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Gonorrhoea enhanced surveillance for indigenous status and risk factors in the south-eastern Sydney population

Mark J Ferson, Kelly-Anne Ressler, Alma Nurkic and Paula J Spokes

Abstract

Background: Gonorrhoea incidence is increasing in the Australian population. As a laboratory notifiable disease in NSW, information is not routinely available on indigenous status, sexual preference or other risk factors for infection. We conducted a 12-month pilot of enhanced surveillance in south-eastern Sydney in order to assess the feasibility of gathering this additional information.

Methods: For each notification in a south-eastern Sydney resident with a 2013 specimen date, we sent a letter and questionnaire to the requesting doctor seeking additional demographic and risk factor information.

Results: Of 1,341 questionnaires sent, 1,073 (79.5%) were returned, and men comprised 947 (88.3%). Indigenous status was provided for 1,009 (94.1%) cases, with seven (0.7%) identified as Aboriginal or Torres Strait Islander. Most men (83%) but a minority of women (19%) had same sex partners ($p < 0.001$). Whilst 70% of men reported acquisition from a casual partner, only 46% of women thought they had acquired infection from a casual partner.

Conclusions: The high response rate and completeness of indigenous status were strong features of this enhanced surveillance pilot which also provided valuable information on sexual preference and other risk factors for infection. However, gathering of this information was very labour intensive for both clinical and public health staff.

Keywords: Gonorrhoea; enhanced surveillance; indigenous status; risk factors; evaluation; men who have sex with men; sex workers;

Introduction

In Australia, after a period of stability, overall gonorrhoea notification rates have shown a striking increase since 2010, and where specific risk-factor data is available, it is evident that men who have sex with men (MSM) and remote Aboriginal communities have been disproportionately affected.¹ In New South Wales (NSW) notification rates also increased markedly in this period, primarily in men.¹ However, as gonorrhoea is notifiable only by laboratories, and there has not been a standard requirement

in NSW for public health follow up of cases, Indigenous status and risk factors for infection are not routinely available.

In south-eastern Sydney, which has the highest concentration of households based around same-sex male couples of all Australian cities,² most gonorrhoea notifications are in male residents who also suffer a high reinfection rate.³ The marked increase in gonorrhoea notifications, the impetus provided by the Third National Sexually Transmissible Infections Strategy to better understand the epidemiology of gonorrhoea,⁴

and a lack of data that prevented a more complete picture of the infection, prompted this pilot of enhanced gonorrhoea surveillance in south-eastern Sydney. If the pilot were deemed successful, it was proposed to initiate enhanced gonorrhoea surveillance across NSW as done in other Australian states.^{5,6}

Methods

For each gonorrhoea notification in a south-eastern Sydney resident with a specimen date between 1 January and 31 December 2013, a standard letter and questionnaire were sent to the requesting doctor seeking additional information: demographics including indigenous status; date of symptom onset and treatment commencement; place and type of sexual exposure and likely source of infection, number of sexual partners, whether the patient was a sex worker, type of service where the patient was seen and reason for presentation.

This information was collected in accordance with section 55 of the *Public Health Act 2010* (NSW) which authorises a medical practitioner to provide the Secretary of the Ministry of Health with such further information concerning a person's medical condition and transmission and risk factors as is available following a laboratory notification. The data collected were entered onto the NSW Notifiable Conditions Information Management System (NCIMS) and analysed using SPSS v24.0 (2016).

Results

Of 1,341 questionnaires sent out for notifications pertaining to specimen dates between 1 January 2013 and 31 December 2013, 1,073 were returned, a response rate of 79.5%. Men comprised 947 (88.3%) cases, 123 were women (11.5%), and there were three transgender cases. The mean age of men was 33.7 years (range 17–85 yrs) and of women was 29.1 years (range 17–56 yrs).

Of the 1,073 cases with a returned questionnaire, seven (0.7%) were identified as Aboriginal

or Torres Strait Islander; 1,002 (93.4%) were not Aboriginal or Torres Strait Islander and for 64 (6.0%) the indigenous status was not provided.

Information on presentation and sexual history is summarised in Table 1. Most patients presented to a sexual health clinic (M, 49%; F, 53%), general practice (M, 22%; F, 38%), or high caseload GP (M, 24%; F, 2.4%). In both men and women, having symptoms was the most common reason the patient initially presented (M, 47%; F, 45%), followed by attendance for screening (M, 41%, F, 36%) and for contact tracing (M, 11%; F, 16%).

For both men and women, the majority considered their infections to have been acquired in NSW. Most women (81%) had sexual partners of only the opposite sex, whilst most men (83%) had same sex partners ($p < 0.001$). For women, 46% thought they had acquired infection from a casual partner compared to 70% of men reporting acquisition from a casual partner. Current sex work was reported for 46 (37%) women and 29 (3.1%) men ($p < 0.001$). Of the 46 women who reported current sex work, 31 (67.4%) were reported to have acquired their infection from a casual partner, 5 (10.9%) from a regular partner and the source of infection for 10 (21.7%) of sex workers was unknown. This is compared to 33 (55%) of non-sex workers who were reported to have acquired their infection from a regular partner. The number of partners was reported for 508 (48%) of cases (Table 2); men who had sex with men were far more likely (86%) to report multiple partners than were heterosexual men (57%) or heterosexual women (36%).

Discussion

This 12-month pilot of enhanced surveillance in a single NSW health district elicited an 80% response rate and gave an ascertainment rate for indigenous status of 94%, thus providing the first high quality data on Indigenous status among gonorrhoea cases, based on follow up of statutory laboratory notifications. The recent study from inner western and south-western Sydney found a high response rate approaching

Table 1. Selected responses from enhanced gonorrhoea questionnaire by sex^a

		Sex			
		Female		Male	
		Count	Percent %	Count	Percent %
Diagnosing facility	General practice	47	38.2%	204	21.5%
	High caseload GP	3	2.4%	227	24.0%
	Other	2	1.6%	5	0.5%
	Private hospital	0	0.0%	2	0.2%
	Public hospital	6	4.9%	45	4.8%
	Sexual health clinic	65	52.8%	464	49.0%
Reason for test^b	Symptoms	55	44.7%	445	47.0%
	Screening	44	35.8%	385	40.7%
	Contact tracing	20	16.3%	103	10.9%
Place of acquisition	Acquired in Australia outside NSW	0	0.0%	6	0.6%
	Acquired in NSW	100	81.3%	772	81.5%
	Acquired outside Australia	7	5.7%	52	5.5%
	Unknown	16	13.0%	117	12.4%
Sexual history	Person(s) of the opposite sex only	100	81.3%	122	12.9%
	Person(s) of the same sex only	4	3.3%	773	81.6%
	Persons of both sexes	5	4.1%	14	1.5%
	Sexual exposure unknown	14	11.4%	38	4.0%
Likely source of infection	Casual partner	56	45.5%	666	70.3%
	Man who has had sex with men	0	0.0%	20	2.1%
	Partner from overseas	2	1.6%	17	1.8%
	Regular partner	42	34.1%	122	12.9%
	Unknown	23	18.7%	122	12.9%
Current sex work	No	59	48.0%	826	87.2%
	Unknown	18	14.6%	92	9.7%
	Yes	46	37.4%	29	3.1%
Total		123	100.0%	947	100.0%

a responses from 3 transgender cases have been excluded

b Four female (3.3%) and fourteen male (1.5%) participants did not provide a reason for seeking testing

90% but did not attempt to ascertain indigenous status.⁷ The completeness of indigenous status in a study from western Sydney was 56% in the absence of a systematic approach to collection of this information.⁸ The high response rate and completeness of indigenous status are slightly improved over enhanced surveillance conducted

in south-eastern Queensland from 2003 to 2008, when a response rate of 72% was achieved and indigenous status was reported in 78%.⁹

As well, the current observations on the sexual preference and sexual history of gonorrhoea cases comes from the urban region containing Australia's highest concentration of men who

Table 2. Number of sexual partners in last 3 months by sex and sexual history

Sex	Sexual history	Reported number of partners		
		1	>1	Total
Female	Person(s) of the opposite sex only	28	16	44
	Person(s) of the same sex only	0	2	2
	Persons of both sexes	0	1	1
	Sexual exposure unknown	0	1	1
	Total	28	20	48
Male	Person(s) of the opposite sex only	27	36	63
	Person(s) of the same sex only	55	327	382
	Persons of both sexes	0	9	9
	Sexual exposure unknown	4	2	6
	Total	86	374	460

have sex with men.² For men in inner eastern Sydney, gonorrhoea is occurring mainly in MSM who are engaging in sexual activity with multiple casual partners. In contrast, the majority of cases in women are acquired from opposite-sex partners; for cases in female sex workers, two thirds of cases were reported by their testing doctors to have been acquired from casual partners, and for women who were not sex workers, the likely source of infection was from their regular partner.

In the present study, gonorrhoea was diagnosed in individuals who presented to a variety of health service providers: 46% to general practitioners and 49% to sexual health clinics. This latter figure is substantially higher than the 34% found in the inner western and south-western Sydney study,⁷ and the 26% made in inner metropolitan sexual health services in 2009.¹⁰ This difference may reflect a number of factors including a change with time, greater number of publicly funded services located in south-eastern Sydney, or the distribution of MSM in this area. The high proportion of notifications from general practice, and in particular from doctors who are not high HIV caseload has important public health implications for targeted sexual health screening, education and promotional activities.

However, it should be noted that this type of notification-based surveillance is relatively labour intensive as it requires questionnaires to be mailed to notifying practice staff, who must complete and return them in a timely fashion, and the additional data entered by public health personnel into the notifiable diseases database. Despite this added work, such a surveillance-based process is unable to provide detailed information on the behaviours leading to acquisition of infection which may be provided by clinical studies based in sexual health services,^{11,12} or through formal research using community recruitment.¹³

Although state-wide enhanced surveillance in this form is not recommended due to the labour involved, this pilot of enhanced surveillance has contributed to gonorrhoea surveillance in NSW by increasing completeness of the indigenous status of people notified with gonorrhoea and reporting basic risk factor information.

An alternative approach to gathering important data on indigenous status, which is less time consuming for clinical and public health personnel, is the use of linkage with other health datasets, and following a trial of this methodology, routine

linkage of health and vital statistics datasets has been initiated by the NSW Ministry of Health since this project.¹⁴

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