Communicable diseases surveillance

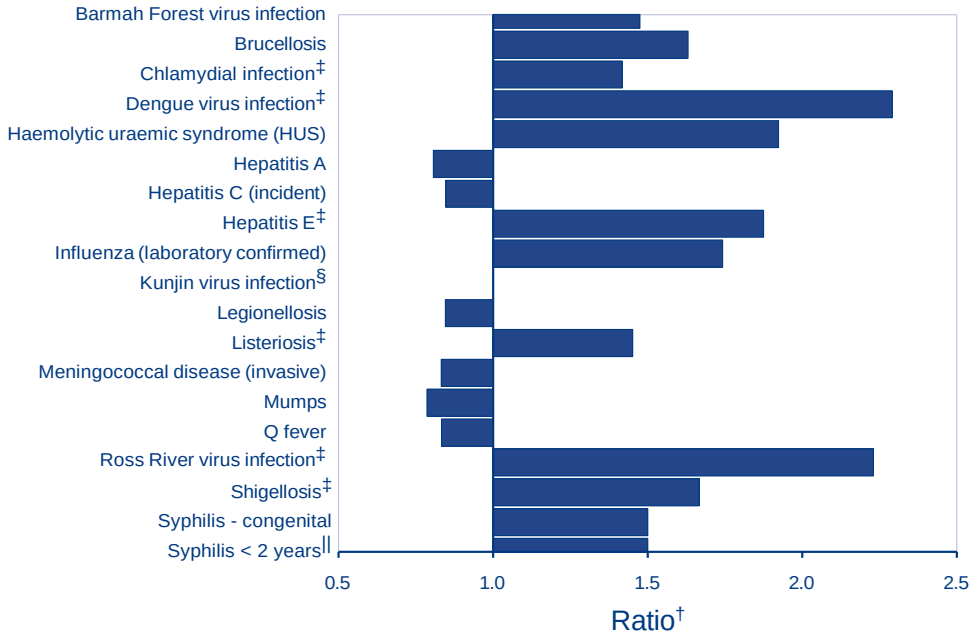
Highlights for 3rd quarter, 2008

Communicable diseases surveillance highlights report on data from various sources, including the National Notifiable Diseases Surveillance System (NNDSS) and several disease specific surveillance systems that provide regular reports to Communicable Diseases Intelligence. These national data collections are complemented by intelligence provided by state and territory communicable disease epidemiologists and/or data managers. This additional information has enabled the reporting of more informative highlights each quarter.

The NNDSS is conducted under the auspices of the Communicable Diseases Network Australia. NNDSS collates data on notifiable communicable diseases from state and territory health departments. The Virology and Serology Laboratory Reporting Scheme (LabVISE) is a sentinel surveillance scheme which collates information on laboratory diagnosis of communicable diseases. In this report, data from the NNDSS are referred to as 'notifications' or 'cases' while data from the LabVISE scheme are referred to as 'laboratory reports'.

Figure 1 shows the changes in selected disease notifications to the National Notifiable Diseases Surveillance System (NNDSS) with a diagnosis in the 3rd quarter (1 July to 30 September) 2008, in comparison with the 5-year mean for the same period. Notifications were above the 5-year mean for the corresponding period and exceeded 2 standard deviations from the 5-year mean for: chlamydial infection, dengue virus infection, hepatitis E, Ross River virus infection and shigellosis. Notifications were equal to or below the 5-year mean for Barmah Forest virus infection, brucellosis, congenital syphilis, cryptosporidiosis, haemolytic uraemic syndrome (HUS), hepatitis B (unspecified), influenza (laboratory confirmed), listeriosis, pertussis, rubella, salmonellosis, STEC/VTEC, infectious

Figure 1. Selected* diseases from the National Notifiable Diseases Surveillance System, comparison of provisional totals for the period 1 July to 30 September 2008 with historical data†



* Selected diseases are chosen each quarter according to current activity. Five-year averages and the ratios of notifications in the reporting period in the 5- year mean should be interpreted with caution. Changes in surveillance practices, diagnostic techniques and reporting, may contribute to increases or decreases in the total notifications received over a 5 year period. Ratios are to be taken as a crude measure of current disease activity and may reflect changes in reporting rather than changes in disease activity. See Table 1 for all diseases.

† Ratio of current quarter total to mean of corresponding quarter for the previous 5 years.

‡ Where the mean of the current quarter exceeds the mean of the corresponding quarter for the previous 5 years by more than 2 standard deviations.

§ Significant. First case diagnosed in this quarter in 6 years.

|| Ratio for syphilis of less than 2 years duration is based on 4 years data.

syphilis <2 years, syphilis >2 years or unspecified duration, typhoid, varicella zoster (shingles), and varicella zoster (unspecified).

Gastrointestinal diseases

Hepatitis E

Between 1 July and 30 September 2008, there were 9 notifications of hepatitis E in Australia, 1.9 times the mean notifications for the corresponding period over the last 5 years. Hepatitis E cases in Australia are commonly imported, and of the 9 notifications during the 3rd quarter of 2008, three were known to have been acquired overseas, three were thought to have been locally acquired, while the travel status of the remaining 3 cases was unknown.

Shigellosis

Between 1 July and 30 September 2008, there were 201 notifications of shigellosis in Australia, representing an annualised rate of 3.8 notifications per 100,000 population. The number of shigellosis notifications represent a 23% increase over the number reported during the corresponding quarter of 2007, and is 1.7 times the 5-year mean of notifications for the corresponding period.

The highest notification rate was in the Northern Territory, where 34 cases were notified, representing an annualised rate of 63.3 cases per 100,000 population. Notification rates for shigellosis in the Northern Territory are usually high compared with other Australian states and territories, with an annual rate of 80.5 cases per 100,000 in 2007 compared with 2.8 cases per 100,000 population nationwide.[1]

There were 2 large clusters of shigellosis reported during the 3rd quarter of 2008 that contributed to the observed increase in notifications compared with previous years. The first was amongst members of the Jewish community in Melbourne, Victoria and the other cluster, with cases reported from 4 states (Queensland, New South Wales, Victoria and Western Australia) was reported amongst adult men, many of whom identified as men who have sex with men.

Sexually transmissible infections

Chlamydial infection

Nationally, chlamydial infections continue to be the most frequently notified infection to the NNDSS, at a rate of 277 cases per 100,000 population (annualised). During the 3rd quarter of 2008 there were 14,531 notifications received, which was 41% higher than the 5-year mean for the corresponding quarters of previous years and exceeded 2 standard deviations from this mean. All jurisdictions reported cases, with the majority notified from Queensland (n=3,714, 26%), New South Wales (n=3,534, 24%), Victoria (n=3,112, 21%) and Western Australia (n=2,131, 15%).

The notification rate was highest in the Northern Territory at 918 cases per 100,000 population (annualised), although there were only 493 cases of chlamydial infections. The rates of chlamydial notification in the Northern Territory during the quarter were substantially higher compared with other jurisdictions such as Western Australia at 405 and Queensland at 355 cases per 100,000 population (annualised).

The total number of cases for the 3rd quarter (n=14,531) was comparable with the previous quarter (n=15,156). For the first 3 quarters of 2008 there were 44,195 notifications, which was 11.9% higher compared to the same period in 2007 (n=39,479) and was 41.3% higher than the 5-year mean for the corresponding periods (n=31,284).

For the 3rd quarter, 37% (5,315) of the total number of infections occurred in the 20–24 year age group and 25% (3,595) in the 15–19 year age group. The highest rates of chlamydial infection was in females aged 20–24 years (443 cases per 100,000 population) and in the 15–19 year age group (385 cases per 100,000 population). The highest rate in males was 270 cases per 100,000 population in the 20–24 year age group. Overall, the ratio of male to female notifications for the quarter was 1:1.5, which was similar to previous years.

Figure 2 shows the epidemic curve of chlamydial infection notifications received by the NNDSS since 2003 by jurisdiction. The increasing trend in chlamydial notifications is most likely associated with increased screening and promotion programs; and the use of less-invasive and more sensitive diagnostic tests.

Vaccine preventable diseases

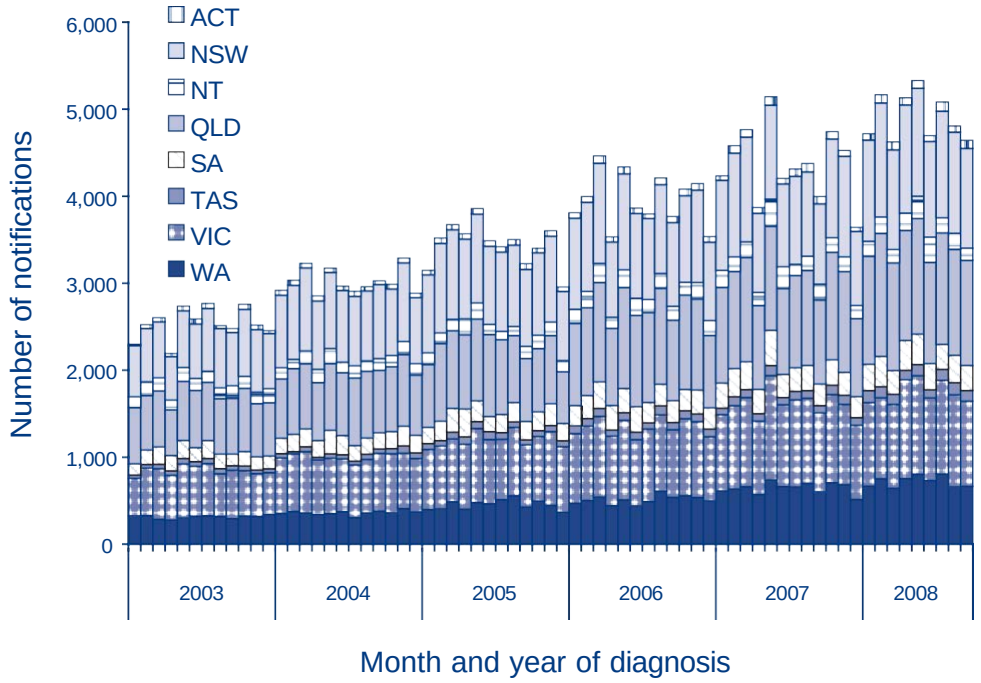
Influenza

Laboratory-confirmed influenza is a nationally notifiable disease in all states and territories in Australia. Data are reported to the NNDSS from state and territory health departments.

The 2008 influenza season began in mid-July following a very gradual increase in notifications since mid-June (Figure 3). The 2008 season commenced several weeks late compared to previous influenza seasons – approximately 5 weeks later than the start of the 2007 season, with notifications peaking in early September, approximately 4 weeks later than 2007.

The total number of laboratory-confirmed influenza notifications to NNDSS for the 3rd quarter

Figure 2. Epidemic curve of notifications of chlamydial infection, Australia, 1 January 2003 to 30 September 2008, by month of diagnosis and state or territory



was 6,324 cases (84.7% of year-to-date notifications); this was 1.7 times the 5-year mean for the corresponding period. The majority of notifications were from Queensland with 2,823 cases (44.6%).

During the 3rd quarter of 2008, the highest rate of notifications occurred in Queensland, followed by Tasmania, the Northern Territory and the Australian Capital Territory (Table). The Australian rate of influenza infection was 30 cases per 100,000 population during this quarter.

Nationally, age-specific notification rates during the 3rd quarter of 2008 were highest in children under 1 year of age, at approximately 156 cases per 100,000 population for males and 116 cases per 100,000 for females.

Influenza notifications to NNDSS were predominantly type A in the first 2 quarters of 2008. From the start of July, and throughout the 3rd quarter, notifications were predominantly type B (Figure 4). There has not been a predominantly type B season in Australia since influenza became nationally notifiable in 2001.

Figure 3. Number of influenza notifications to the National Notifiable Diseases Surveillance System, Australia, 2006, to 2008 (to 30 September), by week of diagnosis

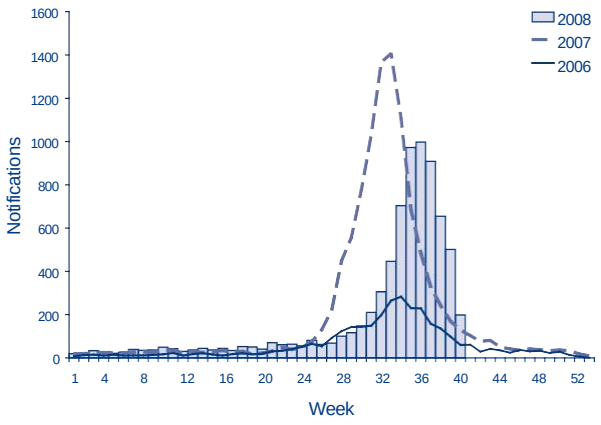
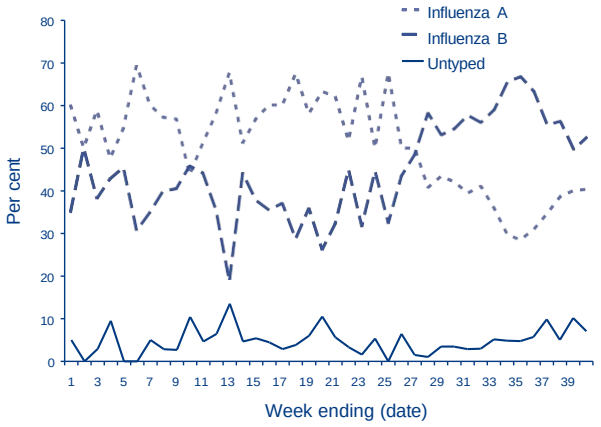


Table. Number and rate of laboratory-confirmed influenza notifications to the National Notifiable Diseases Surveillance System, 1 July 2008 to 30 September 2008, by date of diagnosis, and state or territory

State	Cases	Percentage of total notifications	Rate per 100,000 population*
ACT	164	2.6	48.3
NSW	1,028	16.3	14.9
NT	104	1.6	48.4
Qld	2,823	44.6	67.5
SA	234	3.7	14.8
Tas	291	4.6	59.0
Vic	979	15.5	18.8
WA	701	11.1	33.3
Aus	6,324	100	30.1

* This is a quarterly rate and has not been annualised due to seasonality of influenza. For the annualised rate please see Table 3.

Figure 4. Typing characteristics of notifications of laboratory-confirmed influenza, National Notifiable Diseases Surveillance System, Australia, 1 January to 30 September 2008, by week of diagnosis



In the period between 7 July and 26 September 2008, a total of 344 samples were typed by the WHO Collaborating Centre for Reference and Research in Influenza. Of these, 22 (6.4%) were A/Brisbane/59/2007-like (H1N1), 75 (21.8%) were A/Brisbane/10/2007-like (H3N2), 158 (45.9%) were B/Florida/4/2006-like and 89 (25.9%) were B/Malaysia/2506/2004-like.

During the 2nd and 3rd quarters of 2008, the World Health Organization reported that of those Australian H1N1 isolates that underwent resistance testing, 80% (47 of 59) tested resistant to oseltamivir. Resistant isolates were also detected in 20 of 27 countries that submitted data.

Vectorborne diseases

Dengue virus infection

Between 1 July and 30 September 2008, there were 93 notifications of dengue virus infection in Australia, representing an annualised rate of 1.8 notifications per 100,000 population. The number of dengue notifications represent a 43% increase over the number reported during the same quarter of 2007, and was 2.3 times the 5-year mean of notifications for the corresponding period. All 93 cases were imported from overseas. The number of cases notified in this quarter was the exactly the same as notified in the previous quarter.

New South Wales (n=37), Queensland (n=21) and Western Australia (n=21) reported the highest number of cases. The number of cases reported in New South Wales represented a 118% increase over the number of cases (n=17) reported for the corresponding quarter in 2007, while the number of cases reported in Western Australia represented a 62% increase over the number of cases (n=13) reported for the corresponding quarter in 2007.

The increase in notifications of imported dengue for this quarter has been attributed to an outbreak of dengue in the pacific region, in particular Fiji, Kiribati, New Caledonia, Samoa, Tonga, Wallis and Futuna and Vanuatu.

Kunjin virus infection

One sporadic case of Kunjin was notified in Queensland between 1 July and 30 September 2008. This was the only case notified in Australia during this quarter and was the first time Kunjin has been reported in this period for at least 6 years. The date of diagnosis (15 July) was very early in the reporting period.

Queensland has averaged 1.9 Kunjin notifications per annum since 2001 (when Kunjin became notifiable). The average number of Kunjin notifications in Australia since 2001 is three per annum.

Ross River virus infection

Between 1 July and 30 September 2008, there were 768 notifications of Ross River virus infections (RRV) in Australia, representing an annualised rate of 14.6 notifications per 100,000 population. The number of RRV notifications represent a 17% increase over the number reported during the corresponding quarter of 2007, and was 2.2 times the 5-year mean of notifications for the corresponding period. The number of cases notified this quarter was 34% lower than the number of cases notified in the previous quarter.

With the exception of Tasmania, all jurisdictions reported cases, with the majority notified from Queensland. In Queensland there were 393 notifications, which represented 51% of the number of notifications for Australia for this period. Higher rainfall and warmer than usual conditions in Queensland during this period was likely to have contributed to higher mosquito numbers and the increased transmission of RRV.

Acknowledgements

Thanks go to staff of the Surveillance Branch of the Australian Government Department of Health and Ageing and all our state and territory data managers.

References

1. The OzFoodNet Working Group. Monitoring the incidence and causes of diseases potentially transmitted by food in Australia: Annual report of the OzFoodNet Network, 2007. *Commun Dis Intell* 2008;32:400–424.

Tables

National Notifiable Diseases Surveillance System

A summary of diseases currently being reported by each jurisdiction is provided in Table 1. There were 41,853 notifications to the National Notifiable Diseases Surveillance System (NNDSS) with a notification date between 1 July 30 September 2008 (Table 2). The notification rate of diseases per 100,000 population for each state or territory is presented in Table 3.

Table 1. Reporting of notifiable diseases by jurisdiction

Disease	Data received from:
Bloodborne diseases	
Hepatitis (NEC)	All jurisdictions
Hepatitis B (incident)	All jurisdictions
Hepatitis B (unspecified)	All jurisdictions
Hepatitis C (incident)	All jurisdictions except Queensland
Hepatitis C (unspecified)	All jurisdictions
Hepatitis D	All jurisdictions
Gastrointestinal diseases	
Botulism	All jurisdictions
Campylobacteriosis	All jurisdictions except New South Wales
Cryptosporidiosis	All jurisdictions
Haemolytic uraemic syndrome	All jurisdictions
Hepatitis A	All jurisdictions
Hepatitis E	All jurisdictions
Listeriosis	All jurisdictions
Salmonellosis	All jurisdictions
Shigellosis	All jurisdictions
STEC, VTEC	All jurisdictions
Typhoid	All jurisdictions
Quarantinable diseases	
Cholera	All jurisdictions
Highly pathogenic avian influenza in humans	All jurisdictions
Plague	All jurisdictions
Rabies	All jurisdictions
Severe acute respiratory syndrome	All jurisdictions
Smallpox	All jurisdictions
Viral haemorrhagic fever	All jurisdictions
Yellow fever	All jurisdictions
Sexually transmissible infections	
Chlamydial infection	All jurisdictions
Donovanosis	All jurisdictions
Gonococcal infection	All jurisdictions
Syphilis (all)	
Syphilis <2 years duration	All jurisdictions
Syphilis >2 years or unspecified duration	All jurisdictions except South Australia where data is not collected
Syphilis - congenital	All jurisdictions

Table 1. Reporting of notifiable diseases by jurisdiction, continued

Disease	Data received from:
Vaccine preventable diseases	
Diphtheria	All jurisdictions
Haemophilus influenzae type b	All jurisdictions
Influenza (laboratory confirmed)	All jurisdictions
Measles	All jurisdictions
Mumps	All jurisdictions
Pertussis	All jurisdictions
Pneumococcal disease (invasive)	All jurisdictions
Poliomyelitis	All jurisdictions
Rubella	All jurisdictions
Rubella - congenital	All jurisdictions
Tetanus	All jurisdictions
Varicella zoster (chickenpox)	All jurisdictions except New South Wales
Varicella zoster (shingles)	All jurisdictions except New South Wales
Varicella zoster (unspecified)	All jurisdictions except New South Wales
Vectorborne diseases	
Arbovirus infection (NEC)*	All jurisdictions
Barmah Forest virus infection	All jurisdictions
Dengue virus infection	All jurisdictions
Japanese encephalitis virus infection	All jurisdictions
Kunjin virus infection	All jurisdictions
Malaria	All jurisdictions
Murray Valley encephalitis virus infection	All jurisdictions
Ross River virus infection	All jurisdictions
Zoonoses	
Anthrax	All jurisdictions
Australian bat lyssavirus	All jurisdictions
Brucellosis	All jurisdictions
Leptospirosis	All jurisdictions
Lyssavirus (NEC)	All jurisdictions
Ornithosis	All jurisdictions
Q fever	All jurisdictions
Tularaemia	All jurisdictions
Other bacterial infections	
Legionellosis	All jurisdictions
Leprosy	All jurisdictions
Meningococcal infection	All jurisdictions
Tuberculosis	All jurisdictions

* Flavivirus (NEC) replaced Arbovirus (NEC) from 1 January 2004. Arbovirus (NEC) replaced Flavivirus (NEC) from 2008

NEC Not elsewhere classified

Table 2. Notifications of diseases received by state and territory health authorities in the period 1 July to 30 September 2008, by date of diagnosis*

Disease	State or territory								Total 3rd quarter 2008†	Total 2nd quarter 2008	Total 3rd quarter 2007	Last 5 years mean 3rd quarter	Year to date 2008	Last 5 years YTD mean	Ratio‡
	ACT	NSW	NT	Qld	SA	Tas	Vic	WA							
Bloodborne diseases															
Hepatitis (NEC)	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.0	0.0
Hepatitis B (incident)	0	15	1	12	1	2	25	17	73	63	60	195	226.8	71.8	1.0
Hepatitis B (unspecified)	24	782	34	220	112	21	517	162	1,872	1,681	1,719	5,214	4,687.0	1,592.4	1.2
Hepatitis C (incident)	1	7	3	0	8	5	33	25	82	85	107	249	279.0	96.8	0.8
Hepatitis C (unspecified)	54	1,276	41	649	119	83	569	292	3,083	2,925	2,990	9,070	9,405.8	3,117.2	1.0
Hepatitis D	0	2	0	1	0	0	5	0	8	15	10	35	24.4	11.2	0.7
Gastrointestinal diseases															
Botulism	0	0	0	0	0	0	0	0	0	0	0	0	1.2	0.2	0.0
Campylobacteriosis§	71	0	66	1,103	440	78	1,165	441	3,364	3,417	3,555	11,471	11,435.4	3,666.6	0.9
Cryptosporidiosis	0	78	8	84	13	20	93	15	311	480	262	1,550	1,882.4	269.0	1.2
Haemolytic uraemic syndrome	0	2	0	2	1	0	0	0	5	6	2	19	9.8	2.6	1.9
Hepatitis A	1	18	0	13	4	0	17	3	56	86	43	228	238.8	69.4	0.8
Hepatitis E	0	4	0	2	0	0	2	1	9	11	2	34	18.6	4.8	1.9
Listeriosis	2	8	0	3	0	0	1	4	18	14	10	60	44.4	12.4	1.5
Salmonellosis	21	376	76	267	132	16	256	177	1,321	1,967	1,498	6,187	6,144.4	1,247.8	1.1
Shigellosis	1	32	34	14	30	0	53	37	201	184	163	627	433.8	120.6	1.7
STEC, VTEC‖	0	2	0	7	4	0	2	0	15	19	13	65	50.6	13.4	1.1
Typhoid	0	7	0	2	0	0	9	1	19	26	21	80	55.0	14.8	1.3
Quarantinable diseases															
Cholera	0	0	0	0	0	0	0	0	0	0	0	0	2.2	0.4	0.0
Highly pathogenic avian influenza in humans	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Plague	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Rabies	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Severe acute respiratory syndrome	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Smallpox	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Viral haemorrhagic fever	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Yellow fever	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0

Table 2. Notifications of diseases received by state and territory health authorities in the period 1 July to 30 September 2008, by date of diagnosis,* continued

Disease	State or territory								Total 3rd quarter 2008†	Total 2nd quarter 2008	Total 3rd quarter 2007	Last 5 years mean 3rd quarter	Year to date 2008	Last 5 years YTD mean	Ratio‡
	ACT	NSW	NT	Qld	SA	Tas	Vic	WA							
Sexually transmissible infections															
Chlamydial infection¶	270	3,534	493	3,714	885	392	3,112	2,131	14,531	15,156	12,685	44,195	31,284.0	10,251.0	1.4
Donovanosis	0	0	0	0	0	0	0	0	0	1	1	1	7.4	2.2	0.0
Gonococcal infection	3	342	322	373	74	3	227	390	1,734	2,356	1,830	6,166	5,921.4	1,803.0	1.0
Syphilis (all)	18	350	59	77	16	10	199	78	807	830	856	2,476	256.4	670.3	1.2
Syphilis < 2 years duration	1	62	10	48	16	4	77	59	277	350	377	998	645.8	188.0	1.5
Syphilis >2 years or unspecified duration	17	288	49	29	NDP	6	122	19	530	480	479	1,478	1,266.3	372.6	1.4
Syphilis - congenital	0	3	0	0	0	0	0	0	3	2	0	5	10.2	2.0	1.5
Vaccine preventable diseases															
Diphtheria	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Haemophilus influenzae type b	0	2	0	1	1	0	0	0	4	11	5	20	13.4	6.4	0.6
Influenza (laboratory confirmed)	164	1,028	104	2,823	234	291	979	701	6,324	705	8,823	7,463	4,264.6	3,630.0	1.7
Measles	0	1	0	2	1	0	0	1	5	26	4	64	47.6	8.6	0.6
Mumps	0	11	20	2	6	1	4	12	56	55	149	255	166.8	71.2	0.8
Pertussis	33	1,630	148	550	364	48	401	89	3,263	2,021	1,534	6,804	6,123.2	2,848.4	1.1
Pneumococcal disease (invasive)	1	209	19	149	41	14	130	58	621	432	606	1,263	1,473.4	719.0	0.9
Poliomyelitis	0	0	0	0	0	0	0	0	0	0	1	0	0.2	0.2	0.0
Rubella	0	7	0	3	0	0	1	2	13	9	5	26	35.6	9.8	1.3
Rubella - congenital	0	0	0	0	0	0	0	0	0	0	0	0	1.2	0.4	0.0
Tetanus	0	0	0	0	0	0	0	0	0	1	2	4	2.2	0.6	0.0
Varicella zoster (chickenpox)	0	0	29	166	144	9	0	74	422	278	495	966	496.5	248.3	0.8
Varicella zoster (shingles)	4	0	32	99	172	28	0	107	442	444	332	1,421	332.0	166.0	1.3
Varicella zoster (unspecified)	24	0	1	858	114	9	0	197	1,203	1,033	1,084	3,209	1,047.0	418.8	1.1
Vectorborne diseases															
Arbovirus infection (NEC)	0	0	0	4	0	0	2	0	6	3	3	16	32.8	7.8	0.8
Barmah Forest virus infection	0	87	19	221	11	0	2	34	374	486	318	1,692	1,233.0	253.6	1.5
Dengue virus infection	2	37	5	21	4	3	0	21	93	93	65	339	308.0	40.6	2.3
Japanese encephalitis virus infection	0	0	0	0	0	0	0	0	0	0	0	0	0.4	0.0	0.0
Kunjin virus infection	0	0	0	1	0	0	0	0	1	0	0	1	2.8	0.0	0.0
Malaria	5	31	3	42	5	2	42	22	152	128	115	405	515.4	148.4	1.0
Murray Valley encephalitis virus infection	0	0	0	0	0	0	0	0	0	1	0	2	0.8	0.0	0.0
Ross River virus infection	3	149	43	393	31	0	19	130	768	1,159	654	4,717	3,384.4	344.4	2.2

Table 2. Notifications of diseases received by State and Territory health authorities in the period 1 July to 30 September 2008, by date of diagnosis,* *continued*

Disease	State or territory								Total 3rd quarter 2008†	Total 2nd quarter 2008	Total 3rd quarter 2007	Last 5 years mean 3rd quarter	Year to date 2008	Last 5 years YTD mean	Ratio‡
	ACT	NSW	NT	Qld	SA	Tas	Vic	WA							
Zoonoses															
Anthrax	0	0	0	0	0	0	0	0	0	0	0	0	0.4	0.0	0.0
Australian bat lyssavirus	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Brucellosis	0	1	0	14	0	0	0	0	15	13	10	36	25.6	9.2	1.6
Leptospirosis	0	4	0	9	0	0	0	1	14	30	10	87	114.2	22.4	0.6
Lyssavirus (NEC)	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Ornithosis	0	11	0	2	0	0	12	0	25	33	16	81	128.6	43.8	0.6
Q fever	0	46	1	29	4	0	7	0	87	69	110	266	339.0	104.4	0.8
Tularaemia	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Other bacterial infections															
Legionellosis	0	13	1	10	4	0	10	18	56	76	50	194	236.6	66.2	0.8
Leprosy	0	0	1	0	0	0	0	0	1	2	1	6	7.4	2.0	0.5
Meningococcal infection**	2	41	3	29	8	0	24	9	116	65	123	224	299.6	139.4	0.8
Tuberculosis	3	112	1	40	10	2	90	22	280	281	292	858	777.6	280.4	1.0
Total	707	10,258	1,567	12,011	2,993	1,037	8,008	5,272	41,853	36,778	40,634	118,346	97111.7	33,161.0	1.3

* Date of diagnosis = true onset date, or where not available, the earliest of (i) specimen date, (ii) notification date, or (iii) notification receive date. Hepatitis B and C unspecified were analysed by the date of notification.

† Totals comprise data from all states and territories. Cumulative figures are subject to retrospective revision so there may be discrepancies between the number of new notifications and the increment in the cumulative figure from the previous period.

‡ Ratio = ratio of current quarter total to the mean of last 5 years for the same quarter. Note: Ratios for syphilis <2 years; syphilis >2 years or unspecified duration based on 2 years data

§ Not reported for New South Wales where it is only notifiable as 'foodborne disease' or 'gastroenteritis in an institution'.

|| Infections with Shiga-like toxin (verotoxin) producing *Escherichia coli* (STEC/VTEC).

¶ Includes *Chlamydia trachomatis* identified from cervical, rectal, urine, urethral, throat and eye samples, except for South Australia, which reports only genital tract specimens; Queensland and the Northern Territory, which excludes ocular specimens; and Western Australia, which excludes ocular and perinatal infections.

** Only invasive meningococcal disease is nationally notifiable. However, New South Wales, the Australian Capital Territory and South Australia also report conjunctival cases.

NN Not notifiable.

NEC Not elsewhere classified.

NDP No data provided.

Table 3. Notification rates of diseases, 1 July to 30 September 2008, by state or territory. (Annualised rate per 100,000 population)

Disease*	State or territory								
	ACT	NSW	NT	Qld	SA	Tas	Vic	WA	Aust
Bloodborne diseases									
Hepatitis (NEC)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Hepatitis B (incident)	0.0	0.9	1.9	1.1	0.3	1.6	1.9	3.2	1.4
Hepatitis B (unspecified)	28.3	45.4	63.3	21.0	28.3	17.0	39.7	30.8	35.6
Hepatitis C (incident)	1.2	0.4	5.6	0.0	2.0	4.1	2.5	4.7	1.6
Hepatitis C (unspecified)	63.6	74.1	76.3	62.1	30.0	67.3	43.7	55.5	58.7
Hepatitis D	0.0	0.1	0.0	0.1	0.0	0.0	0.4	0.0	0.2
Gastrointestinal diseases									
Botulism	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Campylobacteriosis†	83.6	NN	122.8	105.5	111.1	63.2	89.5	83.8	95.3
Cryptosporidiosis	0.0	4.5	14.9	8.0	3.3	16.2	7.1	2.8	5.9
Haemolytic uraemic syndrome	0.0	0.1	0.0	0.2	0.3	0.0	0.0	0.0	0.1
Hepatitis A	1.2	1.0	0.0	1.2	1.0	0.0	1.3	0.6	1.1
Hepatitis E	0.0	0.2	0.0	0.2	0.0	0.0	0.2	0.2	0.2
Listeriosis	2.4	0.5	0.0	0.3	0.0	0.0	0.1	0.8	0.3
Salmonellosis	24.7	21.8	141.4	25.5	33.3	13.0	19.7	33.6	25.1
Shigellosis	1.2	1.9	63.3	1.3	7.6	0.0	4.1	7.0	3.8
STEC, VTEC‡	0.0	0.1	0.0	0.7	1.0	0.0	0.2	0.0	0.3
Typhoid	0.0	0.4	0.0	0.2	0.0	0.0	0.7	0.2	0.4
Quarantinable diseases									
Cholera	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highly pathogenic avian influenza in humans	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Plague	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rabies	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Severe acute respiratory syndrome	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Smallpox	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Viral haemorrhagic fever	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow fever	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sexually transmissible infections									
Chlamydial infection§	317.9	205.2	917.5	355.3	223.5	317.8	239.2	404.7	276.6
Donovanosis	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gonococcal infection	3.5	19.9	599.3	35.7	18.7	2.4	17.4	74.1	33.0
Syphilis (all)	21.2	20.3	109.8	7.4	4.0	8.1	15.3	14.8	15.4
Syphilis <2 years duration	1.2	3.6	18.6	4.6	4.0	3.2	5.9	11.2	5.3
Syphilis >2 years or unspecified duration	20.0	16.7	91.2	2.8	NDP	4.9	9.4	3.6	10.1
Syphilis - congenital	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Vaccine preventable diseases									
Diphtheria	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Haemophilus influenzae type b	0.0	0.1	0.0	0.1	0.3	0.0	0.0	0.0	0.1
Influenza (laboratory confirmed)	193.1	59.7	193.6	270.1	59.1	235.9	75.2	133.1	120.4
Measles	0.0	0.1	0.0	0.2	0.3	0.0	0.0	0.2	0.1
Mumps	0.0	0.6	37.2	0.2	1.5	0.8	0.3	2.3	1.1
Pertussis	38.9	94.7	275.4	52.6	91.9	38.9	30.8	16.9	62.1
Pneumococcal disease (invasive)	1.2	12.1	35.4	14.3	10.4	11.4	10.0	11.0	11.8

Table 3. Notification rates of diseases, 1 July to 30 September 2008, by state or territory. (Annualised rate per 100,000 population), continued

Disease*	State or territory								
	ACT	NSW	NT	Qld	SA	Tas	Vic	WA	Aust
Vaccine preventable diseases, *continued*									
Poliomyelitis	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rubella	0.0	0.4	0.0	0.3	0.0	0.0	0.1	0.4	0.2
Rubella - congenital	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Tetanus	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Varicella zoster (chickenpox)	0.0	NN	54.0	15.9	36.4	7.3	NN	14.1	18.9
Varicella zoster (shingles)	4.7	NN	59.6	9.5	43.4	22.7	NN	20.3	19.8
Varicella zoster (unspecified)	28.3	NN	1.9	82.1	28.8	7.3	NN	37.4	53.9
Vectorborne diseases									
Arbovirus infection (NEC)	0.0	0.0	0.0	0.4	0.0	0.0	0.2	0.0	0.1
Barmah Forest virus infection	0.0	5.1	35.4	21.1	2.8	0.0	0.2	6.5	7.1
Chikungunya virus infection	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dengue virus infection	2.4	2.1	9.3	2.0	1.0	2.4	0.0	4.0	1.8
Japanese encephalitis virus infection	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Kunjin virus infection	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
Malaria	5.9	1.8	5.6	4.0	1.3	1.6	3.2	4.2	2.9
Murray Valley encephalitis virus infection	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ross River virus infection	3.5	8.7	80.0	37.6	7.8	0.0	1.5	24.7	14.6
Zoonoses									
Anthrax	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Australian bat lyssavirus	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Brucellosis	0.0	0.1	0.0	1.3	0.0	0.0	0.0	0.0	0.3
Leptospirosis	0.0	0.2	0.0	0.9	0.0	0.0	0.0	0.2	0.3
Lyssavirus (NEC)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ornithosis	0.0	0.6	0.0	0.2	0.0	0.0	0.9	0.0	0.5
Q fever	0.0	2.7	1.9	2.8	1.0	0.0	0.5	0.0	1.7
Tularaemia	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other bacterial infections									
Legionellosis	0.0	0.8	1.9	1.0	1.0	0.0	0.8	3.4	1.1
Leprosy	0.0	0.0	1.9	0.0	0.0	0.0	0.0	0.0	0.0
Meningococcal infection‖	2.4	2.4	5.6	2.8	2.0	0.0	1.8	1.7	2.2
Tuberculosis	3.5	6.5	1.9	3.8	2.5	1.6	6.9	4.2	5.3

* Rates are subject to retrospective revision.

† Not reported for New South Wales where it is only notifiable as 'foodborne disease' or 'gastroenteritis in an institution'.

‡ Infections with Shiga-like toxin (verotoxin) producing *Escherichia coli* (STEC/VTEC).

§ Includes *Chlamydia trachomatis* identified from cervical, rectal, urine, urethral, throat and eye samples, except for South Australia, which reports only genital tract specimens; Queensland and the Northern Territory, which excludes ocular specimens; and Western Australia, which excludes ocular and perinatal infections.

‖ Only invasive meningococcal disease is nationally notifiable. However, New South Wales, the Australian Capital Territory and South Australia also report conjunctival cases.

NN Not notifiable.

NEC Not elsewhere classified.

Laboratory Serology and Virology Reporting Scheme

There were 9,524 reports received by the Virology and Serology Laboratory Reporting Scheme (LabVISE) in the reporting period, 1 July to 30 September 2008 (Tables 4 and 5).

Table 4. Virology and serology laboratory reports by state or territory* for the reporting period 1 July to 30 September 2008, and total reports for the year†

	State or territory								This period 2008	This period 2007	Year to date 2008	Year to date 2007
	ACT	NSW	NT	Qld	SA	Tas	Vic	WA				
Measles, mumps, rubella												
Measles virus	–	–	–	3	3	–	–	–	6	1	30	18
Mumps virus	–	–	2	1	2	–	–	–	5	12	39	41
Rubella virus	–	–	–	3	–	–	–	–	3	–	12	15
Hepatitis viruses												
Hepatitis A virus	–	–	–	5	4	–	–	–	9	4	44	31
Hepatitis D virus	–	–	–	1	1	–	–	–	2	–	20	20
Hepatitis E virus	–	–	–	1	–	–	1	–	2	–	8	1
Arboviruses												
Ross River virus	–	3	1	178	24	–	1	2	209	59	1,266	887
Barmah Forest virus	–	4	2	82	17	–	1	–	106	34	483	409
Flavivirus (unspecified)	–	1	–	12	–	–	–	–	13	7	55	81
Adenoviruses												
Adenovirus not typed/ pending	2	80	–	269	216	–	16	1	584	177	1,299	893
Herpesviruses												
Cytomegalovirus	1	62	–	172	111	1	3	1	351	121	971	945
Varicella-zoster virus	6	134	–	528	186	5	13	1	873	267	2,195	2,125
Epstein-Barr virus	–	19	13	316	233	7	1	29	618	230	1,837	1,965
Other DNA viruses												
Parvovirus	–	3	–	67	6	–	8	–	84	49	207	289
Picornavirus family												
Coxsackievirus A9	–	3	–	–	–	–	–	–	3	–	4	–
Coxsackievirus A16	–	4	–	–	–	–	–	–	4	–	4	–
Echovirus type 11	–	5	–	–	–	–	–	–	5	–	10	–
Rhinovirus (all types)	–	45	–	–	2	–	–	–	47	38	138	245
Enterovirus not typed/ pending	–	7	–	10	4	–	1	–	22	10	122	128
Picornavirus not typed	–	1	–	–	–	1	–	–	2	3	9	7
Ortho/ paramyxoviruses												
Influenza A virus	4	106	2	292	79	2	20	–	505	264	643	2,227
Influenza B virus	6	152	1	333	240	6	38	–	776	39	867	131
Parainfluenza virus type 1	–	2	–	5	20	–	5	–	32	11	181	39
Parainfluenza virus type 2	–	1	–	3	1	–	–	–	5	2	25	59
Parainfluenza virus type 3	–	60	–	70	35	–	9	–	174	131	198	373
Respiratory syncytial virus	1	232	–	163	355	23	71	2	847	284	1,791	2,063

Table 4. Virology and serology laboratory reports by state or territory* for the reporting period 1 July to 30 September 2008, and total reports for the year,† continued

	State or territory								This period 2008	This period 2007	Year to date 2008	Year to date 2007
	ACT	NSW	NT	Qld	SA	Tas	Vic	WA				
Other RNA viruses												
HTLV-1	–	–	–	–	24	–	–	–	24	1	42	12
Rotavirus	–	37	–	–	34	2	5	–	78	111	275	366
Norwalk agent	–	42	–	–	–	4	–	–	46	219	74	767
Other												
Chlamydia trachomatis not typed	32	291	–	1,301	545	19	8	2	2,198	692	6,594	6,326
Chlamydia pneumoniae	–	–	–	–	–	1	–	–	1	–	2	1
Chlamydia psittaci	1	2	–	1	–	1	19	–	24	1	79	39
Chlamydia species	–	–	–	–	–	–	1	–	1	–	3	2
Mycoplasma pneumoniae	–	13	6	129	75	5	74	3	305	120	729	989
Mycoplasma hominis	–	3	–	–	–	–	–	–	3	2	7	7
Coxiella burnetii (Q fever)	3	5	–	18	18	–	9	–	53	25	205	183
Rickettsia - spotted fever group	–	2	1	1	4	–	2	–	10	9	100	98
Streptococcus group A	–	10	48	260	–	–	–	–	318	106	768	825
Yersinia enterocolitica	–	5	–	–	–	–	–	–	5	1	10	7
Brucella species	–	–	–	11	–	–	–	–	11	3	28	7
Bordetella pertussis	–	99	2	140	350	1	1	–	593	67	1,039	666
Legionella pneumophila	–	–	–	–	–	–	1	–	1	4	12	28
Legionella longbeachae	–	–	–	–	2	–	2	–	4	–	9	6
Cryptococcus species	–	1	–	5	3	–	–	–	9	15	24	42
Leptospira species	–	1	–	14	1	–	–	–	16	9	70	52
Treponema pallidum	–	63	13	268	168	–	9	–	521	176	1,629	1,785
Entamoeba histolytica	–	–	2	1	–	–	1	–	4	–	8	6
Toxoplasma gondii	–	–	–	3	3	–	–	–	6	1	12	21
Echinococcus granulosus	–	–	–	–	4	–	2	–	6	1	28	16
Total	56	1,498	93	4,666	2,770	78	322	41	9,524	3,306	24,205	25,243

* State or territory of postcode, if reported, otherwise state or territory of reporting laboratory.

† Data presented are for reports with reports dates in the current period.

– No data received this period.

Table 5. Virology and serology reports by laboratories for the reporting period 1 July to 30 September 2008*

State or territory	Laboratory	July 2008	August 2008	September 2008	Total this period
Australian Capital Territory	The Canberra Hospital	–	–	–	–
New South Wales	Institute of Clinical Pathology and Medical Research, Westmead	118	125	180	423
	New Children's Hospital, Westmead	140	127	128	395
	Repatriation General Hospital, Concord	–	–	–	0
	Royal Prince Alfred Hospital, Camperdown	38	43	53	134
	South West Area Pathology Service, Liverpool	63	75	72	210
Queensland	Queensland Medical Laboratory, West End	1,376	1,804	1,992	5,172
	Townsville General Hospital	–	–	–	0
South Australia	Institute of Medical and Veterinary Science, Adelaide	829	893	1,040	2,762
Tasmania	Northern Tasmanian Pathology Service, Launceston	27	19	24	70
	Royal Hobart Hospital, Hobart	–	–	–	0
Victoria	Australian Rickettsial Reference Laboratory	23			23
	Monash Medical Centre, Melbourne	58	52	23	133
	Royal Children's Hospital, Melbourne	–	–	–	0
	Victorian Infectious Diseases Reference Laboratory, Fairfield	48	65	41	154
Western Australia	PathWest Virology, Perth	–	–	–	0
	Princess Margaret Hospital, Perth	–	–	–	0
	Western Diagnostic Pathology	48	–	–	48
Total		2,768	3,203	3,553	9,524

* The complete list of laboratories reporting for the 12 months, January to December 2008, will appear in every report regardless of whether reports were received in this reporting period. Reports are not always received from all laboratories.

– No data received this period.

Additional reports

Australian Sentinel Practices Research Network

The Australian Sentinel Practices Research Network (ASPREN) is a national surveillance system that is owned and operated by the Royal Australian College of General Practitioners and directed through the Discipline of General Practice at the University of Adelaide.

The network consists of general practitioners who report presentations on a number of defined medical conditions each week. ASPREN was established in 1991 to provide a rapid monitoring scheme for infectious diseases that can alert public health officials of epidemics in their early stages as well as play a role in the evaluation of public health campaigns and research of conditions commonly seen in general practice. Electronic data collection was established in 2006 and currently, further development of ASPREN is in progress to create an automatic reporting system.

The list of conditions is reviewed annually by the ASPREN management committee and an annual report is published. In 2008, 4 conditions are being monitored. They include influenza like illness, gastroenteritis and varicella infections (chickenpox and shingles). Definitions of these conditions are described in Surveillance systems reported in CDI, *published in* Commun Dis Intell *2008;32:135.*

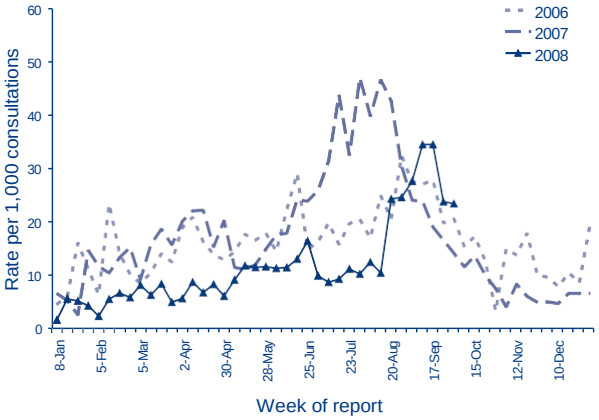
Data on influenza-like illness, gastronenteritis, chickenpox and shingles from 1 July to 30 September 2008 compared with 2007, are shown as the rate per 1,000 consultations in Figures 1, 2, 3 and 4, respectively.

Reporting period 1 July to 30 September 2008

Sentinel practices contributing to ASPREN were located in all jurisdictions other than the Northern Territory. A total of 104 general practitioners contributed data to ASPREN in the second quarter of 2008. Each week an average of 80 general practitioners provided information to ASPREN at an average of 7,804 (range 6,850 to 8,464) consultations per week.

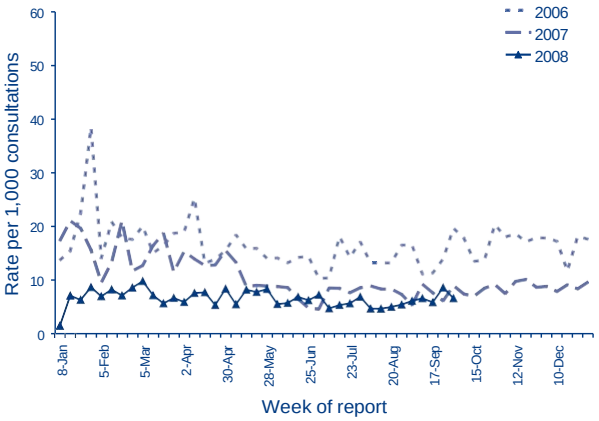
Influenza-like illness (ILI) rates reported from 1 July to 30 September 2008 were lower (9–35 cases per 1,000 consultations) compared with the same reporting period in 2007 (30–47 cases per 1,000 consultations. The rise in ILI rates in the third quarter of 2008 in mid-August occurred later compared with 2007 (beginning July). The peak ILI rate of 35 cases per 1,000 consultations occurred in mid-September (Figure 1).

Figure 1. Consultation rates for influenza-like illness, ASPREN, 1 January 2007 to 30 September 2008, by week of report



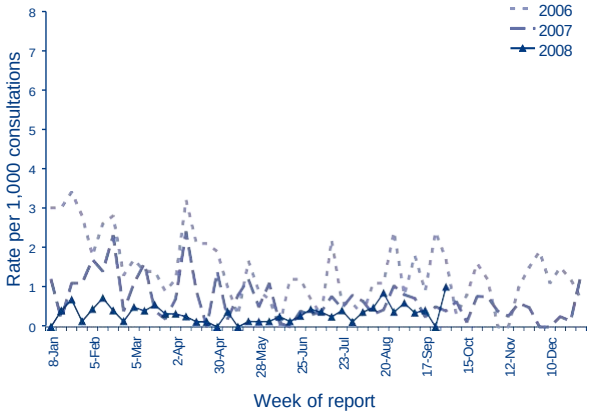
Reports of gastroenteritis from 1 July to 30 September 2008 were lower compared with the same period in 2007 (Figure 2). During this reporting period, consultation rates for gastroenteritis ranged from 5 to 9 cases per 1,000 consultations.

Figure 2. Consultation rates for gastroenteritis, ASPREN, 1 January 2007 to 30 September 2008, by week of report



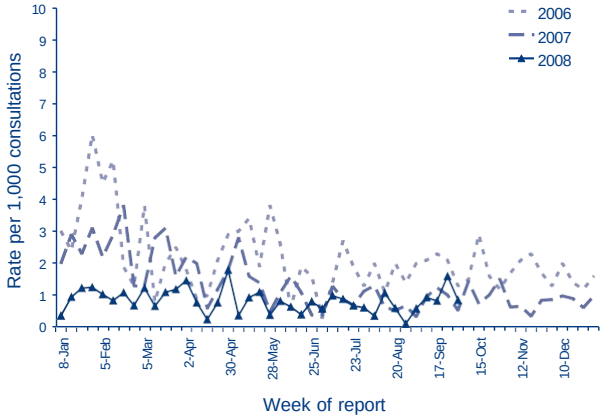
Reports of varicella infections were reported at a similar rate for the third quarter of 2008 compared with the same period in 2007. From 1 July to 30 September 2008, recorded rates for chickenpox were between 0 to 1 case per 1,000 consultations (Figure 3).

Figure 3. Consultation rates for chickenpox, ASPREN, 1 January 2007 to 30 September 2008, by week of report



In the third quarter of 2008, reported rates for shingles were between less than 1 to 1 cases per 1,000 consultations (Figure 4).

Figure 4. Consultation rates for shingles, ASPREN, 1 January 2007 to 30 September 2008, by week of report



Australian childhood immunisation coverage

Tables 1, 2 and 3 provide the latest quarterly report on childhood immunisation coverage from the Australian Childhood Immunisation Register (ACIR).

The data show the percentage of children fully immunised at 12 months of age for the cohort born between 1 April and 30 June 2007, at 24 months of age for the cohort born between 1 April and 30 June 2006, and at 5 years of age for the cohort born between 1 April and 30 June 2002 according to the National Immunisation Program Schedule. However from March 2002 to December 2007, coverage for vaccines due at 4 years of age was assessed at the 6-year milestone age.

For information about the Australian Childhood Immunisation Register see Surveillance systems reported in CDI, *published in* Commun Dis Intell *2008;32:134–135 and for a full description of the methodology used by the Register see* Commun Dis Intell *1998;22:36-37.*

Commentary on the trends in ACIR data is provided by the National Centre for Immunisation Research and Surveillance of Vaccine Preventable Diseases (NCIRS). For further information please contact the NCIRS at telephone: +61 2 9845 1435, Email: brynleyh@chw.edu.au

'Fully immunised' at 12 months of age is defined as a child having a record on the ACIR of 3 doses of a diphtheria (D), tetanus (T) and pertussis-containing (P) vaccine, 3 doses of polio vaccine, 2 or 3 doses of *Haemophilus influenzae* type b (Hib) vaccine, and 2 or 3 doses of hepatitis B vaccine. 'Fully immunised' at 24 months of age is defined as a child having a record on the ACIR of 3 or 4 doses of a DTP-containing vaccine, 3 doses of polio vaccine, 3 or 4 doses of Hib vaccine, 2 or 3 doses of hepatitis B vaccine and 1 dose of a measles, mumps and rubella-containing (MMR) vaccine. 'Fully immunised' at 5 years of age is defined as a child having a record on the ACIR of 4 or 5 doses of a DTP-containing vaccine, 4 doses of polio vaccine, and 2 doses of an MMR-containing vaccine.

Immunisation coverage for children 'fully immunised' at 12 months of age for Australia remained unchanged at 91.2% (Table 1). The only important changes in coverage for any individual vaccines due at 12 months of age occurred in the Northern Territory, where coverage for all vaccines decreased by 2 percentage points and fully immunised coverage dropped just below 90% for the 1st time since mid-2004.

Immunisation coverage for children 'fully immunised' at 24 months of age for Australia decreased by 0.3 of a percentage point to 92.5 (Table 2). There were no important changes in coverage for any individual vaccines due at 24 months of age or by jurisdiction.

Immunisation coverage for 'fully immunised' at 5 years of age for Australia decreased for the third consecutive quarter, by 0.5 of a percentage point, to 86.8% (Table 3). Coverage for all individual vaccines also decreased by 0.6 of a percentage point for Australia, however there were no important changes in coverage for any jurisdiction. This decrease in coverage is likely due to the change in the coverage calculation algorithm, which, since the beginning of 2008, now calculates coverage for vaccines due at 4 years of age at the 5-year milestone, not the 6-year milestone. This means late immunisations given to a child aged between 5 and 6 years are no longer included in the assessment.

Figure 5 shows the trends in vaccination coverage from the first ACIR-derived published coverage estimates in 1997 to the current estimates. There is a clear trend of increasing vaccination coverage over time for children aged 12 months, 24 months and 6 years, although the rate of increase has slowed over the past few years for all age groups. However, there is a noticeable dip in recent coverage labelled at 6 years of age after a second consecutive quarterly decrease due to the abovementioned change in the coverage calculation algorithm. It should also be noted that, currently, coverage for the vaccines added to the NIP since 2003 (Varicella at 18 months, Meningococcal C conjugate at 12 months and Pneumococcal conjugate at 2, 4, and 6 months) are not included in the 12 or 24 months coverage data respectively.

Table 1. Percentage of children immunised at 1 year of age, preliminary results by disease and state or territory for the birth cohort 1 April to 30 June 2007; assessment date 30 September 2008

Vaccine	State or territory								Australia
	ACT	NSW	NT	Qld	SA	Tas	Vic	WA	
Total number of children	1,145	24,196	996	15,320	4,695	1,524	17,163	7,387	72,426
Diphtheria, tetanus, pertussis (%)	94.1	91.8	90.3	91.4	92.1	91.8	92.7	90.5	91.8
Poliomyelitis (%)	94.0	91.8	90.3	91.4	92.1	91.8	92.7	90.5	91.8
Haemophilus influenzae type b (%)	96.0	94.8	93.8	93.8	94.3	95.3	94.7	94.3	94.5
Hepatitis B (%)	95.6	94.8	94.2	93.6	94.2	95.2	94.5	94.2	94.4
Fully immunised (%)	93.5	91.5	89.8	90.7	91.4	91.6	91.6	90.0	91.2
Change in fully immunised since last quarter (%)	-0.1	+0.2	-1.8	-0.1	+0.4	+0.6	-0.3	-0.1	-0.0

Table 2. Percentage of children immunised at 2 years of age, preliminary results by disease and state or territory for the birth cohort 1 April to 30 June 2006; assessment date 30 September 2008*

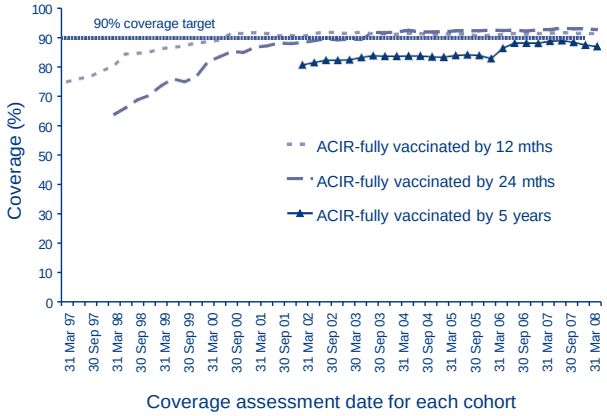
Vaccine	State or territory								Australia
	ACT	NSW	NT	Qld	SA	Tas	Vic	WA	
Total number of children	1,137	22,861	946	14,549	4,518	1,403	16,684	7,154	69,252
Diphtheria, tetanus, pertussis (%)	97.2	94.8	95.9	94.5	94.5	95.4	95.5	93.7	94.8
Poliomyelitis (%)	97.2	94.7	95.9	94.4	94.5	95.2	95.4	93.7	94.8
Haemophilus influenzae type b (%)	97.0	95.2	94.3	93.4	93.3	95.4	94.4	93.5	94.4
Measles, mumps, rubella (%)	96.1	93.7	95.2	93.5	93.4	94.4	94.6	92.9	93.9
Hepatitis B (%)	97.4	95.6	97.2	95.1	95.1	95.9	95.9	94.4	95.5
Fully immunised (%)	94.9	92.4	93.6	91.9	92.4	93.5	93.4	91.2	92.5
Change in fully immunised since last quarter (%)	+0.1	-0.0	-1.2	-0.7	-0.9	+0.1	-0.3	+0.0	-0.3

* The 12 months age data for this cohort was published in *Commun Dis Intell* 2007;31:348.

Table 3. Percentage of children immunised at 5 years of age, preliminary results by disease and state or territory for the birth cohort 1 April to 30 June 2003; assessment date 30 September 2008

Vaccine	State or territory								Australia
	ACT	NSW	NT	Qld	SA	Tas	Vic	WA	
Total number of children	998	22,128	937	13,897	4,482	1,362	15,877	6,719	66,400
Diphtheria, tetanus, pertussis (%)	91.3	86.5	87.1	87.2	86.2	89.7	90.6	84.3	87.5
Poliomyelitis (%)	91.2	86.3	87.0	87.1	86.0	89.8	90.5	84.2	87.4
Measles, mumps, rubella (%)	90.7	86.1	87.1	86.9	86.2	89.7	90.3	84.2	87.2
Fully immunised (%)	90.6	85.7	86.5	86.4	85.7	89.2	89.9	83.4	86.8
Change in fully immunised since last quarter (%)	+1.7	-0.7	-1.5	-0.9	+1.6	-0.6	-0.5	-0.7	-0.5

Figure 5. Trends in vaccination coverage, Australia, 1997 to 30 June 2008, by age cohorts



Gonococcal surveillance

John Tapsall, The Prince of Wales Hospital, Randwick NSW 2031 for the Australian Gonococcal Surveillance Programme.

The Australian Gonococcal Surveillance Programme (AGSP) reference laboratories in the various states and territories report data on sensitivity to an agreed 'core' group of antimicrobial agents quarterly. The antibiotics currently routinely surveyed are penicillin, ceftriaxone, ciprofloxacin and spectinomycin, all of which are administered as single dose regimens and currently used in Australia to treat gonorrhoea. When in vitro resistance to a recommended agent is demonstrated in 5 per cent or more of isolates from a general population, it is usual to remove that agent from the list of recommended treatment.[1] Additional data are also provided on other antibiotics from time to time. At present all laboratories also test isolates for the presence of high level (plasmid-mediated) resistance to the tetracyclines, known as TRNG. Tetracyclines are however, not a recommended therapy for gonorrhoea in Australia. Comparability of data is achieved by means of a standardised system of testing and a program-specific quality assurance process. Because of the substantial geographic differences in susceptibility patterns in Australia, regional as well as aggregated data are presented. For more information see Commun Dis Intell *2008;32:134.*

Reporting period 1 April to 30 June 2008

The AGSP laboratories received a total of 854 isolates in this quarter, a slight increase over the 823 isolates seen in the corresponding period in 2007. Of these, 831 remained viable for susceptibility testing. About 26.5% of this total was from New South Wales, 17% from Victoria, 16% from South Australia, 15% from Queensland, 13% from Western Australia and 11% from the Northern Territory. There was a single isolate from the Australian Capital Territory and 3 from Tasmania. There was a decline in numbers examined in some states but a large increase in South Australia.

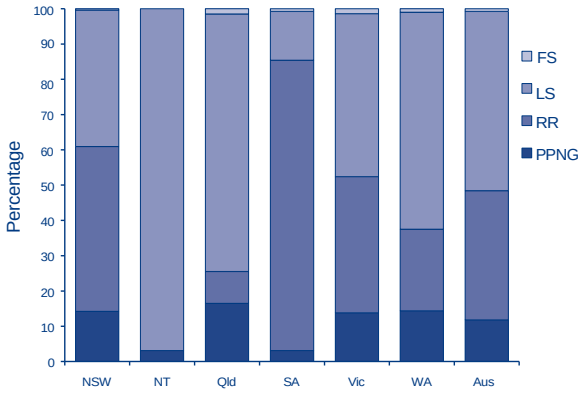
Penicillins

In this quarter, 402 (48.4%) of all isolates examined were penicillin resistant by one or more mechanisms. Ninety-eight (11.8%) were penicillinase-producing *Neisseria gonorrhoeae* (PPNG) and 304 (36.6%) resistant by chromosomal mechanisms, (CMRP). These proportions were greatly increased from those recorded in this quarter in 2007, when 259 (32.1%) of 806 isolates examined nationally were penicillin resistant. PPNG increased from the 79 (9.8%) seen in 2007, and CMRP from 180 (22.3%) isolates in 2007. The proportion of all strains resistant to the penicillins by any mechanism ranged from 3% in the Northern Territory to 85.4% in South Australia. High rates of penicillin resistance were also found in New South Wales (61%), Victoria (52.4%), Western Australia (37.5%) and Queensland (25.5%).

Figure 6 shows the proportions of gonococci fully sensitive (MIC ≤ 0.03 mg/L), less sensitive (MIC 0.06–0.5 mg/L), relatively resistant (MIC ≤ 1 mg/L)

or else PPNG aggregated for Australia and by state and territory. A high proportion of those strains classified as PPNG or CMRP will fail to respond to treatment with penicillins (penicillin, amoxycillin, ampicillin) and early generation cephalosporins.

Figure 6. Categorisation of gonococci isolated in Australia, 1 April to 30 June 2008, by penicillin susceptibility and region



FS Fully sensitive to penicillin, MIC ≤0.03 mg/L.

LS Less sensitive to penicillin, MIC 0.06–0.5 mg/L.

RR Relatively resistant to penicillin, MIC ≥1 mg/L.

PPNG Penicillinase producing *Neisseria gonorrhoeae.*

Most of the resistance in South Australia was related to CMRP—107, comprising 82.3% of isolates—whereas only 4 (3.1%) isolates were PPNG. In New South Wales and Victoria most of the penicillin resistance was also due to CMRP. In New South Wales 105 (46.7%) isolates were CMRP with 32 PPNG (14.2%) and in Victoria 56 (38.6%) were CMRP and 20 (13.8%) PPNG. In Western Australia 24 CMRP were detected accounting for 23% of isolates with 15 PPNG accounting for 14.4% of isolates. In Queensland, PPNG were more prominent (16.5%, 21 isolates) with 9% CMRP. Three PPNG were noted in both Tasmania and the Northern Territory, but no CMRP were detected. The single isolate from the Australian Capital Territory was chromosomally resistant.

Ceftriaxone

Five isolates with decreased susceptibility to ceftriaxone (MIC 0.06 and 0.12 mg/L) were detected, one each in Queensland and South Australia and three in New South Wales.

Spectinomycin

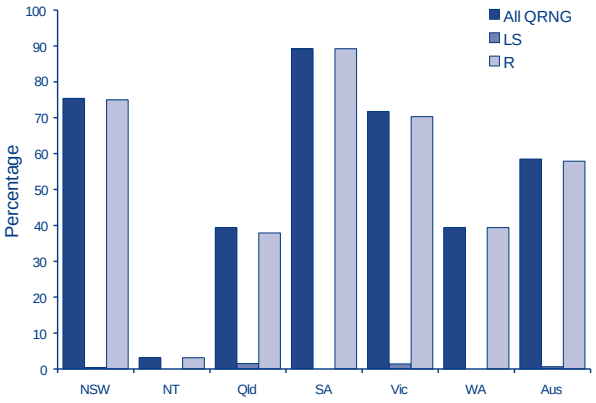
All isolates were susceptible to this injectable agent.

Quinolone antibiotics

QRNG are defined as those isolates with an MIC to ciprofloxacin equal to or greater than 0.06 mg/L. QRNG are further subdivided into less sensitive (ciprofloxacin MICs 0.06–0.5 mg/L) or resistant (MIC ≤ 1 mg/L) groups.

A total of 486 quinolone resistant *N. gonorrhoeae* (QRNG) were detected during this quarter and represented 58.5% of all gonococci tested nationally. This was a further increase in the proportion of QRNG when compared with the 44.5% in this quarter in 2007, 33.7% in 2006 and 30% in 2005. The great majority of QRNG in the current period (99%) continued to exhibit higher-level resistance (ciprofloxacin MICs 1mg/L or more) (Figure 7).

Figure 7. The distribution of quinolone resistant isolates of Neisseria gonorrhoeae in Australia, 1 April to 30 June 2008, by jurisdiction



LS QRNG Ciprofloxacin MICs 0.06–0.5 mg/L.

R QRNG Ciprofloxacin MICs ≥ 1 mg/L.

QRNG were detected in all states and territories. The highest proportion of QRNG was present in South Australia where 116 QRNG accounted for 89.2% of all isolates. A high number (169) and proportion (75%) of QRNG were also found in New South Wales, Victoria (104 QRNG, 72%), Queensland (49 QRNG, 39%), and Western Australia (41 QRNG, 39%). Three isolates from Tasmania and the Northern Territory were QRNG as was the single strain from the Australian Capital Territory.

High level tetracycline resistance

The number (145) of high level tetracycline resistance (TRNG) detected this quarter was greater than the 121 found in the corresponding quarter in 2007 and represented 17.5% of all isolates. The

highest proportion of TRNG in any jurisdiction (37%) was in Western Australia and the highest number (44) was detected in New South Wales. TRNG were present in all states and territories except the Australian Capital Territory.

Reference

1. Management of sexually transmitted diseases. World Health Organization 1997; Document WHO/GPA/TEM94.1 Rev.1 p 37.

Meningococcal surveillance

John Tapsall, The Prince of Wales Hospital, Randwick, NSW, 2031 for the Australian Meningococcal Surveillance Programme.

The reference laboratories of the Australian Meningococcal Surveillance Programme report data on the number of laboratory confirmed cases confirmed either by culture or by non-culture based techniques. Culture positive cases, where a Neisseria meningitidis is grown from a normally sterile site or skin, and non-culture based diagnoses, derived from results of nucleic acid amplification assays and serological techniques, are defined as invasive meningococcal disease (IMD) according to Public Health Laboratory Network definitions. Data contained in the quarterly reports are restricted to a description of the number of cases per jurisdiction, and serogroup, where known. A full analysis of laboratory confirmed cases of IMD is contained in the annual reports of the Programme, published in Communicable Diseases Intelligence. For more information see Commun Dis Intell *2008;32:135.*

Laboratory confirmed cases of invasive meningococcal disease for the period 1 July to 30 September 2008, are included in this issue of Communicable Diseases Intelligence *(Table 4).*

HIV and AIDS surveillance

National surveillance for HIV disease is coordinated by the National Centre in HIV Epidemiology and Clinical Research (NCHECR), in collaboration with State and Territory health authorities and the Commonwealth of Australia. Cases of HIV infection are notified to the National HIV Database on the first occasion of diagnosis in Australia, by either the diagnosing laboratory (Australian Capital Territory, New South Wales, Tasmania, Victoria) or by a combination of laboratory and doctor sources (Northern Territory, Queensland, South Australia, Western Australia). Cases of AIDS are notified through the State and Territory health authori-

Table 4. Number of laboratory confirmed cases of invasive meningococcal disease, Australia, 1 July to 30 September 2008, by serogroup and state or territory

State or territory	Year	Serogroup													
		A		B		C		Y		W135		ND		All	
		Q3	YTD	Q3	YTD	Q3	YTD	Q3	YTD	Q3	YTD	Q3	YTD	Q3	YTD
Australian Capital Territory	08			0	2	1	1							1	3
	07			1	3						1			1	4
New South Wales	08			14	27	1	4	1	3	1	2			17	36
	07			35	52	1	7	2	4	0	1	3	7	41	70
Northern Territory	08			3	3	0	2							3	5
	07			0	1	0	1							0	2
Queensland	08			11	52	2	4					11	11	24	67
	07			24	43	4	5	1	1	2	2		1	31	52
South Australia	08			5	12					1	1			6	13
	07			5	9	1	1					1	1	7	11
Tasmania	08													0	0
	07			2	2			1	1		1			3	5
Victoria	08			20	44	1	1	0	1			3	6	24	52
	07			14	35	0	2	1	4	1	2	3	4	19	47
Western Australia	08			8	16							0	1	8	17
	07			8	15									8	15
Total	08			61	156	5	12	1	4	2	3	14	18	83	193
	07			89	160	6	16	5	10	3	6	7	13	110	205

ties to the National AIDS Registry. Diagnoses of both HIV infection and AIDS are notified with the person's date of birth and name code, to minimise duplicate notifications while maintaining confidentiality.

Tabulations of diagnoses of HIV infection and AIDS are based on data available 3 months after the end of the reporting interval indicated, to allow for reporting delay and to incorporate newly available information. More detailed information on diagnoses of HIV infection and AIDS is published in the quarterly Australian HIV Surveillance Report, and annually in 'HIV/AIDS, viral hepatitis and sexually transmissible infections in Australia, annual surveillance report'. The reports are available from the National Centre in HIV Epidemiology and Clinical Research, 376 Victoria Street, Darlinghurst NSW 2010. Internet: http://www.med.unsw.edu.au/ncheer. Telephone: +61 2 9332 4648. Facsimile: +61 2 9332 1837. For more information see Commun Dis Intell *2005;29:91–92.*

HIV and AIDS diagnoses and deaths following AIDS reported for 1 January to 31 March 2008, as reported to 30 June 2008, are included in this issue of Communicable Diseases Intelligence *(Tables 5 and 6).*

Table 5. New diagnoses of HIV infection, new diagnoses of AIDS and deaths following AIDS occurring in the period 1 January to 31 March 2008, by sex and state or territory of diagnosis

	Sex	State or territory								Totals for Australia			
		ACT	NSW	NT	Qld	SA	Tas	Vic	WA	This period 2008	This period 2007	YTD 2008	YTD 2007
HIV diagnoses	Female	0	11	0	5	2	1	6	3	28	33	28	33
	Male	5	85	0	43	9	3	68	10	223	253	223	253
	Not reported	0	0	0	0	0	0	0	0	0	0	0	0
	Total*	5	96	0	48	11	4	74	13	251	286	251	286
AIDS diagnoses	Female	0	1	0	0	0	0	1	0	2	3	2	3
	Male	1	8	1	7	1	0	16	2	36	35	36	35
	Total*	1	9	1	7	1	0	17	2	38	38	38	38
AIDS deaths	Female	0	1	0	0	0	0	0	0	1	0	1	0
	Male	0	4	0	1	0	0	3	0	8	15	8	15
	Total*	0	5	0	1	0	0	3	0	9	15	9	15

* Totals include people whose sex was reported as transgender.

Table 6. Cumulative diagnoses of HIV infection, AIDS, and deaths following AIDS since the introduction of HIV antibody testing to 31 March 2008, and reported by 30 June 2008, by sex and state or territory

	Sex	State or territory								Australia
		ACT	NSW	NT	Qld	SA	Tas	Vic	WA	
HIV diagnoses	Female	32	939	23	303	113	13	406	224	2,053
	Male	274	13,908	137	2,940	988	115	5,569	1,284	25,215
	Not reported	0	228	0	0	0	0	22	0	250
	Total*	306	15,105	160	3,252	1,102	128	6,019	1,515	27,587
AIDS diagnoses	Female	10	264	4	73	32	4	117	42	546
	Male	94	5,520	46	1,062	413	55	2,068	436	9,694
	Total*	104	5,802	50	1,137	446	59	2,198	480	10,276
AIDS deaths	Female	7	139	1	43	20	2	64	29	305
	Male	73	3,601	30	677	280	33	1,429	299	6,422
	Total*	80	3,751	31	722	300	35	1,502	329	6,750

* Totals include people whose sex was reported as transgender.

National Enteric Pathogens Surveillance System

The National Enteric Pathogens Surveillance System (NEPSS) collects, analyses and disseminates data on human enteric bacterial infections diagnosed in Australia. Communicable Diseases Intelligence *NEPSS quarterly reports include only* Salmonella. *NEPSS receives reports of* Salmonella *isolates that have been serotyped and phage typed by the 5* Salmonella *typing laboratories in Australia.* Salmonella *isolates are submitted to these laboratories for typing by primary diagnostic laboratories throughout Australia.*

A case is defined as the isolation of a Salmonella *from an Australian resident, either acquired locally or as a result of overseas travel, including isolates detected during immigrant and refugee screening. Second and subsequent identical isolates from an individual within 6 months are excluded, as are isolates from overseas visitors to Australia. The date of the case is the date the primary diagnostic laboratory isolated* Salmonella *from the clinical sample.*

Quarterly reports include historical quarterly mean counts. These should be interpreted cautiously as they may be affected by outbreaks and by surveillance artefacts such as newly recognised and incompletely typed Salmonella.

NEPSS may be contacted at the Microbiological Diagnostic Unit, Public Health Laboratory, Department of Microbiology and Immunology, The University of Melbourne; by telephone: +61 3 8344 5701, facsimile: +61 3 8344 7833 or email joanp@unimelb.edu.au

Scientists, diagnostic and reference laboratories contribute data to NEPSS, which is supported by state and territory health departments and the Australian Government Department of Health and Ageing.

Reports to the National Enteric Pathogens Surveillance System of Salmonella *infection for the period 1 July to 30 September 2008 are included in Tables 7 and 8. Data include cases reported and entered by 21 October 2008. Counts are preliminary, and subject to adjustment after completion of typing and reporting of further cases to NEPSS. For more information see* Commun Dis Intell *2008;32:137.*

Reporting period 1 July to 30 September 2008

There were 1,018 reports to NEPSS of human *Salmonella* infection in the third quarter of 2008, approximately 40% fewer than in the second quarter of 2008. Limited third quarter data from Western Australia were available at the time of preparing this report. Taking this into account, the overall count of cases for the remainder of Australia was similar to the recent historical mean number of reports for this time of each year. The nadir in the annual cycle of human salmonellosis in Australia typically occurs in August–September.

During the third quarter of 2008, the 25 most common *Salmonella* types in Australia accounted for 617 cases, 61% of all reported human *Salmonella* infections. Sixteen of the 25 most common *Salmonella* infections in the third quarter of 2008 were also among those most commonly reported in the preceding quarter.

The most conspicuous feature of the national data was the predominance of various phage types of *S*. Typhimurium, which comprised 6 of the 8 most common salmonellae. Among these, the increase in *S*. Typhimurium phage type 9 above the historical average was due to increased cases in New South Wales, Victoria and South Australia. The increase in *S*. Typhimurium phage type 44 was mostly due to cases in Victoria and New South Wales. Increases of *S*. Typhimurium phage type 29 (mostly in Queensland and South Australia) and *S*. Typhimurium phage type 193 (South Australia) were more geographically restricted. *S*. Stanley was moderately elevated (most cases in New South Wales and Victoria).

Acknowledgement: We thank scientists, contributing laboratories, state and territory health departments, and the Australian Government Department of Health and Ageing for their contributions to NEPSS.

Table 7. Reports to the National Enteric Pathogens Surveillance System of *Salmonella* isolated from humans during the period 1 July to 30 September 2008, as reported to 21 October 2008

	State or territory								
	ACT	NSW	NT	Qld	SA	Tas	Vic	WA*	Australia
Total all *Salmonella* for quarter	23	324	58	211	130	13	249	10	1,018
Total contributing *Salmonella* types	16	89	30	74	54	10	87	5	179

* Limited third quarter data from Western Australia were available at the time of preparing this report.

Table 8. Top 25 *Salmonella* types identified in Australia, 1 July to 30 September 2008, by state or territory

National rank	*Salmonella* type	State or territory								Total 3rd quarter 2008	Last 10 years mean 3rd quarter	Year to date 2008	Year to date 2007
		ACT	NSW	NT	Qld	SA	Tas	Vic	WA				
1	*S.* Typhimurium PT 9	4	44	2	9	12	0	25	0	96	63	364	608
2	*S.* Typhimurium PT 135	0	20	1	16	5	0	17	0	59	96	724	528
3	*S.* Typhimurium PT 44	0	18	0	13	1	0	24	0	56	11	282	332
4	*S.* Typhimurium PT 170	2	34	0	6	0	0	13	0	55	28	223	224
5	*S.* Stanley	2	13	0	2	3	1	13	0	34	21	88	100
6	*S.* Virchow PT 8	0	4	7	12	1	0	2	0	26	30	146	184
7	*S.* Typhimurium PT 29	0	3	2	9	11	0	0	0	25	1.8	62	136
8	*S.* Typhimurium untypable	1	5	0	4	9	0	5	0	24	10	60	69
9	*S.* Enteritidis PT 6a	0	5	0	5	2	2	8	0	22	12	49	55
10	*S.* Infantis	0	8	0	3	7	0	2	0	20	27	143	145
11	*S.* Saintpaul	0	3	4	8	1	1	2	0	19	49	186	280
12	*S.* Chester	0	1	3	8	2	0	4	0	18	22	112	127
13	*S.* Enteritidis PT 1	1	3	0	1	2	0	8	1	16	9	41	22
14	*S.* Birkenhead	1	12	0	1	0	0	0	0	14	23	142	163
15	*S.* Weltevreden	0	4	2	2	2	0	4	0	14	10	71	49
16	*S.* Typhimurium PT 193	0	0	1	0	12	0	1	0	14	4.3	37	42
17	*S.* Anatum	0	6	5	0	1	0	1	0	13	12	62	60
18	*S.* Typhimurium PT 12	0	7	0	0	2	0	4	0	13	11	41	78
19	*S.* Singapore	0	11	0	0	0	0	2	0	13	8	66	55
20	*S.* Agona	1	5	0	5	1	0	0	0	12	13	42	44
21	*S.* Aberdeen	0	0	4	8	0	0	0	0	12	12	66	107
22	*S.* Javiana	0	4	0	4	0	0	3	0	11	5	25	37
23	*S.* Montevideo	0	4	0	6	0	0	1	0	11	5	67	97
24	*S.* Typhimurium PT 197	0	3	0	5	1	0	1	0	10	19	83	158
25	*S.* Typhimurium PT 6 var 1	1	2	0	1	0	0	0	6	10	2.8	38	20

* Limited third quarter data from Western Australia were available at the time of preparing this report.