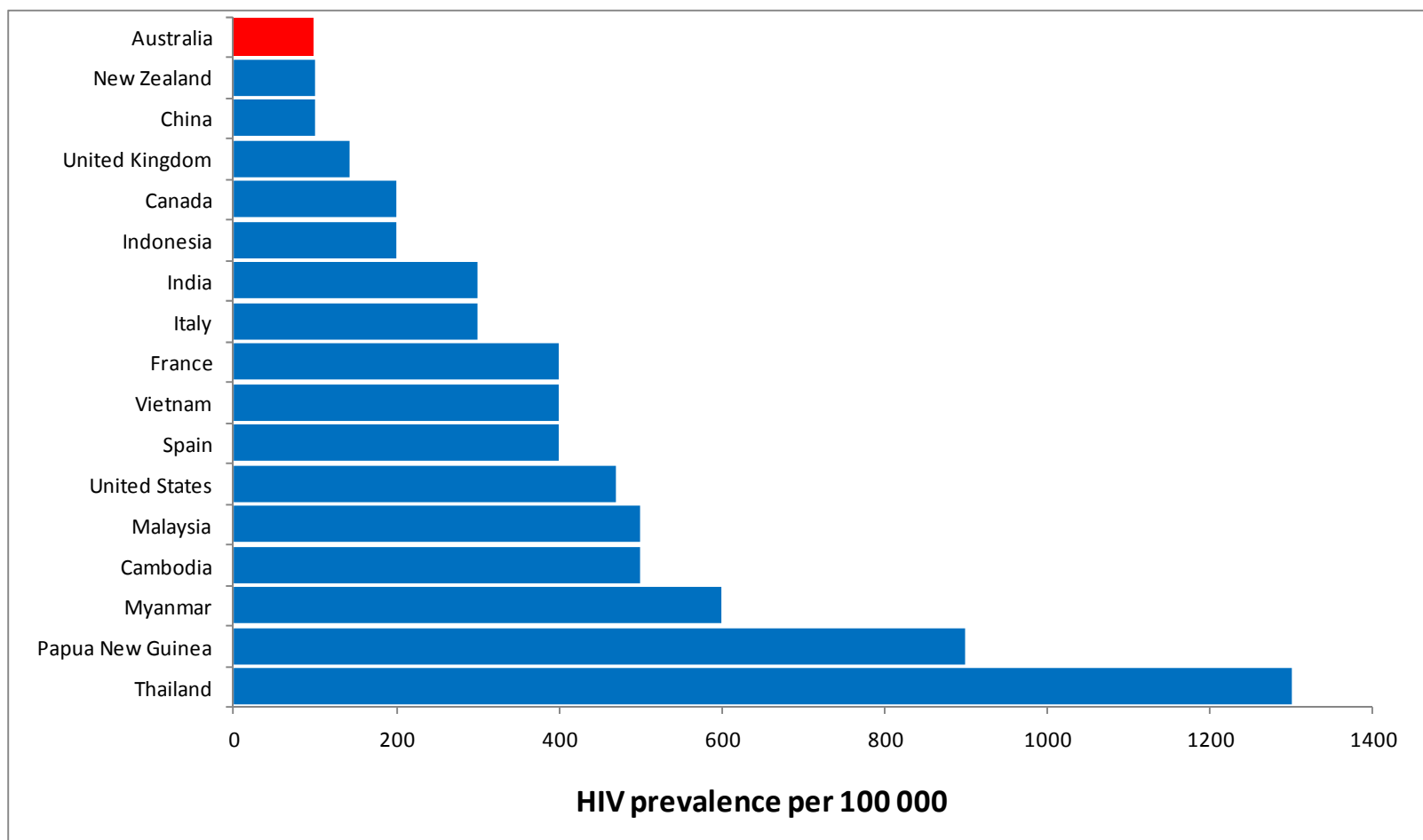


Source: State and Territory health authorities

Highest estimated HIV prevalence countries - 2009



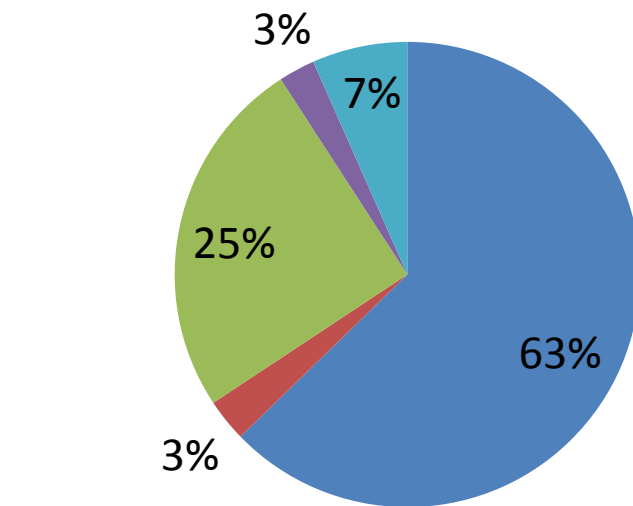
HIV prevalence in selected countries





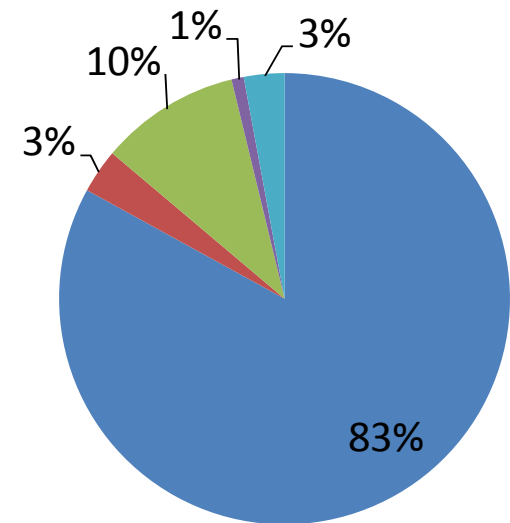
HIV exposure category for new infections in Australia (2006-2010)

Newly diagnosed HIV infection



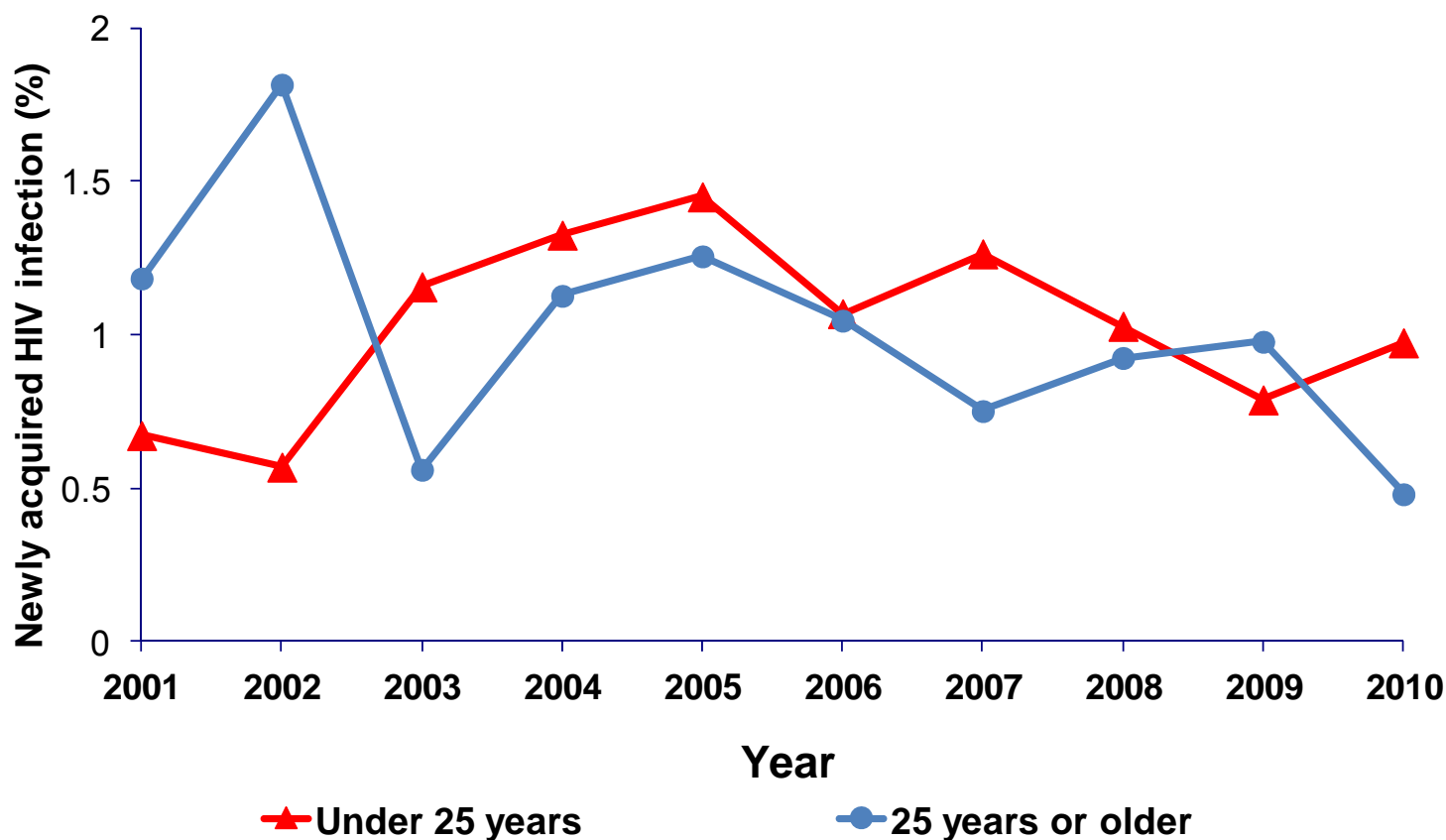
- Men who have sex with men
- Men who have sex with men and injecting drug use
- Heterosexual contact

Newly acquired HIV infection

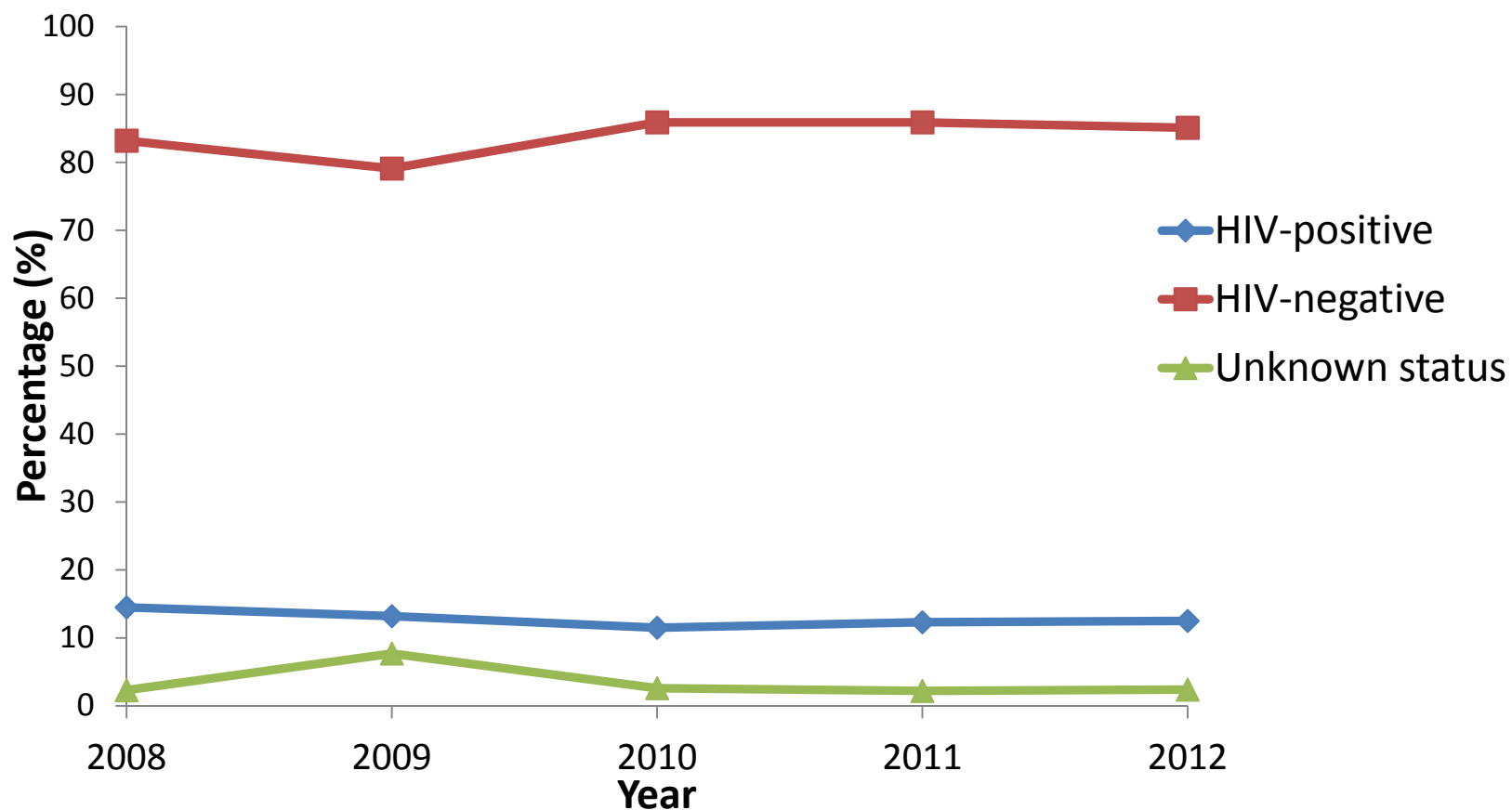


Source: State and Territory health authorities

Newly acquired HIV among gay men seen at Australian sexual health clinics

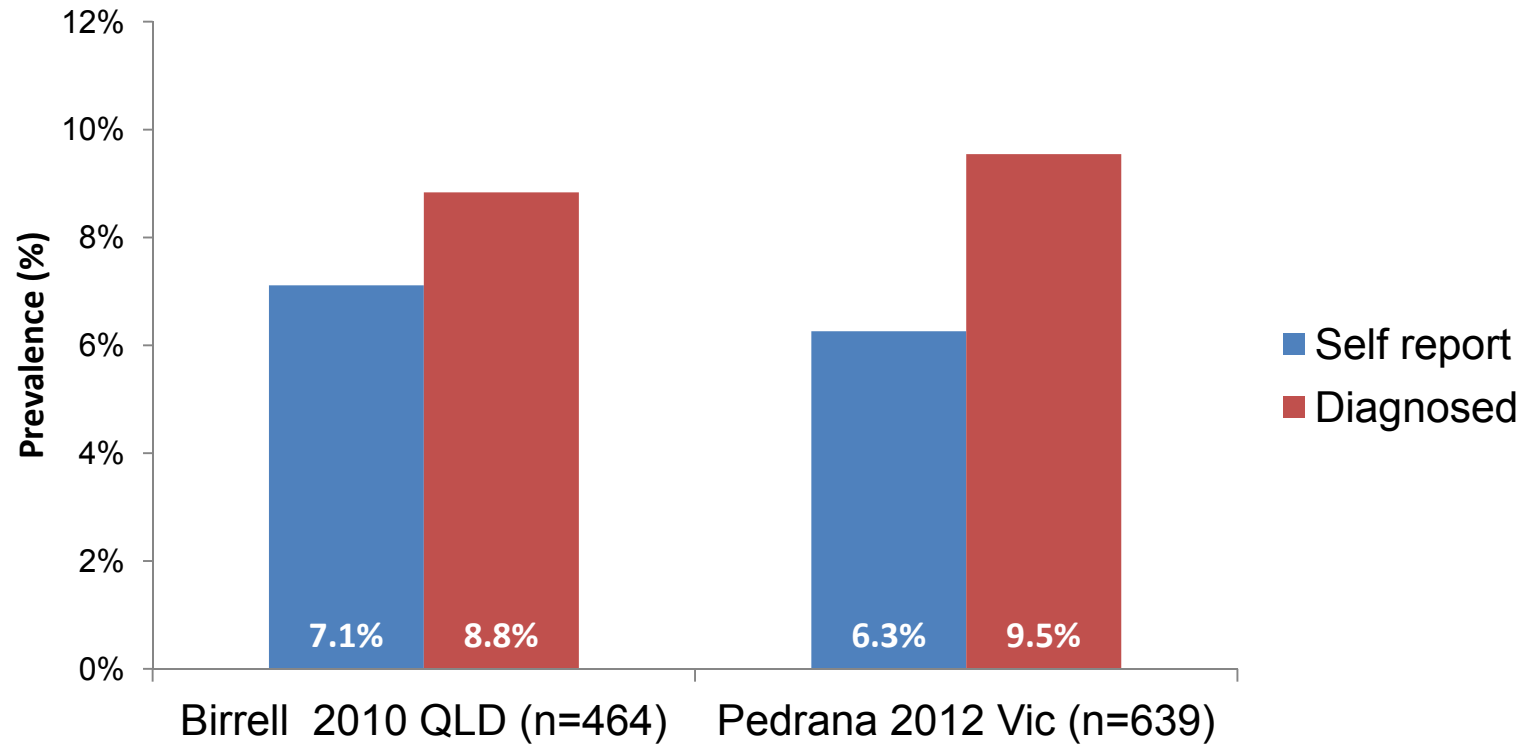


HIV: Self reported prevalence in gay men in Sydney (Gay community periodic survey)





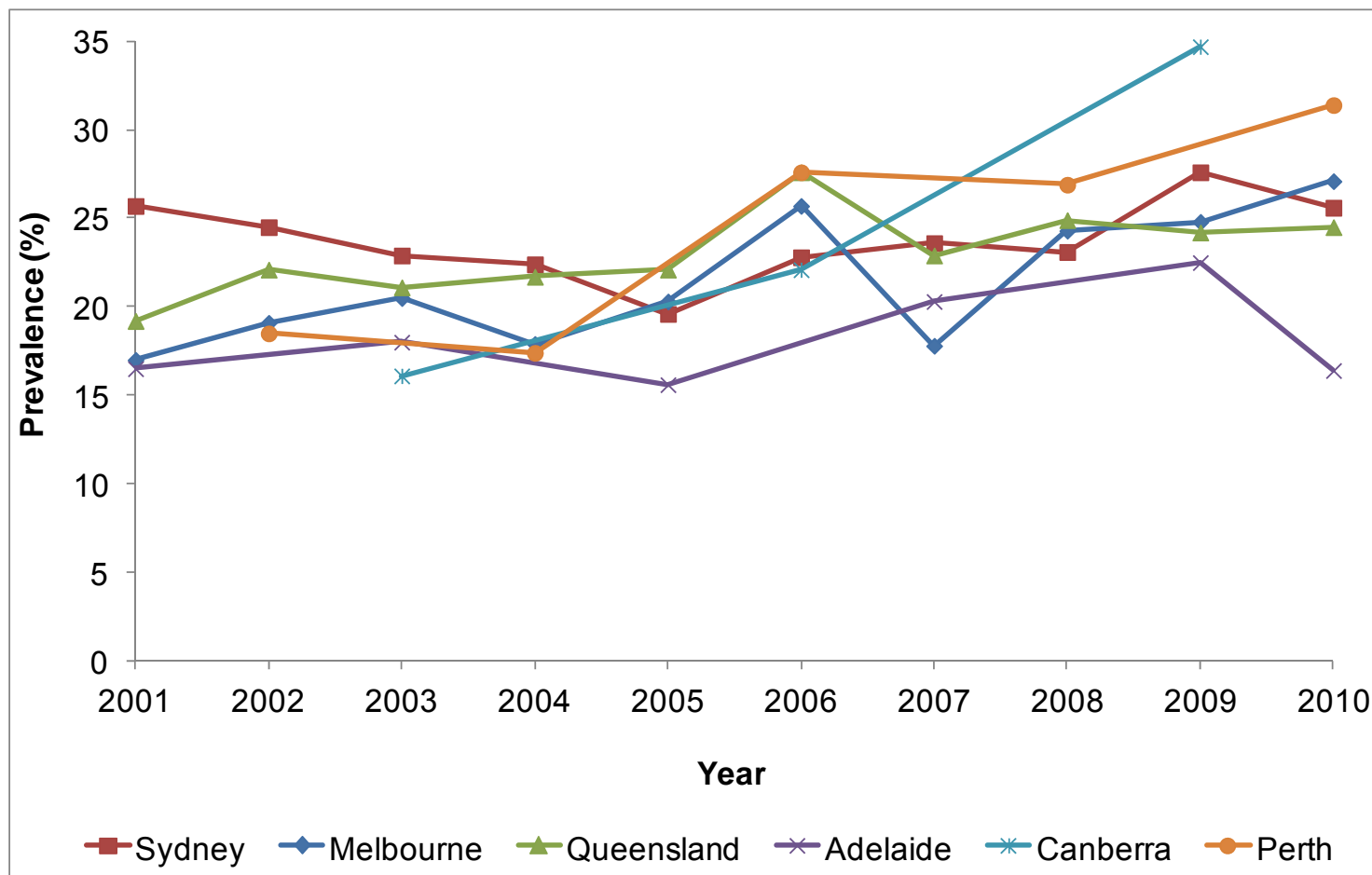
HIV prevalence in two Australian studies



Pedrana *et al.* AIDS Behav. 2011

Birrell *et al.* Sex Health. 2010

Unprotected sex with casual partners, Gay Community Surveys in Australia

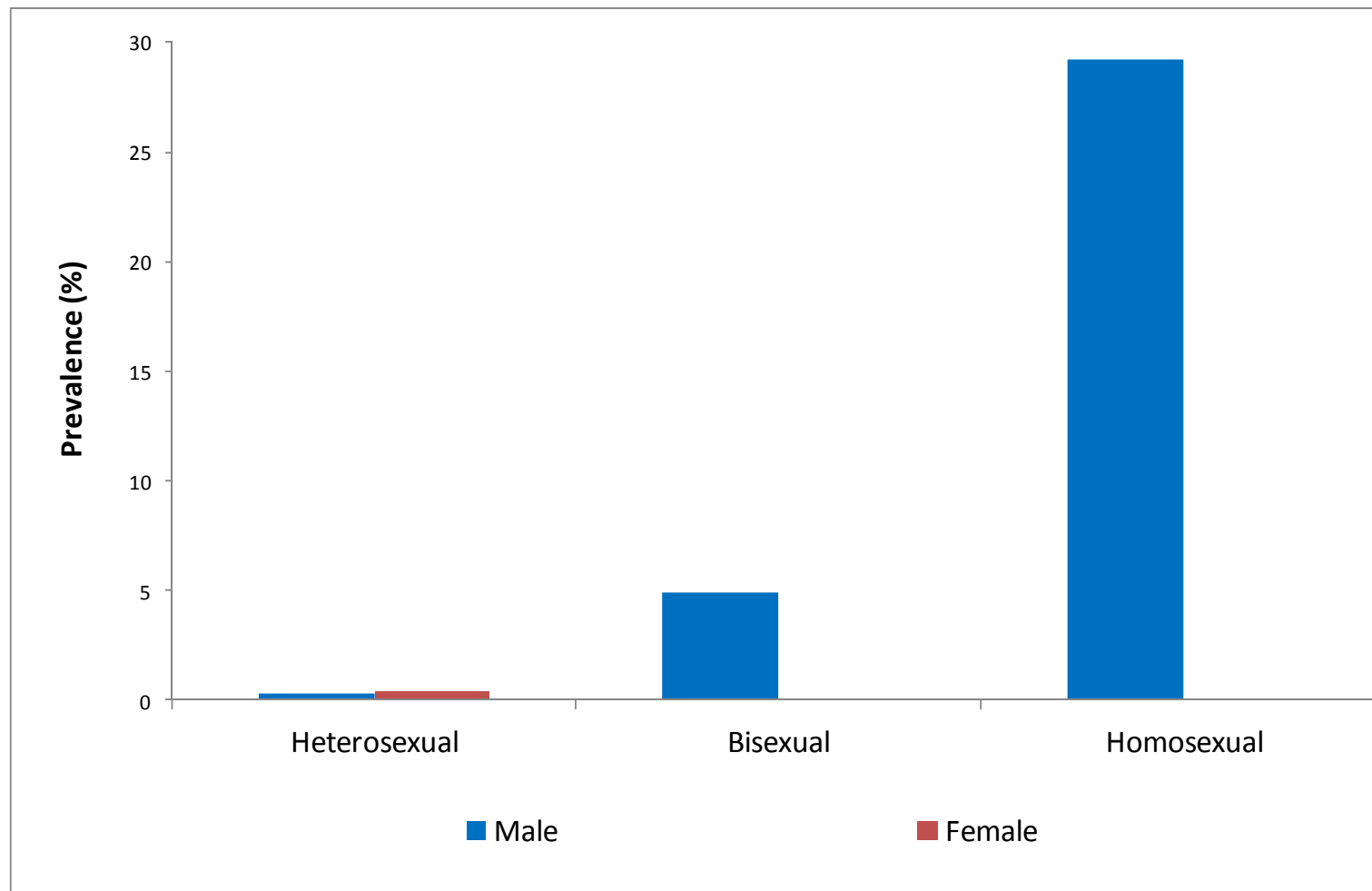


Source: Gay Community Periodic Surveys

HIV prevalence in people who inject drugs in Australia (HIV antibody prevalence)



HIV in needle and syringe program clients, Australia, 2010



Source: Collaboration of Australian Needle and Syringe Programs

HIV in people who inject drugs: Selected Asian cities

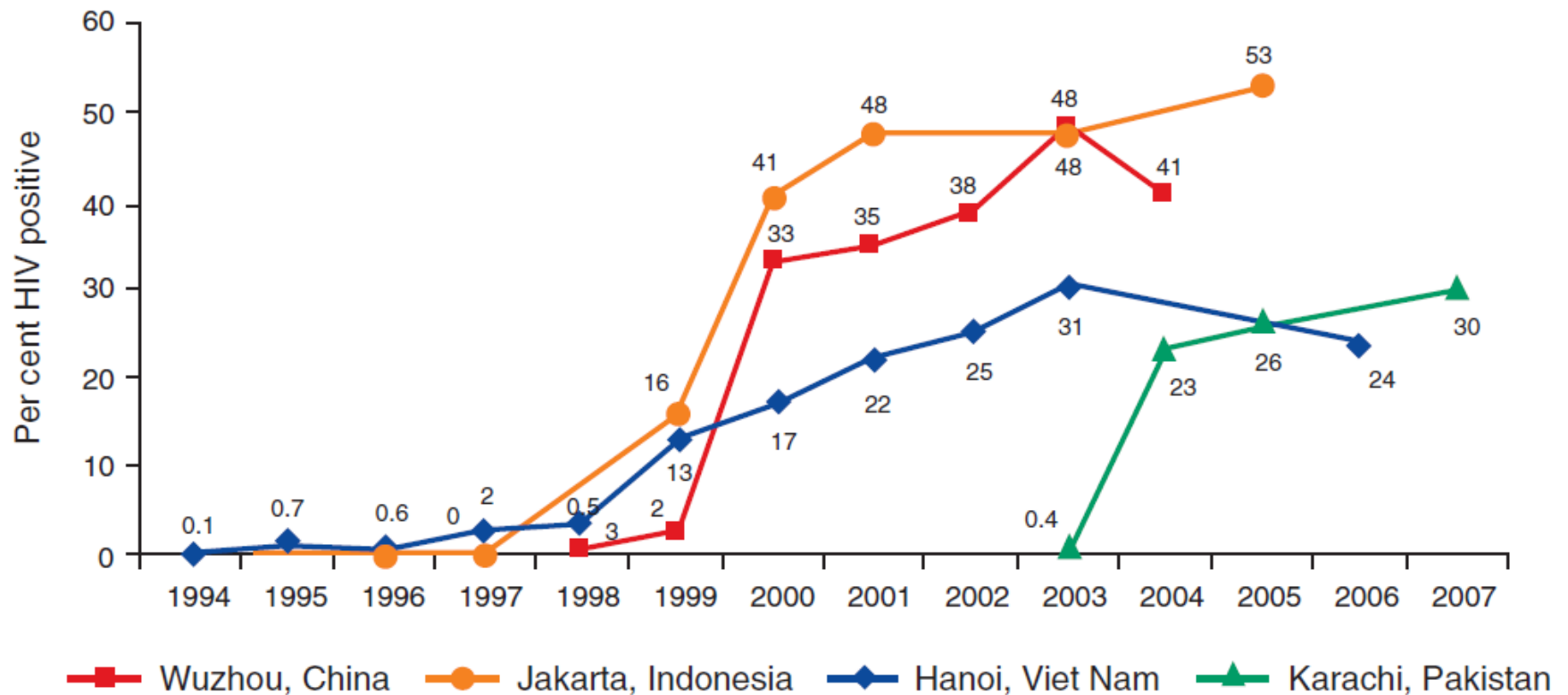
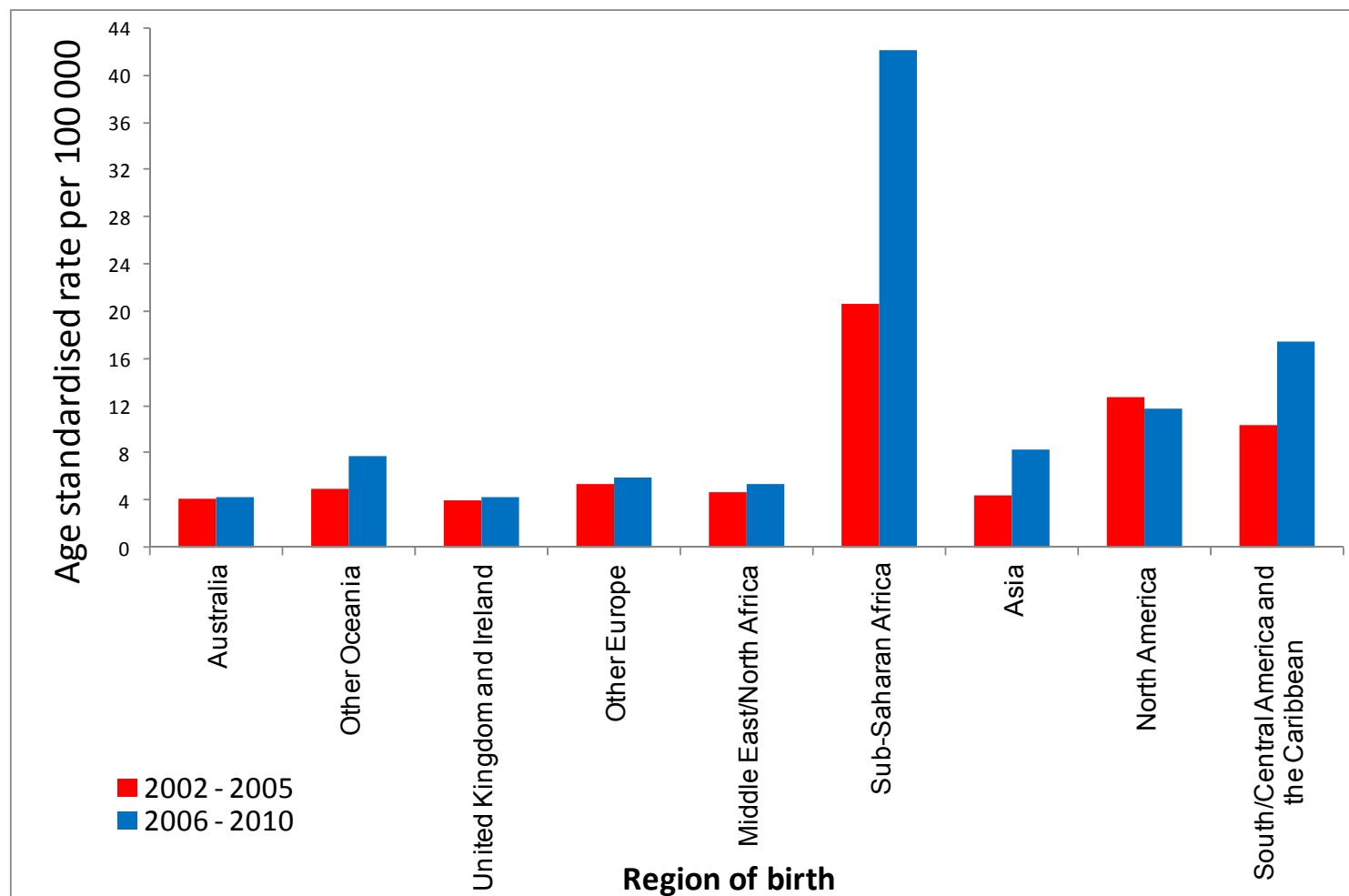


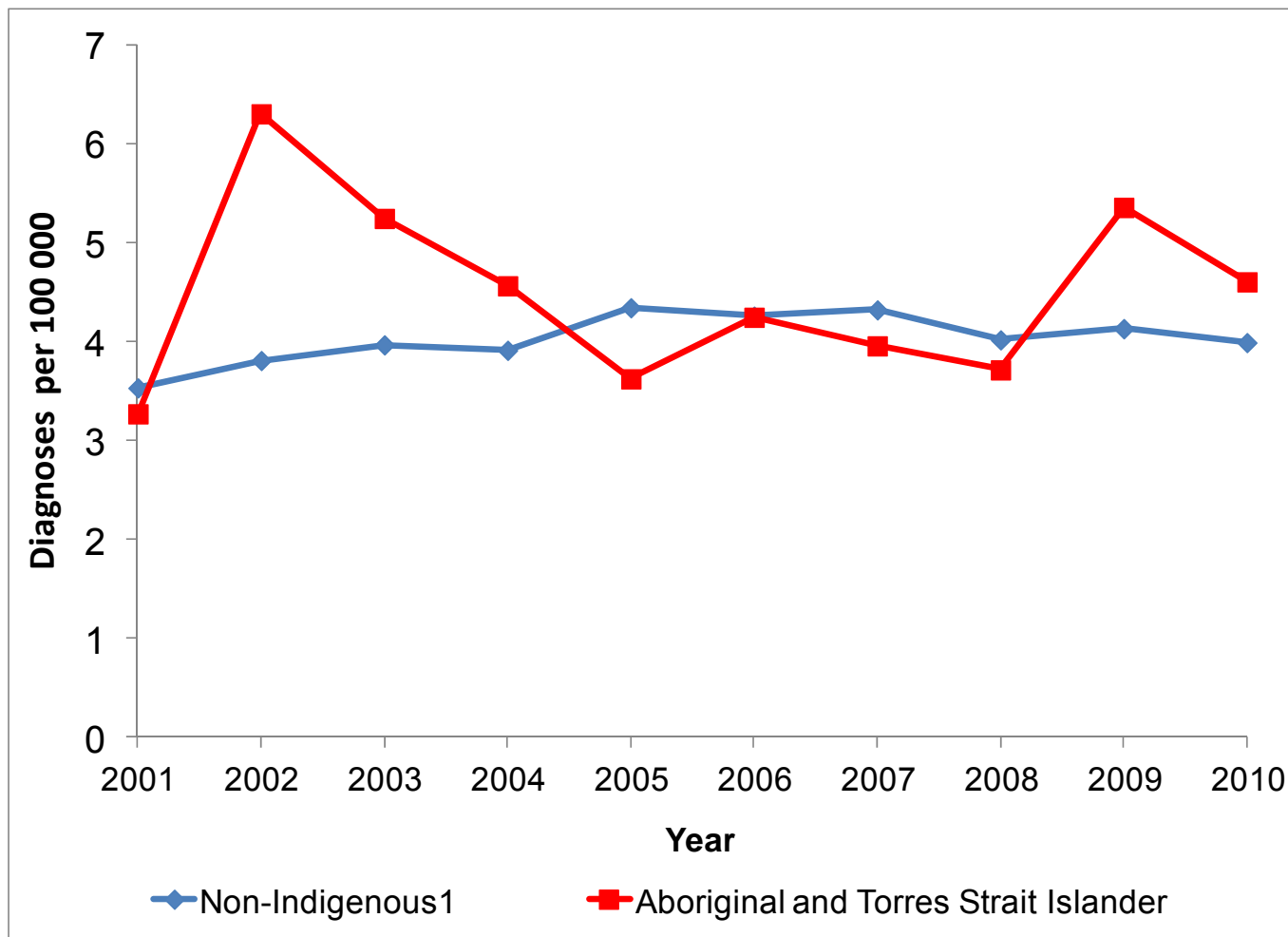
Figure 2.7: HIV can rise very quickly among drug injectors, and reach very high levels

HIV diagnoses in Australia by region of birth



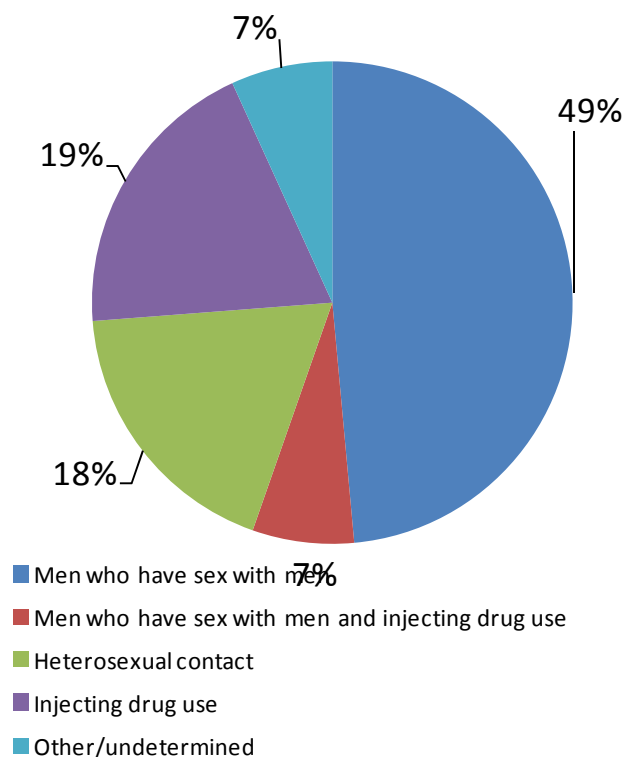
Source: State and Territory health authorities

HIV diagnoses, by Aboriginal and Torres Strait Islander status in Australia

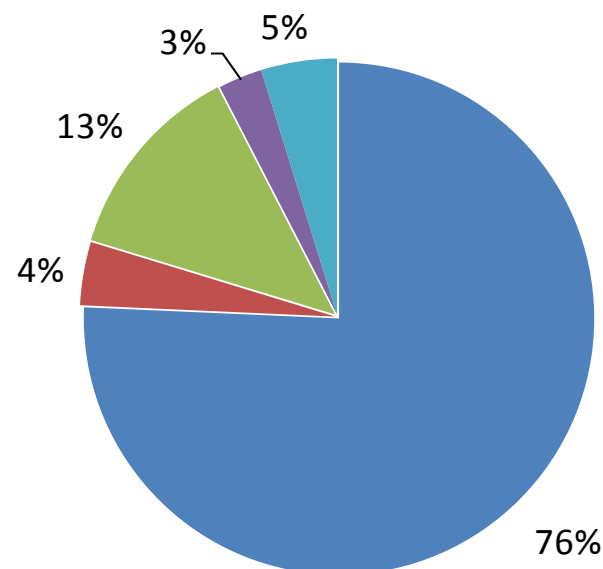


HIV diagnoses by Indigenous status and HIV exposure category (2006-2010)

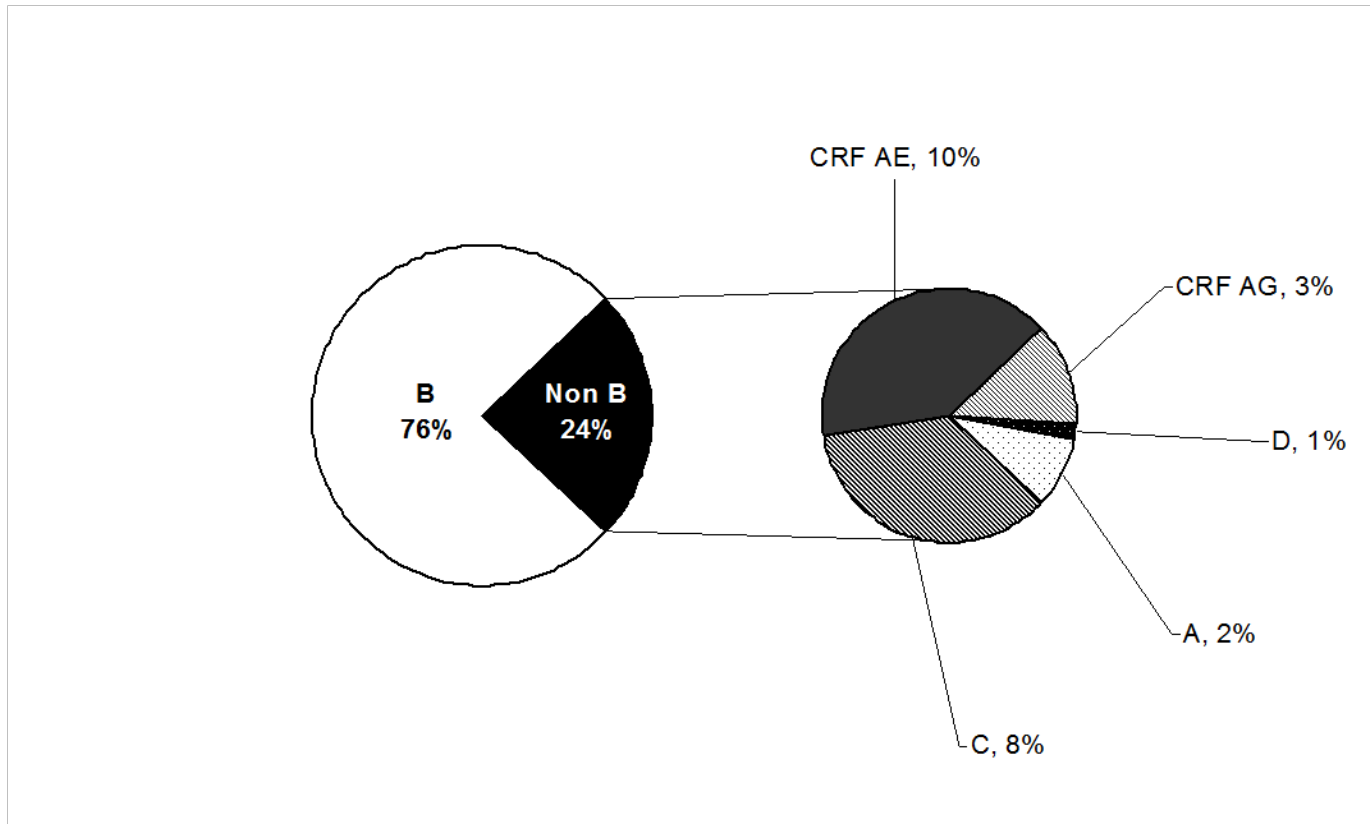
Aboriginal and Torres Strait Islander



Non-Indigenous

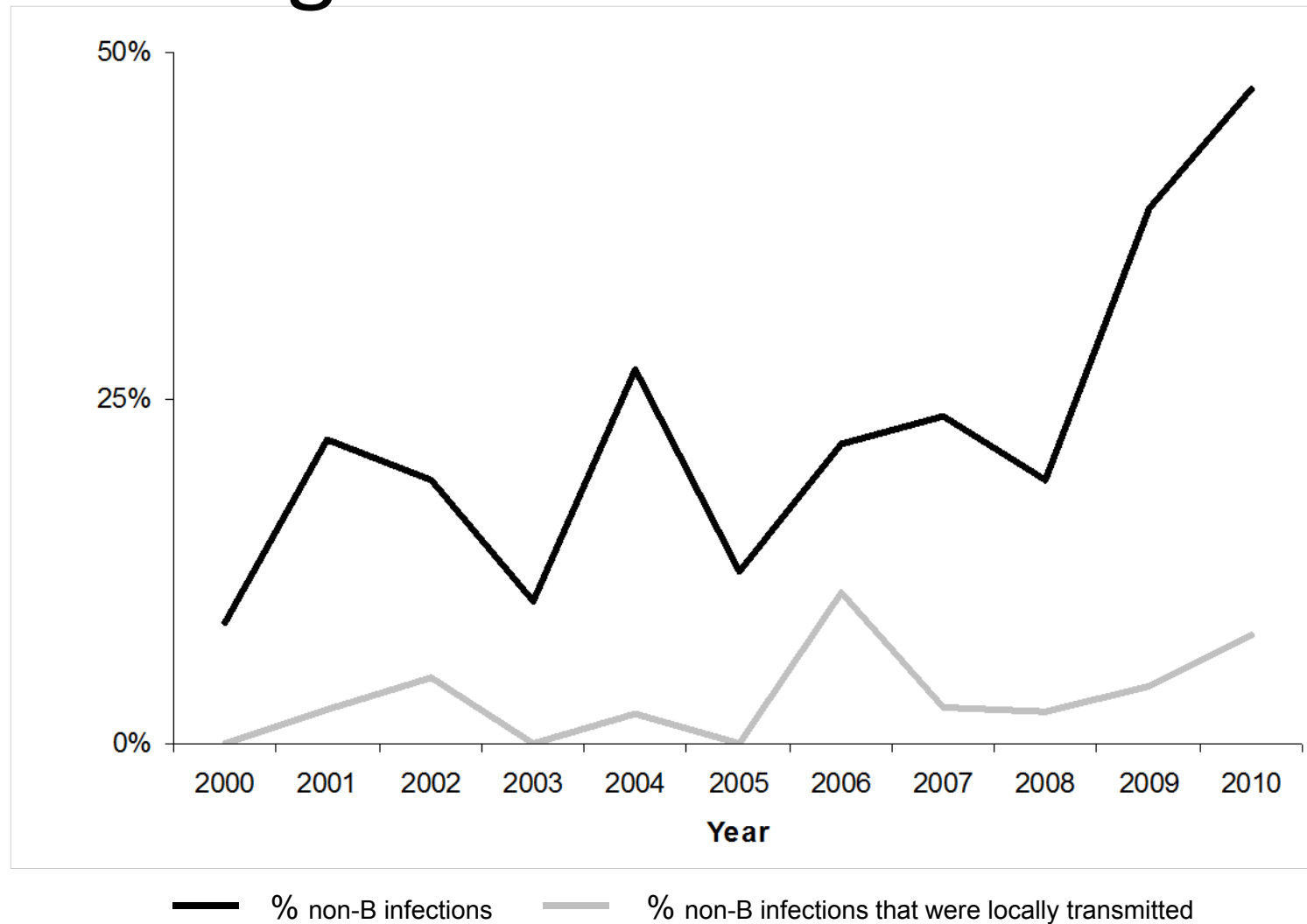


HIV diagnoses in South Australia 2000 – 2010 (n=513)

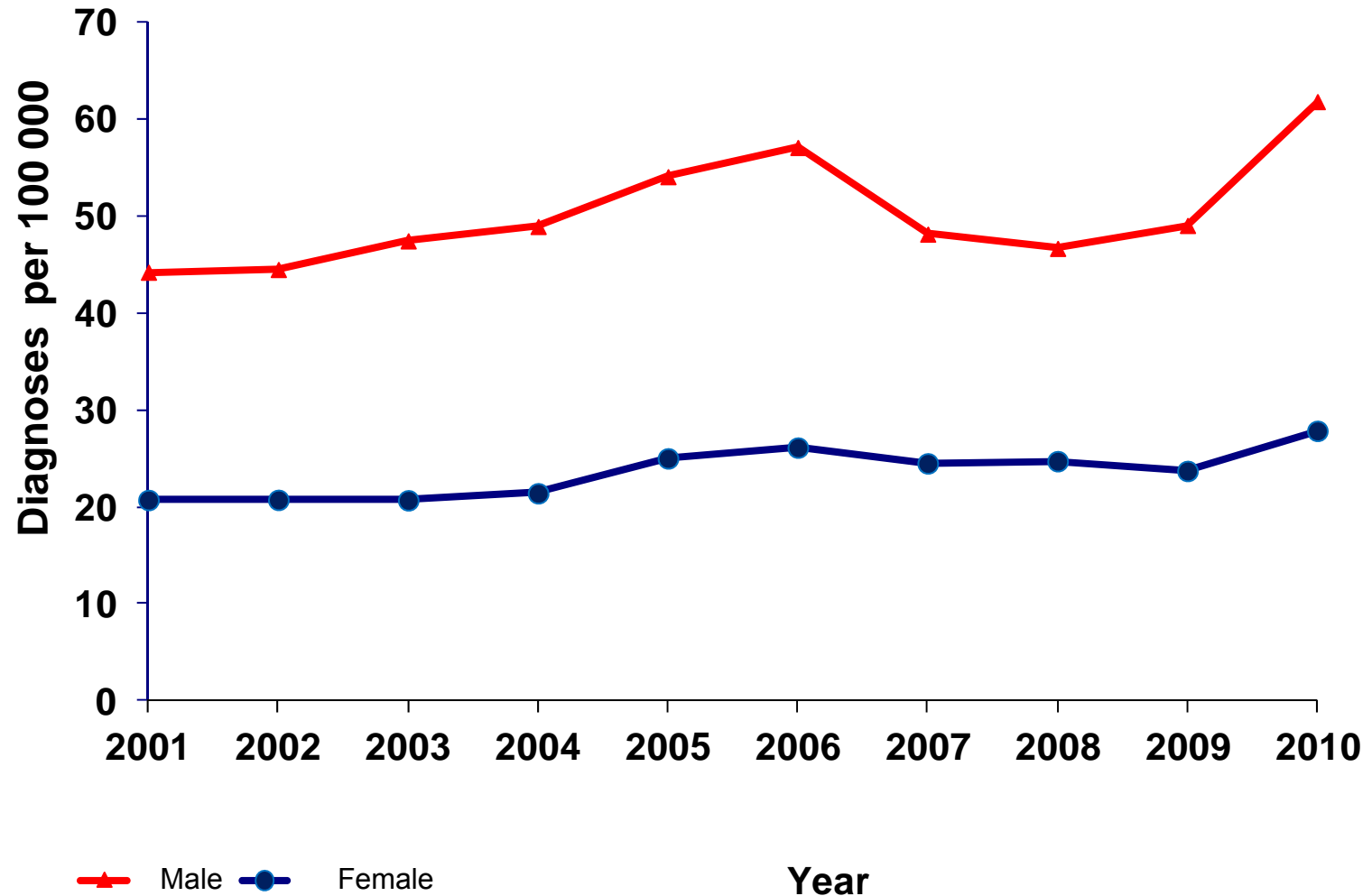


Hawke et al, Australian HIV Conference 2011

HIV diagnoses in South Australia

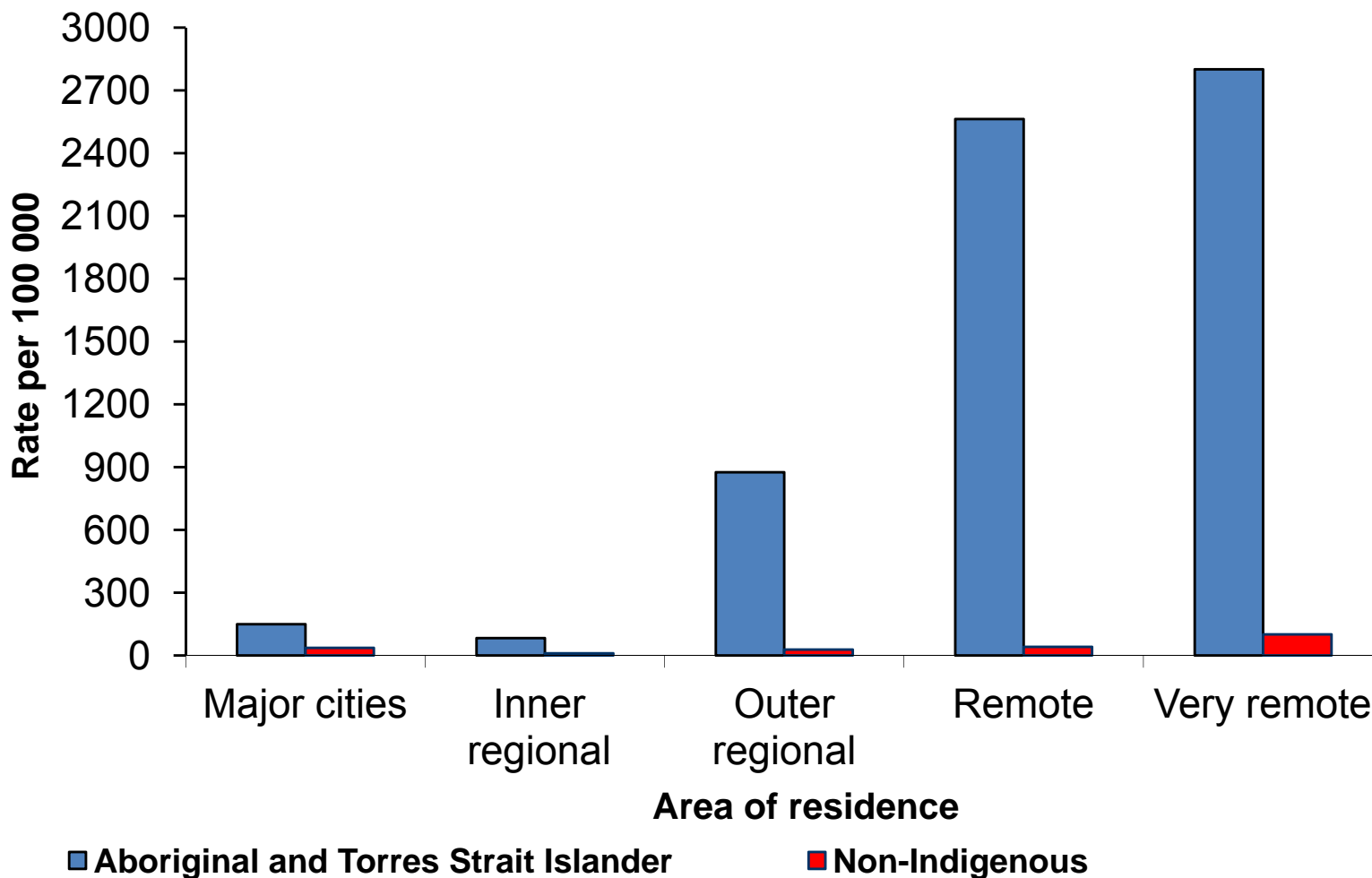


Gonorrhoea diagnoses in Australia



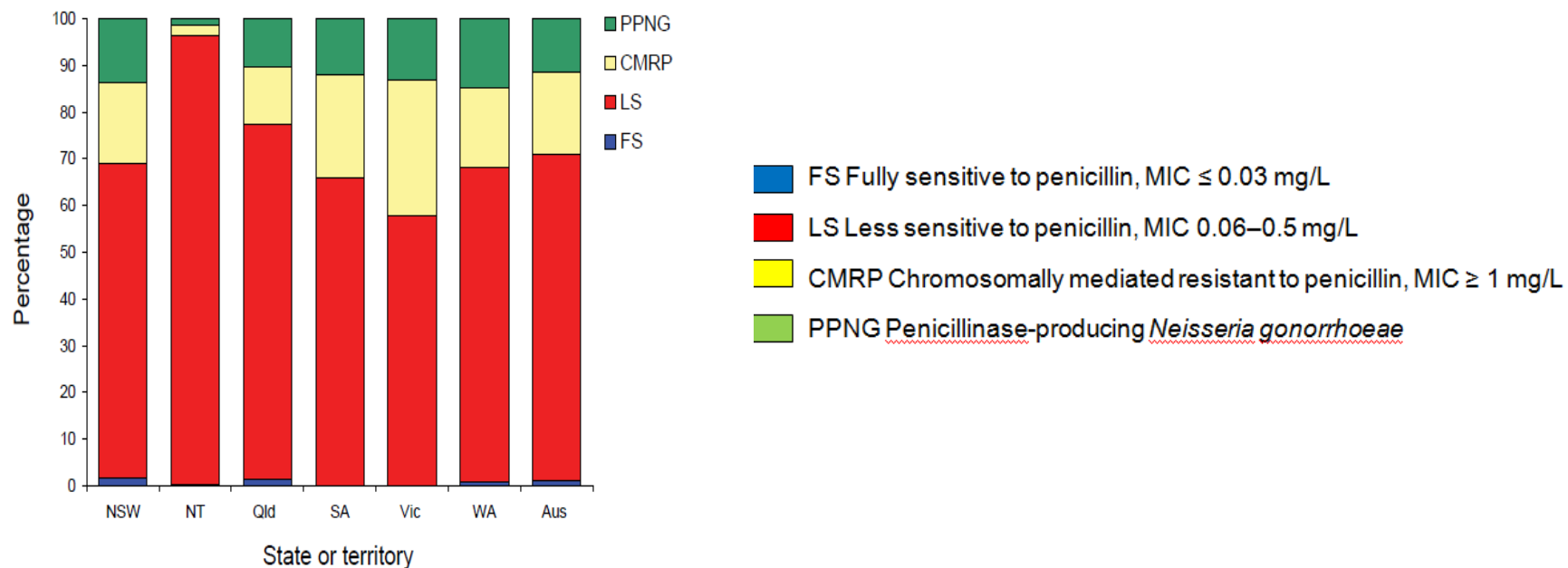
Source: National Notifiable Diseases Surveillance System

Gonorrhoea in Australia by Aboriginality and region 2010



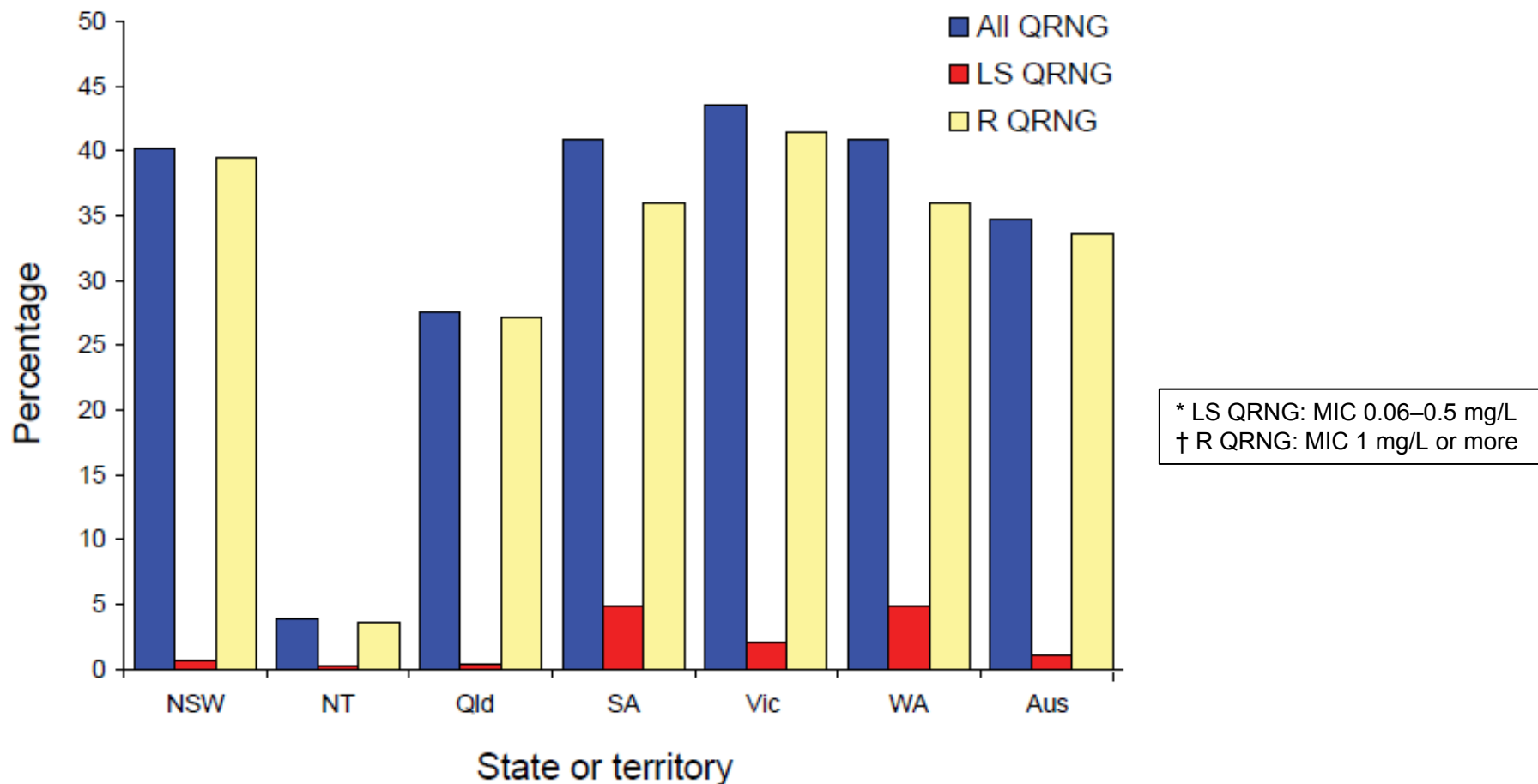
Source: State/Territory health authorities

Gonorrhoea sensitivity to penicillin in Australia 2010

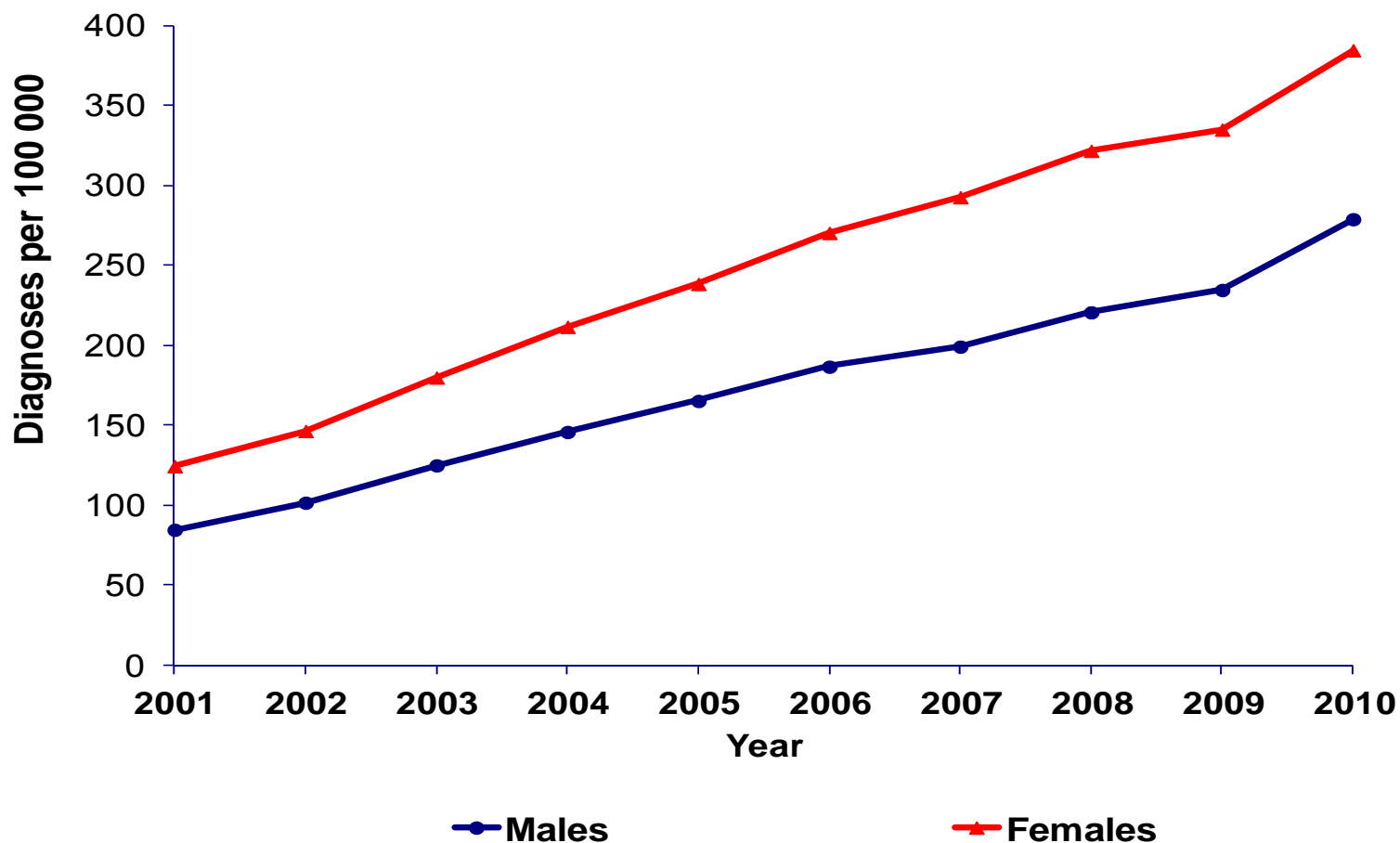




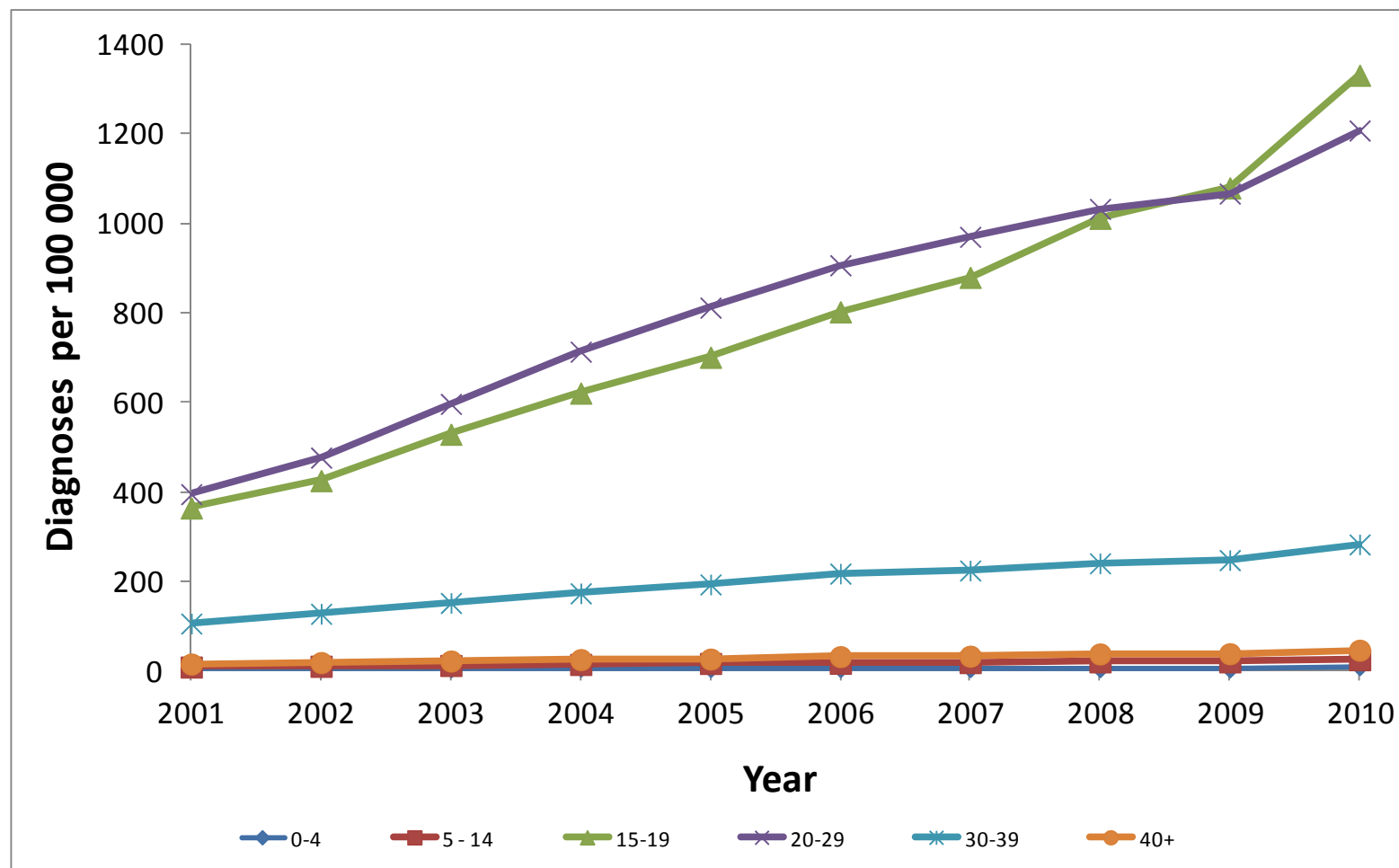
Gonorrhoea sensitivity to ciprofloxacin and quinolone in Australia 2010



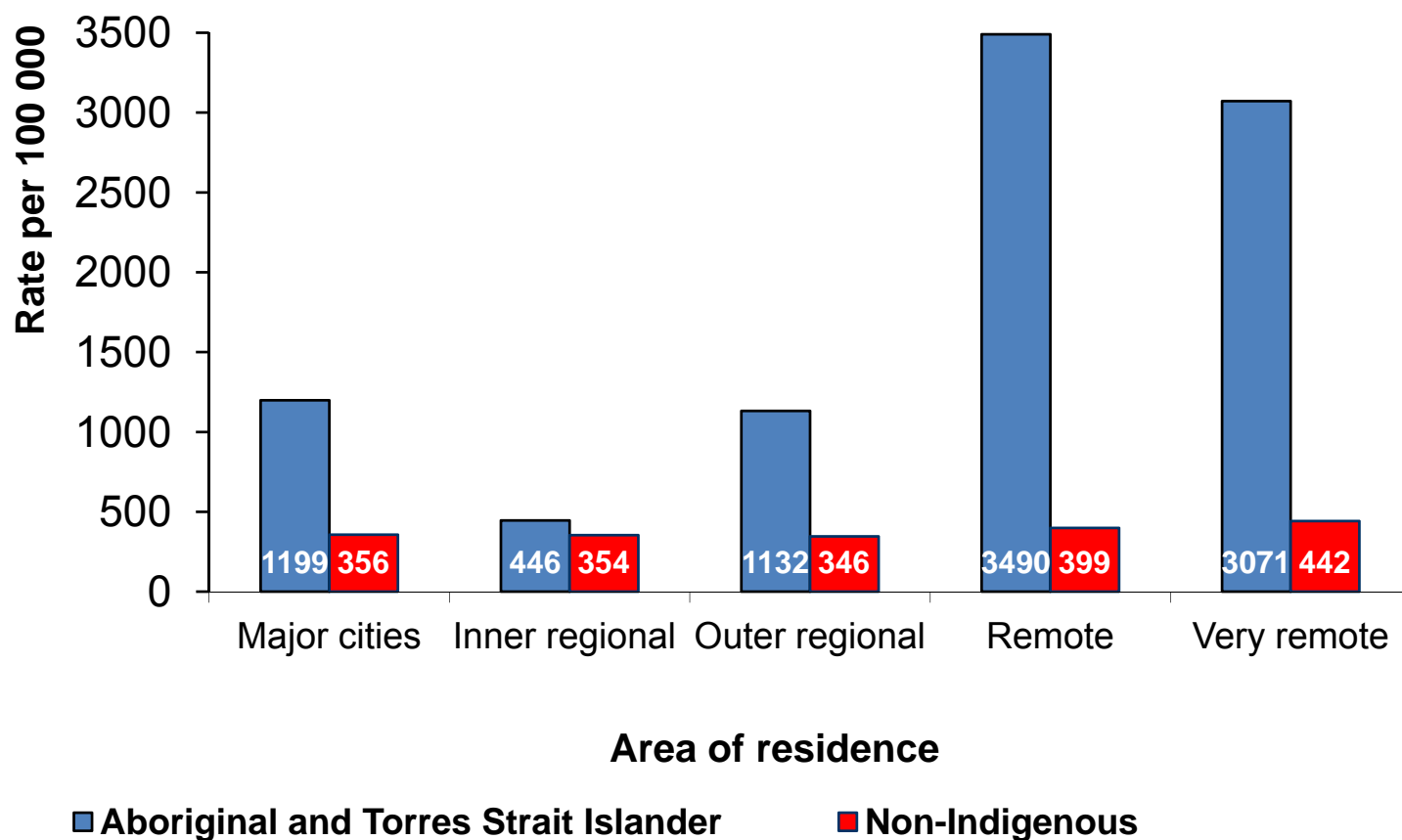
Chlamydia diagnosis rate in Australia



Chlamydia notifications in Australia

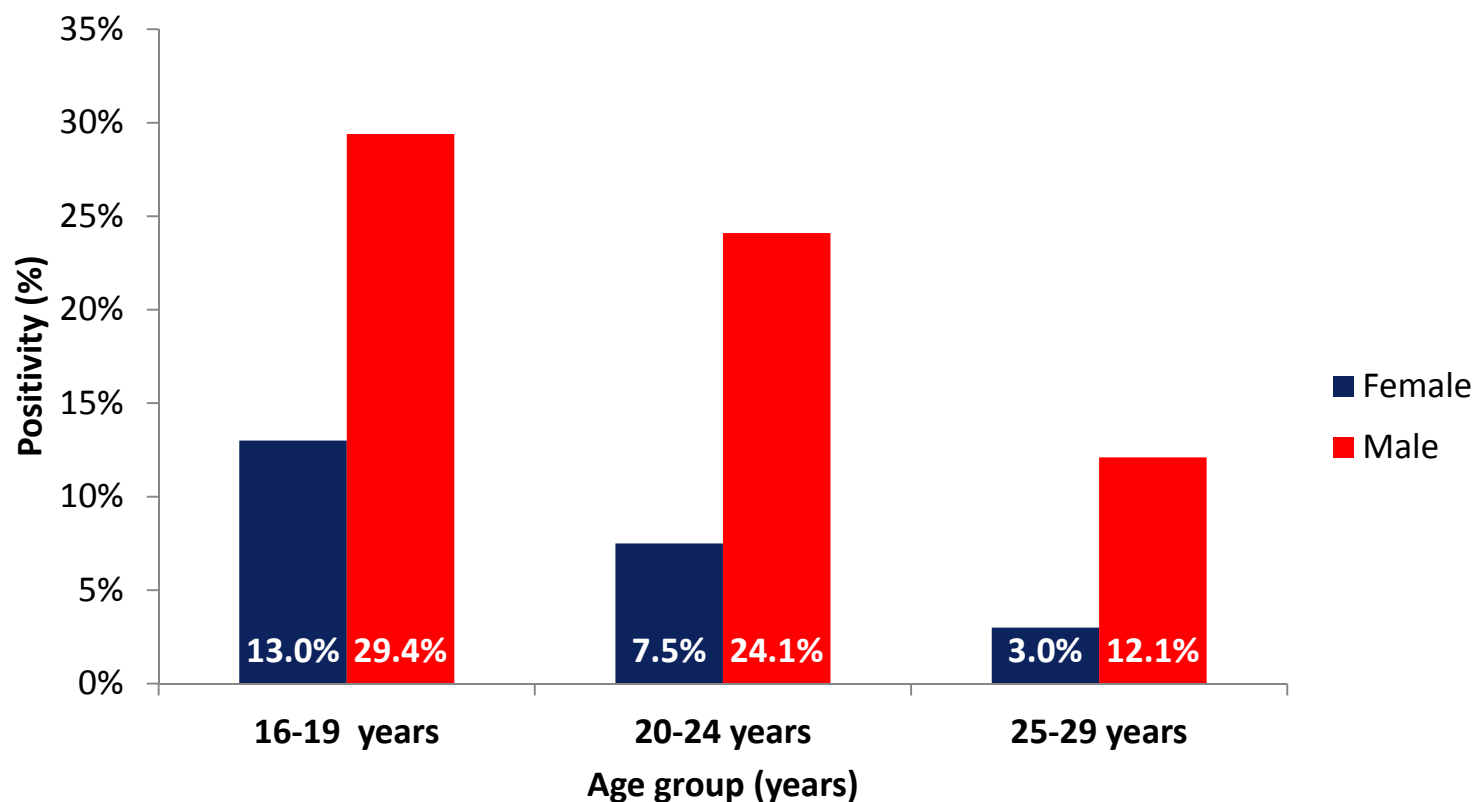


Chlamydia notifications by Aboriginality and region, 2010



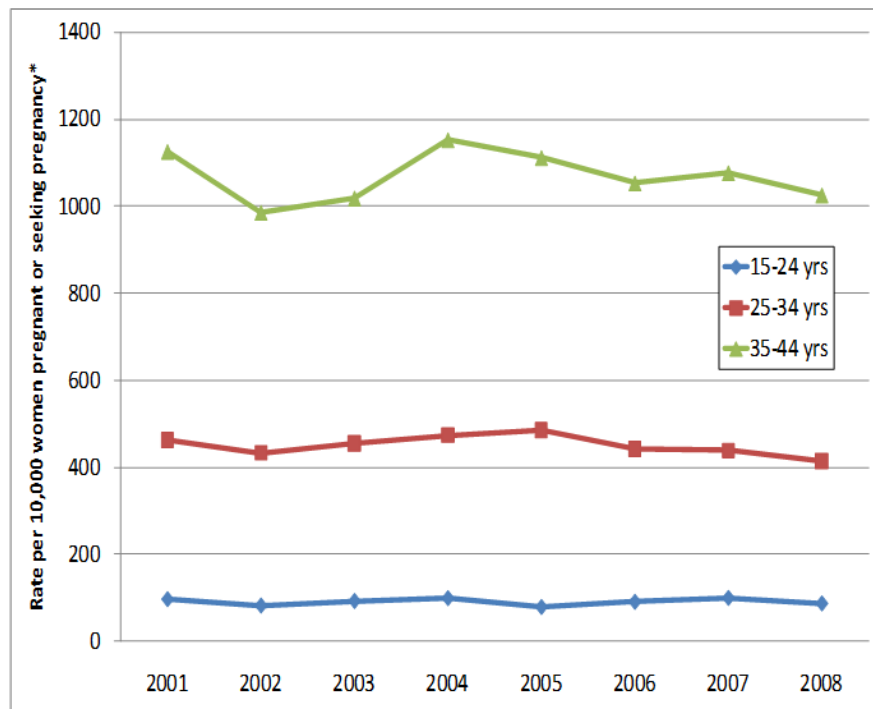
Source: State/Territory health authorities

Chlamydia positivity in family planning clinics 2009

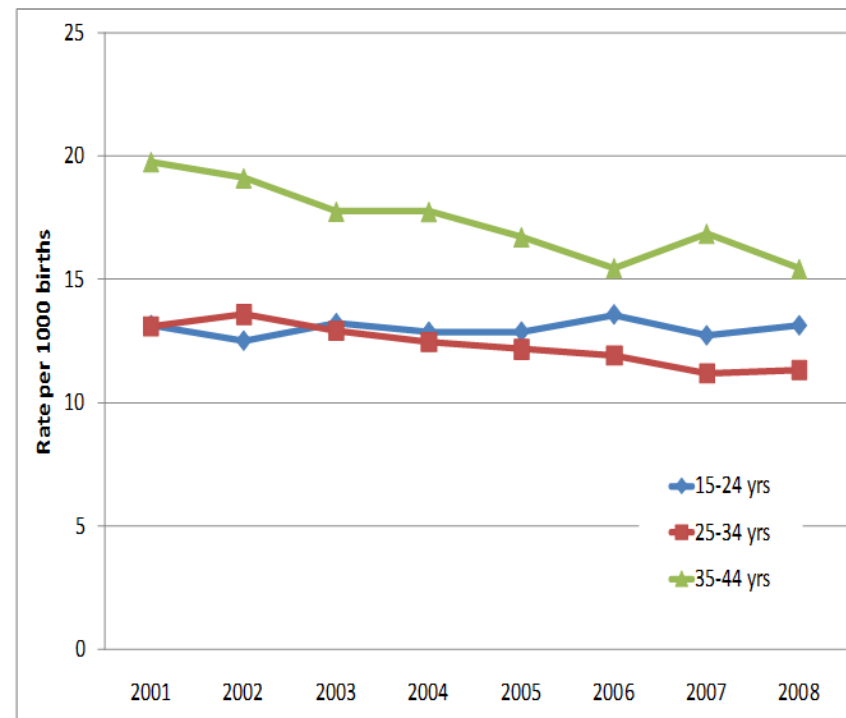


Bowring A, Goller JL, Gouillou M, Harvey C, Bateson D, McNamee K, Read C, Boyle D, Jordan L, Wardle R, Stephens A, Donovan B, Guy R, Hellard ME, on behalf of the ACCESS collaboration. Chlamydia testing and retesting patterns at Family Planning Clinics in Australia

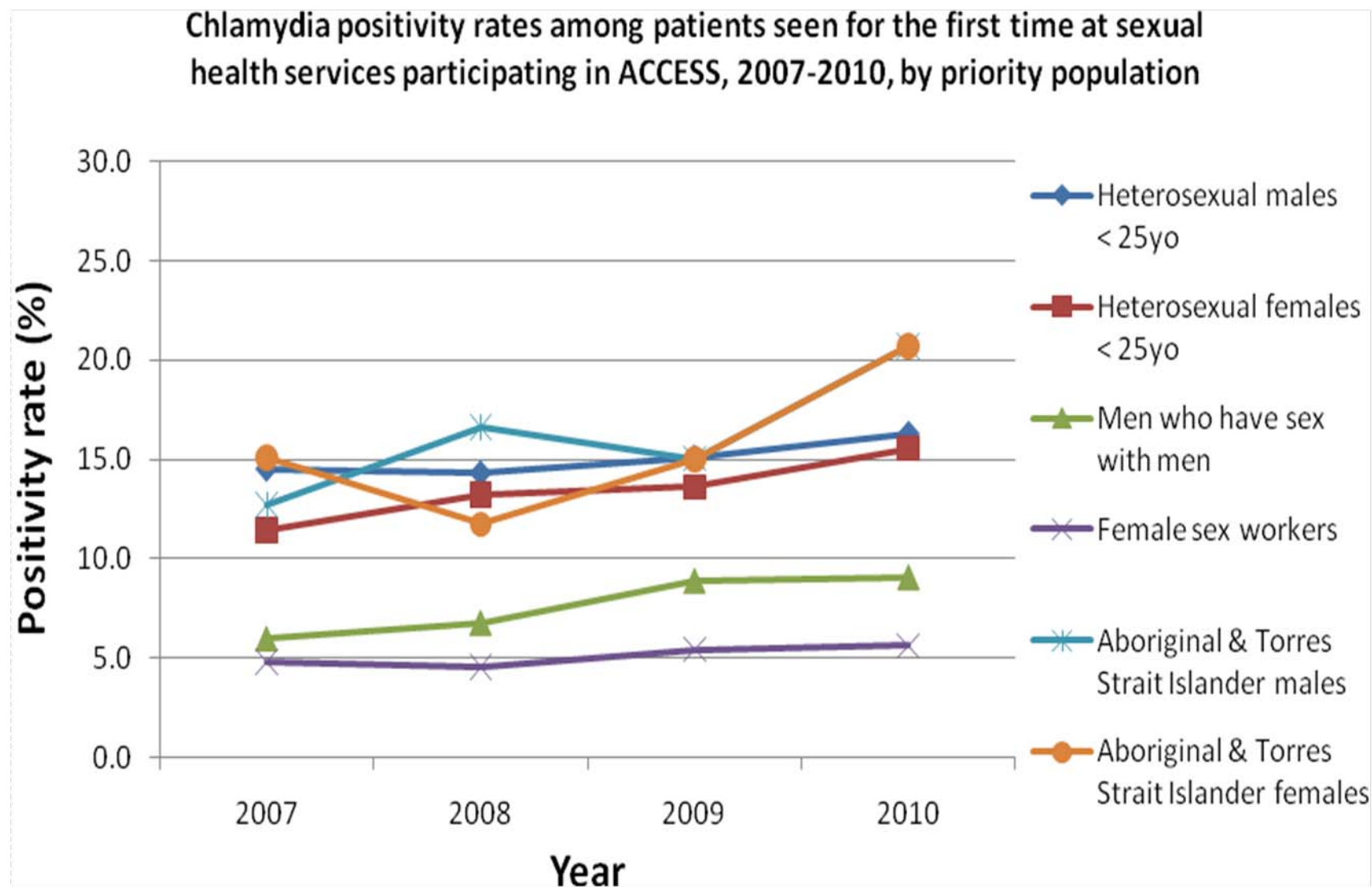
Hospitalisations for PID-related sequelae in New South Wales



Infertility (female origin)

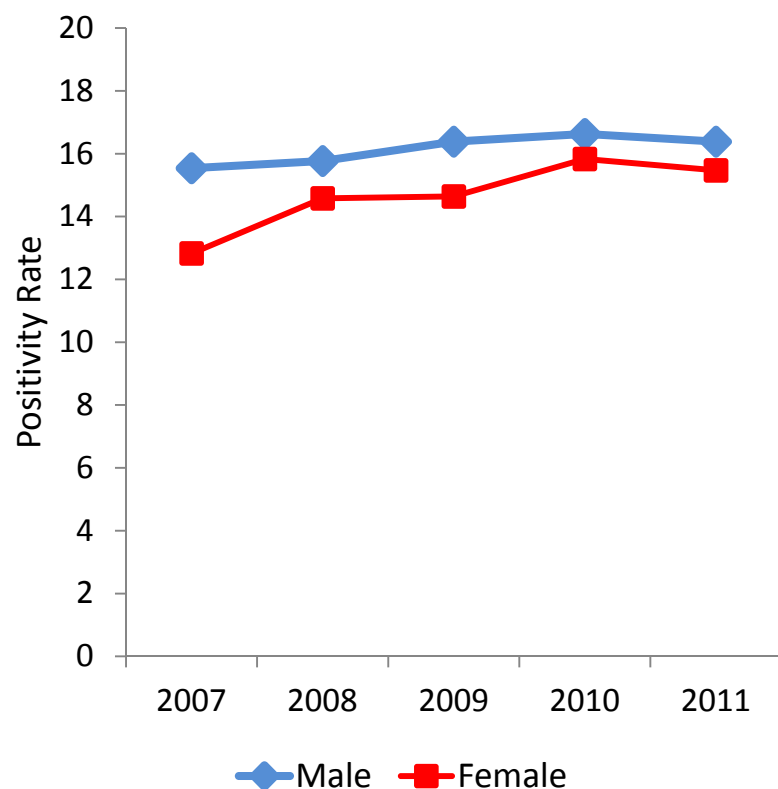


Ectopic pregnancy

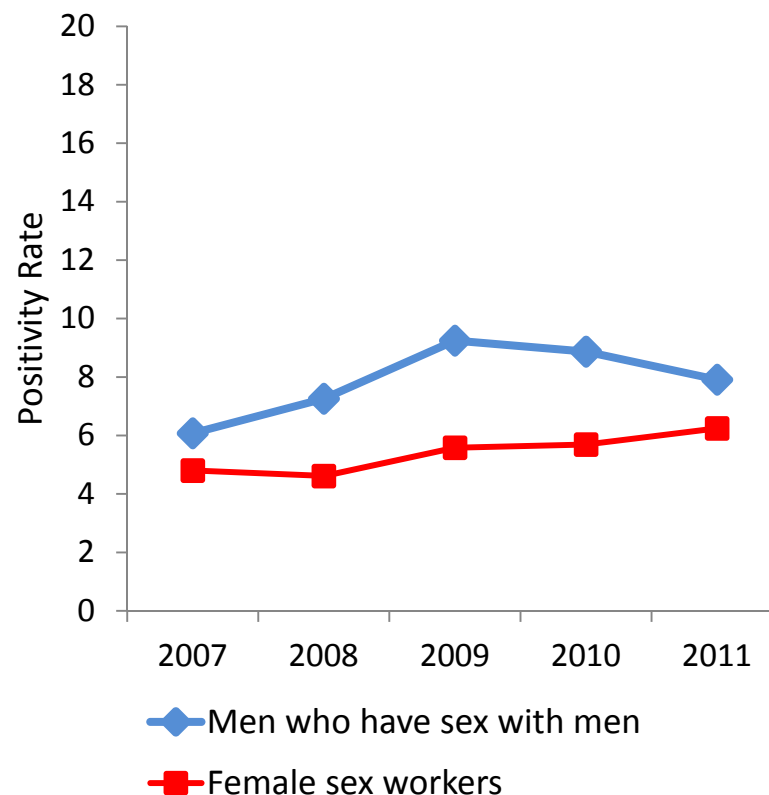


Chlamydia positivity in Sexual Health Services in Australia

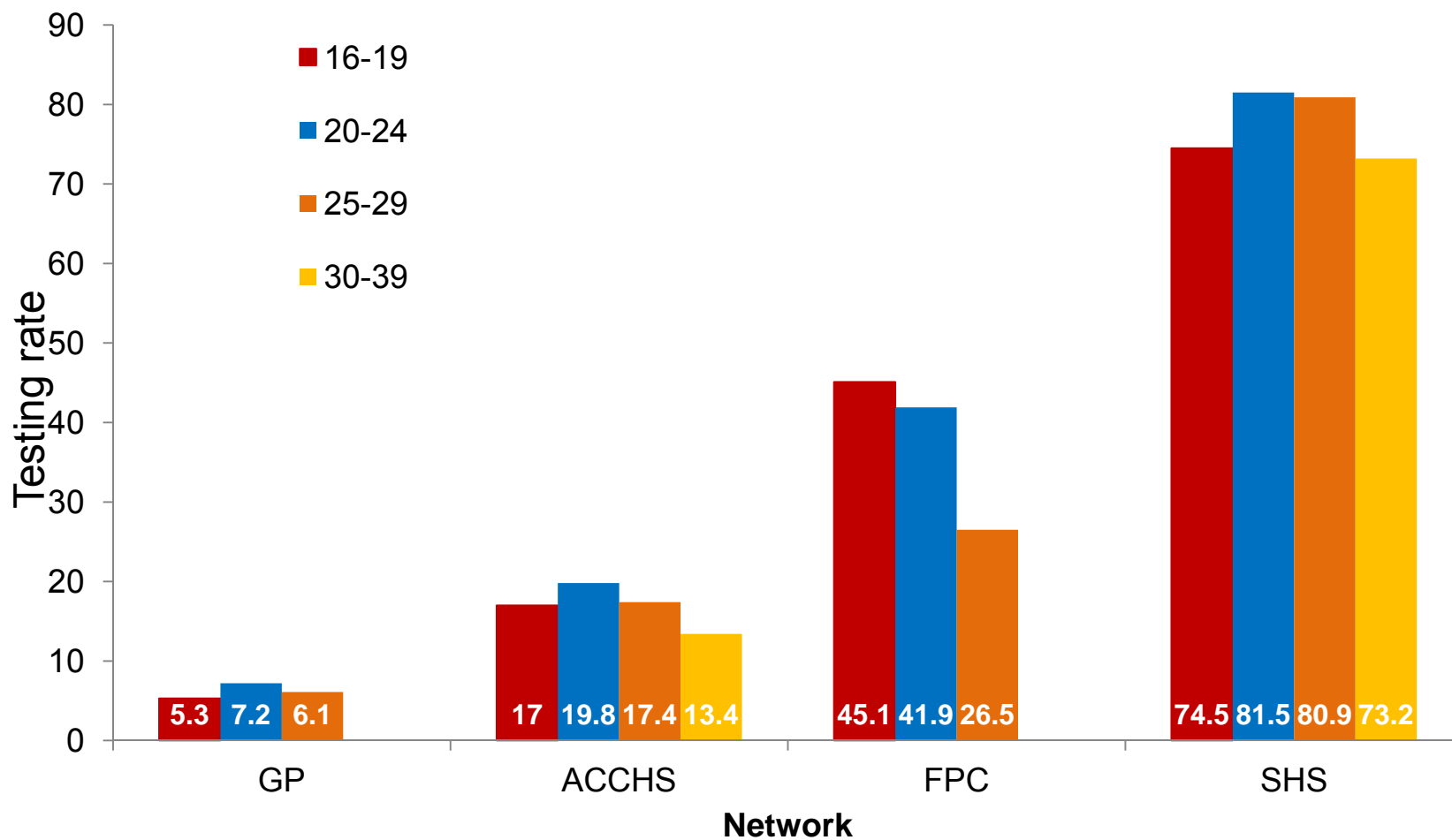
Positivity rates at SHS in 15-29 year olds heterosexuals, by sex, 2007-2011



Testing and positivity rates at SHS in MSM and female sex workers, by sex, 2007-2011

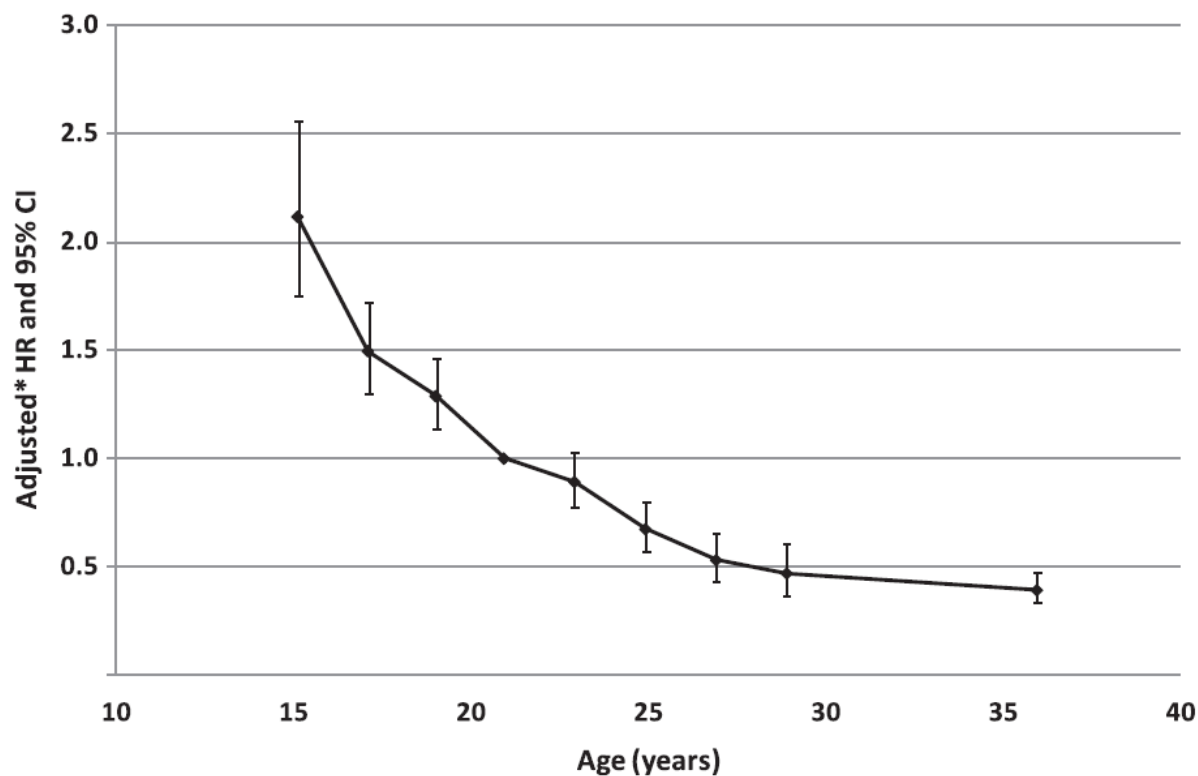


Chlamydia testing rate by service, 2009: ACCESS

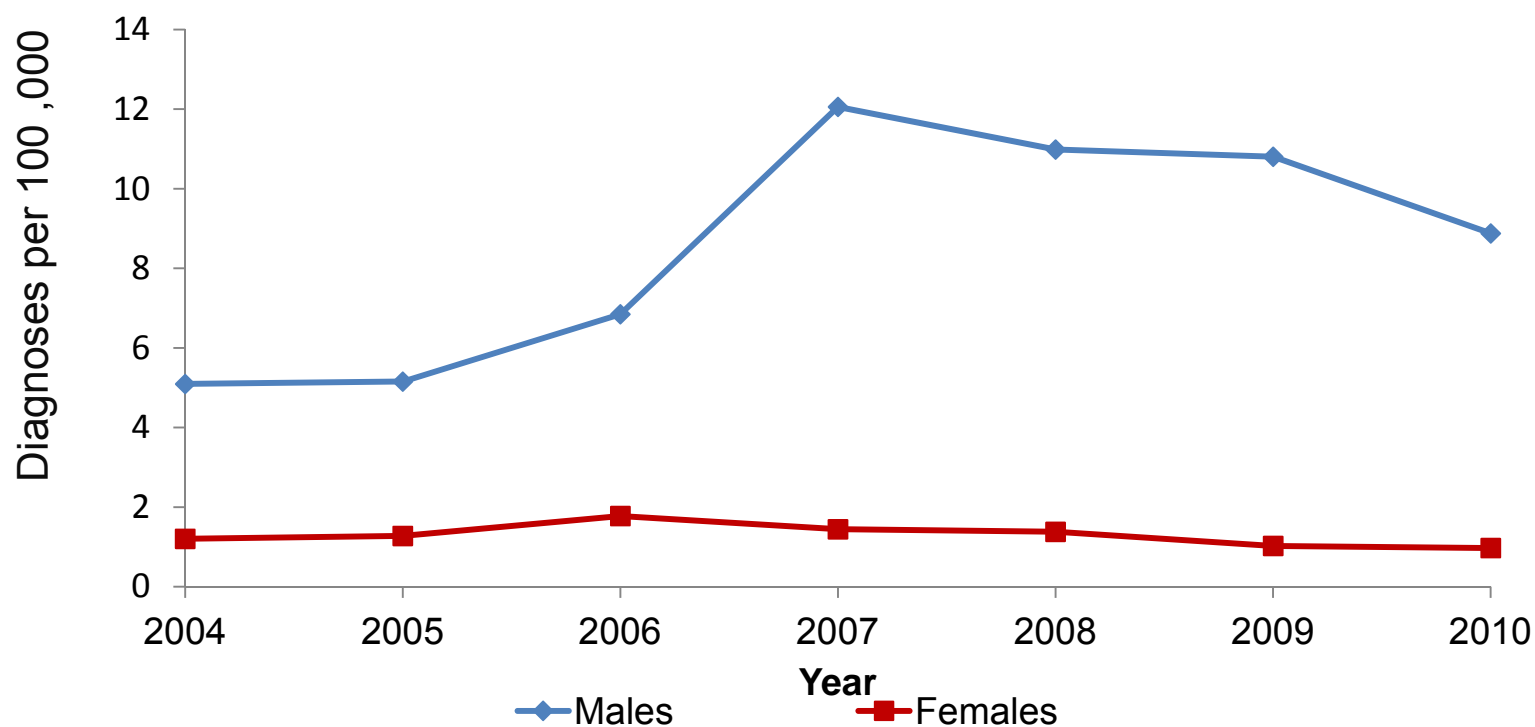


Repeat chlamydia notification in NSW women (n= 40 936)

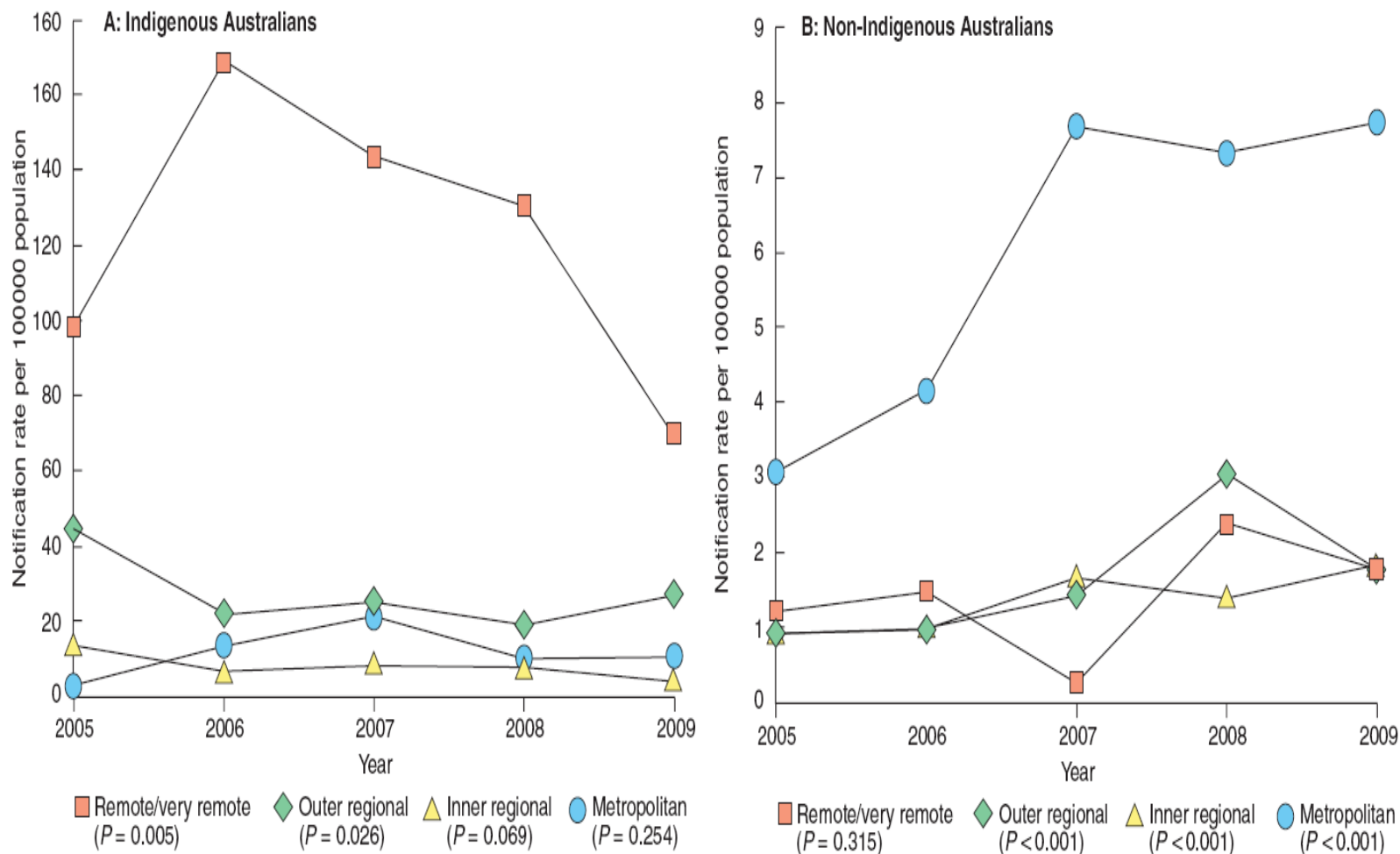
**Adjusted for year of index notification, socioeconomic status, area of residence, linked birth record, gonococcal infection and specimen type.*



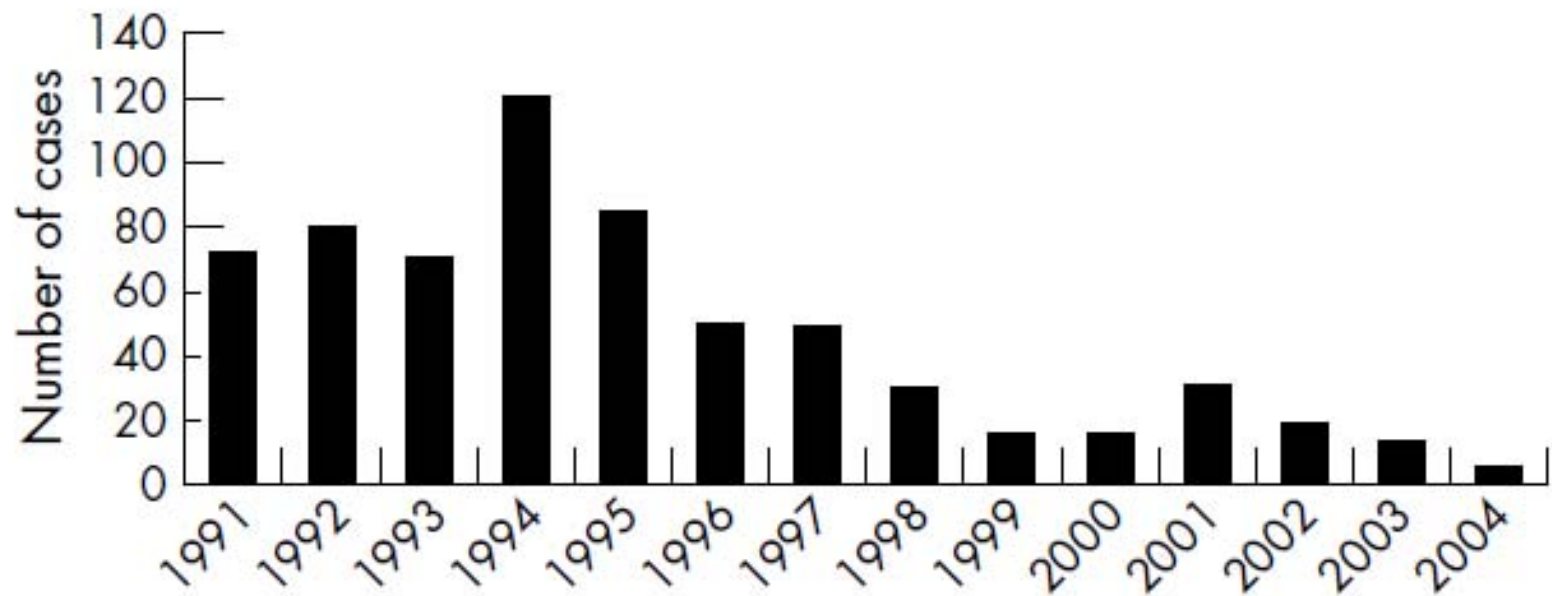
Infectious syphilis rates in Australia



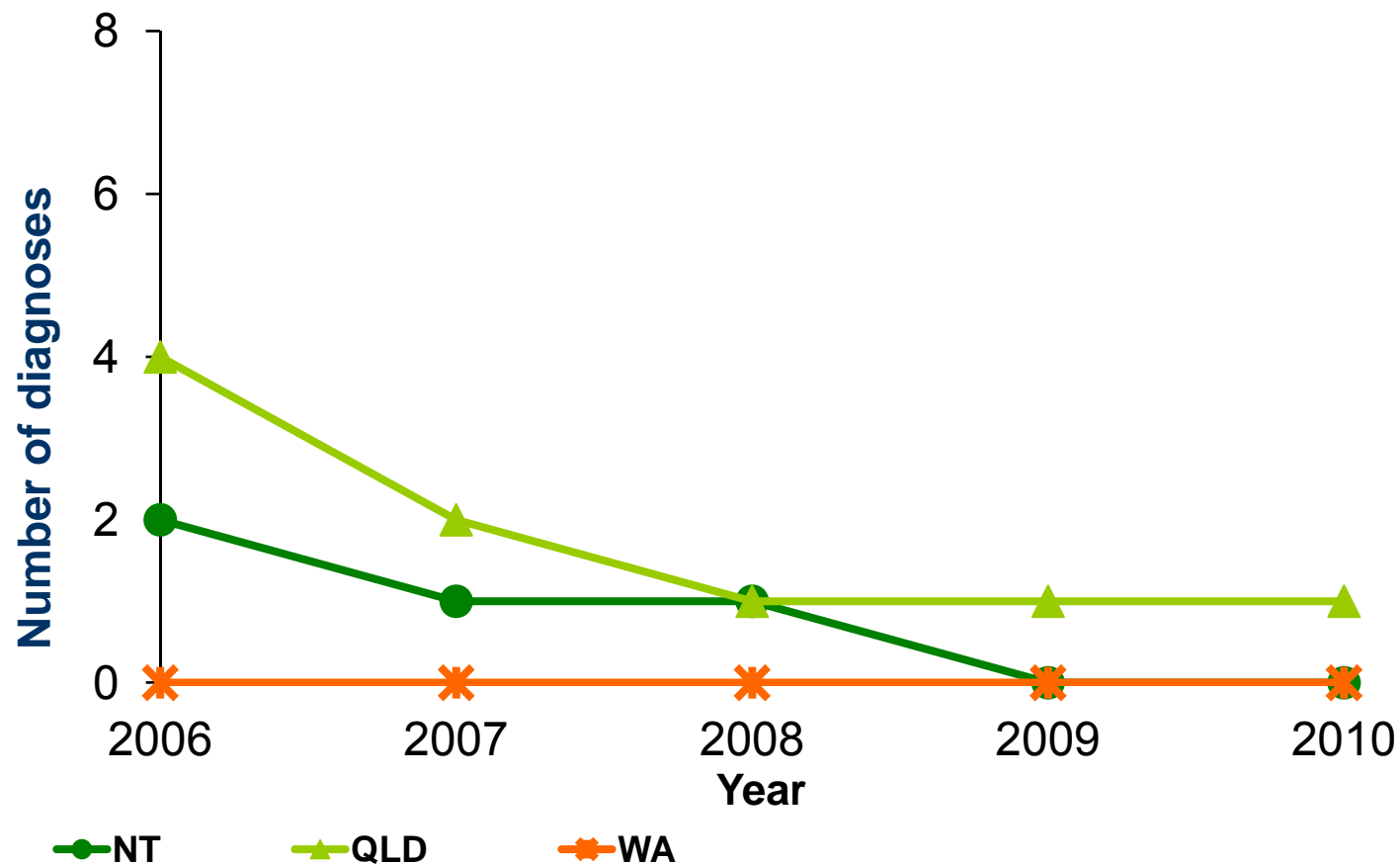
4 Infectious syphilis crude notification rate, by Indigenous status and area of residence, 2005–2009



Donovanosis notifications in Australia, 1991–2004



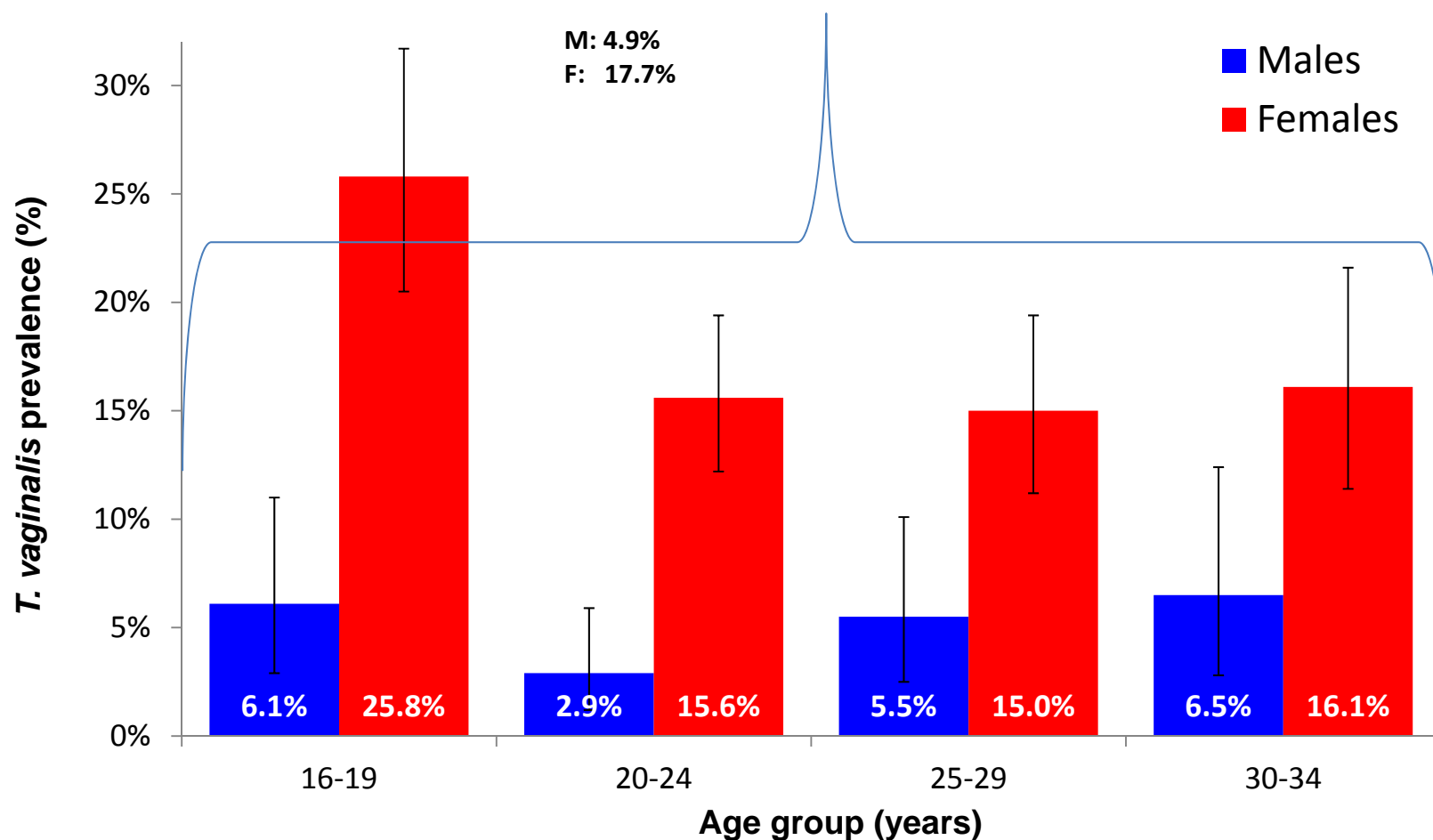
Donovanosis diagnoses in Australia, 2006-2010¹



¹ Jurisdictions (NT, QLD and WA) reporting diagnoses of Donovanosis in 2006 - 2010

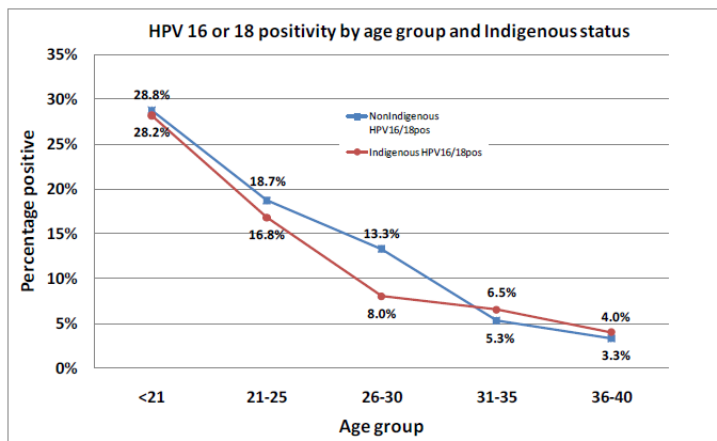
Source: State/Territory health authorities

Trichomoniasis prevalence in remote Aboriginal communities in participating in STRIVE trial (n=1828)

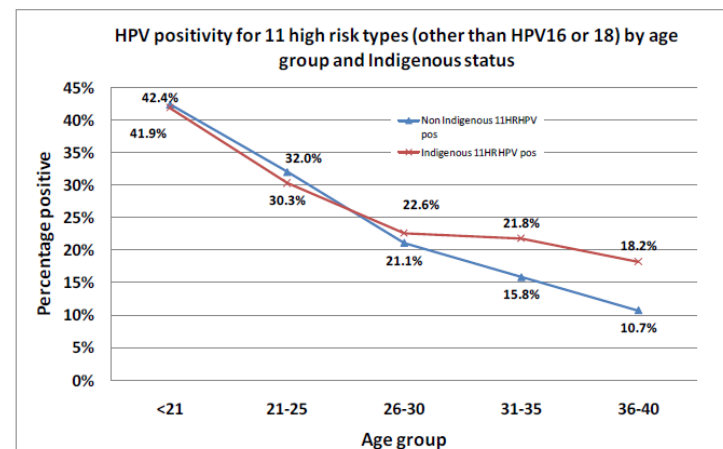


HPV Prevalence of HPV types prior to vaccination program

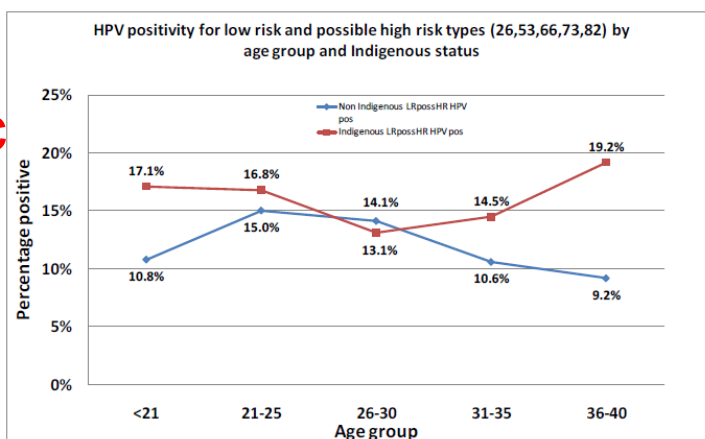
a



b



c



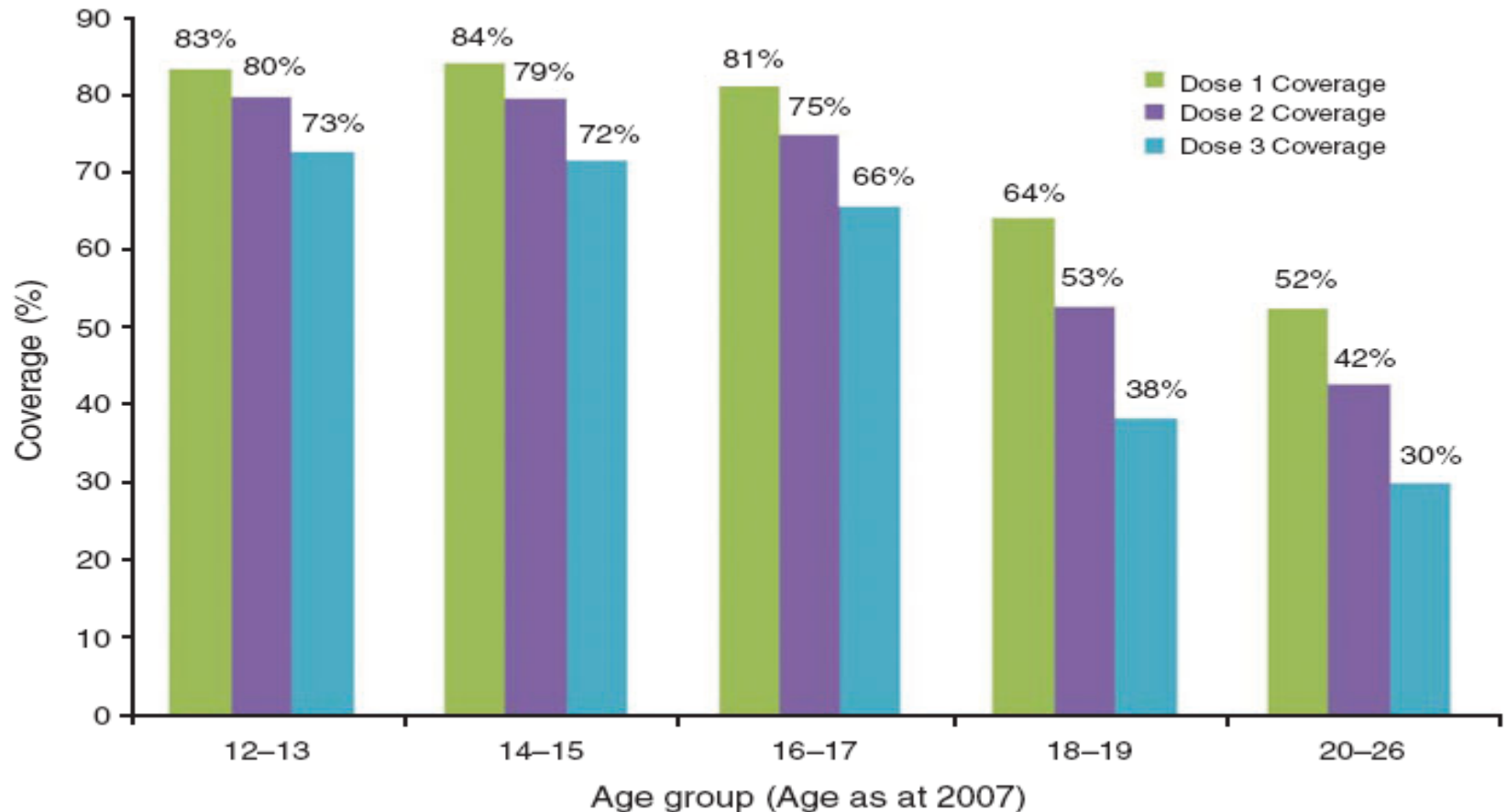
- (A) HPV16 or 18;
- (B) 11 high-risk HPV types without 16/18;
- (C) low-risk and possible high-risk HPV types.

Prevalence of HPV types in women ≤ 40 years prior to vaccination program

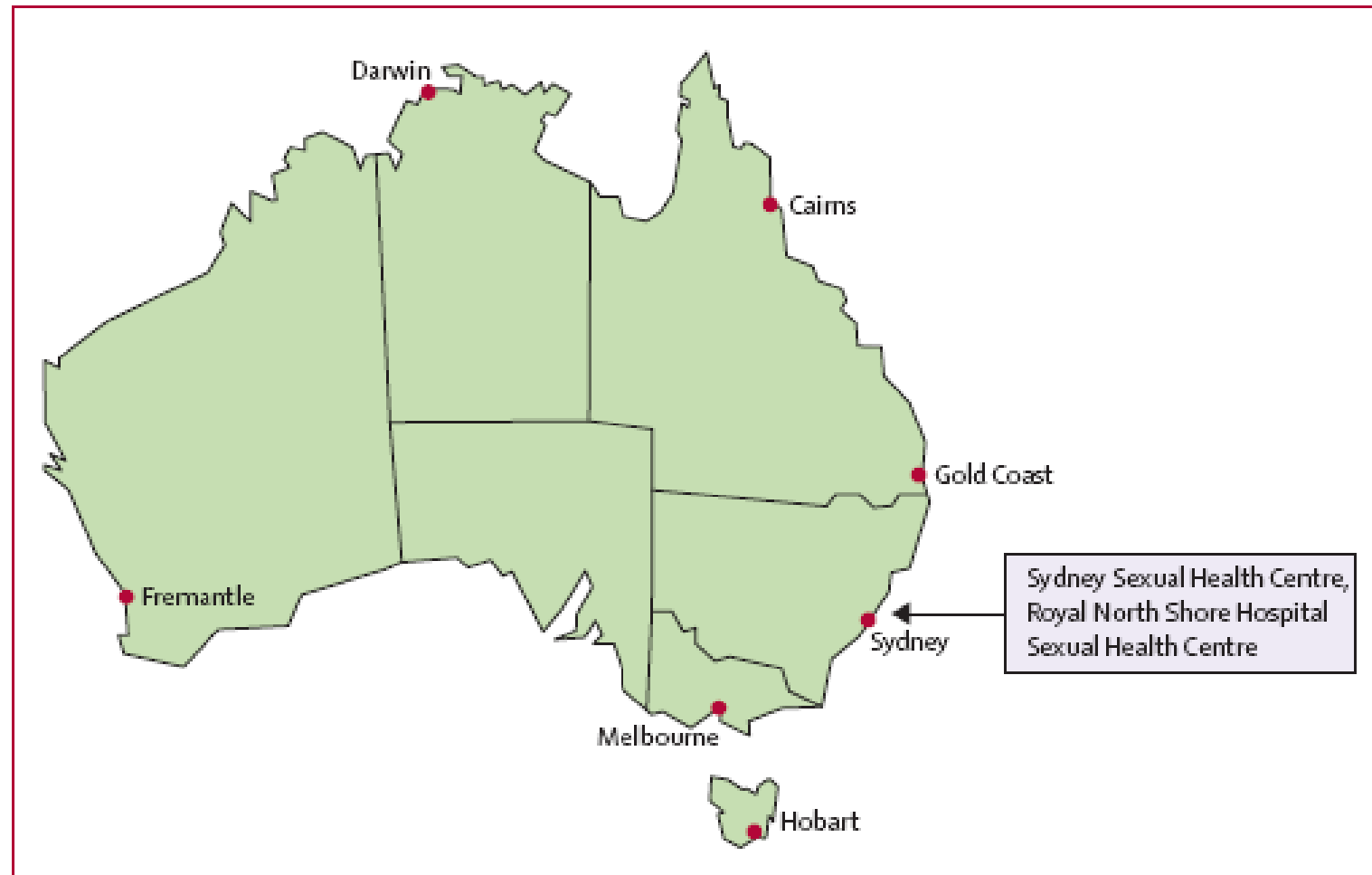
HPV type	Non-Indigenous women (n = 1494)	Indigenous women (n = 655)
Multiple	354 (23.7%)	180 (27.4%)
6/11/16/18	220 (14.7%)	102 (15.5%)
16/18	185 (12.5%)	86 (13.1%)
16 ^a	141 (9.4%)	69 (10.5%)
51 ^a	94 (6.3%)	37 (5.6%)

^a Established high-risk HPV type.

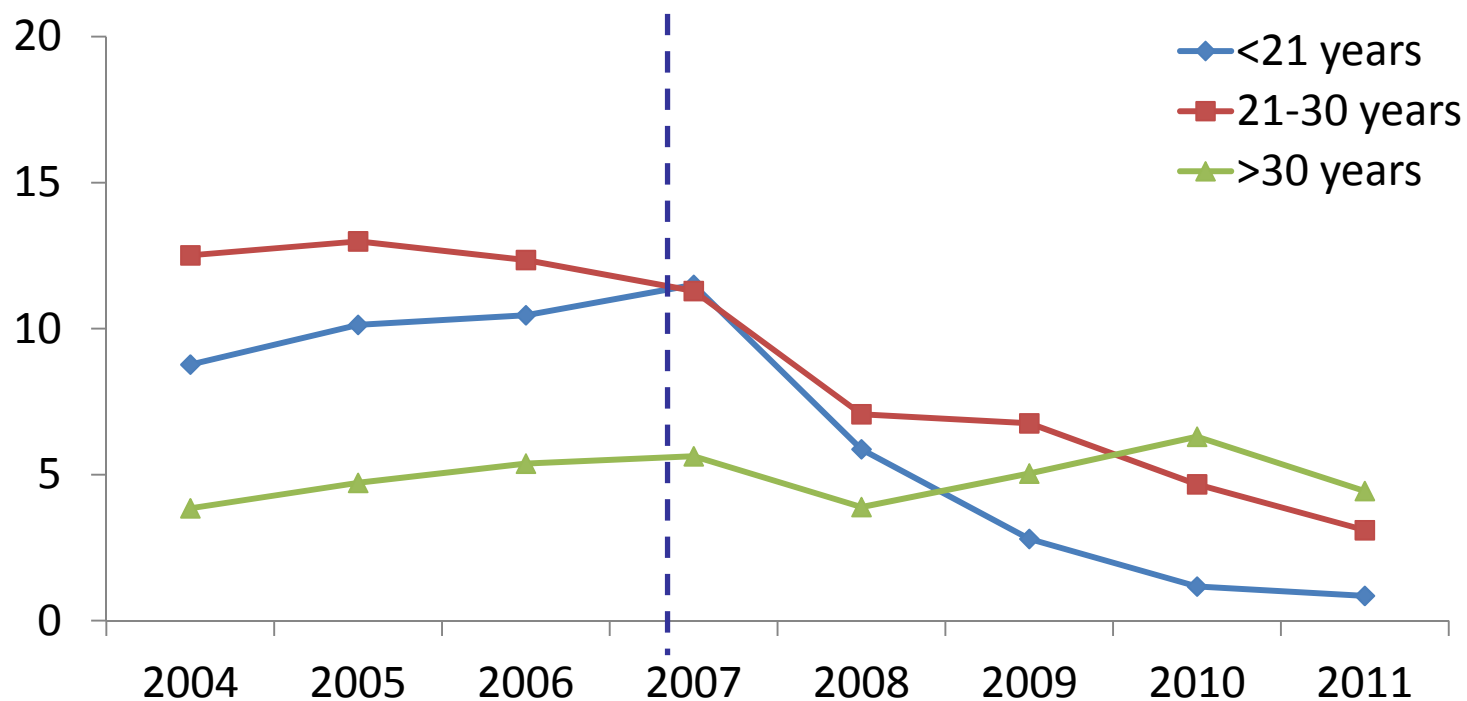
Vaccine coverage of Australian women by age in 2007 (at March 2011)



Eight public sexual health services

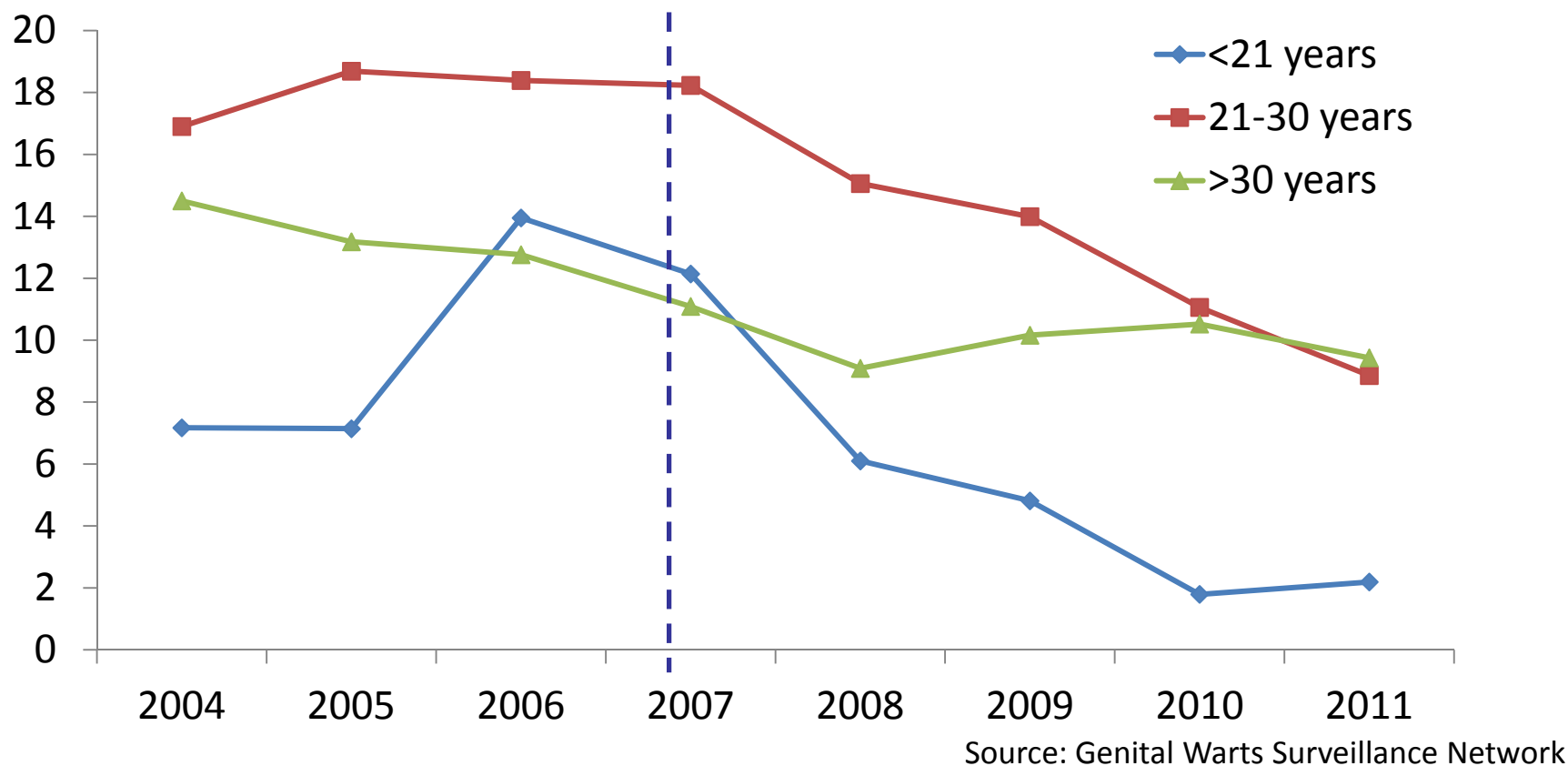


Proportion of Australian born women with genital warts at first visit to sexual health clinic

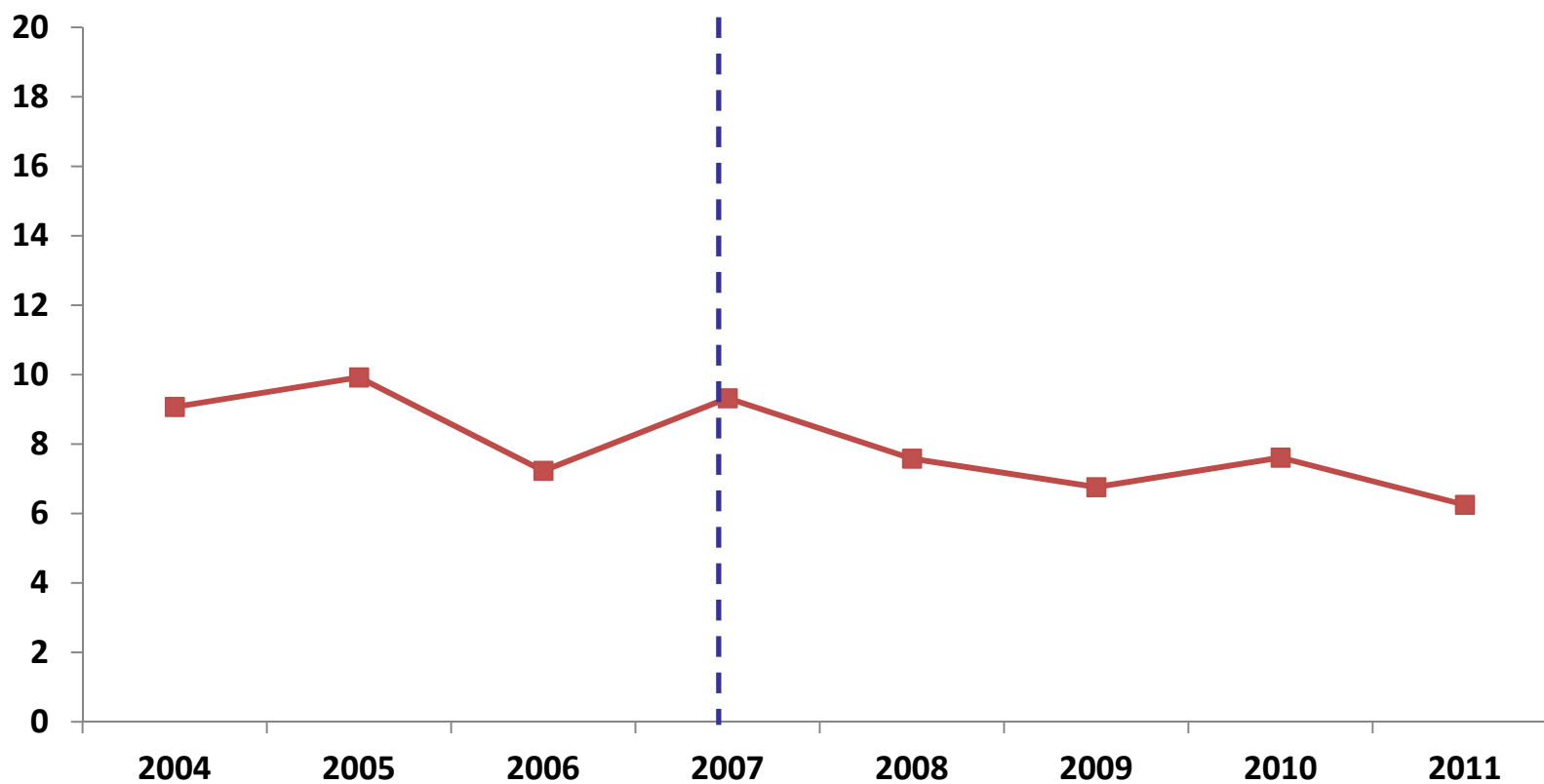


Source: Genital Warts Surveillance Network

Proportion of Australian born heterosexual men with genital warts at first visit to sexual health clinic

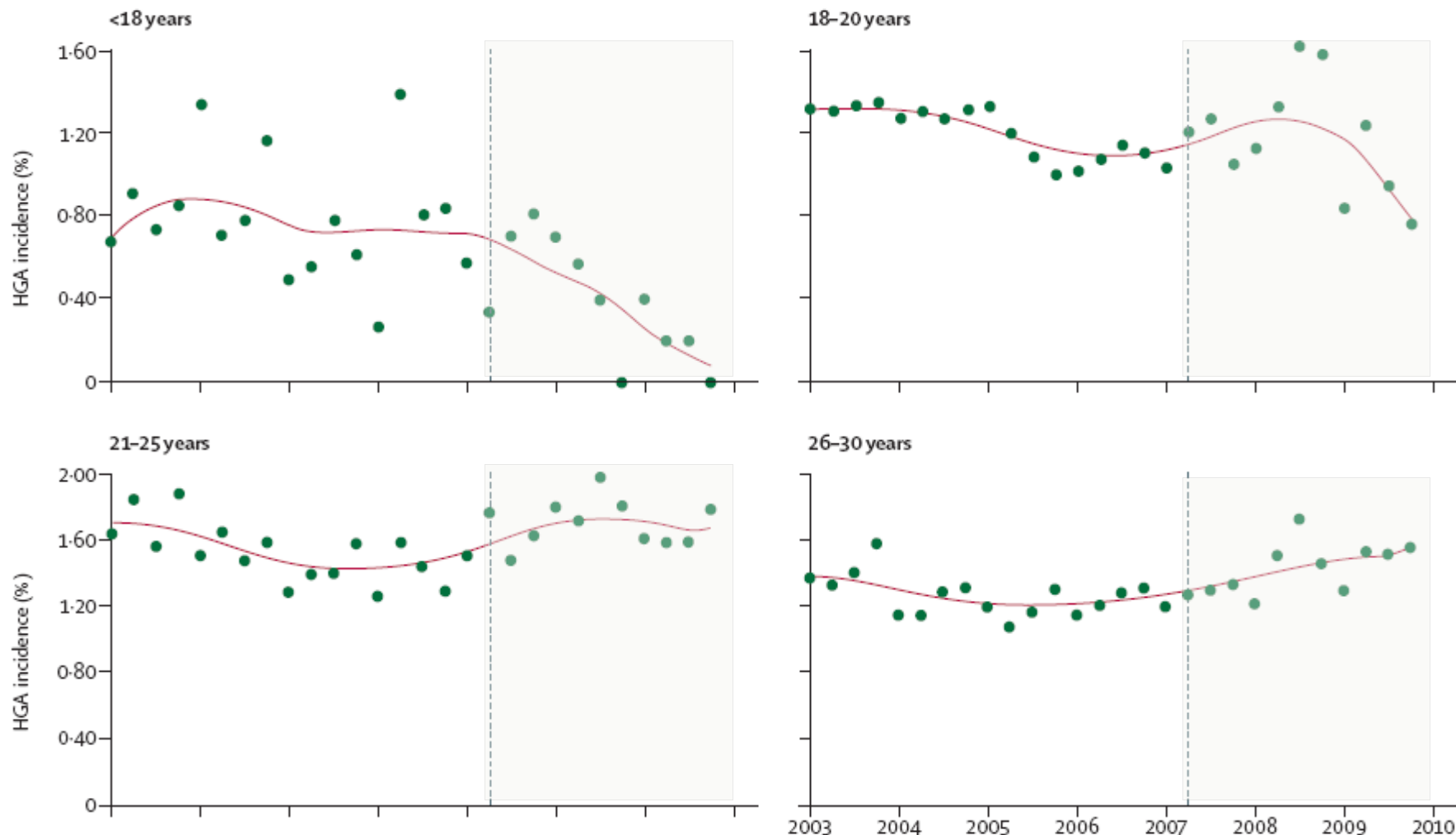


Proportion of Australian born MSM with genital warts at first visit, 2004-2011



Source: Genital Warts Surveillance Network

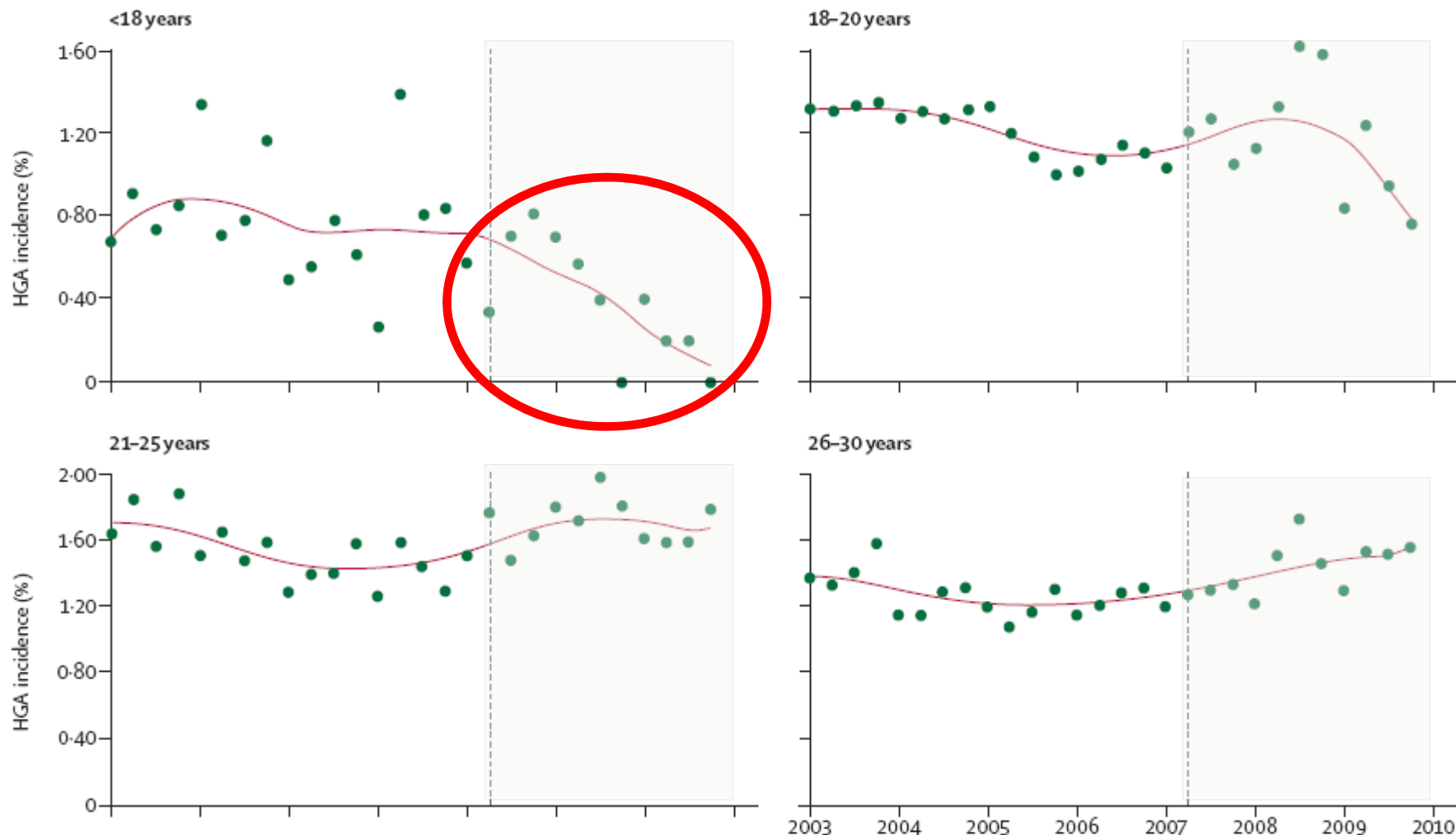
High grade cervical abnormalities in young Victorian women, by age group, 2003-2009



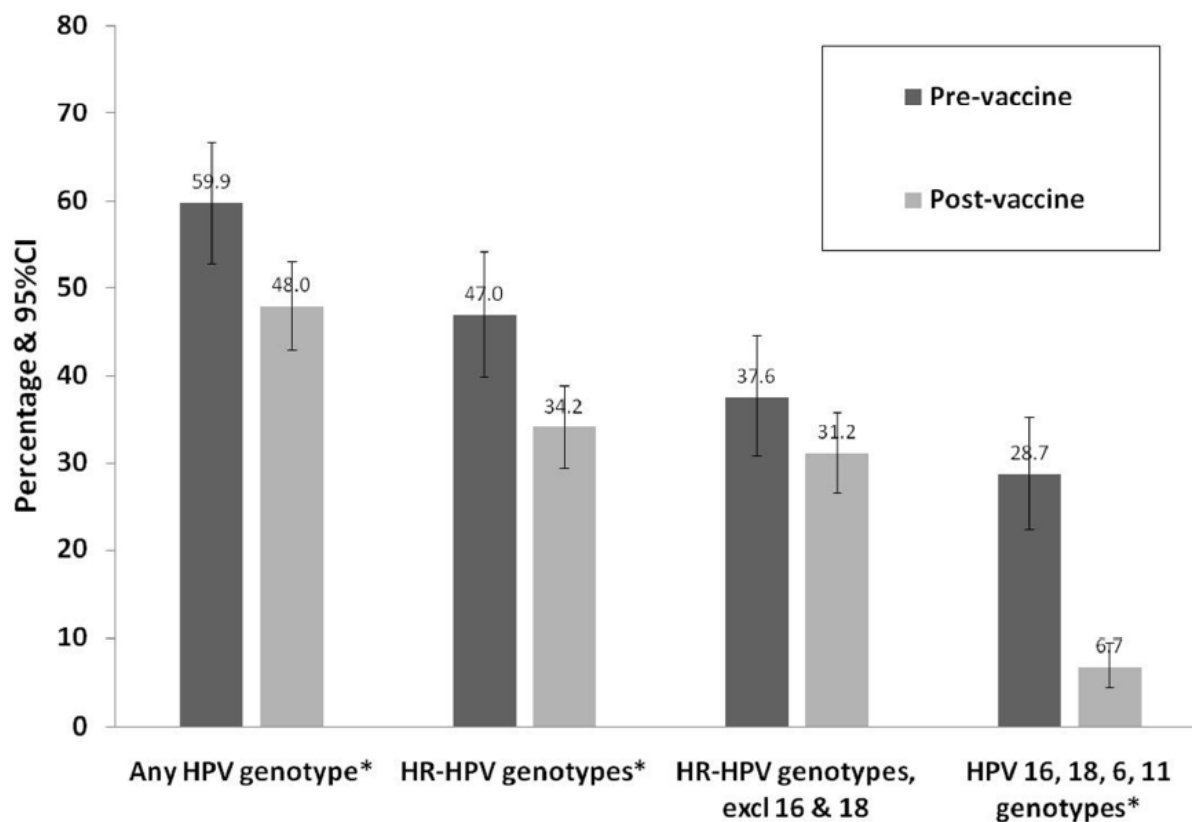
Red lines = Lowess smoothing

Brotherton JML et al. *Lancet* 2011

High grade cervical abnormalities in young Victorian women, by age group, 2003-2009

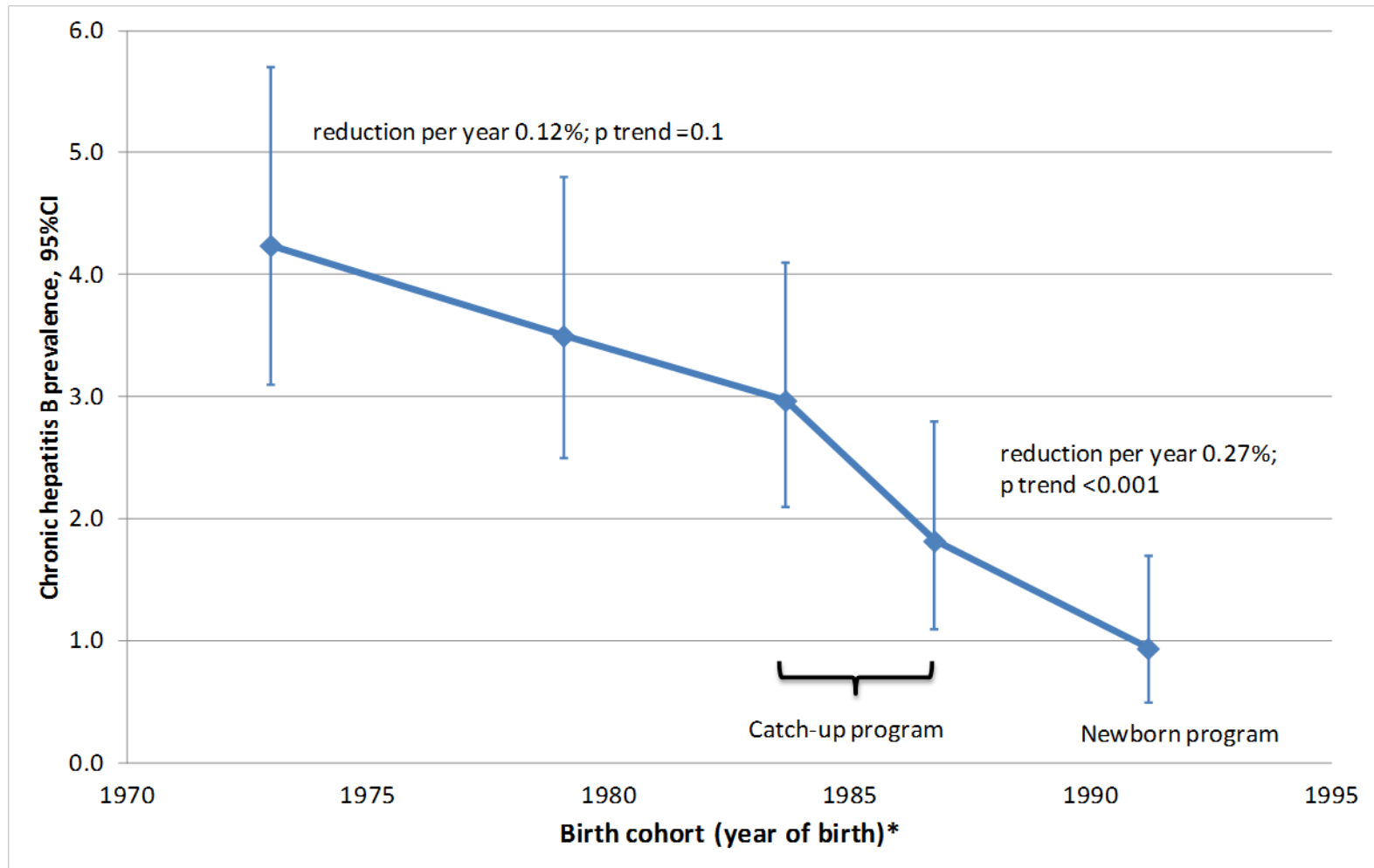


HPV prevalence in young women: impact of Australia's vaccination program



* indicates $p < 0.05$ for difference in percentages between groups

Hepatitis B prevalence by NT birth cohort



Hepatitis B prevalence by NT birth cohort

