Communicable diseases surveillance

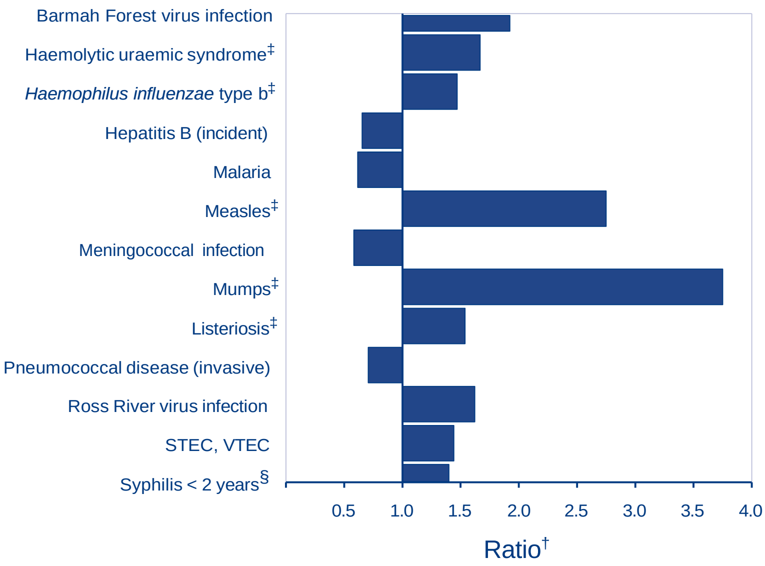
Highlights for 1st quarter, 2008

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 an onset in the first quarter (January to March) 2008, in comparison with the 5-year mean for the same period. Notifications were above the 5-year mean for the same period and exceeded 2 standard deviations from the 5-year mean for: Barmah Forest virus infection, haemolytic uraemic syndrome, listeriosis, measles and mumps. Notifications were above the 5-year mean, but less than 2 standard deviations from the 5-year mean, for *Haemophilus influenzae* type b, Ross River virus infection, Shiga toxin-producing/verotoxin-producing *Escherichia coli* (STEC/VTEC) and syphilis (less than 2 years duration). Notifications were below the 5-year mean for hepatitis B (incident), malaria, meningococcal infection and invasive pneumococcal disease.

Figure 1. Selected* diseases from the National Notifiable Diseases Surveillance System, comparison of provisional totals for the period 1 January to 31 March 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 practice, 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.

† 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.

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

Vectorborne diseases

There are currently 8 notifiable mosquito-borne diseases under national surveillance in Australia. These include alphaviruses (Barmah Forest virus and Ross River virus), flaviviruses (dengue, Japanese encephalitis, Kunjin, Murray Valley encephalitis and flavivirus infection not elsewhere classified) and malaria.

In Australia the alphaviruses, Barmah Forest virus and Ross River virus, are of major public health significance, causing annual epidemics with seasonal peaks occurring between January and May each year. Infection with either of these diseases is characterised by rash, fever, fatigue and joint pain.

Barmah Forest virus infection

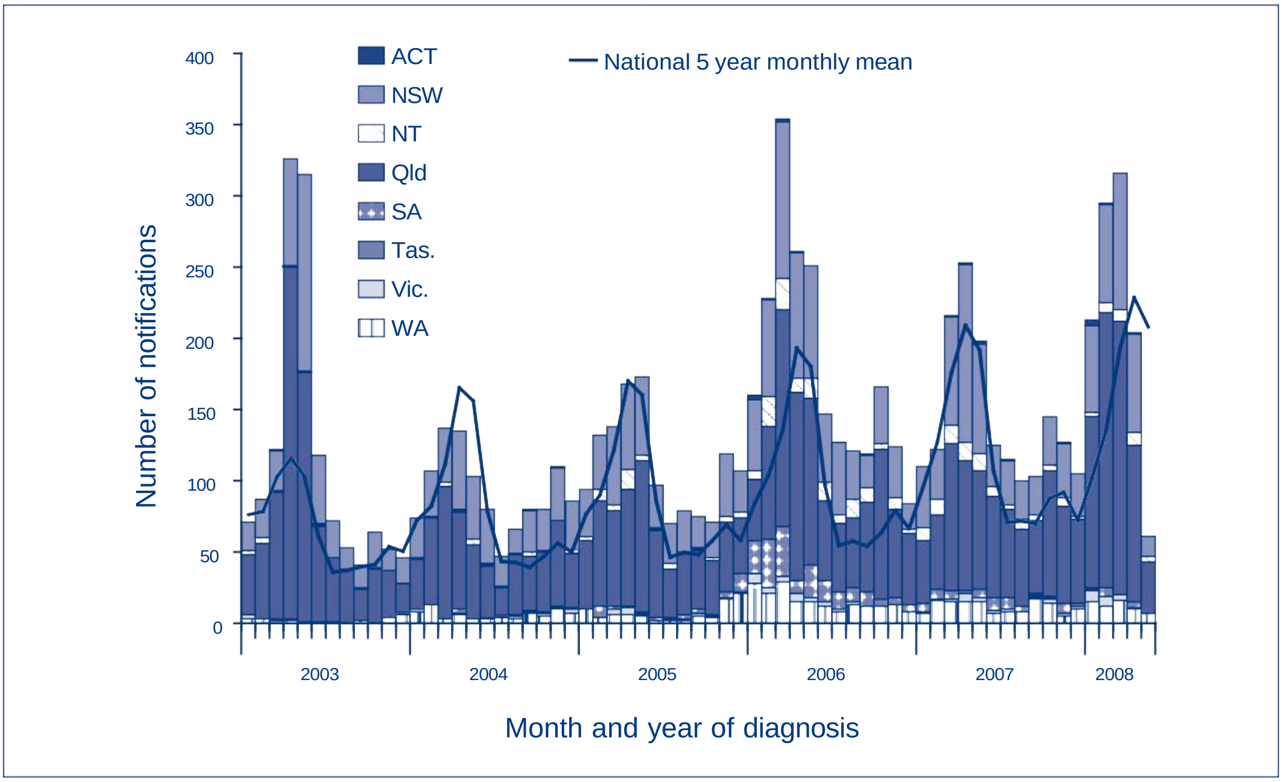
During the first quarter of 2008 there were 824 notifications of Barmah Forest virus infection, which was 93% higher than the 5-year mean for the previous corresponding quarters. All jurisdictions, except Tasmania, reported cases with the majority of cases notified from Queensland (n=505, 61%) and New South Wales (n=226, 28%).

The notification rate was highest in Queensland at 48.3 cases per 100,000 population (annualised), while in the Northern Territory, although only 18 notifications of Barmah Forest virus infection were received, the rate was 33.5 cases per 100,000 population. The rates in these jurisdictions were substantially higher compared with the other jurisdictions where rates were around 13.1 cases per 100,000 population in New South Wales, 8.2 cases per 100,000 population in Western Australia and 5.9 cases per 100,000 population in the Australian Capital Territory.

The total number of cases for the quarter represented a substantive increase from the previous quarter (n=373) and the same quarter in 2007 (n=436). The increase in cases in this quarter may be attributable to increased seasonal rainfall, especially in Queensland, higher than average overnight temperatures and other environmental conditions which promote mosquito breeding and the transmission of the virus.

Figure 2 shows the number of notifications for Barmah Forest virus infection received by NNDSS against the 5-year monthly mean for the period between 2003 and the first quarter of 2008. The entire period from June 2007 to March 2008 was above the 5-year monthly rolling mean, highlighting increased inter-seasonal and seasonal activity, with a higher number of notifications received in the first quarter of 2008 (n=824), compared with the seasonal peak within the first quarter of 2006 (n=742).

Figure 2. Notifications of Barmah Forest virus infection, Australia, 1 January 2003 to 31 March 2008, by month of diagnosis



Ross River virus infection

There were 2,756 notifications of Ross River virus infection reported in the first quarter of 2008, nearly 2.5 times higher than the corresponding period in 2007, however in comparison to the 5-year mean for the previous corresponding quarters it was only 1.6 times higher. Over half of the cases notified to NNDSS (n=1,560, 57%) were from Queensland. New South Wales reported 607 cases (22%) and Western Australia reported 258 cases (9%).

Although only 92 notifications of Ross River virus infection were reported from the Northern Territory, the notification rate was 171.2 cases per 100,000 (annualised), and in Queensland the rate was 149.2 cases per 100,000 population. The notification rates in the Northern Territory and Queensland were substantially higher than in other jurisdictions (49.0 cases per 100,000 population in Western Australia, 43.0 cases per 100,000 population in Tasmania and 35.2 cases per 100,000 population in New South Wales).

Figure 3 shows the number of notifications for Ross River virus infection received by NNDSS nationally against the 5-year rolling mean for the period between 2003 and the first quarter of 2008. As highlighted in this figure, the seasonal peak has shifted from March–April to February in the first quarter of 2008 (n=2,756) and appears to be moderately high and above the 5-year rolling mean, however it is not as high as the seasonal peak in the first quarter of 2006 (n=3,433).

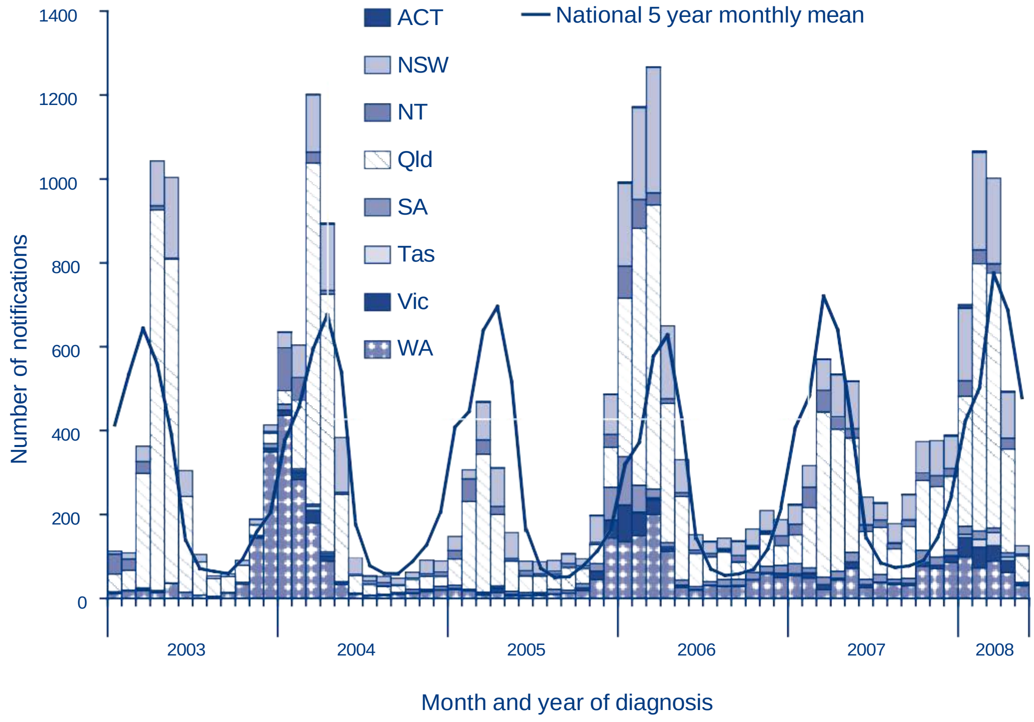
Vaccine preventable diseases

Measles

Measles is an acute, highly communicable viral disease that can lead to serious complications such as pneumonia (lung infection), encephalitis (inflammation of the brain) or otitis media (middle ear infection). In the past measles infection was a common childhood illness, but as a result of national immunisation campaigns measles is now rare in Australia, except for occasional outbreaks of limited duration that are generally linked to an imported case.[1]

Between 1 January and 31 March 2008, 33 cases of measles were reported to the NNDSS, three times the number of notifications received for the whole of 2007 (n=11). Cases were reported from New South Wales (n=15), Queensland (n=8), Western Australia (n=4), the Northern Territory (n=3), Victoria (n=2) and South Australia (n=1). The number of cases for the first quarter of 2008 (n=33) was 2.8 times higher than the 5-year mean (n=12). Figure 4 shows the epidemic curve of measles cases since 2003 by jurisdiction. The high number of

Figure 3. Notifications of Ross River virus infection, Australia, 1 January 2003 to 31 March 2008, by month of diagnosis



notifications reported in 2006 were associated with a touring Indian spiritual leader, which led to a multi-jurisdictional outbreak of measles in April 2006.

This quarter there was an annualised notification rate of 6.3 cases per 1,000,000 population, with 4.8 cases per 1,000,000 being locally acquired cases of measles and 1.5 cases per 1,000,000 reported as acquiring measles outside Australia. The annualised notification rate for this quarter is higher than in previous years, including the multi-jurisdictional outbreak that occurred in 2006 (6.1 cases per 1,000,000 population). This is due to several localised clusters and outbreaks in New South Wales and Queensland respectively, with secondary epidemiologically linked cases associated with cases who acquired measles outside Australia.

Fifty-eight per cent of cases were male and 42% were female. The age of cases ranged from less than 1 year to 48 years. Of the 33 cases, vaccination status was known for 26 cases. Three of the cases (9%) were reported as being fully vaccinated for age, 4 (12%) cases were reported as being partially vaccinated for age and 19 (58%) cases were reported as not vaccinated.

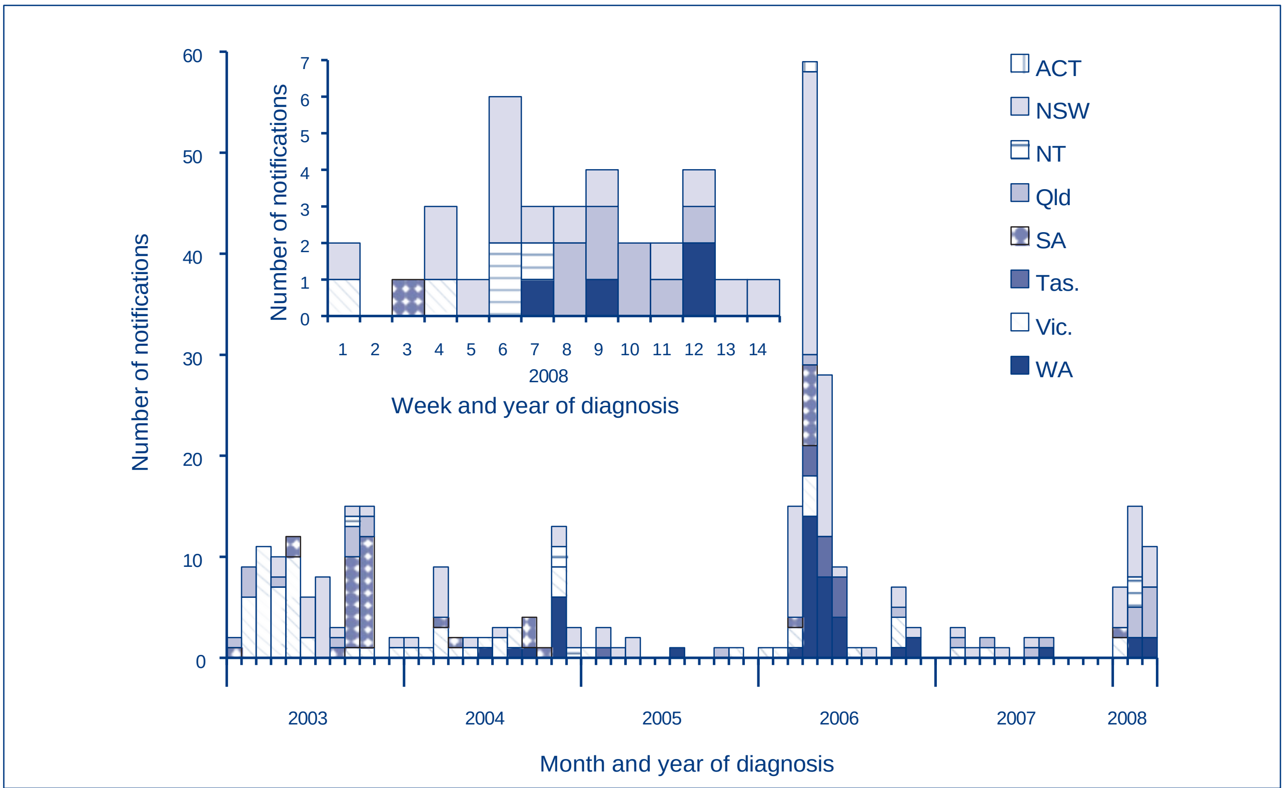
Eight of the cases (24%) were reported as acquiring measles outside Australia from countries including Thailand, India, China and the United Arab Emirates. Four secondary cases (12%) were epidemiologically linked to these imported cases; 2 of these reported from the Northern Territory were linked to an overseas acquired case through travel on the same flight from China to Melbourne via Darwin; a third case was exposed to the same overseas acquired case in the Darwin airport terminal.

An outbreak of measles in the Cairns area of Queensland was identified in late March. Eight cases were reported in two parallel chains of transmission, consisting of 4 cases each. All cases were unvaccinated. There were no recent overseas travel histories or contact with overseas travellers reported.

The virus genotype associated with both the Queensland outbreak and the Darwin cases was confirmed as H1 (personal communication, Dr Mike Catton, Victorian Infectious Diseases Reference Laboratory, CDNA Teleconference, 14 May 2008). The genetic material from these cases shared identical sequence within the nucleoprotein and was identical in this region to measles viruses from cases in New York in 2006 and Shanghai in 2003.

The only other genotyping data reported in 2008 was a D4 from a case in January who had returned from India. There is evidence that Australia currently has no endemic measles genotypes in circulation, with interruption of the endemic transmission of measles having occurred in the 1990s.[2]

Figure 4. Epidemic curve of notifications of measles, Australia, 1 January 2003 to 31 March 2008, by week of diagnosis and state or territory



The current National Immunisation Program Schedule recommends two doses of the measles, mumps and rubella vaccine (MMR) at 12 months of age and at 4 years of age, unless there is a contraindication. High-level vaccination coverage is imperative to enable measles elimination, requiring rates for each new birth cohort of >95% for a single dose and >90% for 2 doses.[3] Coverage data from March 2007 indicates that 93.7% of Australian children for the birth cohort 1 October to 31 December 2004 were immunised for MMR at age 2 years. The proportion of children immunised at 6 years of age for MMR was 88.9%.[4]

Other bacterial infections

Meningococcal disease

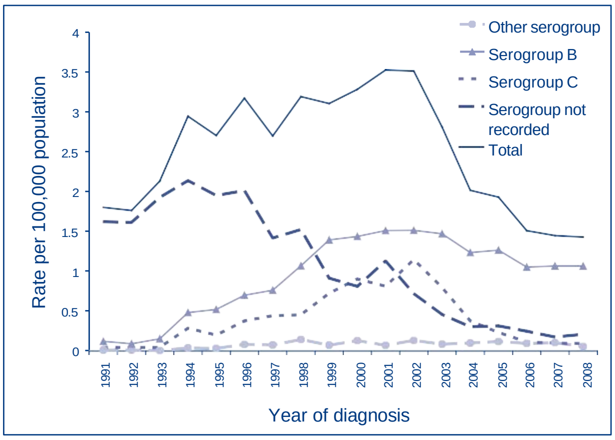
Meningococcal disease is caused by bacterial infection with *Neisseria meningitidis*, which is a gram-negative diplococcus carried and transmitted by humans.[5] The disease is characterised by the sudden onset of fever, intense headache, nausea, stiff neck and photophobia.[6] There are 13 known serogroups and globally serogroups A, B, C, W-135 and Y are the serogroups most commonly associated with disease. In January 2003, the National Meningococcal C Vaccination Program commenced to provide meningococcal C vaccine, to all Australian children aged 1 to 19 years, and the vaccine was also added to the National Immunisation Program schedule.[5]

Between 1 January and 31 March 2008 there were 44 notifications of meningococcal infection reported nationally, half the number of cases reported in the previous quarter (n=78) and similar to the number reported for the corresponding period in 2007 (n=45). Cases were aged between less than 1 year and 77 years, with 32% of cases aged 0–4 years (n=14), 23% aged 5–14 years (n=10) and 18% aged 15–24 years (n=8).

Serogroup data were available on 35 (80%) of the notified cases in the quarter. Twenty-nine (66%) were serogroup B, 5 (11%) were serogroup C, 1 case (2%) was serogroup Y, and in the remaining cases the serogroup was either not typed or no data were provided (n=9, 21%).

Since the introduction of the National Meningococcal C Vaccination Program in 2003, there has been a decrease in the overall number of cases of meningococcal disease, and a steady decline in the number of serogroup C infections among the 0–18 years age group. As shown in Figure 5, although there has been an increase in the proportion of meningococcal infections due to serogroup B, the overall rates of meningococcal infections continue to decline.

Figure 5. Meningococcal disease notifications, Australia, 1 January 1991 to 31 March 2008, by serogroup (annualised rate per 100,000 population)



Acknowledgements

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References

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5. National Health and Medical Research Council. *The Australian Immunisation Handbook*. 9th edn. Canberra: Commonwealth of Australia; 2008. p.213. Available from: http://www.immunise.health.gov.au/internet/immunise/publishing.nsf/Content/5335A7AB925D3E39CA25742100194409/$File/handbook-9.pdf Accessed on 11 May 2008.
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Tables

National Notifiable Diseases Surveillance System

A summary of diseases currently being reported by each jurisdiction is provided in Table 1. There were 38,405 notifications to the National Notifiable Diseases Surveillance System (NNDSS) with a notification date between 1 January and 31 March 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)	All jurisdictions
Syphilis <2 years duration	All jurisdictions
Syphilis >2 years or unspecified duration	All jurisdictions
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 except South Australia
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 and Victoria
Varicella zoster (shingles)	All jurisdictions except New South Wales and Victoria
Varicella zoster (unspecified)	All jurisdictions except New South Wales and Victoria
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
Lyssaviruses (NEC)	All jurisdictions
Ornithosis	All jurisdictions
Q fever	All jurisdictions
Tularemia	All jurisdictions
Other bacterial infections	
Legionellosis	All jurisdictions
Leprosy	All jurisdictions
Meningococcal infection	All jurisdictions
Tuberculosis	All jurisdictions

* Laboratory confirmed influenza is not notifiable in South Australia but reports are forwarded to NNDSS.

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

Table 2. Notifications of diseases received by state and territory health authorities in the period 1 January to 31 March 2008, by date of onset*

Disease	State or territory								Total 1st quarter 2008[†]	Total 4th quarter 2007	Total 1st quarter 2007	Last 5 years mean 1st 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	0.2	0	0.2	0.0
Hepatitis B (incident)	1	5	1	14	7	2	15	6	51	69	81	78.0	51	78.0	0.7
Hepatitis B (unspecified)	14	623	19	194	83	19	445	166	1,563	1,639	1,823	1,571.4	1,563	1,571.4	1.0
Hepatitis C (incident)	2	3	4	NN	13	3	25	18	68	72	96	108.4	68	108.4	0.6
Hepatitis C (unspecified)	43	1,236	56	690	121	74	549	355	3,124	2,876	3,227	3,289.6	3,122	3,289.6	1.0
Hepatitis D	0	1	0	4	0	0	5	1	11	7	10	6.8	11	6.8	1.6
Gastrointestinal diseases															
Botulism	0	0	0	0	0	0	0	0	0	0	1	0.6	0	0.6	0.0
Campylobacteriosis[§]	118	NN	71	1,490	481	153	1,773	496	4,582	4,699	4,865	4,309.6	4,582	4,309.6	1.1
Cryptosporidiosis	7	209	37	240	26	0	158	71	748	809	1,136	992.2	748	992.2	0.8
Haemolytic uraemic syndrome	0	2	0	3	0	0	3	0	8	7	7	4.8	8	4.8	1.7
Hepatitis A	1	22	1	25	11	0	17	7	84	35	47	92.6	84	92.6	0.9
Hepatitis E	0	4	0	1	0	0	6	2	13	3	6	8.8	13	8.8	1.5
Listeriosis	0	16	0	5	1	1	4	1	28	16	16	18.2	28	18.2	1.5
Salmonellosis	34	692	144	755	194	127	587	272	2,805	2,199	3,500	2,952.8	2,805	2,952.8	1.0
Shigellosis	0	22	65	28	50	2	16	55	238	162	144	173.8	238	173.8	1.4
STEC, VTEC[‖]	0	6	0	8	12	0	4	0	30	42	40	20.8	30	20.8	1.4
Typhoid	0	10	0	11	1	0	8	4	34	14	39	26.2	34	26.2	1.3
Quarantinable diseases															
Cholera	0	0	0	0	0	0	0	0	0	1	1	0.8	0	0.8	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 January to 31 March 2008, by date of onset,* continued

Disease	State or territory								Total 1st quarter 2008[†]	Total 4th quarter 2007	Total 1st quarter 2007	Last 5 years mean 1st quarter	Year to date 2008	Last 5 years YTD mean	Ratio[‡]
	ACT	NSW	NT	Qld	SA	Tas	Vic	WA							
Sexually transmissible infections															
Chlamydial infection[¶]	256	3,227	506	3,929	883	383	2,885	2,052	14,121	12,892	13,484	10,541.2	14,121	10,541.2	1.3
Donovanosis	0	0	0	0	0	0	0	0	0	0	2	3.2	0	3.2	0.0
Gonococcal infection	7	306	379	442	111	10	212	417	1,884	1,809	2,024	2,016.6	1,884	2,016.6	0.9
Syphilis (all)	8	268	56	87	11	7	200	61	698	761	730	637.8	698	637.8	1.1
Syphilis < two years duration	1	66	28	53	0	2	97	33	280	297	302	197.3	280	197.3	1.4
Syphilis >two years or unspecified duration	7	202	28	34	11	5	103	28	418	464	428	440.5	418	440.5	1.0
Syphilis - congenital	0	1	0	0	0	0	0	0	1	2	3	3.4	1	3.4	0.3
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	1	1	0	0	0	3	0	5	6	2	3.4	5	3.4	1.5
Influenza (laboratory confirmed)	16	78	30	203	NDP	4	27	56	414	715	344	223.2	414	223.2	1.9
Measles	0	15	3	8	1	0	2	4	33	0	4	12.0	33	12.0	2.8
Mumps	0	46	11	13	9	0	6	53	138	296	46	36.8	138	36.8	3.8
Pertussis	17	665	35	322	77	3	258	32	1,409	1,475	1,039	1,550.6	1,409	1,550.6	0.9
Pneumococcal disease (invasive)	2	50	15	43	6	5	44	26	191	296	193	270.6	191	270.6	0.7
Poliomyelitis	0	0	0	0	0	0	0	0	0	0	0	0.0	0	0.0	0.0
Rubella	0	0	0	0	1	0	0	3	4	7	9	12.4	4	12.4	0.3
Rubella - congenital	0	0	0	0	0	0	0	0	0	0	0	0.2	0	0.2	0.0
Tetanus	0	1	0	0	0	0	1	1	3	1	0	1.0	3	1.0	3.0
Varicella zoster (chickenpox)	3	NN	26	41	93	4	NN	49	216	488	358	289.0	216	289.0	0.8
Varicella zoster (shingles)	1	NN	20	115	148	24	NN	124	432	360	472	324.0	432	324.0	1.4
Varicella zoster (unspecified)	20	NN	1	734	116	15	NN	180	1,066	1,202	1,069	954.5	1,066	954.5	1.2
Vectorborne diseases															
Arbovirus infection (NEC)	0	0	0	5	0	0	2	0	7	3	10	17.4	7	17.4	0.4
Barmah Forest virus infection	5	226	18	505	8	0	19	43	824	373	436	428.0	824	428.0	1.9
Dengue virus infection	1	37	14	51	9	0	2	37	151	75	93	165.4	151	165.4	0.9
Japanese encephalitis virus infection	0	0	0	0	0	0	0	0	0	0	0	0.2	0	0.2	0.0
Kunjin virus infection	0	0	0	0	0	0	0	0	0	1	0	4.6	0	4.6	0.0
Malaria	4	27	5	41	5	1	19	22	124	139	153	202.8	124	202.8	0.6
Murray Valley encephalitis virus infection	0	0	0	0	0	0	0	0	0	0	0	0.6	0	0.6	0.0
Ross River virus infection	11	607	92	1,560	44	53	131	258	2,756	1,136	1,113	1,699.6	2,756	1,699.6	1.6

Table 2. Notifications of diseases received by state and territory health authorities in the period 1 January to 31 March 2008, by date of onset,* continued

Disease	State or territory: ACT	NSW	NT	Qld	SA	Tas	Vic	WA	Total 1st quarter 2008†	Total 4th quarter 2007	Total 1st quarter 2007	Last 5 years mean 1st quarter	Year to date 2008	Last 5 years YTD mean	Ratio‡
Zoonoses															
Anthrax	0	0	0	0	0	0	0	0	0	0	1	0.4	0	0.4	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	6	0	0	0	0	7	6	15	10.4	7	10.4	0.7
Leptospirosis	0	3	0	38	0	0	0	0	41	18	50	51.0	41	51.0	0.8
Lyssavirus (NEC)	0	0	0	0	0	0	0	0	0	0	0	0.0	0	0.0	0.0
Ornithosis	0	7	0	0	0	0	11	2	20	27	28	42.0	20	42.0	0.5
Q fever	0	44	0	49	6	0	3	0	102	111	115	124.4	102	124.4	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	25	0	7	5	0	11	10	58	97	75	86.8	58	86.8	0.7
Leprosy	0	1	0	2	0	0	0	0	3	2	5	3.2	3	3.2	0.9
Meningococcal infection**	0	10	2	20	2	0	6	4	44	78	45	75.4	44	75.4	0.6
Tuberculosis	2	97	6	28	9	2	102	19	265	370	273	259.0	271	259.0	1.0
Total	573	8,594	1,618	11,717	2,544	892	7,559	4,908	38,405	35,396	37,230	32,747	38,405	32,747	1.2

* Date of onset = the true onset. If this is not available, the 'date of onset' is equivalent to the earliest of two dates: (i) specimen date of collection, or (ii) the date of notification to the public health unit. 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; 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 January to 31 March 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)	1.2	0.3	1.9	1.3	1.8	1.6	1.2	1.1	1.0
Hepatitis B (unspecified)	16.5	36.2	35.4	18.6	21.0	15.4	34.2	31.5	29.7
Hepatitis C (incident)	2.4	0.2	7.4	NN	3.3	2.4	1.9	3.4	1.3
Hepatitis C (unspecified)	50.6	71.8	104.2	66.0	30.5	60.0	42.2	67.4	59.5
Hepatitis D	0.0	0.1	0.0	0.4	0.0	0.0	0.4	0.2	0.2
Gastrointestinal diseases									
Botulism	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Campylobacteriosis†	138.9	NN	132.1	142.5	121.4	124.1	136.2	94.2	87.2
Cryptosporidiosis	8.2	12.1	68.8	23.0	6.6	0.0	12.1	13.5	14.2
Haemolytic uraemic syndrome	0.0	0.1	0.0	0.3	0.0	0.0	0.2	0.0	0.2
Hepatitis A	1.2	1.3	1.9	2.4	2.8	0.0	1.3	1.3	1.6
Hepatitis E	0.0	0.2	0.0	0.1	0.0	0.0	0.5	0.4	0.2
Listeriosis	0.0	0.9	0.0	0.5	0.3	0.8	0.3	0.2	0.5
Salmonellosis	40.0	40.2	267.9	72.2	49.0	103.0	45.1	51.7	53.4
Shigellosis	0.0	1.3	120.9	2.7	12.6	1.6	1.2	10.4	4.5
STEC, VTEC‡	0.0	0.3	0.0	0.8	3.0	0.0	0.3	0.0	0.6
Typhoid	0.0	0.6	0.0	1.1	0.3	0.0	0.6	0.8	0.6
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§	301.3	187.4	941.5	375.8	222.9	310.5	221.7	389.8	268.8
Donovanosis	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gonococcal infection	8.2	17.8	705.2	42.3	28.0	8.1	16.3	79.2	35.9
Syphilis (all)	9.4	15.6	104.2	8.3	2.8	5.7	15.4	11.6	13.3
Syphilis <2 years duration	1.2	3.8	52.1	5.1	0.0	1.6	7.5	6.3	5.3
Syphilis >2 years or unspecified duration	8.2	11.7	52.1	3.3	2.8	4.1	7.9	5.3	8.0
Syphilis - congenital	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
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	1.9	0.0	0.0	0.0	0.2	0.0	0.1
Influenza (laboratory confirmed)	18.8	4.5	55.8	19.4	NDP	3.2	2.1	10.6	7.9
Measles	0.0	0.9	5.6	0.8	0.3	0.0	0.2	0.8	0.6
Mumps	0.0	2.7	20.5	1.2	2.3	0.0	0.5	10.1	2.6
Pertussis	20.0	38.6	65.1	30.8	19.4	2.4	19.8	6.1	26.8
Pneumococcal disease (invasive)	2.4	2.9	27.9	4.1	1.5	4.1	3.4	4.9	3.6
Poliomyelitis	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table 3. Notification rates of diseases, 1 January to 31 March 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									
Rubella	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.6	0.1
Rubella - congenital	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Tetanus	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.2	0.1
Varicella zoster (chickenpox)	3.5	NN	48.4	3.9	23.5	3.2	NN	9.3	4.1
Varicella zoster (shingles)	1.2	NN	37.2	11.0	37.4	19.5	NN	23.6	8.2
Varicella zoster (unspecified)	23.5	NN	1.9	70.2	29.3	12.2	NN	34.2	20.3
Vectorborne diseases									
Arbovirus infection (NEC)	0.0	0.0	0.0	0.5	0.0	0.0	0.2	0.0	0.1
Barmah Forest virus infection	5.9	13.1	33.5	48.3	2.0	0.0	1.5	8.2	15.7
Dengue virus infection	1.2	2.1	26.0	4.9	2.3	0.0	0.2	7.0	2.9
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	0.0	0.0	0.0	0.0	0.0	0.0
Malaria	4.7	1.6	9.3	3.9	1.3	0.8	1.5	4.2	2.4
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	12.9	35.2	171.2	149.2	11.1	43.0	10.1	49.0	52.5
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	0.6	0.0	0.0	0.0	0.0	0.1
Leptospirosis	0.0	0.2	0.0	3.6	0.0	0.0	0.0	0.0	0.8
Lyssavirus (NEC)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ornithosis	0.0	0.4	0.0	0.0	0.0	0.0	0.8	0.4	0.4
Q fever	0.0	2.6	0.0	4.7	1.5	0.0	0.2	0.0	1.9
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	1.5	0.0	0.7	1.3	0.0	0.8	1.9	1.1
Leprosy	0.0	0.1	0.0	0.2	0.0	0.0	0.0	0.0	0.1
Meningococcal infection‖	0.0	0.6	3.7	1.9	0.5	0.0	0.5	0.8	0.8
Tuberculosis	2.4	5.6	11.2	2.7	2.3	1.6	7.8	3.6	5.0

* 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; 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

Laboratory Serology and Virology Reporting Scheme

There were 7,637 reports received by the Virology and Serology Laboratory Reporting Scheme (LabVISE) in the reporting period, 1 January to 31 March 2008 (Tables 4 and 5).

Table 4. Virology and serology laboratory reports by state or territory* for the reporting period 1 January to 31 March 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	–	7	1	–	2	–	3	–	13	6	13	6
Mumps virus	–	–	2	3	6	–	5	2	18	9	18	9
Rubella virus	–	–	–	4	–	–	1	–	5	8	5	8
Hepatitis viruses												
Hepatitis A virus	–	3	1	10	6	–	–	1	21	10	21	10
Hepatitis D virus	–	–	–	1	5	–	1	–	7	7	7	7
Hepatitis E virus	–	1	–	–	–	–	–	–	1	1	1	1
Arboviruses												
Barmah Forest virus	–	14	–	223	11	1	1	–	250	139	250	139
Flavivirus (unspecified)	–	–	–	29	–	–	1	–	30	25	30	25
Ross River virus	–	31	20	675	42	4	2	18	792	301	792	301
Adenoviruses												
Adenovirus not typed/pending	–	73	–	70	182	2	17	1	345	180	345	180
Herpes viruses												
Cytomegalovirus	–	44	1	175	142	–	3	–	365	287	365	287
Epstein-Barr virus	–	4	40	305	138	2	13	149	651	677	651	677
Varicella-zoster virus	2	132	–	442	153	–	27	–	756	697	756	697
Other DNA viruses												
Parvovirus	–	4	1	63	2	–	7	–	77	92	77	92
Picornavirus family												
Enterovirus not typed/pending	2	40	–	14	23	–	2	–	81	27	81	27
Picornavirus not typed	–	–	–	–	–	1	–	–	1	–	1	–
Rhinovirus (all types)	1	28	–	–	–	–	1	–	30	65	30	65
Coxsackievirus A9	–	1	–	–	–	–	–	–	1	–	1	–
Echovirus type 7	–	1	–	–	–	–	–	–	1	–	1	–
Ortho/paramyxoviruses												
Influenza A virus	–	2	2	26	16	–	1	–	47	52	47	52
Influenza B virus	–	1	–	5	13	–	2	–	21	5	21	5
Parainfluenza virus type 1	–	40	–	14	1	–	5	–	60	4	60	4
Parainfluenza virus type 2	–	2	–	6	–	–	2	–	10	5	10	5
Parainfluenza virus type 3	–	1	–	1	2	–	3	–	7	33	7	33
Respiratory syncytial virus	–	94	–	94	10	–	5	–	203	171	203	171
Other RNA viruses												
HTLV-1	–	–	–	–	3	–	–	–	3	3	3	3
Norwalk agent	–	16	–	–	–	–	–	–	16	140	16	140
Rotavirus	–	29	–	–	63	3	13	–	108	45	108	45

Table 4. Virology and serology laboratory reports by state or territory* for the reporting period 1 January to 31 March 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												
Chlamydia psittaci	–	–	–	1	–	1	9	–	11	21	11	21
Chlamydia trachomatis - not typed	5	329	2	1,465	524	9	11	2	2,347	2,164	2,347	2,164
Chlamydia species	–	–	–	–	–	–	2	–	2	–	2	–
Coxiella burnetii (Q fever)	3	6	–	42	13	–	11	–	75	28	75	28
Mycoplasma pneumoniae	–	10	10	66	37	5	39	9	176	313	176	313
Mycoplasma hominis	–	2	–	–	–	–	–	–	2	3	2	3
Orientia tsutsuganushi	–	–	1	–	2	–	–	–	3	3	3	3
Rickettsia - spotted fever group	–	4	–	2	1	1	3	–	11	3	11	3
Streptococcus group A	–	7	40	193	–	–	31	–	271	232	271	232
Bordetella pertussis	–	10	1	110	63	–	11	–	195	180	195	180
Brucella species	–	–	–	8	–	–	–	–	8	1	8	1
Legionella longbeachae	–	–	–	–	1	1	–	–	2	3	2	3
Legionella pneumophila	–	4	–	–	–	–	1	–	5	4	5	4
Yersinia enterocolitica	–	4	–	1	–	–	–	–	5	1	5	1
Cryptococcus species	–	2	–	3	2	–	–	–	7	9	7	9
Leptospira species	–	–	–	29	1	–	–	–	30	23	30	23
Treponema pallidum	–	61	11	264	221	–	2	1	560	535	560	535
Toxoplasma gondii	–	–	–	–	–	1	–	–	1	8	1	8
Echinococcus granulosus	–	–	–	–	6	–	–	–	6	3	6	3
Total	13	1,007	133	4,344	1,691	31	235	183	7,637	6,523	7,637	6,523

* 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 January to 31 March 2008*

State or territory	Laboratory	January 2008	February 2008	March 2008	Total this period
Australian Capital Territory	The Canberra Hospital	–	–	–	–
New South Wales	Institute of Clinical Pathology and Medical Research, Westmead	160	115	105	380
	New Children's Hospital, Westmead	48	55	58	161
	Repatriation General Hospital, Concord	–	–	–	–
	Royal Prince Alfred Hospital, Camperdown	16	19	33	68
	South West Area Pathology Service, Liverpool	31	39	59	129
Queensland	Queensland Medical Laboratory, West End	1,409	1,745	1,559	4,713
	Townsville General Hospital	–	–	–	–
South Australia	Institute of Medical and Veterinary Science, Adelaide	609	596	484	1,689
Tasmania	Northern Tasmanian Pathology Service, Launceston	10	7	12	29
	Royal Hobart Hospital, Hobart	–	–	–	–
Victoria	Australian Rickettsial Reference Laboratory	16	20	9	45
	Monash Medical Centre, Melbourne	19	12	13	44
	Royal Children's Hospital, Melbourne	17	20	16	53
	Victorian Infectious Diseases Reference Laboratory, Fairfield	58	31	–	89
Western Australia	PathWest Virology, Perth	–	–	–	–
	Princess Margaret Hospital, Perth	–	–	–	–
	Western Diagnostic Pathology	79	77	81	237
Total		2,472	2,736	2,429	7,637

* 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 Practice 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. The aim of ASPREN is to also provide an indicator of the burden of disease in the primary health care setting and to detect trends in consultation rates.

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 all of which are related to communicable diseases. They include influenza like illness (ILI), 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;32:134–135.

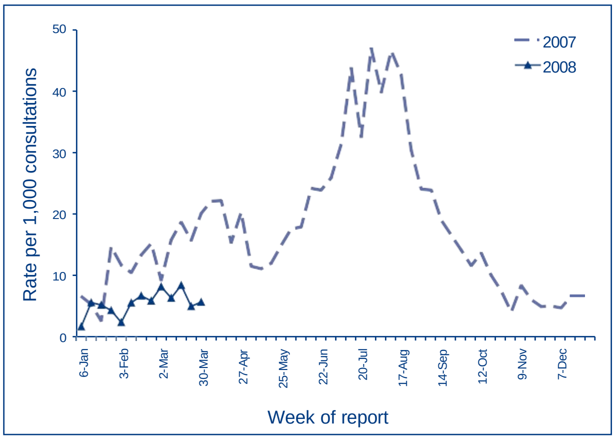
Data on influenza-like illness, gastroenteritis, chickenpox and shingles from 1 January to 31 March 2008 compared with 2007, are shown as the rate per 1,000 consultations in Figures 1, 2, 3 and 4, respectively.

Reporting period 1 January to 31 March 2008

Sentinel practices contributing to ASPREN were located in all jurisdictions other than the Northern Territory. A total of 94 general practitioners contributed data to ASPREN in the first quarter of 2008. Each week an average of 78 general practitioners provided information to ASPREN at an average of 7,013 (range 5,307 to 8,257) consultations per week.

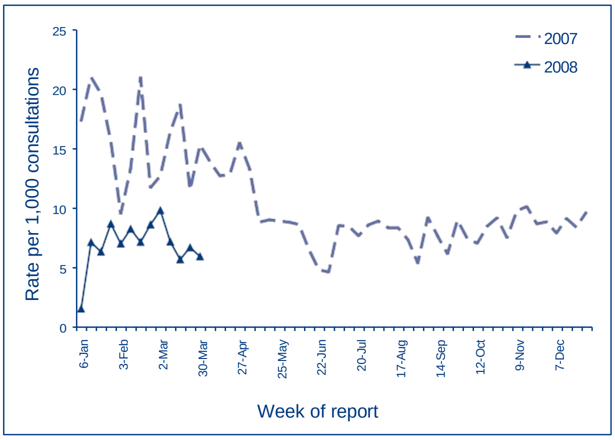
In the first quarter of 2008, influenza like illness (ILI) rates remained low from 1.7 to 8 cases per 1.000 consultations. For the same reporting period in 2007 reported rates were higher at 2 to 20 cases per 1,000 consultations (Figure 1).

Figure 1. Consultation rates for influenza-like illness, ASPREN, 2007 to 31 March 2008, by week of report



Reports of gastroenteritis from 1 January to 31 March 2008 were lower compared with the same period in 2007 (Figure 2). During this reporting period, consultation rates for gastroenteritis ranged from 2 to 10 cases per 1,000.

Figure 2. Consultation rates for gastroenteritis, ASPREN, 2007 to 31 March 2008, by week of report



Reports of varicella infections were reported at a lower rate for the first quarter of 2008 compared with the same period in 2007. From 1 January to 31 March 2008, recorded rates for chickenpox were between 0 to 0.7 case per 1,000 consultations (Figure 3).

In the first quarter of 2008, rates for shingles fluctuated between less than 1 to 1.5 cases per 1,000 consultations (Figure 4).

Figure 3. Consultation rates for chickenpox, ASPREN, 2007 to 31 March 2008, by week of report

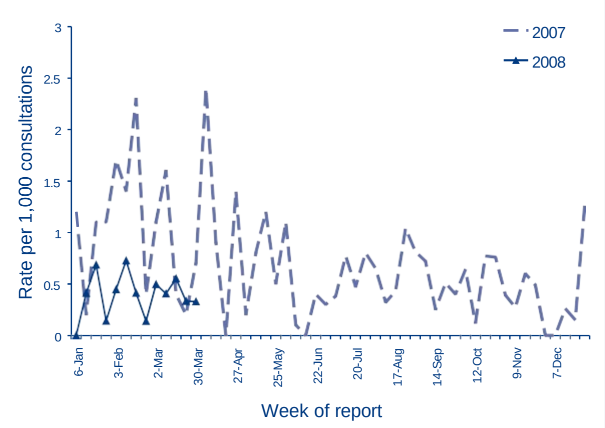
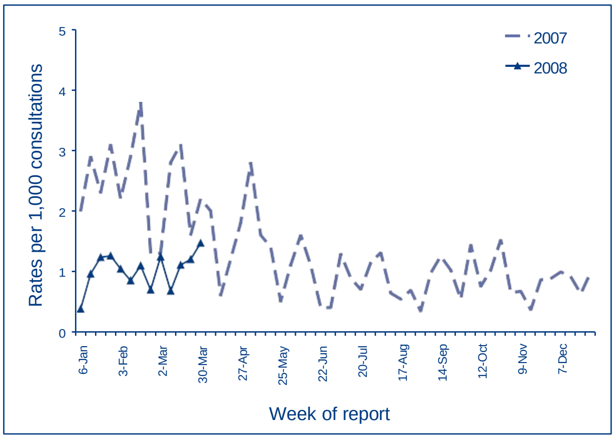


Figure 4. Consultation rates for shingles, ASPREN, 2007 to 31 March 2008, by week of report



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 October and 31 December 2006, at 24 months of age for the cohort born between 1 October and 31 December 2005, and at 6 years of age for the cohort born between 1 October and 31 December 2001 according to the National Immunisation Program.

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

Immunisation coverage for children 'fully immunised' at 12 months of age for Australia decreased marginally by 0.2 percentage points to 91.3% (Table 1). There were no important changes in coverage for any individual vaccines due at 12 months or by jurisdiction.

Immunisation coverage for children 'fully immunised' at 24 months of age for Australia also decreased marginally by 0.2 percentage points to 92.8% (Table 2). There were also no important changes in coverage for any individual vaccines due at 24 months or by jurisdiction.

Table 1. Percentage of children immunised at 1 year of age, preliminary results by disease and state or territory for the birth cohort 1 October to 31 December 2006; assessment date 31 March 2008

Vaccine	State or territory								Australia
	ACT	NSW	NT	Qld	SA	Tas	Vic	WA	
Total number of children	1,114	23,355	906	14,103	4,600	1,589	17,310	7,036	70,013
Diphtheria, tetanus, pertussis (%)	94.1	92.0	91.0	92.0	91.1	92.9	92.8	89.7	91.9
Poliomyelitis (%)	94.2	91.9	91.0	92.0	91.0	92.8	92.8	89.7	91.9
Haemophilus influenzae type b (%)	96.3	94.9	94.4	94.0	93.9	95.2	95.0	93.5	94.5
Hepatitis B (%)	96.3	94.9	95.3	93.8	93.9	95.2	94.8	93.3	94.4
Fully immunised (%)	93.9	91.6	90.1	91.2	90.4	92.7	91.9	88.9	91.3
Change in fully immunised since last quarter (%)	+1.1	-0.1	-0.6	-0.2	-1.2	-0.8	-0.3	+0.1	-0.2

Table 2. Percentage of children immunised at 2 years of age, preliminary results by disease and state or territory for the birth cohort 1 October to 31 December 2005;* assessment date 31 March 2008

Vaccine	State or territory								Australia
	ACT	NSW	NT	Qld	SA	Tas	Vic	WA	
Total number of children	1,156	22,580	868	13,916	4,357	1,576	16,715	6,697	67,865
Diphtheria, tetanus, pertussis (%)	95.6	94.8	95.9	94.6	95.0	95.8	95.7	94.4	95.0
Poliomyelitis (%)	95.6	94.8	95.9	94.6	95.0	95.8	95.7	94.4	95.0
Haemophilus influenzae type b (%)	95.6	95.1	94.2	93.7	93.6	95.7	94.5	94.1	94.5
Measles, mumps, rubella (%)	95.1	93.9	95.7	94.1	93.9	94.7	94.8	93.4	94.2
Hepatitis B (%)	96.8	95.5	96.9	95.4	95.5	96.4	96.3	95.3	95.7
Fully immunised (%)	93.9	92.6	93.9	92.5	92.7	94.1	93.6	91.6	92.8
Change in fully immunised since last quarter (%)	+0.1	-0.3	-0.2	+0.4	-0.2	-1.6	-0.5	+0.2	-0.1

* The 12 months age data for this cohort was published in *Commun Dis Intell* 2007;31:252.

Immunisation coverage for children 'fully immunised' at 6 years of age for Australia decreased by 0.6 percentage points from the previous quarter to 88.2% (Table 3). For 'fully immunised' and all individual vaccines, there were important decreases of greater than 1 percentage point in South Australia, Tasmania, Victoria and Western Australia.

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. It should be noted that currently, coverage for the vaccines added to the National Immunisation Program 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.

Figure 5. Trends in vaccination coverage, Australia, 1997 to 31 December 2007, by age cohorts

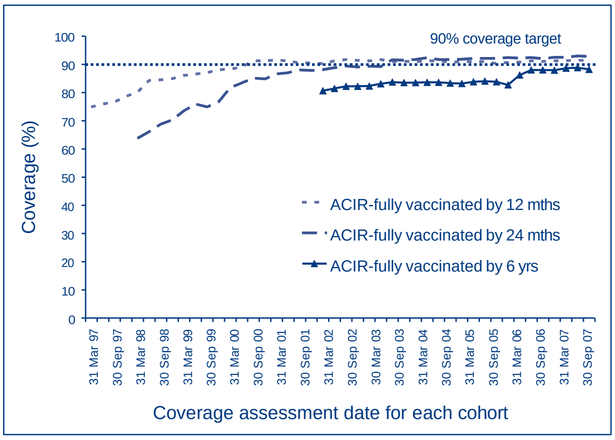


Table 3. Percentage of children immunised at 6 years of age, preliminary results by disease and state or territory for the birth cohort 1 October to 31 December 2001;* assessment date 31 March 2008

Vaccine	State or territory								Australia
	ACT	NSW	NT	Qld	SA	Tas	Vic	WA	
Total number of children	1,061	22,048	872	13,095	4,352	1,483	16,088	6,552	65,551
Diphtheria, tetanus, pertussis (%)	91.5	89.2	88.8	89.2	86.6	87.4	91.0	84.9	89.0
Poliomyelitis (%)	91.3	88.9	88.8	89.0	86.3	87.1	90.9	84.6	88.8
Measles, mumps, rubella (%)	91.0	88.9	89.3	89.0	86.2	87.0	90.8	84.7	88.8
Fully immunised (%)	90.6	88.3	88.3	88.4	85.7	86.4	90.3	83.9	88.2
Change in fully immunised since last quarter (%)	+1.8	-0.8	-0.1	+0.8	-1.9	-1.8	-1.0	-1.3	-0.6

* The 12 months age data for this cohort was published in *Commun Dis Intell* 2003;27:302.

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 January to 31 March 2008 are included in Tables 4 and 5. Data include cases reported and entered by 29 April 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;32:136.*

There were 2,258 reports to NEPSS of human *Salmonella* infection in the first quarter of 2008, approximately 25% more than in the fourth quarter of 2007. Limited first quarter data from Western Australia were available at the time of preparing this report. We anticipate these data will be included in NEPSS in time for the next quarterly report. Taking into account the limited Western Australia data, the overall count of cases for the remainder of Australia was similar to the recent historical mean incidence of salmonellosis at this time of each year. However, the incidence in 3 states (South Australia, Victoria and Tasmania) was at least 20% higher than the recent historical mean for the period.

During the first quarter of 2008, the 25 most common *Salmonella* types in Australia accounted for 1,478 cases, 65% of all reported human *Salmonella* infections. Eighteen of the 25 most common *Salmonella* infections in the first quarter of 2008 were also among those most commonly reported in the preceding quarter.

The most prominent feature of the current data is an increase in *S.* Typhimurium phage type 135, particularly in Victoria and Tasmania. *S.* Typhimurium phage types 44, 170 and 8 were also increased in Victoria, while *S.* Typhimurium phage type 126 was increased in New South Wales and Victoria. *S.* Montevideo and *S.* Singapore were moderately increased in New South Wales. An increase in *S.* Infantis involved New South Wales, South Australia and Victoria.

S. Virchow phage type 8 has historically been largely confined to Queensland. The recent Australia-wide count of *S.* Virchow phage type 8 is less than the historical average. However, during the first quarter of 2008 there was an increase in reports of *S.* Virchow phage type 8 outside its usual range, involving New South Wales, South Australia, the Northern Territory, Tasmania, Victoria and the Australian Capital Territory.

Table 4. Reports to the National Enteric Pathogens Surveillance System of *Salmonella* isolated from humans during the period 1 January to 31 March 2008, as reported to 29 April 2008

	State or territory								
	ACT	NSW	NT	Qld	SA	Tas	Vic	WA*	Australia
Total all *Salmonella* for quarter	31	573	109	640	174	122	592	17	2,258
Total contributing *Salmonella* types	20	115	45	118	56	14	118	10	218

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

Table 5. Top 25 Salmonella types identified in Australia, 1 January to 31 March 2008, by state or territory

National rank	*Salmonella* type	State or territory								Total 1st quarter 2008	Last 10 years mean 1st quarter	Year to date 2008	Year to date 2007
		ACT	NSW	NT	Qld	SA	Tas	Vic	WA*				
1	*S.* Typhimurium PT 135	4	60	0	40	8	52	143	6	313	246	313	250
2	*S.* Typhimurium PT 9	3	20	0	7	20	3	57	2	112	199	112	336
3	*S.* Typhimurium PT 44	1	5	0	7	4	7	71	0	95	41	95	183
4	*S.* Typhimurium PT 170	3	40	0	9	0	0	40	0	92	105	92	124
5	*S.* Saintpaul	0	15	12	59	3	0	2	0	91	136	91	137
6	*S.* Virchow PT 8	2	24	7	36	12	5	3	0	89	113	89	87
7	*S.* Birkenhead	0	35	0	45	0	0	3	0	83	101	83	93
8	*S.* Infantis	4	30	3	3	13	0	13	0	66	50	66	60
9	*S.* Mississippi	0	2	0	6	0	43	7	0	58	47	58	76
10	*S.* Chester	1	7	3	26	8	0	3	0	48	70	48	71
11	*S.* Typhimurium PT 197	0	18	0	21	2	0	5	1	47	69	47	93
12	*S.* Typhimurium PT 126	0	25	0	3	3	0	14	0	45	30	45	9
13	*S.* Muenchen	0	10	1	19	2	0	3	0	35	54	35	58
14	*S.* Waycross	1	14	0	19	0	0	1	0	35	46	35	36
15	*S.* Singapore	0	16	0	9	2	0	5	0	32	21	32	24
16	*S.* Hvittingfoss	0	3	3	25	0	0	0	0	31	43	31	41
17	*S.* Montevideo	1	18	0	5	0	0	5	0	29	16	29	42
18	*S.* Aberdeen	1	2	0	21	0	0	1	0	25	47	25	50
19	*S.* Typhimurium PT 8	1	3	0	3	1	0	16	0	24	12	24	13
20	*S.* Weltevreden	0	4	7	11	1	0	0	0	23	16	23	26
21	*S.* Stanley	0	4	0	6	2	0	10	0	22	17	22	37
22	*S.* Typhimurium PT 29	0	4	0	3	11	0	4	0	22	11	22	49
23	*S.* Zanzibar	0	4	2	14	1	0	0	0	21	12	21	12
24	*S.* Potsdam	0	4	0	12	1	0	2	1	20	23	20	26
25	*S.* Reading	0	2	3	14	0	0	1	0	20	12	20	18

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

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.

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 January to 31 March 2008, are included in this issue of Communicable Diseases Intelligence *(Table 6).*

Table 6. Number of laboratory confirmed cases of invasive meningococcal disease, Australia, 1 January to 31 March 2008, by serogroup and state or territory

State or territory	Year	Serogroup													
		A		B		C		Y		W-135		ND		All	
		Q1	YTD	Q1	YTD	Q1	YTD	Q1	YTD	Q1	YTD	Q1	YTD	Q1	YTD
Australian Capital Territory	08													0	0
	07			1	1					1	1			2	2
New South Wales	08			4	4	1	1	1	1					6	6
	07			12	12	3	1			1		2	2	17	17
Northern Territory	08					1	1							1	1
	07			1	1									1	1
Queensland	08			16	16	2	2							18	18
	07			11	11									11	11
South Australia	08			2	2									2	2
	07			1	1									1	1
Tasmania	08													0	0
	07									1	1			1	1
Victoria	08			4	4									4	4
	07			6	6									6	6
Western Australia	08			3	3							1	1	4	4
	07			3	3									3	3
Total	08			30	30	4	4	1	1			1	1	36	36
	07			35	35	3	3	0	0		1	2	2	41	41

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