COMMUNICABLE DISEASES INTELLIGENCE

ISSN 0725-3141 VOLUME 15 NUMBER 22 4 November 1991

CONTENTS

Editor: Robert Hall

Editorial Staff: Jenny Hargreaves, Evon Bowler, Marcus Hodge, Lenore Cupitt and Michelle Jozing.

CDI is produced fortnightly by:

Communicable Diseases Section
Department of Health, Housing and Community Services
GPO Box 9848 Canberra ACT 2601.
Fax: (06) 289 7802 Telephone: (06) 289 1555

DEPARTMENT OF HEALTH, HOUSING AND COMMUNITY SERVICES

COMMUNICABLE DISEASES NETWORK-AUSTRALIA
A National Network for Communicable Diseases Surveillance

REPORT OF THE AUSTRALIAN MALARIA REGISTER FOR 1990

(Based on the Report of the Australian Malaria Register for 1990 by Simon Forsyth, Kirsten Loeskow, Michael Pearce, Ian Riley, Adrian Sleigh and Malathi Srinivasa, The Tropical Health Program, University of Queensland)

During 1989, negotiations were completed for the Tropical Health Program, University of Queensland (THP) to receive confidential reports of malaria cases from the States and Territories and to maintain the Australian Malaria Register (AMR) from 1 January 1990.

The following is based on the Register's report for 1990.

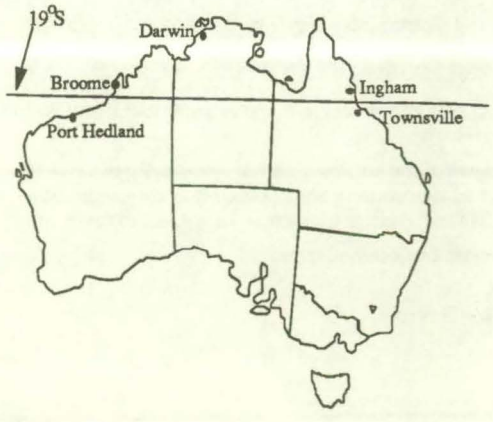
Introduction

Malaria is a world-wide problem with two-thirds of the world's population living in malarious areas. A conservative estimate is that there are 220 million new infections each year, and in Africa alone, malaria causes over one million deaths annually. Indeed, despite the malaria control programs conducted by the World Health Organization (WHO) over the past 30 years, the world malaria situation is deteriorating[1]:

- malaria is returning to areas where it had been previously eradicated
- malaria transmission levels have in general increased
- chloroquine-resistant and multiple drug-resistant *Plasmodium falciparum* malaria continue to spread
- resistance of vector mosquitoes to insecticides, particularly DDT, continues to spread[2].

Australia was certified free of malaria by the WHO in 1981. However, it is thought that conditions in Australia north of latitude 19°S could still support malaria transmission (Figure 1). This region corresponds to the southernmost extension of the malaria vector *Anopheles farauti* sl. (J. Bryan, personal communication) and of verified cases of indigenous malaria.

Figure 1. Australia: malaria receptive zone north of 19°S



Several hundred cases of malaria are imported into Australia each year, either by travellers entering or re-entering by modern air or sea transport, or as a result of traditional movement between Papua New Guinea (PNG) and the Torres Strait Islands.

The disease is diagnosed either because a traveller develops clinical disease, or, as is common for cases diagnosed in the Torres Strait, as a result of screening.

Methods

Malaria cases were classified as imported when infection was acquired outside Australia, and as introduced when infection was thought to have been acquired in Australia from an imported case[3]. A relapse was defined as occurring when the one species of parasite has been identified from a patient after an interval greater than 28 days after the onset of a primary attack. Reports of episodes in the same person that appear to be less than 28 days apart were merged and counted as a single episode. It was not possible to distinguish recrudescent malaria.

The data were managed and analysed by microcomputer using EpiInfo Version 5.01a.

All reported cases with clinical onset in Australia in 1990 or, lacking a clinical history, a first laboratory report in 1990, were recorded in the Register. Reports were accepted until 28 August 1991.

The reported information varied within and between the States and Territories, and was often incomplete. Coding and editing rules were devised to standardise the records and to eliminate duplicates.

Comparison of 1990 with the years 1969-89 was made using published data from the AMR for 1969-1981[4], reports by *CDI* covering 1982-1989 and the Queensland Malaria Register (J. Jameson, personal communication).

The cases were counted and classified by State or Territory of notification, species, age, sex, delay to diagnosis, month and location of onset and (probable) region of exposure. In addition, the following were assessed:

- the risk that Australian residents would develop clinical malaria on return to Australia from various malarious regions
- the number of cases occurring within the receptive zone and thus posing a hazard to the reintroduction of malaria into Australia.

Estimates of risk to travellers to various regions in 1990 were calculated using the method of Black[4] and arrivals data from the Australian Bureau of Statistics (ABS). The same methods were also used to recalculate Black's estimates for 1981 and to make estimates for additional regions for that year. Comparisons were then able to be made between the estimated risks for 1981 and 1990 for travellers to various regions.

In addition, risks for 1990 were calculated to produce estimates adjusted to exclude visitors as follows: cases with a residence reported as overseas were assumed to be visitors and deleted from the numerator; arriving persons identified as visitors on the basis of the ABS data on country of previous stay were deducted from the denominator.

Results

Over 1000 notifications were made, however, identification of duplicates reduced the number of reported malaria cases to a total of 813. The usual cause of duplicate notifications was separate reporting to the AMR by State registers and State laboratories.

Most of the 813 cases were notified from Queensland (479) and New South Wales (172); overall, nearly two-thirds were due to *P. vivax* and one-third due to *P. falciparum* (Table 1). The total number of cases reported continues to show the steady increase recorded for most of the last 20 years (Figure 2). Since 1969, Queensland has reported an increasing number of malaria cases and an increasing proportion of national totals (Table 2). The Northern Territory reported 36 cases for

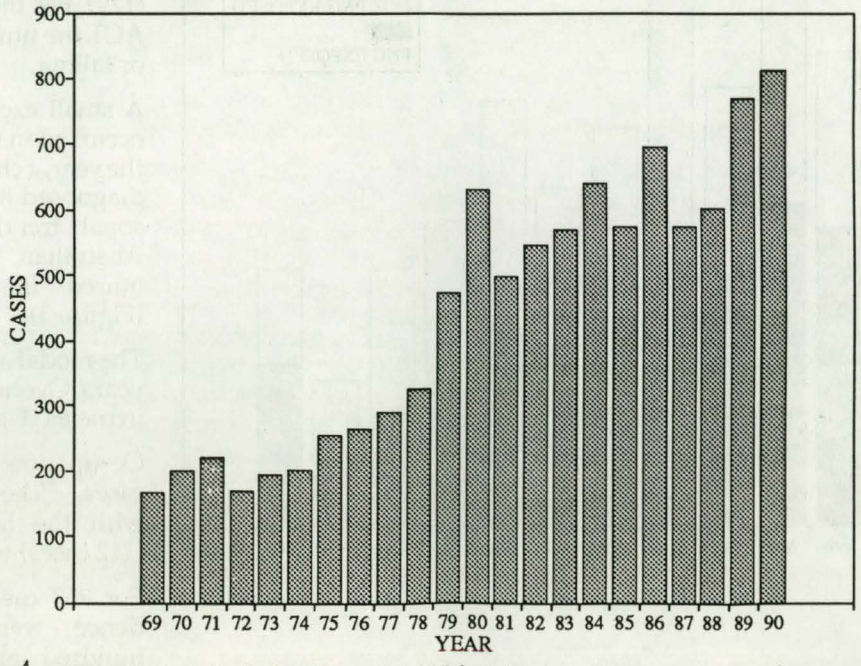
Table 1. Malaria cases diagnosed in Australia, 1990, by reporting State or Territory and species of parasite

REPORTING STATE	SPECIES**							
	?	F	M	O	V	VF	VM	TOTAL
ACT	0	4	1	0	11	0	0	16
NSW	2	45	4	3	117	1	0	172
NT	0	10	2	0	24	0	0	36
Qld	1	169	3	1	287	18	0	479
Qld/NSW*	0	1	0	0	1	0	0	2
Qld/NT*	0	1	0	0	0	0	0	1
SA	6	5	0	1	19	0	0	31
Tas	0	0	0	0	2	0	0	2
Vic	0	12	0	0	33	0	0	45
WA	0	4	0	0	24	0	1	29
TOTAL	9	251	10	5	518	19	1	813

* Notified by two states,

** ? = Unknown, M = malariae, V = vivax, VM = vivax + malariae, F = falciparum, O = ovale, VF = vivax + falciparum

Figure 1. Malaria cases reported in Australia, 1969-1990, by year*



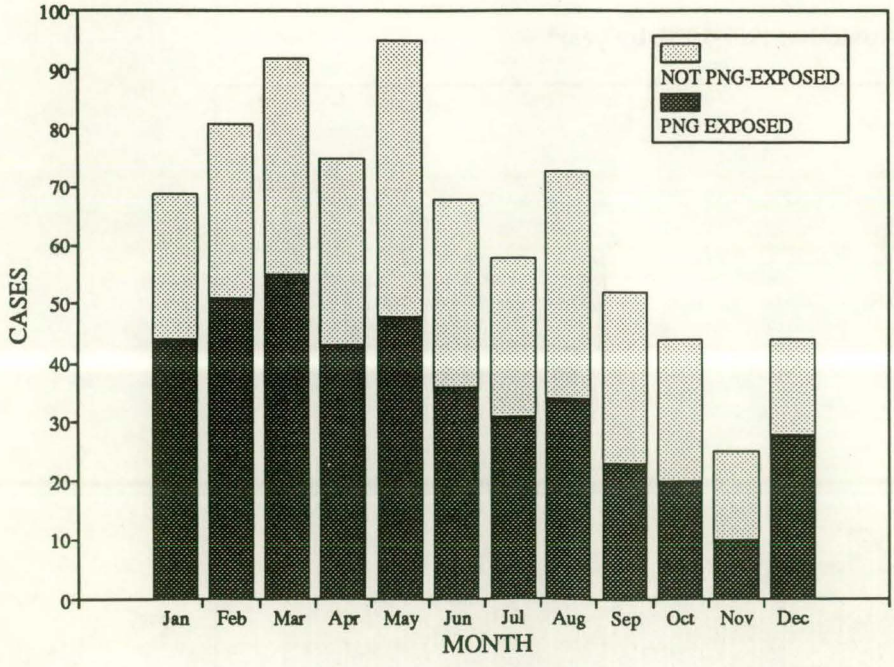
* Sources: 1969-81 Black 1982[4], 1982-89 *CDI* 1983-1990, 1985 Queensland Malaria Register (J. Jameson, personal communication)

Table 2. Malaria cases in Australia by reporting State or Territory 1969-1990*

YEAR	ACT	NSW	Vic	Qld	SA	WA	Tas	NT	TOTAL
1969	9	36	23	58	5	6	0	29	166
1970	8	40	39	76	2	9	3	22	199
1971	3	42	32	71	5	20	1	46	220
1972	12	41	17	33	26	13	0	28	170
1973	19	29	45	48	16	8	2	27	194
1974	18	34	27	51	18	4	1	48	201
1975	15	43	45	65	24	25	1	37	255
1976	13	77	54	62	22	16	1	20	265
1977	14	99	53	68	17	26	2	12	291
1978	17	96	55	71	34	37	4	11	325
1979	19	115	87	176	33	30	3	10	473
1980	18	176	120	191	59	50	8	7	629
1981	16	137	95	165	39	31	4	10	497
1982	20	142	92	219	39	20	1	15	548
1983	16	146	80	223	43	33	2	27	570
1984	19	113	66	330	54	34	9	15	640
1985	16	132	99	72	47	37	5	13	421
1986	35	179	93	283	33	43	10	20	696
1987	27	89	95	268	45	23	4	23	574
1988	26	84	65	332	30	42	2	20	601
1989	19	91	65	487	34	60	9	5	770
1990	16	172	45	482	31	29	2	36	813

* Source: 1969-81 Black 1982[4], 1982-89; *CDI* 1983-90

Figure 3. Malaria cases reported in Australia, 1990, by month of onset and PNG exposure*



* Symptom onset dates were missing for 111 cases

1990, more than double the Northern Territory's average over the last decade. New South Wales reported about twice as many cases for 1990 (172) as in any of the previous three years, but did not exceed the total reported for 1986 (179). For the other States and the ACT the number of cases is stable or falling.

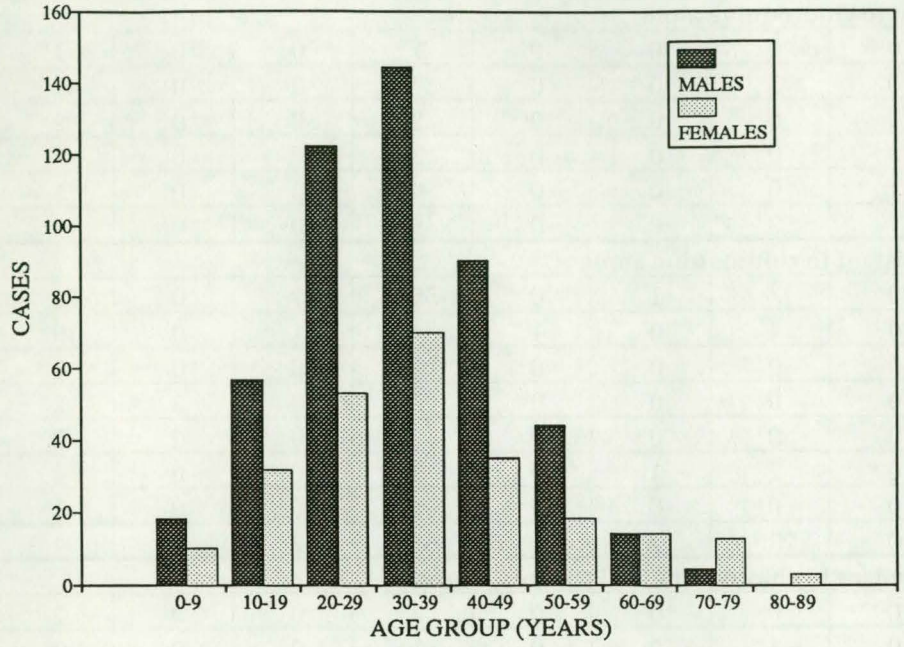
A small excess of reported cases occurred in the first six months of the year, a characteristic of malaria diagnosed in Australia[4]. This seasonal trend also occurred for Australian cases of malaria acquired in PNG during 1990 (Figure 3).

The modal age group was 30 to 39 years. Overall, 66.4% of cases were in males (Figure 4).

Occupation was reported for 576 cases. The occupational group with the largest representation (112 cases) was students.

For 753 cases, the place of residence was recorded. One hundred and twelve cases were reported in visitors, defined as

Figure 4. Malaria cases reported in Australia, 1990, by age group and sex*

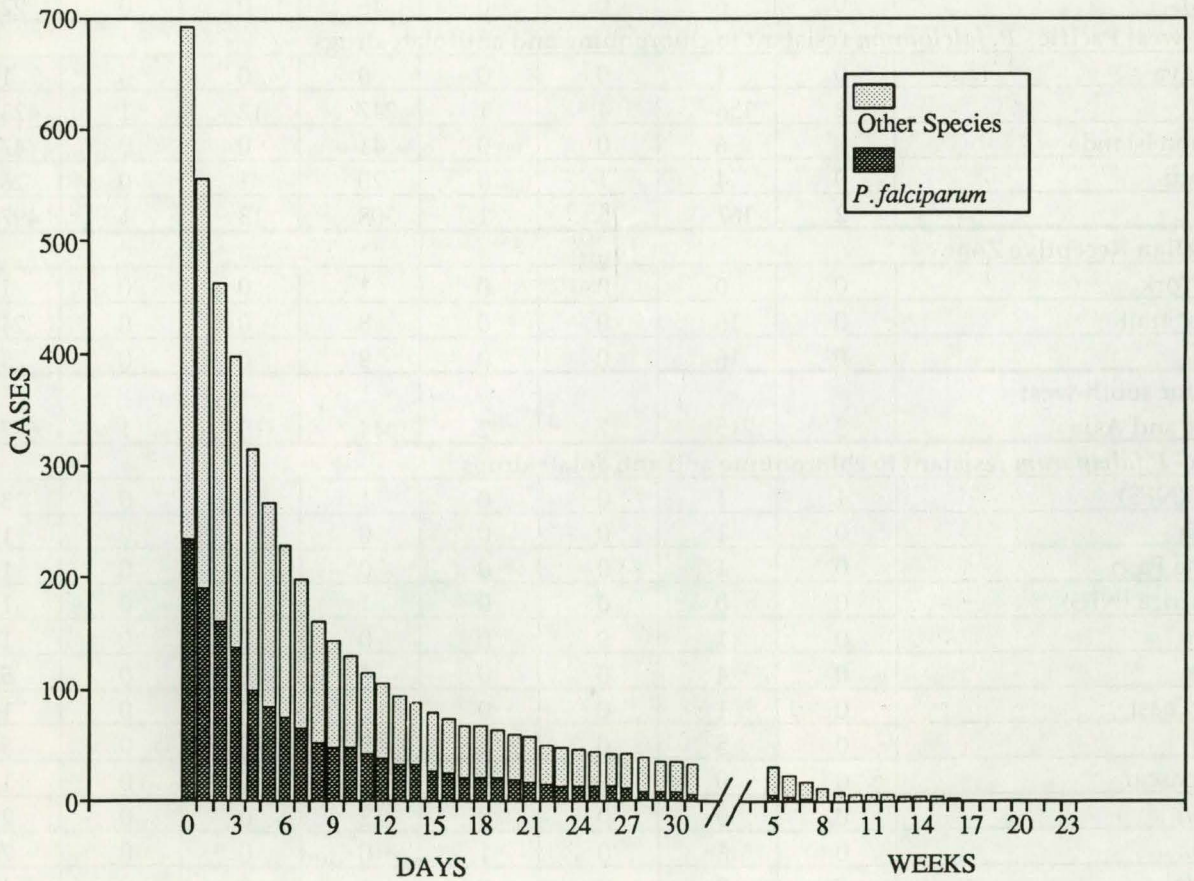


* The age group was unknown for 25 females and 47 males

those with an overseas place of residence. Of these, 104 were residents of PNG and 102 of those were reported by Queensland.

By the end of the first week of illness, 200 (29%) of the 693 cases with dates of onset and diagnosis reported remained undiagnosed (Figure 5). The accuracy of the reported dates is unknown, but this situation appears to have changed little since 1981[4]. Delays in diagnosis of five weeks or more were less frequent for falciparum malaria (6 cases) than vivax malaria (24 cases). However, there was a smaller number of falciparum cases (236) with known delay to diagnosis than vivax cases (454), and thus a ratio of about 1 falciparum case to 2 vivax cases was expected. When the frequency of delays of less than five weeks and five weeks or more are compared for falciparum and other cases, there is no significant difference (Chi squared 2.76, d.f.=1, p=0.10).

Figure 5. Malaria cases remaining undiagnosed, by number of days or weeks that had elapsed since onset*



* The delay between onset and diagnosis was unknown for 120 cases

Table 3. Region of exposure by parasite species*

REGION OF EXPOSURE	?	F	M	O	V	VF	VM	TOTAL
South Asia - *P. falciparum* resistant to chloroquine alone								
Afghanistan	0	0	0	0	1	0	0	1
India	0	3	0	0	39	0	0	42
Nepal	0	0	0	0	2	0	0	2
Pakistan	0	0	0	0	3	0	0	3
Sri Lanka	1	0	0	0	0	0	0	1
TOTAL	1	3	0	0	45	0	0	49
South-east Asia - *P. falciparum* resistant to chloroquine alone								
Indonesia (NFS)	0	17	1	0	55	1	0	74
Bali	0	4	0	1	4	1	0	10
Java	0	0	0	0	1	0	0	1
Sumatra	0	0	0	0	2	0	0	2
Timor	0	0	0	0	2	0	0	2
Malaysia	0	2	1	0	1	0	0	4
Philippines	0	0	0	0	1	0	0	1
TOTAL	0	23	2	1	66	2	0	94
South-east Asia - *P. falciparum* resistant to chloroquine and antifolate drugs								
South-east Asia (NFS)	0	0	0	0	2	0	0	2
Burma	0	1	0	0	1	0	0	2
Cambodia	0	0	0	0	2	0	0	2
Thailand	0	5	0	0	7	0	0	12
Vietnam (NFS)	0	0	0	0	3	0	0	3
South Vietnam	0	0	0	0	1	0	0	1
TOTAL	0	6	0	0	16	0	0	22
South-west Pacific - *P. falciparum* resistant to chloroquine and antifolate drugs								
Irian Jaya	0	1	0	0	0	0	0	1
PNG	2	156	4	1	247	12	1	423
Solomon Islands	0	6	0	0	41	0	0	47
Vanuatu	0	4	1	0	20	1	0	26
TOTAL	2	167	5	1	308	13	1	497
Australian Receptive Zone								
Cape York	0	0	0	0	1	0	0	1
Torres Strait	0	16	0	0	8	0	0	24
TOTAL	0	16	0	0	9	0	0	25
Total for south-west Pacific and Asia	3	215	7	2	444	15	1	687
Africa - *P.falciparum* resistant to chloroquine and anti-folate drugs								
Africa (NFS)	1	1	0	0	1	0	0	3
Algeria	0	1	0	0	0	0	0	1
Burkina Faso	0	1	0	0	0	0	0	1
East Africa (NFS)	0	0	0	0	1	0	0	1
Gabon	0	1	0	0	0	0	0	1
Ghana	0	4	0	0	1	0	0	5
Ivory Coast	0	1	0	0	0	0	0	1
Kenya	0	5	0	1	2	0	0	8
Madagascar	0	0	0	0	1	0	0	1
Malawi	0	0	0	0	2	0	0	2
Nigeria	0	6	0	1	0	0	0	7
Uganda	0	0	0	0	1	0	0	1
West Africa (NFS)	0	0	0	1	0	0	0	1

REGION OF EXPOSURE	?	F	M	O	V	VF	VM	TOTAL
Zambia	0	1	0	0	0	0	0	1
Zimbabwe	0	2	0	0	1	0	0	3
TOTAL	1	23	0	3	10	0	0	37
Central America - *P. falciparum* absent or, if present, sensitive to chloroquine								
Central America (NFS)	0	0	0	0	1	0	0	1
Guatemala	0	0	0	0	1	0	0	1
Mexico	0	0	0	0	1	0	0	1
TOTAL	0	0	0	0	3	0	0	3
Middle East - *P. falciparum* absent or, if present, sensitive to chloroquine								
Asia Minor (NFS)	0	0	0	0	1	0	0	1
Saudi Arabia	0	0	1	0	0	0	0	1
TOTAL	0	0	1	0	1	0	0	2
South America - *P. falciparum* absent or, if present, sensitive to chloroquine								
Argentina	0	0	1	0	0	0	0	1
South America (NFS)	0	0	0	0	1	0	0	1
Unknown	5	13	1	0	59	4	0	82
TOTAL	9	251	10	5	518	1	19	813

NFS: Not further specified

* ? = Unknown, M = malariae, V = vivax, VM = vivax + malariae, F = falciparum, O = ovale, VF = vivax + falciparum

Of the 813 cases in the register, 655 (80.6%) were classified as imported, 61 (7.5%) as relapsing, and 27 (3.3%) as introduced; 70 (8.6%) could not be classified. For two of the introduced cases, no further information was supplied as to the source of infection; for 24, the place of exposure was recorded as the Torres Strait and for one, Cape York was the recorded source of the disease.

The most probable source of infection was considered to be the most recently visited malarious country or area that had been entered at least 6 days before the onset of the disease. Source areas are grouped by regions indicating the risks of falciparum infection and/or drug resistance[5];

- *P. falciparum* absent or, if present, sensitive to chloroquine
- *P. falciparum* resistant to chloroquine alone
- *P. falciparum* resistant to chloroquine and anti-folate drugs

For each report, up to three regions of possible acquisition of the infection were recorded. For 657 of these, only one possible source was listed, but for 37 cases two regions were listed and for a further 37 cases, three were listed. Of those 731 cases for which exposure information was provided, a south-west Pacific country was listed as the most recent country of exposure for 68%. To this could be added the 25 cases of introduced malaria known to be acquired in the Queensland receptive zone, presumably from cases imported into Torres Strait from PNG.

Overall, the most important regions of exposure were the south-west Pacific (497 cases) and Asia (165 cases). The most important countries of exposure within those areas were ranked as follows: PNG (423 cases), Indonesia (90 cases), Solomon Islands (47), India (42) and Vanuatu (26) (Table 3). The numbers of cases from these countries in 1981 were PNG (239), Indonesia (64), Solomon Islands (50), India (44) and Vanuatu (11).

Cases of malaria acquired in PNG were more often due to *P. falciparum* than were cases acquired in other south-west Pacific countries. The proportion of falciparum malaria imported from PNG increased significantly from 30% to 40% between 1981[4] and 1990 (Table 4; Chi squared 6.07, d.f.=1, p=0.01). Fortunately, very few cases of *P. falciparum* infection were acquired in South-east Asian countries where frequent resistance to all drugs is reported. Cases from Africa were most likely to be due to falciparum malaria.

In Queensland and the ACT most malaria cases originated from the south-west Pacific. In NSW cases were divided among various regions with nearly half coming from the south-west Pacific. In the NT, WA and Victoria, more than half the cases were from Asia.

The place of onset of malaria was reported for 791 cases; for 85 persons (10.7%) symptoms commenced outside Australia, suggesting that they were ill when they arrived in this country. Queensland was the place of onset for 430 cases (54.4%).

A total of 246 cases (31.1%) had the zone of onset recorded as within the Australian receptive zone: 33 in the receptive zones of the Northern Territory or Western Australia, 57 in the mainland Queensland receptive zone and 156 in the Torres Strait Islands.

Forty-three cases of malaria were diagnosed by screening and of these, 35 were diagnosed on the Torres Strait Islands (Table 5). Thirty-four were residents of PNG, five cases were residents of Queensland and one case each was resident in the ACT, New South Wales, South Australia and Western Australia. The cases not identi-

Table 4. Cases of falciparum and non-falciparum malaria imported from PNG in 1981* and 1990

YEAR	Falciparum	Not falciparum	Total
1981	72	167	239
1990	168	255	423
TOTAL	240	422	662

* Black (1982)[4]

Table 5. Place of diagnosis in cases identified by screening

Place of diagnosis	Cases
Badu Island	15
Saibai Island	15
Boigu Island	1
Darnley Island	2
Thursday Island	1
Yam Island	1
Total for Torres Strait	35
Brisbane	2
Canberra	1
Kensington Park	1
Longreach	1
Maryborough	1
Newtown	1
Willie Creek, Broome	1
TOTAL	43

fied in the Torres Strait were diagnosed as a result of screening for various purposes including the investigation of pregnancy.

Malaria of PNG origin is of major importance in the receptive zone of Queensland (Table 6). In contrast, South-east Asian malaria dominates among cases imported into the receptive zones of Western Australia and the Northern Territory. These differences are more distinct for cases of *P. falciparum* imported into the receptive zones of Queensland, Western Australia and the Northern Territory (Table 7). Only one of the 118 cases of falciparum malaria in the Queensland receptive zone is reported to have originated from outside the South-west Pacific. Ninety-nine cases came from PNG.

In the Queensland receptive zone falciparum malaria was significantly more frequently diagnosed (56%) than elsewhere in Australia (25%) (Table 8; Chi squared 68.04, $p<0.0001$).

The risk of malaria in travellers entering Australia was estimated for 1981 and 1990 (Table 9). For both years, the highest risk was for the Solomons and PNG but comparison between the two years reveals a decrease of about half for the Solomons Islands, Vanuatu and India and a three-fold decrease for Thailand and Malaysia. The risk for Indonesia fell a little and increased about one third for PNG.

The risk for returning Australian residents was able to be estimated by adjusting the numbers of arrivals and cases for visitors, as detailed above (Table 10). Using this method, the highest risk was again estimated to be for travellers to the Solomons and PNG.

Table 6. Zone of onset by region of exposure, all species

REGION OF EXPOSURE	Queensland Non-Receptive	Other Aust Non-Receptive	NT/WA Receptive	Mainland Queensland Receptive	Torres Strait Islands	Unknown	Total
Australian Receptive	1	0	0	0	24	0	25
Irian Jaya[3]	0	1	0	0	0	0	1
PNG[3]	110	90	10	35	124	54	423
Solomon Islands[3]	20	9	1	8	1	8	47
Vanuatu[3]	11	7	0	1	0	7	26
Africa[3]	5	24	0	0	0	8	37
Central America[1]	0	2	0	0	0	1	3
Middle East[1]	1	0	0	0	0	1	2
South America[1]	0	1	0	0	0	0	1
South America (NFS)	0	0	1	0	0	0	1
South Asia[2]	8	33	1	0	0	7	49
South-east Asia[2]	9	41	19	3	0	0	94
South-east Asia[3]	4	10	0	3	0	5	22
Unknown	48	9	1	7	7	10	82
Total	217	227	33	57	156	123	813

NFS: Not further specified

1. *P. falciparum* absent or, if present, sensitive to chloroquine
2. *P. falciparum* resistant to chloroquine alone
3. *P. falciparum* resistant to chloroquine and anti-folate drugs

Table 7. Zone of onset by region of exposure for Falciparum malaria cases

REGION OF EXPOSURE	Queensland Non-Receptive	Other Aust Non-Receptive	NT/WA Receptive	Mainland Queensland Receptive	Torres Strait Islands	Unknown	Total
Australian Receptive	0	0	0	0	16	0	16
Irian Jaya[3]	0	1	0	0	0	0	1
PNG[3]	25	16	0	11	88	28	168
Solomon Islands[3]	1	0	0	2	0	3	6
Vanuatu[3]	2	0	0	0	0	3	5
Africa[3]	5	14	0	0	0	4	23
South Asia[2]	0	3	0	0	0	0	3
South-east Asia[2]	0	5	8	0	0	12	25
South-east Asia[3]	1	2	0	1	0	2	6
Unknown	11	3	0	0	2	1	17
Total	45	44	8	14	106	53	270

1. *P. falciparum* absent or, if present, sensitive to chloroquine
2. *P. falciparum* resistant to chloroquine alone
3. *P. falciparum* resistant to chloroquine and anti-folate drugs

Table 8: Species of malaria by region of diagnosis

REGION OF DIAGNOSIS	SPECIES*							
	?	F	FV	M	O	V	VM	TOTAL
Not Queensland	8	80	1	7	4	230	1	331
Qld Non-Receptive	0	58	10	3	0	196	0	267
Mainland Qld Receptive	1	12	3	0	1	43	0	60
Torres Strait Islands	0	101	5	0	0	49	0	155
Total	9	251	19	10	5	518	1	813

* ? = Unknown, M = malariae, V = vivax, VM = vivax=malariae, F = falciparum, O = ovale, VF = vivax=falciparum

Table 9: Estimated risk of malaria in persons arriving in Australia, by most recent region of exposure, 1981* and 1990

REGION OF EXPOSURE	TOTAL ARRIVALS**		MALARIA CASES		CASES/1000 ARRIVALS	
	1981	1990	1981	1990	1981	1990
Africa	17482	28325	23	37	1.31	1.30
India	16527	35235	44	42	2.66	1.19
Indonesia	100292	196776	64	90	0.63	0.45
Malaysia	119481	128979	9	4	0.07	0.03
PNG	54939	71955	239	423	4.35	5.87
Thailand	26785	120259	8	12	0.29	0.09
Solomon Islands	4077	7272	50	47	12.26	6.46
Vanuatu	4589	19384	11	26	2.39	1.34

* Black (1982)[4]

** Australian Bureau of Statistics 1991

Informal estimates of the number of Papua New Guineans arriving in Torres Strait were used to estimate that the risk of malaria being reported for a visitor in this category is about 30 per 1000. This is over three times larger than the highest estimated country-specific risk for Australian residents travelling to another country and four times larger than the risk for travellers going to PNG.

Discussion

The number of cases of malaria reported to the Australian Malaria Register rose progressively from 1981 to 1990. The difference appears to have been due to in-

Table 10. Estimated risk of malaria in returning Australian residents, by most recent region of exposure, 1990

REGION OF EXPOSURE	ARRIVALS	CASES	ADJUSTED RATE/1000
Africa	18386	27	1.46
India	23804	34	1.42
Indonesia	160257	87	0.54
Malaysia	78695	3	0.04
PNG	36487	264	7.23
Thailand	99679	11	0.11
Solomon Islands	4173	32	9.10
Vanuatu	16721	22	1.31

creased importation of malaria from the south-west Pacific, especially PNG, and to secondary transmission in the Torres Strait. The percentage of cases of malaria imported from PNG and caused by *P. falciparum* has increased from 30% to 40% over the decade to 1990. This suggests that the spread of chloroquine resistance in PNG has been an important factor in the increased incidence of imported malaria in Australia. Changing patterns of population movement could also be a factor. The effects have been felt most in Queensland and may relate to the increased importance of Queensland cities as regional metropolitan centres for the South-west Pacific.

For the estimate of risks to residents returning to Australia, it was not possible to subtract the number of immigrants from the available ABS data. However, the number of immigrants from the regions listed in Table 9 is probably quite small so the adjusted estimates yield useful region-specific risks of malaria for Australian residents going abroad. There is no evidence of a substantial increase in risk between 1981 and 1990 for any country.

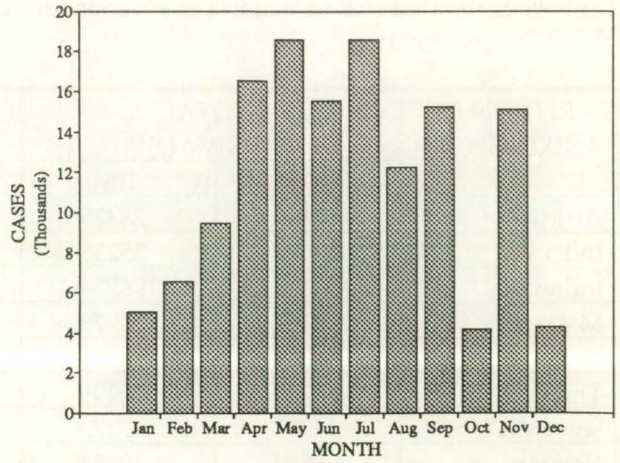
REFERENCES

1. Anonymous. *Malaria worsening in many areas.* WHO News Release WP/15, 13 May 1991. World Health Organization, Geneva.
2. Commonwealth Department of Health, Housing and Community Services. *Health information for international travel*, Third Edition. Australian Government Publishing Service. Canberra 1991.
3. Bruce-Chwatt LJ. *Essential malariology.* William Heinemann. London 1985.
4. Black R. *Malaria in Australia.* Commonwealth Institute of Health Tropical Medicine Technical Paper No. 8. Australian Government Publishing Service. Canberra 1982.
5. World Health Organization. *International Travel and Health: vaccine requirements and health service: situation as on 1 January 1991.* World Health Organization. Geneva 1991.

CDI Editorial Comment

As detailed above, the number of cases of malaria reported in Australia has increased over the last 10 years, and much of this has been attributed to an increase in the number of cases acquired in PNG. In 1990, 141,461 cases of malaria were reported in PNG, with at least 4000 cases reported each month (Figure 5)[1].

Figure 6. Malaria cases reported in PNG, 1990, by month



Provinces which reported large numbers of cases were East New Britain (44,354 cases), Morobe (42,871 cases), East Sepik (16,118 cases), Central Province (13,058 cases), Northern Province (9,138 cases), West New Britain (8,170 cases) and West Sepik (5,182 cases). The reports included 523 cases of cerebral malaria.

REFERENCE

1. Anonymous. Selected morbidity statistics in Papua New Guinea. *EPINT* 1991;13:1-26.

OVERSEAS BRIEFS

In the last two weeks, the following information regarding cholera cases and recently infected areas has been supplied by the World Health Organization.

Cholera in Africa Update

The **United Republic of Tanzania** has reported a total of 2998 cases and 243 deaths for the period 1 January to 11 September. The Arusha, Mara, Rukwa and Tanga regions are newly infected.

Cholera in the Americas Update

Bolivia has reported a further 11 cases and 1 death for the period 10 to 15 October.

Brazil, which only reports laboratory-confirmed cases of cholera, has reported a further 8 cases and 2 deaths for the period 13 to 19 September.

There have been a further 1290 cases and 7 deaths reported for the period 24 September to 11 October in **Colombia**.

Ecuador has reported 1272 cases and 6 deaths for the period 1 to 21 September.

In **Panama**, there were 46 cases and 1 death reported for the period 6 to 12 October.

Peru reported 2878 cases and 19 deaths for the period 28 September to 1 October.

Cholera in Asia Update

There were a further 35 cases reported from **Iraq** for the period 26 September to 2 October.

Singapore reported 8 non-fatal cases for the period 15 to 28 September.

Cholera in Europe Update

Romania reported a further 17 cases for the period 3 to 8 October.

CDI NOTICES TO READERS

Health Information for International Travel

The third edition of *Health Information for International Travel* has recently been published by the Commonwealth Department of Health, Housing and Community Services.

The book is a comprehensive reference for health care providers and associated professionals who may be called upon to advise intending overseas travellers on health matters. General Practitioners will find this book invaluable.

The new edition has been considerably revised and expanded (now about 100 pages) and includes a detailed index.

The chapter dealing with malaria is particularly comprehensive, providing up-to-date information on malaria risks and prophylaxis in an easily read format.

In addition, three information sheets directed at intending travellers have been included. They cover immunisation, malaria and food & water-borne diseases and have been presented so that they may be readily photocopied and passed on.

The book is available from the Australian Government Publishing Service at a cost of $9.95. AGPS publications are available from the Commonwealth Government Bookshops in each State.

Adelaide	(08) 237 6955
Brisbane	(07) 229 6822
Canberra	(06) 247 7211
Darwin	(089) 897 152
(NT Government Information Centre)	
Hobart	(002) 237 151
Melbourne	(03) 663 3010
Parramatta	(02) 893 8466
Perth	(09) 322 4737
Sydney	(02) 299 6737
Townsville	(077) 215 212
	(008) 805 896

A 24 hour on-line telephone order service is available on 008 02 0049.

Other Publications

Readers are reminded that the following publications are also available.

Immunisation Procedures, 4th Edition - available from Commonwealth Government Bookshops at a cost of $16.95

Tuberculosis in Australia and New Zealand into the 1990s - available from Commonwealth Government Bookshops at a cost of $11.95

Fit to travel and return - a booklet for intending travellers, available at no cost from:

The Publications Officer
Communicable Diseases Section
Department of Health, Housing
and Community Services
GPO Box 9848
Canberra ACT 2601.

Correction: Brucellosis - Queensland

There was an error in Table 3 of the *Brucellosis - Queensland* article in the last edition of *CDI* (15:381). The patient from whom *Brucella abortus* was isolated was known to have had pig exposure, rather than unknown pig exposure.

COMMUNICABLE DISEASES SURVEILLANCE

There were a further 37 reports of **influenza B** this fortnight, bringing the total for the year to 302. Four of this period's reports were further identified as 'Yamagata/16/88-like' and one was 'Vic/2/87-like'. There were six cases in persons aged 65 years or more: three males and three females. Cardiac symptoms were reported for two patients: males aged 39 years and 43 years.

There were four reports of **influenza A** this period, bringing the total for the year to 26 cases. One was in a male aged greater than 65 years. In addition, there was also one report of **influenza A H1N1**, making a total of three for the year.

The number of **respiratory syncytial virus** reports from each State declined this period and a total of only 97 reports was received. The winter peak in activity may now have passed in Western Australia and South Australia (Figure 1), as well as in New South Wales and the ACT, Victoria and Queensland (Figure 2). This period's reports included an eight month old male for whom CNS symptoms were reported.

Figure 1. Respiratory syncytial virus reports from Laboratories in New South Wales and the ACT, Victoria and Queensland, by month, 1991.

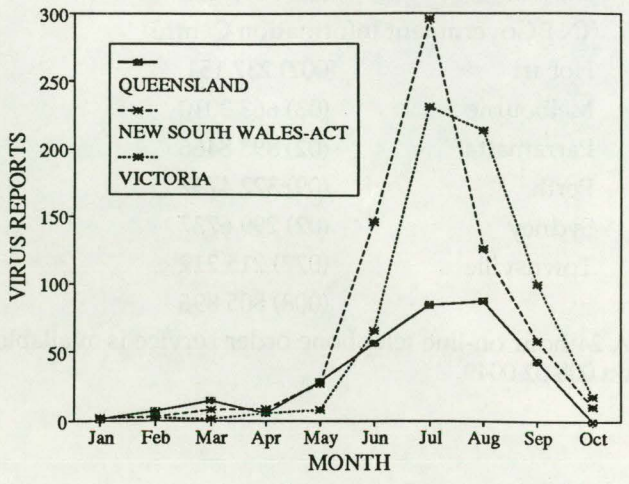
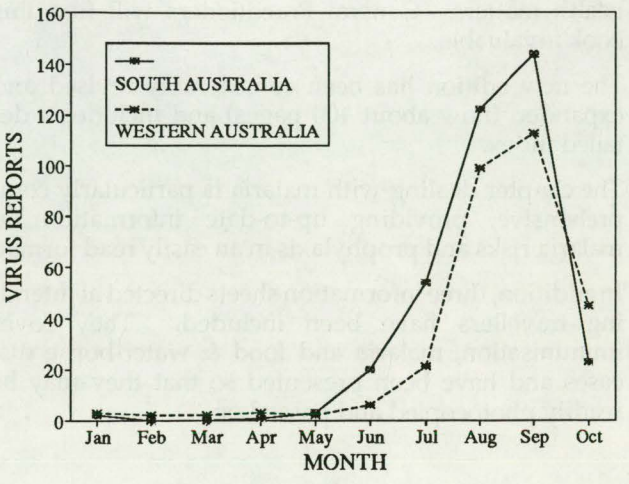


Figure 2. Respiratory syncytial virus reports from Laboratories in South Australia and Western Australia, by month, 1991.



A further 23 reports of **hepatitis A** were received this period. Thirteen of the 16 patients with known age and sex were males aged between 15 and 64 years.

A further 101 reports of **rotavirus** were received this fortnight. A large number were again recorded from laboratories in Sydney (62 cases).

There were 19 reports of **varicella-zoster virus** (chicken pox) this period. The patients included a 53 year old male for whom the reported symptom was pneumonia.

There were 7 reports of **Q fever.** Six were from Queensland and one was from New South Wales. No exposure details were provided for any of the patients.

Rubella was reported in 9 patients. They included a congenitally infected one month old boy from whose urine the virus was isolated. Other patients included three women of child-bearing age (18 years, 26 years and 38 years) and five patients from Tasmania.

A further 12 cases of **measles** were reported, bringing the total for the year to 202. Five of the reports were from the Institute of Medical and Veterinary Science, Adelaide.

There were 43 reports of **hepatitis C.** The patients included a 41 year old male with AIDS.

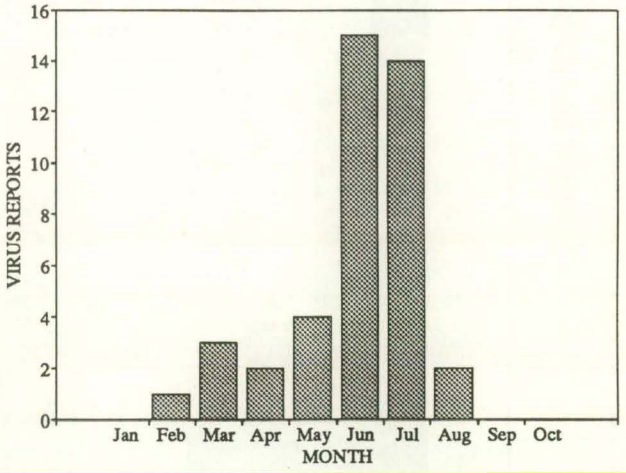
Four reports of **dengue type 2** were received. The patients were a 44 year old male who had travelled to Zimbabwe and Kenya, and a 32 year old male, a 20 year old female and a 46 year old male who had all travelled to South-east Asia. There was also one report of **dengue type 2,** in a 44 year old male who had travelled to Singapore.

There were four cases of **coxsackievirus type A9** infection reported from a Melbourne laboratory. For two of the patients, the reported syndrome was meningitis. For one of these and one patient for whom the reported syndrome was respiratory disease, the virus was isolated from CSF samples. Respiratory disease was the syndrome reported for the fourth patient.

Legionella pneumophila was reported in three patients. One was a female in the age group 65 to 74 years who died after having had unspecified respiratory tract disease. *L. pneumophila* serogroup 4 was identified as the causative organism. The other patients were a male in the age group 45 to 64 years in whom *L.pneumophila* serogroup 3 was identified and a male in the age group 25 to 44 years.

The **echovirus type 17** outbreak in New South Wales and the ACT appears to have finished, as no cases have been reported since August (Figure 3). A total of 41 cases were reported: 36 were from New South Wales, three were from the ACT and there were two early in the year in South Australia. There were 26 cases in males and 15 in females. Eighteen of the patients were under the age of 12 months, but the reported ages ranged up to 43 years. Twenty-seven cases, including 11 aged under 12 months, had CNS symptoms and/or virus isolated from CSF.

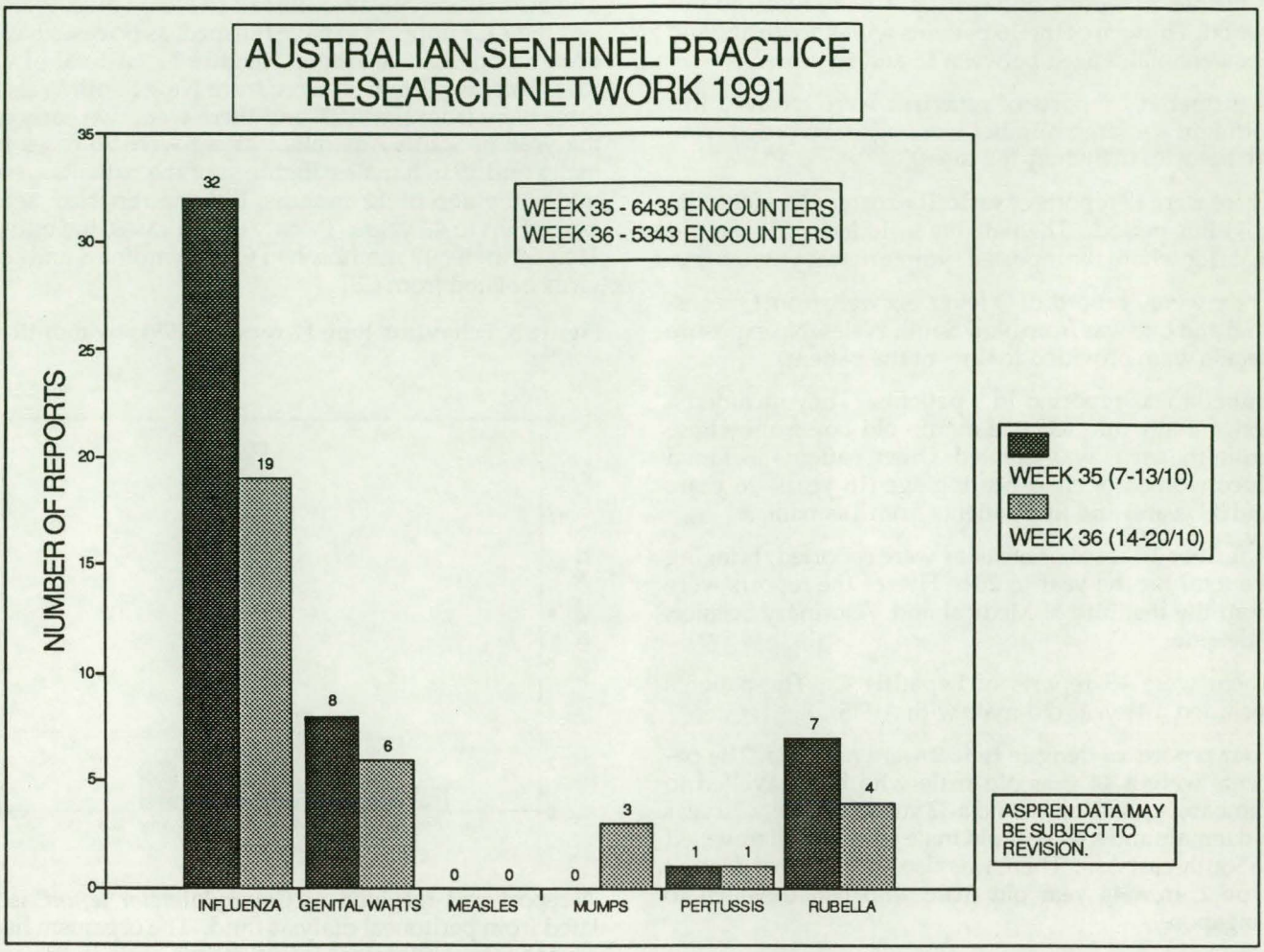
Figure 3. Echovirus type 17 reports, 1991, by month



A report was received of *Campylobacter jejuni* isolated from peritoneal dialysis fluid. The organism had caused intra-abdominal infection in a male in the age group 45 to 64 years.

Toxoplasma gondii was reported in a female in the age group 15 to 24 years. The organism was identified in tonsil tissue using light microscopy. The reported symptom was upper respiratory tract disease.

Three cases of *Cryptococcus* infection were reported. In one case, *C. neoformans* was identified in the CSF of an immunocompromised male (age group 25 to 44 years) who had encephalitis. Both other patients were male (age groups 25 to 44 years and 45 to 64 years) and had *Cryptococcus* sp identified in CSF samples.


AUSTRALIAN SENTINEL PRACTICE RESEARCH NETWORK 1991
WEEK 35 - 6435 ENCOUNTERS
WEEK 36 - 5343 ENCOUNTERS
NUMBER OF REPORTS
0
5
10
15
20
25
30
35
32
19
8
6
0
0
0
3
1
1
7
4
INFLUENZA
GENITAL WARTS
MEASLES
MUMPS
PERTUSSIS
RUBELLA
WEEK 35 (7-13/10)
WEEK 36 (14-20/10)
ASPREN DATA MAY BE SUBJECT TO REVISION.

AUSTRALIA - COMMUNICABLE DISEASES INTELLIGENCE

VIRAL IDENTIFICATIONS FROM CONTRIBUTING LABORATORIES
BASED ON DATE OF REPORTING

PERIOD 9/10/91 TO 22/10/91

CODE 018 - MICROBIOLOGICAL DIAGNOSTIC UNIT, UNIVERSITY OF MELBOURNE (VIC)
CODE 019 - FAIRFIELD HOSPITAL, MELBOURNE (VIC)
CODE 065 - STATE HEALTH LABORATORY SERVICES, PERTH (WA)
CODE 066 - PRINCESS MARGARET HOSPITAL, PERTH (WA)
CODE 110 - INSTITUTE OF MEDICAL & VETERINARY SCIENCE, ADELAIDE (SA)
CODE 111 - ROYAL CHIDLDRENS HOSPITAL, MELBOURNE (VIC)
CODE 112 - INSTITUTE OF CLINICAL PATHOLOGY & MEDICAL RESEARCH, WESTMEAD (NSW)
CODE 113 - PRINCE HENRY/PRINCE OF WALES HOSPITALS, SYDNEY (NSW)
CODE 114 - ROYAL ALEXANDRA HOSPITAL FOR CHILDREN, CAMPERDOWN (NSW)
CODE 115 - STATE HEALTH LABORATORY, BRISBANE (QLD)
CODE 116 - WODEN VALLEY HOSPITAL, GARRAN (ACT)

		018	019	065	066	110	111	112	113	114	115	116	TOTAL
0100	ADENOVIRUS NOT TYPED	0	1	4	1	3	1	5	2	0	0	0	17
0101	ADENOVIRUS TYPE 1	0	0	0	0	3	0	1	0	0	0	0	4
0102	ADENOVIRUS TYPE 2	0	1	0	0	0	7	3	0	1	0	0	12
0103	ADENOVIRUS TYPE 3	0	1	0	0	0	0	0	0	0	0	0	1
0104	ADENOVIRUS TYPE 4	0	1	0	0	0	0	0	0	0	0	0	1
0105	ADENOVIRUS TYPE 5	0	0	0	0	0	2	1	0	0	0	0	3
0199	ADENOVIRUS TYPING PENDING	0	0	0	0	0	9	0	1	1	0	0	11
0201	INFLUENZA A VIRUS	0	0	4	0	0	0	0	0	0	0	0	4
0203	INFLUENZA B VIRUS	0	10	1	0	3	4	2	4	0	12	1	37
0206	INFLUENZA A H1N1	0	1	0	0	0	0	0	0	0	0	0	1
0299	INFLUENZA VIRUS - TYPING PENDI	0	1	0	0	0	0	0	0	0	0	0	1
0301	PARAINFLUENZA VIRUS TYPE 1	0	0	0	1	1	0	0	0	0	0	0	2
0302	PARAINFLUENZA VIRUS TYPE 2	0	0	0	0	1	1	0	0	0	0	0	2
0303	PARAINFLUENZA VIRUS TYPE 3	0	1	0	0	10	4	2	0	2	0	0	19
0399	PARAINFLUENZA VIRUS TYPING PEN	0	0	0	1	0	1	0	0	0	0	0	2
0400	RESPIRATORY SYNCYTIAL VIRUS (R	0	14	2	23	33	11	2	3	4	0	5	97
0500	RHINOVIRUS (ALL TYPES)	0	7	0	0	8	6	0	0	3	0	0	24
0600	MYCOPLASMA PNEUMONIAE	0	4	7	0	1	0	1	3	1	1	0	18
0700	ORNITHOSIS-PSITTACOSIS	0	3	2	0	0	0	0	2	0	4	0	11
0809	COXSACKIEVIRUS A9	0	4	0	0	0	0	0	0	0	0	0	4
0904	COXSACKIEVIRUS B4	0	0	0	0	1	0	0	0	0	0	0	1
1000	ECHOVIRUS NOT TYPED	0	0	0	0	1	0	0	0	0	0	0	1
1024	ECHOVIRUS TYPE 24	0	0	1	0	1	0	0	0	0	0	0	2
1032	ECHOVIRUS TYPE 32	0	0	0	0	0	0	0	0	0	0	1	1
1100	POLIOVIRUS NOT TYPED	0	0	0	0	0	0	0	3	0	0	0	3
1101	POLIOVIRUS TYPE 1 (UNCHARACTER	0	2	0	0	0	0	0	0	0	0	0	2
1102	POLIOVIRUS TYPE 2 (UNCHARACTER	0	2	0	0	1	0	1	0	0	0	0	4
1300	HERPES VIRUS GROUP - NOT TYPED	0	2	2	0	1	0	0	0	0	0	0	5
1301	HERPES SIMPLEX VIRUS - NOT TYP	0	0	0	0	0	0	19	0	2	0	1	22
1302	EPSTEIN-BARR VIRUS (EB VIRUS)	0	1	3	0	17	0	2	6	0	8	0	37
1303	VARICELLA-ZOSTER VIRUS	0	2	5	0	2	1	7	1	0	0	1	19
1306	HERPES SIMPLEX TYPE 1	0	35	28	0	28	3	6	0	0	0	1	101
1307	HERPES SIMPLEX TYPE 2	0	30	52	0	23	1	15	0	0	0	0	121
1401	COXIELLA BURNETII	0	0	0	0	0	0	1	0	0	6	0	7
1502	PICORNA VIRUS - NOT TYPED = EN	0	0	10	0	0	0	0	4	1	0	0	15
1514	MOLLUSCUM CONTAGIOSUM	0	0	0	0	0	0	1	0	0	0	0	1
1521	MEASLES VIRUS	0	3	1	0	5	0	0	2	0	1	0	12
1522	RUBELLA VIRUS	0	0	1	0	2	0	6	0	0	0	0	9
1532	HEPATITIS B ANTIGEN	0	16	18	0	0	0	22	4	0	0	0	60
1535	HEPATITIS A ANTIBODY	0	8	1	0	0	1	10	3	0	0	0	23
1536	HEPATITIS C VIRUS	0	0	34	0	2	0	0	0	1	0	6	43
1537	HEPATITIS, DELTA	0	0	1	0	0	0	0	0	0	0	0	1
1541	CHLAMYDIA TRACHOMATIS - UNSPEC	8	1	46	1	22	2	4	0	0	20	0	104
1543	CHLAMYDIA L1-L3 - (LGV TYPE)	0	0	1	0	0	0	0	0	0	0	0	1
1555	PAPOVAVIRUS GROUP (PAPILLOMA -	0	0	0	0	0	0	0	1	0	0	0	1
1556	CMV - CYTOMEGALOVIRUS	0	26	7	2	0	4	1	9	1	3	1	54
1562	REOVIRUS (ALL TYPES)	0	0	1	0	0	0	0	0	0	0	0	1
1563	CORONAVIRUS	0	0	0	0	0	0	3	0	0	0	0	3
1564	ROTAVIRUS	0	2	2	0	22	13	30	17	15	0	0	101
1571	ENTEROVIRUS TYPE 71 (BCR)	0	1	0	0	0	0	0	0	0	0	0	1
1599	ENTEROVIRUS TYPING PENDING	0	0	0	0	0	3	0	0	0	0	0	3
9906	BARMAH FOREST VIRUS	0	0	0	0	0	0	0	1	0	0	0	1
9981	DENGUE TYPE 1	0	0	2	0	0	0	0	0	0	2	0	4
9982	DENGUE TYPE 2	0	1	0	0	0	0	0	0	0	0	0	1
9992	ROSS RIVER VIRUS	0	0	1	0	0	0	0	1	0	3	0	5
9993	ASTROVIRUS	0	0	0	0	0	0	2	0	0	0	0	2
9994	SMALL VIRUS (LIKE) PARTICLE	0	1	0	0	0	0	0	0	2	0	0	3
9998	ARBOVIRUS GROUP B.(UNSPECIFIED	0	0	0	0	0	0	0	0	0	6	0	6
TOTAL		8	182	237	29	191	74	147	67	34	66	17	1052

AUSTRALIA - COMMUNICABLE DISEASES INTELLIGENCE

VIRAL IDENTIFICATIONS FROM CONTRIBUTING LABORATORIES BY STATE OF CONTRIBUTING LABORATORY

PERIOD 9/10/91 TO 22/10/91

NSW: ICPMR; PHH/POW; RACH; ST GEORGE HOSP, KOGARAH; ROYAL NEWCASTLE HOSP; TAMWRTH LAB.
VIC: FAIRFIELD; RCH; MDU, UNI MELB.
QLD: STATE LAB, BRIS; TOOWOOMBA PATH LAB; ROYAL BRIS HOSP; DR TB LYNCH, PATHOLOGIST, ROCKHAMPTON.
WA: STATE LAB, PERTH; PMH.
SA: IMVS.
TAS: ROYAL HOBART HOSP; DIAGNOSTIC SERVICES, LAUNCESTON; LAUNCESTON GEN HOSP; DIAGNOSTIC SERVICES, HOBART; HOBART PATH; MERSEY GEN HOSP, LATROBE.
ACT: WVH.

		NSW	VIC	QLD	WA	SA	ACT	TOTAL
0100	ADENOVIRUS NOT TYPED	7	2	0	5	3	0	17
0101	ADENOVIRUS TYPE 1	1	0	0	0	3	0	4
0102	ADENOVIRUS TYPE 2	4	8	0	0	0	0	12
0103	ADENOVIRUS TYPE 3	0	1	0	0	0	0	1
0104	ADENOVIRUS TYPE 4	0	1	0	0	0	0	1
0105	ADENOVIRUS TYPE 5	1	2	0	0	0	0	3
0199	ADENOVIRUS TYPING PENDING	2	9	0	0	0	0	11
0201	INFLUENZA A VIRUS	0	0	0	4	0	0	4
0203	INFLUENZA B VIRUS	6	14	12	1	3	1	37
0206	INFLUENZA A H1N1	0	1	0	0	0	0	1
0299	INFLUENZA VIRUS - TYPING PENDI	0	1	0	0	0	0	1
0301	PARAINFLUENZA VIRUS TYPE 1	0	0	0	1	1	0	2
0302	PARAINFLUENZA VIRUS TYPE 2	0	1	0	0	1	0	2
0303	PARAINFLUENZA VIRUS TYPE 3	4	5	0	0	10	0	19
0399	PARAINFLUENZA VIRUS TYPING PEN	0	1	0	1	0	0	2
0400	RESPIRATORY SYNCYTIAL VIRUS (R	9	25	0	25	33	5	97
0500	RHINOVIRUS (ALL TYPES)	3	13	0	0	8	0	24
0600	MYCOPLASMA PNEUMONIAE	5	4	1	7	1	0	18
0700	ORNITHOSIS-PSITTACOSIS	2	3	4	2	0	0	11
0809	COXSACKIEVIRUS A9	0	4	0	0	0	0	4
0904	COXSACKIEVIRUS B4	0	0	0	0	1	0	1
1000	ECHOVIRUS NOT TYPED	0	0	0	0	1	0	1
1024	ECHOVIRUS TYPE 24	0	0	0	1	1	0	2
1032	ECHOVIRUS TYPE 32	0	0	0	0	0	1	1
1100	POLIOVIRUS NOT TYPED	3	0	0	0	0	0	3
1101	POLIOVIRUS TYPE 1 (UNCHARACTER	0	2	0	0	0	0	2
1102	POLIOVIRUS TYPE 2 (UNCHARACTER	1	2	0	0	1	0	4
1300	HERPES VIRUS GROUP - NOT TYPED	0	2	0	2	1	0	5
1301	HERPES SIMPLEX VIRUS - NOT TYP	21	0	0	0	0	1	22
1302	EPSTEIN-BARR VIRUS (EB VIRUS)	8	1	8	3	17	0	37
1303	VARICELLA-ZOSTER VIRUS	8	3	0	5	2	1	19
1306	HERPES SIMPLEX TYPE 1	6	38	0	28	28	1	101
1307	HERPES SIMPLEX TYPE 2	15	31	0	52	23	0	121
1401	COXIELLA BURNETII	1	0	6	0	0	0	7
1502	PICORNA VIRUS - NOT TYPED = EN	5	0	0	10	0	0	15
1514	MOLLUSCUM CONTAGIOSUM	1	0	0	0	0	0	1
1521	MEASLES VIRUS	2	3	1	1	5	0	12
1522	RUBELLA VIRUS	6	0	0	1	2	0	9
1532	HEPATITIS B ANTIGEN	26	16	0	18	0	0	60
1535	HEPATITIS A ANTIBODY	13	9	0	1	0	0	23
1536	HEPATITIS C VIRUS	1	0	0	34	2	6	43
1537	HEPATITIS, DELTA	0	0	0	1	0	0	1
1541	CHLAMYDIA TRACHOMATIS - UNSPEC	4	11	20	47	22	0	104
1543	CHLAMYDIA L1-L3 - (LGV TYPE)	0	0	0	1	0	0	1
1555	PAPOVAVIRUS GROUP (PAPILLOMA -	1	0	0	0	0	0	1
1556	CMV - CYTOMEGALOVIRUS	11	30	3	9	0	1	54
1562	REOVIRUS (ALL TYPES)	0	0	0	1	0	0	1
1563	CORONAVIRUS	3	0	0	0	0	0	3
1564	ROTAVIRUS	62	15	0	2	22	0	101
1571	ENTEROVIRUS TYPE 71 (BCR)	0	1	0	0	0	0	1
1599	ENTEROVIRUS TYPING PENDING	0	3	0	0	0	0	3
9906	BARMAH FOREST VIRUS	1	0	0	0	0	0	1
9981	DENGUE TYPE 1	0	0	2	2	0	0	4
9982	DENGUE TYPE 2	0	1	0	0	0	0	1
9992	ROSS RIVER VIRUS	1	0	3	1	0	0	5
9993	ASTROVIRUS	2	0	0	0	0	0	2
9994	SMALL VIRUS (LIKE) PARTICLE	2	1	0	0	0	0	3
9998	ARBOVIRUS GROUP B.(UNSPECIFIED	0	0	6	0	0	0	6
TOTAL		248	264	66	266	191	17	1052

NOTE: DIRECT COMPARISION BETWEEN STATES IS NOT POSSIBLE SINCE:
- SOME STATES HAVE MORE THAN ONE CONTRIBUTING LABORATORY; AND
- INTERSTATE REFERRRALS OCCUR REGULARLY.

AUSTRALIA - COMMUNICABLE DISEASES INTELLIGENCE

VIRAL IDENTIFICATIONS BY CLINICAL INFORMATION TABLE 1

PERIOD 9/10/91 TO 22/10/91

1. CODE 00, 99 ..... - NO ILL OR DATA
2. CODE 01, 02, 11, 12 - RESPIRATORY
3. CODE E3 ..... - ENCEPHALITIS
4. CODE M3 ..... - MENINGITIS
5. CODE 04 ..... - PARALYSIS
6. CODE 05, 13 ..... - CNS OTHER UNSPEC
7. CODE 07, 49 - GASTRO INTESTINAL
8. CODE 17, 47 - HEPATIC
9. CODE 19 ... - CVS
10. CODE 89 ... - URINARY TRACCT
11. CODE 06 ... - SKIN MUCOUS

		1	2	3	4	6	7	8	9	10	11	TOTAL
0100	ADENOVIRUS NOT TYPED	1	3	0	0	0	11	0	0	0	0	15
0101	ADENOVIRUS TYPE 1	0	2	0	0	0	2	0	0	0	0	4
0102	ADENOVIRUS TYPE 2	0	7	0	0	0	3	0	0	0	0	10
0105	ADENOVIRUS TYPE 5	0	2	0	0	0	1	0	0	0	0	3
0199	ADENOVIRUS TYPING PENDING	0	8	0	1	0	2	0	0	0	0	11
0201	INFLUENZA A VIRUS	0	4	0	0	0	0	0	0	0	0	4
0203	INFLUENZA B VIRUS	1	28	0	0	0	1	0	2	0	0	32
0206	INFLUENZA A H1N1	0	1	0	0	0	0	0	0	0	0	1
0299	INFLUENZA VIRUS - TYPING PENDI	0	1	0	0	0	0	0	0	0	0	1
0301	PARAINFLUENZA VIRUS TYPE 1	0	2	0	0	0	0	0	0	0	0	2
0302	PARAINFLUENZA VIRUS TYPE 2	0	2	0	0	0	0	0	0	0	0	2
0303	PARAINFLUENZA VIRUS TYPE 3	0	18	0	0	0	0	0	0	0	1	19
0399	PARAINFLUENZA VIRUS TYPING PEN	0	2	0	0	0	0	0	0	0	0	2
0400	RESPIRATORY SYNCYTIAL VIRUS (R	0	96	0	0	1	0	0	0	0	0	97
0500	RHINOVIRUS (ALL TYPES)	1	22	0	0	0	0	0	0	0	0	23
0600	MYCOPLASMA PNEUMONIAE	3	12	0	0	0	0	0	0	0	0	15
0700	ORNITHOSIS-PSITTACOSIS	1	6	0	0	0	0	0	0	0	0	7
0809	COXSACKIEVIRUS A9	0	2	0	2	0	0	0	0	0	0	4
1024	ECHOVIRUS TYPE 24	0	0	0	0	0	1	0	0	0	0	1
1032	ECHOVIRUS TYPE 32	0	0	0	0	0	0	0	0	0	1	1
1100	POLIOVIRUS NOT TYPED	0	1	0	0	0	2	0	0	0	0	3
1101	POLIOVIRUS TYPE 1 (UNCHARACTER	0	2	0	0	0	0	0	0	0	0	2
1102	POLIOVIRUS TYPE 2 (UNCHARACTER	0	2	0	0	0	0	0	0	0	0	2
1300	HERPES VIRUS GROUP - NOT TYPED	0	0	2	0	0	0	0	0	0	2	4
1301	HERPES SIMPLEX VIRUS - NOT TYP	4	0	0	0	0	0	0	0	0	8	12
1302	EPSTEIN-BARR VIRUS (EB VIRUS)	4	4	0	0	0	1	2	0	0	0	11
1303	VARICELLA-ZOSTER VIRUS	3	1	0	0	0	0	0	0	0	12	16
1306	HERPES SIMPLEX TYPE 1	5	2	0	1	0	0	0	0	0	66	74
1307	HERPES SIMPLEX TYPE 2	1	1	0	0	0	0	0	0	0	71	73
1401	COXIELLA BURNETII	3	0	0	0	0	0	0	0	0	0	3
1502	PICORNA VIRUS - NOT TYPED = EN	2	4	0	1	2	4	0	0	0	0	13
1514	MOLLUSCUM CONTAGIOSUM	0	0	0	0	0	1	0	0	0	0	1
1521	MEASLES VIRUS	3	1	0	0	0	1	0	0	0	7	12
1522	RUBELLA VIRUS	1	0	0	0	0	0	0	0	0	5	6
1532	HEPATITIS B ANTIGEN	34	0	0	0	0	1	9	0	0	0	44
1535	HEPATITIS A ANTIBODY	0	0	0	0	0	0	15	0	0	0	15
1536	HEPATITIS C VIRUS	30	0	0	0	0	0	10	0	0	0	40
1537	HEPATITIS, DELTA	0	0	0	0	0	0	1	0	0	0	1
1541	CHLAMYDIA TRACHOMATIS - UNSPEC	19	0	0	0	0	0	0	0	0	1	20
1543	CHLAMYDIA L1-L3 - (LGV TYPE)	1	0	0	0	0	0	0	0	0	0	1
1555	PAPOVAVIRUS GROUP (PAPILLOMA -	0	0	0	0	0	0	0	0	1	0	1
1556	CMV - CYTOMEGALOVIRUS	4	8	0	0	0	1	2	1	1	0	17
1562	REOVIRUS (ALL TYPES)	0	0	0	0	0	1	0	0	0	0	1
1563	CORONAVIRUS	0	0	0	0	0	3	0	0	0	0	3
1564	ROTAVIRUS	0	1	0	0	0	98	1	0	0	0	100
1571	ENTEROVIRUS TYPE 71 (BCR)	0	0	0	1	0	0	0	0	0	0	1
1599	ENTEROVIRUS TYPING PENDING	0	1	0	0	0	1	0	0	0	1	3
9701	HIV-1	1	0	0	0	0	0	0	0	0	0	1
9981	DENGUE TYPE 1	3	0	0	0	0	0	0	0	0	0	3
9992	ROSS RIVER VIRUS	2	0	0	0	0	0	0	0	0	0	2
9993	ASTROVIRUS	0	0	0	0	0	2	0	0	0	0	2
9994	SMALL VIRUS (LIKE) PARTICLE	0	0	0	0	0	3	0	0	0	0	3
9998	ARBOVIRUS GROUP B.(UNSPECIFIED	4	0	0	0	0	0	0	0	0	0	4
TOTAL		131	246	2	6	3	140	40	3	2	175	748

AUSTRALIA - COMMUNICABLE DISEASES INTELLIGENCE

VIRAL IDENTIFICATIONS BY CLINICAL INFORMATION TABLE 2

PERIOD 9/10/91 TO 22/10/91

12. CODE 10 - EYE
13. CODE 59 - GENITAL
14. CODE 39 - ENDOCRINE/SALIVARY GL.
15. CODE 38 - RETICULO-ENDOTHELIAL
16. CODE 29 - MUSCLE/JOINT
17. CODE 69 - CONGENTIAL
18. CODE P8 - PUO
19. CODE G8 - FEVER/MALAISE
20. CODE 09 - OTHER
21. CODE A1 - SIDS

		12	13	14	15	16	17	18	19	20	21	TOTAL
0100	ADENOVIRUS NOT TYPED	1	0	0	0	0	0	0	0	1	0	2
0102	ADENOVIRUS TYPE 2	0	0	0	0	0	0	1	0	0	1	2
0103	ADENOVIRUS TYPE 3	1	0	0	0	0	0	0	0	0	0	1
0104	ADENOVIRUS TYPE 4	1	0	0	0	0	0	0	0	0	0	1
0203	INFLUENZA B VIRUS	1	0	0	0	1	0	1	2	0	0	5
0500	RHINOVIRUS (ALL TYPES)	0	0	0	0	0	0	1	0	0	0	1
0600	MYCOPLASMA PNEUMONIAE	0	0	0	0	0	0	0	2	1	0	3
0700	ORNITHOSIS-PSITTACOSIS	1	0	0	0	0	0	0	2	1	0	4
1024	ECHOVIRUS TYPE 24	0	0	0	0	0	0	0	0	0	1	1
1102	POLIOVIRUS TYPE 2 (UNCHARACTER	0	0	0	0	0	0	0	1	0	1	2
1300	HERPES VIRUS GROUP - NOT TYPED	0	1	0	0	0	0	0	0	0	0	1
1301	HERPES SIMPLEX VIRUS - NOT TYP	0	10	0	0	0	0	0	0	0	0	10
1302	EPSTEIN-BARR VIRUS (EB VIRUS)	1	0	19	2	0	0	0	4	0	0	26
1303	VARICELLA-ZOSTER VIRUS	0	1	0	0	1	0	0	0	1	0	3
1306	HERPES SIMPLEX TYPE 1	4	20	0	0	0	0	0	1	2	0	27
1307	HERPES SIMPLEX TYPE 2	0	46	1	0	0	0	0	0	1	0	48
1401	COXIELLA BURNETII	0	0	0	0	1	0	0	1	2	0	4
1502	PICORNA VIRUS - NOT TYPED = EN	0	0	0	0	1	0	0	0	0	0	1
1522	RUBELLA VIRUS	0	0	0	1	0	1	0	0	1	0	3
1536	HEPATITIS C VIRUS	0	0	0	0	0	0	0	0	3	0	3
1541	CHLAMYDIA TRACHOMATIS - UNSPEC	4	80	0	0	0	0	0	0	0	0	84
1556	CMV - CYTOMEGALOVIRUS	1	2	2	1	0	1	0	5	22	1	35
1564	ROTAVIRUS	0	0	0	0	0	0	1	0	0	0	1
9906	BARMAH FOREST VIRUS	0	0	0	0	1	0	0	0	0	0	1
9981	DENGUE TYPE 1	0	0	0	0	0	0	0	1	0	0	1
9982	DENGUE TYPE 2	0	0	0	0	0	0	0	1	0	0	1
9992	ROSS RIVER VIRUS	0	0	0	0	2	0	0	1	0	0	3
9998	ARBOVIRUS GROUP B.(UNSPECIFIED	0	0	0	0	1	0	0	1	0	0	2
TOTAL		15	160	22	4	8	2	4	22	35	4	276