

# Syphilis incidence and associated risk factors among men who have sex with men in Bangkok, Thailand, 2006-2015

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## Introduction:

Syphilis infection has been increasing among men who have sex with men (MSM) in Thailand. We assessed syphilis incidence and associated risk factors in the Bangkok MSM Cohort Study (BMCS).

## Methods:

We enrolled Thai MSM age  $\geq 18$  years old in the BMCS from April 2006 to January 2008 (Period1) and September 2009 to December 2010 (Period2), and followed participants every 4 months for up to 60 months. *Treponema pallidum* (TP) screening was performed at enrollment, annually and at any unscheduled study visits if indicated, using the rapid plasma reagin (RPR). If the RPR was reactive, we confirmed with a TP-specific antibody test. We defined incident syphilis as a RPR titer  $\geq 1:8$  and a reactive treponemal test. We calculated risk factors for incident syphilis in all participants using a Cox proportional hazard model, adjusting for baseline demographic and behavioral characteristics, and prevalent HIV infection.

## Results:

Among 1,502 participants who had no syphilis at baseline and had more than one follow-up visit, 55.5% reported unprotected anal intercourse (UAI). The overall syphilis incidence was 2.7 (95% CI 2.3–3.1) per 100 person-years (/100PY). There was a significant difference in syphilis incidence in the two periods (2.5/100PY in Period1 versus 3.3/100PY in Period2,  $p=0.003$ ). Factors independently associated with incident syphilis were enrollment in Period2 (Adjusted HR [AHR] 1.7; 95% CI 1.2–2.4), UAI (AHR 1.4; 95% CI 1.0–2.0), amyl nitrate use (AHR 1.9; 95% CI 1.2–2.8), Viagra use (AHR 1.6; 95% CI 1.1–2.5), and prevalent HIV infection (AHR 2.3; 95% CI 1.6–3.1).

**Table: Risk factors significantly associated with incident syphilis among a cohort of MSM participated in the BMCS, Bangkok, Thailand (n=1502)**

Characteristics	Incident syphilis		
	Adjusted Hazard Ratio (AHR)	95% CI	P value
<b>Period of enrollment</b>			<b>&lt;0.01</b>
Sep 2009 – Dec-2010 (Period2)	1.7	1.2–2.4	
Apr 2006 – Jan 2008 (Period1)	Ref.		
<b>Unprotected anal intercourse</b>			<b>0.03</b>
Unprotected insertive and receptive	1.4	1.04–2.0	
Unprotected insertive only	1.1	0.6–2.0	
Always use condom	Ref.		
<b>Amyl nitrate use</b>			<b>&lt;0.001</b>
Yes	1.9	1.2–2.8	
No	Ref.		
<b>Viagra use</b>			<b>&lt;0.001</b>
Yes	1.6	1.1–2.5	
No	Ref.		
<b>HIV co-infection</b>			<b>&lt;0.001</b>
HIV prevalent infection	2.3	1.6–3.1	
No	Ref.		

## Conclusion:

In the BMCS, statistically significant differences in incident syphilis by enrollment period may be due to recent increases in syphilis among urban Thai MSM. Syphilis screening identifies MSM at high risk for HIV, and syphilis screening and treatment are necessary for comprehensive HIV VCT services.

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## Disclaimer

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