

Trends in Malaria in Australia, 1991-1997

Bronwen Harvey

An analysis of the malaria cases in the current NNDSS dataset was undertaken for cases with onset dates in 1991 to 1997. To allow for reporting delays, the analysis for each year included cases with onset dates in that year which were reported up to and including 30 June in each subsequent calendar year. Data were downloaded from EpiInfo version 6 and analysed using SPSS for Windows version 8.0. Time series data for the period 1917-1991 were downloaded from the NNDSS historic data collection in Microsoft Excel.

The number of malaria cases notified each year varied between a low of 622 in 1995 and a high of 866 in 1996. Each year, the state reporting the highest number of cases was Queensland (Table 1). Males have predominated with a M:F ratio varying between 2.3 and 2.5. The highest number of cases has been in the young adult age groups, with peaks in the 20-24 years age group in 1991, 1993, 1994 and 1997 and in the 25-29 years age group in 1992, 1995 and 1996 (Table 2).

Data on malaria species have been included in the NNDSS since 1995. Although reporting was initially poor, with no species recorded for over 70% of cases in 1995, there has been a gradual improvement since then. Species data were recorded for 65% of cases in 1996 and 87% of cases in 1997. In each of these years, the predominant species was *Plasmodium vivax*, accounting for between 64% and 69% of the cases for whom species was reported. *P. falciparum* accounted for between 29% and 32% of cases for whom species was reported. Mixed *falciparum/vivax* infections occurred in a small proportion of cases (<1% to 2.3%) each year.

Data on Aboriginality are poorly reported in the NDSS and, in most years, aboriginality is not recorded for over half of the cases. Where status has been recorded, the number of cases reported as occurring in Aboriginal and Torres Strait Islander persons has varied from 0 (1995) to 12 (1997).

While the number of cases has fluctuated from year to year, there appears to have been a plateauing of the upward trend in cases that was seen in the 1970s and 1980s (Figure 1). There have also been no significant

trends in the age, sex, geographic and seasonal distribution of cases. The proportions of cases due to *P. falciparum* in the 1995 - 1997 period are similar to those reported by the AMR for 1992 and 1993 (*Commun Dis Intell* 1998;22:11;237-244).

Figure 1. Malaria notifications, Australia, 1991-1997, by State or Territory

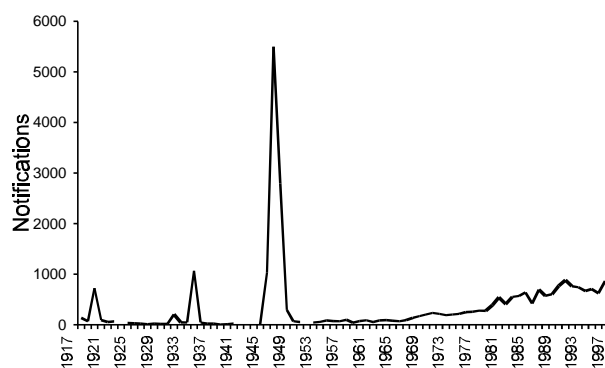


Table 1. Malaria notifications, Australia, 1991-1997, by State or Territory

State/ Territory	Year of onset						
	1991	1992	1993	1994	1995	1996	1997
ACT	22	26	18	24	21	27	17
NSW	139	125	174	185	98	213	162
NT	46	31	29	40	37	26	34
Qld	391	338	291	298	277	412	376
SA	40	35	25	30	24	21	22
Tas	10	14	11	14	1	5	5
Vic	79	132	81	83	127	107	83
WA	38	40	40	30	37	55	34
Total	765	741	669	704	622	866	733

Source: National Notifiable Diseases Surveillance System

Table 2. Malaria notifications, Australia, 1991-1997, by age group and sex

Age group (years)	1991		1992		1993		Sex ¹ 1994		1995		1996		1997	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F
0-4	10	9	8	8	10	13	9	5	4	4	13	12	16	13
5-9	13	13	19	13	14	7	13	10	10	3	18	18	15	10
10-14	39	22	24	15	20	13	15	8	20	11	27	12	17	13
15-19	68	30	53	34	54	28	59	31	33	35	74	37	55	31
20-24	87	26	68	17	79	26	89	30	59	25	85	45	73	31
25-29	85	24	100	34	71	20	71	34	76	22	96	37	68	29
30-34	47	24	62	16	46	21	58	20	50	14	58	32	63	27
35-39	46	17	57	19	39	15	41	18	42	15	60	20	50	17
40-44	49	11	37	16	39	15	50	16	38	21	46	14	38	11
45-49	36	11	29	10	38	12	30	8	45	7	56	10	43	12
50-54	9	8	18	3	17	6	32	12	24	9	19	7	34	10
55-59	12	1	11	7	16	6	12	1	17	2	20	7	15	3
60-64	10	4	12	5	8	2	4	3	7	1	7	4	8	3
65-69	3	1	4	2	5	4	3	4	7	3	13	2	10	2
70-74	3	0	8	0	4	1	2	0	3		4	2	2	2
75-79	1	0	1	0	1	0	2	0	1	1	2	0	2	2
80-84	1	0	0	1	0	0	1	0	1	1	0	0	0	1
85+	2	0	1	1	0	0	0	0		1	0	0	0	0
NS	16	17	17	5	10	2	8	4	5	2	5	1	0	2
Total	537	218	529	206	471	191	499	204	442	177	603	260	509	219

Source: National Notifiable Diseases Surveillance System

1. Excludes the following cases for whom sex was not stated: 1991 = 10, 1992 = 6, 1993 = 7, 1994 = 1, 1995 = 3, 1996 = 3, 1997 = 5.

VRE; a public health context

Alexandra Geue, Senior Microbiologist, National Centre for Disease Control

In recent weeks newspapers around Australia have reported outbreaks of vancomycin-resistant enterococci (VRE) in five Victorian hospitals. To date, VRE has not been a major cause of hospital infection in Australia, unlike the United States where it has become a major nosocomial pathogen. Since 1994, when Australia's first case of VRE was detected, the National Antimicrobial Resistance Surveillance Program (NARSP) has collected data on 69 cases of VRE from around Australia which are presented in a timely report for this issue of *CDI*.¹

The outbreaks in Victoria serve as a reminder that we must constantly examine and improve our public health practices. Vancomycin is currently the last line of treatment against methicillin resistant *Staphylococcus aureus*, a common cause of nosocomial infection in Australia. Japan and the United States have already seen nosocomial infections with *S. aureus* that have resistance to vancomycin. Australia needs to heed this warning and re-examine current practice. Community use of antibiotics in Australia is one of the highest in the developed world.² Antibiotics are also used in animal feeds. The extent to which these practices are contributing to the increasing antibiotic resistant pathogens in humans is largely unknown, but this question is being examined by the Joint Expert Technical Advisory Committee on Antimicrobial Resistance (JETACAR), a joint initiative of the Federal Ministers for

Health and Industries. This committee is expected to complete its work before 1999.

Effective infection control in health care settings remains a vital strategy in containing and preventing nosocomial infections. In the National Centre for Disease Control a review of the national infection control guidelines *Infection Control in the Health Care Setting* is under way. This will utilise experts from across the health care professions in drafting a new national infection control policy. The revised document will include more comprehensive and up-to-date information for controlling antibiotic resistant organisms in health care settings.

Last but not least, outbreaks of VRE remind us of the importance of surveillance. Early detection of resistant organisms can provide important early warnings of changes in our environment that may impact on public health. Without comprehensive active surveillance we can not develop effective or well targeted infection control policies. Surveillance of nosocomial infections and antibiotic resistance in animals and humans has been identified as a high public health priority by the Communicable Disease Network Australia New Zealand.

1. Bell J, Turnidge J, Coombs G, O'Brien F. Emergence and epidemiology of vancomycin-resistant enterococci in Australia. *Commun Dis Intell* 1998;22:249-252.
2. McManus P, Hammond ML, Whicker SD, Primrose JG, Mant A, and Fairall SR. Antibiotic use in the Australian community, 1990-1995. *MJA* 1997;167:124-127.