

# Acceptability of human papillomavirus vaccination among men who have sex with men in Vancouver

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## Background / Objectives

Men who have sex with men (MSM) could benefit from human papillomavirus (HPV) vaccine due to their increased risk of genital warts and anal cancer associated with HPV types 6, 11, 16, and 18. Risk-based vaccination strategies would require self-identification to health care providers (HCP). However, little is known about HPV vaccine acceptability among MSM in Canada.

The ManCount Survey is the Vancouver site of M-Track, a national second-generation surveillance system monitoring risk behaviours, HIV and sexually transmitted infections (STI) among MSM<sup>1</sup>. We assessed willingness to receive HPV vaccine among participants in this study and examined variables likely to inform HPV vaccination strategies among MSM.

## Methods

Participants aged 18 years or older who self-identified as MSM were recruited at community venues in Vancouver, provided a dried blood spot for HIV testing, and completed a questionnaire on behavioural and health-related factors. Vaccine acceptability was assessed by a single survey question having five response options (very unwilling, unwilling, neutral, willing or very willing to receive HPV vaccine).

We carried out descriptive analyses of key survey variables and used multivariate logistic regression to assess factors independently associated ( $p < 0.05$ ) with HPV vaccine acceptability. The outcome was a response as very willing or willing to receive HPV vaccine, and model fitting followed backward selection of explanatory variables.

## Results

From August 2008 to February 2009, 1169 MSM were recruited and 1041 completed data on HPV vaccine acceptability. 697 (67.0%) were very willing or willing to receive HPV vaccine, 214 (20.6%) reported a neutral response, and 130 (12.5%) were very unwilling or unwilling.

**Table 1: Multivariate predictors of willingness to receive HPV vaccine**

Variable		Willing (%)	OR (95% CI)	AOR (95% CI)
Low income (<20,000/year)	Yes	161/277 (58.1%)	0.59 (0.45, 0.79)	0.58 (0.39, 0.86)
	No	523/746 (70.1%)	1.00	1.00
Recreational drug use before or during sex (past 6 months)*	Yes	156/256 (60.9%)	0.70 (0.53, 0.94)	0.66 (0.44, 0.97)
	No	541/785 (68.9%)	1.00	1.00
Received money/goods in exchange for sex	Yes	76/140 (54.3%)	0.54 (0.38, 0.77)	0.60 (0.37, 0.97)
	No	589/856 (68.8%)	1.00	1.00
Ever diagnosed with genital warts	Yes	137/181 (75.7%)	1.67 (1.16, 2.41)	1.97 (1.22, 3.18)
	No	560/860 (65.1%)	1.00	1.00
Hepatitis A or B vaccination	Yes	543/775 (70.1%)	1.72 (1.28, 2.32)	1.54 (1.02, 2.32)
	No	140/243 (57.6%)	1.00	1.00

OR: odds ratio; CI: confidence interval; AOR: adjusted odds ratio; NS: not significant

\*Includes ecstasy, ketamine, crystal meth, GHB, psychedelics or amphetamines

**Table 1, continued**

Variable		Number (%)	OR (95% CI)	AOR (95% CI)
Heard of HPV	Yes	512/741 (69.1%)	1.41 (1.06, 1.86)	NS
	No	183/298 (61.4%)	1.00	
Identified as MSM to HCP	Yes	565/806 (70.1%)	1.86 (1.36, 2.54)	NS
	No	116/208 (55.8%)	1.00	
Age (years)	≥25	578/846 (68.3%)	1.39 (1.00, 1.92)	NS
	< 25	115/189 (60.8%)	1.00	

Other variables analyzed but not statistically significant in bivariate analysis were HIV status, education, ethnicity, history of STI in past 12 months, unprotected anal sex with casual partner in past 6 months, having a concurrent partner.

**Table 2: Data to inform vaccination strategies**

Participants who had heard of HPV (number, %)	741/1039 (71.3%)
Participants who had identified as MSM to a HCP (number, %)	882/1121 (78.7%)
Age when identified as MSM to HCP (years)	median 21 (IQR 18 – 25)
Age at sexual debut with male partners (years)	median 17 (IQR 14 – 20)
Time from first sexual contact with male partners to identification as MSM to HCP (years)	median 4 (IQR 1 – 8)

IQR: interquartile range

## Discussion/Limitations

In multivariate regression we found MSM reporting low income, recreational drug use or receiving money/goods in exchange for sex less likely to accept HPV vaccine while MSM with a history of genital warts or hepatitis vaccination were more likely to accept. When considering HPV vaccination strategies, targeted interventions may be required for groups with potentially lower vaccine uptake who are at increased risk for HPV infection, such as MSM reporting recreational drug use (see P791). In addition, vaccine uptake among those with low income may be even lower if out-of-pocket expenses are required.

Our findings related to vaccine acceptability, age at sexual debut with male partners and identification as MSM to a HCP are consistent with other studies.<sup>2,3</sup> While not statistically significant in our multivariate model, a higher proportion of men who had heard of HPV or identified as MSM to a HCP would accept HPV vaccination. It has been found that recommendation from a HCP increases vaccine acceptability among MSM.<sup>2</sup> We were unable to assess this, nor was our study based on an established theoretical model to predict behaviour change. Given that 21.3% of MSM in our sample had not communicated with a HCP about male sexual partners and the median time from first sexual contact to disclosure was four years, HPV vaccination may be of limited benefit to MSM if delivered through HCP.

## Conclusion

In this venue-based sample of MSM in Vancouver, willingness to receive HPV vaccine was substantial (67%) but acceptability varied by demographics, behavioural risk and health history. Risk-based HPV vaccine programs delivered by HCP may offer limited effectiveness. Population based strategies targeting all males would have an optimal impact on reducing the burden of HPV-related disease among MSM.

## References

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