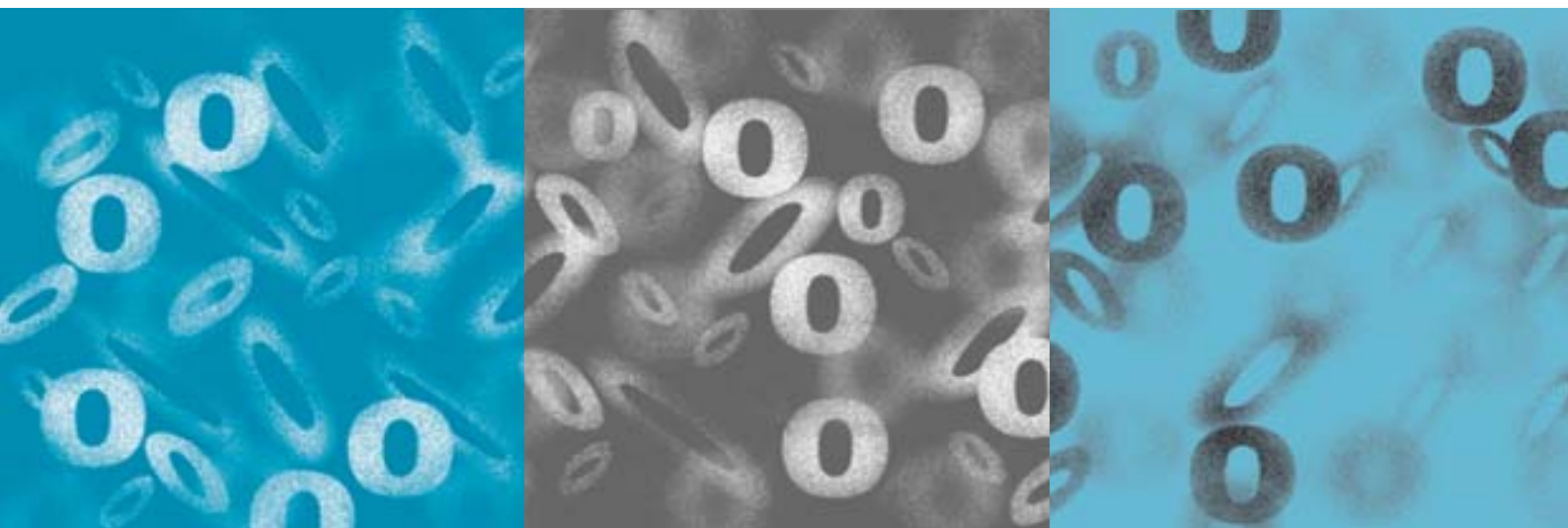


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Acute hepatitis B in Victoria 1997–2003

Marion Moloney, Department of Human Services

Background

The Communicable Diseases Section of the Department of Human Services receives more than 2,000 notifications of hepatitis B each year. On average, however, less than 5 per cent can be classified as newly acquired infections—that is, acute hepatitis B infections (AHBV). Between 1993 and 1999, the number of notifications for AHBV averaged 94 per year, except in 1997 (123 cases) when there was a 24 per cent increase due to an outbreak in injecting drug users.

In 2000, an increase of 22 per cent in AHBV notifications was attributed partly to more reporting by hospital laboratories. Surveillance in early 2001 indicated that case numbers were increasing and, by May 2001, an outbreak was evident. The number of acute cases rose by 70 per cent in 2001, and the rise continued in 2002. In 2003, the number decreased by 20 per cent but did not revert to pre-2000 numbers.

Surveillance Methods

The surveillance system in Victoria is centralised, with all notifications reported to the Communicable Diseases Section. All AHBV notifications are followed up with laboratories and the notifying doctor, to identify possible sources of infection and prevent further cases. A further aim is to monitor the epidemiology of acute infection to help develop better prevention strategies. The department also contacts relevant notifiers to investigate notifications that do not contain enough information for determining whether the case is a chronic carrier or an acute case.

We use the case definition for AHBV developed by the Communicable Diseases Network of Australia.¹ During the outbreak in May 2001, enhanced surveillance was undertaken from July to December 2001, whereby risk factor information was obtained directly from each notified case. Overall surveillance practices have not altered during the period of interest.

Results

Notifications for AHBV declined in 1998 and 1999, increased moderately (22 per cent) in 2000 and then rose sharply in 2001 and 2002 (Figure 1). In 2003, the numbers of acute cases declined but did

not revert to the numbers evident in 1998 and 1999. The reasons for this trend are not clear but may reflect a combination of factors, such as increased reporting from hospital laboratories, and more complete follow-up with notifiers.

The increase in AHBV notifications in Victoria has not been evident in other jurisdictions. The numbers reported by the National Notifiable Diseases Surveillance System (NNDSS) are different from those included here because the NNDSS counts only cases that have an onset date. Additionally, the Victorian numbers reflect notifications encompassing symptomatic and asymptomatic presentations that fit the

Figure 1: Notifications of acute hepatitis B, Victoria, 1997–2003

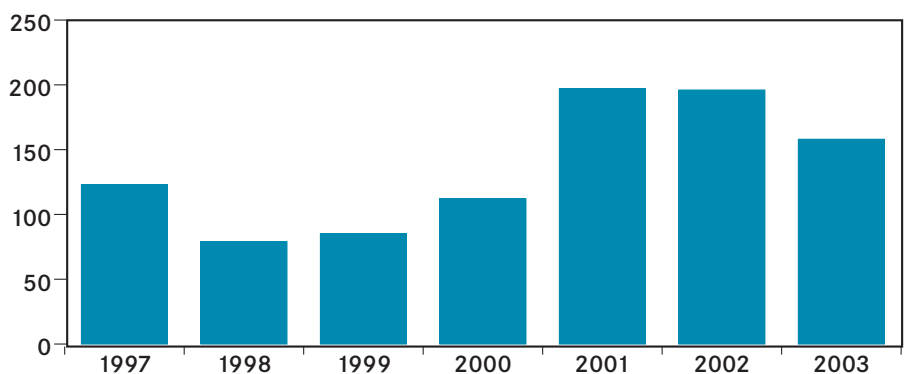
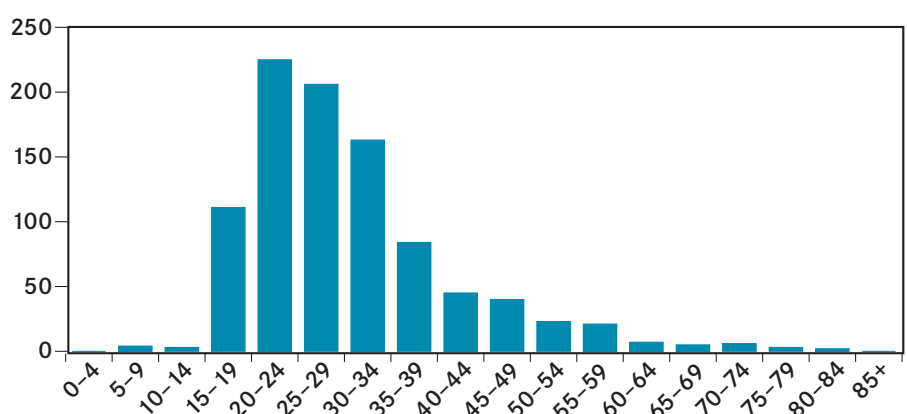


Figure 2: Notifications of acute hepatitis B, by age group, Victoria, 1997–2003



national case definition. The counting of only symptomatic cases is limiting, given that 'less than 30 to 50 per cent of adults with AHBV show icteric disease'.²

Between 1997 and 2003, the burden of acute hepatitis B infection occurred in people aged 20–34 years (Figure 2). In each of the seven years, males accounted for at least 65 per cent of the notifications. The country of birth was known for 83 per cent of AHBV cases over the period, of which 76 per cent (599 of 785) were Australian born.

Unsafe sex and injecting drug use were the main risk factors for AHBV, accounting for 36 per cent and 52 per cent respectively (Table 1). In 16 per cent of cases followed up, investigations could not identify any risk factors. Thirty-five notifications of AHBV were received from correctional services between 2001 and 2003. These cases included people who were incubating disease on reception and others who had acquired infection in prison.

Five deaths were attributed to AHBV between 1997 and 2003. Four additional cases with fulminant disease (one requiring a liver transplant) occurred in the latter three years. All nine cases were unvaccinated. Co-infection with hepatitis C was common, followed by hepatitis D, hepatitis A and HIV (Table 2). In 2001, one person was infected with hepatitis A, B and C within 12 months.

Outbreak interventions during 2001–03

During the 2001 outbreak, a series of public health interventions was implemented. Enhanced surveillance was

Table 1: Risk factors for acquiring acute hepatitis B, Victoria, 1997–2003

	1997	1998	1999	2000	2001	2002	2003
Total cases	123	79	85	112	197	196	158
Risk factor* n (%)							
Injecting drug use	40 (32)	28 (35)	50 (59)	65 (58)	119 (60)	114 (58)	80 (51)
Unsafe sex	38 (31)	38 (48)	28 (33)	31 (28)	72 (36)	72 (37)	68 (43)
Other	12 (10)	4 (5)	3 (3)	3 (3)	17 (9)	20 (10)	1 (1)
No risk	33 (27)	22 (28)	19 (22)	17 (15)	13 (7)	18 (9)	27 (17)

*People may have more than one risk factor.

initiated for six months, which indicated that injecting equipment was still being re-used. The department commenced interventions targeted at injecting drug users. An initial public health alert was released through the Needle and Syringe Program, encouraging at-risk people to seek vaccination. Free hepatitis B vaccine was initially offered via the program, but the uptake was poor as a result of perceived confidentiality issues and inconsistent attendance.

The free vaccine program was then expanded to clinics with a registered methadone provider, which responded well to the offer. A second alert was sent to all Needle and Syringe Program providers, methadone providers, and drug and alcohol services promoting the free hepatitis B vaccine.

Other initiatives to address the increase in AHBV included dedicated funding for hepatitis B vaccine for juvenile justice programs that had traditionally provided hepatitis B vaccine out of their own budgets, and a one-off grant for a hepatitis B vaccination program within the adult correctional system. The latter program is currently being implemented.

Table 2: Co-infections with hepatitis B, Victoria

	2001	2002	2003
Total cases	197	196	158
Co-infections n (%)			
Hepatitis C	75 (38)	58 (30)	35 (22)
Hepatitis D	0 (0)	1 (1)	1 (1)
HIV	2 (1)	0 (0)	0 (0)
Hepatitis A	1 (0)	1 (1)	0 (0)

Conclusion

The increase in the numbers of AHBV for the period 1999–2003 and the occurrence of an outbreak in 2001 have highlighted (1) the need to monitor the epidemiology of acute hepatitis B infection and (2) the need for better strategies to vaccinate population groups at risk. Hepatitis B vaccine is an effective vaccine, and vaccination of at-risk populations remains the priority for disease control.

The high burden of acute hepatitis B among persons aged 20–34 years is a concern and warrants further investigation. The routine adolescent immunisation for hepatitis B introduced in 1997 might not have reached eligible people in this age group.

Transmission of malaria in Victoria: is it possible and has it occurred?

Noel McK. Bennett, Victorian Arbovirus Task Force



References

1. Communicable Diseases Network of Australia (CDNA). National Notifiable Diseases Surveillance System Case Definitions. Canberra: CDNA 2002.
2. Chin J (ed). Control of Communicable Diseases Manual, 18th ed. Washington: American Public Health Association 2000.

Acknowledgements

The department would like to thank all those doctors and laboratory personnel who assisted the Communicable Diseases Section in the investigation of acute cases of hepatitis B. Without this assistance, the department's ability to respond to public health threats would be significantly hampered.

In 2003, malaria was added to the terms of reference of the Victorian Arbovirus Task Force (VATF), which is an advisory body to the Department of Human Services on mosquito-borne diseases. This inclusion aligns with the addition of malaria to the terms of reference of the National Arbovirus and Malaria Advisory Committee, which is a subcommittee of the Communicable Diseases Network of Australia.

Australia was first declared malaria free by the World Health Organisation in 1956, but this infection remains one of the most prevalent and often fatal infectious diseases in the world. Efforts to produce a protective vaccine against any of the four *Plasmodium* species that cause human disease have yet to be realised; resistance to mosquito insecticides is widespread and progressive mutations in the parasite have led to multiple resistance to anti-malarial drugs.¹

Travellers and army service personnel who have acquired malaria overseas may arrive in Australia infected. Many arrive in malaria receptive areas of the tropical north of Australia, increasing the risk of the re-establishment of the disease. The importation and transmission of malaria in the United States (Florida) during 2003 and previously in the Torres Strait Islands suggests a similar occurrence in other areas of northern Australia is possible.

An important consideration is whether malaria could be introduced to, and even become endemic in, the southern part of the continent, such as Victoria, particularly with the advent of global warming. Recently, I reviewed two early publications to answer this question.

Taylor's Survey, 1917²

An entomologist from the Australian Institute of Tropical Medicine, FH Taylor produced an extensive document containing maps, drawings and photographs. He surveyed irrigation districts such as Kyabram, Echuca, Swan Hill, Mildura, Renmark, Lake Boga, Cobdogla and Pompoota to determine the presence or absence of malaria carrying species of mosquito. He concluded that *Anopheles annulipes*, a suitable *Plasmodium vector*, was found throughout the irrigation area (with the possible exceptions of Mildura and Renmark). Further, wherever present, the mosquitoes were found in considerable numbers and close to human habitations.

Forbes Mackenzie's Report, 1948³

Forbes Mackenzie detailed his investigation into a mysterious case of malaria. In 1948, a case of benign tertian (BT) malaria (infection with *Plasmodium vivax*) was reported in a two and a half year old female who lived in East Malvern near Gardiner's Creek. This child had not been outside Victoria and had not had blood transfusions or any injections. The child's parents reported that 'mosquitoes had been troublesome for some time around the house'. An entomologist identified a female mosquito taken from beneath a bridge over Gardiner's Creek as *A. annulipes*. Various ex-soldiers were visitors to the child's home at the time she was probably infected, but they all denied recent attacks of malaria, and blood slides from two soldiers did not reveal any malarial parasites.

Mackenzie concluded 'There seems to be no doubt that this is a case of malarial infection transferred by a mosquito under natural conditions in the metropolitan area of Melbourne'. He added 'A. annulipes ... although not in large numbers in southern Victoria, is very wide spread. It is capable of transmitting malaria'.

In addition, Mackenzie related the publication in the *Medical Journal of Victoria* in 1921 of a prior case of BT malaria: 'The patient, a resident of St Arnaud, had not been out of Victoria. It was presumed that the infection was carried from the patient's son who contracted malaria in the Jordan Valley, Palestine, during the 1914-18 war'.

His conclusion was that 'Wholesale transference of malaria is not likely in Victoria unless there is a corresponding increase in both the *Anopheles* mosquitoes and the number of relapses or imported cases of malaria'.

The current situation in Victoria

No cases of locally acquired malaria have been reported in Victoria since 1948, although cases of malaria continue to be imported into Victoria each year.⁴ A result of either inadequate treatment or failed treatment due to drug resistance, human parasitaemia may be prolonged, providing an increased opportunity for local mosquitoes to become infected. The risk of indigenous malaria may also increase if the number of *Anopheles* mosquitoes in Victoria rises as a result of global warming and subsequent severe widespread flooding.

It is essential, therefore, for health care personnel to investigate carefully the origin of all reported cases of malaria in the state, thereby allowing early detection of indigenous transmission and the institution of appropriate remedial measures. Cases in persons with no history of overseas travel would constitute a public health emergency and should be reported immediately to the Department.

So what about my original question? In summary, yes, malaria can be transmitted in Victoria, particularly if conditions more conducive for such transmission eventuate. It has been transmitted in the state on at least two occasions.

Acknowledgement

I am grateful to Dr Jocelyn Forsyth for reading this paper and giving sage advice.

References

1. Moorthy VS, Good MF & Hill VS. Malaria vaccine developments. *Lancet* 2004;363:150-6.
2. Taylor FH. Malaria mosquito survey of irrigation areas in the Murray Valley district. Canberra: Commonwealth of Australia Quarantine Service Publication no. 12, 1917.
3. Forbes Mackenzie E. Malaria [benign tertian] contracted in metropolitan area, Melbourne. *Health Bulletin [Vic.]* 1948;25:11-5.
4. Department of Human Services. Surveillance of notifiable infectious diseases in Victoria. Melbourne: Department of Human Services, 2002;61-2.

Immunisation update

Stephen Pellissier

Prevention and Perinatal Health Section, Department of Human Services

Data cited in this report are based on the Australian Childhood Immunisation Register (ACIR) coverage report. Table 3 presents immunisation coverage at 30 September 2004 for children aged 12-<15 months, 24-<27 months and 72-<75 months at 30 June 2004. Only vaccines administered before 12 months of age were included in the coverage calculation for the first age group, and only those vaccines administered before 24 and 72 months of age were included in the coverage calculation for the second and third age groups. For a copy of the ACIR report listing immunisation coverage against individual vaccines for each local government area, contact Catherine McNamara at the Department of Human Services (email catherine.mcnamara@dhs.vic.gov.au).

These data show a general increase in coverage rates in the 12<15 months and 24<27 months cohorts. Coverage rates for the 72<75 months age cohort remain stable during the reporting period. The implementation of the new School Entry Immunisation Certificate process will see ACIR sending immunisation status reports directly to parents which can be used as school entry certificates in Victoria if the child is fully and appropriately immunised. This will act as a reminder system to those parents of children not fully immunised. Further strategies are under examination to increase coverage rates in the 72<75 months age cohort.

On 11 June 2004 the Federal Minister for Health and Ageing, the Hon. Tony Abbott MP, announced that the Australian Government is to provide funding for conjugate pneumococcal vaccine for children under the age of two and polysaccharide pneumococcal for older persons aged 65 years and over. These programs will commence on 1 January 2005. Minister Abbott also announced that he had requested the Australian Technical Advisory Group on Immunisation to review the most recent evidence about chickenpox and injectable polio vaccines.



Table 3: Childhood immunisation coverage, by local government area, Victoria, September 2004

Age group	% fully immunised	Local government area (LGA)	Total LGAs (% LGAs)
12<15 months	95+	Ararat (RC), Baw Baw (S), Central Goldfields (S), Corangamite (S), Gannawarra (S), Glenelg (S), Golden Plains (S), Hindmarsh (S), Horsham (RC), Loddon (S), Moyne (S), Murrindindi (S), Northern Grampians (S), Queenscliffe (B), West Wimmera (S)	15 (19)
	90–94	Alpine (S), Ballarat (C), Banyule (C), Boroondara (C), Brimbank (C), Campaspe (S), Cardinia (S), Casey (C), Colac-Otway (S), Darebin (C), Delatite (S), East Gippsland (S), Glen Eira (C), Greater Bendigo (C), Greater Geelong (C), Hobsons Bay (C), Hume (C), Indigo (S), Kingston (C), Knox (C), Macedon Ranges (S), Manningham (C), Maribyrnong (C), Maroondah (C), Melton (S), Mildura (RC), Moira (S), Monash (C), Moonee Valley (C), Moorabool (S), Moreland (C), Mornington Peninsula (S), Nillumbik (S), Pyrenees (S), South Gippsland (S), Swan Hill (RC), Towong (S), Wangaratta (RC), Warrnambool (C), Wellington (S), Whitehorse (C), Whittlesea (C), Wodonga (RC), Wyndham (C)	44 (57)
	85–89	Bass Coast (S), Bayside (C), Frankston (C), Greater Dandenong (C), Greater Shepparton (C), Latrobe (C), Melbourne (C), Mitchell (S), Port Phillip (C), Southern Grampians (S), Stonnington (C), Strathbogie (S), Surf Coast (S), Yarra (C), Yarra Ranges (S)	15 (19)
	80–84	Buloke (S), Hepburn (S), Mount Alexander (S), Yarriambiack (S)	4 (5)
24<27 months	95+	Alpine (S), Ararat (RC), Ballarat (C), Campaspe (S), Colac-Otway (S), Corangamite (S), Gannawarra (S), Glenelg (S), Golden Plains (S), Greater Geelong (C), Hindmarsh (S), Horsham (RC), Hume (C), Latrobe (C), Loddon (S), Macedon Ranges (S), Mitchell (S), Moira (S), Moorabool (S), Moyne (S), Queenscliffe (B), South Gippsland (S), Southern Grampians (S), Strathbogie (S), Surf Coast (S), Towong (S), Warrnambool (C)	27 (35)
	90–94	Banyule (C), Bass Coast (S), Baw Baw (S), Bayside (C), Boroondara (C), Brimbank (C), Buloke (S), Cardinia (S), Casey (C), Central Goldfields (S), Delatite (S), East Gippsland (S), Frankston (C), Glen Eira (C), Greater Bendigo (C), Greater Dandenong (C), Greater Shepparton (C), Hobsons Bay (C), Indigo (S), Kingston (C), Knox (C), Manningham (C), Maribyrnong (C), Maroondah (C), Melton (S), Mildura (RC), Moonee Valley (C), Moreland (C), Mornington Peninsula (S), Murrindindi (S), Nillumbik (S), Northern Grampians (S), Stonnington (C), Swan Hill (RC), Wangaratta (RC), Wellington (S), Whitehorse (C), Whittlesea (C), Wodonga (RC), Wyndham (C), Yarra (C), Yarra Ranges (S), Yarriambiack (S)	43 (55)
	85–89	Darebin (C), Hepburn (S), Melbourne (C), Monash (C), Mount Alexander (S), Port Phillip (C), Pyrenees (S), West Wimmera (S)	8 (10)
72<75 months	95+	Gannawarra (S), Indigo (S)	2 (3)
	90–94	Alpine (S), Ararat (RC), Baw Baw (S), Campaspe (S), Corangamite (S), East Gippsland (S), Glenelg (S), Golden Plains (S), Hindmarsh (S), Horsham (RC), Macedon Ranges (S), Melton (S), Moyne (S), Pyrenees (S), Southern Grampians (S), Strathbogie (S), Swan Hill (RC), Warrnambool (C), Wellington (S), West Wimmera (S), Whitehorse (C), Wodonga (RC), Yarriambiack (S)	23 (29)
	85–89	Ballarat (C), Boroondara (C), Casey (C), Central Goldfields (S), Frankston (C), Greater Bendigo (C), Greater Geelong (C), Greater Shepparton (C), Hepburn (S), Hobsons Bay (C), Hume (C), Kingston (C), Latrobe (C), Manningham (C), Maroondah (C), Mitchell (S), Moira (S), Moonee Valley (C), Moorabool (S), Moreland (C), South Gippsland (S), Surf Coast (S), Wangaratta (RC), Whittlesea (C), Wyndham (C)	25 (32)
	80–84	Banyule (C), Bass Coast (S), Brimbank (C), Cardinia (S), Colac-Otway (S), Darebin (C), Glen Eira (C), Greater Dandenong (C), Knox (C), Loddon (S), Maribyrnong (C), Mildura (RC), Monash (C), Mornington Peninsula (S), Nillumbik (S), Northern Grampians (S), Port Phillip (C), Towong (S), Yarra Ranges (S)	19 (24)
	<80	Bayside (C), Buloke (S), Delatite (S), Melbourne (C), Mount Alexander (S), Murrindindi (S), Queenscliffe (B), Stonnington (C), Yarra (C)	9 (12)

Surveillance report

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 651 160 or fax 1300 651 170.**

This section includes a summary of infectious disease notifications received until 30 September 2004. The Communicable Diseases Section, Department of Human Services, produced the report in cooperation with the Victorian Infectious Diseases Reference Laboratory and the Macfarlane Burnet Institute for Medical Research and Public Health. We gratefully acknowledge the contribution of the Microbiological Diagnostic Unit of the University of Melbourne and the Melbourne Sexual Health Centre.

Summary data at a regional and local government level are available at the website <http://www.health.vic.gov.au/ideas/surveillance/daily.htm>. There were no notifications of leprosy, rubella, tetanus, haemolytic uraemic syndrome, anthrax, Australian arboencephalitis, botulism, diphtheria, Japanese encephalitis, Kunjin virus, plague, poliomyelitis, rabies, viral haemorrhagic fevers or yellow fever in this reporting period.

For comments or queries related to the data presented, contact the Communicable Diseases Section (telephone 61 3 9637 4126). For HIV/AIDS

enquiries, contact Rebecca Guy or Dr Margaret Hellard, Epidemiology and Social Research Unit, Macfarlane Burnet Institute for Medical Research and Public Health (telephone 61 3 9282 2290).

Daily surveillance reports and weekly commentary to assist with interpreting these reports are available at the website <http://www.health.vic.gov.au/ideas/surveillance/daily.htm>. Data in this report are provisional and subject to revision as further information becomes available. You can find general information related to the control of infectious diseases (*The Blue Book*) on line at <http://www.health.vic.gov.au/ideas/bluebook/index.htm>.

Enteric Diseases

Outbreaks of gastrointestinal illness

Joy Gregory, Karen Carter and Jim Adamopoulos, Department of Human Services

From April to September 2004, the Department of Human Services received notification of 166 outbreaks of gastrointestinal illness—an increase of 168 per cent on the number in the same period in 2003 (Table 4). Of the notified outbreaks, 10 were considered to be food borne or probable food borne. Person-to-person transmission was suspected in 144 outbreaks: norovirus (98); rotavirus (4); adenovirus (1) and suspect viral gastroenteritis (41). The mode of transmission was unknown for 12 outbreaks.

The majority of outbreaks occurred in health care facilities and supported accommodation, and were either confirmed as norovirus outbreaks or suspected to be of viral origin. Given the



increase in outbreaks in these settings, the department's Communicable Diseases Section issued an alert to all hospitals, nursing homes and supported residential services in Victoria in September 2004, to remind facilities to report outbreaks and provide information on the management of outbreaks.

A *Salmonella typhimurium* 9 (STM 9) outbreak in a south eastern suburb

In late April 2004, a general practitioner notified the Communicable Diseases Section of two cases of salmonellosis in the same family with same date of onset. The doctor advised that two additional family members were ill at the same time, although no faecal specimens were collected for these cases. The local council interviewed the family, who ate Kosher foods purchased from outlets in a south eastern suburb. The Microbiological Diagnostic Unit of the University of Melbourne later confirmed the salmonellosis cases as STM 9. In addition, both cases had a mixed infection with *Campylobacter*.

Between 13 April and 25 May 2004, five additional cases of STM 9 in the same geographical area were notified to CDS bringing the total number of confirmed cases to nine. The additional cases were interviewed and were also found to have shopped at the same outlets and eaten many of the same products and brands as the index cases. The date of onset for the nine cases was between 4 April and 10 May and the age of cases ranged from 2 years to 48 years (median 17 years).

An investigation of the outlets involved was conducted. Food processing procedures for the suspected foods (dips,

Table 4: Outbreaks of gastrointestinal illness, Victoria, April–September 2004

Setting	Outbreaks	Persons affected	Pathogen/toxin (no. of outbreaks)
Restaurant/reception/ other food premises/ specific food	10	157	<i>Salmonella</i> Typhimurium 9 (2) <i>Salmonella</i> Typhimurium 12a (1) <i>Salmonella</i> Typhimurium 126 (1) Norovirus (1) Suspected viral (1) Unknown (4)
Aged/disability health care institution	135	3,492	Norovirus (93) Suspected viral (30) <i>Clostridium perfringens</i> (1) <i>Campylobacter</i> (1) Unknown (10)
Recreation/holiday/camp	6	129	Norovirus (2) Suspected viral (4)
Children's service/school	12	131	Rotavirus (4) Adenovirus (1) Norovirus (2) Suspected viral (5)
Family/social gathering	1	6	Suspected viral (1)
Other residential institution	2	47	<i>Campylobacter</i> (1) <i>Salmonella</i> Stanley (1)
Total	166	3,962	Norovirus (98) <i>Salmonella</i> Typhimurium 9(2) <i>Salmonella</i> Typhimurium 12a(1) <i>Salmonella</i> Typhimurium 126 (1) <i>Salmonella</i> stanley (1) <i>Campylobacter</i> (2) Suspected viral (41) Rotavirus (4) Adenovirus (1) <i>Clostridium perfringens</i> (1) Unknown (14)

pate and fish products) were reviewed and many foods were sampled but none was positive for STM 9. The investigation was inconclusive and no food source was identified.

A *Salmonella* Typhimurium 126 (STM 126) outbreak linked to a café

In early May 2004, an outbreak of *Salmonella* was detected through routine surveillance when the Communicable Diseases Section was notified of three

cases from the same rural town. A review of recent notifications identified an additional case from the same geographic area. Interviews were conducted with the four notified cases, revealing that all had eaten a cooked breakfast of eggs with hollandaise sauce at the same café either on 30 April 2004 or 1 May 2004.

Local council environmental health officers inspected the café, and conducted a compliance check and a review of food preparation procedures for

the breakfast. The officers also supervised a site clean-up. Food samples were taken and submitted to the Microbiological Diagnostic Unit, but all were negative for *Salmonella*.

On 20 May 2004, a general practitioner notified a fifth case, stating on the notification form that the case had eaten at the café. Further investigation by the local council revealed that food handlers at the premises were also ill. Fourteen food handlers were subsequently interviewed, to collect information on their duties at the café and on any food they had eaten at the café over the suspect weekend. Three of the food handlers were considered to have had the same illness as the notified cases, but faecal specimens collected from them were negative for *Salmonella*.

All eight cases had eaten eggs with hollandaise sauce between 30 April and 2 May inclusive; because raw eggs are an ingredient of the hollandaise sauce, they were suspected as the infection vehicle. The Department of Primary Industries was notified that eggs were suspected as the source of illness, and the egg farm was investigated. Samples were taken for testing, but no *Salmonella* was detected in any of the eggs or environmental samples from the farm.

An outbreak of *Campylobacter* infection at an aged care facility

In September 2004, the Department received a laboratory notification of *Campylobacter* for a resident in an aged care facility. The case was referred to the local council for investigation. The following day, eight further notifications of *Campylobacter* were received for residents at the same facility.

The council investigated the facility and determined that meals were provided by an off-site kitchen that also provided meals to other sites. No illness was reported by the residents or staff of any of the other sites during this period.

The aged care facility is separated into two areas. Illness was reported by residents and staff of only one of these areas, and investigation revealed that this area's residents and staff had attended a barbeque two days before the first onset of illness. A detailed food history could not be obtained from the residents because many suffer from dementia or poor memory.

A total of 24 cases (16 residents and 8 staff) were reported, of whom 11 were confirmed with *Campylobacter*. Although the investigation is continuing, the findings so far suggest contaminated food at the barbeque was the most likely source of illness for the majority of cases. Six cases (one resident and five staff) did not attend the barbeque, and these were suspected to be secondary cases because their illness onset occurred several days after that of the other cases.

A *Salmonella stanley* outbreak in a boarding school

In July 2004, the Communicable Diseases Section was notified by the testing laboratory of a case of *Salmonella* in a boarder at a regional school. The laboratory advised that several other pathology services in the area were also testing faecal samples from the school.

Telephone contact with the local council confirmed that a number of students boarding at the school had been unwell with gastrointestinal symptoms. The council inspected both the

accommodation facilities and the kitchen.

Almost 200 students and staff at the school were interviewed as part of the investigation. Ill persons identified through the investigation were classified as probable or confirmed cases. A probable case was defined as a boarder, teacher or day student at the school who had developed gastroenteritis, consisting of diarrhoea or abdominal pain with at least one other symptom, such as fever, vomiting or nausea, and whose illness onset was between 11 July 2004 and 31 July 2004. A person who met the definition of a probable case and had *S. Stanley*, or *Salmonella* not further typed, isolated from a faecal specimen, was defined as a confirmed case. Of the 33 cases identified, eight were confirmed and 25 were considered probable. Cases included boarding students, day students and staff. Investigation confirmed the pathogen as *S. Stanley*, but all food samples from the school were negative.

Analysis of the food histories of interviewees suggested that food consumed at the school was the source of illness for the majority of the early cases in this outbreak. Cases were more likely to have been ill if they had consumed food from the school on 14 July (relative risk (RR) 2.6, 95% confidence interval (CI) 1.0–7.1) or 15 July (RR 3.7, 95% CI 1.2–11.7). The median onset date was 19 July, which is consistent with the source of illness being food consumed on either day. Two cases had onset before 14 July but neither of the cases was confirmed.

Contaminated food might have been served over a number of days, which could account for the range of onset

dates of illness. Further, some secondary transmission might have occurred, because most cases were boarders and in closer contact with each other than would occur in a regular school setting.

Outbreaks of *Clostridium perfringens* in aged and health care facilities

In May and June 2004, the Communicable Diseases Section received notification of three outbreaks of diarrhoeal illness in aged and health care facilities. The aetiological agent was confirmed as *C. perfringens* for one of these outbreaks and suspected for the other two. The first outbreak was in a hospital and affected 21 patients. All cases had diarrhoea with no vomiting, and four faecal specimens grew *C. perfringens*, with enterotoxin also detected in one specimen. The remaining two outbreaks occurred in aged care facilities and affected 31 residents. Seven specimens grew *C. perfringens*, and enterotoxin was detected in four specimens. All cases were negative for norovirus.

In all three outbreaks, compliance checks of the kitchens were conducted and menus for the days preceding illness were collected. Food preparation procedures for all high risk foods were reviewed with kitchen staff. No source was identified for any of the outbreaks because patient food histories had not been recorded and recall was poor. These outbreaks highlight the need to collect accurate information from facilities during investigation, because food borne outbreaks can easily go undetected when the background rate of norovirus outbreaks is high.

Bloodborne viruses

Hepatitis B

Megan Counahan, Department of Human Services

There were 61 cases of acute hepatitis B infection notified between April and September 2004, representing a 22 per cent decrease in the number of notifications received for the same period in 2003 (n = 78). This decrease returns the level of acute hepatitis B infections notified to that found in 2000 (n = 62), before the sudden increase of cases in 2001 (see 'Acute Hepatitis B in Victoria 1997–2003' article). The majority of notifications were male (36 of 61, or 59 per cent). The age of cases ranged from 15 to 73 years. No notified cases identified as Indigenous.

Hepatitis C

Luke Atkin, Department of Human Services

Between April and September 2004, the Communicable Diseases Section received a total of 1,476 notifications of hepatitis C infections, compared with 1,840 notifications for the same period in 2003. Three per cent of cases were notified as newly acquired infection, however, this is likely to be an underestimate of the incidence of newly acquired hepatitis C in Victoria. Due to the nature of the disease and the risk factors associated with it, the probability of obtaining better data on the newly acquired cases is limited.

Newly Acquired Hepatitis C

Of the 1,476 notifications of hepatitis C in the second and third quarter of 2004, 46 (3 per cent) were classified as newly

acquired (23 males and 23 females). The median age for males was 28 years (range: 3–51 years) and 24 years for females (range: 1 – 51 years).

Thirty-seven cases (80 per cent) were diagnosed on the basis of seroconversion to hepatitis C virus in the previous 24 months. Seven cases (15 per cent) were diagnosed on the basis of having had clinical hepatitis in the previous 24 months and two cases acquired their infection perinatally.

Of the 46 cases, injecting drug use was the major risk factor reported (n = 41),

followed by, having a hepatitis C positive sexual partner (n = 9), imprisonment (n = 6), having a household contact with hepatitis C (n = 4), having had surgery (n = 4) and tattooing (n = 6). Cases may have more than one risk factor identified. All cases for whom a risk factor other than injecting drug use has been identified also report injecting drug use as a risk factor. Three cases have not had any risk factors identified and are currently under investigation.

Hepatitis C (not further specified)

Of the 1,476 notifications of hepatitis C,

Figure 3: Notifications of hepatitis C not further specified, by age group and sex, and rate per 100 000 population, Victoria, 1 April – 30 September 2004

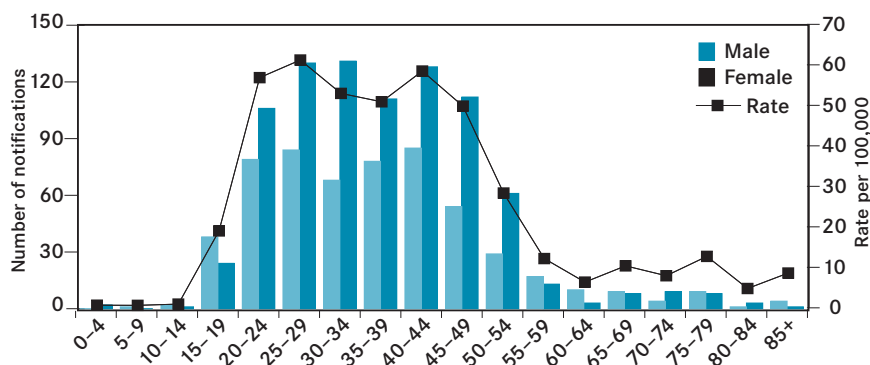
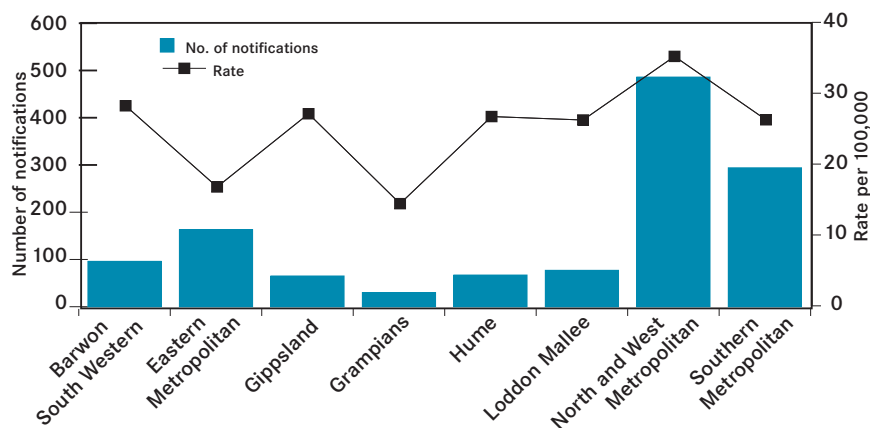


Figure 4: Notifications of hepatitis C not further specified, by region and rate per 100, 000 population, Victoria, 1 April– 30 September 2004



1,430 were classified as not further specified: 853 males, 572 females and 5 for whom sex was not stated (Figure 3). The highest notification rates were in the North and West Metropolitan region (Figure 4).

Vaccine-preventable diseases

Megan Counahan, Department of Human Services

Invasive pneumococcal disease

There were 244 cases of invasive pneumococcal disease (IPD) notified between April and September 2004, a 2 per cent decrease on the number of cases for the same period in 2003 (n = 249). Three cases were Indigenous persons. Fifty-nine per cent of notifications were male (n = 143) and 41 per cent (n = 101) were female.

The cases ranged in age from 1 month to 96 years. The highest rates of IPD were found in those aged under 2 years and those aged over 85 years. Among those aged 30–39 years, twice as many males were notified as were females (34 compared with 17 respectively).

Twenty-one deaths were attributed to IPD in the six-month period. Three were aged under 2 years (a case fatality rate of 5.6 per cent), six were aged between 30 and 64 years (a case fatality rate of 6.6 per cent) and 13 were aged 65 years and over (a case fatality rate of 18.2 per cent). Among those whose death was attributed to IPD, only one person was immunised (an 88 year old male).

Serotype information was available for 90 per cent (n = 220) of cases. Eighty-five per cent (46 of 54) of the cases notified in children aged under 2 years and 84 per

cent (21 of 25) of those aged 2–5 years had a serotype contained in the seven-valent conjugate vaccine, however, only one child had been vaccinated. Of those notified cases aged 65 years and over, 79 per cent (52 of 66) had a serotype, which is contained in the 23-valent vaccine. Sixteen people had acquired their infection despite being fully immunised and of these fifteen were aged 65 years and over. Of the 15 individuals, three were immunocompromised. It should be noted that the response to the vaccine is diminished in immunocompromised people. The other vaccine failure was an immunocompromised 10 year old child who had had two episodes of IPD in a four-year period.

Measles

There were eight cases of measles notified between April and September 2004. The cases ranged in age from 18 to 32 years, and six were male. Six of the cases acquired their infections overseas and the remaining two cases were epidemiologically linked to those cases.

Other notifiable diseases

Tuberculosis

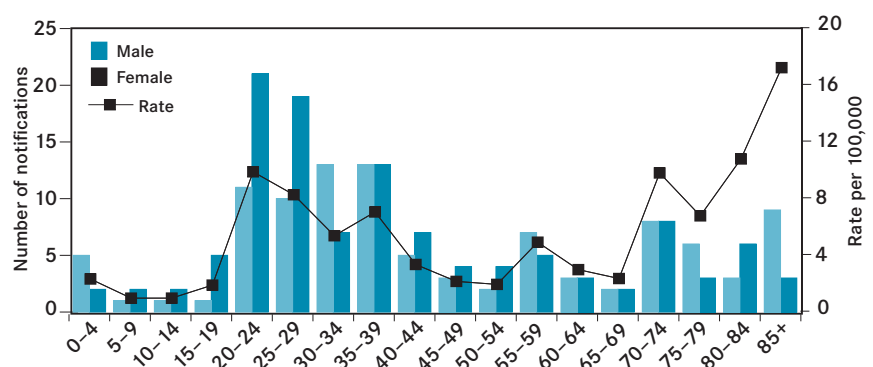
Lynne Brown, Department of Human Services

Owing to the slow growing nature of *Mycobacterium tuberculosis*, data on tuberculosis infection are preliminary and subject to change. This report relates to notifications received from April to September 2004.

Overview

The Department of Human Services received 219 notifications of tuberculosis in the second and third quarters of 2004. This is similar to the number of notifications for the same period in 2003 (n = 221). Of the 219 notifications, 103 were female (47 per cent) and 116 (53 per cent) were male. Patients aged 20–24 years and 85 years or older had the highest notification rates, at 10.2 per 100,000 and 17.5 per 100,000 respectively (Figure 5). Thirteen children aged younger than 15 years were notified with tuberculosis; most (seven of 13) were identified by contact tracing and found to have early signs of disease on initial assessment. Two Australian born

Figure 5: Notifications of tuberculosis, by age group and rate per 100 000 population, Victoria, 1 April–30 September 2004



children presented at the same time as the adult index case, who had been unwell for six months before seeking medical attention. A third Australian born child presented following an overseas trip during which he was exposed to a relative with pulmonary tuberculosis. Three children were recent arrivals in Australia from refugee backgrounds in Africa.

Eighty-six per cent (n = 188) of notifications were for overseas born patients. Of these notified cases, 59 per cent were born in countries from the Horn of Africa (33), India (32), Vietnam (31) or China (15). No Indigenous Australians were notified. Thirty-five (19 per cent) of the 188 overseas born notifications had previously been placed on a tuberculosis undertaking (TBU), which requires a new migrant arriving in Australia to undergo further screening and assessment for possible tuberculosis.

Table 5: Notifications of tuberculosis, by site of disease, Victoria, 1 April–30 September 2004

Site	Number
Pulmonary	104
Pulmonary and other sites	16
Lymph nodes	53
Pleural	23
Bone/joint	12
Peritoneal	6
Meningeal	5
Genitourinary	3
Miliary	2
Other	11
Total	235

Note: Total is greater than number of notifications because some patients had multiple sites.

Fifteen of the TBU notifications (43 per cent) were diagnosed via the health assessment that is a condition of the TBU. Three patients were known to have HIV and tuberculosis co-infection.

Site of disease

Pulmonary disease accounted for 55 per cent of all notifications (n = 120) (Table 5). Sixteen of these notifications noted additional sites, other than the lungs. Pleural disease was the most common additional site, but two patients had miliary tuberculosis and three had tuberculosis isolated in lymph nodes. Extrapulmonary disease was reported in 45 per cent of notifications, the most common sites being lymphatic (51 per cent), bone/joint (11 per cent) and pleural (15 per cent). Of the 50 lymph node notifications, 12 were mediastinal nodes and two were identified as primary lymph node disease in children.

Laboratory confirmation of diagnosis

Laboratory confirmation of diagnosis in some form (smear, culture or antigen detection) was obtained in 87 per cent of notifications (Table 6). Seventy-seven per

cent of all notifications were confirmed by culture, while the diagnosis was bacteriologically confirmed in 84 per cent of pulmonary notifications. Just over half (61 of 120) of pulmonary notifications were smear positive for acid-fast bacilli, whereas 85 per cent (102 of 120) were positive on culture.

Legionellosis

Megan Counahan, Department of Human Services

Fifty-four cases of legionellosis were notified in the six months between April and September 2004 compared to 44 cases in the same period in 2003. Forty-two (78 per cent) of the notifications were for *Legionella pneumophila* species, and 22 (52 per cent) of these were *L. pneumophila* serogroup 1. Of the 12 notifications for non-*L. pneumophila* species, 10 were for *L. longbeachae*, one was for *L. micdadei* and typing was not available for the other. Thirty-nine (72 per cent) of notifications were male and 15 (28 per cent) were female.

The age range of cases was 20–86 years. Four deaths were attributed to disease

Table 6: Laboratory confirmation of tuberculosis notifications, by diagnostic method, Victoria, April–September 2004

Diagnostic method	Extrapulmonary tuberculosis only	Pulmonary tuberculosis only	Pulmonary tuberculosis plus other sites	Total
Culture	67	87	15	169
Microscopic examination	2	3	0	5
Histology	9	0	0	9
Polymerase chain reaction / nucleic acid testing	7	0	0	7
Radiological examination	6	14	1	21
Clinical examination	8	0	0	8
Total	99	104	16	219

during the reporting period: a 65-year-old male with untyped *Legionella*, a 77-year-old male with *L. pneumophila* and 2 males, 74-year-old and 56-year-old, with *L. longbeachae*.

The majority of notifications were from metropolitan regions (Figure 6). The high rate noted in the Hume region reflected the outbreak in Cobram.

Two outbreaks of *L. pneumophila* serogroup 1 were investigated in the reporting period. The first outbreak, in the metropolitan area, was notified in April. It involved two cases (both male) aged 55 years and 58 years. No source was identified.

The second outbreak was notified in June. It was associated with five cases (three females and two males), all of whom lived and/or worked in Cobram. Their ages ranged from 20 years to 78 years. All of these cases were urinary antigen positive for *L. pneumophila* serogroup 1, and the same species was subsequently grown in water samples taken from a cooling tower in the town. One case had a clinical isolate of *Legionella*, and the molecular subtyping determined that the environmental isolate and human isolate matched.

Invasive meningococcal disease

Megan Counahan, Department of Human Services

There were 48 cases of invasive meningococcal disease notified between April and September 2004, compared with 69 for the same period in 2003 (Table 7). Of the 48 cases, 23 (48 per cent) were female and 25 (52 per cent) were male. Almost two thirds of cases were group B disease (31 of 48, or 65 per cent), while eight cases were notified with

Figure 6: Notifications and rates per 100 000 population of legionellosis, by region, Victoria, 1 April–30 September 2004

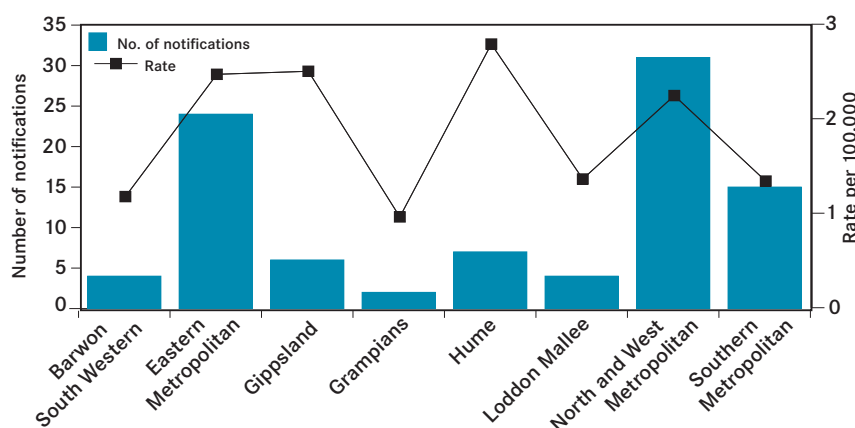


Table 7: Notifications of invasive meningococcal disease, by serogroup and vaccination program age group, Victoria, April–September 2004

Meningococcal disease	Age group	1999	2000	2001	2002	2003	2004
Group C	<1	0	2	0	1	1	0
	1–5	1	6	6	8	2	1
	6–14	2	3	4	5	5	0
	15–19	9	6	4	13	3	1
	20–30	2	16	6	7	9	1
	30+	11	4	8	14	6	5
	Subtotal	25	37	28	48	26	8
Group B	<1	3	3	1	5	5	8
	1–5	10	5	8	5	7	6
	6–14	5	3	4	5	4	4
	15–19	5	2	3	9	5	4
	20–30	4	5	2	3	4	4
	30+	2	6	5	4	5	5
	Subtotal	29	24	23	31	30	31
Other	<1	1	0	1	1	1	1
	1–5	8	7	7	4	0	3
	6–14	3	1	6	8	1	0
	15–19	6	2	4	2	1	2
	20–30	4	4	5	4	4	1
	30+	6	4	7	11	6	2
	Subtotal	28	18	30	30	13	9
Total		82	79	81	109	69	48

group C disease (17 per cent). There was a single case of group Y disease (2 per cent) and one case could not be grouped. The remaining seven cases (15 per cent) had a clinically compatible illness but no laboratory confirmation. The five deaths in the reporting period were all attributed to group B disease; the age of these cases ranged from 1 month to 63 years, but four were aged under 8 years.

Since the introduction of the National Meningococcal C Immunisation Program, the number of cases of group C disease has fallen in Victoria. Eight cases of group C disease were reported between April and September 2004, compared with 29 cases for the same period in 2003. While two cases of group C disease were notified among the age groups eligible for free vaccine, neither person had been vaccinated (see shading in Table 7).

Sexually transmissible infections

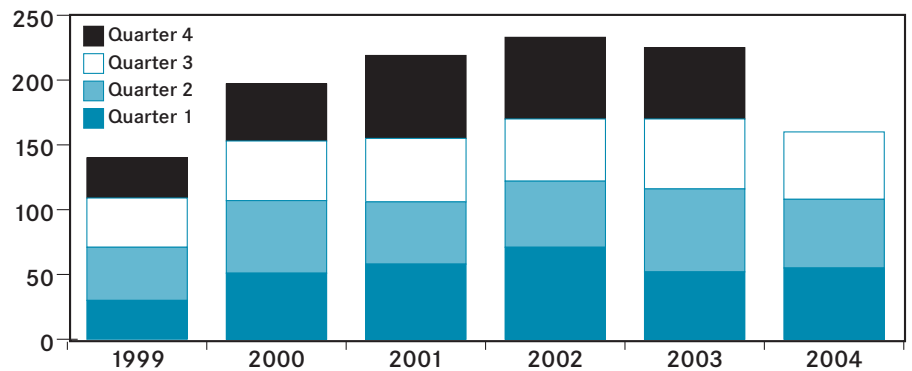
Human immunodeficiency virus (HIV) infection

Rebecca Guy, Macfarlane Burnet Institute for Medical Research and Public Health

There were 53 new HIV diagnoses in Victoria during the second quarter of 2004 and 52 during the third quarter. These 105 notifications represent a 5 per cent decrease on the 110 reported in the previous six months (October 2003 – March 2004) and an 11 per cent decrease on the 118 in the same period last year (Figure 7).

The median age of cases for the second and third quarters of 2004 was 36 years (range: 19–66 years) (Table 2). Of the

Figure 7: New HIV diagnoses, by year and quarter, Victoria, 1999–2004



105 new HIV diagnoses in this period, 90 (86 per cent) were males and 15 (14 per cent) were females (Table 8). Of the males, 66 (73 per cent) reported male-to-male sexual contact as their exposure category (Table 9), a 20 per cent decrease on the 83 males in the previous six months who reported male-to-male sexual contact.

Male-to-male sexual contact

Of the 66 males with male-to-male sexual contact as their exposure category, 53 (80 per cent) reported acquiring their HIV infection in Victoria

(Table 10). Nineteen (29 per cent) of the 66 reported acquiring their HIV infection from an anonymous partner, while nine (14 per cent) reported a casual partner as the source, and 13 (20 per cent) reported a regular partner. Table 11 shows a breakdown of other reported partner types as the source of infection.

Heterosexual contact

Twenty-seven (26 per cent) of the 105 new HIV diagnoses reported heterosexual contact as their exposure category (Table 12). This was a 93 per cent increase on the 14 diagnoses in the previous six

Table 8: New HIV diagnoses, by age group and sex, Victoria, April–September 2004

Age Group	April–June 2004		Jul–Sep 2004	
	Males	Females	Males	Females
0–12	0	0	0	0
13–19	0	0	1	0
20–29	8	6	9	0
30–39	20	3	20	1
40–49	13	1	12	3
50–59	1	0	4	1
60+	1	0	1	0
Total	43	10	47	5

Table 9: New HIV diagnoses, by exposure category, Victoria, April–September 2004

Exposure category	April–June 2004				Jul–Sep 2004			
	Males		Females		Males		Females	
	n	%	n	%	n	%	n	%
Male homosexual/bisexual	36	83.7	–	–	30	63.8	–	–
Male homosexual/bisexual and injecting drug user	3	7.0	–	–	3	6.4	–	–
Injecting drug user	0	0	0	0	3	6.4	0	0
Heterosexual	1	2.3	5	50.0	6	12.8	2	40.0
Person from a HPC*	2	4.7	5	50.0	3	6.4	3	60.0
Haemophilia/related disorder	0	0	0	0	0	0	0	0
Transfusion recipient	0	0	0	0	0	0	0	0
Other/unknown	1	2.3	0	0	2	4.3	0	0
Total	43	100	10	100	47	100	5	100

* HPC: High prevalence country (greater than 1 per cent of population infected with HIV).

Table 10: New HIV diagnoses in males reporting homosexual contact, by place where infection was acquired, Victoria, April–September 2004

Place infection acquired	April–June 2004		July–September 2004	
	n	%	n	%
Victoria	30	83.3	23	76.7
Interstate	3	8.3	1	3.3
Overseas	2	5.6	2	6.7
Unknown	1	2.8	4	13.3
Total	36	100	30	100

Table 11: New HIV diagnoses in males reporting homosexual contact, by source partner type, Victoria, April–September 2004

Source partner type	April–June 2004		July–September 2004	
	n	%	n	%
Regular partner	7	19.4	6	20.0
Casual partner	6	16.7	3	10.0
Anonymous partner	11	30.6	8	26.7
Any combination of above	6	16.7	9	30.0
Unknown	6	16.7	4	13.3
Total	36	100	30	100

months who reported heterosexual contact as the exposure category. Of the 27 cases (12 males, 15 females), 15 (56 per cent) were born in a high prevalence country or reported heterosexual contact with a person from a high prevalence country.

Injecting drug use

In the second and third quarters of 2004, there were nine cases (all males) with a history of injecting drug use (Table 9). Six of these cases also reported male-to-male sexual contact.

Sex workers

Two cases in the period identified as sex workers. One case was a male and one was a female, and both reported a history of male sex work.

Incident infections

Those with newly acquired HIV or incident infection are identified on the basis of a previous negative HIV test and/or a seroconversion illness within the 12 months preceding HIV diagnosis. Thirty-one individuals were classified as incident HIV infections during the second and third quarters of 2004, including 27 males and four females (Table 13). This is an 11 per cent decrease on the 35 incident infections identified in the previous six months.

AIDS

The department was notified of 35 AIDS cases between April and September 2004 (31 males, four females), of whom 13 (10 males, three females) had been diagnosed with AIDS within this time frame. Of the 31 males, 24 (77 per cent) reported a history of male-to-male sexual contact.

Table 12: New HIV diagnoses reporting heterosexual exposure, Victoria, April–September 2004

Exposure category	April–June 2004				July–September 2004			
	Male		Female		Male		Female	
	n	%	n	%	n	%	n	%
Person from a HPC*	2	66.7	5	50.0	3	33.3	3	60.0
Heterosexual contact with person from a HPC	0	0	2	20.0	0	0	0	0
Heterosexual contact with bisexual man	0	0	1	10.0	0	0	1	20.0
Heterosexual contact with injecting drug user	0	0	0	0	0	0	0	0
Heterosexual contact with person with HIV with no specified risk	1	33.3	1	10.0	3	33.3	0	0
Heterosexual contact with person with other risk	0	0	0	0	0	0	0	0
Heterosexual contact (not otherwise specified)	0	0	1	10.0	3	33.3	1	20.0
Total	3	100	10	100	9	100.00	5	100

* HPC: High prevalence country (greater than 1 per cent of population infected with HIV).

Deaths

Eight deaths following HIV or AIDS diagnosis were notified during the second and third quarters of 2004, compared with 10 deaths in the previous six months. All deaths were males.

Chlamydia infections

Luke Atkin, Department of Human Services

The department received 3,684 notifications of Chlamydia trachomatis in the second and third quarters of 2004, representing an increase of 8 per cent on the number of notifications from the same period in 2003 (n = 3,406) (Figure 8). The age and sex distributions remain unchanged with the greatest burden of disease in the 20–24 year old age group.

The highest notification rates were from the North and West Metropolitan region (Figure 9).

Data on the type of specimen and laboratory testing methods were available for 3,508 (95 per cent) notifications. Nucleic acid tests were the most common method reported. No laboratory confirmations were received for 176 (5 per cent) notifications, compared with 299 (9 per cent) notifications for the same period in 2003.

As the Medicare Benefits Schedule does not fund testing for more than one site per episode, it is likely that the surveillance system underestimates the true number of extragenital chlamydial infections.

The passive notification system is enhanced by the collection of risk factor information from clinicians. There were 1,326 (36 per cent) questionnaires returned during the reporting period, although not all questionnaires were complete, compared with 1,161 (34 per cent) for the same period in 2003.

Table 13: New HIV diagnoses, by time since last negative test or seroconversion illness, Victoria, April–September 2004

Time between HIV diagnosis and negative test and/or seroconversion illness	April–June 2004		July–September 2004	
	Male	Female	Male	Female
Less than one year	12	3	16	0
One year to less than three years	9	1	3	2
Three or more years	8	1	7	0
No previous negative test or seroconversion illness	10	4	8	1
Last HIV test was positive (diagnosed interstate/overseas)	2	1	4	1
History unknown	2	0	9	2
Total	43	10	47	6

Figure 8. Notifications of *Chlamydia*, by quarter, Victoria, 1999–2004

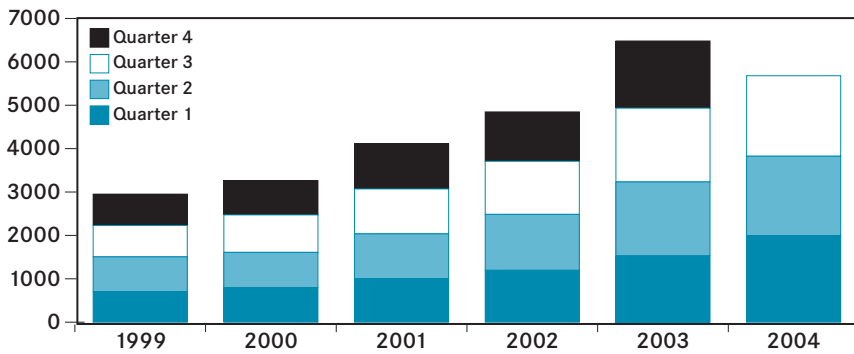


Figure 9. Notifications and rate per 100,000 population of *Chlamydia*, by departmental region, Victoria, 1 April–30 September 2004

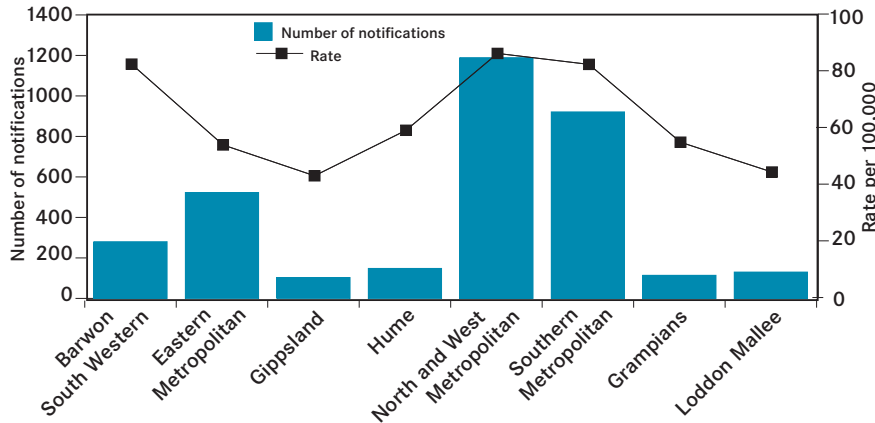


Table 14. Specimen type and testing method for *C. trachomatis*, Victoria, April–September 2004

Specimen type	Specimen site	Culture	EIA	Not stated	NAT/PCR*	Total
Swab	Cervix	1	0	0	1022	1023
	Eye	1	0	0	21	22
	Pharynx	0	0	0	4	4
	Rectum	1	0	0	59	60
	Urethra	0	0	0	231	231
	Vagina	0	0	0	154	154
	Not specified	1	0	0	59	60
Urine	Not applicable	0	0	1	1747	1748
Other/ Not stated		0	4	1	148	153
Total		4	4	2	3445	3455

* NAT: Nucleic acid amplification. PCR: polymerase chain reaction
 Note: may include multiple testing on a single individual

According to enhanced data, the most common reason reported for *Chlamydia* testing was clinical evidence of a sexually transmissible infection (n = 423), with more males seeking medical attention for their symptoms than females. Patient initiated testing was the next most common reason for testing (n = 326), followed by doctor initiated testing (n = 310). Cases diagnosed as a result of antenatal or pre-termination screening comprised a very small proportion of cases (2 and 16 cases respectively). (Table 13).

Gonorrhoea

Luke Atkin, Department of Human Services

The Department of Human Services received 527 notifications of *Neisseria gonorrhoeae* during April–September 2004, compared with 624 notifications in the same period in 2003 (Figure 10).

Of the 527 notifications, 478 (91 per cent) were males and 49 (9 per cent) were females. Table 14 shows the age and sex distributions of those notifications. The median age of male cases was 33 years (range: 12–70 years) and the median age for female cases was 30 years (range: 15–69 years).

The region of residence at the time of testing was known for 76 per cent (n = 402) of the cases. Notification rates were higher for the Melbourne metropolitan regions, with the highest rate for the north and west metropolitan region (Figure 11).

The notifying clinician provides the Department with risk factor information on the reported cases. Enhanced surveillance information was obtained for

Table 15. Enhanced data on reported reasons for testing for *Chlamydia*, Victoria, April–September 2004

Reason for testing	Female	Male	Not stated	Total
Clinical evidence of STI	187	234	2	423
Pt initiated STI screen	184	139	3	326
Doctor initiated STI screen	196	112	2	310
Asymptomatic contact*	54	113	0	167
Abnormal exam	14	4	0	18
Pre-termination screen	15	1	0	16
Antenatal screen	1	1	0	2
Other	42	15	0	57
Not stated	11	7	0	18
Total	704	626	7	1337

*Contact with a known infected partner

Table 16: Notifications of gonorrhoea, by age group and sex, Victoria, April–September 2004

Age group (years)	April–September 2004		
	Male	Female	Total
0–4	0	0	0
5–9	0	0	0
10–14	1	0	1
15–19	18	8	26
20–24	87	11	98
25–29	85	10	95
30–34	92	6	98
35–39	66	6	72
40–44	51	2	53
45–49	38	2	40
50–54	18	0	18
55–59	16	2	18
60+	6	2	8
Total	478	49	527

Figure 10: Notifications of gonorrhoea, Victoria, 1 April–30 September 2004

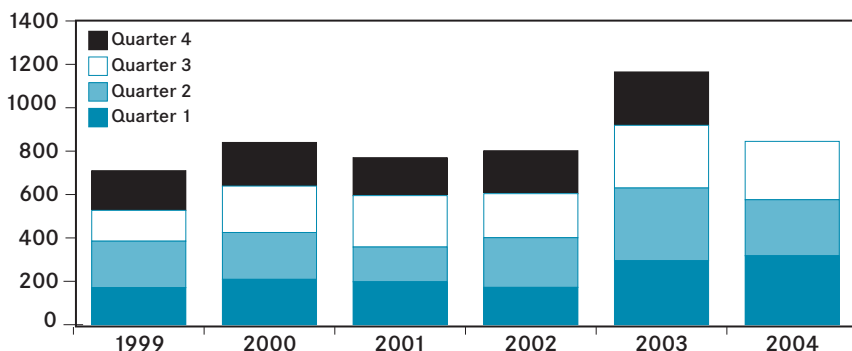
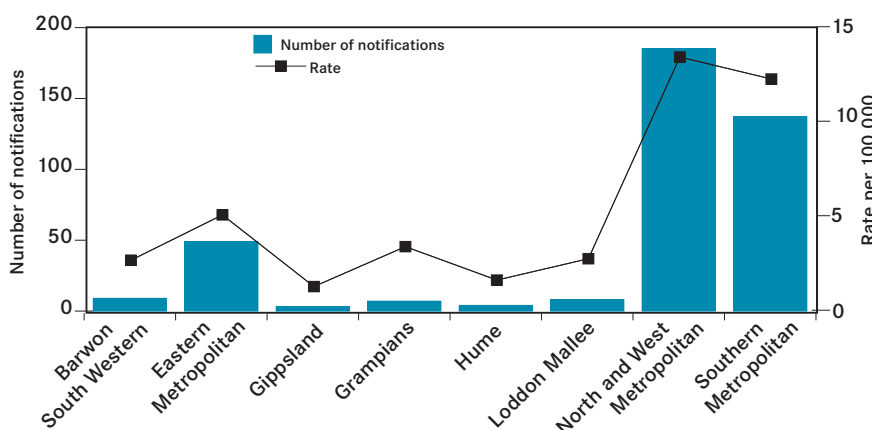


Figure 11: Notifications and rate per 100,000 population of gonorrhoea, by region Victoria, April–September 2004



76 per cent (n = 402) of notifications, although not all returned questionnaires were complete.

Males

Of the 478 notifications from males, information on the sex of the sexual partner was collected for 370 cases (77 per cent). Of these males, 71 per cent (n = 261) reported a male partner and 19 per cent (n = 70) reported a female partner. For 39 cases (11 per cent), the information was unknown or not stated.

Of the 370 males for whom the information was collected on partner type, 69 per cent (n = 255) reported having acquired their infection from a casual partner, 15 per cent (n = 57) from a regular partner, 3 per cent (n = 11) from a sex worker and 1 per cent (n = 5) from

a client. For 42 cases (11 per cent), the information was unknown or not stated.

Of the 370 male cases for whom place of infection acquisition was collected, 78 per cent (n = 290) reported acquiring their infection in Victoria, while 10 per cent (n = 38) reported overseas acquisition and 1 per cent (n = 4) reported interstate acquisition. For 38 notifications, the information was unknown or not stated.

Females

Of the 49 female cases, the sex of the sexual partner was collected for 65 per cent (n = 32). Of these, 84 per cent (n = 27) cases reported having acquired their infection from a male partner, while partner sex was female for one case (3 per cent), and unknown or not stated for four cases (13 per cent).

Of the 32 female cases for whom information was collected on partner type, 63 per cent (n = 20) reported having acquired their infection from a regular partner, while source was reported as being a casual partner for 19 per cent (n = 6), a client for two cases (6 per cent), and unknown for four cases (13 per cent).

Information about place of infection acquisition was collected for 32 of the female cases. The majority of infections were acquired in Victoria (66 per cent, n = 21), while six cases reported overseas acquisition and one reported interstate acquisition. The place of acquisition was unknown for four cases.

The most common site of a positive test was the urethra (Table 15). Testing for antibiotic susceptibility is only possible if *N. gonorrhoeae* is isolated by culture.

Of 527 notifications during the reporting period, 402 isolates were tested by the Microbiological Diagnostic Unit, the University of Melbourne for antibiotic susceptibility. Of the 402 isolates, 376 were from males and 26 were from females. Multiple isolates can be tested from each individual.

Resistance to ciprofloxacin was identified in 116 (29 per cent) of 402 isolates (106 males and 10 females). Of the 229 isolates collected from male cases that reported a male sexual partner and having acquired infection in Victoria, 53 (23 per cent) were ciprofloxacin resistant. The Department recently updated its gonorrhoea fact sheet, recommending treatment of all gonorrhoea infections with ceftriaxone, and alerted general practitioners through the Victorian Divisions of General Practice.

Table 17: Positive *N. gonorrhoeae* tests, by site of infection, Victoria, April–September 2004

Specimen type	Specimen site	Number
Blood	Not applicable	2
Swab	Cervix	22
	Eye	0
	Pharynx	61
	Rectum	105
	Urethral	216
	Vagina	10
	Not stated	10
Urine	Not applicable	113
Not stated	Not stated	27
Total		566

* Includes multiple testing on a single individual.

Infectious syphilis

Luke Atkin, Department of Human Services

In the second and third quarters of 2004 there were 37 cases of infectious syphilis notified to the department, 35 of those cases were male (age range: 24–70 years) and two were female (both cases were aged 18 years). This represents a 3 per cent increase on the 36 cases notified during the same period in 2003 and a 106 per cent increase on the 18 cases notified during the same period in 2002 (Figure 12).

Of the 37 cases, 16 were primary infections, twelve were secondary infections and nine were early latent infections.

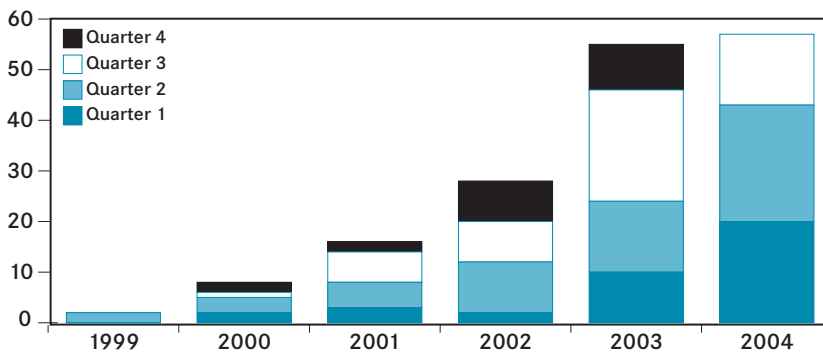
Males

Of the 35 male cases, 27 reported male sexual partners, seven had female sexual partners and for one the information was unknown. Twenty four male cases reported acquiring their infection from a casual sexual partner, six male cases reported acquiring their infection from a regular sexual partner and one male case reported acquiring their infection from a client (the patient was a sex worker) and one male case reported acquiring his infection from a sex worker. For three cases the information was unknown. Of the 35 male cases, nineteen reported acquiring their infection in Victoria, six cases reported acquiring their infection overseas, two cases reported acquiring their infection interstate and for eight cases the information was unknown.

Females

Of the two female cases, both reported acquiring their infection from a male

Figure 12. Notifications of infectious syphilis, by year and quarter, Victoria, 1999–2004



partner. One case reported acquiring her infection in Victoria and for the other case the information was unknown. Of the two females, one reported acquiring her infection from a regular partner and for the other case the information was unknown.

Zoonoses

Megan Counahan, Department of Human Services

Psittacosis

There were 72 cases of psittacosis notified between April and September 2004, compared with 42 during the same period in 2003. Sixteen of the cases were associated with an outbreak at a poultry-processing farm. The outbreak, which was first notified in November 2003, was investigated with the involvement of the Department of Primary Industry, Department of Sustainability and Environment, and the Victorian WorkCover Authority. After control measures were implemented, the last case was notified in July. There were 26 cases (8 females and 18 males) during the outbreak, and all worked at the processing facility.

The majority of cases notified in the six-month period were male (46 of 72), and the age of cases ranged from 16 to 88 years.

Mycobacterium Reference Laboratory report

Rob Warren, Janet Fyfe and Aina Sievers, Victorian Infectious Diseases Reference Laboratory

This report covers the period May to August 2004 rather than the second and third quarters of 2004 due to the slow

growing nature of *Mycobacterium*. Most specimens submitted to the Mycobacterium Reference Laboratory (MRL), both primary and referred, were from Victorian patients. The majority of non-Victorian specimens came from the Northern Territory and the Solomon Islands.

Comments

M. abscessus was isolated from respiratory specimens of three patients, one was a 63 year old male who has had the organism isolated on numerous occasions since 1998.

M. bovis BCG was isolated from urine specimens from two elderly males following treatment with BCG for bladder cancer. The organism was also recovered from an axillary lymph node of a 6 months old infant after BCG vaccination.

M. chelonae was recovered from the upper and lower extremities of four patients between 14–94 years old.

Table 18: Mycobacterium spp isolates received at the MRL, May–August, 2004

	Primary specimens				Total
	<i>M. tb</i> isolates	New Victorian <i>M. tb</i> isolates	Non <i>M. tb</i> isolates	Negatives	
May	17	7	21	329	367
June	22	5	21	394	437
July	19	5	20	414	453
August	14	3	27	484	525
Referred specimens					
	<i>M. tb</i> isolates	New Victorian <i>M. tb</i> isolates	Non <i>M. tb</i> isolates	Total	
May	23	13	28	51	
June	20	13	53	73	
July	21	15	54	75	
August	26	14	59	85	
Total	162	74	283	1621	2066

Figure 13: New *M. tuberculosis* isolates from Victorian residents by age and sex, Victoria, May–August 2004

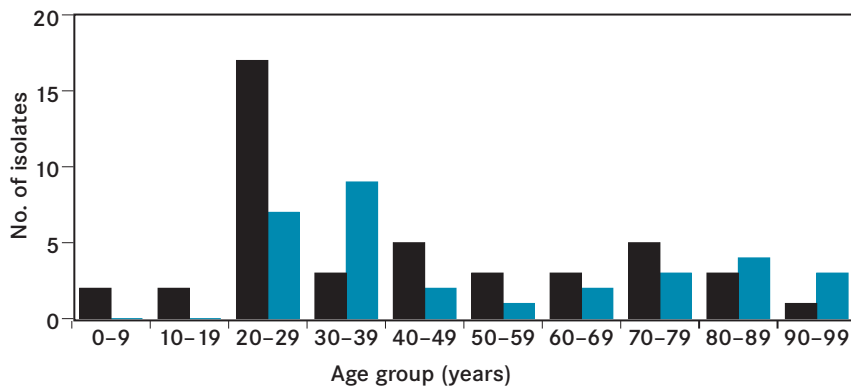


Table 19: Extra-pulmonary *M. tuberculosis* isolates and resistant isolates by month, May–August, 2004

Site	May	June	July	August
Pulmonary	14	13	16	8
Extrapulmonary	6	5	4	9
Extrapulmonary site details	Lymph node (x1) Neck pus (x1) Pleural fluid (x2) Pleural tiss (x2)	Peritoneal fl (x1) Peritoneal tiss (x1) Ascitic fluid (x1) Pleural bx (x1) Wrist tissue (x1)	Lymph node (x3) Hepatic flexure tissue(x1)	Lymph node (x3) Pleural fl (x1) Ascitic fluid (x1) Chest wall (x1) CSF (x1) Peritoneal bx (x1) Neck asp (x1)
Resistance	1x resistance to isoniazid & streptomycin 1x resistance to isoniazid	3x resistance to isoniazid	1x resistance to isoniazid, rifampicin & streptomycin	

M. fortuitum was isolated from a neck abscess of a 12 year old boy.

M. kansasii was isolated from respiratory specimens of four patients, from two of them the organism was first isolated in 1998.

M. marinum was recovered from the fingers of three males, 21–69 years of age. One had multiple abscesses spreading up his arm to the axilla.

M. ulcerans PCR was requested on 120 specimens. There were 23 positive results from 14 patients. These are all new cases with the majority (n = 10) being connected with the Point Lonsdale outbreak. To date, all but two of the PCR results have been confirmed by culture.

Mycobacterium generic PCR was performed on 48 specimens (from 35 patients), including six paraffin embedded tissues and a variety of fresh

tissues and respiratory specimens. *M. tuberculosis* complex was detected in a sputum. *M. intracellulare* was detected in a swab and a paraffin embedded tissue from the knee of one patient. MAC was detected in four respiratory specimens from the same patient and from a lung tissue of a Tree Kangaroo. *M. chelonae* was detected in three tissue specimens from two patients, *M. haemophilum* was detected from a neck mass, *M. marinum* from an arm swab and *M. genavense* from a duodenal tissue.

Victorian Hospital Pathogen Surveillance Scheme report

Mark Veitch and Sally Bodenham, Microbiological Diagnostic Unit, the University of Melbourne.

We present here a synopsis of reports of bloodstream infections and meningitis to the Victorian Hospital Pathogen Surveillance Scheme (VHPSS) for the second and third quarters of 2004. The VHPSS provides voluntary, laboratory-based surveillance of bacterial and fungal agents of bloodstream infections and meningitis in Victoria. Although not all laboratories participate in the VHPSS, the data are broadly representative and readily interpretable to provide insights into the wider population.

Surveillance case definitions

The data presented for the second and third quarters of 2004 are based on a case definition under which an episode of bacteraemia or meningitis is defined as the first isolation of a clinically significant bacterium or fungus from the blood or cerebrospinal fluid (CSF) of a person in a 14-day period. Cases with more than one species of bacteria or fungi isolated are

counted as separate episodes. We include recent historical counts for comparison; these are based on a slightly different case definition, so serve only as a general guide to trends.

The diagnostic laboratory may identify and report an organism only to the level of genus, or an organism may be incompletely speciated (where definitive identification is unnecessary for patient care). For these reasons, some organism categories overlap –for example, coagulase negative *Staphylococcus* and *S. epidermidis*. Variable reporting of suspected contaminants may also affect counts.

Summary of the important agents of bloodstream infection and meningitis in the second and third quarters of 2004

Cases reported to the VHPSS during the second and third quarters of 2004 were diagnosed by 24 laboratories and associated with 92 Victorian hospitals. In the second quarter of 2004, there were 1,196 reports (1,175 bloodstream isolates and 21 from cerebrospinal fluid) from 132 species/types of bacterium and fungus. In the third quarter of 2004, there were 1,356 reports (1,330 bloodstream isolates and 26 cerebrospinal fluid) from 141 species/types of bacterium and fungus.

Table 18 shows that the 20 most common organisms accounted for 82 per cent of reports to VHPSS. Reports of *Escherichia coli*, *Staphylococcus aureus* and *Streptococcus pneumoniae* comprised 47 per cent of the reports.

Reports of bloodstream isolates of *Enterococcus faecalis* and *E. faecium* exceeded expectations based on the observed counts of the previous four

Table 20: Twenty most common isolates reported to VHPSS, Victoria, April–September 2004

Rank (Q2, Q3)	Organism name	April–June 2004	July–Sept 2004	Year to 30 Sept 2004	Year to 30 Sept 2003	2003 total
1, 1	<i>Escherichia coli</i>	254	259	788	693	939
2, 2	<i>Staphylococcus aureus</i>	245	228	737	696	938
3, 3	<i>Streptococcus pneumoniae</i>	101	124	291	338	446
4, 4	Coagulase negative <i>Staphylococcus</i>	53	69	181	171	214
5, 5	<i>Klebsiella pneumoniae</i>	50	56	177	157	212
6, 6	<i>Enterococcus faecalis</i>	47	53	134	104	147
7, 7	<i>Pseudomonas aeruginosa</i>	34	41	112	94	136
9, 8	Group A <i>Streptococcus</i>	27	31	77	58	78
25, 9	<i>Enterococcus faecium</i>	6	29	46	36	51
14, 10	<i>Klebsiella oxytoca</i>	13	25	50	55	71
11, 11	<i>Enterobacter cloacae</i>	18	25	64	58	80
8, 12	<i>Staphylococcus epidermidis</i>	33	25	80	114	143
22, 13	<i>Candida albicans</i>	8	23	47	48	60
15, 14	Group B <i>Streptococcus</i>	13	21	56	50	68
37, 15	<i>Haemophilus influenzae</i>	3	17	21	12	18
10, 16	<i>Neisseria meningitidis</i>	19	16	44	59	76
17, 17	Group G <i>Streptococcus</i>	9	15	38	40	50
12, 18	<i>Proteus mirabilis</i>	17	15	49	42	55
18, 19	<i>Streptococcus mitis</i>	9	13	36	36	43
13, 20	<i>Serratia marcescens</i>	14	13	42	29	37
16, 22	<i>Stenotrophomonas maltophilia</i>	10	9	26	25	31
19, 28	<i>Streptococcus sanguinis</i>	8	7	19	17	23
20, 47	<i>Salmonella paratyphi A</i>	8	3	15	6	6
Total of top 20 for quarter		982	1,098			
Total of other isolate types		214	258			
Total		1,196	1,356			
Total isolate types		132	141			

years. A modest increase in reports of *E. faecalis* has persisted since late 2002, whereas the increase in reports of *E. faecium* is recent. Recent reports of both species have been associated with large

and small, and metropolitan and regional hospitals.

Changes in the number of reports of coagulase negative *Staphylococcus* and *S. epidermidis* are likely to represent

variable degrees of speciation and reporting of possible contaminant organisms.

Trends in reported antimicrobial resistance of some invasive bacterial pathogens in the second and third quarters of 2004

The prevalence of reported key antimicrobial resistances in invasive isolates of important Gram positive pathogens and *E. coli* during the second and third quarters of 2004 was broadly similar to that of the previous four years—see the Department of Human Services' *Victorian Infectious Diseases Bulletin*, vol. 7, issue 1, pp. 7–9).

The proportions of *S. aureus* isolates reported to be resistant to methicillin for the second and third quarters of 2004 were 28 per cent and 24 per cent respectively (Table 19). During these six months, the proportion of isolates demonstrating methicillin resistance was 19 per cent among specimens collected before the third day of hospitalisation, rising to 57 per cent among specimens collected after the seventh day of hospitalisation. One methicillin resistant *S. aureus* (MRSA) isolate was reported as demonstrating heterogeneous intermediate resistance to vancomycin (hVISA).

In the second quarter of 2004, 7 per cent (seven isolates) of invasive *S. pneumoniae* were reported as having intermediate susceptibility or resistance to penicillin—that is, penicillin nonsusceptible pneumococci (PNSP). This proportion rose to 12 per cent (15 isolates) in the third quarter of 2004. During these six months, the prevalence of PNSP among children aged under 5 years with reported invasive pneumococcal disease was 8 per cent, while it was 16 per cent among adults aged 60 years or older.

Among young children, most PNSP had intermediate susceptibility to penicillin and were covered by serotypes (or were from a related serogroup) in the seven-valent conjugate pneumococcal vaccine. PNSP among older adults included isolates with both intermediate susceptibility and resistance to penicillin, and all recently reported serotypes of PNSP in this age group were covered by the 23-valent polysaccharide pneumococcal vaccine.

Among the 22 PNSP were seven isolates (one in the second quarter and six in the third quarter) reported to have intermediate susceptibility to cefotaxime and/or ceftriaxone. Seventy-one per cent of reports of *S. pneumoniae* included

erythromycin susceptibility, of which 12 (8 per cent) were reported to have intermediate susceptibility or resistance. One erythromycin resistant isolate was also reported to have reduced susceptibility to penicillin, cefotaxime and ceftriaxone.

Invasive infections due to *E. faecalis* were more common than those due to *E. faecium*, but included no vancomycin resistant isolates. Although reports of *E. faecium* increased in the third quarter of 2004, the proportion of vancomycin resistant *E. faecium* isolates remained stable (eight of 35, or 23 per cent) during the six months.

Reports of the susceptibility of *E. coli* to amoxicillin, ceftazidime, gentamicin and ciprofloxacin were available for 99 per cent, 65 per cent, 98 per cent and 84 per cent of isolates respectively for the second and third quarters of 2004. Among *E. coli* isolates with susceptibility data, 45 per cent were resistant to amoxicillin, as were 3 per cent to ceftazidime, 2 per cent to gentamicin and 4 per cent to ciprofloxacin. One report of *E. coli* isolated from the blood of a male urology patient was reported to have multiple resistance to amoxicillin, ceftazidime, gentamicin and ciprofloxacin.

Table 21: Trends in key antimicrobial resistance patterns in four commonly reported species

Period	<i>Staphylococcus aureus</i>		<i>Streptococcus pneumoniae</i>		<i>Enterococcus faecalis</i>		<i>Enterococcus faecium</i>	
	Methicillin resistant (%)	Isolates tested (n)	Penicillin nonsusceptible (%)	Isolates tested (n)	Vancomycin resistant (%)	Isolates tested (n)	Vancomycin resistant (%)	Isolates tested (n)
April–June 2004	28	245	7	101	0	47	17	6
July–September 2004	24	228	12	124	0	52	24	29

Brief commentary on reports of *Serratia* species to VHPSS, 1992–2003

There were 467 reports of *Serratia* bloodstream isolates from 1992 to 2003, comprising of 386 *S. marcescens*, 67 *S. liquefaciens*, 2 *S. fonticola*, 2 *S. rubidaea* and 10 unspiciated *Serratia*. *S. marcescens* accounted for 83 per cent of all *Serratia* reports. Reports of *Serratia* species other than *S. marcescens* were uncommon with fewer than 10 reports in total most years.

Since 1992, VHPSS received an average of 32 reports of *S. marcescens* bloodstream isolates per year (range: 18–47). Reports of *S. marcescens* comprise approximately 0.7 per cent of all reports to VHSS. This organism is among the twenty most commonly reported bacteria, and there appears to be no regular seasonal variation in the report.

The age distribution of reports of cases of *S. marcescens* bloodstream isolates has two peaks. The first is in persons aged 60 years and over, and the second in children aged under one year, particularly neonates (an average of two reports among babies aged under 28 days per year, range 0 to 5). Although the greatest number of cases occurs among the older age group (60 per cent of reports, 2.5 per 100,000 per year), the highest incidence is among infants in the first year of life (11 per cent of reports, 6 per 100,000 per year). Prematurity in infants and the presence of malignancies in older persons were common risk factors. About 60 per cent of infections appeared to arise on or after the third day following hospitalisation.¹

Reference

1. Bodenham S & Veitch M. Surveillance of bloodstream infections and meningitis in 2003 by the Victorian Hospital Pathogens Surveillance Scheme. *Victorian Infectious Diseases Bulletin* 2004;7(1):7-9.

Acknowledgments

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Table 22. Notifications of Infectious Diseases, by Department of Human Services Region, 1 January to 30 September 2004 and His

Notifiable Disease	Barwon South Western		Grampians		Loddon Mallee		Hume	
	2004 ytd	2003 ytd	2004 ytd	2003 ytd	2004 ytd	2003 ytd	2004 ytd	2003 ytd
Blood Borne Diseases								
Hepatitis B – Acute	3	5	1	4	5	5	3	1
Hepatitis B – Chronic/Unknown	11	31	6	5	15	8	7	12
Hepatitis C – Newly acquired	6	10	4	3	6	5	5	2
Hepatitis C – Not further specified	132	168	55	78	108	116	109	116
Hepatitis D	1	0	0	0	0	0	0	0
Enteric Diseases								
Campylobacter infection	412	384	128	116	166	198	228	230
Cholera	1	0	1	0	0	0	0	0
Cryptosporidiosis	16	33	9	1	5	5	21	17
Food/Water/Environmental – Other	30	8	42	6	66	9	61	9
Giardiasis	35	44	17	23	21	28	27	23
Haemolytic Uraemic Syndrome	0	0	0	0	0	1	1	0
Hepatitis A	3	1	0	0	4	3	7	7
Hepatitis E	0	0	1	0	0	0	0	0
Listeriosis	0	0	0	1	1	0	0	1
Paratyphoid	0	0	0	0	0	0	1	0
Salmonellosis	86	82	52	26	31	52	54	52
Shigellosis	0	3	1	1	0	0	1	0
Typhoid	0	0	0	0	1	0	0	0
Vero Toxin producing E.coli	2	0	1	0	0	1	0	0
Other Infectious Notifiable Diseases								
Invasive Meningococcal Disease – Group B	7	7	4	0	2	4	0	2
Invasive Meningococcal Disease – Group C	2	6	0	1	1	5	1	1
Invasive Meningococcal Disease – Other	4	4	0	0	0	0	1	0
Legionella – Other	1	0	0	0	0	0	0	0
Legionella longbeachae	1	0	1	0	1	1	0	1
Legionella pneumophila – Other	0	1	1	1	2	2	1	0
Legionella pneumophila 1	2	2	0	0	0	1	5	1
Leprosy	0	0	0	0	0	0	0	0
Mycobacterium infection (non-TB)	1	0	0	1	0	1	0	1
Mycobacterium tuberculosis	1	3	1	4	1	4	5	2
Mycobacterium ulcerans	5	1	2	0	0	0	0	0
Syndromes	0	0	0	0	0	0	0	0
Sexually Transmitted Infections								
Chlamydia	412	333	192	170	219	190	208	167
Gonococcal Infection	16	6	12	5	14	10	8	11
Syphilis - infectious	1	1	0	2	1	1	1	3
Syphilis - other	5	5	0	2	6	2	6	3
Vaccine Preventable Diseases								
Haemophilus influenzae type b	0	1	0	0	0	0	0	0
Influenza	1	22	4	12	1	14	0	17
Invasive Pneumococcal Disease	31	27	12	14	12	20	17	15
Measles	1	0	0	0	0	17	0	3
Mumps	0	0	0	0	0	1	0	0
Pertussis	38	54	12	26	43	17	40	38
Rubella	0	0	0	0	0	0	0	0
Tetanus	0	0	0	0	0	1	0	0
Vector Borne Diseases								
Arbovirus - Alphavirus	5	0	6	0	23	3	14	0
Arbovirus - Flavivirus	0	0	0	1	0	0	1	0
Malaria	3	1	1	1	2	2	1	4
Zoonoses								
Brucellosis	0	0	0	0	0	0	0	1
Leptospirosis	1	3	0	0	0	0	0	0
Psittacosis	0	0	29	2	10	3	9	1
Q Fever	1	3	2	5	4	0	7	3
ABS Est. resident population	347,289		211,165		298,903		256,727	

Note–The data are preliminary figures only and may be subject to revision (daily surveillance reports are available online at <http://www.health.vic.gov.au/ideas>)

Historical Comparisons*

Gippsland		North and West Metropolitan		Eastern Metropolitan		Southern Metropolitan		Unknown		Victoria		
2004 ytd	2003 ytd	2004 ytd	2003 ytd	2004 ytd	2003 ytd	2004 ytd	2003 ytd	2004 ytd	2003 ytd	2004 ytd	2003 ytd	2003 total
8	9	28	41	13	16	22	37	0	3	83	121	159
4	15	505	491	235	254	231	292	114	77	1128	1185	1606
4	2	15	38	10	10	13	13	4	9	67	92	112
98	114	744	950	247	337	489	637	197	172	2179	2688	3589
0	0	0	6	1	1	1	3	0	0	3	10	13
341	257	1064	1076	961	775	1032	893	109	117	4441	4046	5644
0	0	0	0	1	0	1	0	0	0	4	0	0
42	30	34	25	18	28	60	37	5	3	210	179	214
36	13	212	203	145	83	312	88	353	224	1257	643	898
22	25	171	155	101	105	182	157	9	17	585	577	772
0	0	0	0	0	1	0	0	0	0	1	2	4
0	4	26	26	4	20	12	23	1	1	57	85	93
0	0	6	1	2	1	1	2	0	0	10	4	4
0	1	3	5	0	7	5	2	0	0	9	17	21
0	0	6	4	4	4	9	2	0	0	20	10	10
39	60	215	350	172	172	213	208	23	31	885	1033	1264
0	0	29	18	6	10	12	8	3	1	52	41	50
1	1	7	5	1	6	5	5	0	0	15	17	19
0	0	1	0	0	0	0	1	0	0	4	3	3
3	1	13	11	2	5	12	7	2	0	45	37	55
2	1	3	11	2	2	1	12	0	0	12	39	47
1	1	3	5	1	4	2	5	0	2	12	21	27
0	0	2	1	1	0	0	1	0	0	4	2	2
3	3	6	8	6	2	2	2	0	0	20	17	23
2	2	15	14	3	4	2	1	0	0	26	25	32
1	0	5	11	9	7	7	7	1	0	30	29	33
0	0	0	2	0	0	0	0	0	0	0	2	2
1	2	6	3	5	5	4	9	0	0	17	22	33
1	3	114	95	47	34	48	68	1	2	219	215	328
1	4	2	0	5	0	3	4	0	0	18	9	12
0	0	0	0	0	0	0	0	0	3	0	3	3
169	147	1790	1558	820	768	1436	1252	435	346	5681	4931	6475
3	11	299	321	80	107	216	248	198	200	846	919	1165
0	0	19	12	2	10	18	12	15	5	57	46	55
1	1	94	68	27	29	67	69	33	38	239	217	302
0	0	0	0	0	0	1	0	0	0	1	1	1
4	16	35	204	28	141	39	157	9	29	121	612	643
22	15	72	65	47	65	94	95	7	18	314	334	468
0	0	2	12	4	1	5	2	0	0	12	35	38
0	0	1	0	1	0	1	1	0	0	3	2	4
39	53	120	98	82	65	102	47	23	3	499	401	610
0	0	0	0	0	2	0	1	0	0	0	3	3
0	0	0	0	0	0	0	0	0	0	0	1	1
15	5	12	2	9	3	9	1	1	0	94	14	23
0	0	3	4	4	2	2	7	0	0	10	14	18
2	1	16	14	9	12	5	8	8	4	47	47	59
0	0	2	1	0	0	1	1	0	0	3	3	4
1	1	0	0	0	1	0	0	1	0	3	5	9
2	0	38	24	17	18	15	10	1	0	121	58	89
1	4	4	2	0	0	0	0	1	0	20	17	19
242,980		1,430,468		973,957		1,155,732				4,917,311		

Victorian Infectious Diseases Bulletin



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