

Resurgence of syphilis among HIV-infected men who have sex with men attending STI clinics in the Netherlands

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Background

- While syphilis has re-emerged in a number of countries worldwide over the past decade, the infectious syphilis (syphilis) rate among STI clinic attendees continued to decrease in the Netherlands.
- Men who have sex with men (MSM) account for approximately 90% of all syphilis cases diagnosed at STI clinics each year.
- In 2014, the absolute number of syphilis diagnoses among MSM increased by 19% over 2013.

Objectives:

- To determine to what extent the observed increase in syphilis among MSM was geographically clustered or represented an overall increase in the Netherlands.
- To explore syphilis trends among MSM by HIV status between 2007 and 2014.

Methods

- We analysed the Dutch STI surveillance data, which contains socio-demographic, behavioural and clinical data from all 26 STI clinics in the Netherlands.
- The clients' four-digit postal-codes were used to perform cluster analysis on municipality level (SaTScan software).
- We assumed a Poisson-distribution for the number of cases in each location. Space-time scan statistic was used to identify clusters.

Results

1. Geographical clusters

We identified two significant clusters in space and time (Figure 1).

Cluster 1:

- located in Amsterdam between January 2011 and December 2014 ($n = 834$, $P < 0.001$).
- the median age was 41, 59.6% was known HIV-infected, 36.0% was notified for an STI, 62.4% reported STI related symptoms and 53.7% originated from the Netherlands.

Cluster 2:

- located in the south-eastern region between July 2009 and September 2010 ($n = 10$, $P < 0.001$).
- 9 out of 10 were young (median age: 23) migrant male sex workers.

2. Syphilis positivity trends by HIV status

- Regardless of HIV status, the number of MSM tested for syphilis increased by 171% since 2007 (Table 1).
- HIV-negative MSM: the syphilis positivity rate decreased from 2.8% in 2007 to 1.4% in 2011 and stabilised thereafter (Figure 2).
- Known HIV-infected MSM: the syphilis positivity rate decreased from 12.3% in 2007 to 4.5% in 2011, followed by an increasing rate up to 6.6% in 2014. A similar trend was observed among MSM newly diagnosed with HIV (Figure 2).

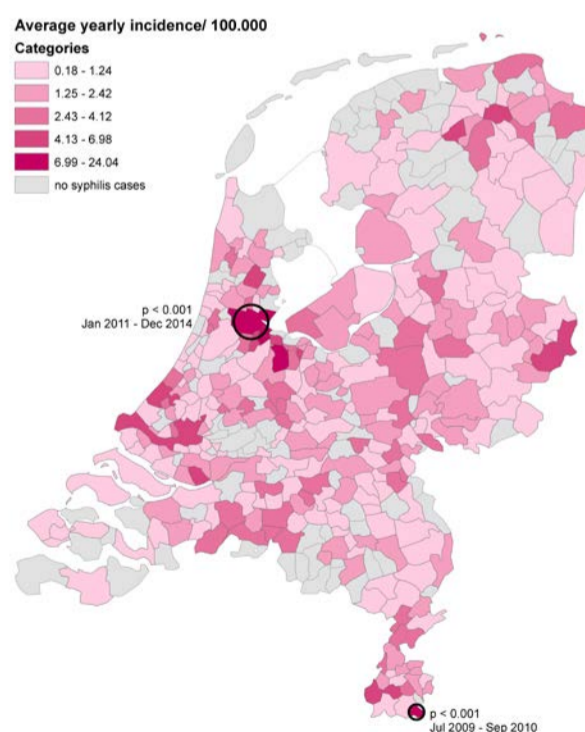


Figure 1. The average annual incidence among MSM per 100,000 general population by geographic location and the significant clusters in the period between 2007 and 2014.

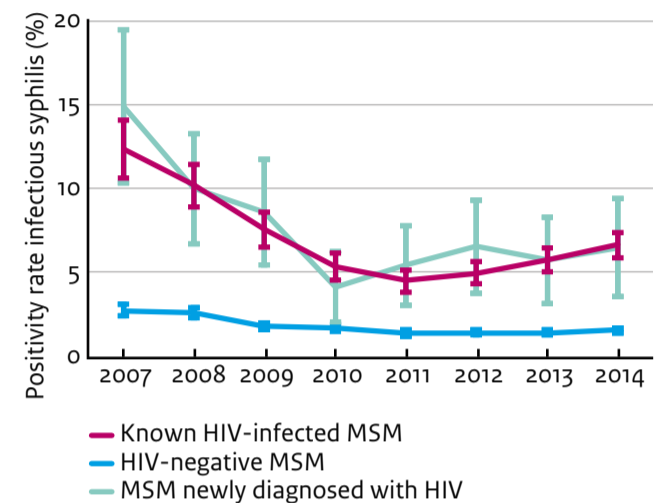


Figure 2. The positivity rate and 95% confidence intervals of infectious syphilis among MSM by HIV-status between 2007 and 2014.

Table 1. The number of (positive) infectious syphilis tests among MSM attending the STI clinics in the Netherlands, by HIV status between 2007 and 2014.

Year	Known HIV-infected		HIV-negative		Newly HIV-infected	
	tests	syphilis	tests	syphilis	tests	syphilis
2007	1,361	168	9,429	260	235	35
2008	2,099	214	11,319	292	320	32
2009	2,505	189	13,500	246	304	26
2010	2,984	160	16,256	273	317	13
2011	3,696	166	17,717	244	351	19
2012	4,197	208	20,124	289	305	20
2013	4,098	236	23,072	327	315	18
2014	4,240	281	25,413	394	278	18

Conclusion

- We observed a resurgence of syphilis among HIV-infected MSM in recent years, but not among HIV-negative MSM.
- Our findings imply that currently, syphilis prevention activities should focus on (HIV-infected) MSM in Amsterdam.
- Cluster analysis should be a standard STI surveillance procedure in order to efficiently target and to timely initiate or enhance prevention activities in the Netherlands.