

Spatial and temporal epidemiology of infectious syphilis in Victoria, Australia, 2015-2018

Authors:

Aung ET^{1,2}, Chen MY^{1,2}, Fairley CK^{1,2}, Higgins N³, Williamson DA⁴, Tomnay JE⁵, Cook K¹, Peel J¹, Dharmakulasinghe V¹, Alpren C³, Chow EPF^{1,2,6}

1. Melbourne Sexual Health Centre, Alfred Health, Melbourne, Victoria, Australia
2. Central Clinical School, Faculty of Medicine, Nursing and Health Sciences, Monash University, Melbourne, Victoria, Australia
3. Department of Health and Human Services, Melbourne, Victoria, Australia
4. Microbiological Diagnostic Unit Public Health Laboratory, Department of Microbiology and Immunology, The University of Melbourne at The Doherty Institute for Infection and Immunity, Melbourne, Victoria, Australia
5. Centre for Excellence in Rural Sexual Health, Melbourne Medical School, The University of Melbourne, Melbourne, Victoria, Australia
6. Centre for Epidemiology and Biostatistics, Melbourne School of Population and Global Health, The University of Melbourne, Melbourne, Victoria, Australia

Background:

The study aims to examine the trends of syphilis infection in Victoria and the characteristics of notified cases of syphilis among different population groups stratified by risk and in different geographical distributions.

Methods:

We analysed the demographic characteristics, notification trends and geographical distribution of notified cases of syphilis in Victoria between 2015 and 2018.

Infectious syphilis cases were categorised into four population groups: men who have sex with men (MSM), men who have sex with women (heterosexual males), females, and men who have sex with men and women (bisexual males). We examined the staging of syphilis, geographic location by residence of cases, HIV status, reasons for testing, and notifying source.

Results:

Of the 4,808 notified infectious syphilis cases, there were 3,801 (64%) MSM, 593 (12%) heterosexual males, 465 (10%) females, and 118 (2%) bisexual males. Females (219% increase, $p_{trend}<0.001$) and bisexual males (220% increase, $p_{trend}=0.004$) had the greatest increase in the number of cases, followed by heterosexual males (129% increase, $p_{trend}<0.001$) and MSM (21% increase, $p_{trend}<0.001$). Geographical mapping showed the majority of the syphilis cases in MSM occurred in inner metropolitan Melbourne suburbs, while the cases in heterosexuals occurred in outer Melbourne suburbs.

Conclusion:

Notified cases of syphilis infection had significantly increased across all population groups but particularly in heterosexual males and females. Campaigns and control measures should be specific for each population group with targeted screening and education in areas with a high number of syphilis cases.

Disclosure of Interest Statement:

Chow EPF is supported by an Australian National Health and Medical Research Council (NHMRC) Emerging Leadership Investigator Grant (GNT1172873). Williamson DA is supported by an Australian NHMRC Emerging Leadership Investigator Grant (GNT1174555). Fairley CK is supported by an Australian NHMRC Leadership Investigator Grant (GNT1172900). Aung ET is supported by Research Training Program (RTP) scholarship from Monash University. All other authors have no conflicts of interest to declare.