

ENHANCED GONORRHOEA SURVEILLANCE IN TWO LOCAL HEALTH DISTRICTS IN SYDNEY

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BACKGROUND

Gonorrhoea is a sexually transmissible infection (STI) which is notifiable in New South Wales (NSW). Between 2008 and 2012 there was a significant increase in notifications from 19 per 100,000 to 56.6 per 100,000.¹ Routine notifications capture basic demographic data but fail to capture information such as sexual behaviour and indigenous status. In 2013 the South Eastern Sydney Public Health Unit (PHU) developed an enhanced surveillance project which was subsequently approved by the NSW Ministry of Health for enhanced surveillance in other PHUs throughout NSW.² This report presents the results of enhanced gonorrhoea surveillance conducted in the South Western Sydney and Sydney Local Health Districts PHU between August 2013 and February 2014.

METHODS

For gonorrhoea notifications received between 1 August 2013 and 28 February 2014, enhanced surveillance forms were sent to treating doctors requesting additional information including sexual exposure, likely source of infection and indigenous background. The information supplied was collated and entered into the NSW Notifiable Conditions Information Management System (NCIMS). Data were extracted into a spreadsheet and analysed using Microsoft Excel 2010. Standardised data for both South Western Sydney and Sydney Local Health Districts were extracted from SAPHaRI and also analysed using Microsoft Excel 2010.

Figure 1: Notified cases of gonorrhoea by age group, SWSLHD and SLHD, 1 August 2013 to 28 February 2014

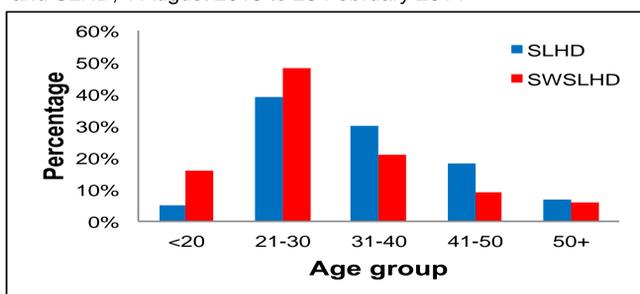


Figure 2: Notified male cases of gonorrhoea by care provider, SWSLHD and SLHD, 1 August 2013 to 28 February 2014

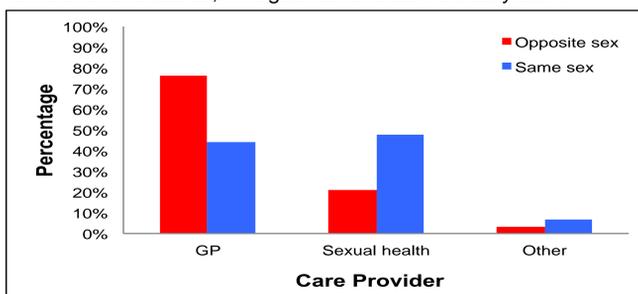
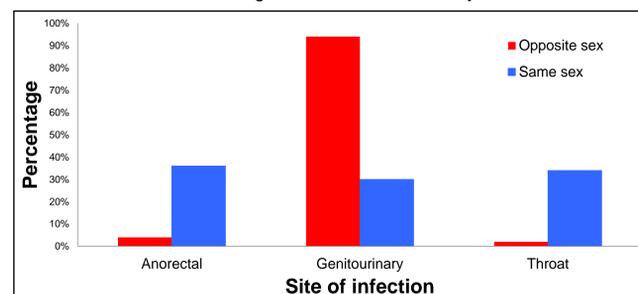


Figure 3: Notified male cases of gonorrhoea by site of infection, SWSLHD and SLHD, 1 August 2013 to 28 February 2014



RESULTS

A total of 777 notifications were received: 587 (76%) from Sydney Local Health District (SLHD) and 190 (24%) from South Western Sydney Local Health District (SWSLHD). Questionnaires were forwarded to the treating doctors and 698 responses were received. Of these notified cases, 594 (85%) were male, 289 (41%) were aged 21-30 years and 12 (2%) identified as Aboriginal or Torres Strait Islander.

A comparison of age groups in both LHDs showed a statistically significant difference [$\chi^2 = 33.78$, $P < 0.001$]. SWSLHD had a higher proportion of notified cases aged less than 20 years, 16% compared to 5% in SLHD, while SLHD had a higher percentage of notified cases in the 31-40 age group, 30% compared to 21% in SWSLHD [Figure 1].

A comparison of care providers in both LHDs also demonstrated a statistically significant difference [$\chi^2 = 29.06$, $P < 0.001$]. In SLHD, the highest proportion of both female and male notified cases came from GPs (50% and 55%, respectively). The same was reported for females and males in SWSLHD (73% and 75%, respectively) [Table 1]. Amongst males with a history of same sex exposure only, 44% of notified cases were from a GP and 48% of notified cases were from sexual health services [Figure 2].

Amongst notified cases of males, the proportion of men who reported sex with men only was higher in SLHD than SWSLHD (62% and 27% respectively) [Table 1]. Males in SLHD reported casual partners as the most likely source of infection (60%), while females reported regular partners as the most likely source of infection (45%) [Table 1]. In SWSLHD, exposure to a person of the opposite sex only was the most common exposure for both males (46%) and females (60%) and casual partners were identified as the most likely source of infection for both males (52%) and females (29%) [Table 1].

Genitourinary infection was identified as the most common site of infection for both males and females in both LHDs [Table 1]. However, amongst males in SLHD, anorectal and throat infection accounted for 30% and 28% of notified cases respectively. In SWSLHD, the proportion of anorectal and throat infection amongst males was lower (13% and 12% respectively) [Table 1]. Multiple sites of infection were reported by 9% and 4% of notified cases in SLHD and SWSLHD respectively. Amongst males who reported sex with females only, genitourinary infection accounted for 94% of notified cases. Amongst males who reported sex with males only, genitourinary infection was reported by 30%, while anorectal and throat infections were reported by 36% and 34% of notified cases respectively [Figure 3].

A comparison of test notified and providers demonstrated a statistically significant difference [$\chi^2 = 18.11$, $P = 0.001$]. Nucleic acid amplification testing (NAAT) was reported for 72% of notifications while culture was reported for 10% of notifications and 17% reported both NAAT and culture. In SLHD, 16% of notifications from GPs reported both NAAT and culture while in SWSLHD only 9% of notifications from GPs reported both NAAT and culture. Sexual health services had a higher proportion of NAAT and culture in both SLHD and SWSLHD than GPs (25% and 27%, respectively) [Figure 4].

Figure 4: Notified cases of gonorrhoea by test type and care provider, SWSLHD and SLHD, 1 August 2013 to 28 February 2014

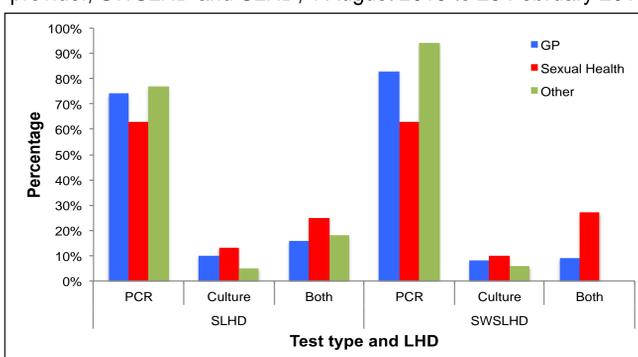


Table 1: Demographic and risk factor characteristics of notified cases of gonorrhoea, SWSLHD and SLHD, 1 August 2013 to 28 February 2014

	SLHD		SWSLHD	
	Female No. (%)	Male No. (%)	Female No. (%)	Male No. (%)
Age (years)				
<20	10 (18)	17 (4)	10 (21)	19 (14)
21-30	28 (50)	175 (38)	23 (48)	63 (47)
31-40	9 (16)	148 (32)	10 (21)	28 (21)
41-50	4 (7)	91 (20)	3 (6)	14 (11)
50+	5 (9)	30 (7)	2 (4)	9 (7)
Sexual history				
Opposite sex only	45 (80)	70 (15)	29(60)	61(46)
Same sex only	1 (2)	286 (62)	1(2)	36(27)
Both sexes	0(0)	18 (4)	1(2)	1(1)
Other/blank	10 (18)	87 (19)	17(35)	35(26)
Likely source				
Casual partner	15 (27)	277 (60)	14(29)	69(52)
Regular partner	25 (45)	62 (13)	12(25)	16(12)
Overseas acquired	1 (2)	11 (2)	1(2)	7(5)
Other/blank	15 (27)	111 (24)	21(44)	41(31)
Care provider				
GP	28 (50)	252 (55)	35(73)	100(75)
Sexual health	19 (34)	179 (39)	7(15)	23(17)
Other	9 (16)	30 (7)	6(13)	10(8)
Infection site				
Anorectal	4 (7)	149 (30)	0 (0)	18 (13)
Genitourinary	45 (76)	214 (42)	45 (90)	105 (75)
Throat	10 (17)	142 (28)	5 (10)	17 (12)

DISCUSSION

The enhanced surveillance provided insight into the epidemiology of gonorrhoea in both SWSLHD and SLHD and provided an opportunity to compare the two districts. Amongst females, gonorrhoea was more likely to affect women under 30 in both LHDs but more likely to be acquired from a casual partner in SWSLHD and a regular partner in SLHD. Amongst males, SWSLHD had a higher proportion of notified cases aged less than 30 years while SLHD had a higher proportion of notified cases aged older than 30 years. Males who reported sex with males only were also more likely to be in SLHD than SWSLHD and are likely to account for the higher proportion of notified cases amongst older males in this LHD.

GPs were identified as the main care provider in both LHDs. Sexual health services saw a higher proportion of cases in SLHD than SWSLHD and were more commonly accessed by males than females. Amongst men who have sex with men (MSM) only, sexual health services were the most common source of notification. This may reflect the male population's knowledge of services available in the area or be due to where varying portions of the population feel most comfortable accessing services.

Rates of throat and rectal gonorrhoea were higher in SLHD than SWSLHD, as were multiple sites of infection. This likely reflects the larger MSM population in SLHD, however, further investigation into routine testing practices in both LHDs could help to determine if this is due to differing testing practices amongst various service providers or the result of sexual behaviour.

NAAT was the most commonly reported test in both LHDs. Culture, or NAAT and culture were more commonly reported from sexual health services than GPs. Investigation of denominator data may help to determine if this is due to differences in testing practice or related to higher rates of extragenital infection reported from sexual health services due to client access of services.



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References

- Australian Government Department of Health and Ageing. National Notifiable Diseases Surveillance System data for meningococcal disease. Report number 4: Notifications of selected disease by state and territory and year. [online]. Accessed on 30 June 2014. Available from: http://www9.health.gov.au/cda/source/pt_4.cfm
- Ressler, KA et al. (2013) Enhanced surveillance of gonorrhoea in South Eastern Sydney. Unpublished poster presentation at: Australasian Sexual Health Conference, 21-23 October, 2013, Darwin, Australia.