Original Article

Sexually Transmitted Infections in Melbourne, Australia from 1918 to 2016: nearly a century of data

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Abstract

Introduction

Our aim was to describe trends in the number of bacterial sexually transmitted infections (STIs) diagnosed at Melbourne's sexual health clinic over a century.

Methods

A retrospective analysis of STI diagnoses (gonorrhoea, infectious syphilis and chancroid) among individuals attending Melbourne's sexual health service over 99 years between 1918 and 2016.

Results

Substantial increases in STI rates coincided with World War II, the 'Sexual Revolution of the 1960s and 1970s', and the last 10 years. Substantial declines coincided with the advent of antibiotics and the HIV/AIDS pandemic. There were also key differences between STIs. Chancroid virtually disappeared after 1950. Syphilis fell to very low levels in women after about 1950 and has only rebounded in men. The declines in gonorrhoea were less marked. A substantial peak in gonorrhoea occurred in women in the early 1970s and rates are currently rising in women, albeit much less than in men.

Conclusions

Both antibiotics and changing sexual behaviour have had a powerful effect on STI rates. These data suggest gonorrhoea is more difficult to control than syphilis or chancroid. Indeed, the past rates suggest substantial endemic gonorrhoea transmission in heterosexuals occurred in the third quarter of last century before the appearance of the HIV pandemic. Worryingly, there is a suggestion that endemic heterosexual gonorrhoea may be returning. The data also suggest that future control of gonorrhoea and syphilis in men who have sex with men is going to be challenging.

Keywords: sexually transmitted infections, gonorrhoea, syphilis, chancroid, epidemiology, history, sexual health clinic, Australia

INTRODUCTION

A number of countries, such as the United Kingdom have data on sexually transmitted infections (STIs) over the last 100 years [1]. However in Australia there is only one paper, by Hall, published nearly 25 years ago that describes notifications of STIs over more than a few decades[2]. Furthermore, in that paper there is a gap of 40-years in notifications between 1929 and 1969, a time period that includes significant societal changes including a world war, the advent of antibiotics, and the introduction of the oral contraceptive pill[2]. Considerable efforts have been made by Hall at the time and by the authors of this paper to locate these notifications without success. In the absence of records of these notifications other records may exist to fill this gap in notifications.

A number of publicly-funded sexual health clinics in Australia have been in operation over the last century but only one clinic (Melbourne Sexual Health Centre (MSHC)) has almost continuous recorded data going back to 1918 when it first opened. MSHC has been the only publicly-funded clinic operating in Melbourne over this time for the sole purpose of providing STI care. The clinic is therefore ideally placed to provide historical data over this period and could potentially provide insights into the future [3]. Our aim was to describe the number of cases of bacterial STIs at this clinic over the last 99 years. Furthermore, in the discussion of this paper we describe major events or societal changes that occurred around the time of significant changes in the diagnoses of STIs. For each of these we discuss how these events may have influenced the reproductive rate, and therefore the incidence, of STIs, such as for example the discovery of antibiotics for their treatment.

METHODS

This was a retrospective analysis of STIs diagnosed at the STI clinic in Melbourne (now MSHC) over a 99-year period, from 28 June 1918 to 31 December 2016. The STI clinic in Melbourne has had six previous names (Table 1). The clinic has operated continuously in the metropolitan area of Melbourne, Australia over the study period. Over the entire time, the clinic has provided free clinical consultations for the management and treatment of STIs.

The primary analysis involved the number of diagnoses of gonorrhoea, infectious syphilis, and chancroid, by sex. Several data sources were used to provide data for the 99-year period (Table 2). We include these three STIs because they are mostly symptomatic and therefore diagnosed cases will reflect the cases presenting to the clinic. Chlamydia was not included in this analysis because it was only relatively recently discovered (1970s) and is largely asymptomatic so the diagnoses strongly reflect testing practices, and not necessarily changes in the incidence of infection[4]. We have provided the raw number of chlamydia diagnoses in Supplementary Table S1 for reference. Data on trichomoniasis has been previously published[5].

Syphilis cases were recorded over the entire period by stage; we included infectious syphilis (primary, secondary and early latent (<2 years)) and cases without stage specified, and excluded congenital, tertiary and late latent (>2 years) cases. Definitions of these stages over time were not available. There was no standardised definition for the diagnosis of gonorrhoea or chancroid over the entire 99 year study period. There were a number of years with incomplete or missing data, described in Table 3. For these years, to provide full year data we have taken the average of the periods preceding or following these periods and assumed there were no substantial changes from year to year.

We calculated sex-stratified annual rates for gonorrhoea and syphilis separately. Data for women were available from 1918 and for men only from 1926 as data from earlier years are missing. We calculated sex-stratified annual rates for these two diagnoses made at the centre using the annual population of the greater metropolitan area of Melbourne as the denominator[6,7]. In the last 10 years, MSHC diagnosed about 40% of infectious syphilis notifications and 30% of gonorrhoea notifications in Victoria. We assumed the male-to-female ratio was 1:1 in Melbourne and did not change substantially over the study period. We presented a 3-years centred moving average

Table 1. Names and locations of public sexual health clinics in Melbourne, Australia, from 1918 to 2016.

Clinic Name	Clients	Location	Period
Government Clinic for Males	Males only	440 Lonsdale Street, Melbourne	1918 – 1929
Government Clinic for Females	Females only	372-378 Little Lonsdale Street, Melbourne	1918 – 1929
Unknown	Males and females	372-378 Little Lonsdale Street, Melbourne	1929 – 1948
Unknown	Males and females	201 Little Lonsdale Street, Melbourne	1948 – 1961
Government Clinic	Males and females	136 Gertrude Street, Fitzroy	1961 – 1979
Melbourne Communicable Diseases Centre	Males and females	364-370 Little Lonsdale Street, Melbourne	1979 – 1992
Melbourne Sexual Health Centre (MSHC)	Males and females	580 Swanston Street, Carlton	1992 – present

Table 2. Description of data sources.

Year	Description of data sources
1918-1982	Admittance registers (Photo 1) housed in the MSHC archive included line-by-line consultation data. An admittance register is a list of individuals and their specific diagnoses.
1926-1964	Clinic ledgers included aggregate consultation data. A clinic ledger is a list of monthly total of the number of clients with specific diagnoses. These have been used when data from admittance registers is unavailable.
1982-2001	Laboratory book data records all clients who had at least one laboratory investigation for a STI and their specific diagnoses.
2002-2016	Individual consultation data were available from the current clinic practice management system database, which is a custom built medical software package used to record all consultations. This is the only dataset with sexual practice information, where men who have sex with men or women can be differentiated. For the purpose of analysis men who had sex with other men in the previous 12 months were defined as MSM and all other men as heterosexual males.

Photo 1. Admittance registers housed in the MSHC archive included line-by-line consultation data for the period 1918-1982.

Table 3. Formulas of adjusted data.

Year	Available data		Adjusted number used in analysis
	Males	Females	
1918	No data	6 months	(1918 number) ×2
1926	6 months	12 months*	(1926 number) ×2
1964	1 month	12 months*	Average of (1961-1963 number)
1965 and 1966	No data	12 months*	Average of (1961-1963 number)
1967 and 1968	No data	12 months*	Average of (1969-1971 number)
1969	7 months	12 months*	(1969 number) ×12/7
1982	12 months*	6 months	(1982 number) ×2
2002	6 months	6 months	(2002 number) ×2

* Data not adjusted.

for the rates of diagnoses for each STI over the study period. These have been calculated for every year by taking the average of the year itself, the previous year and the subsequent year. Chancroid diagnoses were presented as the raw number of diagnoses due to low numbers of diagnoses.

Analyses were conducted using SPSS version 23 (SPSS Inc., Chicago IL). Ethical approval for this was obtained from the Alfred Hospital Ethics Committee (approval number 473/15).

RESULTS

Over the 99-year period, there were 77,290 gonorrhoea, 9,381 syphilis, and 1,048 chancroid diagnoses among individuals attending the clinic.

Gonorrhoea

Figure 1 shows the rate of gonorrhoea by sex per 100,000. For men, the rates fell to a low in 1953, then rose until about 1980, fell dramatically until about 2000, from which time they steadily rose

again. In women, there were two peaks (in 1930 and in 1972), after which rates declined to very low levels but began rising again in the early 2000s.

Syphilis

Figure 2 shows the rate of syphilis by sex per 100,000. Rates in men fell rapidly from a peak in 1928 to almost zero by about 1990. During this decline two substantial peaks occurred in 1942 and 1949. Rates in men began to rise again from early 2000s to the levels not seen since the 1940s. In women, rates fell from 1918 to an initial nadir in 1924, and then rose to peak in 1929. They then fell fairly rapidly to very low levels from the 1950s.

Chancroid

Figure 3 shows the number of chancroid diagnosis by sex for males from 1926 and for women from 1918. In men, two peaks occurred in 1927 and then again in 1950 with virtually no cases between these peaks or after 1952. In women only a few sporadic cases were seen in the years before the mid-1940s.

DISCUSSION

This is the first paper describing the temporal trends of three key STIs over a period of nearly 100 years in any part of Australia and importantly fills the 40-year gap between 1929 and 1969. This his-

Figure 1. Centred 3-year moving average of the annual adjusted rate of gonorrhoea diagnoses by sex in sexual health clinics in Melbourne, 1918-2016. *Raw number of gonorrhoea diagnoses in each year by sex and male sexual practice is presented in Supplementary Table S1.*

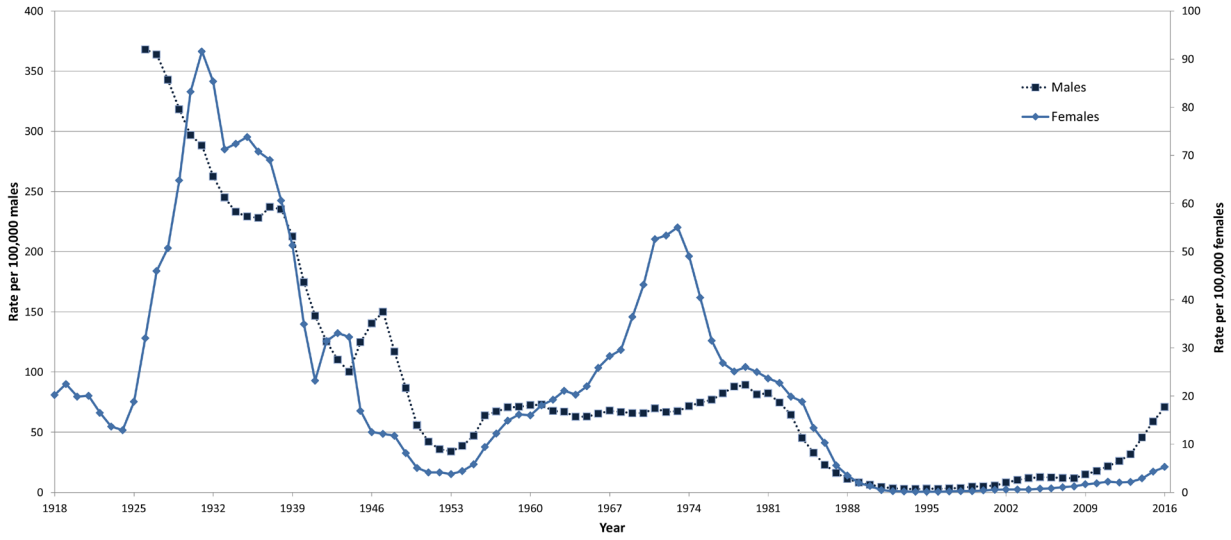


Figure 2. Centred 3-year moving average of the annual adjusted rate of infectious syphilis diagnoses by sex in sexual health clinics in Melbourne, 1918-2016. *Raw number of infectious syphilis diagnoses in each year by sex and male sexual practice is presented in Supplementary Table S1.*

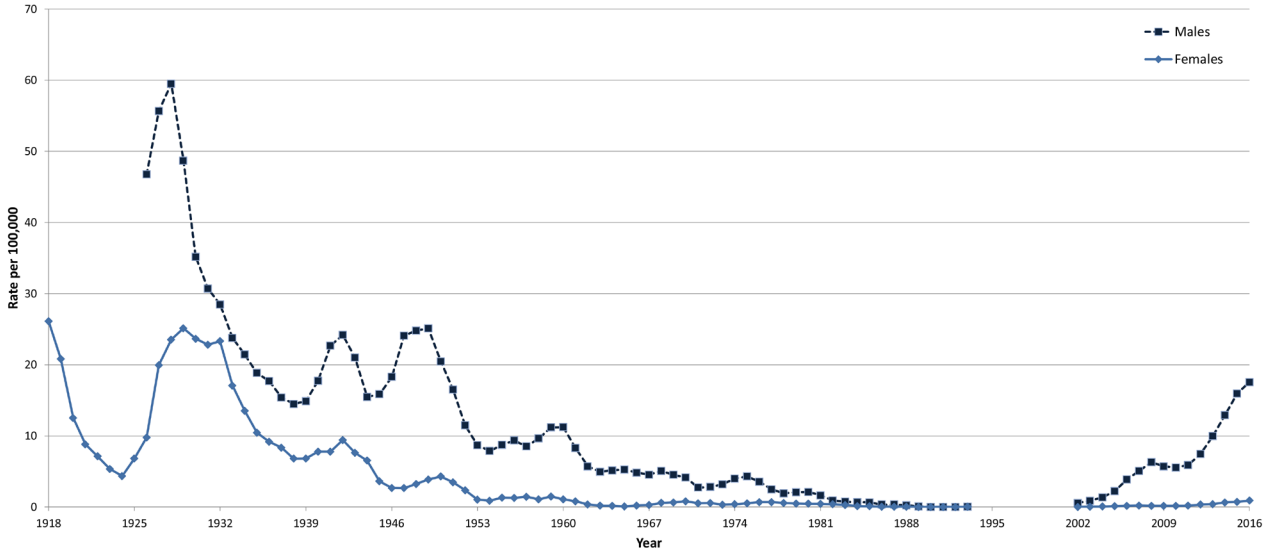
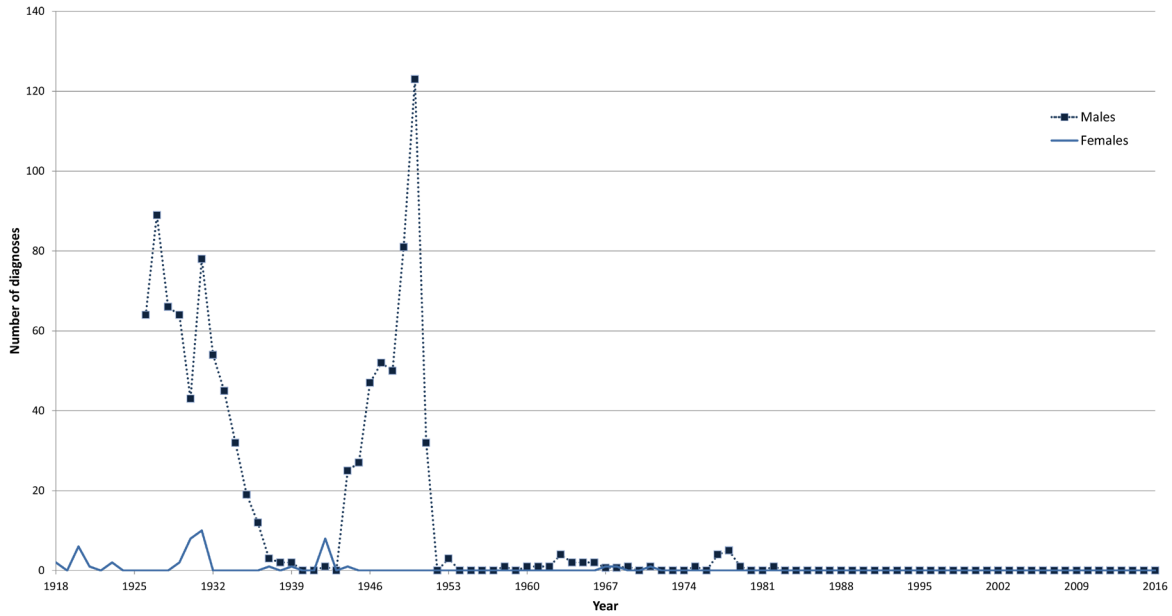


Figure 3. Number of chancroid diagnoses by sex in sexual health clinics in Melbourne, 1918-2016.



toric data may be Australia's only complete record for this period [2]. In our data the rises and falls of STIs occurred at similar times to key historical events that may have influenced changes in the rates of different STIs. While some of the changes were specific to Australia, most trends broadly mirror those seen in the UK and elsewhere[8,9]. These historical trends may offer guidance for the future public health interventions for Australia, as we enter an era when most STI rates are again rising rapidly.

There are a number of factors that need to be considered when interpreting our data. Firstly, we did not have a denominator for most of the time periods. This is why we displayed the data as a rate for the Melbourne population. This method too is a weakness because it's likely that the proportion of cases diagnosed in Melbourne who attended the clinic varied over time and also clearly this significantly underestimates the rate, MSHC currently diagnoses about 30-40% of the notifications of both syphilis and gonorrhoea in Victoria. Additionally, it is likely the age distribution of the population of Melbourne would have changed over the 99-year period. However, this data was not publicly available over this period and we were not able to adjust for this as a potential confounder in our analysis. Nevertheless, our data are the only continuous data in Australia and the general trends observed are very large in magnitude and fit with overseas data. While there were seven different iterations of the same clinic over 99 years, all clinics existed continuously and for the same public health purpose. Secondly, we also acknowledge strongly that no causality can be implied, although some associations are likely given their plausible nature such as the large declines in rate of syphilis and gonorrhoea diagnoses with the beginning of the mass production of penicillin in the late 1940s[10]. We have taken the liberty of suggesting possible reasons for these changes, acknowledging these suggestions are hypotheses, for which it is unlikely firm evidence for or against them will ever be forth coming. Finally, the data was taken from four distinct sources for the length of the study. The way these sources were recorded was different, and it is likely that both changes in the way data was recorded and improvements in testing methodologies with increasing sensitivity over time have occurred and influenced the rate of STIs diagnosed. However, the magnitude of the changes is large and not likely to be influenced greatly by these changes. Acknowledging these biases we point out that these data do provide the first continuous record of STIs in Australia's second largest city.

The most striking feature in all of the three STIs is the dramatic decline with the introduction of antibiotics in the late 1940s [10,11]. Indeed for gonorrhoea and syphilis rates in men and women have never exceeded the levels seen before the pre-antibiotic era. While not well documented, trends in the number of sexual partners and age of first intercourse in Australia suggest that this pre-antibiotic era was associated with substantially lower rates of sexual partner change, implying that if the current rate of partner change were replicated in the pre-antibiotic era, STI rates would have been much higher [12,13]. This same dramatic decline with antibiotics also occurred in the UK, Sweden and elsewhere which highlights the fundamental importance of access to health care for the effective control of curable STIs[1,14-16]. Extending the logic that access to health care for the treatment

of STIs reduces their rate, there is the impression that the introduction of the universal healthcare scheme, Medicare, in about 1975 could have lowered gonorrhoea rates for women through greater access to health care. No reduction in men is seen, but rates of STIs were rising rapidly in men most likely because of the large rises in men who have sex with men (MSM) which may have overwhelmed any changes in heterosexual men[17]. In addition, this change however may simply be an artefact of Medicare which could have artificially lowered rates at the sexual health clinic because women could now seek health care through their general practitioners[18]. The importance of accessible health care for the effective control of STIs is highlighted in remote Indigenous communities where high STI rates are in part due to reduced access to health care in these communities[19].

A second feature of the patterns seen in all three STIs is the rise around the time of world wars[20]. Rates temporarily rose at around the time men returned to Australia from the World War II which is consistent with social disruption and the greater rate of partner change in young servicemen in foreign cities[20]. The rise seems short lived although around this time antibiotics were also becoming more available so it is possible that these two factors were both contributing[10,11]. Again these trends are also evident in the UK and Swedish data[1,14].

The third feature that is evident in the trends of gonorrhoea is the influence of changes in sexual risk that occurred over time [12,15,21,22]. For example the oral contraceptive pill was introduced on prescription in Australia in 1961 around the time that sexual risk (e.g. increasing partner number and condomless sex) rose in Australia and elsewhere[12]. The more pronounced rise in gonorrhoea in men compared to women around this time also coincided with the repealing of laws prohibiting same-sex sexual activity between men and the gay and lesbian political movements[23]. Finally, the precipitous fall in gonorrhoea in men with the appearance of HIV and dramatic reduction in sexual risk among MSM is evident not only in our data but was virtually universal around the world [1,14,15,24]. Falls were also seen in women as condom use rose in heterosexuals, but it should be noted that around this time Victoria also regulated sex work which also saw dramatic falls in STIs in sex workers [25-27]. More recently the rapid rise in gonorrhoea and syphilis in MSM is a common feature around the world and coincided with successful HIV treatment [22,24,28].

These data also highlight some important differences between gonorrhoea and syphilis, particularly in heterosexuals, which in our data is largely reflected by rates in women. The graphs show that when sexual risk rose after the 1950s, rates of gonorrhoea rose in women but syphilis did not [13]. This indicates that for heterosexuals syphilis is an easier infection to control at a population level, although widespread antenatal screening for syphilis was also introduced about this time [13]. This suggestion that gonorrhoea is harder to control in heterosexuals is also evident in the last few years of data analysed here, as rates of gonorrhoea but not syphilis were rising in women albeit not to levels seen in the 1970s[29]. The concept that syphilis is easier to control than gonorrhoea is also supported in the US[30] and among Indigenous Australians living in remote settings[31] where endemic gonorrhoea is common but syphilis tends to be associated with intermittent epidemics [19].

The national Australian notification data also show rising rates of gonorrhoea in women as do some international data[3,29]. This trend may be in part explained by the recent introduction of more widespread and sensitive testing for gonorrhoea that has detected infections that may have been previously missed[29]. However the concern is that the recent rises in rates among heterosexuals may be real and indicate population rates are rising again. A key public health issue then is how far will it rise? The significance of this finding is that it may herald the start of endemic heterosexual gonorrhoea once again in Australia for the first time in 30 years and the emerging trend requires careful observation.

Finally, the pattern of chancroid suggests it is a particularly easy infection to control at a population level. Not only did it virtually disappear after the early 1950's, but many of the male cases diagnosed between 1942 and 1952 in Australia were likely to have been acquired overseas, on the basis that 29% were seamen (data not shown). In contrast, while occasional cases occurred in women these infections appeared to be treated without substantial ongoing heterosexual spread on the basis that cases in women were very sporadic. It seems unlikely that these were infections in predominantly MSM because this infection has not been associated with MSM in the past and the very high ratios of men to women occurred only in the latter half of last century with the legalisation of same sex sexual practices[23].

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Contributors

Christopher K. Fairley conceived the idea of this study. Emile Jasek, Christopher K. Fairley and Eric P.F. Chow designed the study. Tiffany Phillips was involved in data entry and management. Emile Jasek undertook the analysis and interpretation, and prepared the first draft of the manuscript. Eric P.F. Chow and Christopher K. Fairley assisted with data analysis and data interpretation. Meredith Temple-Smith and David Lee were consulted for the historical data during the writing of the manuscript. All authors contributed in data interpretation and revising the manuscript critically for important intellectual content.

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References

1. Lowndes CM, Hughes G. Epidemiology of STIs: UK. *Medicine* 2010; 38(5): 211-5.
2. Hall R. Notifiable Diseases Surveillance, 1917 to 1991. *Communicable Diseases Intelligence* 1993; 17(11): 226-41.
3. National Notifiable Disease Surveillance System Data. Australian Government Department of Health, Canberra; 2016. http://www9.health.gov.au/cda/source/cda-index.cfm
4. Schachter J. Chlamydia trachomatis: the more you look, the more you find--how much is there? *Sexually Transmitted Diseases* 1998; 25(5): 229-31.
5. Marrone J, Fairley CK, Saville M, et al. Temporal Associations With Declining Trichomonas vaginalis Diagnosis Rates Among Women in the State of Victoria, Australia, 1947 to 2005. *Sexually Transmitted Diseases* 2008; 35(6): 572-6.
6. Australian Historical Population Statistics, 2014. Canberra, Australia: Australia Bureau of Statistics 2014.
7. Regional Population Growth, Australia, 2014-15. Canberra, Australia: Australia Bureau of Statistics, 2016.
8. 2014 Sexually Transmitted Diseases Surveillance. Centers for Disease Control and Prevention. Atlanta, Georgia, USA. [online]. 2017 January [Cited 9th February 2017]. https://www.cdc.gov/std/stats14/slides.htm
9. Statistics - Syphilis. Health Protection Agency. United Kingdom. [online]. [Cited 9th February 2017]. http://webarchive.nationalarchives.gov.uk/20091105184503/http:/www.hpa.org.uk/infections/topics_az/hiv_and_sti/Stats/STIs/syphilis/statistics.htm.
10. Neushul P. Science, Government, and the Mass Production of Penicillin. *Journal of the History of Medicine and Allied Sciences* 1993; 48(4): 371-95.
11. Kampmeier R. Introduction of sulfonamide therapy for gonorrhea. *Sexually Transmitted Diseases* 1983; 10(2): 81-4.
12. Smith TW. The sexual revolution? *Public Opinion Quarterly* 1990; 54(3): 415-35.
13. de Visser RO, Smith A, Rissel C, Richters J, Grulich A. Heterosexual experience and recent heterosexual encounters among a representative sample of adults. *Australian and New Zealand Journal of Public Health* 2003; 27(2): 146-54.
14. Cronberg S. The rise and fall of sexually transmitted diseases in Sweden. *Genitourinary medicine* 1993; 69(3): 184-6.
15. Martin JL. The impact of AIDS on gay male sexual behavior patterns in New York City. *American Journal of Public Health* 1987; 77(5): 578-81.
16. Westrom L. Incidence, prevalence and trends of acute pelivc inflammatory disease and its consequences in industrialised countries. *American Journal of Obstetrics and Gynecology* 1980; 138: 880-92.
17. Quinn TC. Gay bowel syndrome: The broadened spectrum of nongenital infection. *Postgraduate Medicine* 1984; 76(2): 197-210.
18. Davis K. Equal treatment and unequal benefits: The Medicare program. *The Milbank Memorial Fund Quarterly. Health and Society* 1975: 449-88.
19. Fairley CK, Hocking JS. Sexual health in indigenous communities. *Medical Journal of Australia* 2012; 197(11): 597-8.
20. Bean CEW. ANZAC to Amiens. Ringwood, Victoria: Penguin; 1983.
21. Grulich AE, de Visser RO, Badcock PB, et al. Homosexual experience and recent homosexual encounters: the Second Australian Study of Health and Relationships. *Sexual Health* 2014; 11(5): 439-50.
22. Kojima N, Davey DJ, Klausner JD. Pre-exposure prophylaxis for HIV infection and new sexually transmitted infections among men who have sex with men. *AIDS* 2016; 30(14): 2251-2.

23. Willett G. The darkest decade: Homophobia in 1950s Australia. *Australian Historical Studies* 1997; 27(109): 120-32.

24. Read P, Fairley CK, Chow EP. Increasing trends of syphilis among men who have sex with men in high income countries. *Sexual Health* 2015.

25. Lee DM, Binger A, Hocking J, Fairley CK. The incidence of sexually transmitted infections among frequently screened sex workers in a decriminalised and regulated system in Melbourne. *Sexually Transmitted Infections* 2005; 81(5): 434-6.

26. Rissel CE, Richters J, Grulich AE, de Visser RO, Smith AM. Sex in Australia: first experiences of vaginal intercourse and oral sex among a representative sample of adults. *Australian and New Zealand Journal of Public health* 2003; 27(2): 131-7.

27. O'Connor CC, Berry G, Rohrsheim R, Donovan B. Sexual health and use of condoms among local and international sex workers in Sydney. *Genitourinary Medicine* 1996; 72(1): 47-51.

28. Chow EPF, Callander D, Fairley CK, et al. Increased Syphilis Testing of Men Who Have Sex With Men: Greater Detection of Asymptomatic Early Syphilis and Relative Reduction in Secondary Syphilis. *Clinical Infectious Diseases :* 2017; 65(3): 389-95.

29. Chow EPF, Read TRH, Tabrizi S, et al. Gonorrhoea notifications and nucleic acid amplification testing in a very low-prevalence Australian female population. *Medical Journal of Australia* 2014; 202(6): 321-3.

30. Centers for Disease Control and Prevention. Sexually Transmitted Disease Surveillance 2015. Atlanta, Georgia: Centers for Disease Control and Prevention, 2016. https://www.cdc.gov/std/stats15/STD-Surveillance-2015-print.pdf

31. The Kirby Institute. Bloodborne viral and sexually transmissible infections in Aboriginal and Torres Strait Islander people: Annual Surveillance Report 2016. Sydney, NSW 2052: The Kirby Institute, UNSW Sydney, 2016. https://kirby.unsw.edu.au/sites/default/files/kirby/report/SERP_Annual-Surveillance-Report-2016_UPD170627.pdf

Table S1. Number of gonorrhoea, infectious syphilis, chancroid and chlamydia diagnoses by sex and male sexual practice, sexual health clinics, Melbourne, 1918-2016.

Year	Gonorrhoea diagnoses				Infectious syphilis diagnoses				Chancroid diagnoses				Chlamydia diagnoses			
	Female	Males	Men who have sex with men	Heterosexual males	Female	Males	Men who have sex with men	Heterosexual males	Female	Males	Men who have sex with men	Heterosexual males	Female	Males	Men who have sex with men	Heterosexual males
1918	96				130				1							
1919	53				62				0							
1920	103				39				6							
1921	74				43				1							
1922	61				23				0							
1923	71				22				2							
1924	44				24				0							
1925	57				12				0							
1926	162	1,698			59	146			0	32						
1927	240	1,829			69	304			0	89						
1928	269	1,761			164	364			0	66						
1929	244	1,490			117	213			2	64						
1930	458	1,515			95	151			8	43						
1931	545	1,451			143	164			10	78						
1932	366	1,344			103	144			0	54						
1933	363	1,123			102	117			0	45						
1934	336	1,194			50	94			0	32						
1935	389	1,185			51	111			0	19						
1936	392	1,085			57	80			0	12						
1937	297	1,208			32	79			1	3						
1938	373	1,355			39	78			0	2						
1939	272	1,095			35	68			1	2						
1940	163	911			34	90			0	0						
1941	128	820			58	132			0	0						
1942	95	715			38	159			8	1						
1943	316	601			65	122			0	0						
1944	164	593			29	83			1	25						
1945	83	562			20	66			0	27						
1946	52	1,057			15	132			0	47						
1947	91	912			13	132			0	52						
1948	81	770			21	178			0	50						
1949	48	503			27	155			0	81						
1950	26	375			26	146			0	123						
1951	25	205			31	97			0	32						
1952	32	259			12	85			0	0						
1953	28	268			5	51			0	3						
1954	20	192			5	48			0	0						
1955	53	412			10	79			0	0						
1956	67	521			17	81			0	0						
1957	112	634			4	68			0	0						
1958	130	535			15	65			0	1						

Year	Gonorrhoea diagnoses				Infectious syphilis diagnoses				Chancroid diagnoses				Chlamydia diagnoses			
	Female	Males	Men who have sex with men	Heterosexual males	Female	Males	Men who have sex with men	Heterosexual males	Female	Males	Men who have sex with men	Heterosexual males	Female	Males	Men who have sex with men	Heterosexual males
1959	145	661			9	119			0	0						
1960	157	705			16	116			0	1						
1961	144	656			5	76			0	1						
1962	230	769			2	47			0	1						
1963	214	634			4	50			0	4						
1964	214				0				0							
1965	220				1				0							
1966	289				2				0							
1967	361				4				1							
1968	319				4				1							
1969	356	696			13	81			0	1						
1970	638	845			6	30			0	0						
1971	618	916			11	42			1	1						
1972	773	930			4	34			0	0						
1973	730	803			8	36			0	0						
1974	715	991			1	59			0	0						
1975	553	1,127			7	68			0	1						
1976	395	954			14	50			0	0						
1977	358	1,109			7	30			0	4						
1978	368	1,379			8	24			0	5						
1979	330	1,201			9	27			0	1						
1980	402	1,190			4	37			0	0						
1981	333	1,068			7	26			0	0			103	2		
1982	280	1,277			8	7			0	1			300	4		
1983	373	884			2	7			0	0			408	2		
1984	216	651			3	19			0	0			432	6		
1985	243	453			1	4			0	0			362	23		
1986	137	354			1	6			0	0			261	2		
1987	82	218			1	6			0	0			154	2		
1988	36	159			1	4			0	0			125	0		
1989	44	136			0	1			0	0			104	11		
1990	12	93			0	0			0	0			90	78		
1991	7	71			0	0			0	0			21	43		
1992	5	52			1	1			0	0			0	0		
1993	1	41			0	0			0	0			0	0		
1994	4	48							0	0						
1995	1	46							0	0						
1996	2	64							0	0						
1997	5	34							0	0				81		
1998	3	70							0	0			81	117		
1999	5	79							0	0			95	137		
2000	5	93							0	0			71	162		
2001	11	88							0	0			91	224		
2002	14	122	94	28	0	10	4	6	0	0	0	0	186	352	148	204

Year	Gonorrhoea diagnoses				Infectious syphilis diagnoses				Chancroid diagnoses				Chlamydia diagnoses			
	Female	Males	Men who have sex with men	Heterosexual males	Female	Males	Men who have sex with men	Heterosexual males	Female	Males	Men who have sex with men	Heterosexual males	Female	Males	Men who have sex with men	Heterosexual males
2003	7	224	191	33	1	10	8	2	0	0	0	0	218	401	130	271
2004	12	209	189	20	2	28	24	4	0	0	0	0	213	425	152	273
2005	15	214	170	44	1	37	36	1	0	0	0	0	257	456	178	278
2006	15	283	252	31	4	60	54	6	0	0	0	0	307	522	236	286
2007	19	203	175	28	5	123	108	15	0	0	0	0	287	498	218	280
2008	28	200	173	27	3	111	104	7	0	0	0	0	327	617	278	339
2009	26	292	239	53	3	139	128	11	0	0	0	0	377	764	412	352
2010	48	418	380	38	4	94	80	14	0	0	0	0	404	911	504	407
2011	43	382	330	52	3	109	92	17	0	0	0	0	352	724	405	319
2012	46	545	487	58	5	162	151	11	0	0	0	0	414	946	511	435
2013	40	704	622	82	14	192	178	14	0	0	0	0	530	1,250	706	544
2014	51	743	679	64	7	273	256	17	0	0	0	0	600	1,360	730	630
2015	96	1,489	1,404	85	21	366	329	37	0	0	0	0	640	1,671	1,048	623
2016	137	1,629	1,525	104	19	406	366	40	0	0	0	0	754	2,079	1,454	625