

Short report

INFECTIOUS AND CONGENITAL SYPHILIS NOTIFICATIONS ASSOCIATED WITH AN ONGOING OUTBREAK IN NORTHERN AUSTRALIA

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Introduction

In January 2011, an increase of infectious syphilis notifications among young Aboriginal and Torres Strait Islander people was identified in the North West region of Queensland. Subsequent increases in notifications were reported in the Northern Territory and Western Australia in July 2013 and June 2014 respectively, following sustained periods of low notification rates.¹ In 2012, in response to increased notifications, the Western Australian Department of Health led and funded, with in-kind contributions from the Northern Territory, Queensland and South Australia the development of the *Interim Guidelines for the Public Health Management of Syphilis in Remote Populations in Australia* (interim guidelines).

In April 2015, a Multijurisdictional Syphilis Outbreak Group (MJSO) of the Communicable Diseases Network Australia (CDNA) was formed in response to this on-going outbreak among young Aboriginal and Torres Strait Islander people living in remote areas of northern Australia. A subcommittee of the MJSO was formed in May 2015 to ensure Aboriginal communities were engaged in the outbreak response. The MJSO, with representatives from affected jurisdictions, sexual health physicians, experts in Aboriginal and Torres Strait Islander sexual health and the Australian Government Department of Health, meets monthly with the objective of co-ordinating the public health response for outbreak control and preventing transmission of syphilis from infected women to their babies, through rigorous antenatal testing and care.

All affected jurisdictions have responded to the outbreak in accordance with the *2015 National Guidelines for Syphilis*² and interim guidelines. The disease control interventions that have been implemented include: opportunistic and community screening/testing, particularly among young sexually active people aged less than 35 years; immediate treatment of people who are symptomatic (e.g. genital ulceration), have tested positive for syphilis or are sexual contacts of cases; and antenatal screening for syphilis. Public health

alerts, health protection and education and campaigns, and active follow up of cases are also being conducted. This report provides a brief description of the epidemiology of the outbreak up to the end of 2015.

Methods

Cases of infectious and congenital syphilis, (as defined by the national CDNA surveillance case definitions^{3,4}), were categorised as outbreak cases as defined by the MJSO outbreak case definition.

Any person newly diagnosed with confirmed or probable infectious syphilis according to the CDNA national surveillance case definition for infectious syphilis,

AND

1. is an Aboriginal or Torres Strait Islander person who resides in any of the following outbreak declared regions at or after the dates indicated:

Queensland

- Torres Cape Hospital and Health Service area (from 1 December 2012);
- Cairns and Hinterland Hospital and Health Service area (from 1 August 2013);
- North West Hospital and Health Service area (from 1 January 2011);
- Townsville Hospital and Health Service area (from 1 January 2014);

Northern Territory

- Alice Springs or Barkly district (from 1 July 2013);

Katherine district (from 1 May 2014);

- East Arnhem district (from 1 November 2015);

Western Australia

- Kimberley region (from 1 June 2014).

OR

2. is a sexual contact of a confirmed outbreak case.

Data on cases meeting the outbreak case definition were provided to the MJSO by Queensland, the Northern Territory and Western Australia. An area was declared an outbreak at the discretion of the local jurisdiction. When an area was declared an outbreak region, the same local jurisdiction applied retrospective analysis to determine an outbreak start date when increased numbers of notifications in the new outbreak area could be detected. Cases are reported from the outbreak start date for each outbreak area: these dates are captured in the case definition above.

The national rate of Aboriginal and Torres Strait Islander congenital syphilis cases per 100,000 live births was calculated using the Australian Bureau of Statistics (ABS) Births Australia, 2014 data cubes and past releases of these data. Congenital cases of syphilis were considered associated with the outbreak if the mother was an outbreak case. Live birth refers to the number of births registered within each calendar year and excludes stillbirths or foetal deaths. For a full list of caveats refer to the explanatory notes of the ABS Births Australia releases (catalogue number 3301.0).

Interpretation

It is important to note that changes in notifications over time may not solely reflect changes in disease incidence as changes in notifiable disease case definitions, screening programs,⁵ the use of less invasive and more sensitive diagnostic tests⁶ and periodic public awareness campaigns⁷ may influence the number of notifications to health agencies. Rates for sexually transmissible infections, including infectious syphilis, are particularly susceptible to overall rates of testing.⁸ As a priority

'at risk' populations and Aboriginal and Torres Strait Islander people are targeted for increased sexually transmissible infections screening and testing strategies.⁹

Results

The outbreak was first declared in September 2011 in the North West Hospital and Health Service region of Queensland, however, increased notifications associated with the start of the outbreak were first observed in January 2011. Similarly, the Northern Territory declared an outbreak in July 2014 but prior to that, a small linked cluster had been detected in July 2013 with a low number of new cases diagnosed in the ensuing months. In the Kimberley region of Western Australia, increased notifications and the declaration of the outbreak both occurred in the same month, June 2014. Data are reported from the start date indicated in the outbreak case definition to 31 December 2015.

Between 1 January 2011 and 31 December 2015, 790 outbreak associated cases of infectious syphilis (644 confirmed and 146 probable) were reported, in largely remote and rural geographic areas, in northern Australia (Figure 1). Of these, Queensland reported 482 cases (January 2011 to 31 December 2015); the Northern Territory reported 261 cases (July 2013 to 31 December 2015), and; Western Australia reported 47 cases of infectious syphilis (June 2014 to 31 December 2015) (Table).

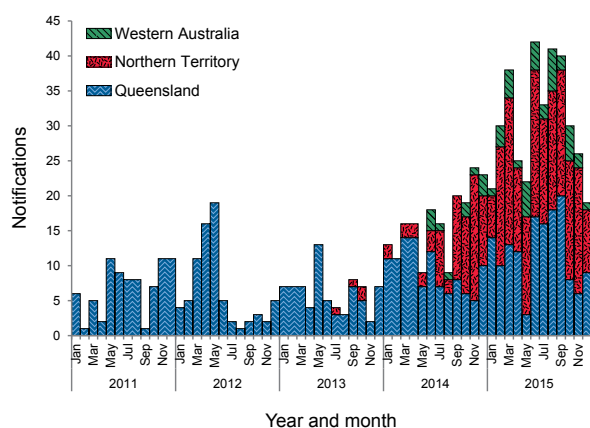
There was a similar distribution between males and females (45% male; 55% female) and cases were predominately reported in the 15–19 and 20–29 years age groups, representing 37% and 38% respectively.

Table: Outbreak associated infectious syphilis cases, 1 January 2011 to 31 December 2015

Affected regions	Confirmed cases	Probable cases	Total cases
Queensland			
Torres and Cape HHS	427	55	482
Cairns and Hinterland HHS			
North West HHS			
Townsville HHS			
Northern Territory			
Alice Springs	181	80	261
Barkly			
Katherine			
East Arnhem			
Western Australia			
Kimberley health region	36	11	47
Total outbreak cases	644	146	790

HHS – Hospital and Health Service

Figure 1: Infectious syphilis notifications associated with the outbreak in affected regions* of Queensland, the Northern Territory and Western Australia, 1 January 2011 to 31 December 2015



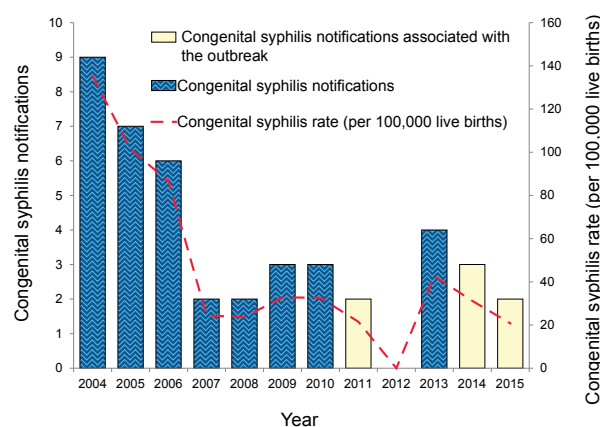
* Includes Torres and Cape, Cairns and Hinterland, North West and Townsville Hospital and Health service regions in Queensland; Alice Springs, Barkly, Katherine and East Arnhem districts in the Northern Territory, and; the Kimberley health region in Western Australia.

Since 2011, a total of 7 outbreak associated congenital syphilis cases were reported in the Aboriginal and Torres Strait Islander population: 3 cases in the Northern Territory (1 confirmed and 2 probable) and 4 cases in Queensland (3 confirmed and 1 probable) (Figure 2). Of the Queensland cases, 2 were stillborn and 1 died in the neonatal period. All 3 cases in the Northern Territory returned negative serology results at or before the 18-month follow-up. Over the course of the outbreak (January 2011 to December 2015), the rate of congenital syphilis (including both confirmed and probable cases) in the Aboriginal and Torres Strait Islander populations for all of Queensland, the Northern Territory and Western Australia averaged 23.0 cases per 100,000 live births, which was lower than that recorded in the 5 years prior to the outbreak (2006 to 2010) at 38.2 cases per 100,000 live births (Figure 2).

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Figure 2: Number of congenital syphilis notifications and notification rate per 100,000 live births, in Aboriginal and Torres Strait Islanders people, Western Australia, the Northern Territory and Queensland, 2004 to 2015



of Health), Carolien Giele (Communicable Disease Control Directorate, Western Australian Department of Health), Manoji Gunathilake (Centre for Disease Control, Northern Territory Department of Health), Alex Hope (Aboriginal Medical Services Alliance Northern Territory), Rae-Lin Huang (Nganampa Health Council), John Kaldor (The Kirby Institute, University of New South Wales), Vicki Krause (Centre for Disease Control, Northern Territory Department of Health), Donna Mak (Communicable Disease Control Directorate, Western Australian Department of Health), Arun Menon (Townsville Sexual Health Services, Queensland Health), Rhonda Owen (Office of Health Protection, Australian Government Department of Health), Annie Preston-Thomas (Tropical Public Health Services, Cairns), Amanda Sibosado (Kimberley Aboriginal Medical Services Council Inc), Jiunn-Yih Su (Centre for Disease Control, Northern Territory Department of Health), Matthew Thalanany (Centre for Disease Control, Northern Territory Department of Health), Ingrid Tribe (Communicable Disease Control Branch, Department of Human Services South Australia), Russel Waddell (Communicable Disease Control Branch, Department of Human Services South Australia) and James Ward (South Australian Health and Medical Research Institute).

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References

1. Ward J, Guy R, Akre S, Middleton M, Giele C, Su J, et al. Epidemiology of syphilis in Australia: moving toward elimination of infectious syphilis from remote Aboriginal and Torres Strait Islander communities? *Med J Aust* 2011;194(10):525–529.
2. Communicable Diseases Network Australia. National guidelines for public health units: syphilis. 2015. Accessed on 21 December 2015. Available from: <http://www.health.gov.au/internet/main/publishing.nsf/Content/cdna-song-syphilis.htm>
3. Communicable Diseases Network Australia. Congenital syphilis case definition. 2015. Accessed on 25 February 2016. Available from: http://www.health.gov.au/internet/main/publishing.nsf/Content/cda-surveil-nndss-casedefs-cd_consyph.htm
4. Communicable Diseases Network Australia. Infectious syphilis case definition. 2015. Accessed on 25 February 2016. Available from: http://www.health.gov.au/internet/main/publishing.nsf/Content/cda-surveil-nndss-casedefs-cd_syph12.htm
5. Hocking J, Fairley C, Counahan M, Crofts N. The pattern of notification and testing for genital *Chlamydia trachomatis* infection in Victoria, 1998–2000: an ecological analysis. *Aust N Z J Public Health* 2003;27(4):405–408.
6. Burckhardt F, Warner P, Young H. What is the impact of change in diagnostic test method on surveillance data trends in *Chlamydia trachomatis* infection? *Sex Transm Infect* 2006;82(1):24–30.
7. Chen M, Karvelas M, Sundararajan V, Hocking J, Fairley C. Evidence for the effectiveness of a chlamydia awareness campaign: increased population rates of chlamydia testing and detection. *Int J STD AIDS* 2007;18(4):239–243.
8. Ali H, Guy R, Fairley C, Wand H, Chen M, Dickson B, et al. Understanding trends in genital *Chlamydia trachomatis* can benefit from enhanced surveillance: findings from Australia. *Sex Transm Infect* 2012;88(7):552–557.
9. Australian Government Department of Health. Fourth National Aboriginal and Torres Strait Islander Blood-Borne Viruses and Sexually Transmissible Infections Strategy 2014–2017. 2014. [Online]. Accessed on 25 February 2016. Available from: <http://www.health.gov.au/internet/main/publishing.nsf/Content/ohp-bbvs-atsi>