

The Epidemiology Of STDs And AIDS In Early Australia

J Talukdar

Citation

J Talukdar. *The Epidemiology Of STDs And AIDS In Early Australia*. The Internet Journal of Sexual Medicine. 2013 Volume 2 Number 1.

Abstract

The current review traces the epidemiological perspective of venereal diseases (the present day form of sexually transmitted diseases) and Acquired Immunodeficiency Syndrome in early Australia. The origins and surges of these diseases in the sixteenth, seventeenth, eighteenth and nineteenth centuries presents some interesting findings regarding the etiology of these diseases. The rise of the second and third generation of sexually transmitted diseases including that of the Acquired Immunodeficiency Syndrome is also reviewed.

INTRODUCTION

Until the late eighteenth century, scientists were slow to recognize that there was more than one kind of sexually transmitted disease (STD). They thought that all sexually transmitted infections were the same disease and thus termed it as venereal disease (or VD). This was primarily based on the method of contagion with the word venereal derived from Venus, the Roman goddess of love [1]. The present day definition of a STD is a pathology (i.e., damage) with or without symptoms secondary to an infection that is usually (more than half the time) passed from one person to another during intimate bodily contact meant to give or derive sexual gratification [2]. Although in recent times, the term 'venereal' has been abandoned in favour of the more morally neutral and purely descriptive 'sexually transmitted', yet syphilis and the others continue to be shameful diseases [3].

VENEREAL DISEASES IN EARLY COLONIAL AUSTRALIA

From the period 1717 until 1776 with the American War of Independence bringing the traffic to a halt, Britain started sending convicts to her American colonies. It was eventually in 1787 that more than 160,000 convicts (the ratio of men to women being six to one) were transported to the Australian colonies [3, 4]. The First Fleet Lady Penrhyn landed safely at Sydney Cove in January 1788, however, not barring from seven venereal disease cases on its first break at Rio de Janeiro, and three on the last leg of its journey from Cape Town to Botany Bay and all attributed to the sexual relations

between the female convicts and sailors and marines [3, 5-8]. The situation was repeated on some vessels of the Second Fleet Lady Juliana which arrived in 1790 [9]. Collins reported that efforts were made to prevent concealment of infection as per 'Orders imposed by the Governor', however, promiscuous relations continued [10]. Governor Phillip in early February 1788 had condemned the 'illegal intercourse between the sexes' [11]. However, deteriorating situations forced Governor Phillip to comment as early as 1789 that venereal disease 'has gained such a footing in this settlement that I doubt if it will ever be done away' [9].

For the next few years, fragments of quantitative evidence exist. In December 1795, two male convicts died at Sydney and one of them had been a venereal patient [10]. In 1797 in the General Hospital where soldiers of the New South Wales Corps were accommodated as were the naval personnel, one of the causes of death had been listed as 'lues venerea' [12]. Finally, in the regiment hospitals in 1808, venereal disease accounted for 1308 of 5861 registered cases [9]. When James Bowman succeeded D'Arcy Wentworth at the General Hospital Sydney (later Sydney Hospital) in 1819, he segregated patients with syphilis and it was under his auspices in 1820, that a special ward was set aside for their treatment [12]. Curson listed the major illnesses treated at the General Hospital Sydney for one month in 1819 and found that gonorrhoea was almost three and a half times as common as syphilis cases but together (as total venereal disease) they were the third most frequent cause of hospitalisation (Table 1) [13].

Table 1

Major Illnesses Treated at Sydney Hospital, 31 Aug.-30 Sept. 1819

Ulcers	236	Lumbago	14
Abscesses	105	Pneumonia	13
(Gonorrhoea	64)	Fontanelle	13
(Syphilis	19)	Cynache	12
Total Venereal Disease	83		
Contusions	81	Scrofula	11
Wounds	67	Ophthalmia	10
Catarrh	61	Dislocations	8
Dysentery	49	Rheumatism	7
Constipation	22	Diarrhoea	5
Cephalalgia	17	Fever	3
Debility	15		

By 1821 it was recorded that dysentery, rheumatism and venereal disease were the most common conditions in the General Hospital Sydney, and that for females, venereal disease was the commonest reason for admission [9]. The ten leading diseases treated at Sydney Hospital in the periods 1838-1839, 1849 and 1859 (ten-yearly intervals) are presented in Table 2 which clearly reveals that venereal cases were significant and somewhat increasing as a proportion of total cases, 4.8 % of total cases in 1838-1839, 5.2 % in 1849 and 7.0 % in 1859 [13].

Table 2

Ten Leading Diseases Treated at Sydney Hospital, 1838-1839, 1849 and 1859

1838-39		
Rank	Disease	% of total cases
1	Accidents/Violence	9.6
2	Influenza	7.4
3	Diarrhoea	5.8
4	Rheumatism	5.7
5	Dysentery	4.9
6	Venereal	4.8
7	Ulcers	3.8
8	Inflammation of eye	3.7
9	Whooping Cough	2.5
10	Worms	2.2
1849		
Rank	Disease	% of total cases
1	Accidents/Violence	9.9
2	Rheumatism	7.0
3	Ulcers	6.2
4	Venereal	5.2
5	Dyspepsia	4.7
6	Inflammation of bronchia	3.6
7	Diarrhoea	2.6
8	Abscess	2.0
9	Dysentery	1.9
10	Constipation	1.8
1859		
Rank	Disease	% of total cases
1	Rheumatism	11.2
2	Accidents/Violence	9.3
3	Venereal	7.0
4	Diarrhoea	6.0
5	Ulcers	5.8
6	Inflammation of bronchia	3.8
7	Phthisis	3.2
8	Inflammation of eye	2.7
9	Dyspepsia	2.2
10	Dysentery	1.5

The other settlements were also not spared the ravages of venereal disease and at the Colonial Hospital Hobart Town (Tasmania), James Scott, Colonial Surgeon, revealed 637 cases of gonorrhoea and 33 cases of syphilis in 1821-1831 [14]. Gonorrhoeal ophthalmia, often ending in blindness was common and the Hobart Hospital saw about 60 cases an year [15]. The colonial hospitals in Tasmania in 1844-1853 had a total of 1831 venereal disease cases (with 31 deaths), which were only comparable to the more frequently fatal ‘fevers’ responsible for 1553 cases [16]. At Launceston, a settlement in the north of the island, Surgeon Mountgarrett recorded that in 1820 he treated females for ‘venereal complaints’ [9]. The records of the General Hospital Moreton Bay (Brisbane) mentions no venereal disease cases in 1825-1827, but two cases of syphilis in 1827-1828 and also in 1829, with the number increased to seven in 1830. The year 1833 recorded an increase of syphilis cases to ten with three attributed to gonorrhoea. In the period August 1837 to July 1839, one case of syphilis and 12 cases of gonorrhoea were apprehended [3]. Smithurst commented that probably earlier year surgeons considering gonorrhoea as comparatively unimportant, did not record all incidences [9]. The other free settlement established in Swan River, Perth, in 1829 had intestinal infections and ophthalmia as the dominant diseases until the convict transportation began in 1850 [17]. However, Acting Colonial Surgeon Harris on reviewing the medical condition of the colony in the mid 1830s noted that gonorrhoea was present [18]. John Batman, who in 1837 opened up the Port Phillip District (Melbourne) to white settlement was himself dying from syphilis and ‘had to keep to a sort of wheelchair put together out of rushes’ [19].

VENEREOLOGY IN AUSTRALIA IN THE NINETEENTH CENTURY

James Keene, former surgeon to the West London Hospital and then of Melbourne in the early 1860s, kept the colonial profession informed through his articles about the latest European ideas on whether gonorrhoea and syphilis were caused by the same ‘venereal poison’ [20]. However, as pointed out by G Rothwell Adam, Honorary Physician to the Women’s Hospital Melbourne in 1890, it was not until Nöggerath’s view of 1872 that gonorrhoea in the female was not as simple as traditionally supposed, that gonorrhoea had been recognised as an important cause of the disease of the ‘uterine appendages’. Nevertheless, ‘stricture of the urethra, sometimes leading to death, was a serious complication of gonorrhoea in males, and while not a very common condition, was a persistent cause of disability throughout the nineteenth century’. Another complication due to

gonorrhoeal infection acquired from the mother during the birth process, ophthalmia neonatorum, often causing severe corneal manifestations and leading to blindness was the most common cause of the latter in the late nineteenth century [3]. Berlin University clinic experiments on 1700 ophthalmia cases had revealed the microorganism of gonorrhoea in every case [21]. M L Symons, Honorary Ophthalmic Surgeon to the Adelaide Hospital in 1887, lacked statistics for South Australia, however, informed of the number of cases, he urged the Board of Health to educate the public about the dangers of ophthalmia [22]. In recognition of the gravity of the disease, in 1899, the New South Wales Branch of the British Medical Association (BMA) recommended that ophthalmia neonatorum be put on the list of compulsorily notifiable diseases [17]. Even F Antill Pockley, Honorary Ophthalmic Surgeon to the Prince Alfred Hospital Sydney, announced the disease as very common in Sydney and called for compulsory notification [23]. J P Ryan, Surgeon to the Victorian Eye and Ear Hospital, Melbourne, stated in the mid-1890s that he had no reliable statistics as to prevalence in Melbourne but that over the previous five years there had been 172 cases treated at his hospital [3]. The Australasian Medical Gazette in late 1894 as a self-congratulatory appraisal, questioned on the scarce appearance of syphilis in Australian medical literature and attributed it to successful treatment and abatement of the virulence of the disease [3]. The journal found it hard to recall a tertiary syphilis case in the previous five years [24]. The journal's claim regarding the rarity of the disease was supported by figures from the provincial Newcastle Hospital with only one serious case in 1000 inpatients and 1500 outpatients treated over a period of 21 months [25]. However, these claims were refuted by AW Finch Noyes, Surgeon in Charge of the Skin Department Melbourne Hospital and the Skin Department Alfred Hospital. He also accounted for 60 tertiary cases in a total of 400 cases of syphilis treated (15 %) at Melbourne Hospital [26]. Finch was agreed upon by W Chisholm, Honorary Surgeon to the Children's Hospital and Honorary Assistant Surgeon to Prince Alfred Hospital Sydney, who believed that owing to the curability of the disease it was uncommon to witness the late, serious cases, nevertheless, many failed to continue treatment and hence in reality they were common [3]. The hospital admissions and cases, however, do reveal the prevalence of venereal diseases in the later nineteenth century Australia. Table 3 reflects the venereal disease cases at Sydney Hospital in the years 1874 and 1881, ranking second and fifth respectively of all the cases admitted [13].

Table 4 depicts venereal cases as a percentage of total inpatient and outpatient cases respectively at the Hobart General Hospital in the late nineteenth and early twentieth century, where figures are of the same order of magnitude as the Sydney ones [15].

Table 3
Venereal Disease Cases at Sydney Hospital, 1874 and 1881

Rank	1874	% of total cases	Rank	1881	% of total cases
1	Accidents/Violence	20.0	1	Accidents/Violence	25.5
2	Venereal	6.5	2	Rheumatism	6.9
3	Rheumatism	6.2	3	Alcoholism	5.1
4	Phthisis	3.6	4	Phthisis	4.4
5	Bronchitis	3.1	5	Venereal	3.8
6	Typhoid	2.8	6	Typhoid	3.0
7	Dyspepsia	2.6	7	Pneumonia	2.8
8	Bright's Disease	2.6	8	Disease of cord	2.2
9	Epilepsy	2.5	9	Bright's Disease	2.0
10	Cancer	2.3	10	Bronchitis	1.9

Table 4
Inpatient and Outpatient Diseases, General Hospital, Hobart, 1877-1911

Class of disease	% of total inpatient cases	% of total outpatient cases
General disease		
Miasmatic	13.35	6.55
Venereal	3.32	3.62
Diarrhoeal		2.15
Septic	1.31	0.24
Parasitic	0.62	2.86
Dietic	3.60	0.49
Constitutional	10.23	6.85
Developmental	1.39	1.49
Local systematic diseases		
Nervous	7.56	3.13
Organs of a special sense	3.02	2.86
Circulatory	4.07	2.28
Respiratory	8.12	12.15
Digestive	8.64	14.27
Lymphatic	0.58	0.85
Urinary	2.81	1.34
Generative	3.80	2.89
Parturition	1.64	0.49
Locomotion	3.20	2.19
Integumentary	4.20	6.86
Other classes		
Violence	14.08	21.85
Ill-defined	4.35	4.59

THE PENICILLIN ERA DROOP AND STD RESURGENCE

The magic bullet, the antibiotic penicillin was discovered by Sir Alexander Fleming in 1929 in Britain, and Florey, Abraham and Chain at Oxford spurred on by the exigencies of war, developed it for therapeutic use in 1940. Repository penicillin proved to be successful as 'one shot' therapy for syphilis and gonorrhoea and for other non-venereal treponemal infections and thus flooded the market soon. The dramatic impact of the wonder drug on venereal diseases could be seen in the great declines in incidence rates - but

not for long [3].

The leading Australian venereologist John Cooper Booth predicted as early as 1955 that if antibiotics became less effective then the problems of the pre-antibiotic period would prevail regarding STDs [27]. His conjectures were not too erring – in Australia, the incidence of syphilis had declined from 17.2 per 100,000 people in 1950 to 5.5 in 1954 but had risen to 7.2 in 1959, while gonorrhoeal incidence was 45.5 in 1950, 23.6 in 1954 and 44.7 in 1959 [27, 28]. The Director of the new Division of Epidemiology, the New South Wales Health Commission S Fisher, at the onset of the 1970s listed factors considered by experts in Australia and overseas to be ‘very significant’ and ‘less important’ regarding the high incidence of gonorrhoea and syphilis, as represented in Table 5 [29].

Table 5

Factors Considered to Contribute to the Continued High Incidence of Gonorrhoea and Syphilis in Australia
 Table 5
 Factors Considered to Contribute to the Continued High Incidence of Gonorrhoea and Syphilis in Australia

Considered very significant	Considered less important
Lack of symptoms in the infective stage	Antibiotic resistance
Community ignorance	Increase in travelling
(i) of fact that it is possible to be infective while symptomless;	Oral contraceptives
(ii) of modes of transmission, symptoms, ease of cure;	Prostitution
(iii) of existing diagnostic and treatment facilities	Reduction of age at which sexual intercourse commenced
Fear of stigma by at risk population	Inadequate treatment
Moralizing and punitive attitudes of health professionals	Failure to notify
Lack of convenient clinic facilities	

Whatsoever the factors may be, it was evident from the different Australian State statistics that the triumph of the penicillin-based control of the classical venereal diseases was short-lived. The first significant increase in syphilis and gonorrhoea notifications was observed in New South Wales in 1959 with a 58.4 and 12.3 % increase, respectively of the diseases, as on 1958 [30]. In 1960, an expert committee of State and Federal medical officers, recommended under the auspices of the National Health and Medical Research Council in a view to examine the situation, reported that there had been a ‘sharp increase’ in every State since 1954 except Western Australia where notifications had tended to decline since 1956 [31, 32]. At the close of the 1950s, it was only Western Australia who had not yet experienced the resurgence in venereal diseases which other Australian States and the United Kingdom as well as America had experienced and in addition, this State also did not encounter

strains of gonococci relatively resistant to penicillin [33-37].

STDS IN THE 1980S AND THE EARLY 1990S

Syphilis cases in Australia depicted a steady rate of 8 to 9 per 100,000 from 1969 to 1973, rising to 23 per 100,000 in 1976 and being stable at this rate for the next decade, and declined thereafter from 20 per 100,000 in 1987 to 10 per 100,000 in 1990 [3]. Since the beginning of the 1990s, more than 90 % of syphilis infections took place among the Aboriginals, and for the European Australians it posed a relatively small threat thence [3]. Similar national trends were observed for gonorrhoea, from a decline in the 1980s and reaching a peak in 1982-1983, the incidence fell over 80 % in 1991. Gonococcal resistance to antibiotics ranging from intrinsic resistance to the penicillins as well as penicillinase-producing *Neisseria gonorrhoeae* (PPNG) was widespread, and almost 9 % of isolates in Australia by June 1991 demonstrated high levels of intrinsic resistance, while 13 % of strains were PPNG [38].

Apart from gonorrhoea and syphilis, lymphogranuloma venereum (LGV), chancroid and donovanosis were, as defined by legislation, represented under the group of venereal diseases in many countries. LGV being a rare disease in Australia was not notifiable in Western Australia, South Australia and Tasmania and only 23 cases were reported in the period 1980-1986 (nine in New South Wales, one in Queensland and 13 in the Northern Territory) and none in 1987-1990. For chancroid which was also an infrequently encountered infection, the figures were 30 in 1980 to three in 1989 in the whole country and in the same period, 63 for Queensland, 40 for Western Australia, 15 for New South Wales, two for Victoria and four each for Northern Territory and the Australian Capital Territory, with Tasmania reporting none and South Australia having it as not notifiable. Donovanosis too, being not notifiable in Victoria, South Australia and Tasmania turned out figures for others for the period 1980-1990, with Queensland from a high of 90 in 1980 to a low of 26 in 1985, Western Australia from 105 in 1984 to eight in 1981 and 1982 and in the Northern Territory from 54 in 1984 to 18 in 1980 [3]. Chlamydia in Australia like in many Western countries, prevailed as the most common STD being five times more frequent than *N. Gonorrhoeae* - 1990 figures reveal 561 male and 1415 female cases notified in Queensland, 513 and 949 cases in South Australia and in the Northern Territory, 169 and 532 cases respectively for males and females [3]. Genital herpes too had rising rates, from 790 in 1984 in the New South Wales, it increased to 1140 in 1986 though dropped to 876 in 1989 [39-42]. The epidemiological

evidence linking mortality rates from cervical cancer and the Human Papillomavirus (HPV) was limited, though it was established that HPV types 6 and 11 which caused genital warts, were sexually transmitted [3].

Trichomoniasis caused by *Trichomonas vaginalis*, yet another common STD of women, had prevalence rates revealed by a Sydney study carried out in 1977-1978 involving three different groups. Rates varied from 0.5 % in 'non-promiscuous' family planning clinic patients to 17.8 % in a symptomatic venereal disease group [43-45].

EPIDEMIOLOGY OF HIV/AIDS IN AUSTRALIA IN THE FIRST DECADE OF THE PANDEMIC

The first diagnosed case of the Acquired Immunodeficiency Syndrome (AIDS) in Australia was that of an American gay man in December 1982, with six additional cases being reported in 1983. Nevertheless, it was only in December 1983 that the first person believed to have been infected with AIDS in Australia was reported [3]. In 1994, however, a review of cases of *Pneumocystis carinii* pneumonia (PCP) at the Royal Prince Alfred Hospital Sydney revealed a 72-year-old man with locally acquired Human Immunodeficiency Virus (HIV) who had died after prolonged illness in September 1981. This undiagnosed case is considered the first instance of HIV recorded [46, 47].

As of March 1992, 3160 AIDS cases had been reported to the National AIDS Registry (with a diagnosis date before 1 January, 1992) and the incidence was by far the highest in New South Wales, to be followed by Victoria and then the Australian Capital Territory as represented in Table 6 [48].

Table 6
AIDS Cases in Australia by State/Territory, 1982-1991

State/Territory	Year of diagnosis											Total	Cumulative incidence+
	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991			
ACT	0	0	0	0	2	3	8	9	11	8	41	14	
NSW	1	3	30	89	16	24	31	33	38	34	1,915	32	
NT	0	0	0	2	0	0	0	1	2	5	10	6.3	
QLD	0	0	5	12	13	25	38	48	57	54	252	8.5	
SA	0	0	0	2	5	9	22	28	24	35	125	8.6	
TAS	0	0	0	1	0	2	0	6	5	2	16	3.5	
VIC	0	3	8	12	36	79	11	12	12	15	653	15	
WA	0	0	3	7	11	12	24	31	25	35	148	8.9	
Total Cases	1	6	46	12	22	37	52	58	62	64	3,160	18	
			5	7	5	6	0	9	5				

+ Per 100 000 total 1991 population

The only reported figures relating to AIDS in the Aboriginals and Torres Strait Islanders (ATSI) could be obtained from the Queensland Health Department AIDS Medical Unit after 1993 (after the State tripartite forum

agreed to publication), which reveals that from July 1985 to August 1991, three female and 26 male ATSI notifications were received compared with 1158 (48 female, 1105 male and five transsexual) non-ATSI notifications, though the cumulative prevalence in each population was similar, 47.3 and 45.9 per 100,000 respectively (Table 7) [49]. Bowden, Sheppard and Currie comments in this regard that the very profile of AIDS-related diseases would be different from that seen in non-Aboriginal Australia because severe tuberculosis and gastrointestinal infections were already highly prevalent in Aboriginal communities [50].

Table 7
HIV Notifications in Queensland by Year of Diagnosis

	1984	1985	1986	1987	1988	1989	1990	1991
Non-ATSI	23	159	164	142	141	193	185	151
ATSI*	-	1	1	6	5	7	4	5

*ATSI - Aboriginals and Torres Strait Islanders

CONCLUSION

In early colonial Australia, transportation of convicts was cited as the major cause of the advent of venereal diseases. Gradually, venereal diseases mainly in the form of gonorrhoea and syphilis became one of the most frequent causes of hospitalisation. The other settlements also reported venereal disease cases, but mainly in the form of gonorrhoea and syphilis.

The prevalence of venereal diseases in nineteenth century Australia continued as evident from hospital admissions and case statistics. Gonorrhoea emerged as a dreaded disease with its complications in the form of strictures of the urethra and consequent disability (mostly in males) and ophthalmia neonatorum, often causing severe corneal manifestations and leading to blindness in newborns.

The Penicillin Era initially saw a drop in the sexually transmitted disease rates. However, the triumph of penicillin was short-lived with increased surges reported from most States in Australia (with the exception of Western Australia) as elsewhere in the world.

The 1980s and the early 1990s reported the occurrence of the second and third generation of STDs in addition to the classical gonorrhoea and syphilis. These were lymphogranuloma venereum, chancroid, donovanosis, chlamydia, genital herpes, genital warts, and trichomoniasis. The incidence of the first AIDS case reported in Australia, however, was controversial. Claims for the first reported diagnosed case of AIDS dated back to 1983, though some historians considered an undiagnosed case of 1981 as the

first incidence.

CONFLICT OF INTEREST STATEMENT

No competing interest declared

References

1. Little M. 21st Century Health and Wellness: Sexually Transmitted Diseases. Philadelphia: Chelsea House Publishers; 2000.
2. Shuford JA. What is the difference between sexually transmitted infection (STI) and sexually transmitted disease (STD)? [The Medical Institute Web site]. October, 2008. Available at: <http://www.medinstitute.org/public/132.cfm>. Accessed December 29, 2010.
3. Lewis MJ. Thorns on the Rose: The History of Sexually Transmitted Diseases in Australia in International Perspective. Canberra: Australia Government Publishing Service; 1998.
4. Inglis KS. The Australian Colonists. Carlton: Melbourne University Press; 1974.
5. Fidlon PG, Ryan RJ. The Journal of Arthur Bowes Smyth: Surgeon, Lady Penrhyn, 1787-1789. Sydney: Australian Documents Library; 1979.
6. Hughes R. The Fatal Shore: A History of the Transportation of Convicts to Australia, 1787-1868. London: Collins Harvill; 1987.
7. Royle HG, Simpson RL. Medical Aspects of the Voyage of the First Fleet. Med J Aust. 1988; 149: 625-30.
8. White J. Journal of a Voyage to New South Wales, AH Chisholm, ed. Sydney: Angus and Robertson; 1962.
9. Smithurst BA. Historic and Epidemiologic Review of Venereal Disease in Queensland, 2 vols. University of Queensland: MD Thesis; 1981.
10. Collins D. An Account of the English Colony in New South Wales, BH Fletcher, ed. Sydney: Reed; 1975.
11. Cumes JWC. Their Chastity Was Not Too Rigid. Melbourne: Longman Cheshire/Reed; 1979.
12. Watson JF. The History of the Sydney Hospital from 1811 to 1911. Sydney: Government Printer; 1911.
13. Curson PH. Times of Crisis: Epidemics in Sydney, 1788-1900. Sydney: Sydney University Press; 1985.
14. Scott J. A Return of Medical and Surgical Diseases, Treated at HM Colonial Hospital, Hobart Town, Van Diemen's Land, for the Years 1821 to 1831. Transactions of Provincial Medical and Surgical Association. 1835; III: i-xii.
15. Rimmer WG. Portrait of a Hospital: The Royal Hobart. Hobart: Royal Hobart Hospital; 1981.
16. Pridmore S. Disease in Tasmania, 1804-1975: An Outline. THRAPP. 1979; 26: 34-48.
17. Cumpston JHL. Health and Disease in Australia, MJ Lewis, ed. Canberra: AGPS Press; 1989.
18. Joske EJP. Health and Hospital: A Study of Community Welfare in Western Australia, 1829-1855. University of Western Australia: MA Thesis; 1973.
19. Cannon M. Who's Master Who's Man? Australia in the Victorian Age. Melbourne: Nelson; 1971.
20. Keene J. On the Venereal Poison. AMJ. 1862; 7: 106-11, 186-89.
21. AMG. Purulent Ophthalmia in Newly-Born Children. 1887; 6: 231.
22. Symons MJ. Purulent Ophthalmia in Newly-Born Children. AMG. 1887; 6: 189-90.
23. Antill Pockley F. The Notification of Ophthalmia Neonatorum. AMG. 1899; 18: 371-72, 401-2, 466.
24. AMG. Tertiary Syphilis. 1894; 13: 427-28.
25. AMG. Syphilis in Australia. 1894; 13: 350-51.
26. Finch Noyes AW. Tertiary Syphilis in Australia. AMG. 1895; 14: 352-54.
27. Cooper Booth J. Venereal Disease in Australia in the Post-War Decade, 1945-55. Brit J Vener Dis. 1956; 32: 154-56.
28. Report of Director General of Public Health NSW 1961. Sydney: Government Printer; 1962.
29. Fisher S. The Epidemiology of Venereal Disease. Aust Fam Physician. 1974; 3: 87-90.
30. Report of Director General of Public Health NSW 1959. Sydney: Government Printer; 1961.
31. Health Journal. States Asked to Confer on Increase in Venereal Disease. 1960; 10: 53.
32. Health Journal. Medical officers Report Increase in Venereal Disease since 1954. 1961; 11: 16-18.
33. Report of Commissioner of Public Health WA 1953. Perth: Government Printer; 1955.
34. Report of Commissioner of Public Health WA 1954. Perth: Government Printer; 1956.
35. Report of Commissioner of Public Health WA 1956. Perth: Government Printer; 1958.
36. Report of Commissioner of Public Health WA 1958. Perth: Government Printer; 1959.
37. Report of Commissioner of Public Health WA 1959. Perth: Government Printer; 1960.
38. Australian Gonococcal Surveillance Programme. The Incidence of Gonorrhoea and the Antibiotic Sensitivity of Gonococci in Australia. Genitourin Med. 1993; 69: 364-69.
39. Report of Health Commission of NSW 1981. Sydney: Government Printer; 1982.
40. Report of Department of Health NSW 1989. NSW: Acting Government Printer; 1989.
41. Report of Department of Health NSW 1990. Sydney: Lindsay Yates; 1990.
42. Report of Commission of Public Health Vic. 1982. Melbourne: Government

Printer; 1982.

43. Gaal R, Rich R, Hansman D. A Survey of Trichomonal and Neisserian Infection in Antenatal Patients. *Med J Aust.* 1968; 1: 634-35.

44. Goldsmid JM, Langley J, Davies N. Trichomoniasis - Some Alternative Views. *Venereology*; 1991; 4: 96-98.

45. Tapsall JW, Puglisi J, Smith DD. Trichomonas Vaginalis Infections in Sydney: Laboratory Diagnosis and Prevalence. *Med J Aust.* 1979; 1: 193-94.

46. Brass A, Gold J. AIDS and Australia. Sydney: Bay Books; 1985.

47. Gerrard JG, McGraham SL, Milliken JS, Mathys J-M J, Wills EJ. Australia's First

Case of AIDS? Pneumocystis carinii pneumonia and HIV in 1981. *Med J Aust.* 1994; 160: 247-50.

48. Kaldor J, McDonald AM, Blumer C et al. The Acquired Immunodeficiency Syndrome in Australia: Incidence, 1982-1991. *Med J Aust.* 1993; 158: 10-17.

49. Neilsen G, Hill PS. Human Immunodeficiency Virus Notifications for Aborigines and Torres Strait Islanders in Queensland. *Med J Aust.* 1993; 158: 155-57.

50. Bowden FJ, Sheppard C, Currie B. HIV in Australia's Northern Territory: Current Disease Patterns and Predictions for the Future. *Venereology.* 1994; 7: 50-55.

Author Information

Joy Talukdar, Master of Science (MSc.)

School of Education, The University of Adelaide

Adelaide, Australia

joy.talukdar@adelaide.edu.au