

Victorian Infectious Diseases Bulletin

A Victory Against Polio

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The world celebrated an historic day on 29 October 2000—the date of elimination of poliomyelitis in the Western Pacific. The vast region stretches from the western borders of China to the eastern reaches of Polynesia, encompassing one quarter of the world's population. This achievement matches that on 20 August 1994 when the Pan American Health Organization declared the Americas to be polio free.¹ These dates are but two of a number of immensely significant milestones marking our continuing progress towards the global eradication of this fearful disease, which has killed and lamed millions of children over the centuries. Before vaccines became available there were an estimated 600,000 cases of paralytic polio annually.²

VICTORY IN THE WESTERN PACIFIC

Polio's legacy is seen in the 10–20 million people who are living today with some degree of paralysis caused by the disease. Now, two of the World Health Organization's six regions have been declared 'polio free', meaning that the transmission of wild indigenous poliovirus has been totally halted in these regions. The European region is expected to follow in just over one year. The remaining three regions—South East Asia, the Eastern Mediterranean and Africa—still have significant reservoirs of wild poliovirus circulating and thus are a little further behind.

Global certification is not expected until 2005. However, if this worldwide endeavour is triumphant at that time, then it will be the culmination of a truly remarkable journey that began in 1948 when Thomas Weller and Frederick Robbins succeeded in growing poliovirus in live cells. This paved the way for the 1955 development by Jonas Salk of the inactivated injectable vaccine (IPV) and the 1961 development by Albert Sabin of the live oral vaccine (OPV).

The success of the World Health

Organization's smallpox eradication campaign in 1979 and the impressive initiative of Rotary International (beginning in 1987) to raise millions of dollars to fight polio gave the 1988 World Health Assembly the confidence to resolve that poliomyelitis should be eradicated by 2000.

Only three years later in 1991 the last case of polio in the Americas occurred in Peru, thus making it possible in 1994 (after three years had elapsed without any cases) to declare victory in the western hemisphere.^{3–5} Now victory has also been declared in the Western Pacific.

LEARNING THE LESSONS

After global eradication the World Health Organization will undoubtedly set about documenting every aspect of this amazing saga, as it did for the smallpox story. This documentation will include descriptions of the extraordinary efforts of all the international agencies; the meticulous planning and execution of national and sub-national immunisation days; the establishment of national surveillance schemes to identify all cases of acute flaccid paralysis (AFP); and a worldwide network of laboratories.

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The laboratory and surveillance network and expertise established throughout the regions will be an invaluable legacy that is already paying extra dividends as it begins to be used in the control of other diseases such as measles and neonatal tetanus.

Above all, the dedication (and, in many instances, the heroism) of countless national and international staff needs to be recorded. Some died from accidents or violence in the course of mass immunisation campaigns in areas of geographic hardship or civil strife.

In the Western Pacific the World Health Organization coordinated the whole campaign in partnership with many other national and international bodies, including UNICEF; the governments of Australia, Canada, Finland, France, Italy, Japan, the Republic of Korea, Sweden and the United States; and Rotary International. The World Health Organization has also established a global laboratory network, which has ensured in recent years that virological confirmation of suspected polio cases could be undertaken anywhere on earth.

Following the example set by the Pan American Health Organization—whereby an independent International Commission for the Certification of Poliomyelitis Eradication in the Americas was established in 1990 to provide an impartial and critical overview of the eradication process and its results—the World Health Organization set up a Global Commission for the Certification of Poliomyelitis Eradication in 1995.

In turn the Western Pacific Regional Office of the World Health Organization created its Regional Commission for the Certification of Poliomyelitis Eradication (RCC), which met for the first time in 1996 in Australia.

Just over four years later in Japan, at its sixth meeting, the RCC was able to conclude that the circulation of indigenous wild poliovirus had ceased throughout the region. A period of over three years had elapsed since the last indigenous case had been reported in Cambodia on 19 March 1997, under conditions of high quality surveillance throughout the region. This conclusion was formally conveyed to the Regional Director, Dr Shigeru Omi, on 29 October 2000.

In the intervening period the RCC had met annually and had watched with growing anticipation and admiration as the number of polio cases plummeted in response to national, sub-national and targeted (house to house or, as in the waterways of Cambodia, boat to boat) immunisation days conducted in most endemic or recently endemic countries.

The Western Pacific Regional Office went beyond the traditional approaches used in the Americas, developing special tactics to reach remote populations. In addition to the teams used to immunise mobile boat dwelling populations—in the Mekong Delta, for example—other teams had to penetrate extremely difficult highland areas, while maintaining a cold chain for vaccines.

National immunisation days (NIDs) were generally carried out in the 'low' season (that is, during the cooler and drier months), which was not necessarily done in the Americas. Civil strife in some areas proved to be a particular challenge, which was overcome by negotiating access for immunisation teams with the cooperation of all parties.

KEEPING WATCH

Cross-border cooperation with South East Asia—to minimise the risks of importation of polio—will need to be ongoing until global eradication is achieved. Given the sheer size of China's population and the consequent demand for oral polio vaccine in that country, the NID age range in China was dropped from 0–5 years to 0–4 years. Local vaccine production was encouraged in both China and Vietnam, thus augmenting the vaccines produced by global suppliers that were used in other countries.

As cases declined the number of stool specimens from AFP cases subjected to virological examination rose dramatically, giving us increasing confidence in the surveillance system. Illustrating how dramatically the number of poliomyelitis cases fell, the Western Pacific was estimated to have had over 60,000 clinical cases in 1990 but only 1147 in 1993. For the remainder of the 1990s, the numbers were 744 (1994), 481 (1995), 198 (1996) and finally 9 (1997).

Countries in the region fell into two categories:

- Non-endemic, where cases of polio had not been seen for many years (Australia, Brunei Darussalam, Hong Kong SAR China, Japan, Macao SAR China, twenty Pacific Island countries and areas, the Republic of Korea, New Zealand and Singapore).

and;

- Recently endemic, where circulation of wild poliovirus only ceased in the past few years (Cambodia, China, Laos PDR, Malaysia, Mongolia, Papua New Guinea, the Philippines and Viet Nam).

Most of the RCC's attention was focused on the recently endemic countries to ensure they provided evidence that immunisation and surveillance activities were of the highest quality, but the RCC also demanded exactly the same sort of documentation from the non-endemic countries.

The Global Commission has set certification criteria and guidelines that the regional commissions need to follow. The Western Pacific RCC modified and embellished these to some extent to make its expectations as clear as possible to the national committees as they prepared their final documents.

POLIO IN CHINA

Between Western Pacific RCC meetings many members had the opportunity to observe NIDs and sub-national immunisation days (SNIDs) in action, reviewing AFP surveillance activities and meeting with national certification committees. The sheer effort, enthusiasm and organisation that went into the immunisation days in China, for example, left an indelible imprint on the minds of those of us fortunate enough to have observed them.

The other awe-inspiring event in China was its remarkable and most creditable response to a recent threat to certification—the importation of wild poliovirus. In late 1999 the Chinese AFP surveillance system detected a clinical case of polio due to wild poliovirus in remote Qinghai province, some 1000 kilometres from the nearest international border. Imagine the consternation this event caused. Was it an indigenous case, which would mean setting back the certification clock by three years? Or, was it an imported case?

The Ministry of Health in China treated the case as a public health emergency, initiating major surveillance and supplementary immunisation activities both to document the extent of wild polio circulation (which was very restricted, fortunately) and to ensure further circulation was interrupted. Sequencing of the virus demonstrated beyond doubt that it had been imported, most likely from northern India and presumably by people travelling along a well-established trading route.

The response to this emergency—which, in theory, can happen anywhere in the world at any time before global eradication is attained—cost the Chinese Government an estimated US\$14 million. To this cost must be added the enormous effort by hundreds of health workers in responding to the emergency. The world needs to heed this experience and use the expensive lessons to push for a rapid finale to the eradication effort in the regions that still harbour wild poliovirus.

The Western Pacific shares borders with thirteen countries in three other regions where wild poliovirus still circulates. All countries must maintain the ability to detect and respond to imported cases.

STORES OF WILD POLIOVIRUS

One of the Global Commission's conditions for global certification is the destruction and/or high security containment of all biologically derived specimens likely to contain wild poliovirus that are held in pathology laboratories and research institutes around the world. This matter was not considered in the early 1990s when the Americas region was approaching certification.

The Western Pacific RCC resolved to make evidence of its significant progress towards the first phase of the containment of laboratory specimens. Thus, it developed an inventory of all laboratories and a timetable for securing all specimens under BSL 2 conditions—an important item on which each country had to report by the RCC's sixth meeting in 2000.

In most countries the containment task is relatively straightforward and some countries have already completed the entire process. For others—such as Japan, where the number of laboratories to be inventoried may exceed 10,000—it is much more complex and time consuming. Our advice to other regions with member countries that have extensive laboratory networks (the United States and Europe, for example) is to start the process as soon as possible.

THE FINAL STEPS

National certification committees were also required to provide the following evidence to the RCC in advance of its crucial sixth meeting:

- High immunisation coverage rates in all areas of the country.
- That surveillance and follow-up of AFP cases were meeting the set criteria.
- A plan of action for responding to an imported case.
- Political commitment on the part of the national government to maintain all polio eradication activities at current levels of intensity until at least 2005.

The standard of the documents was so high that they may be distributed to other World Health Organization regions, which may find the guidance helpful as they approach certification.

A NOTE OF THANKS

It is impossible in this communication to begin to name everyone who has made this victory in the Western Pacific possible. My colleagues from the Western Pacific region, both in Manila and at the country level, deserve special mention for their extraordinary role in leading and coordinating this huge endeavour. So, too, do our national counterparts—many having toiled for years in difficult and often dangerous conditions. Together, they have not only wiped out poliomyelitis but also helped strengthened fundamental public health infrastructures across a significant part of the world. We, the members of the Regional Certification Commission,⁶ salute their work and thank them for their morale-boosting achievement, which gives us hope of reaching the global goal by 2005.

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Infectious Diseases News

ARE YOU A READER OR A RECIPIENT?

The *Victorian Infectious Diseases Bulletin* has just turned 10—this is our tenth issue. There are 2800 people on our mailing list and we want to make sure that you still want to receive the bulletin and that it is meeting your needs. If you wish to remain on the mailing list please return the survey (see insert). We are very interested in any suggestions on how the bulletin could be improved and are always looking for contributions.

HEPATITIS D

Eleven cases of hepatitis Delta virus (HDV) have been identified by the Victorian Infectious Diseases Reference Laboratory. HDV notifications are relatively uncommon in Victoria. HDV is always associated with a coexistent hepatitis B virus (HBV) infection. The onset is usually abrupt, with signs and symptoms resembling those of hepatitis B. HDV and HBV may occur together or HDV may occur as a superinfection in persons with chronic HBV.

Studies in Europe and the USA have shown that 25-50 per cent of fulminant hepatitis cases thought to be caused by HBV were associated with concurrent infection with HDV. Fulminant disease occurs more often with superinfections rather than coinfections.

Diagnosis is made by detection of total antibody to HDV (anti-HDV). HDV RNA by PCR is the most sensitive assay for detecting viremia. The serological course of HDV infection varies depending on whether the virus is acquired as a coinfection with HBV or as a superinfection of a person with chronic HBV.

Anti-HDV generally declines to sub detectable levels after the infection resolves and there is no serologic marker that persists to indicate that the person was ever infected with HDV.

Clinicians are asked to consider testing for HDV in cases of hepatitis B, especially if illness is severe, or a chronic carrier develops acute hepatitis.

GOOD NEWS ON POLIO

Our cover story in this issue contains the encouraging news that the World Health Organization's Western Pacific region, which includes Australia, has been declared polio free. We still have a way to go before polio joins small pox in the history books, but this is a very important step in the journey.

MOZZIES IN MELBOURNE

A possum at the Melbourne Zoo may be the first demonstration of a locally acquired Ross River virus infection in Melbourne. In this issue, Dr Elwyn Wishart evaluates whether mosquitoes in Melbourne are likely to cause human infections (see page 61). Dr Wishart discusses survey work from the Victorian Institute of Animal Sciences on mosquito trapping around the metropolitan area.

ANNUAL SURVEILLANCE REPORTS ON THE WEB

Two annual reports are now available on the Department of Human Services' website:

- *Surveillance of Notifiable Infectious Diseases in Victoria 1999* at: www.dhs.vic.gov.au/phd/008010/index.htm
- *Surveillance of Sexually Transmissible Infections in Victoria 1999* at: www.dhs.vic.gov.au/phd/009073/index.htm

INVASIVE PNEUMOCOCCAL DISEASE

Invasive pneumococcal disease (IPD) has been added to the recommended list of nationally notifiable diseases. Legislation requiring notification of IPD to the Victorian Department of Human Services is expected to be introduced by May 2001. Meanwhile, the Department has obtained ethics committee approval to establish a pilot system for IPD surveillance.

The purpose of the surveillance is to monitor both the incidence of IPD and the effectiveness of the pneumococcal vaccination program. The surveillance will inform the development of public health policy on the provision of free pneumococcal vaccine for the elderly and possibly the introduction of new conjugate vaccines for children. If the pilot is successful, it could be used as a model for national surveillance of IPD.

Hospitals and pathology laboratories have been contacted and asked to notify the Communicable Diseases Section of the Department of any cases of *Streptococcus pneumoniae* being isolated from blood or other normally sterile sites.

FOOD-BORNE DISEASE

The Department of Human Services is establishing sentinel surveillance for food-borne disease. The Department has employed a project officer and a food-borne disease specialist to carry out this project in two Departmental regions. This two-year program of work will contribute to a national program designed to increase our understanding of the incidence and causes of illnesses due to food.

REPORT OF A WATER-BORNE OUTBREAK OF *E. COLI* O157:H7 IN WALKERTON, CANADA

In June 2000 a large outbreak of *E. coli* infection occurred in Walkerton, Ontario, Canada. There were 1346 reported cases of gastroenteritis, which included 27 cases who developed haemolytic uraemic syndrome and seven who died. The cause of the outbreak was traced back to contaminated groundwater that was inadequately disinfected. As a result of this outbreak, many other small Canadian towns are examining the quality of their water supplies. For a full report of the outbreak, see http://www.srhip.on.ca/bgoshu2/_private/Report/SPReport.htm.

Mosquitoes and Arboviruses in Melbourne— Are Residents at Risk?

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Adult mosquito populations were surveyed across Melbourne and its surrounds during the summers of 1997–98, 1998–99 and 1999–2000. This survey was undertaken to assess the possibility of arboviral transmission occurring in the city and surrounding areas. Four possible vector species of arboviruses were found to be well established in Melbourne. As part of the study, sera from 90 possums residing in the Melbourne Zoo were tested. One was found to have positive serology for Ross River virus.

ARBOVIRUSES IN AUSTRALIAN CAPITAL CITIES

Every year Victoria's Department of Human Services receives a number of arboviral notifications (Table 1). Most are due to Ross River virus and Barmah Forest virus infections, but the flaviviruses Murray Valley encephalitis virus and Kunjin virus are also of concern to the health of the local population. In Australia these arboviruses generally have not been associated with our capital cities. However, in recent years there has been increasing evidence of arboviral activity around Brisbane,¹ Sydney,^{2,3} and Perth.^{4,5} In Melbourne there has been anecdotal evidence of locally acquired Ross River virus cases in some outer suburbs, but the extent to which this really occurs across the city is not known. Therefore, over the past three summers a mosquito-trapping survey was undertaken across metropolitan Melbourne and surrounding areas. The aim of this survey was to identify the mosquito species present in and around Melbourne and thus to assess the possibility of arbovirus transmission occurring in the urban environment. As part of the study, 90 sera from the Melbourne Zoo possum population were screened for the presence of antibodies to alpha and flaviviruses.

Table 1: Victorian Arbovirus Notifications Received by the Department of Human Services

Arbovirus	1997	1998	1999	2000 (1 Jan–1 Aug)
Barmah Forest virus	43	19	14	10
Ross River virus	1 062	113	265	255
Flavivirus	6	20	1	12
Unspecified	0	24	48	22
Total	1111	176	328	299

MOSQUITO SURVEYS

Mosquitoes were surveyed using carbon dioxide and light baited traps for a 15-week period from December to mid-March each summer. Traps were placed in parklands and backyards in both inner and outer suburban locations. Traps were set in the late afternoon and collected the following morning. Trap locations varied slightly from

year to year, and fewer sites were trapped in the 1999–2000 season.

Over the three summers 32,114 mosquitoes were trapped and 20 species from six genera were identified (Table 2). The trapped species included a wide distribution of species that are known or believed to be potential arbovirus vectors (*Culex annulirostris*, *Aedes camptorhynchus*, *Coquillettidia linealis* and *Aedes notoscriptus*). Of these vectors the presence of *Cx. annulirostris* may be of greatest concern. It is a known vector of the arboviruses Murray Valley encephalitis virus, Kunjin virus, Ross River virus, Barmah Forest virus, Sindbis virus and Japanese encephalitis virus (which is an arbovirus becoming established in the Torres Strait Islands).⁶ This species of mosquito readily feeds on a wide spectrum of hosts, including humans.⁷ *Cx. annulirostris* was trapped in generally small numbers across most of the trapping sites in each of the three summers. Higher catches of this species were made in the parkland sites across the city and in small farm sites on the edge of the city.

Figure 1: Melbourne Trapping Locations and Council Boundaries



Table 2: Species Trapped in Metropolitan Melbourne and Surrounding Areas

Mosquito species	Females trapped 1997–98 ^a	Females trapped 1998–99	Females trapped 1999–2000	Total	Potential Arbovirus Vector
<i>Aedes alboannulatus</i>	77	96	114	287	
<i>Ae. alternans</i>	0	1	0	1	
<i>Ae. bancroftianus</i>	71	4	31	106	
<i>Ae. camptorhynchus</i>	2 149	16 147	2 956	21 252	yes
<i>Ae. imperfectus</i>	0	0	2	2	
<i>Ae. notoscriptus</i>	424	454	656	1534	yes
<i>Ae. postspiraculosus</i>	1	0	0	1	
<i>Ae. rubrithorax</i>	17	58	88	163	
<i>Ae. sagax</i>	0	0	1	1	
<i>Ae. theobalbi</i>	0	0	1	1	
<i>Anopheles annulipes</i>	89	211	255	555	
<i>Coquillettidia linealis</i>	180	746	348	1 274	yes
<i>Culiseta otwayensis</i>	0	0	1	1	
<i>Culex australicus</i>	257	581	337	1 175	
<i>Cx. annulirostris</i>	123	181	488	792	yes
<i>Cx. molestus</i>	2 803	1 452	66	4 321	
<i>Cx. quinquefasciatus</i>	162	68	155	385	
<i>Cx. globocoxitus</i>	42	72	136	250	
<i>Tripteroides atripes</i>	1	2	5	8	
<i>Tp. tasmaniensis</i>	0	4	1	5	
Total	6 396	20 077	5 641	32 114	

Although *Ae. camptorhynchus* was trapped at a number of sites, it was trapped in higher numbers in the coastal trap sites of the Greater Geelong City Council and Frankston City Council areas. Catches of this species were generally higher during December and the early part of January. Numbers then decreased as weather conditions became warmer. *Ae. camptorhynchus* appears to be the most important vector of Ross River virus in the coastal Gippsland region of Victoria,⁶ so it should be regarded as a potential vector of concern in the coastal areas of the city.

Ae. notoscriptus (Skuse) is arguably the major domestic mosquito pest in south-eastern Australia and must be considered a potentially important vector of Ross River and Barmah Forest viruses.^{9,10} It is a domestic container breeding species and appeared to be well established across Melbourne in both backyards and parklands. It was trapped at all sites over the three summers.

Coquillettidia linealis (Skuse) should be considered as a potential Ross River virus vector.¹¹ Barmah Forest virus has also been isolated from *Cq. linealis* trapped on the south-east coast of Victoria.¹² This species was trapped at sites in both inner and outer suburbs across the metropolitan area.

For arboviruses to spread or become established in the city, a competent host species also needs to be present. Marsupials are considered to be likely hosts of arboviruses, so 90 sera collected by Melbourne Zoo staff from their possum population were screened for the presence of antibodies to Ross River virus. One bush-tailed possum (*Trichosurus vulpecula*) sample had positive serology. This sample, collected by zoo staff in 1991, has

been stored since at –80 degrees Celsius. The territorial nature of these animals means this possum is unlikely to have travelled and, therefore, is the first demonstration of a locally acquired Ross River virus infection.

Arbovirus activity is unlikely to be endemic in the metropolitan area, but under certain conditions virus activity may spread into the metropolitan areas and pose a threat to human health in Melbourne.

Summary

Do potential arbovirus vector mosquitoes inhabit Melbourne? Yes, four possible vector species have been identified (*Cx. annulirostris*, *Cq. linealis*, *Ae. camptorhynchus* and *Ae. notoscriptus*) among the 20 species caught in mosquito traps set in and around the Metropolitan area over three consecutive summers.

One metropolitan possum was found with positive RRV serology, supporting the possibility of arbovirus transmission occurring in the urban area.

ACKNOWLEDGEMENTS

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Case Report from the Melbourne Infectious Diseases Group

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SALMONELLA VIRCHOW—AN INVASIVE SEROTYPE WITH AN INTERESTING EPIDEMIOLOGY

A previously well 28-year-old man developed fever, rigors, headache and vomiting one week after returning home from a three-week holiday in Port Douglas, Queensland. He was initially diagnosed with viral gastroenteritis but had persistent anorexia, headache and night sweats. His general practitioner noted abnormal liver function tests.

After a week of symptoms the man developed acute epigastric pain and was admitted to hospital with a provisional diagnosis of viral hepatitis. He had a fever of 38.4 degrees Celsius and his liver edge was tender.

During the first two days of admission he was not particularly unwell, but had localised tenderness over the gallbladder. An abdominal ultrasound showed sludge in the gallbladder, but the surgical team felt that cholecystitis was unlikely. On the third day, *S. Virchow* was isolated from his faeces and he was commenced on ciprofloxacin.

Forty-eight hours later his condition worsened and he developed high fever, marked neutrophilia and increased abdominal pain. Blood cultures collected at this time were negative. A CT scan of his abdomen now showed acute acalculous cholecystitis, so an urgent laparoscopic cholecystectomy was performed. He was treated with ceftriaxone perioperatively, then completed two weeks of antibiotic therapy with ciprofloxacin. *Salmonellae* were isolated from his bile and gall bladder tissue, and the original isolate was typed as *S. Virchow* phage type 43.

S. Virchow belongs to the serological group C1, which includes *S. Choleraesuis*, *S. Montevideo*, *S. Birkenhead*, *S. Singapore* and *S. Infantis*. *S. Virchow* was first reported in Australia in 1964¹ and in 1999 was the most commonly reported *Salmonella* serotype isolated from blood in Australia.² Most cases of *S. Virchow* infection appear to be sporadic, although an apparently food-borne outbreak of *S. Virchow* 34 affected a function in Victoria in early 1999 and the bacterium was isolated from raw chicken from the caterer's supplier.³

The highest incidence of *S. Virchow* in Australia occurs in Queensland, where *S. Virchow* phage type 8 predominates—205 cases were notified in 1999, comprising 69 per cent of Queensland *S. Virchow* cases.² The incidence of *S. Virchow* is highest in northern Queensland, but during the 1990s an increasing number of cases were reported from more populous southern Queensland.⁴ Locally acquired *S. Virchow* was rare in Victoria until 1998, when *S. Virchow* phage type 34 suddenly emerged. The 163 cases of *S. Virchow* phage type 34 in Victoria in 1999 constituted the second most common single *Salmonella* phage type in Victoria.²

S. Virchow phage type 43 was first reported from rural Queensland in October 1998.¹ In 1999 four cases were reported from Victoria and two were reported from Queensland.² Several of these infections were likely to have been acquired in South East Asia.¹

S. Virchow has a well-recognised tendency to cause invasive disease and bacteremia.^{5–7} Abscess formation, leptomeningitis and septic arthritis have been reported. Although acute cholecystitis is the most common focal extra-intestinal infection caused by *S. typhi* and *S. paratyphi*, it is uncommon in invasive non-typhoidal *Salmonella* infections.⁸ Acalculous cholecystitis due to *S. Virchow* was first reported in 1990.⁹ Ciprofloxacin failure has been reported in three cases of acalculous cholecystitis due to non-typhoidal *Salmonella* (two *S. Enteritidis* and one *S. Virchow*). All isolates were sensitive to ciprofloxacin and the authors postulated that the failure was due to decreased penetration of the antibiotic in the context of gallbladder ischaemia and necrosis, as well as the disease itself, which usually requires early surgery.¹⁰

Given *S. Virchow*'s propensity for invasive disease, clinicians should maintain a high level of suspicion for possible complications. This case also illustrates the interesting epidemiology of *S. Virchow* notifications in Australia, drawing attention to the recent increase in incidence in Victoria.

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Immunisation Update

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Data cited in this report are based on the Australian Childhood Immunisation Register (ACIR) Coverage Report. The ACIR report measured immunisation coverage at 30 June 2000 for children aged 12–<15 months and 24–<27 months at 30 September 2000. Only vaccines administered before 12 months of age were included in the coverage calculation for the former age group and only those vaccines administered before 24 months of age were included in the coverage calculation for the latter age group.

Table 1 groups immunisation coverage by local government area for the two birth cohorts. For a copy of the ACIR report listing immunisation coverage against individual vaccines for each local government area, contact Ted Jamieson (edward.jamieson@dhs.vic.gov.au).

Congratulations to immunisation providers in the municipalities of Queenscliffe, Yarriambiack, Alpine, Loddon and Bass Coast for achieving coverage of 95 per cent or higher for children at 12 months of age. Queenscliffe, Horsham, Gannawarra and Wodonga achieved coverage of over 95 per cent for children at 24 months of age.

The proportion of local government areas with coverage below 80 per cent for children at 12 months of age remained at 1 per cent. Sixty-three per cent of all local government areas achieved coverage of 90 per cent or higher for this age group.

Overall coverage in Victoria of children at 12 months of age remained at 90.02 per cent over the three-month period. Coverage of children at 24 months of age increased from 83.4 per cent to 84.1 per cent.

Table 1: Childhood Immunisation Coverage, by Local Government Area, Victoria, 30 September 2000

Age Group	% Fully Immunised	Local Government Area (LGA)	Total LGAs (% LGAs)
12–<15 months	95%+	Alpine (S), Bass Coast (S), Loddon (S), Queenscliffe (B), Yarriambiack (S)	5 (6%)
	90–94%	Ballarat (C), Baw Baw (S), Bayside (C), Campaspe (S), Casey (C) Central Goldfields (S), Colac-Otway (S), Corangamite (S), Delatite (S), East Gippsland (S), Frankston (C), Gannawarra (S), Glenelg (S), Golden Plains (S), Greater Bendigo (C), Greater Geelong (C), Greater Shepparton (C), Hindmarsh (S), Hobsons Bay (C), Horsham (RC), Kingston (C), Knox (C), Macedon Ranges (S), Maroondah (C), Maribyrnong (C), Melton (S), Mildura (RC), Mitchell (S), Moira (S), Moonee Valley (C), Moorabool (S), Mornington Peninsula (S), Nillumbik (S), Northern Grampians (S), Pyrenees (S), Southern Grampians (S), South Gippsland (S), Stonnington (C), Surf Coast (S), Towong (S), Wangaratta (RC), Warrnambool (C), Whitehorse (C), Wyndham (C)	44 (56%)
	85–89%	Ararat (RC), Banyule (C), Boroondara (C), Brimbank (C), Buloke (S), Cardinia (S), Darebin (C), Glen Eira (C), Greater Dandenong (C), Hepburn (S), Hume (C), Indigo (S), LaTrobe (S), Manningham (C), Melbourne (C), Monash (C), Moreland (C), Moyne (S), Port Phillip (C), Strathbogie (S), Swan Hill (RC), Wellington (S), Whittlesea (C), Wodonga (RC), Yarra (C), Yarra Ranges (S)	26 (33%)
	80–84%	Mount Alexander (S), Murrindindi (S)	2 (3%)
	<80%	West Wimmera	1 (1%)
24–<27 months	95%+	Gannawarra (S), Horsham (RC), Queenscliffe (B), Wodonga (RC)	4 (5%)
	90–94%	Alpine (S), Baw Baw (S), Corangamite (S), Golden Plains (S), Hindmarsh (S), Indigo (S), Macedon Ranges (S), Melton (S), Mildura (RC), Pyrenees (S), Warrnambool (C)	11 (14%)
	85–89%	Ballarat (C), Buloke (S), Campaspe (S), Casey (C), Colac-Otway (S), Frankston (C), Glenelg (S), Greater Bendigo (C), Greater Geelong (C), Greater Shepparton (C), Hepburn (S), Hobsons Bay (C), Kingston (C), Knox (C), Maroondah (C), Mitchell (S), Moira (S), Mount Alexander (S), Moyne (S), Murrindindi (S), Southern Grampians (S), Surf Coast (S), Whittlesea (C), Yarriambiack (S)	24 (31%)
	80–84%	Ararat (RC), Banyule (C), Bass Coast (S), Bayside (C), Boroondara (C), Brimbank (C), Delatite (S), East Gippsland (S), Glen Eira (C), Loddon (S), Manningham (C), Moonee Valley (C), Moorabool (S), Moreland (C), Mornington Peninsula (S), Nillumbik (S), South Gippsland (S), Strathbogie (S), Swan Hill (S), Wellington (S), Whitehorse (C), Wyndham (C), Yarra (C), Yarra Ranges (S)	24 (31%)
	<80%	Cardinia (S), Central Goldfields (S), Darebin (C), Greater Dandenong (C), Hume (C), LaTrobe (S), Maribyrnong (C), Melbourne (C), Monash (C), Northern Grampians (S), Port Phillip (C), Stonnington (C), Towong (S), Wangaratta (RC), West Wimmera (S)	15 (19%)

Surveillance Briefs

The Department of Human Services receives notifications of infectious diseases from medical practitioners and laboratories. These notifications prompt investigation and action to control infectious diseases in Victoria. For some diseases, investigation is initiated on the basis of clinical suspicion in the absence of laboratory confirmation. Prompt notification of infectious diseases is an integral component of prompt public health action. Please do not delay. To notify, call 1300 65 1160 or fax 1300 65 1170.

This section includes a summary of infectious disease notifications received until 30 September 2000 and historical comparisons with 1999 data at both the State and regional level (Table 4). There have been no notifications of anthrax, Australian arbo encephalitis, botulism, diphtheria, leprosy, plague, poliomyelitis, rabies, primary amoebic meningo-encephalitis, typhus, viral haemorrhagic fevers or yellow fever. Summary data at local government level is available from Greg Mathews, Communicable Diseases Section, Department of Human Services (03 9637 4108). Data may be subject to revision.

This section includes surveillance data from the Victorian Infectious Diseases Reference Laboratory (VIDRL). The VIDRL Fortnightly Surveillance Bulletin appears online at <http://www.dhs.vic.gov.au/vidrl/>. Surveillance data on sexually transmissible diseases are incorporated within the Victorian STD surveillance report (page 68).

General information related to the control of infectious diseases (The Blue Book) can be found online at http://www.dhs.vic.gov.au/phd/hprot/inf_dis/bluebook/index.htm.

MENINGOCOCCAL DISEASE

Meningococcal disease in Victoria is still changing. An analysis of notified cases received from 1 January–30 September 2000 highlights the following points:

- Confirmed serogroup C disease now outweighs serogroup B by 1.5:1, which is an unusual situation because the reverse is more commonly the case.
- Only 40 of 107 cases (37 per cent) have been under the age of 15 years. However, cases caused by both serogroup B and serogroup C are falling in the age group of 5–14 years.
- While serogroup C disease in children under 15 years is now similar to serogroup B disease (1.2:1) in that population, serogroup C is responsible for a larger proportion of disease in older teenagers and adults (1.8:1). However, this difference is not statistically different ($p = 0.5$).
- There have been two serogroup Y cases (a male aged 1 year and a male aged 13 years), and two serogroup W135 cases (a female aged 46 years and a female aged 52 years)—all from metropolitan Melbourne.
- The cumulative attack rate is now 2.5 per 100,000 population. Age-specific cumulative attack rates remain highest in infants (13.0 per 100,000), young children (10.2 per 100,000) and young adults aged 15–24 years (5.7 per 100,000).
- The case fatality rate is 8.6 per cent overall.

September is usually the month in which the greatest number of cases is notified, and 22 cases were notified this year. We have now had notifications from all health regions. The southern metropolitan region still has the highest attack rate, with 39 cases so far and a year-to-date, population-specific attack rate of 3.5 per 100,000. Based on National Health and Medical Research Council guidelines, there is no geographic or temporal clustering of cases, either of serogroup B or of serogroup C disease.

Notifications for meningococcal disease can be taken at any hour of the day or night because the Public Health Division operates a 24-hour a day, seven-day a week service. We greatly appreciate the cooperation of clinicians in notifying us, and we are also grateful to the laboratories for forwarding specimens to the reference laboratory for continuing microbiology and public health surveillance. Microbiological information is vital for tracking the course of these serogroups so as to be able to give accurate and timely advice to our State and federal health ministers. Victoria is able to demonstrate active and truly multidisciplinary cooperation in the public health management of this disease.

OUTBREAKS OF GASTROINTESTINAL ILLNESS

For the third quarter of this year, 1 July to 30 September 2000, 17 outbreaks of gastrointestinal illness were reported to the Department's Communicable Diseases Section (Table 1).

Table 1: Outbreaks of Gastrointestinal Illness Reported to the Communicable Diseases Section, 1 July–30 September 2000

Setting	Outbreaks	Persons Affected	Pathogen/Toxin (No. of Outbreaks)
Restaurant/reception/other food premises/specific food	3	36	Norwalk virus (1), unknown (2)
Aged/disability/health care institution	10	190	Rotavirus (2), Norwalk virus (4), Suspected viral (4)
Family/social gathering	2	24	Salmonella (1), Norwalk virus (1)
Children's service/school	2	70	Suspected viral (2)
Total	17	320	Salmonella (1), Rotavirus (2), Norwalk virus (5), suspected viral (7), unknown (2)

In July, a general practitioner notified four cases of confirmed Salmonellosis and another suspected case in a family who lived in a rural area of Victoria. An investigation was undertaken to try to determine the source of their illness. This investigation involved the local bush nurse and the council environmental health officer, who revealed that four of the cases had consumed a common meal on 30 June with other family members. Interviews with the family group confirmed that 10 people had attended the lunch but only seven of these people had eaten the food that was served. Of these seven, five people became sick with gastroenteritis, which was later confirmed as *Salmonella* Typhimurium 9.

Lunch had consisted of lamb sandwiches, hot dogs, hot chips and chicken nuggets. Given the small number of people involved in this cluster and the absence of leftover food for analysis, it was difficult to determine the source. However, there was a 100 per cent attack rate for those who ate the hot dogs. It is possible that the hot dogs had been contaminated by the food handler and then not reheated adequately before consumption. It is also possible that the hot dogs had been contaminated at the premises where they were purchased, but an inspection of the premises revealed no suspect food hygiene practices. It is unlikely that contamination occurred at the manufacturers because a much wider outbreak would have been observed.

One additional family member was also confirmed with *Salmonella* Typhimurium 9 and appears to be a secondary case because he was not present at the lunch and became ill approximately one week after his two children became ill.

An outbreak of gastroenteritis after a wedding reception was reported to the Communicable Diseases Section in August. The Department undertook a cohort study involving 96 of the 107 people who had attended the wedding. It was confirmed that 26 of the 96 people interviewed had become ill. Analysis of the food histories showed that the Chicken

Atlantic had the strongest association with illness (with a relative risk of 2.0) and accounted for 64 per cent of those who had been ill.

However, further information revealed that one of the bridal party had been ill for three days before the wedding and had still been unwell at the function. Another guest had vomited in the toilets at the function. While transmission of the pathogen via food cannot be ruled out, it is believed that person-to-person transmission was most likely. Norwalk-like virus was subsequently detected by PCR in three of the faecal specimens submitted for analysis.

A number of nursing homes and hostels recently reported outbreaks of viral gastroenteritis in which residents and staff were affected by diarrhoea and vomiting. A viral gastroenteritis alert has been sent to Commonwealth and State managed facilities to alert the staff to signs of an outbreak, so clean-up and control measures can be implemented in the early stages of the outbreak to prevent further cases.

TUBERCULOSIS

The Mycobacterium Reference Laboratory at VIDRL prepared this report. Given the slow-growing nature of *Mycobacterium* spp, the report is limited to the second quarter of 2000. Most specimens (both primary and referred) and isolates are from Victorian patients. The majority of non-Victorian specimens originate in the Northern Territory and the Solomon Islands.

COMMENTS

- *M. kansasii* isolated from four patients. Three were males aged 35–68 years and one was a 45-year-old female.
- *M. xenopi* was isolated from the blood and ascitic fluid of a 49-year-old HIV-positive patient.

Table 2: Specimens Submitted to the VIDRL Mycobacterium Reference Laboratory, by Month, April–June 2000

Primary Specimens	<i>M. tb</i> Isolates	New Victorian <i>M. tb</i> Isolates	Non <i>M. tb</i> isolates	Negatives	Total
April	29	5	17	363	409
May	30	4	10	444	474
June	18	6	15	504	537
Referred Specimens	<i>M. tb</i> Isolates	New Victorian <i>M. tb</i> Isolates	Non <i>M. tb</i> isolates	Negatives	Total
May	21	10	55		76
June	22	12	41		63
Total	139	51	168	1 311	1 608

Table 3: Extra-pulmonary *M. tuberculosis* Isolates and Resistant Isolates Detected by VIDRL Mycobacterium Reference Laboratory, by Month, April–June 2000

Site	April	May	June
Pulmonary	10	13	11
Extra-pulmonary	6	1	7
Extra-pulmonary site details	Lymph node (x3), peritoneum, urine, omentum	Lymph node (x1)	Lymph node (x4), adrenal tissue, ascitic fluid, urine
Antibiotic resistance	Resistance to Isoniazid (x1)		Resistance to Isoniazid (x1)

Table 4: Notifications of Infectious Diseases, by Department of Human Services Region, Victoria, 1 January to 30 September 2000 and Historical Comparisons

Disease	Barwon South Western		Grampians		Loddon-Mallee		Hume		Gippsland		Western Metropolitan		Northern Metropolitan		Eastern Metropolitan		Southern Metropolitan		Unknown		Victoria		Total
	2000ytd	1999ytd	2000ytd	1999ytd	2000ytd	1999ytd	2000 ytd	1999 ytd	2000 ytd	1999 ytd	2000 ytd	1999 ytd	2000 ytd	1999 ytd	2000 ytd	1999 ytd	2000 ytd	1999 ytd	2000 ytd	1999 ytd	2000 ytd	1999 ytd	
Blood Borne Diseases																							
Hepatitis B—acute	3	1	2	1	8	2	0	3	2	5	7	16	12	9	9	9	31	14	8	1	82	61	94
Hepatitis B—chronic/unknown	10	13	8	8	10	18	8	13	12	17	384	449	298	354	333	357	401	454	109	87	1573	1770	2287
Hepatitis C—incident	5	3	0	1	2	2	1	0	5	3	13	12	7	10	11	6	10	10	4	1	58	48	74
Hepatitis C—unspecified	193	243	109	93	160	182	160	199	177	179	939	586	734	718	586	674	1027	1089	559	802	4644	4765	6313
Enteric diseases																							
Amoebiasis	4	3	0	5	0	1	2	3	0	0	10	15	16	15	7	20	22	19	6	1	67	82	113
Campylobacter infection	228	172	92	97	134	100	180	169	227	220	416	432	533	503	806	742	864	825	101	89	3581	3349	4798
Cholera	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
Food/water/environment – Cryptosporidium	1	2	1	3	5	7	11	13	12	10	11	4	11	13	16	8	12	12	1	1	81	73	104
– Other	0	3	0	3	4	3	1	12	0	3	20	26	2	49	13	39	4	37	11	76	55	251	321
Giardiasis	60	60	29	30	25	35	34	52	34	34	79	82	93	109	168	165	181	195	17	14	720	756	933
Haemolytic uraemic syndrome	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	2	2	8
Hepatitis A	8	5	5	4	4	3	4	4	11	8	30	14	22	17	23	31	56	56	5	1	168	143	260
Listeriosis	0	1	0	1	0	0	0	1	0	0	1	1	1	0	4	2	3	3	0	0	9	9	12
Paratyphoid	0	0	0	0	0	0	0	1	0	0	1	2	0	0	1	1	1	1	0	0	3	5	5
Salmonellosis	80	79	43	42	56	25	48	42	32	43	105	133	131	158	133	191	193	214	36	33	857	960	1198
Shigellosis	3	2	1	1	1	2	1	3	0	3	13	11	16	10	14	16	18	26	5	2	72	76	107
Typhoid	0	0	1	0	0	0	0	2	0	0	1	3	4	3	1	2	1	4	2	0	10	14	16
Verotoxin-producing E. coli	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	0	1	0	0	0	4	5
Yersiniosis	1	0	0	0	0	0	0	0	0	0	0	6	2	5	0	2	3	3	1	0	7	16	17
Other infectious notifiable diseases																							
Hepatitis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	1	1
Legionellosis	8	2	4	0	7	0	10	0	6	1	27	13	55	19	43	9	50	11	2	1	212	56	64
Leprosy	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Meningococcal infection	6	7	6	3	1	3	3	6	4	5	9	12	20	14	19	16	38	27	1	1	107	94	137
Tuberculosis	6	7	5	3	5	4	4	13	1	2	56	56	38	44	37	41	55	58	3	1	210	229	324
Vaccine preventable diseases																							
Haemophilus influenzae type b	1	0	0	0	0	1	0	0	0	0	0	1	0	0	1	1	0	1	0	0	2	4	4
Measles	4	0	0	2	1	2	0	1	0	1	4	37	1	30	3	11	4	6	1	3	18	93	111
Mumps	1	0	0	5	0	1	0	7	1	2	8	14	9	9	9	5	5	6	2	3	35	52	73
Pertussis	36	24	37	22	29	31	27	52	50	84	87	94	84	75	75	142	111	84	45	12	581	620	990
Rubella	5	4	3	3	0	2	2	9	1	0	10	11	6	16	13	23	10	24	4	3	54	95	123
Vector-borne diseases																							
Arbovirus—Barmah Forest	1	0	0	0	3	2	1	3	4	5	0	0	0	1	0	0	0	0	2	2	11	13	15
Arbovirus—flavivirus	0	0	0	0	1	0	1	0	2	0	1	0	2	1	2	0	2	0	1	0	12	1	1
Arbovirus—not further specified	1	0	1	3	9	6	5	4	2	30	0	0	1	1	1	0	1	4	3	24	48	48	
Arbovirus—Ross River	13	6	28	15	119	43	20	41	6	67	5	7	12	16	13	20	12	23	63	13	291	251	267
Arbovirus—Sindbis	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Malaria	1	2	3	2	0	4	5	2	3	2	14	4	14	8	18	11	23	20	10	3	91	58	81
Zoonoses																							
Brucellosis	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	2	3
Hydatid disease	0	3	0	0	0	0	0	1	0	1	0	3	2	2	1	1	2	2	6	1	11	14	17
Leptospirosis	5	5	0	0	5	3	5	5	2	1	1	0	0	0	0	0	1	0	1	2	20	16	29
Psittacosis	0	4	1	3	1	3	2	5	0	1	7	4	10	5	22	15	11	13	0	0	54	53	69
Q fever	1	3	0	0	2	3	1	5	6	2	0	1	1	0	0	1	0	2	2	5	13	22	26
Taeniasis	0	1	0	0	0	0	0	0	0	0	4	3	2	4	1	1	1	0	1	0	9	9	12
Total	686	656	379	350	592	489	536	671	600	731	2 263	2 033	2 139	2 219	2 383	2 563	3 154	3 243	1 013	1 162	13 745	14 117	19 063
Population	327 876		201 835		283 152		240 092		234 221		583 482		749 253		953 749		1 081 257				4 654 937		

Notes

- 1 Verotoxin-producing E. coli was made notifiable from 27 October 1998
- 2 The data are preliminary figures only and may be subject to revision.
- 3 ABS estimated resident population data as at July 1998

Victorian STD Surveillance Report

This report is produced by the Epidemiology and Social Research Unit of the Macfarlane Burnet Centre for Medical Research, on behalf of the Communicable Diseases Section (Department of Human Services), in cooperation with the Melbourne Sexual Health Centre; the Microbiological Diagnostic Unit, University of Melbourne; the Victorian Infectious Diseases Reference Laboratory; and the Victorian Collaborative Group on HIV and AIDS Surveillance. The Department of Human Services and the Victorian Health Promotion Foundation jointly fund the Epidemiology and Social Research Unit to conduct surveillance and related research into sexually transmissible diseases and blood-borne viruses.

Reports on surveillance data for sexually transmissible diseases in Victoria are generally available approximately six weeks after the end of each quarter from the Communicable Diseases Section, Department Human Services. For comments or queries contact Jane Hocking or Dr Nick Crofts, Epidemiology and Social Research Unit, Macfarlane Burnet Centre for Medical Research (03 9282 2290) or the Communicable Diseases Section, Department of Human Services (03 9637 4184).

All data in this report are provisional and subject to revision as further information becomes available.

SUMMARY

- HIV and AIDS—Active case finding resulted in 25 AIDS notifications during the third quarter of 2000. There were 39 HIV notifications compared with 31 for the same period in 1999.
- Chlamydia infections—The number of notifications per quarter continued to increase, with 872 notifications for the third quarter of 2000.
- Gonorrhoea—The number of notifications remained stable, with 190 cases notified this quarter.
- Syphilis—There were no notifications of infectious syphilis this quarter.

ACQUIRED IMMUNE DEFICIENCY SYNDROME

Active case finding during the third quarter of 2000 resulted in 25 AIDS notifications compared with 12

notifications during the first quarter of this year and also 12 notifications during the third quarter of 1999. The majority of cases (68 per cent) were among males who identified as gay or bisexual. Although this represented an increase from the previous quarter's results, only two of the 25 notifications had been diagnosed with AIDS during this quarter.

Of the five deaths notified in this quarter, only two were from individuals previously diagnosed with AIDS. Cumulatively until the end of September 2000, 1554 deaths had been notified among individuals with HIV or AIDS. Of these deaths, 136 people had not been diagnosed with AIDS.

During the 12 months from July 1999 to October 2000, 58 people were notified with AIDS—53 males, four females and one transgender person. Sixty-seven per cent identified as gay or bisexual males and 10 per cent reported to be heterosexual.

Table 1: Notifications of AIDS and Deaths in People with AIDS in Victoria, July–September 2000, October 1999–September 2000 and Cumulative Total

	Jul–Sep 2000				Oct 1999–Sep 2000				Cumulative Total to 30 Sep 2000					
	Male		Female		Male		Female		Male		Female		Total	
	n.	Deaths	n.	Deaths	n.	Deaths	n.	Deaths	n.	Deaths	n.	Deaths	Total Cases*	Total Deaths**
Male homosexual/bisexual	17	2	–	–	38	16	–	–	1 508	1 191	–	–	1 513	1 194
Male homosexual/bisexual and injecting drug user	1	0	–	–	2	3	–	–	96	74	–	–	99	77
Injecting drug user	0	0	0	0	3	0	1	0	20	12	11	5	31	17
Heterosexual	1	0	1	0	4	1	2	2	60	29	47	38	107	67
Person from specified country†	1	0	1	0	2	1	1	0	14	6	7	3	21	9
Haemophilia/related disorder	1	0	0	0	1	1	0	0	37	27	1	1	38	28
Transfusion recipient	0	0	0	0	0	0	0	0	8	6	5	4	13	10
Other	0	0	0	0	0	0	0	0	1	0	1	0	2	0
Unavailable	2	0	0	0	3	2	0	0	21	14	2	2	23	16
Total	23	2	2	0	53	24	4	2	1 765	1 359	74	53	1 847	1 418

* Includes eight persons for whom gender was reported as transsexual.

** Includes six persons for whom gender was reported as transsexual.

† Persons from countries with a high prevalence (>1 per cent) of HIV.

HUMAN IMMUNODEFICIENCY VIRUS INFECTION

Thirty-nine HIV notifications were received during the third quarter of 2000—a 26 per cent increase from the number in the same quarter in 1999, but a decrease from the 57 notifications received during the second quarter of 2000. There were 35 notifications from males, of whom 57 per cent reported male-to-male sexual contact, an

additional 14 per cent reported injecting drug use and male-to-male sexual contact, and 14 per cent cited heterosexual exposure only. Of the four females notified, two reported heterosexual exposure, one came from a high prevalence country and no information was available for the remaining female.

Table 2: Notifications of HIV in Victoria, by Age Group, July–September 2000, October 1999–September 2000 and Cumulative Total

Age Group	Cases Notified Jul–Sep 2000		Cases Notified Oct 1999–Sep 2000		Cumulative Total to 30 Sep 2000		
	Male	Female	Male	Female	Male	Female	Total*
0–12	0	0	0	0	34	10	44
13–19	0	0	4	0	103	11	115
20–29	8	3	45	6	1 482	97	1 595
30–39	12	1	63	8	1 446	61	1 515
40–49	12	0	29	1	619	26	647
50+	3	0	20	1	306	23	329
Unavailable	0	0	0	0	101	1	117
Total	35	4	161	16	4 091	229	4 362

* Includes 15 cases for whom gender is reported as transsexual and 27 cases for whom no gender is reported.

Table 3: Notifications of HIV in Victoria, by exposure category, July–September 2000, October 1999–September 2000 and Cumulative Total

Exposure Category	Cases Notified Jul–Sep 2000		Cases Notified Oct 1999–Sep 2000		Cumulative Total to 30 Sep 2000		
	Male	Female	Male	Female	Male	Female	Total*
Male homosexual/bisexual	20	–	112	–	3 325	–	3 339
Male homosexual/bisexual and injecting drug user	5	–	7	–	198	–	200
IDU	0	0	8	1	114	36	153
Heterosexual	5	2	17	6	162	133	295
Person from specified country†	3	1	11	9	65	33	98
Haemophilia/related disorder	0	0	0	0	100	1	101
Transfusion recipient	0	0	0	0	20	15	35
Other	0	0	1	0	5	9	14
Unavailable	2	1	5	0	102	2	127
Total	35	4	161	16	4 091	229	4 362

* Includes 15 cases whose gender was reported as transsexual and 27 cases for whom no gender was reported.

† Persons from countries with a high prevalence (>1 per cent) of HIV.

Table 4: Notifications of HIV in Victoria, by Time since Last Negative Test or Seroconversion Illness, July–September 2000 and October 1999–September 2000

Time between HIV Diagnosis and Negative Test and/or Seroconversion Illness	Cases Diagnosed Jul–Sep 2000			Cases Diagnosed Oct 1999–Sep 2000		
	Male	Female	Total	Male	Female	Total*
Less than 1 year	9	1	10	53	2	55
1 year to less than 3 years	1	1	2	20	1	22
3 or more years	8	1	9	22	1	23
No previous negative test or seroconversion illness	17	1	18	66	12	78
Total	35	4	39	161	16	178

* Includes one case for whom gender was reported as transsexual.

Incident or newly acquired HIV infection cases are defined as those who have had a negative HIV test and/or symptoms of a seroconversion illness in the 12 months before they are diagnosed as having HIV. Incident cases of HIV infection accounted for 26 per cent (n = 10) of infections notified during this quarter and 31 per cent (n = 55) of cases notified in the previous 12 months. This is an increase from the 19 per cent (n = 6) diagnosed during the third quarter in 1999.

CHLAMYDIA INFECTIONS

The Department was notified of 872 cases of *C. trachomatis* this quarter—only a 6 per cent increase from the previous quarter's total of 822 cases and a 19 per cent increase from the total for same time period in 1999. However, the cumulative total of 3229 for the previous 12 months represents an increase of 11 per cent from the 2908 cases notified in the year from October 1998 to September 1999. The age and sex distribution of cases was unchanged, with most newly diagnosed cases occurring in young people aged 20–29 years. The overall annual female to male ratio was 1.5:1.

Table 5: *Chlamydia trachomatis* notifications in Victoria, by Age and Sex, July–September 2000 and October 1999–September 2000

Age Group	Chlamydia Notifications Jul–Sep 2000				Chlamydia Notifications Oct 1999–Sep 2000			
	Male	Female	Unknown	Total*	Male	Female	Unknown	Total†
0–12 years	4	6	0	10	4	15	0	19
13–19 years	17	96	0	113	69	334	0	403
20–29 years	169	317	3	489	666	1 179	11	1 856
30–39 years	114	70	0	184	388	278	2	668
40–49 years	40	17	0	57	130	73	2	205
50+ years	15	4	0	19	52	22	0	74
Unavailable	0	0	0	0	1	1	2	4
Total	359	510	3	872	1 310	1 902	17	3 229

* Includes six reported eye infections.

† Includes 16 reported eye infections.

GONORRHOEA INFECTIONS

Table 6: *N. gonorrhoeae* notifications* in Victoria, by Sexual Orientation and Sex, July–September 2000

Gender	Site of Isolation	Urethral	Vaginal	Cervical	Rectal	Pharyngeal	Other†	Total
Heterosexual	Male	50	–	–	0	0	1	51
	Female	0	3	3	0	1	0	7
Homo/bisexual	Male	76	0	0	18	9	0	103
	Female	0	0	0	0	0	0	0
Unavailable	Male	25	0	0	2	0	1	28
	Female	0	1	0	0	0	0	1
Total		151	4	3	20	10	2	190

* Represents 206 isolates.

† Includes one joint isolate and one anal abscess.

The number of gonorrhoea notifications continued to remain high this quarter—182 males and 8 females. This represents a 28 per cent increase from the number of notifications (148) in July–September in 1999. The majority of notifications were among gay or bisexual males (54 per cent), with heterosexual males accounting for 27 per cent

of infections and sexual orientation being unavailable for 15 per cent. Approximately 79 per cent of infections were urethral, while 11 per cent were rectal infections and 5 per cent were pharyngeal.

Table 7: *N. gonorrhoeae* Notifications in Victoria, by Age Group, July–September 2000

Age Group	Male	Female	Total	Proportion (Per Cent)
0–12 years	0	1	1	0.5
13–19 years	4	2	6	3
20–29 years	62	3	65	34
30–39 years	64	1	65	34
40–49 years	35	0	35	18
50+ years	16	0	16	8
Unavailable	1	1	2	1
Total	182	8	190	100

SYPHILIS INFECTIONS

Table 8: Syphilis Notifications in Victoria, by Sex and Category of Disease, July–September

	Male	Female	Total*
Primary syphilis	0	0	0
Secondary syphilis	0	0	0
Latent syphilis—early	0	1	1
Latent syphilis—late	3	0	3
Latent syphilis—unknown	5	7	12
Other late syphilis	0	0	0
Neurosyphilis	0	0	0
Past treated	5	3	8
Unknown	11	10	23
Total	24	21	47

* Includes two people for whom gender was unknown.

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The *Victorian Infectious Diseases Bulletin* is published quarterly and provides summaries of infectious diseases surveillance data, local news, outbreak investigations, infection control procedures, clinical cases of general interest and brief reports on original clinical or laboratory based research. The bulletin is distributed free of charge to persons with an interest in the control and treatment of infectious diseases in Victoria.

Contributions are invited on any topic dealing with the control of infectious diseases. These may be in the form of articles, short reports or letters. Submissions should be in Microsoft Word IBM-compatible format with Vancouver-style references. We encourage submissions in electronic format. Original data from which graphs and figures have been prepared should be included. Submissions will be edited to conform with the style of the bulletin.

The editors recognise and thank the individuals and organisations who contribute to the surveillance and management of infectious diseases. We remind authors of their responsibility to cite appropriate persons as authors, and to acknowledge separately those whose work contributed significantly but did not justify authorship.

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