
ANNUAL REPORT OF THE NATIONAL NOTIFIABLE DISEASES SURVEILLANCE SYSTEM, 1995

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Summary

There were 58,074 communicable disease notifications for 1995 to the National Notifiable Diseases Surveillance System. Barmah Forest virus was reported separately for the first time with 756 notifications, including an outbreak on the south coast of New South Wales. There were fewer notifications of Ross River virus infection than in previous years. Notifications of ornithosis increased, reflecting an outbreak in Victoria. Measles notifications decreased significantly following the epidemic years of 1993 and 1994. Pertussis notifications remained high and the rubella notification rate was higher than in any recent year. *Haemophilus influenzae* type b infection notifications decreased every year since 1991 and reached a rate of 0.4 cases per 100,000 population in 1995. There were also decreases in notifications of Q fever, syphilis and yersiniosis in 1995. Highest notification rates were for campylobacteriosis, chlamydial infection (not elsewhere classified) and salmonellosis (not elsewhere classified), as was the case in previous years.

Introduction

Notification of communicable diseases is an important public health activity. It prompts investigation and the use of interventions to control the spread of diseases, and enables monitoring of the effectiveness of existing control activities. Many communicable disease control activities are initiated at local government or State/Territory level, necessitating local and State-based surveillance activities. National surveillance combines data from the State and Territory based systems. National surveillance is necessary for control activities in outbreaks which affect more than one jurisdiction, to monitor the need for, or impact of, national control programs and to guide National Health and Medical Research Council (NHMRC) and other national policy development. National surveillance also describes the epidemiology of rare diseases for which there are only a few notifications in each State, assists in quarantine activities and facilitates agreed international collaborations such as reporting to the World Health Organization.

The National Notifiable Diseases Surveillance System (NNDSS) was established in its current form in 1991, under the auspices of what is now the Communicable Diseases Network Australia New Zealand (CDNANZ). The CDNANZ monitors the incidence of an agreed list of communicable diseases in Australia through national collation of notifications of these diseases received by health authorities of the States and Territories. More than forty diseases or disease categories are included, largely as recommended by the NHMRC¹.

This is the fifth annual report of the NNDSS in its current form. Previous annual reports have been published for 1991 to 1994^{2,3,4,5}.

Methods

Notifications of communicable diseases were collected during 1995 by the States and Territories under their public health legislations. These were combined and analysed fortnightly by the Department of Health and Family serv-

ices and published in *Communicable Diseases Intelligence*. Final data sets for cases reported in 1995 were provided by the States and Territories between June and September 1996. Missing data and apparent errors were corrected where possible, and duplicate records deleted, in consultation with the States and Territories.

The national data set included fields for a unique record reference number; the disease; age, sex, Aboriginality and postcode of residence of the case; the date of onset of the disease and date of report to the State or Territory health authority; and the confirmation status of the report. An additional field was introduced in 1995 to provide further details for some diseases, such as organism species (for example for malaria and legionellosis) or serogroup (for example for *Neisseria meningitidis*). Aboriginality was not included in analyses due to incomplete reporting of this field.

Population notification rates were calculated using 1995 mid-year estimates of the resident population supplied by the Australian Bureau of Statistics. In cases where a disease was not notifiable in a State or Territory, the denominators used in calculation of national rates excluded population data from that State or Territory.

Most analyses were based on cases with report dates in 1995. The data included some notifications with onset dates in 1994 and excluded notifications with report dates in 1996 and onset dates in 1995. For analysis of seasonal trends, notifications were presented by month of onset.

Notifications were allocated to the Australian Bureau of Statistics Statistical Divisions for mapping using postcodes of residence of the cases (Figure 1). The two Statistical Divisions which make up the Australian Capital Territory were combined, as the population for one division is very small. Notifications for Darwin and the remainder of the Northern Territory were also combined to calculate rates for the Northern Territory as a whole. For South Australia and Victoria, data for sexually transmis-

sible diseases were combined to provide rates for the State as a whole. In general, notification rates for Statistical Divisions were depicted in maps or discussed in the text only where the number of notifications was sufficiently large for these to be meaningful.

Notes on interpretation

The notifications compiled by the NNDSS may be influenced by a number of factors which should be considered when interpreting the data. Due to under-reporting, notified cases mostly represent only a proportion of the total number of cases which occurred. This proportion may vary between diseases, between States and Territories and with time. Methods of surveillance vary between jurisdictions, with different requirements for notification by medical practitioners, laboratories and hospitals. In addition the list of notifiable diseases and the case definitions may vary between jurisdictions.

Postcode information is well reported but, as it is usually the postcode of residence, it may not always represent the place of acquisition or diagnosis of the disease or the area in which public health actions were taken in response to the notification. Duplicate checking between the State data sets was not possible so there may be duplicate reports if patients moved from one jurisdiction to another and were notified in both. Some Statistical Divisions have small populations (Figure 1), so small numbers of cases may result in high notification rates in these areas.

The data are limited as they do not include risk factor information other than age, sex, and postcode of residence. Other risk factor information is compiled in data sets supplementary to the NNDSS, for *Haemophilus influenzae* type b infection, tuberculosis, non-tuberculous mycobacterial infection and hepatitis C, and is reported separately.

Some States and Territories reported notifications of HIV infection and non-tuberculous mycobacterial infection in

addition to the diseases included in this report. National HIV and AIDS surveillance is conducted by the National Centre in HIV Epidemiology and Clinical Research, which reports separately⁶. The non-tuberculous mycobacterial infection notifications are included in the National Mycobacterial Surveillance System which also reports separately⁷.

Results

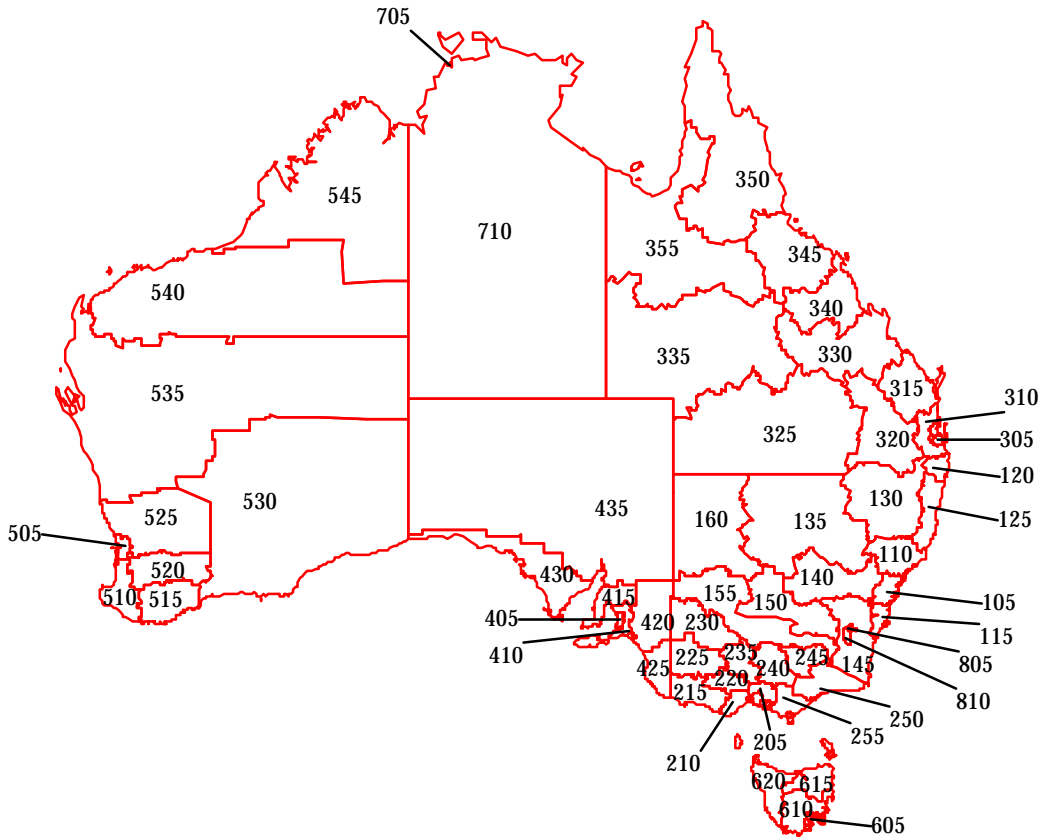
There were 58,074 communicable disease notifications for 1995 (Table 1). Notification rates per 100,000 population for each disease are presented in Table 2. There was a decrease of 6% in total notifications compared with 1994 (Table 3). The total number of notifications has remained fairly stable over the last five years.

Data were missing from some fields in some records. Information was missing in the field for sex for 411 notifications (0.7%), age for 753 (1.3%), and postcode of residence for 2,921 (5.1%). The proportion of reports with missing data in these fields varied by State or Territory, and also by disease. The new field for 'disease details' was also poorly completed.

There were changes in notification totals and rates for several diseases in 1995 compared to previous years. These included decreases in Ross River virus infection, *Haemophilus influenzae* type b infection, measles and syphilis. There were increased notifications of mumps, ornithosis and salmonellosis (not elsewhere classified). In addition Barmah Forest virus infection was reported separately for the first time in 1995.

In the remainder of this report, data on individual notifiable diseases are described and discussed in the order in which they are presented in Table 1.

Figure 1. Australian Bureau of Statistics Statistical Divisions



Statistical Division		Population	Statistical Division		Population	Statistical Division		Population
Australian Capital Territory			Queensland continued			Victoria		
805	Canberra	303734	315	Wide Bay-Burnett	222521	205	Melbourne	3218051
810	Australian Capital Territory - balance	391	320	Darling Downs	205400	210	Barwon	238767
New South Wales			325	South West	28369	215	Western District	101550
105	Sydney	3772678	330	Fitzroy	181925	220	Central Highlands	133969
110	Hunter	558967	335	Central West	12945	225	Wimmera	53157
115	Illawarra	369263	340	Mackay	118733	230	Mallee	88932
120	Richmond-Tweed	200097	345	Northern	195314	235	Loddon-Campaspe	156081
125	Mid-North Coast	261690	350	Far North	200920	240	Goulburn	184731
130	Northern	187622	355	North West	37698	245	Ovens-Murray	88696
135	North Western	119423	South Australia			250	East Gippsland	82254
140	Central West	174706	405	Adelaide	1080972	255	Gippsland	155812
145	South Eastern	180579	410	Outer Adelaide	104654	Western Australia		
150	Murrumbidgee	151282	415	Yorke and Lower North	44361	505	Perth	1262569
155	Murray	111337	420	Murray Lands	66501	510	South West	163764
160	Far West	27499	425	South East	61550	515	Lower Great Southern	50533
Northern Territory			430	Eyre	32275	520	Upper Great Southern	19879
705	Darwin	79080	435	Northern	83653	525	Midlands	51063
710	Northern Territory -balance	94625	Tasmania			530	South Eastern	54160
Queensland			605	Greater Hobart	194668	535	Central	61827
305	Brisbane	1489069	610	Southern	33600	540	Pilbara	42960
310	Moreton	584220	615	Northern	133434	545	Kimberley	24968
			620	Mersey-Lyell	111320			

Table 1. National Notifiable Diseases Surveillance System reports, 1995, by State or Territory and disease

DISEASE	ACT	NSW	NT	Qld	SA	Tas	Vic	WA	Total
Arbovirus infection									
Barmah Forest virus infection	5	285	-	456	3	0	7	-	756
Dengue	0	10	8	13	0	1	0	2	34
Ross River virus infection	2	233	387	1688	23	28	31	210	2602
NEC ¹	0	15	14	11	0	0	19	8	67
Botulism ²	0	-	0	NN	0	0	0	NN	0
Brucellosis	0	2	0	24	1	0	2	0	29
Campylobacteriosis ²	296	-	353	2094	3272	475	2938	1505	10933
Chancroid	0	0	0	0	NN	0	2	0	2
Chlamydial infection (NEC)	79	NN	542	2404	757	282	1321	1026	6411
Cholera	1	1	0	2	0	0	0	1	5
Diphtheria	0	0	0	0	0	0	0	0	0
Donovanosis	0	NN	45	18	NN	0	0	22	85
Gonococcal infection ³	10	420	547	749	251	3	243	1036	3259
<i>Haemophilus influenzae</i> type b infection	1	29	5	9	6	5	14	5	74
Hepatitis A	15	620	53	451	34	9	246	173	1601
Hepatitis B	13	66	14	64	33	7	92	32	321
Hepatitis C - incident	7	41	5	-	15	1	-	-	69
Hepatitis C - unspecified	330		309	2920		268	4506	1268	9601
Hepatitis (NEC) ⁴	0	21	1	17	2	0	14	NN	55
Hydatid infection	0	18	0	11	0	3	14	0	46
Legionellosis	1	77	2	20	13	2	22	23	160
Leprosy	0	2	1	1	0	0	0	3	7
Leptospirosis	0	8	1	61	7	5	62	5	149
Listeriosis	3	15	1	8	4	1	23	3	58
Lymphogranuloma venereum	0	NN	0	0	NN	0	1	NN	1
Malaria	22	103	36	282	24	2	116	40	625
Measles	48	649	110	251	5	53	150	58	1324
Meningococcal infection	11	114	8	100	26	7	75	41	382
Mumps	16	14	8	NN	12	9	77	17	153
Ornithosis	1	NN	0	15	6	2	147	5	176
Pertussis	34	1342	174	1416	389	118	376	448	4297
Plague	0	0	0	0	0	NN	0	0	0
Poliomyelitis	0	0	0	0	0	0	0	0	0
Q fever	1	218	0	180	7	0	62	5	473
Rabies	0	NN	0	0	0	0	0	0	0
Rubella	159	1102	11	1188	79	166	1273	402	4380
Salmonellosis (NEC)	83	1395	369	1579	648	139	965	717	5895
Shigellosis ²	7	-	199	222	76	1	82	147	734
Syphilis	11	935	360	367	32	2	21	126	1854
Tetanus	0	0	0	0	0	0	4	3	7
Tuberculosis	8	454	39	133	59	12	283	85	1073
Typhoid ⁵	2	36	1	5	2	1	13	10	70
Viral haemorrhagic fever (NEC)	0	0	0	0	0	0	0	0	0
Yellow fever	0	0	0	0	0	0	0	0	0
Yersiniosis (NEC) ²	1	-	2	177	96	2	24	4	306
TOTAL	1167	8225	3605	16936	5882	1604	13225	7430	58074

NN Not notifiable.

NEC Not elsewhere classified.

- Elsewhere Classified.

1. Northern Territory and Western Australia: Includes Barmah Forest virus infection.

2. New South Wales: only as 'foodborne disease' or 'gastroenteritis in an institution'.

3. Northern Territory, Queensland, South Australia and Victoria: includes gonococcal neonatal ophthalmia.

4. Includes Hepatitis D and E.

5. Includes paratyphoid in New South Wales and Victoria.

Table 2. National Notifiable Diseases Surveillance System notification rates per 100,000 population, 1995, by State or Territory and disease

DISEASE	ACT	NSW	NT	Qld	SA	Tas	Vic	WA	Total
Arbovirus infection									
Barmah Forest virus infection	1.6	4.7	-	13.9	0.2	0	0.2	-	4.7
Dengue	0	0.2	4.6	0.4	0	0.2	0	0.1	0.2
Ross River virus infection	0.7	3.8	222.6	51.5	1.6	5.9	0.7	12.1	14.4
NEC ¹	0	0.2	8.1	0.3	0	0	0.4	0.5	0.4
Botulism ²	0	-	0	NN	0	0	0	NN	0
Brucellosis	0	0	0	0.7	0.1	0	0	0	0.2
Campylobacteriosis ²	97.3	-	203.0	63.9	222.0	100.4	65.3	86.9	91.6
Chancroid	0	0	0	0	NN	0	0	0	0
Chlamydial infection (NEC)	26.0	NN	311.7	73.4	51.4	59.6	29.3	59.2	53.7
Cholera	0.3	0	0	0.1	0	0	0	0.1	0
Diphtheria	0	0	0	0	0	0	0	0	0
Donovanosis	0	NN	25.9	0.5	NN	0	0	1.3	0.8
Gonococcal infection ³	3.3	6.9	314.6	22.9	17.0	0.6	5.4	59.8	18.1
<i>Haemophilus influenzae</i> type b infection	0.3	0.5	2.9	0.3	0.4	1.1	0.3	0.3	0.4
Hepatitis A	4.9	10.1	30.5	13.8	2.3	1.9	5.5	10.0	8.9
Hepatitis B - incident	4.3	1.1	8.1	2.0	2.2	1.5	2.0	1.8	1.8
Hepatitis C - incident	2.3	0.7	2.9	-	1.0	0.2	-	-	0.8
Hepatitis C - unspecified	108.5		177.7	89.1		56.7	100.1	73.2	91.8
Hepatitis (NEC) ⁴	0	0.3	0.6	0.5	0.1	0	0.3	NN	0.3
Hydatid infection	0	0.3	0	0.3	0	0.6	0.3	0	0.3
Legionellosis	0.3	1.3	1.2	0.6	0.9	0.4	0.5	1.3	0.9
Leprosy	0	0	0.6	0	0	0	0	0.2	0
Leptospirosis	0	0.1	0.6	1.9	0.5	1.1	1.4	0.3	0.8
Listeriosis	1.0	0.2	0.6	0.2	0.3	0.2	0.5	0.2	0.3
Lymphogranuloma venereum	0	NN	0	0	NN	0	0	NN	0
Malaria	7.2	1.7	20.7	8.6	1.6	0.4	2.6	2.3	3.5
Measles	15.8	10.6	63.3	7.7	0.3	11.2	3.3	3.3	7.3
Meningococcal infection	3.6	1.9	4.6	3.1	1.8	1.5	1.7	2.4	2.1
Mumps	5.3	0.2	4.6	NN	0.8	1.9	1.7	1.0	1.0
Ornithosis	0.3	NN	0	0.5	0.4	0.4	3.3	0.3	1.5
Pertussis	11.2	21.9	100.1	43.2	26.4	24.9	8.4	25.9	23.8
Plague	0	0	0	0	0	NN	0	0	0
Poliomyelitis	0	0	0	0	0	0	0	0	0
Q fever	0.3	3.6	0	5.5	0.5	0	1.4	0.3	2.6
Rabies	0	NN	0	0	0	0	0	0	0
Rubella	52.3	18.0	6.3	36.2	5.4	35.1	28.3	23.2	24.3
Salmonellosis (NEC)	27.3	22.8	212.2	48.2	44.0	29.4	21.4	41.4	32.7
Shigellosis ²	2.3	-	114.4	6.8	5.2	0.2	1.8	8.5	6.1
Syphilis	3.6	15.3	207.0	11.2	2.2	0.4	0.5	7.3	10.3
Tetanus	0	0	0	0	0	0	0.1	0.2	0
Tuberculosis	2.6	7.4	22.4	4.1	4.0	2.5	6.3	4.9	5.9
Typhoid ⁵	0.7	0.6	0.6	0.2	0.1	0.2	0.3	0.6	0.4
Viral haemorrhagic fever (NEC)	0	0	0	0	0	0	0	0	0
Yellow fever	0	0	0	0	0	0	0	0	0
Yersiniosis ²	0.3	-	1.2	5.4	6.5	0.4	0.5	0.2	2.6

NN Not notifiable.

NEC Not elsewhere classified.

- Elsewhere Classified.

1. Northern Territory and Western Australia: includes Barmah Forest virus infection.

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3. Northern Territory, Queensland, South Australia and Victoria: includes gonococcal neonatal ophthalmia.

4. Includes Hepatitis D and E.

5. Includes paratyphoid in New South Wales and Victoria.

Table 3. National Notifiable Diseases Surveillance System reports and notification rates per year, 1991 to 1995, by year¹ and disease

DISEASE	Notifications					Rate per 100,000 population				
	1991	1992	1993	1994	1995	1991	1992	1993	1994	1995
Arbovirus infection										
Barmah Forest virus infection	-	-	-	-	756	-	-	-	-	4.7
Dengue	46	366	690	17	34	0.3	2.2	4.5	0.1	0.2
Ross River virus infection	3532	5630	5428	3974	2602	22.9	36.5	31.6	22.9	14.4
NEC	201	303	578	587	67	1.2	1.8	3.3	3.3	0.4
Botulism ²	NN	0	0	0	0	NN	0	0	0	0
Brucellosis	28	29	20	34	29	0.2	0.2	0.1	0.2	0.2
Campylobacteriosis	8672	9135	8111	10117	10933	75.8	54.2	69.6	85.8	91.6
Chancroid	0	5	1	0	2	0	0.1	0	0	0
Chlamydial infection (NEC)	4044	6293	6500	6159	6411	48.7	56.6	55.8	55.3	53.7
Cholera	0	3	6	3	5	0	0	0	0	0
Diphtheria	8	14	1	0	0	0	0.1	0	0	0
Donovanosis	72	78	67	117	85	0.8	1.0	0.7	1.1	0.8
Gonococcal infection	2530	2908	2811	2971	3259	14.6	17.3	15.9	16.7	18.1
<i>Haemophilus influenzae</i> type b infection	549	501	396	169	74	3.5	3.0	2.2	1.0	0.4
Hepatitis A	2195	2109	2006	1894	1601	12.7	12.5	11.4	10.6	8.9
Hepatitis B	108	133	278	327	321	1.8	2.3	2.2	1.9	1.8
Hepatitis C - incident	-	-	30	43	69	-	-	0.4	0.6	0.8
Hepatitis C - unspecified	4116	8812	7542	8898	9601	29.0	63.6	73.9	86.2	91.8
Hepatitis (NEC)	338	70	72	42	55	2.2	0.5	0.5	0.3	0.3
Hydatid infection	44	38	32	56	46	0.3	0.2	0.2	0.3	0.3
Legionellosis	110	185	178	179	160	0.6	1.1	1.0	1.0	0.9
Leprosy	13	16	15	11	7	0.1	0.1	0.1	0.1	0
Leptospirosis	169	159	178	123	148	1.0	0.9	1.0	0.7	0.8
Listeriosis	44	38	53	34	58	0.3	0.3	0.3	0.2	0.3
Lymphogranuloma venereum	0	3	1	2	1	0	0	0	0	0
Malaria	790	712	688	703	625	4.6	4.2	3.9	3.9	3.5
Measles	1380	1425	4536	4895	1324	8.0	8.5	25.7	27.4	7.3
Meningococcal infection	285	292	378	383	382	1.6	1.7	2.1	2.2	2.1
Mumps ²	NN	23	28	94	153	NN	0.2	0.2	0.5	1.0
Ornithosis	136	94	98	85	176	1.2	0.9	0.8	0.7	1.5
Pertussis	337	739	3990	5633	4297	1.9	4.4	22.6	31.6	23.8
Plague	0	0	0	0	0	0	0	0	0	0
Poliomyelitis	0	0	0	0	0	0	0	0	0	0
Q fever	595	543	889	667	473	3.4	3.2	5.0	3.7	2.6
Rabies	0	0	0	0	0	0	0	0	0	0
Rubella	620	3810	3812	3315	4380	3.6	22.6	21.6	18.6	24.3
Salmonellosis (NEC)	5440	4614	4731	5283	5895	31.4	27.4	26.8	29.6	32.7
Shigellosis	902	694	708	724	734	7.9	6.2	6.1	6.1	6.1
Syphilis	2053	2695	2305	2324	1854	11.8	16.0	13.1	13.0	10.3
Tetanus	7	14	10	15	7	0	0.1	0.1	0.1	0
Tuberculosis	834 ³	970	1071	1024	1073	4.8	5.8	6.1	5.7	5.9
Typhoid	89	50	72	50	69	0.5	0.3	0.4	0.3	0.4
Viral haemorrhagic fever (NEC)	0	0	0	0	0	0	0	0	0	0
Yellow fever	0	0	0	0	0	0	0	0	0	0
Yersiniosis (NEC)	515	567	459	414	306	4.6	3.4	3.9	3.5	2.6
TOTAL	44155	59156	60745	61726	58074	254.7	351.1	344.0	345.9	321.7

NEC Not Elsewhere Classified.

NN Not notifiable.

- Elsewhere classified.

1. Not all diseases were notifiable in every State and Territory every year.
2. Botulism and mumps notifications have been collated nationally only since 1992.
3. Includes notifications from Victoria that were not included in the Annual Report for 1991.

Arbovirus - Barmah Forest virus infection

Separate reporting of Barmah Forest virus infection to the National Notifiable Diseases Surveillance System began in 1995 for all jurisdictions other than Western Australia and the Northern Territory. In previous years cases were notified as arbovirus infection - not elsewhere classified.

There were 756 notifications of Barmah Forest virus infection received in 1995, with an adjusted notification rate of 4.7 cases per 100,000 population.

There was a marked seasonal distribution, with most cases having onset in the months of March, April and May (Figure 2), similar to that for Ross River virus infection.

Similar numbers of males and females were reported, the male:female ratio being 1.1:1. All age groups were represented. The majority of notifications (88%) were for persons in the 30 - 64 years age group (Figure 3).

The highest notification rates were for the Central West, Mackay, Fitzroy and South West Statistical Divisions of Queensland (rates of 77.3, 53.9, 47.3 and 42.3 per 100,000 population respectively) (Figure 4). The outbreak in the South Eastern Statistical Division of New South Wales⁸ resulted in a notification rate of 48.2 per 100,000.

Arbovirus infection - dengue

There were 34 notifications of dengue received in 1995. This is more than in 1994 (17 notifications) but markedly less than the 690 notifications in 1993. The annual notifica-

Figure 2. Notifications of Barmah Forest virus infection, 1995, by month of onset

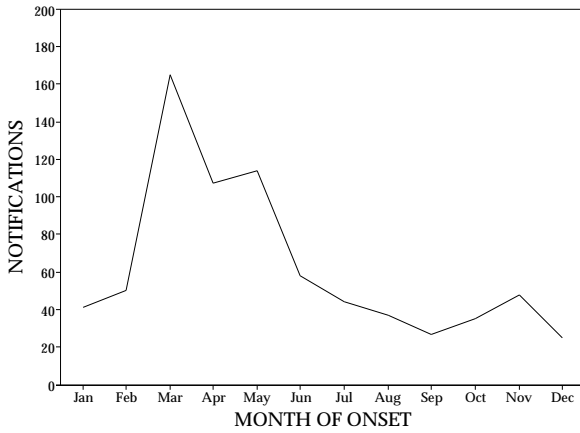


Figure 3. Adjusted notification rate of Barmah Forest virus infection, 1995, by age group and sex

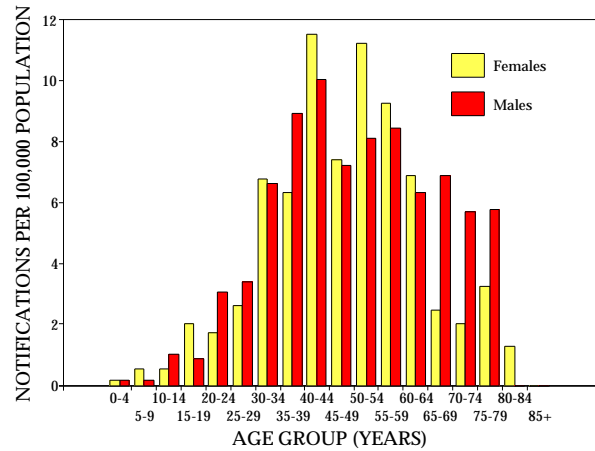


Figure 4. Notification rate of Barmah Forest virus infection, 1995, by Statistical Division of residence

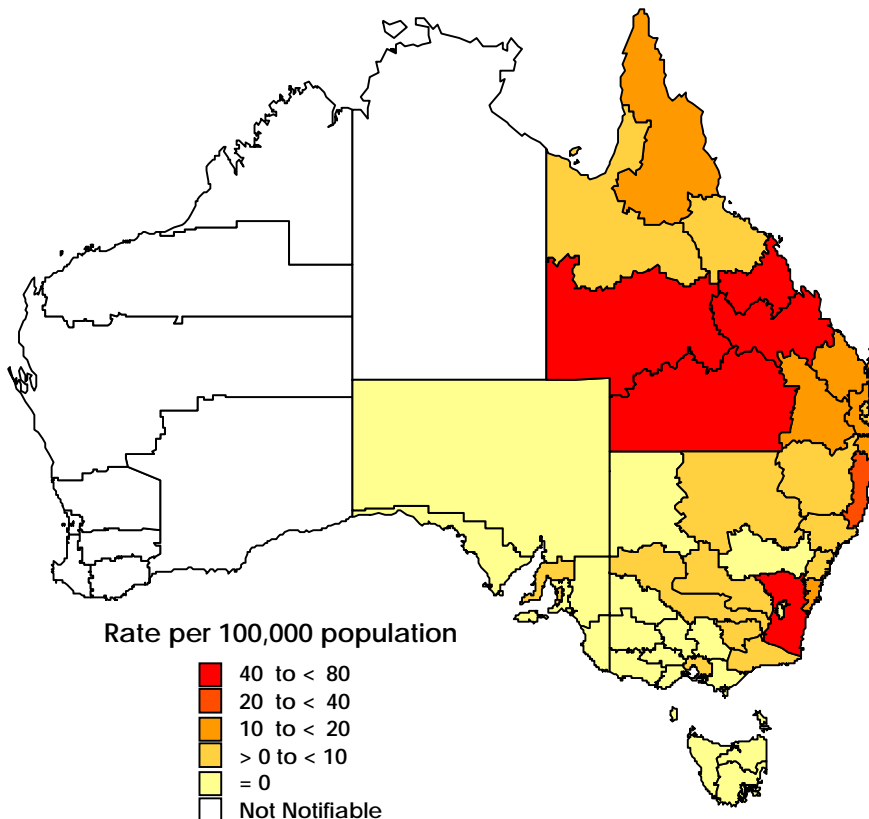
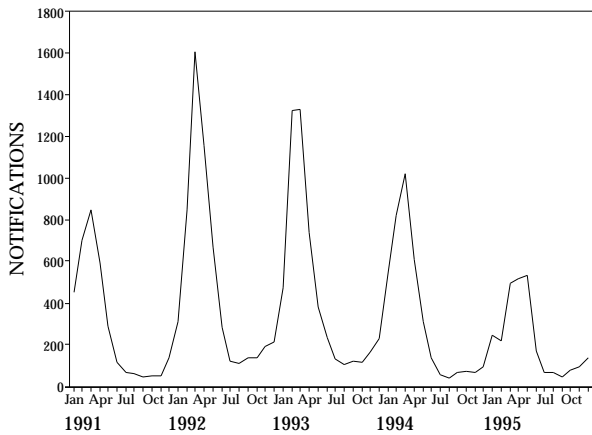


Figure 5. Notifications of Ross River virus infection, 1991 to 1995, by month of onset



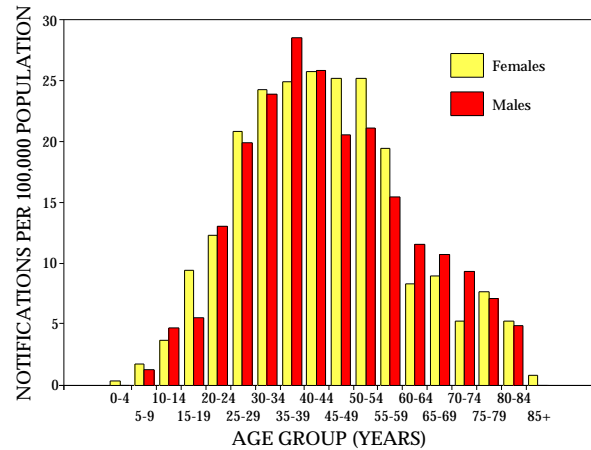
tion rate was 0.2 per 100,000 population. There was no seasonal trend.

The male:female ratio was 1:1. All notifications were for persons in the 10 - 54 years age range, more than half of whom (53%) were aged 25 - 34 years. Cases were reported for residents of New South Wales, the Northern Territory, Queensland, Tasmania and Western Australia.

Arbovirus infection - Ross River virus infection

There were 2,602 notifications of Ross River virus infection in 1995. The notification rate of 14.4 per 100,000 population was markedly lower than any rate recorded since 1991 when the system began in its current form.

Figure 7. Notification rate of Ross River virus infection, 1995, by age group and sex

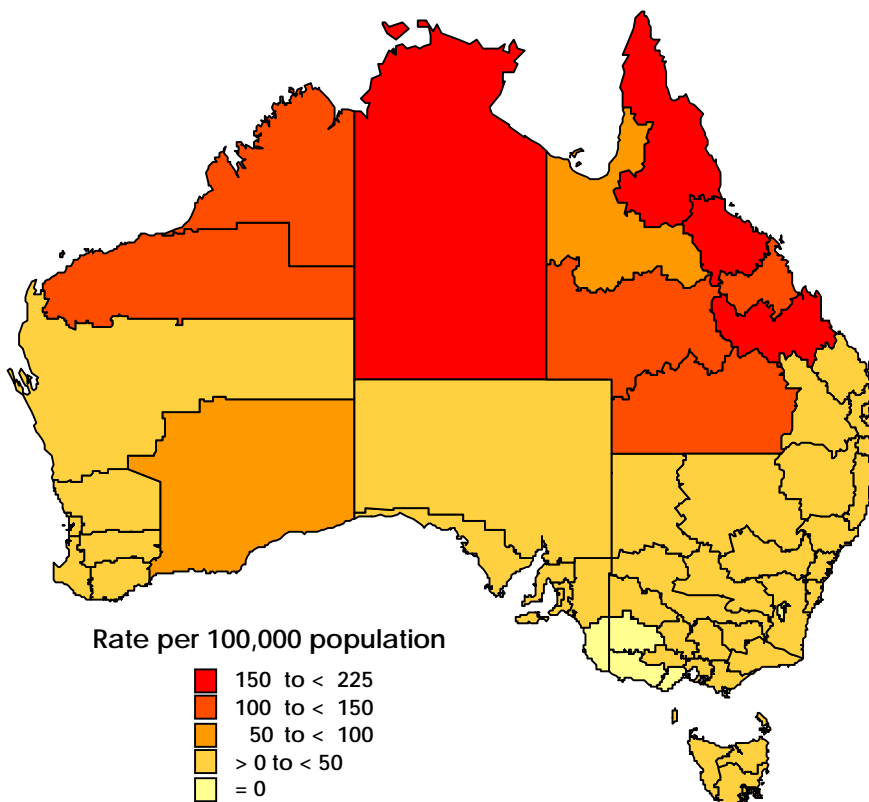


The highest number of notifications was received for cases with onset in April and May (519 and 530 cases respectively). This was later than the peak months of February and March reported in previous years (Figure 5).

The highest rates were recorded for the Statistical Divisions of the Northern Territory (222.6 per 100,000 population) and the Queensland Statistical Divisions of Northern (186.4 per 100,000 population), Far North (150.8 per 100,000 population) and Fitzroy (150.1 per 100,000 population) (Figure 6).

Equal numbers of males and females were reported. As in previous years the peak notification rate was for the 30 - 54 years age range (Figure 7).

Figure 6. Notification rate of Ross River virus infection, 1995, by Statistical Division of residence



Arbovirus infection - not elsewhere classified

This classification may include infections with the alphavirus Sindbis virus, and the flaviviruses, Murray Valley encephalitis, Kunjin, Kokobera and Stratford viruses. It may also include Barmah Forest virus infection in the Northern Territory and Western Australia.

In 1995 the National Notifiable Diseases Surveillance System began collecting notification data on Barmah Forest virus infection separately. These data had previously been included in the arbovirus infection - not elsewhere classified category.

There were 67 reports of arbovirus (not elsewhere classified) received in 1995, fewer than reported in previous years. This reduction is probably due to separate reporting of Barmah Forest virus infection.

Fifty-seven per cent of reports were for persons in the 20 - 45 years age range. The male:female ratio was 1.6:1.

Botulism

There were no cases of botulism reported in 1995. There have been no notifications of this disease reported nationally since collation began in 1992

Brucellosis

There were 29 reports of brucellosis in 1995. The notification rate of 0.2 per 100,000 population was similar to previous years. Most notifications (24) were from Queensland. Of these, nine were from the Central West Statistical Division.

All notifications were aged between 5 - 69 years, 18 (62%) being 29 - 39 years of age. All notifications were for males.

Figure 9. Notification rate of campylobacteriosis, 1995, by Statistical Division of residence

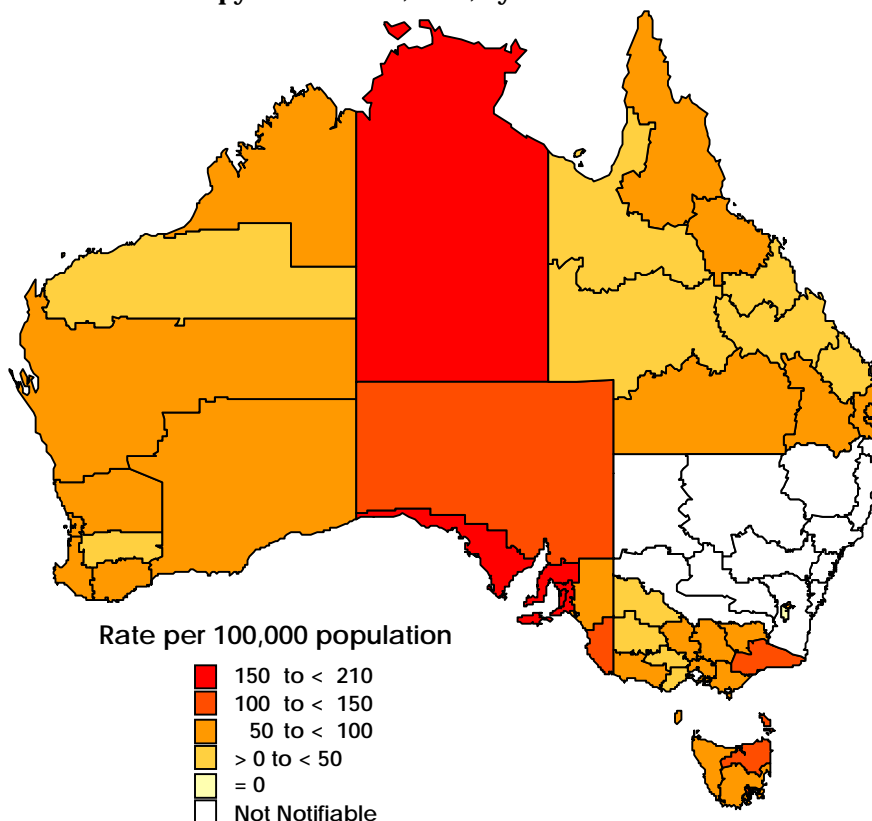
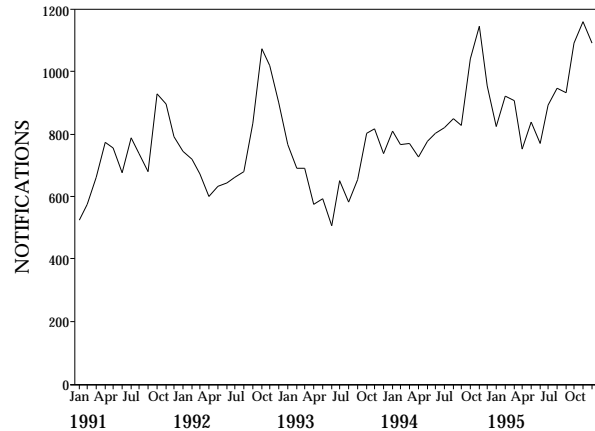


Figure 8. Notifications of campylobacteriosis, 1991 to 1995, by month of onset



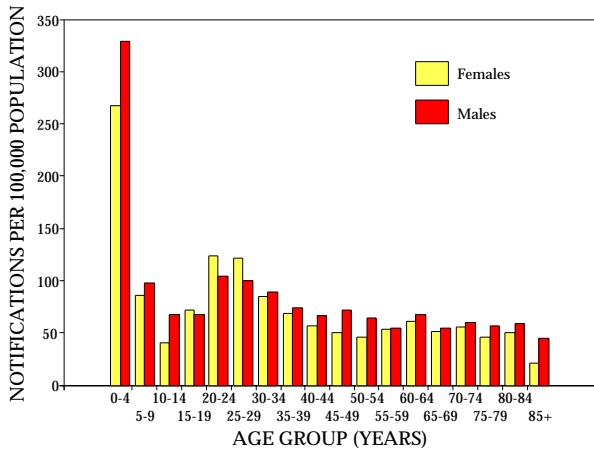
Campylobacteriosis

There were 10,933 cases of campylobacteriosis reported in 1995, with a notification rate of 91.6 per 100,000 population. The notification rate of campylobacteriosis has continued to rise since 1992 (Figure 8). In New South Wales, campylobacteriosis was only notifiable as 'food-borne disease' or 'gastroenteritis in an institution'.

There was a decline in the number of cases through the winter months, followed by a marked rise in the last three months of the year.

Campylobacteriosis was reported from all States and Territories where it was notifiable. The highest rates were seen in South Australia and the Northern Territory (222.0 and 203.0 per 100,000 population respectively) (Figure 9).

Figure 10. Adjusted notification rate of campylobacteriosis, 1995, by age group and sex



The male:female ratio was 1.1:1. The highest notification rates were in the 0 - 4 years age group (males 327.7 and females 266.3 per 100,000 population respectively) (Figure 10).

Chancroid

Two cases of chancroid were reported in 1995. Both were in females in the age range 40 - 54 years.

Chlamydial infection

There were 6,411 cases of chlamydial infection reported in 1995, but it was not notifiable in New South Wales. The adjusted rate for 1995 was 53.7 per 100,000 population.

This rate has not changed substantially over several years. There was no seasonal trend in onset dates.

High notification rates were reported across northern Australia, including the Statistical Divisions of Pilbara and Kimberley in Western Australia, the Northern Territory, and the Statistical Divisions of North West and Far North Queensland (Figure 11).

The male:female ratio was 1:2.2, with 27% of all cases reported in females in the age group 20 - 24 years (Figure 12). There were 53 cases reported in children less than one year of age.

Figure 12. Adjusted notification rate of chlamydial infection, 1995, by age group and sex

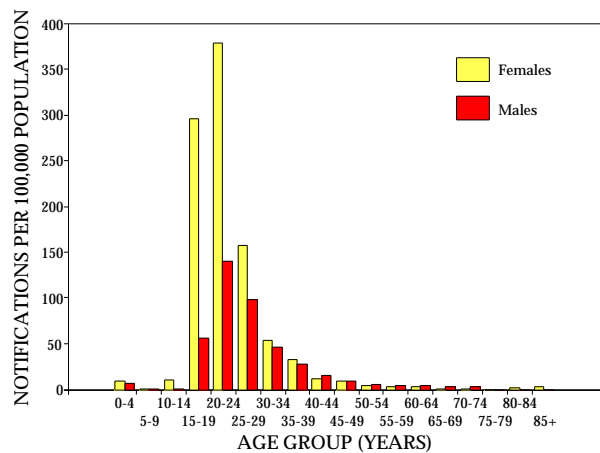
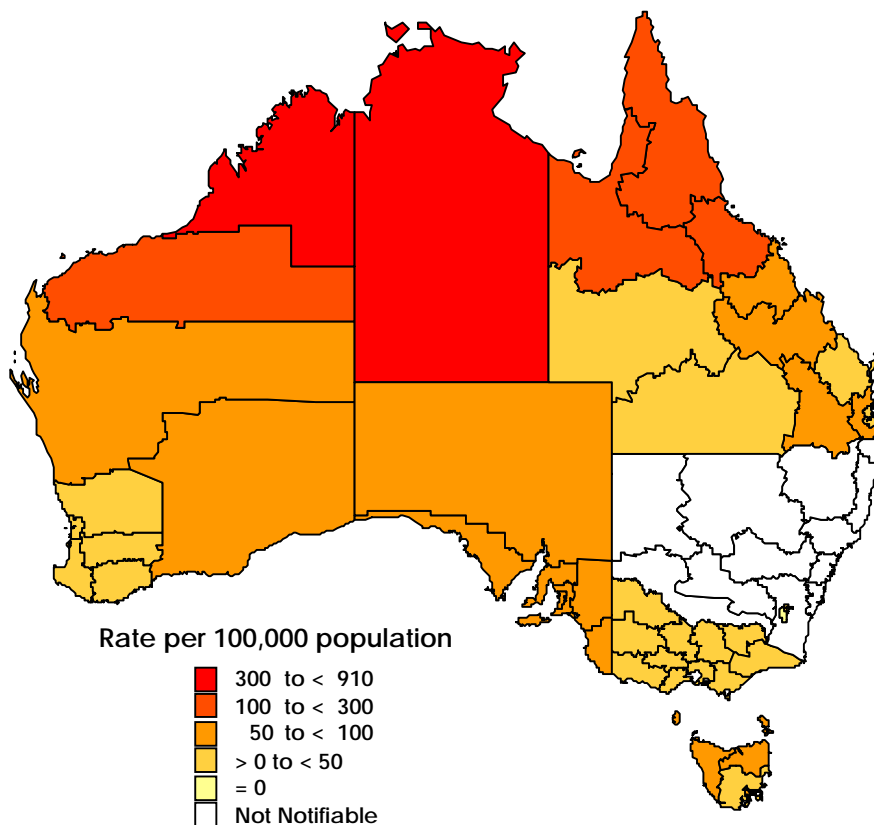


Figure 11. Notification rate of chlamydial infection, 1995, by Statistical Division of residence



Cholera

There were five reports of cholera in 1995, from the Australian Capital Territory, New South Wales, Queensland and Western Australia. Four cases were females aged between 30 - 49 years, and the age and sex of one case was not reported.

Diphtheria

There were no cases of diphtheria reported in 1995. The last notification of this disease in Australia was in 1993.

Donovanosis

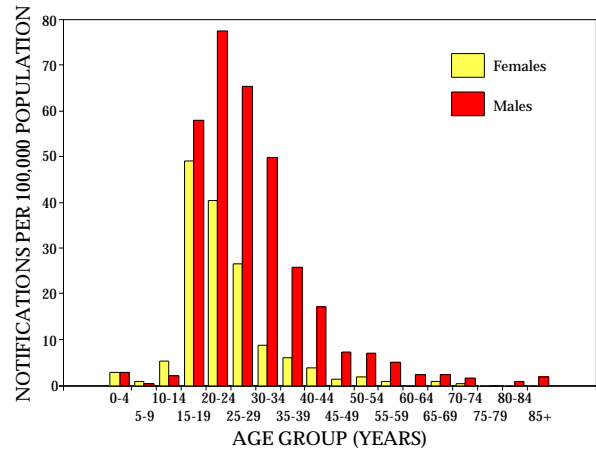
Donovanosis was not a notifiable disease in New South Wales or South Australia in 1995. There were 85 notifications from Queensland, Western Australia and the Northern Territory, but none from the other States and the Australian Capital Territory. Those cases reported from Queensland and Western Australia were from tropical Statistical Divisions.

The male:female ratio was 1:1.5. Seventy per cent of notifications were for persons in the age range 15 - 29 years.

Gonococcal infection

In 1995, there were 3,259 notifications of gonococcal infection received from all States and Territories. The notification rate of 18.1 per 100,000 population was higher than in recent years. However, this rate remains far below the very high rates recorded in the 1970s and early 1980s, which peaked at 84.4 per 100,000 population in 1982. There was no seasonal trend.

Figure 14. Notification rate of gonococcal infection, 1995, by age group and sex



There was wide geographical variation in the notification rate of gonococcal infection (Figure 13). High notification rates (above 150 per 100,000 population) were reported across northern Australia, including the Statistical Divisions of Pilbara and Kimberley in Western Australia, the Northern Territory, and the Statistical Divisions of North West and Far North, Queensland.

The male:female ratio of 2.2:1 was also comparable to previous years. Notification rates were higher for males than for females in all adult age groups (Figure 14).

Figure 13. Notification rate of gonococcal infection, 1995, by Statistical Division of residence

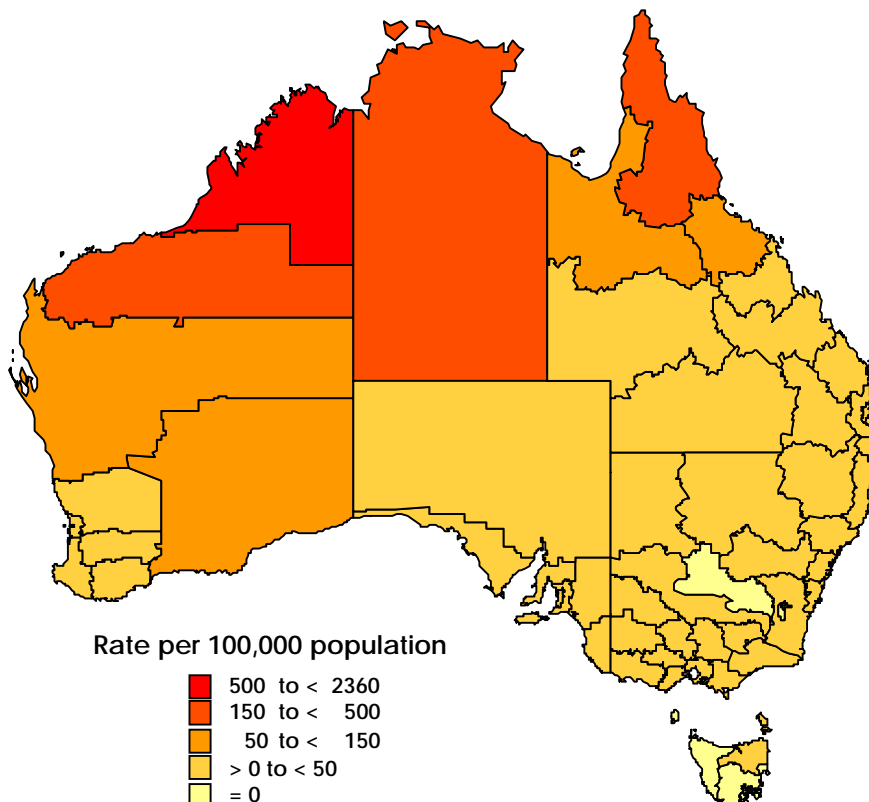
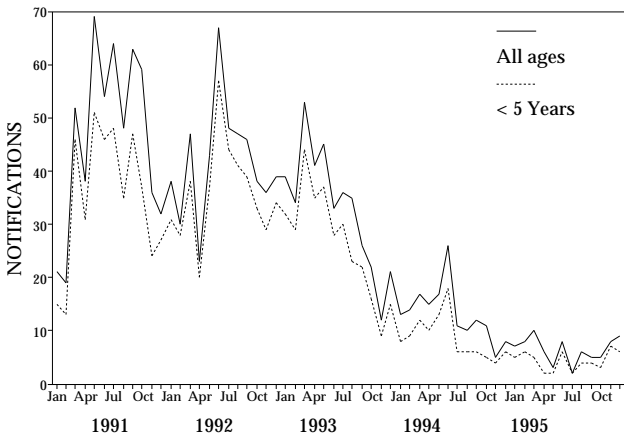


Figure 15. Notifications of *Haemophilus influenzae* type b infection, 1991 to 1995, by month of onset and age group



***Haemophilus influenzae* type b infection**

There were 74 cases of *Haemophilus influenzae* type b infection (Hib) notified in 1995, with an annual rate of 0.4 per 100,000 population. The notification rate declined dramatically following the introduction of conjugate Hib vaccines in 1992 when the rate was 3.0 per 100,000 population. In children under the age of five years there was an 88% reduction in the number of notifications between 1992 and 1995 (Figure 15).

The male:female ratio was 1:1.1. Sixty-eight per cent of notifications occurred in the 0 - 4 years age group with a rate of 3.9 per 100,000 population. In 1992 the rate in the

same age group was 33.6 per 100,000 population. Twenty-three per cent of cases occurred in children under the age of one year in 1995.

Hepatitis A

There were 1,601 notifications of hepatitis A during 1995. The notification rate was 8.9 per 100,000 population. The rate has continued to fall in recent years.

The number of notifications fell throughout the winter months and rose at the end of the year. The highest number of notifications was for December (Figure 16).

The highest notification rates were reported for the Pilbara and Kimberley Statistical Divisions of Western Australia

Figure 16. Notifications of hepatitis A, 1995, by month of onset

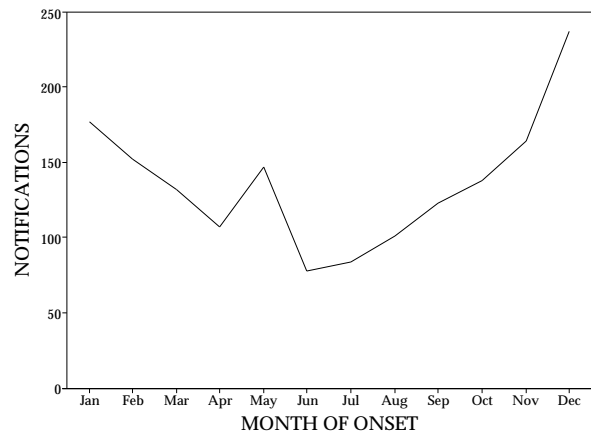


Figure 17. Notification rate of hepatitis A infection, 1995, by Statistical Division of residence

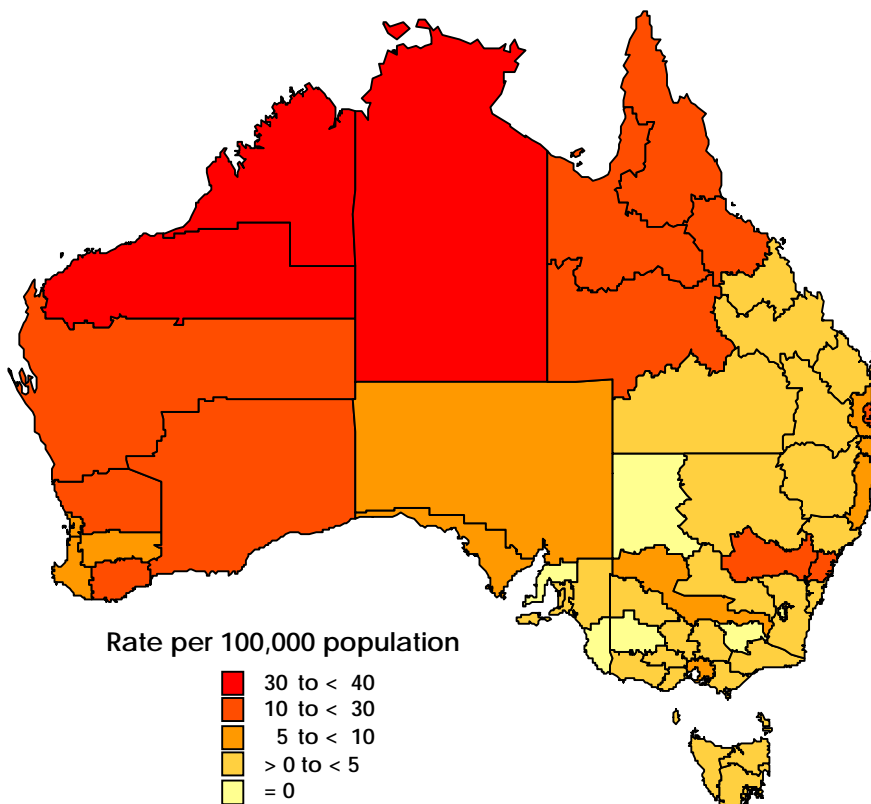
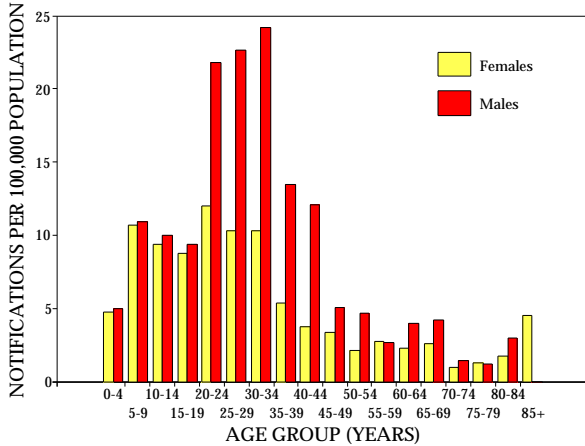


Figure 18. Notification rate of hepatitis A, 1995, by age group and sex



(37.2 and 36.1 per 100,000 population respectively) and the Northern Territory (30.5 per 100,000 population) (Figure 17).

The male:female ratio was 1.7:1. Age group specific notification rates were highest for those aged 20 - 34 years (Figure 18).

Hepatitis B

There were 321 incident cases of hepatitis B reported in 1995. This corresponds to a notification rate of 1.8 per 100,000 population.

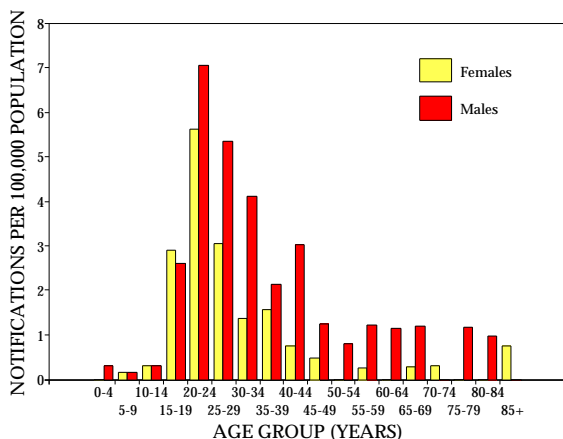
The highest notification rates were reported for the Kimberley Statistical Division of Western Australia (44.0 per 100,000 population) and the North Western Statistical Division of New South Wales (11.7 per 100,000 population).

The male:female ratio was 1.8:1. The highest age group specific notification rates were for the 20 - 24 years age group (6.4 per 100,000 population) (Figure 19).

Hepatitis C

There were 69 reports of incident hepatitis C received from States and Territories other than Queensland, Victoria and Western Australia. The male:female ratio was 1.8:1. There were 56 cases (81%) aged between 20 - 39 years. The male:female ratio in this age group was 2.1:1.

Figure 19. Notification rate of hepatitis B, 1995, by age group and sex



A 12 month pilot program for the enhanced surveillance of incident cases of hepatitis C and associated risk factors was commenced in 1995. There were 138 incident cases of hepatitis C identified⁹. The difference in incident cases in the two surveillance systems indicates better case ascertainment in the enhanced surveillance system than in the NNDSS.

Unspecified hepatitis C was reported by all States and Territories except South Australia and New South Wales. The annual adjusted notification rate was 91.8 per 100,000 population. As unspecified notifications do not differentiate between acute, chronic and past infection it is probable that these figures are representative of testing patterns rather than newly acquired infection. The median age was 34 years (range 0 - 94 years). The male:female ratio was 1.6:1.

Hepatitis (not elsewhere classified)

There were 55 reports of hepatitis (not elsewhere classified) received in 1995. These included 20 reports of hepatitis D and 6 reports of hepatitis E.

Hydatid infection

Hydatid infection was reported for 46 patients in 1995 (0.3 per 100,000 population). The age range was 15 - 84 years. The male:female ratio was 1:1.4. Forty-three per cent of cases were aged over 60 years. Notifications were received from both rural and metropolitan Statistical Divisions, as has been the case in previous years¹⁰.

Legionellosis

This classification includes notifications of infections caused by all *Legionellae* species. There were 160 notifications received in 1995, constituting a rate of 0.9 cases per 100,000 population for the year. Similar numbers of cases were observed in the previous four years (Figure 20).

The male:female ratio was 3.3:1. Sixty-seven per cent of all cases were in males older than 40 years (Figure 21).

The highest numbers of notifications were recorded with onset during January and March. Fifty-three per cent of cases reported for this period were from New South Wales. Species identification was not available for the majority of infections. *L. pneumophila* infections have been

Figure 20. Notifications of legionellosis, 1991 to 1995, by month of onset

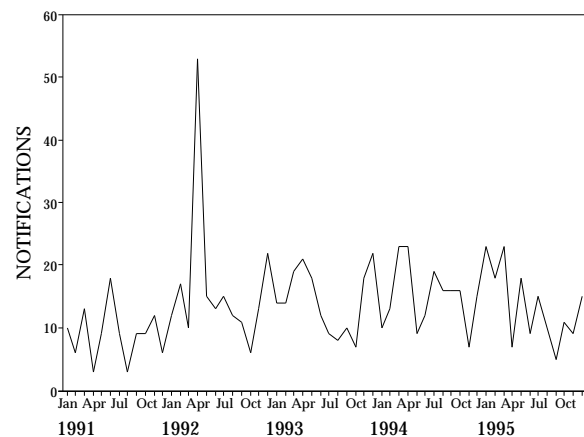
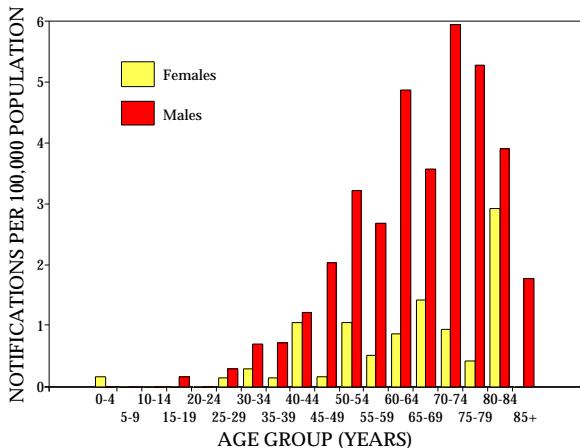


Figure 21. Notification rate of legionellosis, 1995, by age group and sex



reported to peak in the autumn, and *L. longbeachae* infections in the spring¹¹.

Leprosy

There were seven notifications of leprosy in 1995. Six cases were male. The notification rate of 0.04 per 100,000 population was slightly lower than for recent years. The three youngest persons notified with the disease were in the age group 30 - 34 years.

Leptospirosis

There were 149 notifications of leptospirosis in 1995 (0.8 per 100,000 population). Cases were in the age range 5 - 74 years. The male:female ratio was 7.2:1. The highest notification rate was reported for the 20 - 29 years age group (1.7 per 100,000 population) (Figure 22). More reports were received for November and December than for other months, similar to the seasonal distribution observed in previous years (Figure 23).

The highest numbers of notifications were recorded for Queensland and Victoria. The highest notification rates were reported for the Statistical Divisions of Western District (17.7 per 100,000 population) and Gippsland (10.3 per 100,000 population) in Victoria, and Far North Queensland (15.4 per 100,000 population).

Listeriosis

Listeriosis was notified for 58 cases in 1995, from all States and Territories. The notification rate was 0.3 per 100,000 population, about the same as for previous years.

Twenty-six of the cases (45%) had a recorded onset during the warmer months of January and February (Figure 24). There were 4 cases in the 0 - 4 years age group, and 24 cases (41%) were aged over 64 years.

Lymphogranuloma venereum

Lymphogranuloma venereum was not a notifiable disease in New South Wales, Western Australia or South Australia in 1995. A single case was reported from Victoria in 1995.

Figure 22. Notification rate of leptospirosis, 1995, by age group and sex

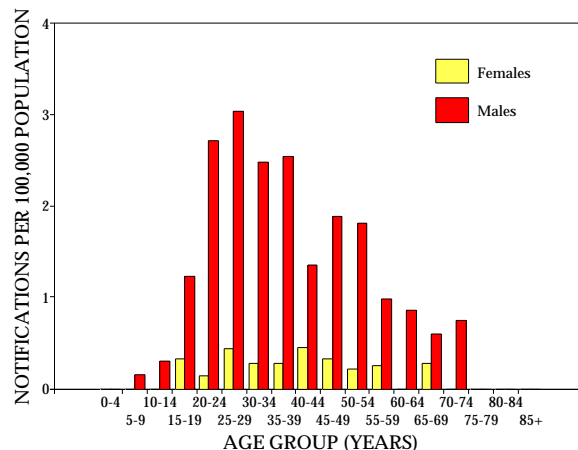


Figure 23. Notifications of leptospirosis, 1991 to 1995, by month of onset

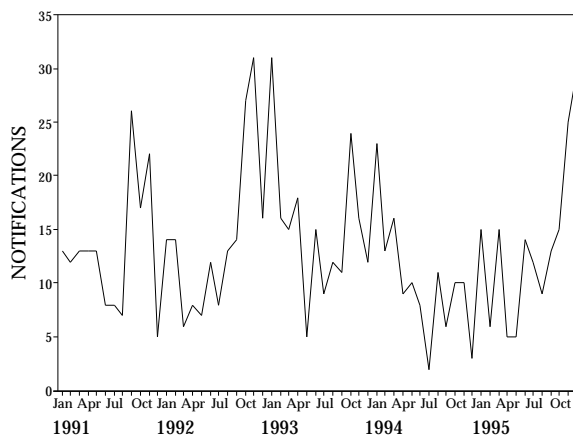
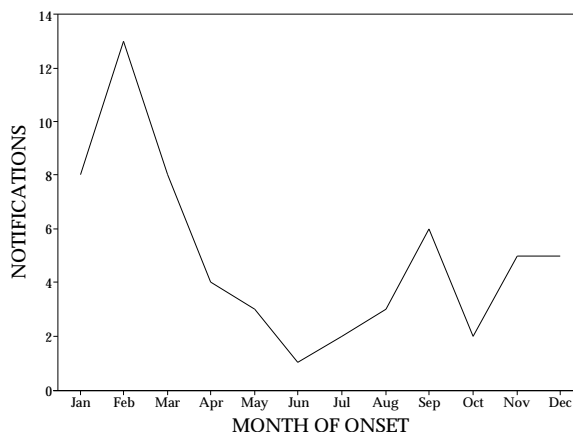


Figure 24. Notifications of listeriosis, 1995, by month of onset



Malaria

There were 625 notifications of malaria during 1995, the notification rate being 3.5 per 100,000 population. This rate is somewhat lower than the rates recorded for the previous four years. There were no reports of locally acquired cases.

There was a marked seasonal variation, with the highest number of notifications having a recorded onset in February (Figure 25). This seasonal distribution follows the pattern of previous years and may reflect travel patterns. This was most marked in the Northern Territory and

Queensland where 32% and 16% respectively of the total notifications for the year had onset dates in February.

As seen in previous years, the highest notification rates were recorded for residents of the Queensland Statistical Divisions of Far North (24.9 per 100,000 population), and Northern (15.9 per 100,000 population), and for the Northern Territory (20.7 per 100,000 population) (Figure 26).

The male:female ratio was 2.5:1. Sixty-seven per cent of notifications were seen in persons 20 - 49 years of age (Figure 27).

Figure 25. Notifications of malaria, 1991 to 1995, by month of onset

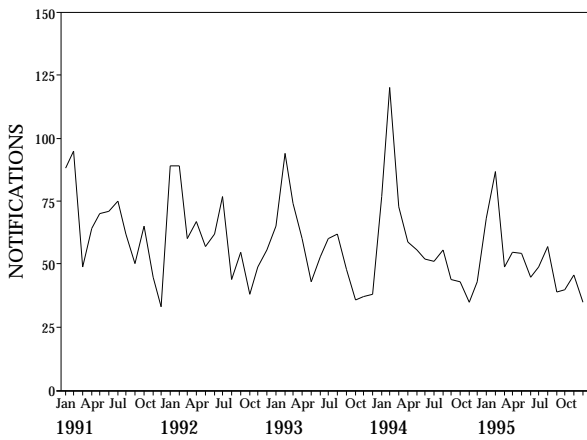


Figure 27. Notification rate of malaria, 1995, by age group and sex

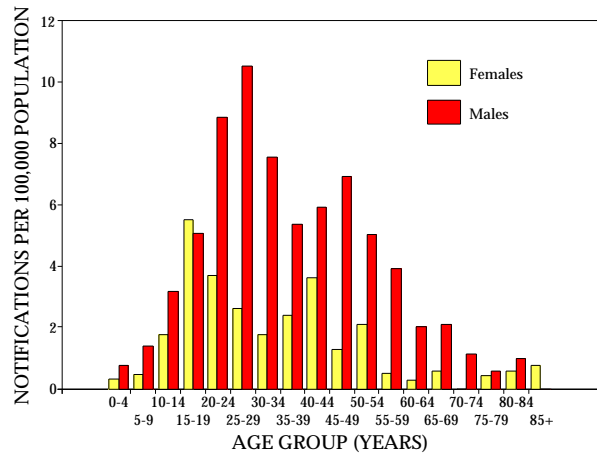
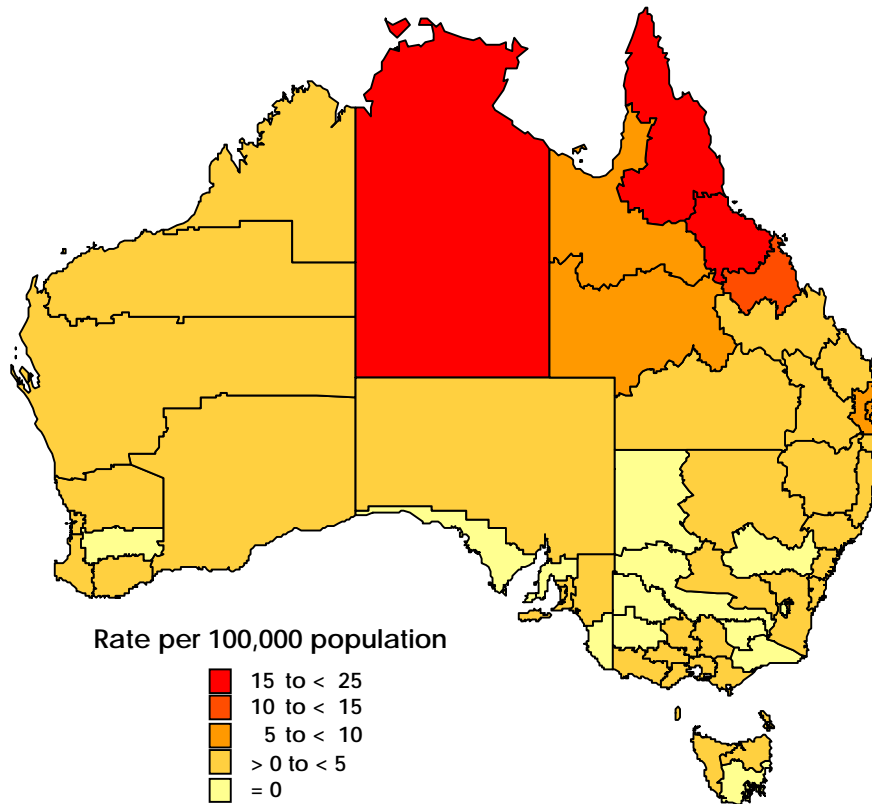


Figure 26. Notification rate of malaria, 1995, by Statistical Division of residence



Measles

Notifications of measles decreased in 1995 after the epidemic years of 1993 and 1994 (Figure 28).

There were 1,324 cases reported in 1995, with an annual notification rate of 7.3 per 100,000 population. This was substantially lower than the rates of 27.4 per 100,000 population in 1994 and 25.7 per 100,000 population in 1993. Notifications were highest from January to March, representing the end of the 1993-94 epidemic.

The male:female ratio was 1.2:1. Eighty-two per cent of all cases were reported in those aged less than 20 years, with the highest notification rate in children aged 0 - 4 years (35.5 per 100,000 population) (Figure 29). There were 135 cases (10%) reported for children under the age of one year.

Notification rates were highest for the Northern Territory (63.3 per 100,000 population) and the Statistical Divisions of Far North Queensland (32.9 per 100,000 population) and Illawarra and Mid North Coast, New South Wales

Figure 28. Notifications of measles, 1992 to 1995, by month of onset

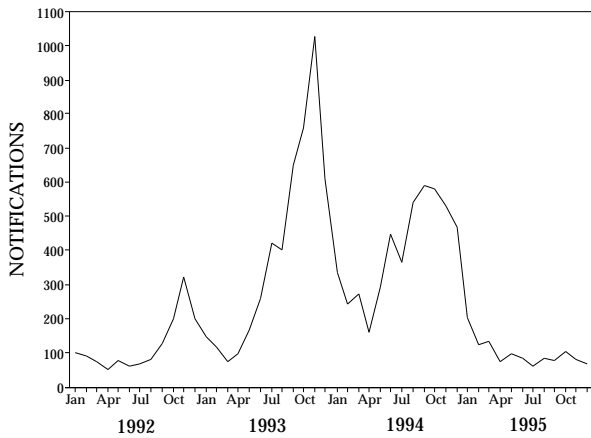


Figure 29. Notification rate of measles, 1995, by age group and sex

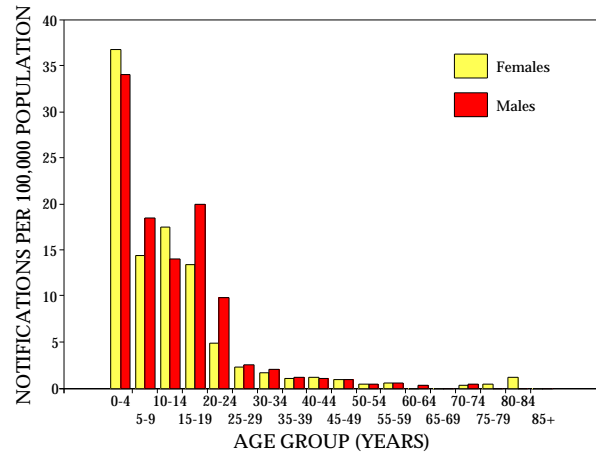


Figure 30. Notification rate of measles, 1995, by Statistical Division of residence

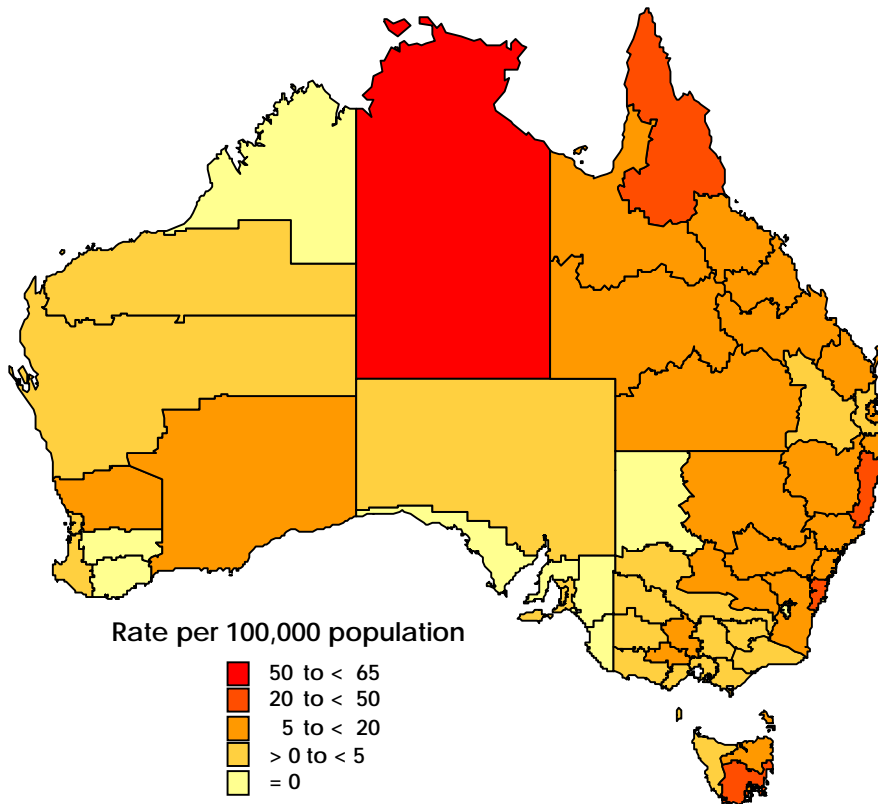
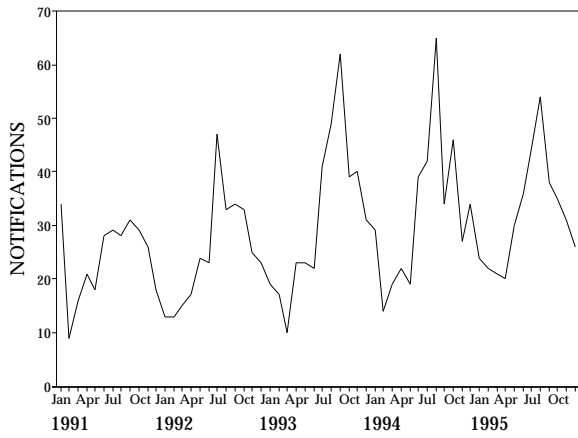


Figure 31. Notifications of meningococcal infection, 1991 to 1995, by month of onset



(24.9 and 20.3 per 100,000 population respectively) (Figure 30).

Meningococcal infection

There were 382 notifications of meningococcal infection in 1995 with a rate of 2.1 per 100,000 population. This is similar to the rates of 2.2 and 2.1 per 100,000 population recorded in 1994 and 1993 respectively.

There was a marked seasonal pattern, with 45% of cases having onset from July to October (Figure 31). The seasonal pattern varied slightly between jurisdictions, with New South Wales having an earlier peak than Victoria.

The male:female ratio was 1.2:1. The highest rates were for the 0 - 4 and the 15 - 19 years age groups (11.7 and 4.5 per 100,000 population respectively) (Figure 32).

The National Neisseria Network reported 250 *Neisseria meningitidis* isolates in 1995¹²; 166 (66%) were serogroup B and 69 (28%) were serogroup C. The remainder were for other serogroups.

Mumps

Mumps was notifiable in all States and Territories except Queensland in 1995. There were 153 cases reported, with

Figure 32. Notification rate of meningococcal infection, 1995, by age group and sex

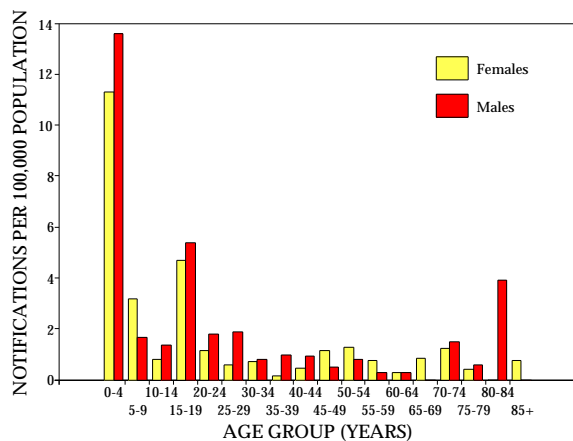
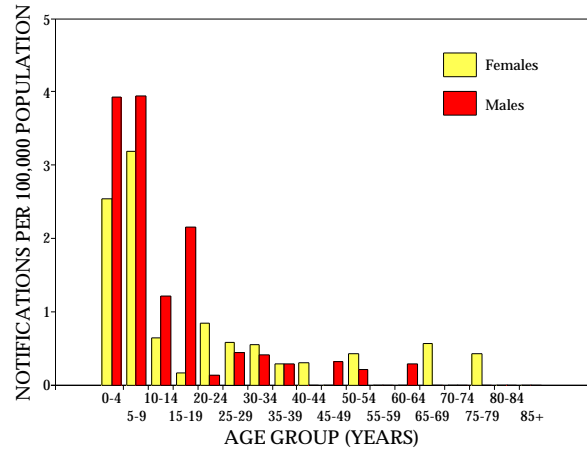


Figure 33. Adjusted notification rate of mumps, 1995, by age group and sex



an annual adjusted rate of 1.0 per 100,000 population. Fifty per cent of cases were reported from Victoria. There was no seasonal pattern.

The male:female ratio was 1.3:1. The notification rate was highest in the 5 - 9 years age group (4.4 cases per 100,000 population) and the 0 - 4 years age group (4.1 cases per 100,000 population) (Figure 33).

Sixty per cent of cases occurred in children under the age of 10 years. A small peak in notifications occurred in males in the 15 - 19 years age group (14 cases, rate 2.6 per 100,000 male population).

Ornithosis

Ornithosis was notifiable in all States and Territories except New South Wales in 1995. There were 176 cases reported, of which 147 were from Victoria. The annual adjusted notification rate was 1.5 per 100,000 population. This is the highest rate observed since 1991. The highest notification rate of 31.6 per 100,000 population was reported from the Ovens-Murray Statistical Division of Victoria where an outbreak was reported¹³.

Figure 34. Notifications of ornithosis, 1995, by month of onset

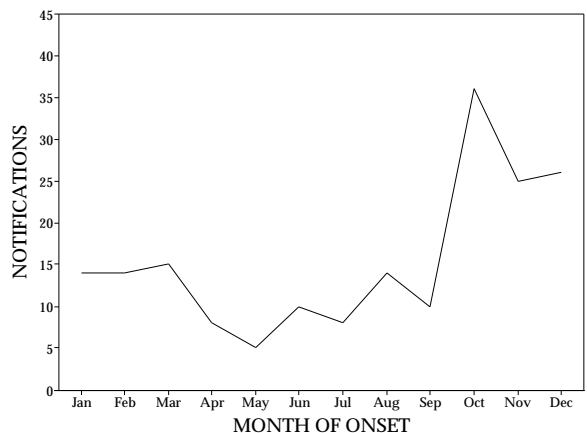


Figure 35. Adjusted notification rate of ornithosis, 1995, by age group and sex

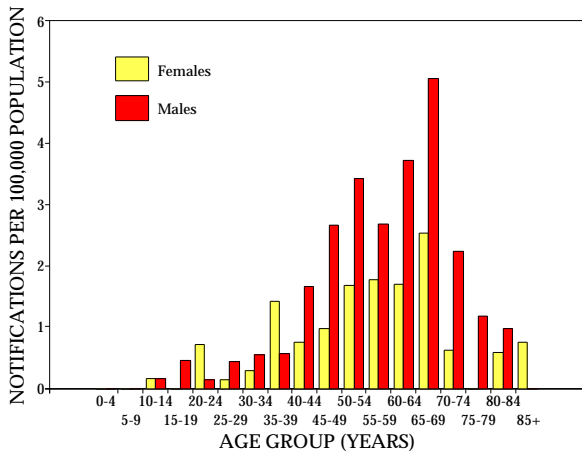
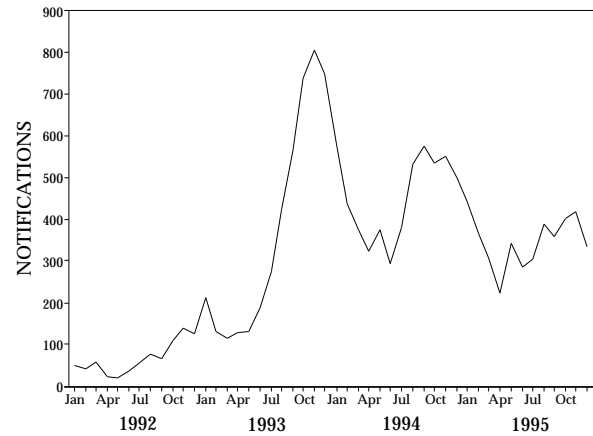


Figure 36. Notifications of pertussis, 1992 to 1995, by month of onset



There were more notifications in the spring and summer months, reflecting the outbreak in Victoria (Figure 34).

More males were reported than females, with a male:female ratio of 1.8:1. The highest age group specific notification rate was reported for the 60 - 69 years age group (Figure 35).

Pertussis

Large numbers of notifications of pertussis continued in 1995, with 4,297 cases reported and an annual notification

rate of 23.8 per 100,000 population. Notifications have remained high since 1993 (Figure 36).

Notification rates for the year varied across the country. Rates were highest in the Statistical Divisions of South West, Queensland (239.7 per 100,000 population), Richmond-Tweed, New South Wales (143.9 per 100,000 population), and the Northern Territory (100.1 per 100,000 population) (Figure 37).

The male:female ratio was 1:1.2. The highest notification rate was in those aged 5 - 9 years (82.7 per 100,000 popu-

Figure 37. Notification rate of pertussis, 1995, by Statistical Division of residence

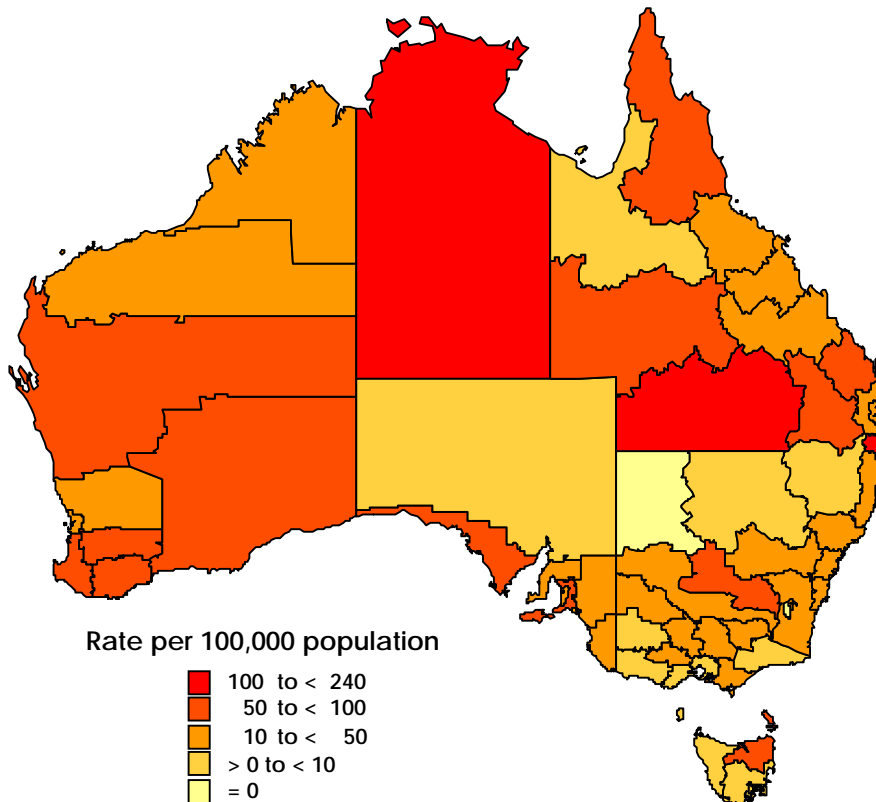
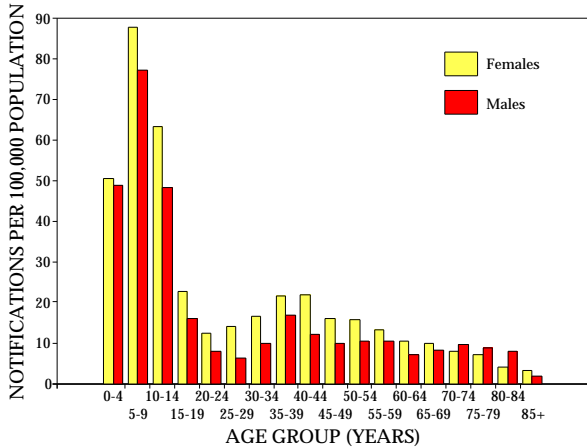


Figure 38. Notification rate of pertussis, 1995, by age group and sex



lation), but the rate was also high in children aged less than five years (49.8 per 100,000 population) and 10 - 14 years (56.0 per 100,000 population) (Figure 38). There were 195 cases (5%) in children aged less than one year.

Plague

There were no notifications of plague in 1994. The last notification of this disease in Australia was in 1923.

Poliomyelitis

No cases of poliomyelitis were notified in Australia in 1995. The last case of this disease reported to the NNDSS was in 1986.

Q fever

There were 473 cases of Q fever reported in 1995 at a notification rate of 2.6 per 100,000 population. This is the lowest rate observed since 1991. There was no seasonal pattern.

As in previous years, most notifications were from New South Wales (218) and Queensland (180). No cases were reported from the Northern Territory or Tasmania. The highest rates occurred in the Statistical Divisions of South

Figure 39. Notification rate of Q fever, 1995, by age group and sex

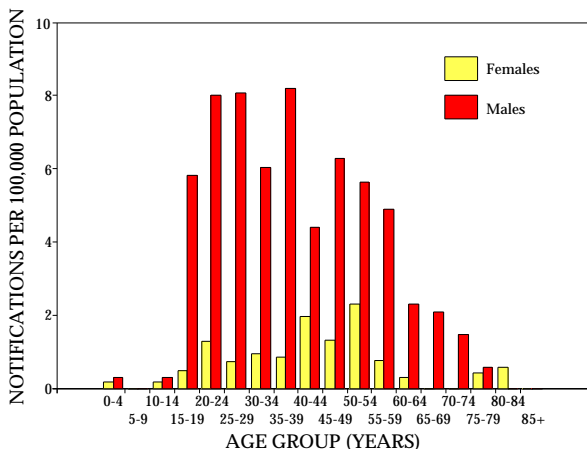
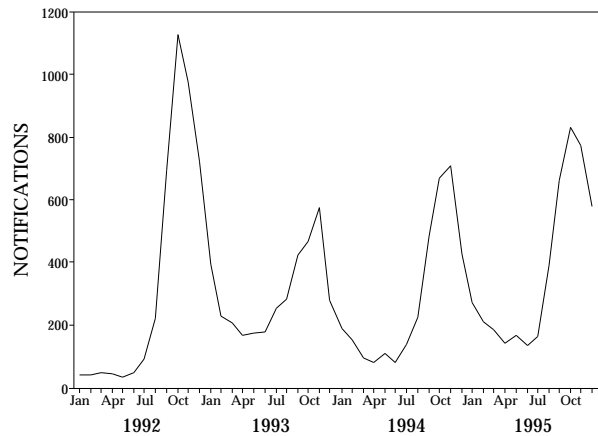


Figure 40. Notifications of rubella, 1992 to 1995, by month of onset



West and Central West, Queensland (70.5 and 30.9 per 100,000 population respectively) and North West, New South Wales (38.5 per 100,000 population).

There was a marked predominance of males, with a male:female ratio of 5.7:1. The highest notification rates were reported for the 20 - 39 years age range (Figure 39).

Rabies

There were no notifications of rabies in 1995.

Rubella

Large numbers of cases of rubella were notified in 1995. There were 4,380 cases reported, including one report of congenital rubella syndrome. The annual notification rate was 24.3 per 100,000 population. This was higher than the rate for any recent year (Figure 40).

The male:female ratio was 2.5:1. The highest notification rate occurred in the 15 - 19 years age group (94.8 per 100,000 population), with the rate in males 159.3 per 100,000 population and the rate in females 25.9 per 100,000 population (Figure 41). There were 529 cases reported in women aged between 15 - 44 years.

Figure 41. Notification rate of rubella, 1995, by age group and sex

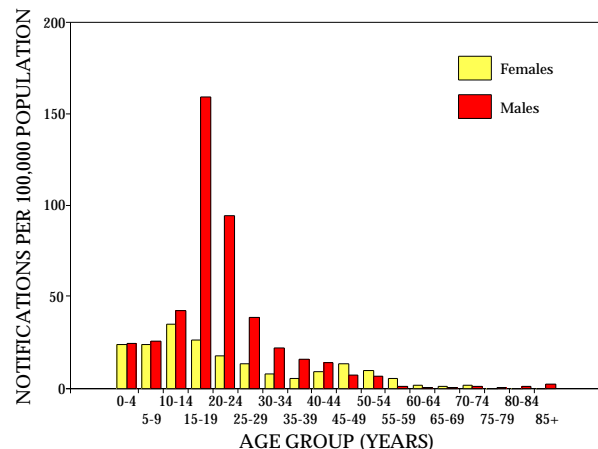
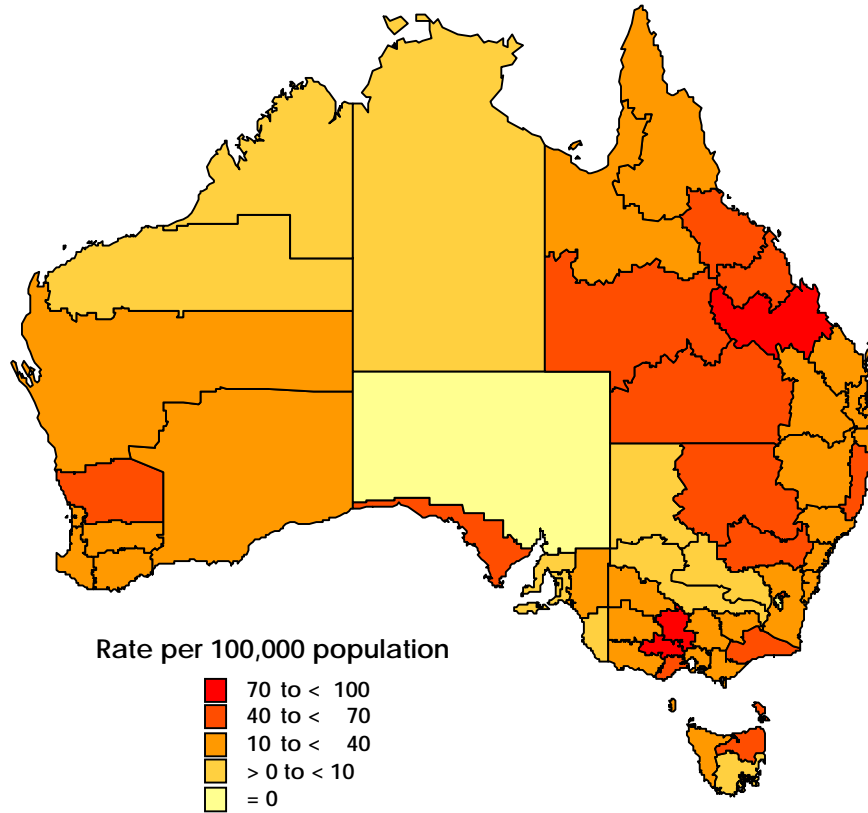


Figure 42. Notification rate of rubella, 1995, by Statistical Division of residence



Notifications peaked in October and November, consistent with the seasonal pattern of previous years.

Rates were highest in the Statistical Divisions of Fitzroy, Queensland (92.9 per 100,000 population) and Central Highlands, Victoria (92.6 per 100,000 population) (Figure 42).

Salmonellosis (not elsewhere classified)

There were 5,895 cases of salmonellosis (not elsewhere classified) reported in 1995, the annual notification rate of

32.7 per 100,000 population being higher than for any of the previous four years.

As in previous years, a seasonal trend was noted with more notifications having onset in the warmer months (Figure 43).

By far the highest age specific notification rate was in the 0 - 4 years age group (196.7 per 100,000 population) (Figure 44).

Figure 43. Notifications of salmonellosis, 1991 to 1995, by month of onset

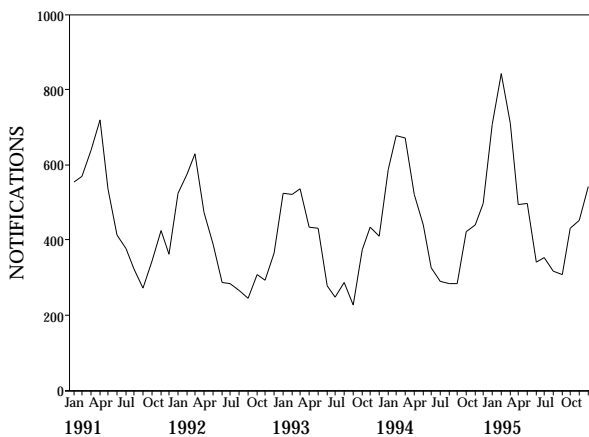
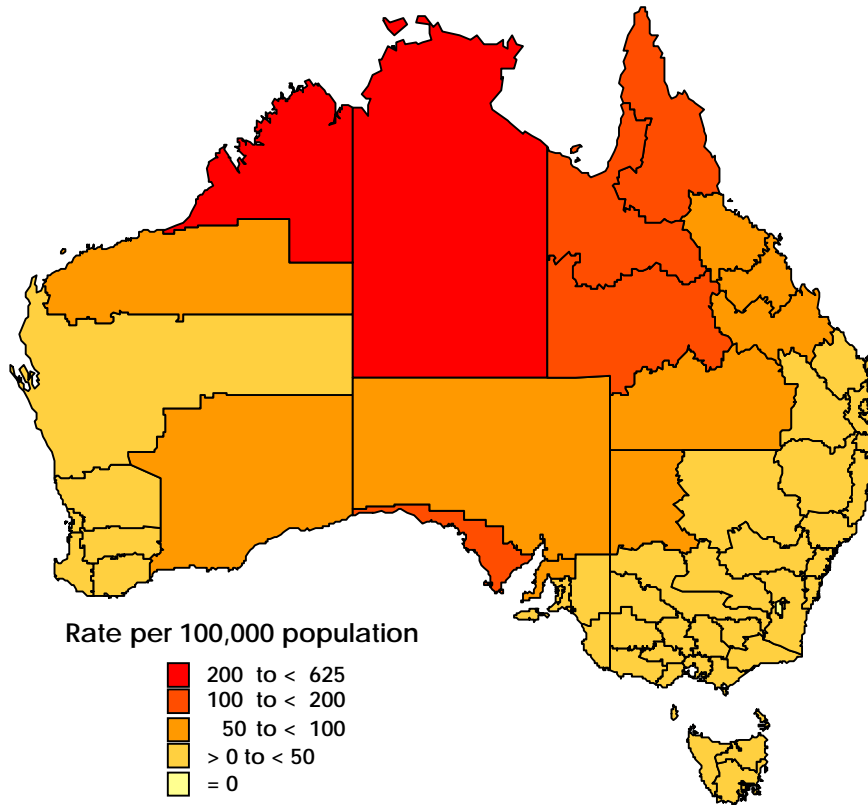


Figure 44. Notification rate of salmonellosis, 1995, by age group and sex



Figure 45. Notification rate of salmonellosis, 1995, by Statistical Division of residence



Notification rates were highest in the Statistical Division of Kimberley in Western Australia (620.8 per 100,000 population) and the Northern Territory (212.2 per 100,000 population) (Figure 45).

Shigellosis

There were 734 notifications of shigellosis in 1995, from all States and Territories except New South Wales, where it was only notifiable as 'food-borne disease' or 'gastroen-

teritis in an institution'. The adjusted notification rate, 6.1 per 100,000 population, was similar to previous years.

Most cases were reported in the first half of the year, with a peak of 106 reports with onset dates in March (Figure 46).

The male:female ratio was 1:1.2. The highest age group specific rates occurred in the 0 - 4 years age group for both males and females (Figure 47).

Figure 46. Notifications of shigellosis, 1995, by month of onset

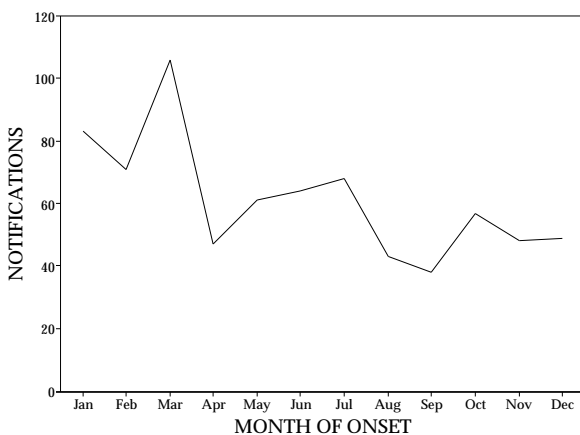


Figure 47. Adjusted notification rate of shigellosis, 1995, by age group and sex

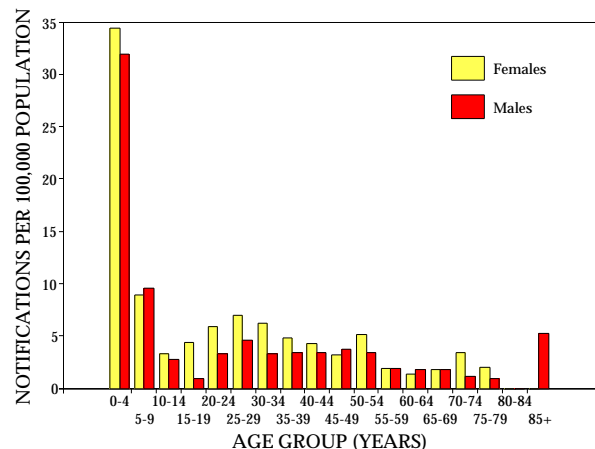
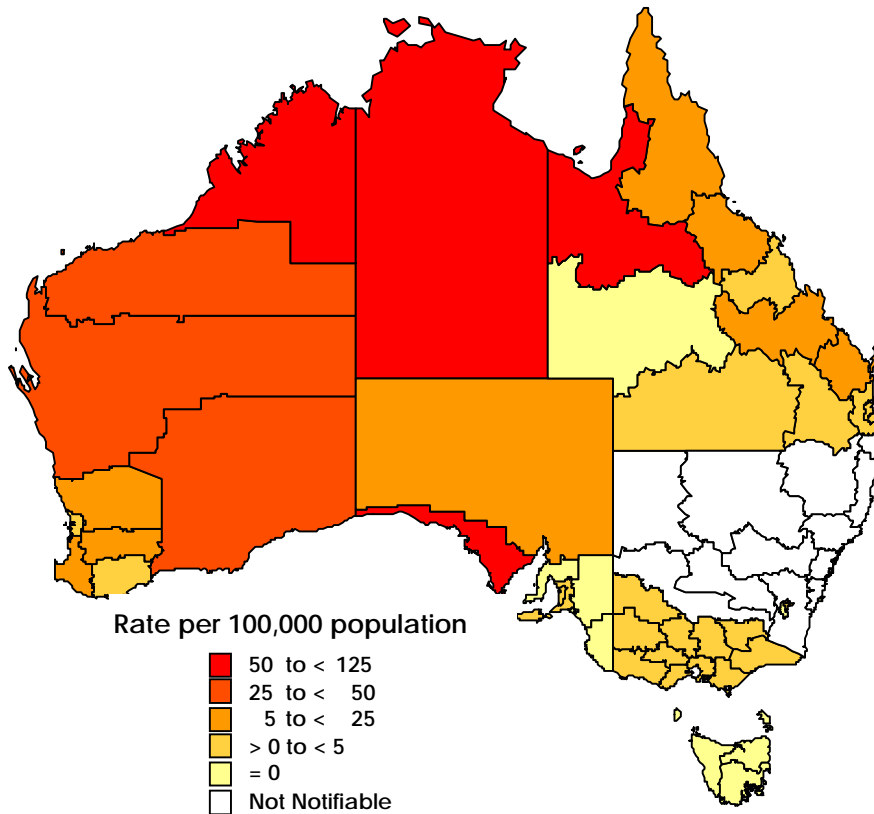


Figure 48. Notification rate of shigellosis, 1995, by Statistical Division of residence



Notification rates were highest in the Northern Territory (114.4 per 100,000 population) and the Statistical Divisions of North West, Queensland (76.9 per 100,000 population), Kimberley, Western Australia (76.1 per 100,000 population) and Eyre, South Australia (80.6 per 100,000 population) (Figure 48).

Syphilis

There were 1,854 notifications of syphilis in 1995. The rate of 10.3 per 100,000 population was the lowest reported in Australia for over 20 years except for 1990, when the rate was 9.6 per 100,000 population (Figure 49). Caution should be taken in interpreting the data, including the secular

trend and age-specific rates in older age groups, as notifications from some jurisdictions might include reports of cases other than of recent infection.

The male:female ratio was 1.1:1. Among younger persons, notification rates were higher in females, and among older persons, in males (Figure 50).

Of the 1,854 notifications, 25 cases were identified as congenital syphilis, including 20 in infants under one year of age, three in older children, and two in persons over 65 years of age. There were a further 20 cases reported as syphilis in children under 10 years, of which 16 were under one year of age.

Figure 49. Notification rate of syphilis, 1970 to 1995, by year of report

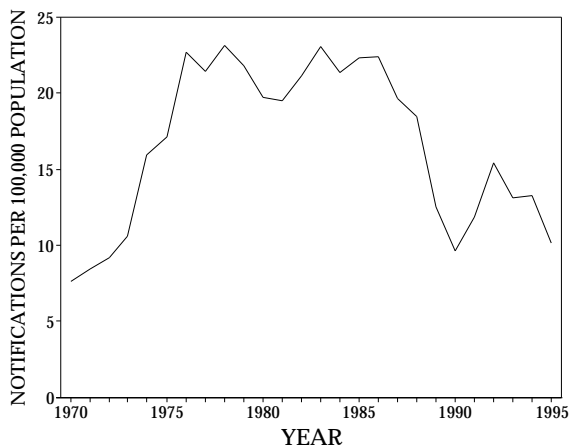


Figure 50. Notification rate of syphilis, 1995, by age group and sex

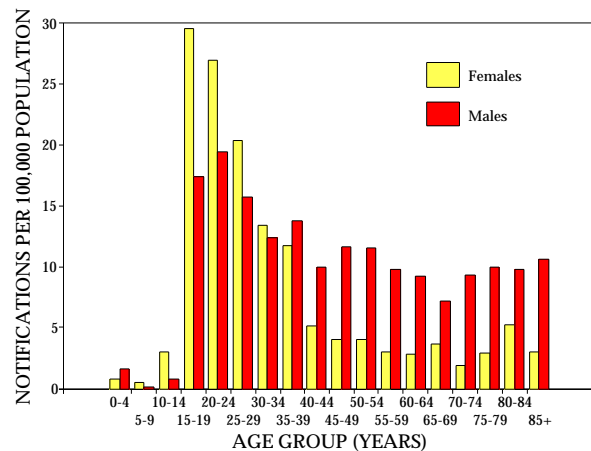
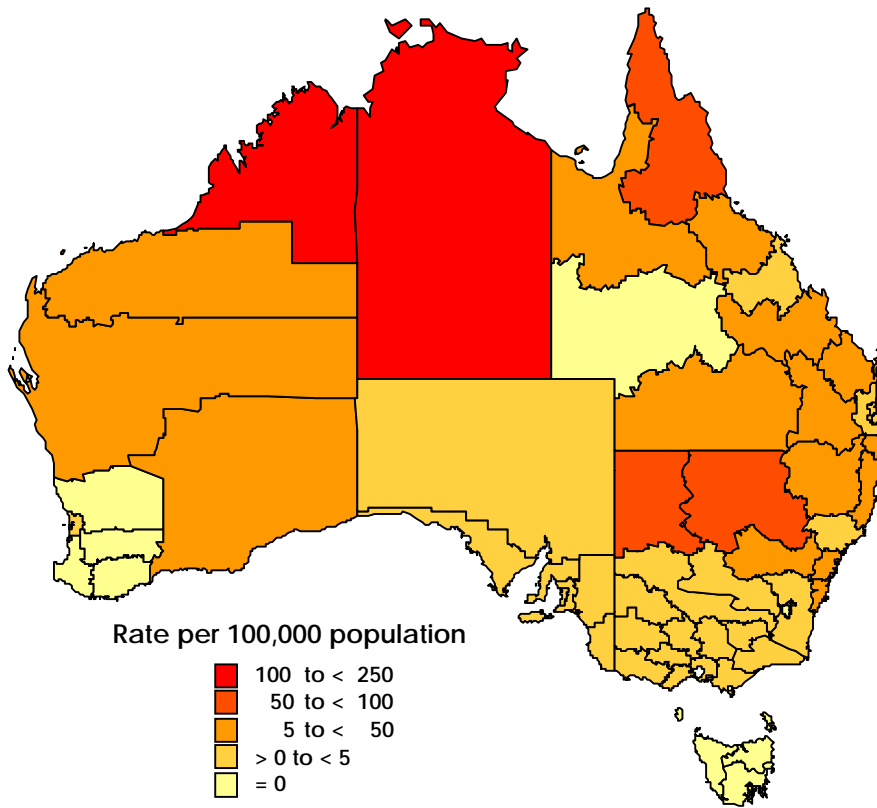


Figure 51. Notification rate of syphilis, 1995, by Statistical Division of residence



There was wide geographical variation in the notification rate of syphilis (Figure 51). High notification rates were reported for the Northern Territory and the Statistical Divisions of Kimberley, Western Australia, Far West and North Western, New South Wales, and Far North, Queensland. There was no seasonal trend.

Tetanus

There were 7 notifications of tetanus in 1995, from Victoria and Western Australia. All cases were aged over 49 years and 4 cases were 70 years or older. The male:female ratio was 1:1.3.

Tuberculosis

There were 1,073 notifications of tuberculosis in 1995. The notification rate of 5.9 per 100,000 population was similar to recent years (Figure 52). There was no seasonal trend in onset dates.

The male:female ratio was 1.1:1; age-specific rates were similar for males and females in younger age groups, but were higher in older men than older women (Figure 53).

The highest notification rates were reported for the Northern Territory (23.0 per 100,000 population), the Queensland Statistical Division of North West (15.9 per 100,000), the Western Australian Statistical Divisions of

Figure 52. Notification rate of tuberculosis, 1986 to 1995, by year of report

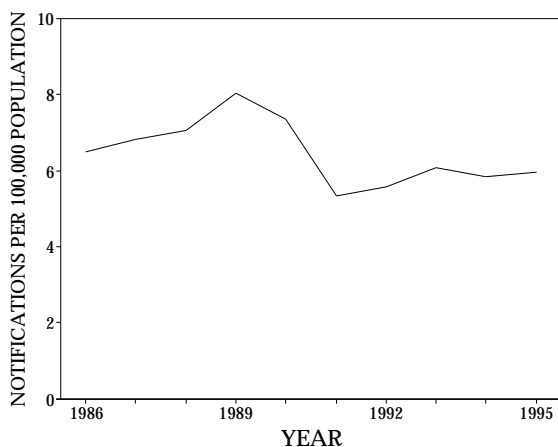


Figure 53. Notification rate of tuberculosis, 1995, by age group and sex

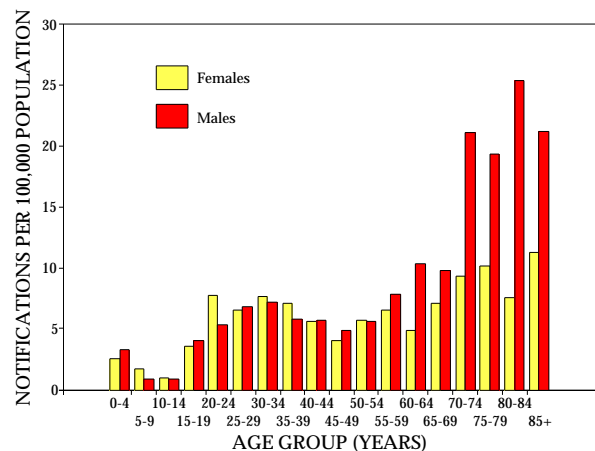
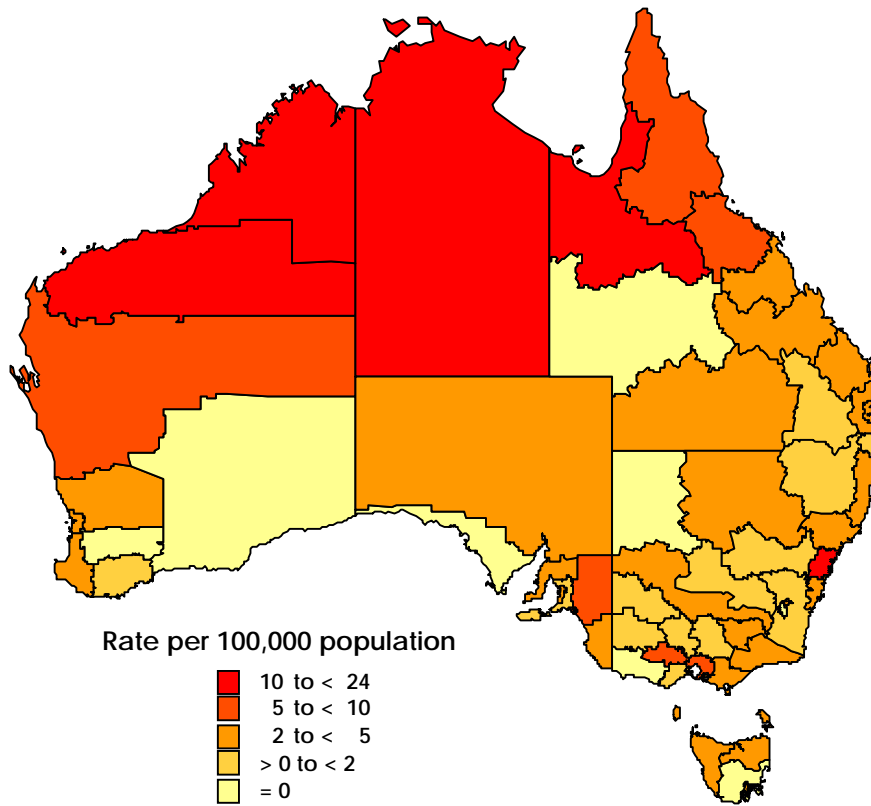


Figure 54. Notification rate of tuberculosis, 1995, by Statistical Division of residence



Kimberley and Pilbara (12.0 and 11.6 per 100,000 population respectively) and the New South Wales metropolitan Statistical Division of Sydney (10.7 per 100,000 population) (Figure 54).

A more detailed analysis of enhanced surveillance of tuberculosis and non-tuberculous mycobacterial infections, collated in the National Mycobacterial Surveillance System, is published separately⁷.

Typhoid and paratyphoid

There were 70 cases of typhoid and paratyphoid notified in 1995, the notification rate being 0.4 per 100,000 population. The male:female ratio was 1.3:1, with 19 cases in the 15 - 29 years age range. There was no seasonal trend.

Yellow fever and other viral haemorrhagic fevers

There were no notifications of these diseases in 1995.

Yersiniosis

There were 306 cases of yersiniosis notified in 1995, from all States and Territories except New South Wales, where it was only notifiable as 'food-borne disease' or 'gastroenteritis in an institution'. The majority of reports were received from Queensland and South Australia.

The male:female ratio was 1.1:1. The highest age group specific rate of 12.8 per 100,000 population occurred in the 0-4 years age group (Figure 55); 35% of all cases notified were in this age group.

Figure 55. Adjusted notification rate of yersiniosis, 1995, by age group and sex

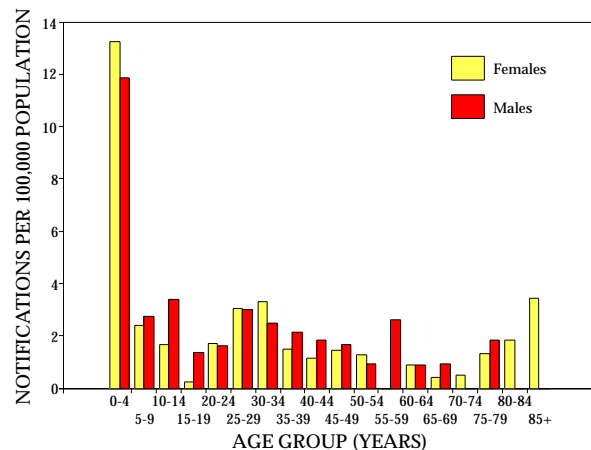
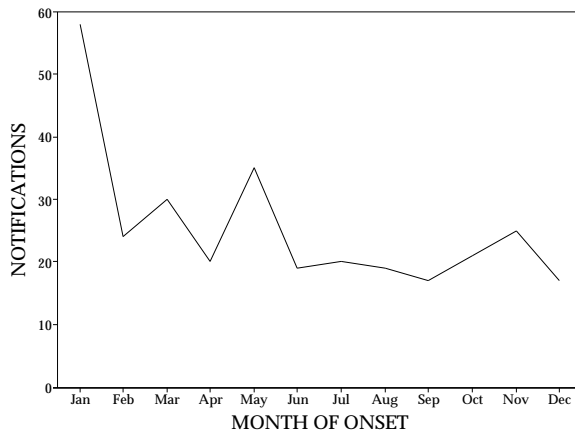


Figure 56. Notifications of yersiniosis, 1995, by month of onset



More cases had a recorded onset in January than for any other month (Figure 56).

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