



Human Papillomavirus in Young People Epidemiological Research

The HYPER Study

Basic study info

Background:

Human Papillomavirus (HPV) is a virus that is commonly transmitted through sexual contact. You might know that HPV causes cervical cancer in women, but it is a little known fact that it can also cause genital warts and anal cancer among men. Currently there is HPV vaccine that is free to 12 yo girls and young women, men have to pay about \$450 to get the vaccine.

Aim of the study:

To understand how prevalent HPV is among young same-sex attracted men and how likely young guys will choose to have the vaccine if it is provided for young gay men for free.

Who are we looking for:

Same-sex attracted guys aged 16-20.

What is involved:

- 4 study visits across 12 months, appointment available.
- A questionnaire, 15 minutes to finish.
- Swabs from genital sites and a blood sample.

What is provided:

- Reimbursement of \$100 in vouchers;
- HPV vaccine (Gardasil) (normally costs \$450 for guys).

Where the study takes place:

Melbourne Sexual Health Centre
580 Swanston Street, Carlton

How to contact us:

HYPER line: 1800 887 324

Email: hyper@mshc.org.au

Website: www.hyper.org.au

Background:

- MSM are at increased risk for HPV infection and HPV associated anal cancer;
- There are no previous studies that have focused on the prevalence of HPV in representative samples of young MSM and used **detection** of HPV over time to define the presence of **infection**;
- The HYPER study aims to determine the prevalence and risk factors of HPV infection among young same sex attracted males.

We argue that if many young MSM have already been infected, then all boys will need to get the vaccine when they are younger; if most young MSM don't have HPV it might be possible to vaccinate same-sex attracted boys before they get HPV.

Eligibility

- Participants have to be same-sex attracted males aged 16 to 20.
- We used a series of strategies to promote the study and recruit young men, such as queer departments of universities in Victoria, LGBT groups, facebook, twitter, Grindr, radio and community magazines, etc.
- Ethical approval from the Alfred Hospital and Melbourne University.

Methods:

- This study includes 4 visits at month 0, 3, 6 and 12.
- At each visit we take swabs from anus, perianus, penis together with an oral gargle. We also take blood for HPV serology.
- At baseline, we also take swabs for gonorrhoea and Chlamydia testing and blood to test for HIV, syphilis, Hepatitis A and B.
- Our study is really a multiple cross-sectional study. We use swab and blood samples to test for HPV DNA, antibody and RNA. We use these markers to distinguish infection from deposition. For example, antibody or RNA detected any given time is defined as infection, DNA detected at two consecutive time points is also considered infection. While DNA detected once or non-consecutively is considered deposition.

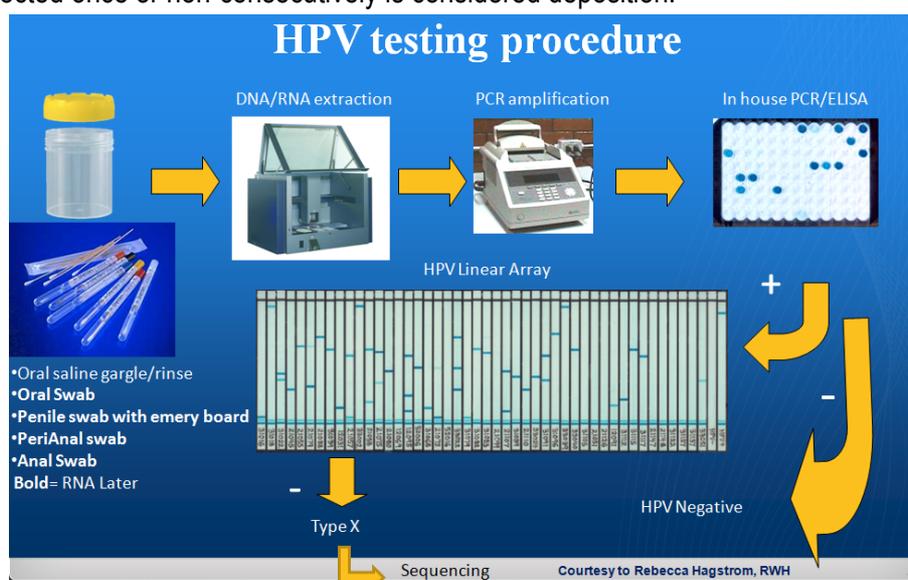


Fig. 1 HPV testing procedure

At each visit, participants self-minister a questionnaire. In the questionnaire, we ask questions

about socio-demographic characteristics, Sexual behaviours, STIs testing and history, Knowledge about HPV, Attitudes towards HPV vaccine, Tobacco, alcohol and drug use and Circumcision. For the moment we have only tested HPV for the first 39 men.

Results:

We commenced the HYPER Study on 20 September 2010. Until 20 August 2011, we have recruited 100 men. The median age for the 100 men was 19. About 80% of men were in year 12, TAFE or tertiary education. About 40% were from the community. Only 12% were circumcised.

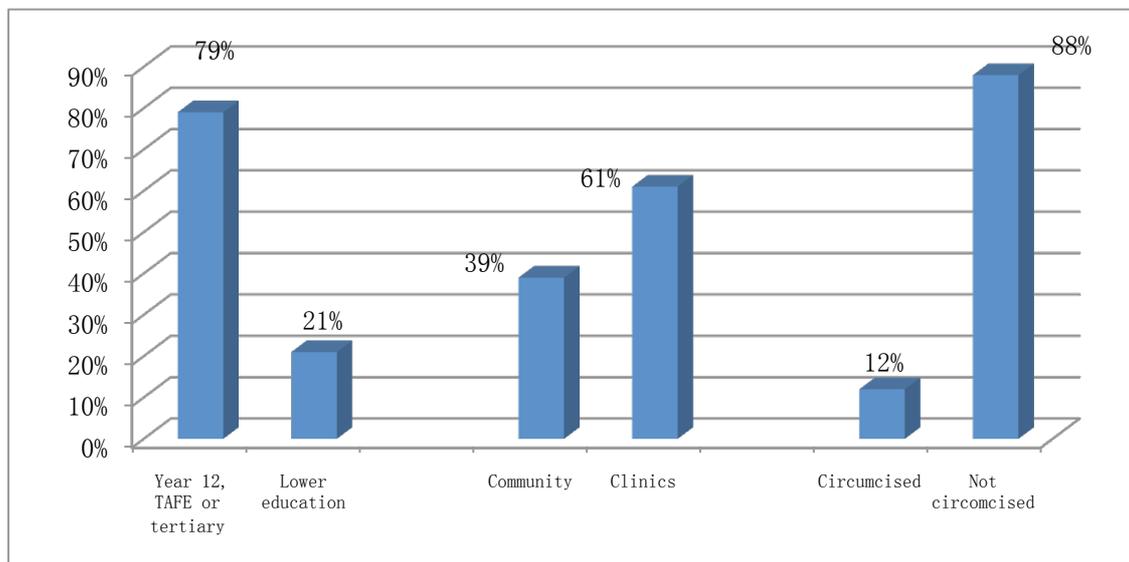


Fig. 2 Characteristics of HYPER participants

Literally all men had been involved in kissing and oral sex with another man, and about 90% had experienced anal sex with another man. Over 50% had rimmed another man.

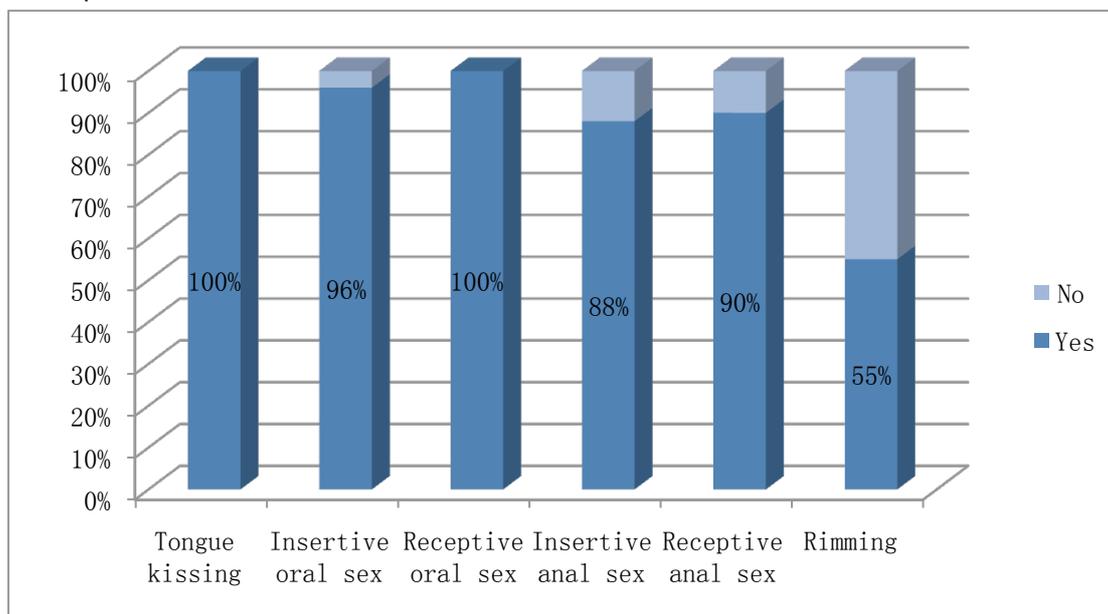


Fig. 3 Sexual experiences with male sexual partners among HYPER participants

The median age of first oral sex was 16 and the figure of first anal sex was 17.

Table 1 Age of first sexual behaviours with male sexual partners among HYPER participants

Sexual behaviour	Median age
First tongue kissing	16
First insertive oral sex	16
First receptive oral sex	16
First insertive anal sex	17
First receptive anal sex	17
First rimming	17

The number of lifetime male sexual partners among HYPER participants. The median number of any sex in lifetime was 10, the figure for insertive oral sex was 10 and receptive oral sex 8. The median number of insertive anal sex was 4 and receptive anal sex 3.

Table 2 Number of lifetime male sexual partners among HYPER participants

Sexual behaviour	Median number
Tongue kissing	15
Sex of any type	10
Insertive oral sex	10
Receptive oral sex	8
Insertive anal sex	4
Receptive anal sex	3
Rimming	2

Even around 40% of men stick to condom use all the time, there were still around 20% of them who have never used a condom.

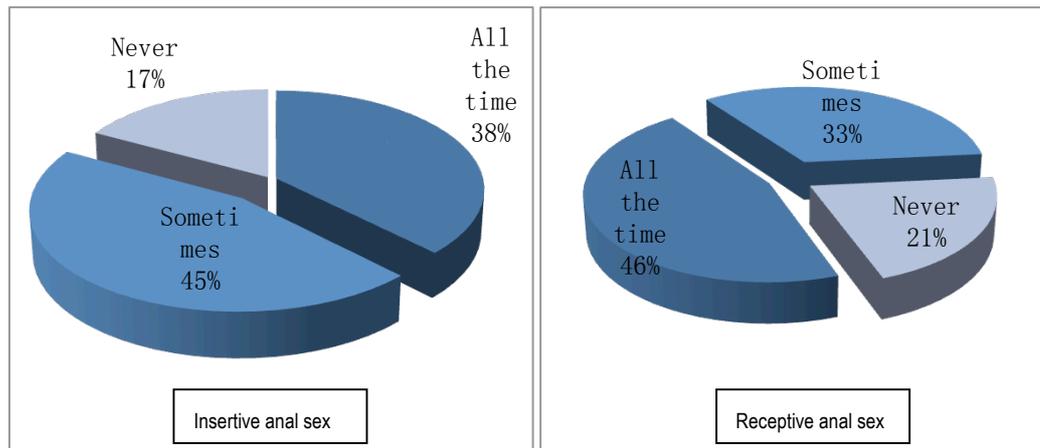


Fig. 4 Condom use with male sexual partners among HYPHER participants

We asked participants a few questions on their knowledge of HPV. 85% thought HPV can cause genital warts. This rate is quite high. Because when we promoted the study, we would tell potential participants that HPV can potentially cause genital warts. But about 11% were still doubting. 30% reported that they had discussed HPV with peers, it could be influenced by word-of-mouth, and the actual figure might be even lower. 34% didn't believe non-genital skin to skin contact, such as fingers and feet can transmit HPV. 44% don't know if one can get HPV from toilet seats. About 20% don't know if the vaccine can give them the virus.

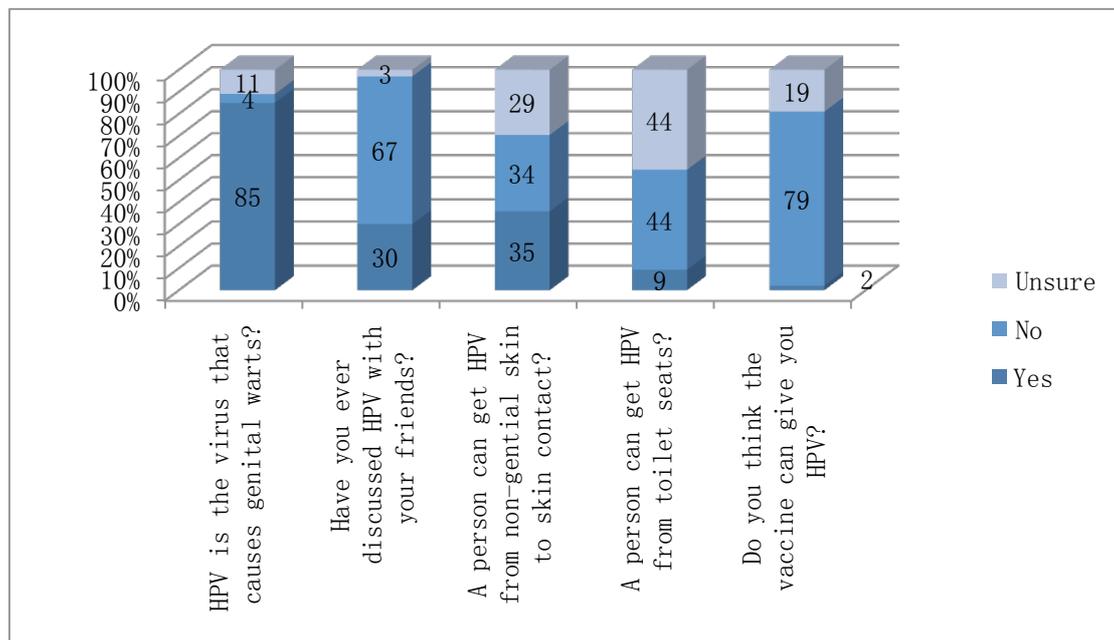


Fig. 5 Knowledge of HPV among HYPHER participants

When we asked them “are you happy to pay about \$400 for the vaccine”, the majority of them replied “unlikely or very unlikely”, 93% thought HPV vaccine should be offered to young men for free. When we further asked them “if the HPV vaccine was only available free of charge to same-sex attracted men, do you feel comfortable to tell your doctor that you are gay in order to get the vaccine”, about 90% of them answered “likely or very likely”. Actually this makes sense

as 56.2% had already disclosed their sexuality to their doctors. If the vaccine was free of charge for them, I believe the rate would have been much higher.

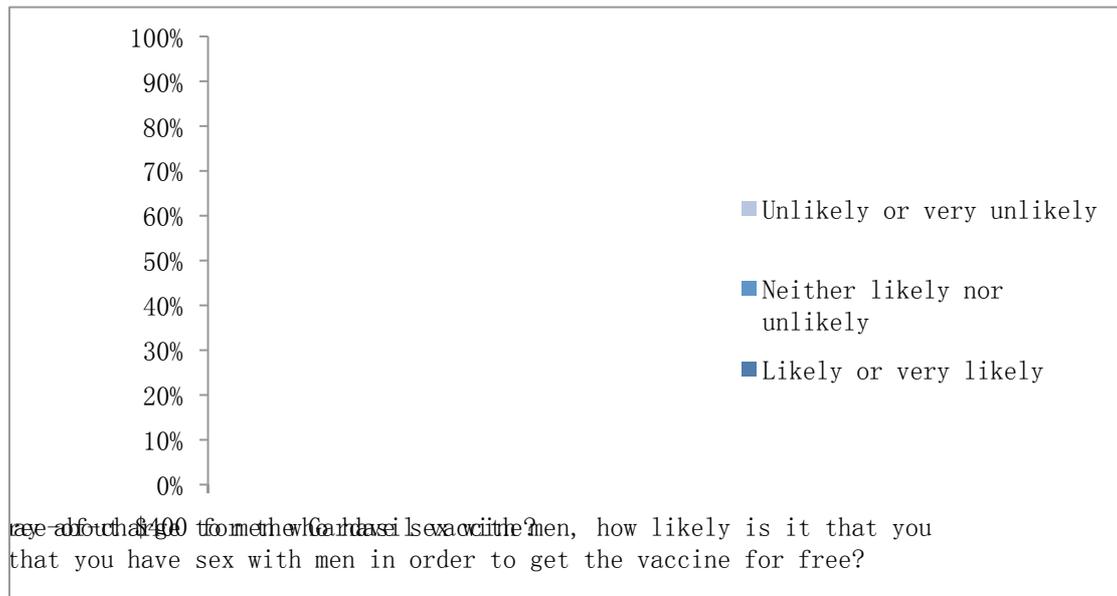


Fig. 6 Attitude towards HPV vaccine among HYPHER participants

Anal and penile HPV detection from the first 39 participants: We haven't tested samples for all participants just yet. We are particularly interested in the four types which the Gardasil vaccine covers. In this graph for anal HPV detection, we can see that 15% had HPV 6, 5% had 11, 15% had 16, 18% had any high risk HPV and 46% had any at least one type of HPV. In this graph for penile HPV detection, we can see that 3% had HPV 6, 5% had 11, 5% had 16, 10% had any high risk HPV and 15% had any at least one type of HPV. Interestingly, HPV 18 was not detected at any site of any man. Literally the four vaccine types were not detected in any oral or oral gargle samples.

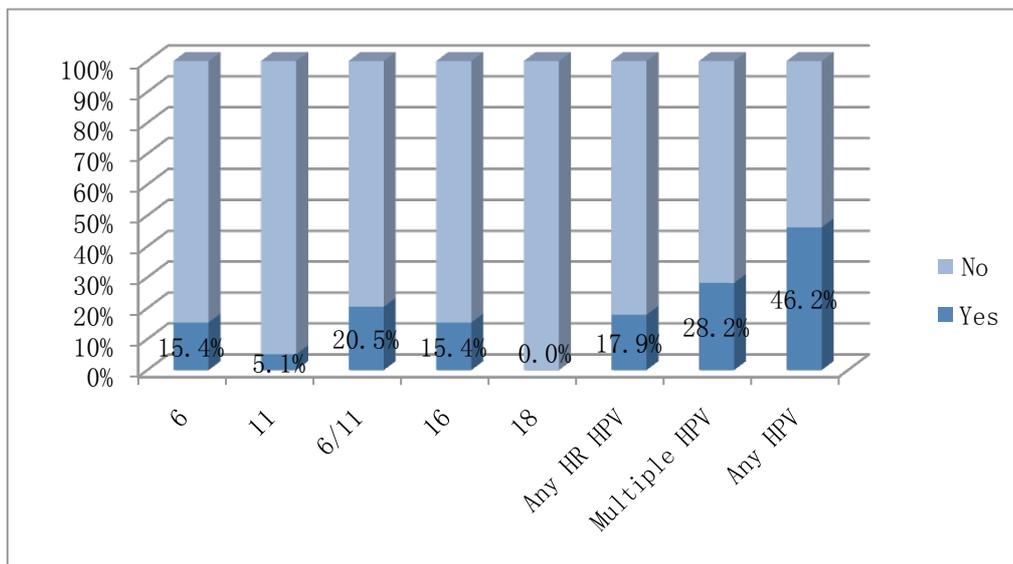


Fig. 7 Anal HPV prevalence in 39 HYPHER participants

Even though we found that 46% men have already been detected with at least one type of HPV, from this table we can see that the first 39 men had much higher number of sexual partners than the last 61 men and they were likely to have higher risk of HPV acquisition. Also we can see that samples from the clinic had much higher number of sexual partners than those who were from the community.

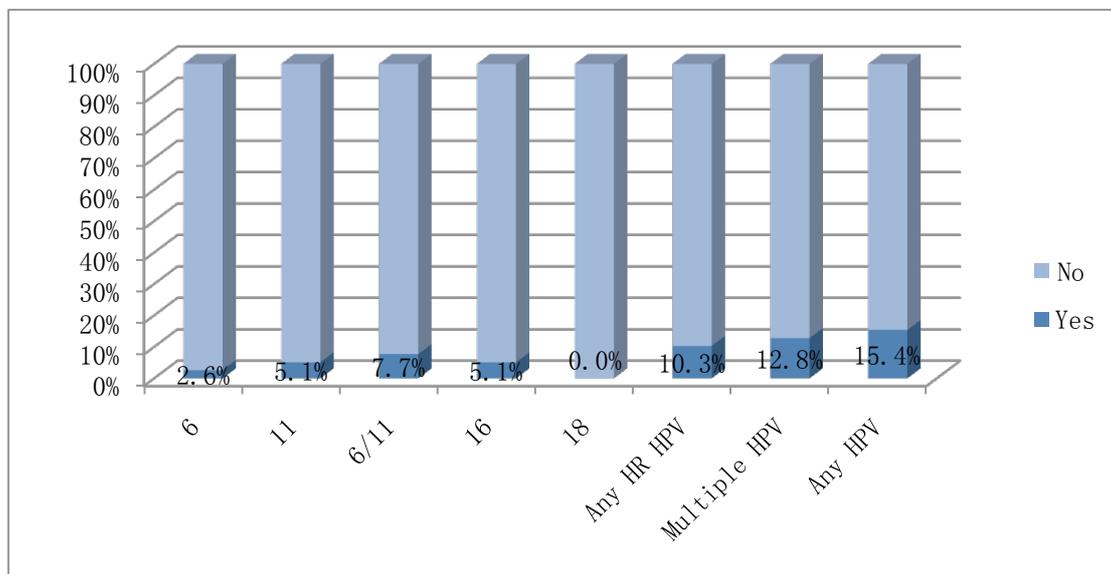


Fig. 8 Penile HPV prevalence in 39 HYPHER participants

9% had either gonorrhoea or chlamydia, no one got HIV or syphilis. One was Hep B carrier.

Discussion:

- This is the first study to focus on HPV prevalence among younger MSM;
- Teenage MSM is a potentially difficult population to recruit: 9 men per month;
- About 40% of MSM were recruited from community, such as universities, MSM groups, which reminds us to step up recruits from the community in order to get a more representative sample;
- Young MSM start sexual contact at an early age with most young MSM experiencing high risk sexual behaviours;
- About 9% of young MSM have at least one bacterial STI;
- In contrast to older MSM, who are almost universally infected with anal HPV, many young MSM are still not infected with HPV, and the majority haven't be affected by the 4 vaccine types.
- The majority of young MSM would not pay \$400 for the vaccine but would disclose their sexual orientation to a doctor if HPV vaccination was offered free of charge for MSM.
- Early study results point to the potential for preventing HPV associated morbidity including anal cancer in MSM.
- Median age that young men would feel comfortable disclosing sexuality to a doctor to obtain the vaccine is 17.

Where HYPHER is going?

August 2012

- Finish recruiting 200 men: testing of PCR specimens from baseline for 200 men
- Testing of PCR and serology specimens from all 4 visits for the first 100 men

August 2013

- Testing of PCR and serology specimens from follow-up visits for the remaining 100 men