



Repeat Syphilis Among Men Who Have Sex with Men — San Diego County, California, 2004–2009



Marjorie A. Lee, MPH¹, Tom Gray, BS², Julia L. Marcus, MPH³, Elaine F. Pierce, MD, MPH¹, Kenneth A. Katz, MD, MSc, MSCE¹

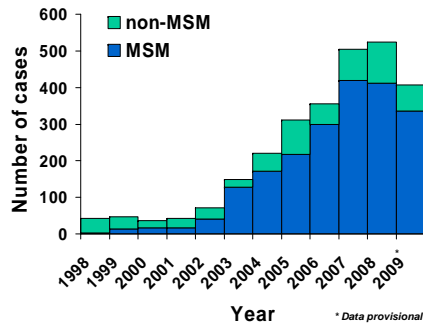
¹HIV, STD, and Hepatitis Branch, Public Health Services, Health and Human Services Agency, County of San Diego, San Diego, CA

²STD Control Branch, California Department of Public Health, San Diego, CA ³STD Prevention and Control Services, San Francisco Department of Public Health, San Francisco, CA

Background

- Early syphilis (primary, secondary, or early latent syphilis) cases in San Diego County increased > 800% from 1998 (N=43) to 2009 (N=407)
- 80% of cases during 2004–2009 were among men who have sex with men (MSM), of whom 62% were HIV-infected
- County of San Diego (COSD) recommends syphilis screening every 3–6 months for sexually active MSM, and also with every viral load or CD4 count ordered for HIV-infected MSM
- A recent study showed that among MSM diagnosed with early syphilis in San Francisco, 7% had repeat syphilis within 1 year
 - HIV infection was the only factor associated with increased risk of repeat syphilis
 - Odds ratio for repeat syphilis for HIV-infected MSM compared with HIV-uninfected MSM was 4.7; 95% confidence interval [CI], 1.8–12.0)

Figure 1. Early syphilis cases among MSM and non-MSM residents, by year — San Diego County, 1998–2009



Objectives

- Describe the proportion of MSM in San Diego County diagnosed with repeat syphilis within two years
- Identify predictors of repeat syphilis among MSM in San Diego County

Methods

- Included MSM residents of San Diego County with no history of syphilis who were diagnosed with syphilis during January 2004–June 2007 and were interviewed by a County Communicable Disease Investigator
 - Defined MSM as a man reporting sex with men in the year prior to diagnosis
 - For MSM with >1 syphilis diagnosis during January 2004–June 2007, the earliest diagnosis was considered the index diagnosis
- Obtained data from syphilis surveillance records and syphilis interviews
- Defined repeat syphilis as a case of syphilis occurring within two years in a previously appropriately treated person who, after having a four-fold titer decrease, had:
 - A four-fold increase in titer, or
 - Clinical signs of syphilis
- Follow-up occurred through June 30, 2009
- Used Fisher's exact and Mann-Whitney tests for categorical and continuous variables, respectively, to identify characteristics associated with repeat syphilis
- Entered all characteristics with $P < 0.1$ into a prediction model, retaining characteristics with $P < 0.05$
- Calculated area under the curve (AUC) for final prediction model

Results

Figure 2. Flowchart of early syphilis cases and repeat syphilis within 2 years in San Diego County

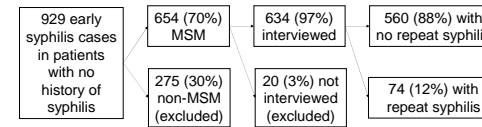


Table 1. Selected characteristics at index diagnosis, by repeat syphilis status

Characteristic	No repeat syphilis (n=560) ^a	Repeat syphilis (n=74) ^a	P value
Age in years	36.5 (19, 71)	37 (20, 61)	0.44
Race/ethnicity			0.92
Non-Hispanic White	332 (88)	47 (12)	
Hispanic	149 (90)	17 (10)	
Non-Hispanic Black	53 (88)	7 (12)	
Other	23 (89)	3 (12)	
Stage at diagnosis			0.89
Primary or secondary	397 (88)	52 (12)	
Early latent	163 (88)	22 (12)	
HIV status			0.01
HIV-uninfected	217 (92)	19 (8)	
HIV-infected	323 (85)	55 (15)	
Refused or unknown	20 (100)	0 (0)	
Methamphetamine use^b			0.49
No	388 (89)	49 (11)	
Yes	154 (87)	24 (14)	
Number of male partners^b	4 (1, 200)	5 (1, 125)	0.27
Met sex partners on Internet^b			0.06
No	289 (91)	30 (9)	
Yes	250 (86)	42 (14)	

^a Presented as numbers (row percentages), except for age and number of male partners, presented as median (minimum, maximum). Numbers might not sum to 560 or 74 because of missing data. Row percentages might not sum to 100 because of rounding.

^b Within year prior to diagnosis.

Table 2. Odds ratios from final model (AUC=0.57)

HIV status	Odds ratio for repeat syphilis (95% confidence interval)	P value
HIV-uninfected	1	0.02
HIV-infected	1.9 (1.1–3.4)	
Refused or unknown	Not available ^a	

^a Odds ratio not available because all those in that category did not have repeat syphilis.

Conclusions

- 12% of MSM, including 15% of HIV-infected MSM and 8% of HIV-uninfected MSM, had repeat syphilis within 2 years
 - Only HIV infection predicted higher risk
- Using HIV status, model predicts repeat syphilis slightly better than chance alone

Limitations

- Possible bias in ascertaining repeat syphilis among HIV-infected MSM
- No data if patients left San Diego County
- Limited statistical power
- Prediction model not validated

Recommendations

- With a community partner, COSD is developing the "We All Test" campaign to encourage MSM to register for email or text message reminders to get syphilis screening every 3 or 6 months
- "We All Test" will offer small incentives to HIV-infected MSM to register

Figure 3. Logo for "We All Test"



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Contact information

- Kenneth.Katz@sdcounty.ca.gov
- www.stdsandiego.org