

# Victorian Infectious Diseases Bulletin

## Rising HIV Notifications in Victoria, 2001

Cathy Keenan, Margaret Hellard, Nick Crofts, Epidemiology and Social Research Unit, Macfarlane Burnet Institute for Medical Research and Public Health

[ckeenan@burnet.edu.au](mailto:ckeenan@burnet.edu.au)

*Victoria's continued progress in controlling the HIV/AIDS epidemic is under threat. For the second year in a row HIV diagnoses have increased. In 2001 218 people were diagnosed with HIV; a 56 per cent increase on the 1999 figure of 139 cases. Here we present an analysis of Victorian HIV surveillance data for the year 2001.*

### SUMMARY OF TRENDS IN HIV IN VICTORIA

The increase in new diagnoses first observed in Victoria in 2000 has continued in 2001. The major proportion of this increase is attributable to a rise in HIV diagnoses among men who have sex with men. HIV diagnoses in this group have risen from 80 in 1999 to 150 in 2001; an 88 per cent increase. In 2001 12 cases of HIV were diagnosed in heterosexual women. This is a 77 per cent increase on the seven cases diagnosed in 2000. Eleven new cases of HIV were diagnosed in people whose main exposure was injecting drug use (IDU) in 2001, the same number as in 2000. However, these numbers are on average at least double

those recorded throughout most of the 1990s. This increase is mainly due to a sharp rise in the number of diagnoses among persons from Indochina who inject drugs. The annual number of newly acquired infections during 2001 also rose to 72, representing a third of total diagnoses (Table 1).

### HIV/AIDS IN VICTORIA

From 1983 to the end of 2001, there were a cumulative total of 4629 HIV diagnoses in Victoria. This represents about 21 per cent of Australia's total. Males account for 4329 diagnoses (94 per cent) and females account for 257 (5 per cent). The annual number of HIV diagnoses in Victoria peaked in 1985 with 528 diagnoses (Figure 1).

Table 1: Summary of Trends in HIV in Victoria, 1999 to 2001

	1999		2000		2001		Change 1999-2001
	N	Per cent	N	Per cent	N	Per cent	Per cent
Total cases	139	100	197	100	218	100	+56
Males	127	91.4	176	89.3	193	93.5	+52
Females	12	8.6	20	10.2	23	5.6	+91
MSM	80	57.5	127	64.5	150	78	+88
IDU	5	3.6	11	5.6	11	5.0	+122
New infections	42	30	64	32	72	33	+71

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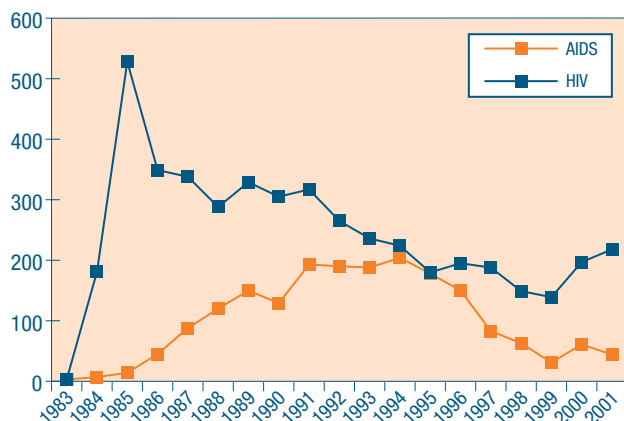
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**Figure 1: HIV and AIDS Notifications, 1983–2001, Victoria**



The cumulative total of AIDS diagnoses in Victoria until the end of 2001 was 1942. The annual number of AIDS diagnoses in Victoria peaked at 203 in 1994 and has since fallen rapidly to 44 in 2001.

### EPIDEMIOLOGY OF HIV IN VICTORIA DURING 2001

In 2001, 218 cases of HIV were diagnosed in Victoria. This is the highest annual number of notifications since 1994. Of these 193 (89 per cent) were males, 23 (11 per cent) were females and there were two transgender individuals. The median age at diagnosis was 32 years for males (range: 20 to 73 years) and 30 years for females (range: 0 to 54 years). Although the majority (73 per cent) of diagnoses were among individuals aged between 25 and 44 years, seven (3 per cent) were aged under 20 years and three (1.5 per cent) were aged over 60 years.

Over three quarters of individuals diagnosed with HIV lived in metropolitan Melbourne, with the largest number residing in the Southern Metropolitan Region (79 people or 36 per cent) and the second largest number

**Table 2: HIV Diagnoses and Notification Rate per 100,000 Population by DHS Region, 1999–2001, Victoria\***

	1999		2000		2001	
	Number	Rate	Number	Rate	Number	Rate
Barwon South Western	2	0.6	5	1.5	6	1.8
Eastern Metropolitan	13	1.3	27	2.8	24	2.5
Gippsland	4	1.7	5	2.1	0	0
Grampians	5	2.5	8	3.9	0	0
Hume	2	0.8	4	1.6	4	1.6
Loddon Mallee	2	0.7	2	0.7	7	2.4
Northern Metropolitan	28	3.7	45	5.9	53	6.9
Southern Metropolitan	41	3.7	55	4.9	79	7.1
Western Metropolitan	21	3.4	29	4.8	30	4.9
<b>Victoria total#</b>	<b>139</b>	<b>2.9</b>	<b>197</b>	<b>4.1</b>	<b>218</b>	<b>4.6</b>

\*Denominator ABS Estimated Resident Population (2000)

#Includes cases for whom regional details were unavailable

in the Northern Metropolitan Region (53 people, or 24 per cent). Seventeen (8 per cent) individuals were resident in non-metropolitan Melbourne, while post-code information was unavailable for 15 (seven per cent) cases. The regional distribution of cases is similar to that observed in 2000 however, in some regions, the crude population rate of HIV has increased substantially (Table 2).

### RISK FACTORS IN MALES IN 2001

There were 193 males diagnosed with HIV infection. Male-to-male sexual contact (homosexual and bisexual) accounted for 150 (78 per cent) diagnoses. There were 15 (8 per cent) diagnoses notified reporting heterosexual contact, compared with 14 (8 per cent) in 2000 and 16 (13 per cent) in 1999.

There was a decrease in the number of males diagnosed with HIV who originated from a high prevalence country.\* Five (3 per cent) such males were diagnosed, compared with 11 (6 per cent) in 2000 and seven (6 per cent) in 1999.

Six males (3 per cent) reported both injecting drug use and male-to-male sexual contact. Nine (5 per cent) males reported injecting drug use alone. No exposure information was available for an additional five (3 per cent) infections notified.

Most (58 per cent) males were tested as a result of perceived high-risk behaviour—that is, sexual practices and/or injecting drug use. Three-quarters of all males were symptomatic at the time of testing; 24 per cent were tested as a result of HIV symptoms including symptoms of AIDS and nine per cent presented with an acute seroconversion illness. Seven males (4 per cent) were also diagnosed with gonorrhoea at the time that they were tested for HIV.

Males reporting male-to-male sexual contact were more likely than males reporting heterosexual contact to report that they had acquired their infection in Australia (84 per cent versus 40 per cent). Males reporting heterosexual contact were more likely than those reporting male-to-male sexual contact to report that they had acquired their infection overseas (53 per cent versus 8 per cent).

There was little variation in the proportion of source partners identified as casual or anonymous between males reporting male-to-male sexual contact (63 per cent) and those reporting heterosexual contact (60 per cent). Regular sexual partners were identified as the most likely source of HIV infection by 25 per cent of those reporting male-to-male sexual contact and 27 per cent of those reporting heterosexual contact.

### RISK FACTORS IN FEMALES IN 2001

There were 23 females diagnosed with HIV infection. This increase was largely attributable to a greater number of notifications from women reporting heterosexual contact. Heterosexual contact accounted for 12 diagnoses (52 per cent of the total) and originating from a high prevalence country accounted

\* High prevalence countries include those in sub-Saharan Africa, the Caribbean and specified countries in South-East Asia (Cambodia, Myanmar and Thailand), where HIV is transmitted predominantly by heterosexual contact.

for seven (30 percent). Two females (9 per cent) reported injecting drug use. The remaining two cases in females were attributed to vertical transmission.

Twenty-six per cent of females were tested because of high-risk behaviour, with another five (22 per cent) tested because of HIV symptoms. Three females (13 per cent) were tested during antenatal screening.

Eleven (48 per cent) females reported that they had acquired their infection overseas and nine (39 per cent) in Australia. The place of acquisition of HIV infection was unknown for the remaining three (13 percent) females. Women were much more likely than men to identify their regular partner as the source of their HIV infection; 61 per cent as opposed to 24 per cent.

### HIV AMONG PERSONS WHO INJECT DRUGS IN 2001

There were 15 males diagnosed with HIV who had a history of injecting drug use. Of these, six men reported a history of male-to-male sexual contact; a decrease compared with the seven men in this category notified during 2000 and the 12 notified in 1999. Nine males, five of whom were from Indochina, reported injecting drug use alone; a slight decrease on the 10 notified in 2000 but still substantially higher than any other year since 1990 when 13 such males were notified.

Those with a history of injecting drug use without male-to-male sexual contact tend to be younger than all others diagnosed with HIV (an average of 28 years compared with 33 years).

### NEWLY ACQUIRED INFECTIONS DIAGNOSED DURING 2001

Those with newly acquired or incident HIV infection provide a picture of who is presently being affected by the HIV epidemic. Such individuals are identified on the basis of a previous negative HIV test and/or a seroconversion illness within the 12 months preceding HIV diagnosis. Seventy-two newly acquired HIV infections were notified; males accounted for 92 per cent and male-to-male sexual contact was reported by 92 per cent of these. Gay identified males are, however, more likely to be diagnosed with incident infection because many serially test for HIV and attend a gay or specialist medical practice in which the doctors are familiar with the clinical presentation of a seroconversion illness.

Data about incident infection must be treated with caution because many of the reports by patients of either seroconversion illnesses or previous negative tests are unable to be verified. If incident infection were

to be defined only on the basis of a confirmed prior negative test for HIV within the 12 months preceding diagnosis, (in which confirmation of the test result was provided by either the doctor or the laboratory), 31 people (all males) would be classified as incident cases. Of these 31 confirmed incident cases, 28 (90 per cent) reported male-to-male sexual contact. In comparison there were 34 confirmed incident HIV cases diagnosed in 2000, 18 in 1999, 23 in 1998 and 41 in 1997.

### HIV TESTING IN VICTORIA

Laboratories who undertake HIV testing in Victoria provide a range of de-identified information about the population undergoing HIV testing. This enables us to assess whether any observed increases in HIV diagnoses are likely to be related to an increase in testing, or whether the increase is due to some other reason. There has been no significant increase in the total number of tests performed annually in Victoria since 1995 (Table 3).

### DISCUSSION

The recent rise in HIV diagnoses in Victoria has occurred against a backdrop of increasing rates of other sexually transmitted infections (STI), in particular gonorrhoea.<sup>1</sup> Similar trends have also been observed in several other countries including the United Kingdom, the Netherlands, and several states in North America.<sup>2,3,4</sup> Data from San Francisco suggest that rates of new infections may also be starting to increase.<sup>9</sup> Rises in the number of STI infections are of concern because not only may they reflect an increase in high-risk sexual behaviour, but they may also facilitate the transmission of HIV.<sup>5</sup> Surveys of self-reported sexual behaviour among the gay community, both here and overseas, also give credence to the likelihood that the proportion of MSM who engage in unprotected anal intercourse, with partners of unknown or opposite serostatus, is increasing.<sup>6,7,8</sup>

The increase in new HIV diagnoses first observed in 2000 has continued throughout 2001, and may indicate that this is the beginning of an upward trend. During this two year period men who have sex with men have recorded an 88 per cent increase in new diagnoses of HIV and a 77 percent increase has been observed in heterosexual women. Persons who inject drugs, particularly those from Indochina, continue to record unacceptably high numbers of new diagnoses.

A number of projects have been, or are currently being, developed to identify the reasons behind the increase in HIV infection in particular sub-groups in Victoria.

**Table 3: HIV Testing by Sex and Year of Test, Victoria, 1993–2001**

	1993	1995	1997	1999	2001*
Males	31,089	56,564	61,672	51,311	53,845
Females	29,517	48,349	58,516	53,642	57,008
Unavailable	1,382	14,779	1,616	17,894	971
Total	61,988	119,692	121,804	122,847	111,824

\* Does not include data from one laboratory who reported a total of 13,185 tests in 1999

These include:

- a case-control study of transmission risks among gay men;
- a pilot record linkage study to identify the extent of the inter-relationship between MSM with gonorrhoea and MSM with HIV;
- a study investigating risk factors for HIV among persons from Indochina who inject drugs; and
- a project to better identify which heterosexual women are at risk of HIV and where and how they are becoming infected.

The Victorian Infectious Diseases Reference Laboratory has recently undertaken pilot testing of a new technique, the “detuned” Elisa, which enables incident HIV infections to be identified serologically. The information derived from this pilot study will be used to validate current epidemiological methods for identifying incident, or newly acquired, cases and will add to our understanding of who is currently becoming infected with HIV.

Improving our ability to identify incident cases would enable changing trends in transmission to be identified more quickly so that prompt public health action can be taken to limit any outbreak among particular groups. The 56 percent increase in HIV diagnoses between 1999 and 2001 is unacceptable. These figures may indicate a widespread complacency in the community about the risks of HIV infection and highlight the urgent need for current prevention efforts to be augmented by new strategies to reach those at risk of HIV.

## Recent Infection with HIV in Victoria 1999–2000 Determined by “Detuned” EIA

Alan Breschkin, Adam Enriquez and Mike Catton. Victorian Infectious Diseases Reference Laboratory

[alan.breschkin@mh.org.au](mailto:alan.breschkin@mh.org.au)

*The recent rise in the number of newly diagnosed cases of HIV infection in Victoria is a concern. We used a “detuned” HIV antibody test to determine the number of recent infections among newly diagnosed cases in 1999 and 2000. Over this two year period 30 per cent (1999) and 38 per cent (2000) of HIV diagnoses occurred within approximately 170 days of infection.*

### INTRODUCTION

There were 197 newly diagnosed cases of HIV infection in Victoria in 2000, a 41 per cent increase compared to 1999. These cases were all confirmed positive by Western blot testing at the Victorian Infectious Diseases Reference Laboratory, which serves as the state HIV reference laboratory. However, a new diagnosis of HIV does not necessarily indicate that the infection was recently acquired.

Previously, recent HIV infection could only be recognised based on a patient’s history of a recent negative or indeterminate antibody test, or clinical recognition of HIV seroconversion illness. In 1998, Jansson et al<sup>1</sup> at the

### ACKNOWLEDGEMENTS

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United States’ Centers for Disease Control and Prevention (CDC) reported a method that could identify recently acquired cases due to the low level and avidity of HIV antibody present in the early stage of infection. At the time of diagnosis, if the antibody level and avidity are low, the infection is likely to have occurred recently. The assay developed by Jansson et al<sup>1</sup> has become known as the less sensitive or “detuned” enzyme immunoassay (EIA) method. Patients who are HIV antibody positive on a current generation, high sensitivity assay, but negative on a low sensitivity (or “detuned”) test are presumed to be recently infected. Patients who are antibody positive on both methods are interpreted as having long-standing infection.

The less sensitive assay used by Jansson et al<sup>1</sup> was the Abbott Diagnostics HIV-1 lysate EIA (3A11). The authors estimated that the mean time interval for seroconversion on the Abbott 3A11 EIA was 129 + 20 days from time of infection. The use of the 3A11-detuned assay to detect early cases of HIV infection has been trialed in Australia.<sup>2</sup> However, Abbott subsequently discontinued production of this assay. CDC has validated an alternative "detuned" assay marketed by Organon Teknika. The seroconversion window period with the detuned Organon EIA has been estimated to be 170 days. The somewhat longer "detuned" period for the Organon assay is advantageous for public health purposes, as an incident infection is conventionally defined to be within 12 months of diagnosis. We have used the detuned Organon Teknika assay to test the newly diagnosed cases of HIV infection from 1999 and 2000 in Victoria.

## METHODS

All cases of HIV infection newly diagnosed in Victoria in 1999 and 2000 were originally tested by Abbott Diagnostics HIV-1/HIV-2 gO EIA and confirmed antibody positive by the Genelab Diagnostics HIV 2.2 Western blot assay. Retrospective "detuned" testing was performed using the Organon Teknika Vironostika HIV EIA (Code 59606), modified according to the CDC less sensitive protocol. The modifications were as follows:

- Very high specimen dilution (1:20,000 final)
- Reduced sample incubation time (30 min at 37°C)

The CDC assay calibrator, low positive control, and high positive control were kindly supplied by Mr Philip Cunningham (Centre for Immunology, St Vincent's Hospital, Sydney) and were included in triplicate in each assay run, along with the kit negative control. Each specimen was tested only once and not repeated in triplicate, as recommended in the CDC protocol, due to the limited availability of the calibration reagent.

**Table 1: Correlation of "Detuned" EIA\* Results With Days Post Serological Diagnosis of HIV in One Patient**

Bleed Date	Days Post HIV Diagnosis by Western blot	SOD* by "Detuned" EIA*
9.11.00	0	0.094
10.1.01	61	0.224
13.3.01	120	0.439
20.08.01	280	1.089

+ standardised optical density  
\* enzyme immunoassay

**Table 2: "Detuned" Antibody Testing of Newly Diagnosed HIV Cases**

Year of Diagnosis	Number of New Cases Diagnosed in Victoria	Number Tested by Detuned EIA	Number (%) Classified Recent Infection (SOD<1.0)	Number (%) Classified Intermediate Infection (1.0<SOD<2.0)	Number (%) Classified Past Infection (SOD>2.0)
1999	140	138	42 (30.4)	24 (17.4)	72 (52.2)
2000	197	192	73 (38.0)	24 (12.5)	95 (49.5)

The optical density (OD) for each control or specimen well was read at 405nm. The mean OD of the negative controls was subtracted from the specimen and calibrator OD's, and these values were used to calculate the standardized OD (SOD) for each specimen (SOD=specimen OD/calibrator OD). Specimen SOD's less than 1.00 were non-reactive in the less sensitive assay and considered to indicate recent seroconversion (within 170 days).

## RESULTS

### VALIDATION STUDIES

A small study was initially undertaken to validate our performance of the Vironostika less sensitive ("detuned") assay. Four specimens from patients known to have long-standing HIV infection and seven specimens from patients known to have seroconverted within three months were tested. The SOD's for all of the established infections were greater than 2.0 (range 5.25–7.40) and SOD's for recent seroconverters were well below 1.0 (range 0.00–0.62).

Serial serum samples from one patient who had a history of seroconversion were tested to compare estimates of the window period for the assay (Table 1). The patient was first tested EIA reactive, Western blot indeterminate group IV by our laboratory on a specimen taken 18 October 2000. A follow up bleed from 9 November 2000 was confirmed Western blot positive, consistent with full seroconversion to HIV. The detuned SOD on this specimen was 0.094, clearly indicative of recent infection. The SOD progressively increased on two follow-up bleeds but remained well below 1.00 at 120 days post diagnosis. At 280 days follow-up the SOD was 1.089, the point at which the detuned assay was borderline positive. For this individual, the detuned window period was significantly longer than the 170 day estimate based on the CDC trial.

### NEW HIV DIAGNOSES 1999 & 2000

Having established that the detuned Vironostika EIA was discriminating recently acquired from established HIV infection, our aim was to test as many of the newly diagnosed cases from 1999 and 2000 as possible.

Sera remaining from almost all cases of HIV diagnosed in 1999 and 2000 were tested (Table 2). Of the 1999 cases, 42 (30.4 per cent) were non-reactive (SOD<1.00) in the detuned EIA; by comparison 73 (38.0 per cent) of the 2000 cases were non-reactive. According to the CDC protocol a non-reactive result defines a case of early (i.e. within 170 days) HIV infection. The recently acquired infections occurred predominantly in men

who had sex with men—69 per cent (1999) and 78 per cent (2000). In 2000 seven cases of early infection occurred in heterosexual intravenous drug users.

An additional 24 cases each in 1999 and 2000 had SOD's in the range between 1.0–2.0. The CDC protocol recommends that such specimens be re-tested in triplicate prior to interpreting early infection status. In our study this was not done due to limited availability of assay reagents.

## DISCUSSION

The Vironostika “detuned” EIA allowed us to estimate the frequency of infection for almost all of the newly diagnosed HIV cases in Victoria for 1999 and 2000. One advantage of the “detuned” methodology is that it allows the detection of recent infection in a single blood specimen, without reliance on the availability of results from previous HIV antibody testing or recognition of a seroconversion illness. Using these latter surveillance methods, 30 per cent of cases in 1999 and 31 per cent in 2000 were determined to have acquired HIV infection within 12 months of diagnosis<sup>3</sup>. Our estimates of early HIV infection by “detuned” testing for 1999 (30.4 per cent) and 2000 (38.0 per cent) were similar to those obtained from surveillance. However, the surveillance estimates refer to infection acquired within 12 months of diagnosis, whereas the period recognised by the “detuned” assay is only 170 days, according to current CDC data. A collaborative study between VIDRL and the Macfarlane Burnet Institute for Medical Research and Public Health is planned to further evaluate the surveillance and “detuned” data on recently acquired infection.

The period defining recent infection may be revised as additional results are obtained with the Vironostika assay. For example, the period was approximately 280 days for a series of specimens we tested from a patient with a well-characterised history of acquisition of HIV

infection. We were unable to test specimens in triplicate due to limited availability of the assay calibrator. This may slightly diminish the accuracy of our estimates of recently acquired infection. However, we believe the comparison of 1999 and 2000, which was the main objective of our study, is valid.

To bring the “detuned” methodology closer into line with the conventional definition of incident HIV infection, it may be useful to include cases for which the detuned result is in the 1.0–2.0 range, in addition to those which are non-reactive. From our results, 47.8 per cent of cases in 1999 and 50.5 per cent in 2000 had a result of less than 2.0 and would be classified as recent infections if this wider definition were employed. Extensive testing would be required to establish the validity of this proposal.

Victoria experienced a disturbing rise in the number of newly diagnosed cases of HIV infection in 2000. From 1999 to 2000, newly diagnosed HIV cases went from 140 to 197, an increase of 41 per cent. Our “detuned” EIA results indicate that the cases of recent infection increased more sharply from 42 to 73, a rise of 73 per cent over this period.

It is hoped that these results, and further comparison of cases of recently acquired infections identified by the “detuned” assay and the surveillance methods, will contribute to a better understanding of current HIV transmission patterns and aid in the design of effective HIV prevention efforts.

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# Infectious Diseases News

## EMERGENCE OF INFLUENZA B/HONG KONG/330/2001-LIKE STRAINS

Dr A Hampson, World Health Organisation Collaborating Centre for Reference and Research on Influenza

The evolution of influenza B viruses differs from that of influenza A. For influenza A there is generally a progression along a single genetic lineage with new variants replacing their predecessors. Multiple lineages seldom co-exist for more than a short period of time. For influenza B, however, it is not uncommon for more than a single genetic lineage of virus to co-exist in the population for an extended period and these may be quite distinct antigenically.

Currently two genetically and antigenically distinguishable lineages of influenza B viruses are co-existing in the human population. There is genetic evidence that

these two groups began to diverge around 1969. However, it was not until the late 1980s when significant antigenic differences were recognized and the two lineages were then characterised according to the reference strains at that time as B/Victoria/2/87-like or B/Yamagata/16/88-like. B/Yamagata lineage viruses became the predominant influenza B viruses and from 1991 B/Victoria-like strains were observed only in Asia where their levels have fluctuated from year to year. The two lineages of influenza B have continued to evolve independently since that time, however, the genetic and corresponding antigenic changes in influenza B viruses occur at a slower rate than for the influenza A viruses, particularly A (H3N2) strains.

In May–June 2001 a number of B/Victoria-lineage viruses were observed in Hawaii, their first occurrence outside Asia in a decade. At that time there was no evidence of spread beyond Hawaii, however, a single

isolate was found in Canada in association with overseas travel. At the time of the WHO and Australian influenza vaccine formulation recommendations in September and October 2001 there had been no further spread. B/Sichuan/379/99-like strains (B/Yamagata-lineage) were the predominant influenza B viruses; therefore, a B/Sichuan-like strain was incorporated into vaccine formulations for the 2002 Southern winter.

Due to the lack of recent experience with virus strains of the B/Victoria lineage there is reduced background immunity to B/Hong Kong-like viruses in populations outside Asia and this is most pronounced in children. In addition, in these populations antibody responses to B/Hong Kong-like strains are of reduced frequency and magnitude in comparison to the vaccine strain when B/Sichuan-containing vaccines are administered. During the 2001–2002 Northern Hemisphere winter some further spread of B/Victoria lineage viruses was observed in Europe, North America and Africa. Although B/Sichuan-like strains were still more numerous overall it was recommended by WHO in February 2002 that a recent B/Victoria lineage virus (a B/Hong Kong/330/2001-like strain) should be included in the vaccine for the 2002–3 Northern Hemisphere winter.

It should be noted that the option of including two B strains in influenza vaccines, which may be considered in the current epidemiological situation, gives rise to a number of concerns. These include the possibility of increased lead-time for vaccine production and potential for reduced vaccine availability plus unresolved questions regarding the possibility of antigenic competition between the two related components. Vaccine trials conducted previously with a 1997 representative of the B/Victoria lineage suggested that viruses of this type might induce better responses to the B/Sichuan lineage than the converse situation, however this remains to be confirmed.

Currently both influenza B/Sichuan and B/Hong Kong-like viruses are circulating in Australia and have been seen in approximately equal numbers, however influenza A (H3N2) A/Moscow-like strains have been predominant for the year to date. Reports from Canada, where widespread activity due to B/Hong Kong-like strains occurred during the 2001–2 season indicate that the virus has mainly affected children, as might be expected, and that few cases were seen in vaccinated individuals who received the current vaccine containing a B/Sichuan-like strain.

The current Australian influenza vaccine represents a good match for the majority of circulating viruses, particularly the influenza A strains which are most commonly the cause of serious morbidity and mortality in the key target groups for whom vaccination is recommended. It has been reported that even when there is a significant antigenic difference between circulating strains and a vaccine component that vaccination may still provide a reduction in the severe outcomes of infection. It remains important, therefore, to continue to offer vaccination according to the NH&MRC guidelines.

## **A NEW INITIATIVE IN THE CONTROL OF NOSOCOMIAL INFECTIONS IN VICTORIA**

The Victorian Nosocomial Infection Surveillance Coordinating Centre commenced operation in April 2002. It is co-located with the Victorian Infectious Diseases Reference Laboratory. The Director of the Coordinating Centre is Dr Mike Richards, Mr Phil Russo is Deputy Director, and Dr Ann Bull is Epidemiologist. By June, the full complement of staff will include an Information Technology Officer, Infection Control Practitioners, Educational Development Officer and Secretary. An Infectious Diseases Physician will join the Centre in August.

The Coordinating Centre will establish and support the Victorian Nosocomial Infection Surveillance System (VICNISS). VICNISS will play a critical role in reducing hospital-acquired infections and associated morbidity and mortality. The ultimate goal of VICNISS is improving health.

The Coordinating Centre will receive data and report on public hospital infection rates for hospitals with more than 100 beds. This will provide reliable and meaningful information about Victorian hospital infection rates. The Centre will feed benchmarked information back to participating institutions both directly and through broad publication. Phase one will commence in 10 tertiary hospitals in 2002 and a system for smaller hospitals will be developed and piloted in 2004.

Further information can be accessed at <http://infectioncontrol.health.vic.gov.au/vicniss.htm>.

## **MURRAY VALLEY ENCEPHALITIS WARNING FOR NORTHERN AUSTRALIA**

The Department of Health & Community Services in the Northern Territory issued a Murray Valley encephalitis (MVE) warning for the Top End of the Northern Territory on 16 May 2002. The warning followed the seroconversion of sentinel chickens in and around the Darwin area.

The high-risk period for MVE in Northern Australia extends until the end of June. Given tourist numbers increase markedly at this time, travellers are urged to take precautions to avoid mosquito bites and to take the appropriate personal protective measures. Clinicians should consider MVE and Kunjin virus encephalitis in persons with viral encephalitis who have a history of travel to endemic areas.

## **SURVEILLANCE OF INVASIVE GROUP A STREPTOCOCCAL DISEASE**

Invasive group A streptococcal disease (IGAS) is a serious bacterial infection that has a case fatality rate approaching 30 per cent. The incidence and severity of this disease is increasing worldwide, and possibly Australia. The role that this disease plays in the overall burden of infectious disease in Australia is unknown.

In response to the need for both clinical and risk factor information, the Department of Human Services (DHS) and the Department of Paediatrics, University of

Melbourne have implemented an active surveillance system to research the burden of invasive group A streptococcal (GAS) disease in Victoria.

As part of the surveillance, all laboratories in Victoria that perform diagnostic microbiology have been asked to send notifications to DHS of all isolates of GAS from a normally sterile site (eg blood & CSF). We have also requested that laboratories send these isolates to the Microbiological Diagnostic Unit Public Health Laboratory (MDU) for further testing. In addition to investigating each primary case of IGAS in Victoria, we will be conducting carriage studies in family members and close contacts of primary cases.

For further information about this study, please contact Dr Jonathan Carapetis (03) 9345 4977 or Ms Loraine Kelpie (03) 9345 7081.

### OZFOODNET UPDATE

OzFoodNet is an initiative funded by the Commonwealth Department of Health and Ageing to enhance surveillance of food borne disease across Australia. In Victoria, the Communicable Diseases Section of the Department of Human Services manages this project.

Case-control studies for *Campylobacter* and *Salmonella* are major components of the OzFoodNet project nationwide; these commenced in Victoria in October 2001 and are now close to completion. Cases and controls have been interviewed using a standard questionnaire to

investigate risk factors for infection such as foods consumed, travel and contact with animals.

OzFoodNet Victoria is currently planning a general practice survey to be conducted in August/September 2002. Randomly selected practices across the state will be requested to complete a survey on the prevalence of gastrointestinal illness amongst their patients, the frequency and reasons for collection of faecal specimens from those with acute gastroenteritis and their treatment with antibiotics. The survey will be conducted by mail, and results will be analysed and reported to participating clinicians.

### PHASE II OF THE NATIONAL Q FEVER MANAGEMENT PLAN COMMENCES

In 2001, the Federal Government offered \$10.6 million dollars to all States and Territories to implement a Q Fever screening and vaccination program aimed at reducing the incidence of Q fever in high-risk groups. The initial focus was abattoir workers. Additional funds have now been allocated for 2002/2003 to extend the program to include livestock and dairy farmers.

To ensure the Q fever campaign is successful, training for regional and rural general practitioners is underway. Once training has been established, the Department will hold a series of mass screening and immunisation clinics. A pilot project for shearers in the far west of the state has already been a success, with more than 80 attending a screening session and returning a week later for immunisation

## Privacy Legislation and Notifiable Diseases in Victoria

Kerry-Ann O'Grady, Communicable Diseases Section, Department of Human Services.

Kerry-Ann.O'Grady@dhs.vic.gov.au

### INTRODUCTION

Public health surveillance systems are critical to the protection of the health and safety of communities and their effectiveness is dependent on accurate and timely data from several sources. However, there is an increasing emphasis on the promotion of the right to privacy and an individual's ability to control their personal information. While the protection of privacy is critical to maintaining community confidence in public health activities, these developments have led to increased tension between the protection of an individual's privacy and the protection of health and safety.<sup>1-3</sup>

This has particular relevance for the rapid growth in information technology in all areas of health. The increasing ability of governments and private organisations to collect large amounts of personal information and from multiple data sources allows the creation of comprehensive health information histories on individuals and their communities.

Here, we review new privacy legislation in Victoria and at the national level, outline the key aspects of the legislation, and discuss the implications for surveillance of notifiable infectious diseases.

### STATE LEGISLATION

#### HEALTH RECORDS ACT 2001

The *Health Records Act 2001* (HRA)<sup>4</sup> establishes privacy standards for the handling of health information. Compliance with the Act is required from 1 July 2002 and applies to all Victorian organisations—profit and non-profit, public and private sector—and people who handle health information. Under the Act, health information that is collected, held or used by organisations must be handled in accordance with the Health Privacy Principles in Schedule 1.

For the purposes of the Act, health information is defined to include personal (identifying) information that is collected by an organisation in the course of

providing a health, disability or aged care service to a person, or information that relates to a person's health or disabilities.

### INFORMATION PRIVACY ACT 2000

In December 2000, the Victorian Government passed the *Information Privacy Act 2000* (IPA)<sup>5</sup> to establish a legal framework for the responsible collection and handling of personal information in the Victorian public sector. The Act came into partial effect on 1 September 2001 and compliance with the principles is a legal obligation from 1 September 2002. This legislation will cover the Victorian public sector and will also apply to organisations providing services funded by Victorian Government departments. The IPA does not cover health information.

For the purposes of the Act, personal information is defined as information or an opinion (including information or an opinion forming part of a database), that is recorded in any form and whether true or not, about an individual whose identity is apparent, or can reasonably be ascertained, from the information or opinion, but does not include information of a kind to which Schedule 2 (that is, health information) applies.

The Act has particular provisions for the collection and use of sensitive information which includes: racial or ethnic origin; political opinions; membership of a political association; religious beliefs or affiliations; philosophical beliefs; membership of a professional or trade association; membership of a trade union; sexual preferences or practices; and/or criminal record.

### COMMONWEALTH LEGISLATION

#### THE PRIVACY AMENDMENT (PRIVATE SECTOR) ACT 2000

The *Privacy Amendment (Private Sector) Act 2000* (PAA)<sup>6</sup> amends the *Commonwealth Privacy Act 1988* to establish minimum privacy standards for the Australian private sector, including for all private sector organisations that provide health services and hold health information (as defined above).<sup>7</sup> This legislation takes precedence over State or Territory legislation, only to the extent that these laws are inconsistent.

#### KEY COMPONENTS OF THE HEALTH RECORDS ACT

The legislative requirements are based on ten to twelve privacy principles, which are closely related and largely consistent between the three Acts (Table 1). The key aspect of each of the principles is the manner in which health and identifying information is handled either with or without the person's consent.

The Victorian Health Services Commissioner has the ability to issue statutory guidelines under the HRA relating to some or all of the privacy principles. Currently there are two such guidelines, respectively covering the transfer or closure of a health service and the collection and use of identifying health information in research.<sup>8,9</sup>

The Department of Human Services has developed comprehensive guidelines, which assist in interpreting

**Table 1: Privacy Principles in Victorian and Commonwealth Privacy Legislation**

Principle	Health Records Act	Information Privacy Act	Privacy Amendment Act
Collection	✓	✓	✓
Use and Disclosure	✓	✓	✓
Quality	✓	✓	✓
Security	✓	✓	✓
Retention and Disposal	✓	✓	NE
Openness	✓	✓	✓
Access and Correction	✓	✓	✓
Unique Identifiers	✓	✓	✓
Anonymity	✓	✓	✓
Transborder Data Flows	✓	✓	✓
Sensitive Information	NE	✓	✓
Transfer or Closure of a Health Service Provider	✓	NE	NE

NE – No equivalent

and applying the principles to the management of personal and health information. These guidelines apply to all DHS services, employees and funded agencies, and can be accessed on the Department's website at <http://www.dhs.vic.gov.au/privacy>. Non-DHS service providers may also find the information relevant.

### PRIVACY LAWS AND NOTIFIABLE INFECTIOUS DISEASES

The purpose of the collection of notifiable diseases information is to monitor and control infectious diseases in the community and to protect public health and safety.

The privacy laws are complementary to existing laws which override privacy law to the extent that they apply. Privacy laws do not negate the obligations imposed on doctors, laboratories and persons to notify a gazetted infectious disease by the *Health Act 1958* and *Health (Infectious Diseases) Regulations 2001*. Notifiers are required by law to provide specific information, which includes patient identifiers and demographics, occupation (or school or child-care attended), indigenous status, risk factors, suspected modes of transmission, onset dates and mortality indicators, other relevant comments and notifier identification.

Similarly, the *Health Act 1958* specifies that "...persons at risk of contracting or being infected with an infectious diseases must take all reasonable precautions to avoid contracting or being infected with the disease...and must ascertain whether he or she is infected; and what precautions should be taken to prevent others being infected;...and must take necessary measures to ensure that others are not knowingly placed at risk of becoming infected."<sup>10</sup>

Doctors and laboratories do not need to obtain consent from patients to provide notification information, however they have an obligation under the HRA to

inform patients that their information is being provided to the Department. Similarly health information can be collected without consent if there is imminent and serious threat to an individual or public health and safety; these provisions may apply during investigations of outbreaks of infectious diseases. It is, however, accepted practice that the Department seeks the consent of both the diagnosing doctor and affected individual when investigating notified cases and outbreaks, and the success of these investigations is dependent on a professional and trusting relationship between parties.

The Department of Human Services has recently reviewed all details requested on the principal notification form, and supplementary forms, to ensure that information collected complies with state and federal legislation. Similarly the need to demonstrate due process in establishing compliance with the privacy principles has been addressed in Departmental protocols for the response to, and management of, notifications. The Communicable Diseases Section has produced fact sheets to assist providers and their patients in understanding the notification process and the maintenance of the privacy of all information collected. These are available at <http://www.dhs.vic.gov.au/phd/>.

## CONCLUSION

Consideration of the rights of the individual versus the public good has become increasingly important in public health, heightened by the emergence of diseases such HIV/AIDS and hepatitis C and the development of both national and state legislation to protect the privacy of individuals. While there will always be difficulties in reconciling competing interests, the

success of disease surveillance and control programs is highly dependent on health service providers and public health units taking due care to protect an individual's privacy. The new privacy laws demand that providers are aware of their responsibilities, and take appropriate measures to ensure their management of personal and health information is in concordance with the privacy principles. To maintain public support for health surveillance, health care professionals should ensure the community and their clients are aware of the rationale for health data collections and the contribution they make to public health and safety.

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# Vaccination Against Serogroup C Meningococcal Disease

Rosemary Lester, Helen Pitcher, Stephen Pellissier, Prevention and National Health Priorities Section, Priscilla Robinson, Communicable Diseases Section, Department of Human Services.

[rosemary.lester@dhs.vic.gov.au](mailto:rosemary.lester@dhs.vic.gov.au)

## BACKGROUND

Although there are many serogroups of meningococci, serogroups B and C cause most disease in Australia, with an additional handful due to serogroups W125 and Y, and occasional single cases due to serogroups 29E, X and Z.<sup>1</sup> Within the serogroups there are important differences,<sup>2,3</sup> and public health officials and microbiologists use these to track new strains and identify potential outbreaks.<sup>4,5</sup>

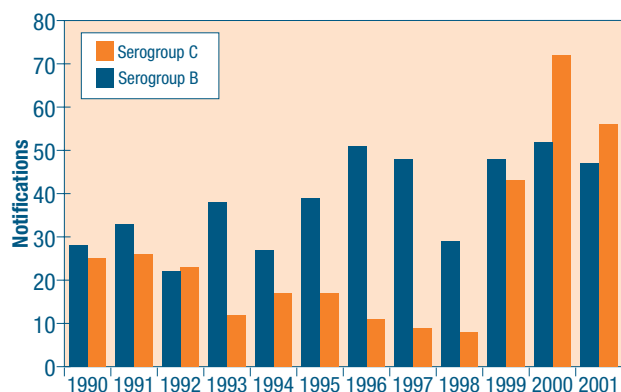
In most developed countries, serogroup B causes about twice as much meningococcal disease as serogroup C,<sup>6–8</sup> but in recent years there has been more serogroup C than serogroup B in Victoria (Figure 1).<sup>9</sup>

There is no vaccine to protect from serogroup B disease in Australia, and despite considerable research, remains only a distant prospect.

Following a similar rise in serogroup C cases in the United Kingdom and the Republic of Ireland, meningococcal serogroup C conjugate (MCC) vaccine was introduced into the routine immunisation schedule.<sup>10</sup>

Since being licensed for use in Australia in February 2002, the demand for the new conjugate vaccine has been proportionately higher in Victoria than in other states. The Public Health Immunisation and Communicable Diseases Units have answered about 25 calls a day, and distributed large amounts of information about the vaccine. Of the vaccine distributed so far in

**Figure 1: Notifications of Invasive Meningococcal Disease Due to Serogroups B and C, Victoria, 1990–2001**



Australia, Victorian health care providers have used 53 per cent, with the other states and territories in Australia combined having provided 47 per cent.

However, as there are now two types of vaccines that protect against meningococcal serogroup C, polysaccharide and conjugated vaccines which are different in several significant ways, it is important that the differences between them are clearly understood by immunisation providers, public health staff giving advice, and the public alike.

### MENINGOCOCCAL POLYVALENT POLYSACCHARIDE VACCINE

The polysaccharide vaccine covers several groups (A, C, W135, & Y), and has been available for nearly fifty years.<sup>11</sup> It has been successfully used in the past to stop outbreaks of meningococcal disease, including in Victoria.<sup>12</sup> There are however several disadvantages of this vaccine:<sup>11</sup>

- It produces a diminished response in young children and for that reason is not licensed for use in children under the age of two years;
- It does not provide long-term protection. At best immunity lasts for five years, and at worst this might be as little as one year, particularly in children; and
- Response to this vaccine is diminished after the second or third dose. Hyporesponsiveness is a real concern in vaccines being used for public health protection.

These vaccines provide protection from several serogroups, but as there has been no serogroup A disease in Australia since the early 1990s<sup>13</sup> there is no need to vaccinate the population. However, it is a useful vaccine for travellers to places such as Africa and Asia, where serogroup A strains are the cause of regular outbreaks,<sup>14</sup> and pilgrims to the Hajj where serogroup W135 strains have recently been a problem.<sup>15</sup> The two polysaccharide vaccines are called *Mencevax ACWY* (Glaxo SmithKline) and *Menomune* (CSL/Pasteur Merieux).

### MENINGOCOCCAL SEROGROUP C CONJUGATE VACCINE

The newly available conjugate vaccine overcomes the main problems with the polysaccharide vaccine.<sup>16,17</sup>

- It can be given to all age groups including babies over six weeks of age.
- At this point in time research provides evidence that the vaccine will provide long lasting immunity (at least 15 years).
- Either conjugate or polysaccharide vaccine may be used as a booster.

The currently available MCC vaccine is called **Meningitec** (Wyeth). **Meningitec** vaccine is an inactivated vaccine so it can be administered in a separate syringe, at a separate site on the same day as other vaccines or at any time before or after other vaccines. Two other MCC vaccines are likely to be licensed in Australia in the near future, called **Menjugate** (Chiron/CSL) and **NeisVac-C** (Baxter). There are only minor technical differences between these vaccines, and they are equally effective.<sup>18</sup> Meningitec and Menjugate are conjugated to a diphtheria protein and NeisVac-C to a tetanus protein, both of which are commonly used in other conjugated vaccines.

MCC vaccine should be delayed in people who have a high fever on the day of the injection or who are pregnant. Administration technique may need to be varied in people who have severe latex sensitivity (because the stopper is made of rubber) and in thrombocytopenia or coagulation disorder (for whom intramuscular injection may be contraindicated). MCC vaccine is contraindicated in people who have previously had a severe reaction to MCC, diphtheria or tetanus vaccines.

There are no beef-derived components in the finished MCC vaccine, although casein (a milk product) is used during the manufacturing process for Meningitec and NeisVac-C. The casein is from BSE-free countries, including Australia. MCC vaccines are also free from egg and wheat products, nuts, food colouring, penicillin, aspirin, or any milk products of any kind, so people with allergies to these items may safely be given this vaccine.

MCC vaccines are not live vaccines. They will not cause meningitis or septicaemia as a side effect. As with other vaccines, the risk of anaphylaxis is very rare. A few side effects have been noted with MCC vaccine, most of them minor. The most common include inflammation at the injection site, irritability in young children, headache in about 10 per cent of older individuals, and sometimes fever over the next few days. The consensus is that the side effects are fewer and milder than after the DTPa vaccine.<sup>19</sup> There does not seem to be an increase in side effects when this vaccine is given at the same time as others.

The conjugated vaccine can be given at the same time as other routine vaccines including DTPa, Hib, MMR, Td, polio, varicella, pneumococcal and influenza. It should be given separately and not mixed with any of these in the syringe. There are no published data on co-administration with hepatitis B, but it is not expected that there would be an adverse interaction. Similarly,

there is no published information about administration with or soon after BCG vaccination, although it is known to have been not problematic when given within a month.

If people have been given meningococcal polysaccharide vaccine, for maximum immune response preferably six months should elapse before giving the conjugate vaccine,<sup>20</sup> unless there is an urgent need to provide protection in which case it may safely be administered after a gap of two weeks. Similarly, at least two weeks should be left after giving the conjugate vaccine prior to administration of multivalent polysaccharide vaccine.

## SUMMARY

Remember that there are no vaccines for serogroup B meningococcal disease in Australia.

Think of meningococcal polysaccharide vaccines as travel vaccines, which primarily protect from serogroups A and W135 abroad. Think of MCC vaccine as long-term protection from serogroup C disease for all age groups. MCC vaccines can be given at the same time as other vaccines. There are very few contraindications to—or side effects from—MCC vaccines.

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# Immunisation Update

Stephen Pellissier, Prevention and National Health Priorities Section, Department of Human Services

[stephen.pellissier@dhs.vic.gov.au](mailto:stephen.pellissier@dhs.vic.gov.au)

*Data cited in this report are based on the Australian Childhood Immunisation Register (ACIR) Coverage Report. The ACIR report measured immunisation coverage at 31 March 2002 for children aged 12–<15 months and 24–<27 months at 31 December 2001. 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.*

The following table (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 Michele Sands ([michele.sands@dhs.vic.gov.au](mailto:michele.sands@dhs.vic.gov.au)).

**Table 1: Childhood Immunisation Coverage, by Local Government Area (LGA), Victoria, March 2002.**

Age Group	% Fully Immunised	Local Government Area (LGA)	Total LGAs (% LGAs)
12–<15 months	95%+	Ararat (RC), Buloke (S), Campaspe (S), Corangamite (S), Delatite (S), Gannawarra (S), Hindmarsh (S), Loddon (S), Moorabool (S), Moyne (S), Northern Grampians (S), Swan Hill (RC), Wangaratta (RC), Warrnambool (C), West Wimmera (S), Yarriambiack (S)	16 (21%)
	90–94%	Alpine (S), Ballarat (C), Baw Baw (S), Bayside (C), Boroondara (C), Brimbank (C), Colac-Otway (S), Darebin (C), Glen Eira (C), Glenelg (S), Golden Plains (S), Greater Bendigo (C), Greater Geelong (C), Greater Shepparton (C), Hobsons Bay (C), Horsham (RC), Indigo (S), Kingston (C), Knox (C), LaTrobe (C), Macedon Ranges (S), Maribyrnong (C), Melton (S), Mildura (RC), Mitchell (S), Moira (S), Moonee Valley (C), Moreland (C), South Gippsland (S), Southern Grampians (S), Towong (S), Wellington (S), Whitehorse (C), Whittlesea (C), Wodonga (RC), Wyndham (C)	36 (46%)
	85–89%	Banyule (C), Bass Coast (S), Cardinia (S), Casey (C), East Gippsland (S), Frankston (C), Greater Dandenong (C), Hepburn (S), Hume (C), Manningham (C), Maroondah (C), Melbourne (C), Monash (C), Mornington Peninsula (S), Murrindindi (S), Nillumbik (S), Port Phillip (C), Queenscliffe (B), Stonnington (C), Surf Coast (S), Yarra (C), Yarra Ranges (S)	22 (28%)
	80–84%	Central Goldfields (S), Mount Alexander (S), Strathbogie (S)	3 (4%)
	<80%	Pyrenees (S)	1 (1%)
24–<27 months	95%+	Alpine (S), Ararat (RC), Central Goldfields (S), Corangamite (S), Gannawarra (S), Glenelg (S), Hindmarsh (S), Horsham (RC), Loddon (S), Moira (S), Murrindindi (S), Queenscliffe (B), Southern Grampians (S), Swan Hill (RC), West Wimmera (S), Yarriambiack (S)	16 (21%)
	90–94%	Ballarat (C), Buloke (S), Campaspe (S), Cardinia (S), Delatite (S), East Gippsland (S), Glen Eira (C), Greater Bendigo (C), Greater Geelong (C), Indigo (S), Knox (C), LaTrobe (C), Maribyrnong (C), Maroondah (C), Melton (S), Mitchell (S), Moorabool (S), Northern Grampians (S), South Gippsland (S), Surf Coast (S), Towong (S), Warrnambool (C), Whitehorse (C), Whittlesea (C), Wodonga (RC)	25 (32%)
	85–89%	Banyule (C), Bass Coast (S), Baw Baw (S), Bayside (C), Brimbank (C), Casey (C), Colac-Otway (S), Darebin (C), Frankston (C), Golden Plains (S), Greater Dandenong (C), Greater Shepparton (C), Hobsons Bay (C), Hume (C), Kingston (C), Macedon Ranges (S), Manningham (C), Mildura (RC), Moonee Valley (C), Moreland (C), Mornington Peninsula (S), Mount Alexander (S), Moyne (S), Nillumbik (S), Stonnington (C), Wellington (C), Wyndham (C), Yarra (C), Yarra Ranges (S)	29 (37%)
	80–84%	Boroondara (C), Monash (C), Port Phillip (C), Pyrenees (S), Strathbogie (S), Wangaratta (RC)	6 (8%)
	<80%	Hepburn (S), Melbourne (C)	2 (2%)

## 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 31 March 2002. The report has been produced by the Communicable Diseases Section, Department of Human Services, 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, University of Melbourne; and the Melbourne Sexual Health Centre.*

*Table 17 includes historical comparisons of selected diseases with 2001 data at both the State and regional level. Summary data at local government level for the diseases listed are available from Greg Mathews, Communicable Diseases Section, Department of Human Services (03 9637 4108). There have been no notifications of anthrax, Australian arboencephalitis, botulism, cholera, diphtheria, Japanese encephalitis, Kunjin virus, plague, poliomyelitis, rabies, tetanus, viral haemorrhagic fevers or yellow fever.*

*For comments or queries related to data for sexually transmissible diseases, contact the Communicable Diseases Section, Department of Human Services (03 9637 4126). For HIV/AIDS enquiries, contact Cathy Keenan or Dr Nick Crofts, Epidemiology and Social Research Unit, The Macfarlane Burnet Institute for Medical Research and Public Health (03 9282 2290).*

*Fortnightly surveillance data from the Victorian Infectious Diseases Reference Laboratory are available at <http://www.dhs.vic.gov.au/vidrll>. All 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.dhs.vic.gov.au/phd/hprot/inf\\_dis/bluebook/index.htm](http://www.dhs.vic.gov.au/phd/hprot/inf_dis/bluebook/index.htm).*

## ENTERIC DISEASES

For the first quarter of 2002 there were 32 outbreaks of gastrointestinal illness reported to the Department (Table 1). Of these, seven outbreaks were considered to be food borne or probable food borne outbreaks. Of the remaining 25, 20 were suspected to have been transmitted by person-to-person contact (Norwalk-Like Virus (12), Hepatitis A (1), Rotavirus (1), suspect viral gastroenteritis (6)).

### CRYPTOSPORIDIOSIS

An outbreak of gastroenteritis in a caravan park in a rural area of Victoria was reported on 5 February 2002. Probable cases were defined as a person who attended the caravan park between 26–29 January 2002 and had onset of a gastrointestinal illness consisting of two or more symptoms of diarrhoea, abdominal pain and nausea. Cases were confirmed if *C. parvum* was isolated from a faecal specimen.

Eleven confirmed and eight probable cases were identified amongst a group of 21 persons attending the park over the weekend. The suspected source was the park's swimming pool where all cases had been swimming. The two people who were not ill had not been swimming. Environmental investigations suggested there were ongoing problems with ducks swimming in the pool. Water and duck faecal samples were negative for *C. parvum*. The pool was closed until results of water samples were obtained and the pool owners undertook superchlorination and other pool hygiene procedures.

## HEPATITIS A

On 9 January 2002, the Communicable Diseases Section was notified of a case of Hepatitis A in a teacher at a childcare centre in southern Victoria. Between 9 January and 11 February, 11 confirmed cases were identified amongst teachers, siblings and parents of children who attended the centre, with onsets of illness between 28 December 2001 and 9 February 2002. Control measures included providing information to families, primary schools and teachers in the area about the outbreak and prevention measures, and clean-up procedures at the centre.

Recommendations for testing of potentially exposed persons for Hepatitis A IgM and the receipt of immunoglobulin were based on the last possible day of exposure, incubation period of Hepatitis A, and the onset dates of the confirmed cases. While immunoglobulin was recommended for the families of six cases, it was not given as parents refused or because treating doctors had given them Hepatitis A vaccine instead.

### FESTIVAL OUTBREAK

A large outbreak of food poisoning was reported in Melbourne in late March. Over 272 people sought medical care and although 15 were admitted to hospital overnight, symptoms were short-lived. The onset of gastroenteritis was between one and four hours after consumption of a meal of rice, lamb and potatoes served at a New Year Islamic festival. *Bacillus cereus* and *Staphylococcus aureus* were confirmed as the cause of the outbreak. Inadequate storage and handling of leftover

**Table 1: Outbreaks of Gastrointestinal Illness, 1 Jan–31 Mar 2002**

Setting	Outbreaks	Persons Affected	Pathogen/Toxin (number of outbreaks)
Restaurant / Reception / other food premises / specific food	6	93	Norwalk-like Virus (1) Suspect viral (1) Unknown (4)
Aged / disability /Health Care Institution	13	401	Norwalk-like Virus (8) Rotavirus (1) Suspected viral (3) Unknown (1)
Recreation / holiday / Camp	6	102	Norwalk-like Virus (2) Cryptosporidium (1) Suspected viral (3)
Children's Service / School	2	19	Hepatitis A (1) Norwalk-like Virus (1)
Family / social gathering	3	35	Salmonella Typhimurium 135 (1) Unknown (2)
Workplace	1	4	Norwalk-like Virus (1)
Festival	1	272	Staphylococcus aureus enterotoxin & Bacillus cereus (1)
TOTAL	32	926	Norwalk-like Virus (13) Cryptosporidium (1) Hepatitis A (1) Rotavirus (1) Salmonella Typhimurium 135 (1) Staphylococcus aureus enterotoxin & Bacillus cereus (1) Suspect viral (7) Unknown (7)

food was thought to be the mechanism by which food became unsuitable for consumption.

## BLOODBORNE VIRUSES

### ACUTE HEPATITIS B

Notifications of acute hepatitis B increased in 2000 to 115 cases, an 18 per cent increase from 1999. This increase was partly due to more complete reporting from hospital laboratories.

Notifications continued to increase in 2001 with a marked increase in May and June (Figure 1). A total of 196 cases of acute hepatitis B were notified in 2001, a 58 per cent increase from 2000.

Routine surveillance had identified the outbreak, which also identified an increase in injecting drug use (IDU) as a risk factor. In 1997 and 1998, approximately 30 per cent of cases were reported to have a history of IDU, which increased from 53 per cent in 1999 to 61 per cent in 2001. To improve the identification of risk factors for acute hepatitis B infection, enhanced surveillance

was undertaken from 1 July to 31 December. This process involved contacting cases directly to obtain illness histories and risk factor information, rather than from their treating doctor only.

Sixty-three (32 per cent) cases were not symptomatic and were tested for other reasons. Seventy-three per cent of cases were born in Australia. Risk factors identified during both the routine and enhanced surveillance periods are outlined in table 2. Seventy-seven cases (40 per cent) were co-infected with another blood borne virus; 75 with hepatitis C and two with HIV. Acute hepatitis C infection was also identified in nine cases.

Interviews with persons with a history of IDU during the enhanced surveillance indicates that some are still sharing needles, syringes and other equipment. Health care workers are encouraged to promote hepatitis B vaccination, safe injecting practises and safe sex for all their clients; especially those considered to be engaging in unsafe behaviours.

### NEWLY ACQUIRED HEPATITIS C

Of the 1400 notifications of hepatitis C in the first quarter of 2002, 20 (1.4 per cent) were classified as newly acquired. Of these, 12 (60 per cent) were male with a median age of 23 years (range: 16–45). For the eight females, the median age was 26 years (range: 15–40). Injecting drug use was identified as a risk factor in 16 cases (80 per cent). Seroconversion to HCV antibodies in the preceding 24 months was the basis of diagnosis for 16 cases (80 per cent).

## VACCINE PREVENTABLE DISEASES

### HAEMOPHILUS INFLUENZAE TYPE B

There was one notification of *Haemophilus influenzae* type b septicaemia in March. The adult case had been admitted for elective surgery to remove a pancreatic cyst and developed fevers and a productive cough the day of the surgery. Sputum cultures were also positive for non-typable *Haemophilus influenzae*. The case was admitted to intensive care and treated successfully with intravenous ceftriaxone.

### INVASIVE PNEUMOCOCCAL DISEASE

Between 1 January and 31 March 2002, 65 notifications of invasive pneumococcal disease were received for 32 males and 33 females. The median age of cases was 33 years (range 0–87 years). There were no notifications for persons of Aboriginal and/or Torres Strait Islander origin. Twenty-three cases (35 per cent) were aged less than five years and 24 cases (37 per cent) were aged greater than 50 years. There were five deaths (case fatality rate of 7.6 per cent); one in a child aged five years and four in adults aged 43, 50, 68 and 84 years. Of those who died, all were unvaccinated and three were eligible for the polysaccharide pneumococcal vaccine at no charge.

Of the notifications for which serotype was known (n = 41, 63 per cent), 100 per cent were serotypes included in the 23 valent polysaccharide vaccine and 87 per cent

Figure 1: Acute Hepatitis B Notifications, by Onset Month, Victoria, 1998–2001

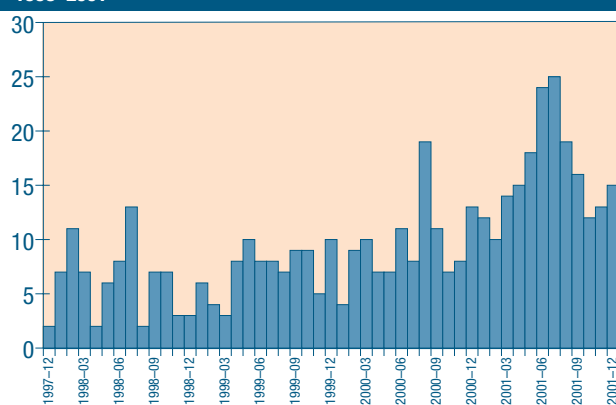


Table 2: Risk Factors For Acute Hepatitis B Infection, Victoria, 2001

Risk factor	Jan–June Routine	July–Dec Enhanced	Total (Per cent)
IDU	49	50*	94 (48)
Heterosexual contact <sup>#</sup>	22	19	41 (21)
IDU + heterosexual contact	12	13	25 (13)
No risk identified	3	9	12 (6)
Non occupational exposure to blood	2	5	7 (3.5)
Male to male sexual contact	1	5	6 (3)
Other drug use <sup>*†</sup>	2	4	6 (3)
Overseas born	0	2	2 (1)
Household contact <sup>#</sup>	0	1	1 (0.5)
Iatrogenic	0	1	1 (0.5)
No information available	1	0	1 (0.5)
<b>Total</b>	<b>87</b>	<b>109</b>	<b>196 (100)</b>

\* Fist fight/current IDU 1 case

<sup>#</sup> Contact with a hepatitis B infected person

<sup>\*†</sup> Bongs, snorting equipment

were included in the 7 valent conjugate vaccine. Three cases had documented evidence of receipt of the polysaccharide vaccine within the previous five years, and one case (aged 33 years with asplenia) had received a single dose of the conjugate vaccine. All vaccinated cases were due to strains contained in both vaccines (23 F, 14 and 9V).

The polysaccharide pneumococcal vaccine is available free of charge to all persons aged 65 years and older, Aboriginal and/or Torres Strait Islanders persons aged 50 years and over and those aged 15 to 49 years with certain health risks, and for all public hospital outpatients and inpatients with chronic cardiac disorders, diabetes and metabolic/renal disorders, asthma and chronic respiratory disorders and immunosuppression. The conjugate vaccine is not recommended for use in adults as the polysaccharide vaccine provides protection against a broader range of serotypes.

## OTHER NOTIFIABLE DISEASES

### LEGIONELLOSIS

Between 8 to 30 April 2002, the Department was notified of eight cases of *Legionella pneumophila* serogroup 1 in visitors to the centre of Melbourne in the vicinity of the Swanston Street and Collins Street junction. Three cases worked in the central CBD, two visited, as part of their work duties, and the other three cases were casual visitors.

Due to the cluster of cases in place and time, an investigation was commenced. All cooling towers in the area bounded by Flinders Lane and Bourke Street between Elizabeth Street to the west and within approximately 100 metres to the east of Swanston Street were sampled and disinfected. One tower tested positive for *L pneumophila* 1 at high levels while another grew low levels of a *Legionella* strain unrelated to the human cases.

No cases visited or worked in or adjacent to the building with a tower positive for *L pneumophila* 1. Despite obtaining human specimens for culture, *Legionella* was not grown from any sputum samples. Without isolates for subtyping it is difficult to confirm the association between cases and a positive cooling tower.

### MENINGOCOCCAL DISEASE

In the first quarter of 2002 DHS received 37 notifications of invasive meningococcal disease (Table 3). Of these, eight were confirmed as serogroup B, eleven as serogroup C, and two as W135 (unconnected to each other). There were a further six cases who were confirmed by laboratory tests (eg. gram negative diplococci in the CSF) but for whom serogroup information is unavailable, and 10 cases with clinically compatible illnesses for whom laboratory tests were negative or no appropriate specimens were available.

Prior to the introduction of PCR as a diagnostic tool, one third of cases were diagnosed on the basis of a clinically compatible illness. That we do not know the serogroup for 10 of the 13 cases under 15 years old, despite

**Table 3: Notifications of Meningococcal Disease, by Age Group and Serogroup, Victoria, Jan–Mar 2002.**

	< 5 years	5–14 years	15–29 years	≥30 years	Total
Serogroup B	1	0	6	1	8
Serogroup C	0	1	8	2	11
Other or unknown serogroup	8	3	4	3	18
TOTAL	9	4	18	6	37

laboratory confirmation for four, may reflect a reluctance to collect cerebrospinal fluid in children with meningitis. Two young adult cases—one confirmed as serogroup C and the other a laboratory confirmed case—were acquaintances that had attended the same party.

The geographical distribution is different for serogroups B and C. Serogroup B cases have been widely distributed, notified from the Northern Metropolitan, Barwon South West, Grampians, Hume, Western and Southern Metropolitan regions, and none from Loddon-Mallee and Gippsland. Serogroup C cases have been largely from the Metropolitan area, with three each from the Northern and Southern Metropolitan areas, two from Eastern Metropolitan region, and one from Geelong in Barwon South West.

### LEPROSY

The Department was notified of the first case of leprosy (Hansen's Disease) since 1999, in an Indian born man who had been living in Australia and returned to visit India in 2000. The patient had a history of symptoms as a child, which resolved without treatment. More recently he developed areas of hypopigmentation on his leg, buttock and then on one side of his face. Whilst in India he was diagnosed with leprosy following biopsies that were suggestive of borderline tuberculoid / borderline lepromatous Hansen's disease.

The patient was commenced on treatment of rifampicin, ofloxacin and cynomycin monthly in addition to dapsone and clofazamine daily for twelve months. On return to Australia the patient will continue on rifampicin monthly and dapsone daily for a further two years to ensure complete resolution. Follow up of family contacts requires that child household contacts should receive BCG vaccination.

## VECTOR BORNE DISEASES

### BARMAH FOREST VIRUS DISEASE

An outbreak of Barmah Forest Virus disease (BFVd) was identified among residents and visitors to the Gippsland area in the first five months of 2002. In total 47 cases of BFVd were notified to DHS, and 40 were interviewed (85 per cent). Of the 47 cases, 38 were from the Gippsland area, 34 within the East Gippsland Shire. Four cases were linked to Gippsland as visitors and the remaining five cases had no link to Gippsland and were infected in other areas. The most common symptoms among those interviewed were arthralgia, (90 per cent), lethargy (90 per cent) and a maculopapular rash (73 per cent).

Over the same period of time there were only 21 notifications of Ross River Virus disease (RRVd) in Victoria, compared to 326 for 2001. This was the first time since data was available that BFVd cases outnumbered RRVd cases. This outbreak had the highest number of cases in the first five months of the year since the outbreak of BFVd and RRVd in the Loddon Mallee region of Victoria in 1993 in which there were 53 cases of BFVd and 1109 cases of RRVd.

## SEXUALLY TRANSMISSIBLE INFECTIONS

### ACQUIRED IMMUNE DEFICIENCY SYNDROME

There were nine cases of AIDS notified during the first quarter of 2002—six males and three females (Table 4). Three men (50 per cent) attributed their infection to heterosexual exposure, of the remainder one man was from a high prevalence country, one reported injecting drug use as their only exposure and one attributed his exposure to male-to-male sexual contact. Two of the cases in females were attributed to sexual contact and the remaining female was from a high prevalence country.

Of the 59 individuals notified with AIDS during the 12-month period from April 2001 to March 2002 (49 males, nine females and one transgender individual), 44 (75 per cent) were notified within three months of diagnosis, a further two individuals were notified within one year of diagnosis. In the remaining 11 cases, the delay in notification ranged between two and nine years.

There were 1948 people notified with AIDS from 1983 to 31 March 2002—1854 males, 85 females and nine transgender individuals. Over 90 per cent of all males notified have reported male-to-male sexual contact.

Three people, all males, who had been diagnosed with either HIV or AIDS were notified as having died during the first quarter of 2002 (Table 5). Between 01 April 2001 and 31 March 2002, 34 deaths were notified and since 1983, there have been 1617 deaths recorded. Of these 1617 individuals, 1467 (91 per cent) had been previously diagnosed with AIDS whereas 150 had not been notified as having progressed to AIDS.

**Table 4: Notifications of AIDS in Victoria, Jan–Mar 2002, Apr 2001–Mar 2002 and Cumulative Total since 1983**

Exposure Category	Jan–Mar 2002		April 2001–Mar 2002		Cumulative Total		
	Males	Females	Males	Females	Males	Females	Total <sup>#</sup>
Male homosexual/bisexual	1	–	32	–	1571	–	1576
Male homosexual/bisexual and injecting drug user	0	–	1	–	99	–	103
Injecting drug user	1	0	1	0	23	12	35
Heterosexual	3	2	8	3	68	51	119
Person from specified country*	1	1	3	3	18	10	28
Haemophilia/related disorder	0	0	0	0	39	1	40
Transfusion recipient	0	0	0	0	8	5	13
Other	0	0	0	1	1	2	3
Unavailable	0	0	4	2	27	4	31
<b>Total</b>	<b>6</b>	<b>3</b>	<b>49</b>	<b>9</b>	<b>1854</b>	<b>85</b>	<b>1948</b>

# Includes persons for whom sex is reported as transgender

\* Persons from countries with a high prevalence (>1 per cent) of HIV

**Table 5: Notifications of Deaths Following HIV/AIDS Diagnosis in Victoria, Jan–Mar 2002, Apr 2001–Mar 2002 and Cumulative Total since 1983**

Exposure Category	Jan–Mar 2002		April 2001–Mar 2002		Cumulative Total		
	Males	Females	Males	Females	Males	Females	Total <sup>#</sup>
Male homosexual/bisexual	2	–	11	–	1215	–	1217
Male homosexual/bisexual and injecting drug user	1	–	2	–	76	–	78
Injecting drug user	0	0	1	0	15	6	21
Heterosexual	0	0	0	0	31	38	69
Person from specified country*	0	0	0	2	6	5	11
Haemophilia/related disorder	0	0	1	0	29	1	30
Transfusion recipient	0	0	0	0	6	4	10
Other	0	0	0	0	0	0	0
Unavailable	0	0	16	1	32	3	35
<b>Total</b>	<b>3</b>	<b>0</b>	<b>31</b>	<b>3</b>	<b>1395</b>	<b>57</b>	<b>1617</b>

# Includes transgender individuals and individuals for whom gender is not specified

\* Persons from countries with a high prevalence (>1 per cent) of HIV

## HUMAN IMMUNODEFICIENCY VIRUS INFECTION

There have been 68 new HIV diagnoses in Victoria during the first quarter of 2002; 58 males and 10 females, compared with a total of 58 cases notified during the same quarter in 2001 (Table 6). The median age of those notified was 35 years (range: 19 to 68 years), with males being younger on average (34 years compared with 37 years). The majority (71 per cent) of

males notified during this quarter reported male-to-male sexual contact (Table 7).

There were 228 HIV notifications in Victoria received during the 12 months from April 2001 to March 2002—200 (88 per cent) males, 27 (12 per cent) females and one transgender individual. This is a 16 per cent increase on the 197 notifications reported between 1 April 2000 and 31 March 2001.

**Table 6: Notifications of HIV in Victoria, by Age Group, Jan–Mar 2002, Apr 2001–Mar 2002 and Cumulative Total since 1983**

Age Group	Jan–Mar 2002		April 2001–Mar 2002		Cumulative Total		
	Males	Females	Males	Females	Males	Females	Total <sup>#</sup>
0–12	0	0	1	2	30	11	41
13–19	1	0	4	1	81	8	90
20–29	17	1	47	4	1497	105	1617
30–39	22	7	88	14	1606	83	1699
40–49	10	1	29	5	715	31	748
50–59	6	0	17	0	271	16	288
60+	2	0	0	0	101	1	117
Unavailable	0	1	4	1	87	11	98
<b>Total</b>	<b>58</b>	<b>10</b>	<b>200</b>	<b>27</b>	<b>4388</b>	<b>266</b>	<b>4697</b>

<sup>#</sup> Includes 17 persons for whom sex is reported as transgender and 26 persons for whom sex is not specified

**Table 7 Notifications of HIV in Victoria, by Exposure Category, Jan–Mar 2002, Apr 2001–Mar 2002 and Cumulative Total since 1983**

Exposure Category	Jan–Mar 2002		April 2001–Mar 2002		Cumulative Total		
	Males	Females	Males	Females	Males	Females	Total <sup>*</sup>
Male homosexual/bisexual	41	–	143	–	3547	–	3563
Male homosexual/bisexual and injecting drug user	1	–	6	–	207	–	210
Injecting drug user	1	0	8	2	124	38	165
Heterosexual	10	6	23	14	191	153	344
Person from specified country <sup>#</sup>	5	3	7	8	76	45	121
Haemophilia/related disorder	0	0	1	0	101	1	102
Transfusion recipient	0	0	0	0	20	15	35
Other	0	0	0	2	4	11	15
Unavailable	0	1	12	1	118	3	143
<b>Total</b>	<b>58</b>	<b>10</b>	<b>200</b>	<b>27</b>	<b>4388</b>	<b>266</b>	<b>4697</b>

<sup>\*</sup> Includes 17 persons for whom sex is reported as transgender and 26 persons for whom sex is not specified

<sup>#</sup> Persons from countries with a high prevalence (>1 per cent) of HIV

Those with newly acquired HIV or incident infection provide a picture of who is presently affected by the HIV epidemic. Such individuals are identified on the basis of a previous negative HIV test and/or a seroconversion illness within the 12 months preceding HIV diagnosis. There were 24 individuals notified with

incident HIV infection during the first quarter of 2002—20 males and 4 females. In the period 1 April 2001 to 31 March 2002, 69 individuals fulfilled the criteria of incident infection. These numbers are slightly higher than the 66 individuals reported with incident HIV infection during the preceding 12 months.

**Table 8: Notifications of HIV in Victoria, by Time Since Last Negative Test or Seroconversion Illness, Jan–Mar 2002 and Apr 2001–Mar 2002.**

Time between HIV Diagnosis and Negative Test and/or Seroconversion Illness	Jan–Mar 2002			April 2001–Mar 2002		
	Males	Females	Total*	Males	Females	Total*
Less than 1 year	20	4	24	66	3	69
1 year to less than 3 years	4	1	5	23	1	25
3 or more years	10	1	12	37	1	38
No previous negative test or seroconversion illness	24	4	27	74	22	96
Total	58	10	68	200	27	228

\* Includes one person for whom sex was reported as transgender.

### CHLAMYDIA INFECTIONS

The Department received 1184 notifications of *Chlamydia trachomatis* (*C.trachomatis*) in the first quarter of 2002, representing a 14 percent increase on the number of notifications from the previous quarter (n=1038). It is also an increase of 21 per cent on the

same period last year (n=978). The age and sex distribution remains unchanged with the greatest burden of disease conferred in 20–24 year old age group (Table 9). In this same age group, the notification rate is 549 per 100,000/yr for females and 268 per 100,000/ yr for males.

**Table 9: Notifications of *C. trachomatis* in Victoria, by Age Group and Sex, Jan–Mar 2002 and Apr 2001–Mar 2002.**

Age group	January–March 2002			April 2001–December 2001		
	Male	Female	Total	Male	Female	Total
0–4 years	0	0	0	0	1	1
5–9 years	0	0	0	0	0	0
10–14 years	1	3	4	3	8	11
15–19 years	34	172	206	126	592	718
20–24 years	151	260	411	475	928	1403
25–29 years	126	129	255	424	487	911
30–34 years	82	74	156	268	232	500
35–39 years	33	30	63	170	122	292
40–44 years	25	13	38	109	56	165
45–49 years	14	11	25	64	24	88
50–54 years	10	6	16	36	16	52
55–59 years	2	1	3	18	6	24
60–64 years	3	0	3	6	0	6
65–69 years	0	0	0	2	1	3
70–74 years	0	0	0	1	0	1
75–79 years	1	0	1	1	0	1
80–84	1	2	3	1	2	3
Unknown	0	0	0	1	2	3
Total	483	701	1184	1705	2477	4182

Whilst the highest number of notifications were received from the Southern and Eastern Metropolitan regions, notification rates were highest in the Western Metropolitan region and lowest in the Grampians region.

The most common method of diagnosis of *C. trachomatis* infection reported was by nucleic acid testing (Table 10). The implications of test sensitivity need to be considered when analysing the trends in notifications of chlamydia, as an increase in the sensitivity and ease of testing is likely to lead to an increase in the number of notifications.

**Table 10: Testing Method Reported by Laboratories for *C. trachomatis* Notifications, Victoria, Jan–Mar 2002.**

Testing method	Number	Percent
Nucleic Acid Testing	1092	92.2
Enzyme Immunoassays	35	3.0
Antibody Fluorescence Testing	33	2.8
Not stated	23	1.9
Culture	1	0.1
Total	1184	100.0

## GONORRHOEA INFECTIONS

Surveillance of gonorrhoea was transferred from the Microbiological Diagnostic Unit (MDU) to the Department from 10 January 2002. As the recording of notifications differs slightly between the two organisations there will be minor discrepancies in the number of notifications reported between the two time periods. MDU record notifications based on the specimen date and the Department records on the date the notification was received.

There were 171 cases of gonorrhoea notified during the

first quarter of 2002. This represents a decrease compared with the 181 cases notified during the first quarter of 2001. The quarterly count is also lower than the 204 cases in the corresponding quarter in 2000, and is consistent with the average number of first quarter notifications for the years 1998–2002 (n=172). Of the first quarter notifications, 157 (92 per cent) were for males and 14 (8 per cent) were for females. The age and sex distribution is described in Table 11. The median age of males was 29 years (range: 17–61) and the median age for females was 26 years (range 21–38 years).

**Table 11: Gonorrhoea Notifications, by Age Group and Sex, Jan–Mar 2002 and Apr 2001–Mar 2002, Victoria.**

Age group	January–March 2002			April 2001–March 2002		
	Male	Female	Total	Male	Female	Total
0–14 years	0	0	0	0	0	0
15–19 years	5	0	5	26	3	29
20–24 years	17	3	20	91	14	105
25–29 years	43	4	47	145	11	156
30–34 years	40	6	46	132	11	143
35–39 years	24	1	25	93	11	104
40–44 years	17	0	17	59	0	59
45–49 years	5	0	5	33	1	34
50–54 years	5	0	5	24	3	27
55–59 years	1	0	1	9	2	11
60–64 years	0	0	0	6	0	6
65–69 years	0	0	0	4	1	5
70 + years	0	0	0	0	0	0
Total	157	14	171	622	57	679

Risk factor information is provided to the Department by the notifying clinician. This information was available for 91 per cent (n=155) of notifications. Infection

was most commonly acquired in Victoria from casual sexual partners (Table 12).

**Table 12: Notifications of Gonorrhoea by Gender, Source Partner and Reported Place of Acquisition, Jan–Mar 2002.**

Gender	Sexual Partner	Victoria	Interstate	Overseas	Not stated	Total
Male	Casual Partner	72	5	10	3	90
	Regular Partner	26	0	1	2	29
	Sex Worker	3	0	2	0	5
	Unknown	7	2	4	20	33
Female	Casual Partner	4	0	0	0	4
	Client (partner is sex worker)	2	0	0	0	2
	Regular Partner	4	0	1	0	5
	Unknown	1	0	0	2	3
Total		120	7	18	27	171

In males, the most common site for a positive test was the urethra and for females the cervix/vagina (Table 13). Twenty-one per cent of cases (n=36) reported were

diagnosed solely by detection of *N. gonorrhoeae* by nucleic acid amplification (such as PCR).

**Table 13: Positive *N. gonorrhoeae* Tests by Sex and Site of Infection, Victoria Jan–Mar 2002**

Site of infection	Female	Male
Cervix/Vagina	14	0
Pharynx	5	17
Rectal	0	18
Urethral	1	184
Urine	1	30
Other Site	1	1
Not Stated	3	25
Total	25	275

Testing for antibiotic susceptibility is currently only possible if *N. gonorrhoeae* is isolated by culture. In the first quarter of 2002, sensitivity-testing results were received on 111 of 135 (82 per cent) cases diagnosed by culture. Nine people were found to have resistance to ciprofloxacin. Table 14 shows the sexual partner and place of acquisition for these nine cases.

**SYPHILIS**

In the first quarter of 2002, one case of infectious syphilis was reported in a 23-year-old, heterosexual male. For the same period last year there were four cases notified.

**Table 14: Gender, Gender of Partner and Place of Acquisition of Ciprofloxacin and Ceftriaxone Resistant Isolates of *N. gonorrhoeae*, Victoria, Jan–Mar 2002**

Gender	Sexual Partner	Where acquired	Ceftriaxone resistant (MIC >=0.25)	Ciprofloxacin resistant (MIC >0.5 mcg/mL)
Male	Female	Overseas	0	2
	Male	Overseas	0	2
	Unknown	Overseas	0	2
	Unknown	Unknown	0	1
Female	Male	Victoria	0	1
	Unknown	Overseas	0	1

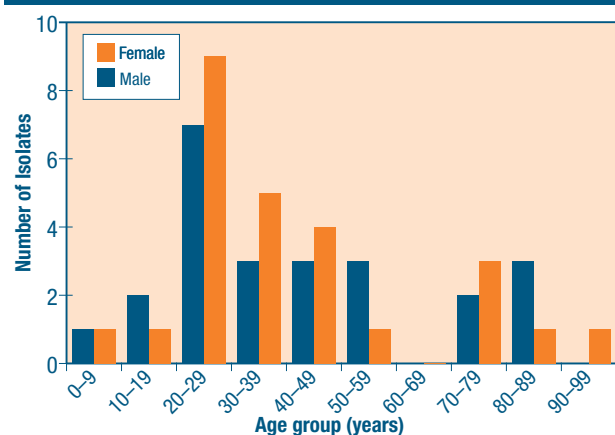
**MYCOBACTERIUM REFERENCE LABORATORY REPORT**

Due to the slow growing nature of *Mycobacterium* spp. this report is presented with a one period delay to maintain accuracy. 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.

**Table 15: Specimens Submitted to the *Mycobacterium* Reference Laboratory, Jan–Mar 2002**

	Primary Specimens				Total
	<i>M. tb</i> Isolates	New Victorian <i>M. tb</i> Isolates	Non <i>M. tb</i> isolates	Negatives	
January	13	3	26	467	506
February	6	1	10	378	394
March	2	2	12	352	366
	Referred Specimens				Total
	<i>M. tb</i> Isolates	New Victorian <i>M. tb</i> Isolates	Non <i>M. tb</i> isolates	Negatives	
January	28	18	36		64
February	22	11	40		62
March	40	14	30		70
Total	111	49	154	1197	1462

**Figure 2: New *M. tuberculosis* Isolates, by Age Group and Gender, Victoria, Jan–Mar 2002**



**Table 16: Extra-Pulmonary *M tuberculosis* Isolates and Resistant Isolates, Jan – Mar 2002**

	January	February	March
Pulmonary	10	7	11
Extrapulmonary	11	5	5
Extrapulmonary Site Details	Lymph node (x6) Pleural fluid (x2) Wrist (x1) Testicular abscess (x1) Rib Abscess (x1) Bone Asp (x1)	Lymph node (x3) Pleural bx (x1)	Lymph node (x3) Pleural fluid (x1) CSF (x1)
Resistance			2x resistance to Isoniazid

- *M. kansasii*: isolated from pulmonary specimens of five mainly elderly patients, two males and three females. Two patients had multiple isolations and one had concurrent isolation of *M. avium* complex.
- *M. fortuitum*: a rapid growing *Mycobacteria* sp. which can cause wound infections, was isolated from leg ulcers of a 64 year old male and a 10 year old boy. This organism was also isolated from a shoulder wound of a dog following a dog bite.
- *M. marinum*: a referred isolate from a poison arrow frog.
- *M. ulcerans*: *M. ulcerans* PCR was requested for 40 specimens. There were seven positive results from six patients. Two specimens were from a patient who had been previously positive. The PCR results were confirmed by culture, except in one instance where a previously positive patient had a negative PCR result but the organism was isolated in culture. In addition *M. ulcerans* was identified from a referred isolate from another patient where PCR was not requested.
- Molecular identifying techniques were used to identify or confirm identification of 17 isolates, including one of *M. shimodei* from two different patients. This organism is a rare cause of pulmonary disease and when relying on biochemical tests only it may be mistaken for *M. terrae* complex which rarely causes disease.
- *Mycobacterium* generic PCR was performed on 23 specimens, including 15 paraffin embedded tissue biopsies, 3 sputa, 1 bone marrow, 1 lymph node and 1 vitreous humour. *M. haemophilum* was identified from a paraffin embedded skin biopsy.

**Table 17: Notifications of Infectious Diseases, by Department of Human Services Region, Victoria, 1 January to 31 March 2002 and Historical Comparisons**

Disease	Barwon South Western		Grampians		Loddon Mallee		Hume		Gippsland		Western Metropolitan		Northern Metropolitan		Eastern Metropolitan		Southern Metropolitan		Unknown		Victoria	
	2002ytd	2001ytd	2002ytd	2001ytd	2002ytd	2001ytd	2002ytd	2001ytd	2002ytd	2001ytd	2002ytd	2001ytd	2002ytd	2001ytd	2002ytd	2001ytd	2002ytd	2001ytd	2002ytd	2001ytd	2002ytd	2001ytd
<b>Blood Borne Diseases</b>																						
Hepatitis B – Acute	0	1	2	0	0	0	1	0	5	1	5	9	6	4	3	7	12	9	0	0	37	31
Hepatitis B – Chronic/Unknown	3	2	0	0	8	8	9	2	5	6	114	109	85	80	97	76	75	94	48	23	444	400
Hepatitis C – Incident	3	1	1	0	2	0	2	0	0	2	3	5	2	5	2	4	2	5	2	0	19	22
Hepatitis C – Unspecified	32	76	31	30	45	56	41	37	55	61	240	185	179	207	136	161	245	265	156	141	1160	1221
Hepatitis D	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0
<b>Enteric Diseases</b>																						
Baculum	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
Campylobacter infection	103	60	43	43	78	46	85	76	102	71	113	153	196	177	254	274	326	311	38	34	1338	1245
Cholera	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Cryptosporidiosis	3	2	3	1	4	2	5	5	13	6	13	33	16	19	14	30	12	17	3	3	86	118
Giardiasis	13	19	10	5	3	13	5	17	11	11	18	33	32	43	29	47	42	48	9	4	172	240
Haemolytic Uraemic Syndrome	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Hepatitis A	12	2	0	0	1	0	1	1	0	1	5	3	2	6	8	4	10	7	0	0	39	24
Hepatitis E	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Listeriosis	1	2	0	0	0	0	0	0	0	0	1	2	1	0	0	0	0	0	1	0	3	6
Paratyphoid	0	0	0	1	0	0	0	0	0	0	3	1	1	0	0	1	2	1	0	0	6	5
Salmonellosis	34	21	17	15	34	25	30	22	21	22	47	30	37	57	68	75	93	78	13	9	394	354
Shigellosis	0	1	0	0	0	0	0	0	0	0	4	6	4	12	0	3	6	5	1	2	15	29
Typhoid	0	0	0	0	0	0	0	1	0	0	0	1	2	1	2	2	8	0	0	1	12	6
Verotoxin producing <i>E. coli</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	1	0	0	0	0	0	3
<b>Other Infectious Notifiable Diseases</b>																						
Invasive Meningococcal Disease	2	6	1	1	0	0	1	0	0	0	9	2	11	6	7	7	6	10	0	0	37	32
Legionellosis	2	0	0	1	0	1	2	1	0	0	2	10	4	9	5	6	3	8	1	1	19	37
Leprosy	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Tuberculosis	0	1	0	0	0	1	2	1	1	0	14	21	15	13	15	14	14	27	1	1	62	79
<b>Vaccine Preventable Diseases</b>																						
<i>Haemophilus influenzae</i> type b																						
Influenza	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	2	1
Invasive Pneumococcal Disease	6	0	0	3	6	6	1	0	7	3	4	1	8	1	13	5	11	3	9	18	65	40
Measles	2	0	0	2	0	1	0	1	0	0	0	7	0	9	2	17	2	18	0	0	6	55
Mumps	0	1	0	2	0	0	0	0	0	0	2	3	0	2	2	3	3	2	0	0	7	13
Pertussis	22	4	5	8	39	3	17	15	23	16	32	14	39	21	46	35	48	32	1	2	272	150
Rubella	1	0	0	0	1	0	0	3	0	1	1	0	1	5	1	1	4	7	0	0	8	18
Tetanus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
<b>Vector Borne Diseases</b>																						
Arbovirus – Barmah Forest	0	0	0	0	2	1	0	2	30	5	0	0	0	0	2	1	3	1	0	0	37	10
Arbovirus – Flavivirus	0	0	0	0	0	0	1	0	0	0	1	0	1	0	1	1	2	0	0	0	6	1
Arbovirus – Not further Specified	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	4	5
Arbovirus – Ross River	0	6	0	9	2	91	1	56	4	37	0	9	1	12	2	16	1	22	0	14	11	272
Australian Arbocephalitis – Kunjin	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Malaria	0	0	0	2	0	1	2	1	1	1	2	4	3	1	4	4	7	12	6	4	25	30
<b>Zoonoses</b>																						
Brucellosis	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
Leptospirosis	2	4	0	0	0	3	1	1	3	4	0	0	0	0	0	0	0	0	0	0	6	12
Psittacosis	0	1	1	4	2	3	0	2	0	1	0	6	0	4	2	3	1	4	0	0	6	28
Q Fever	0	0	0	1	2	2	4	0	3	0	0	1	1	1	1	1	0	0	0	0	11	5
<b>Total</b>	<b>241</b>	<b>210</b>	<b>115</b>	<b>128</b>	<b>231</b>	<b>269</b>	<b>212</b>	<b>247</b>	<b>284</b>	<b>250</b>	<b>638</b>	<b>650</b>	<b>652</b>	<b>699</b>	<b>719</b>	<b>799</b>	<b>964</b>	<b>988</b>	<b>288</b>	<b>298</b>	<b>4344</b>	<b>4498</b>
Population	333003	203546	115000	128000	285977	265977	212000	245493	233094	250000	610252	610252	652000	699000	719000	799000	964000	988000	288000	298000	4344000	4498000
<b>Notes</b>																						
1. The data are preliminary figures only and may be subject to revision																						
2. ABS estimated resident population data—June 2000																						
3. Reporting of invasive pneumococcal disease commenced in December 2000 under a voluntary laboratory based scheme																						

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Jane Hocking, Rebecca Rose, Graham Tallis and  
Mark Veitch

Production editor: Rachael Dullahide

Planning editor: Kerry Ann O'Grady

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**Editorial correspondence and subscription enquiries should be directed to:**

**The Editor  
Victorian Infectious Diseases Bulletin  
Communicable Diseases Section  
Department of Human Services  
Level 17, 120 Spencer Street  
Melbourne Victoria 3000**

**Phone: 03 9637 4102 Fax: 03 9637 4477  
Email [vidb@dhs.vic.gov.au](mailto:vidb@dhs.vic.gov.au)**

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