



# COMMUNICABLE DISEASES INTELLIGENCE

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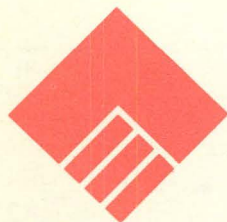
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**DEPARTMENT OF  
HEALTH, HOUSING AND  
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**COMMUNICABLE DISEASES NETWORK-AUSTRALIA**  
**A National Network for Communicable Diseases Surveillance**

## WORLD MALARIA SITUATION IN 1990

(Based on *Weekly Epidemiological Record* 1992;67:161-167 and 169-174)

### Population at risk

In 1990, over 40% of the world population remained exposed to varying degrees of malaria risk in 99 countries or areas (Map 1). In 13 of these countries or areas *Plasmodium falciparum* malaria does not exist or its relative prevalence is less than 1%.

Of a total world population of about 5,300 million, 3,100 million (59%) live in areas free of malaria (the disease has never existed, has disappeared or has been eliminated by antimalaria campaigns and the malaria-free status has been maintained); 1,700 million (32%) live in areas where endemic malaria has been considerably reduced or even eliminated, but where transmission has been reinstated and the situation is unstable or deteriorating. The latter areas include zones with the most severe malaria problems which developed following major ecological or social changes, such as agricultural or other economic exploitation of jungle areas, sociopolitical unrest, et cetera; these zones comprise only about 1% of the world population. Areas where endemic malaria remains basically unchanged and where no national antimalaria programme has ever been implemented are inhabited by 500 million people (9%), mainly in tropical Africa.

### Malaria reporting to WHO

Through its Regional Offices, the World Health Organization (WHO) receives information on the number of malaria cases recorded by surveillance programmes in Member States. Malaria cases are commonly defined as cases requiring treatment which have been microscopically confirmed; in countries without microscopy facilities at peripheral level, cases are mostly diagnosed on clinical grounds. Barring specific mention to the contrary, such cases are not included in the figures quoted in this article.

Accurate information on the global incidence of malaria is difficult to obtain because reporting is particularly incomplete in areas known to be highly endemic. The global incidence of malaria is estimated to be nearly 120 million clinical cases each year, with nearly 300 million people carrying the parasite. Countries in tropical Africa are estimated to account for more than 80% of all clinical cases and more than 90% of all parasite carriers.

In recent years, reporting of malaria cases improved in the WHO African Region, although it remains fragmentary and irregular. In the other Regions, the overall number of cases did not change much during the last years (Table 1); however, trends in the individual countries vary. Of the overall number of cases reported annually to WHO (excluding the African Region), 90% originate from 19 countries only. Some 75% are concentrated in 9 countries: India, Brazil, Afghanistan, Sri Lanka, Thailand, Indonesia, Vietnam, Cambodia and China (in decreasing order). Furthermore, within these countries malaria is concentrated in certain areas.

### Malaria mortality

Severe malaria and mortality are linked to infections caused by *Plasmodium falciparum*, which is the predominant species of malaria in tropical Africa. In the rest of the world, *P. falciparum* is less common. WHO receives very limited and irregular reports on malaria deaths. Coverage of reporting is particularly poor in 'frontier areas' of economic development, such as intensified exploitation of natural resources in jungle areas, or in areas afflicted with civil war or other conflicts, illegal trade and mass movements of refugees, and figures are therefore gross underestimates. For example, a total of 1,428 deaths were reported from the Americas in 1986, but the annual malaria mortality for the Brazilian Amazon region alone has been estimated to be between 6,000 and 10,000. The vast majority of malaria deaths occur in Africa; estimates vary greatly: a figure of

Table 1. Number of malaria cases reported, by WHO Region (thousands), 1983-1990<sup>1</sup>

WHO Region	1983	1984	1985	1986	1987	1988	1989	1990 <sup>3</sup>
Africa <sup>2,3</sup>	2,726	4,523	11,634	17,442	19,463	21,957	13,835	- <sup>4</sup>
Americas	831	932	911	951	1,018	1,120	1,114	1,057
South-East Asia	2,731	3,004	2,503	2,689	2,823	2,789	2,957	2,614
Europe	73	62	57	47	28	24	21	12
Eastern Mediterranean	305	335	391	611	566	602	532	566
Western Pacific	1,839	1,410	1,178	1,012	893	774	829	761
Total (excluding Africa)	5,779	5,743	5,040	5,310	5,328	5,309	5,453	5,010

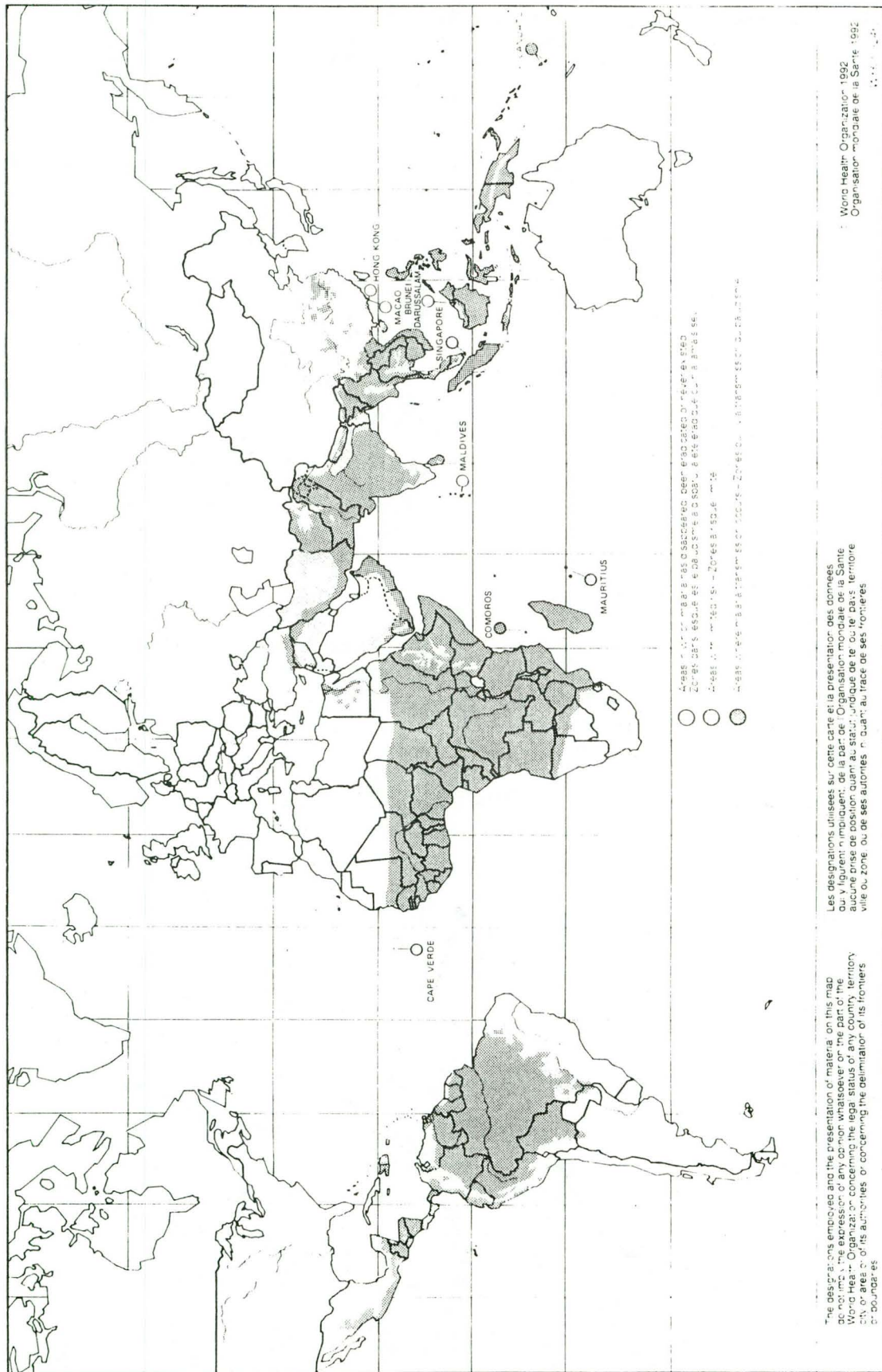
1. The information provided does not cover the total population at risk in some instances.

2. Mainly clinically diagnosed cases.

3. Incomplete figures.

4. No data available.

Map 1. Epidemiological assessment of the status of malaria, 1990<sup>1</sup>



1. Reproduced, by permission of the World Health Organization, from: World malaria situation in 1990, Parts I/II. *Weekly Epidemiological Record* 1992;67(22, 23):161-167, 169-174.

800,000 deaths per year in African children was quoted in 1991 by the WHO African Region. There are indications that mortality in children has fallen in some areas, due to widespread use of antimalarials, and improvements in education and social development.

### Constraints

The variety and complexity of technical, political, sociocultural and economic factors that come together in the transmission of malaria have demonstrated the necessity to change the simplistic approach of using one principal control measure in all malarious areas without taking into account various risk factors leading to different degrees of endemicity. The various epidemiological situations need organised control with realistic goals, permitting diversification and complementarity in the measures that are applied in accordance with local conditions, resources and levels of development. Among the main obstacles to the prevention and control of the disease in areas with high transmission rates are:

- inadequate sanitation and precarious living conditions;
- lack of financial resources;
- lack of knowledge about the biology and ecology of the vectors;

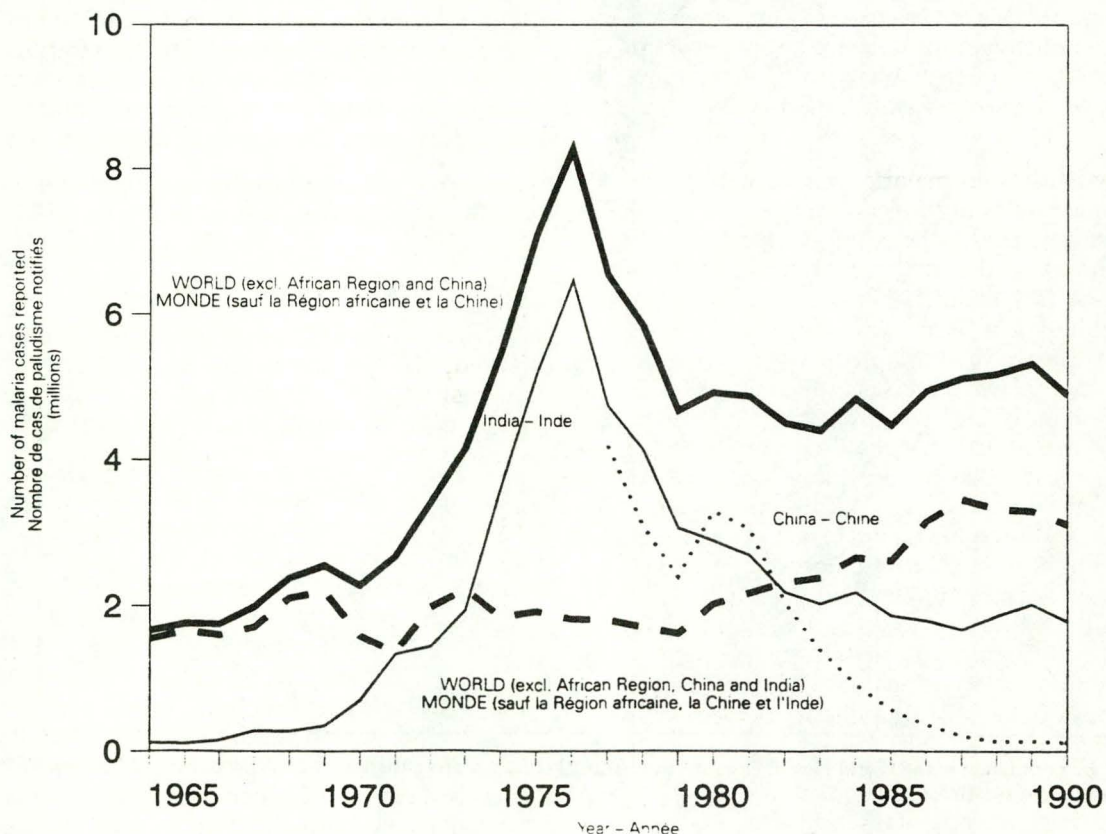
- expansion of agriculture, mining and forest industries into new areas, leading to migration; and
- inefficient or nonexistent health infrastructure.

### Global trends

The reduction of reported malaria cases from 9 million to 5 million between 1976 and 1984 (Figure 1) was largely due to the control of malaria resurgence in India. In terms of the number of cases reported, compounded figures tend to mask the different trends existing between countries or even within countries. The situation has improved in some countries but in others it has deteriorated. Areas particularly susceptible to this deterioration include 'frontier areas' in South-East Asia and South America. In the highly endemic areas of Africa, there has been little change, but epidemics have occurred in areas of lower endemicity.

With regard to parasite resistance to antimalarial drugs, only a few countries have not reported resistance of *P. falciparum* to chloroquine. The rapid evolution of this resistance in Africa threatens to hamper the provision of adequate treatment in rural areas. Resistance to sulfadoxine/pyrimethamine has developed in South-East Asia and South America and focally in Africa. In Thailand, there are indications that up to 50% of cases in certain areas no longer respond to mefloquine therapy, while the sensitivity to quinine is

Figure 1. Number of malaria cases reported, 1964-1990



also diminishing in certain areas of Thailand and Vietnam.

## Africa

In Africa north of the Sahara, the total number of cases reported has fluctuated around 1,100 during recent years. The Libyan Arab Jamahiriya and Tunisia are considered free from malaria transmission; only imported cases are being reported. In Egypt, only 75 cases were recorded in 1990 compared with 192 in 1989. Most of them (*P. falciparum* infections) were from a new focus (Khour Saudii) in El Faiyûm Governorate. In Algeria, 109 of the 152 cases recorded in 1990 were imported. Two foci of *P. vivax* infections were detected: Arib locality in Ain-Defla Wilaya with 13 cases, and Ihrir area in Djanet Wilaya with 29 cases. The latter is an old focus probably reactivated after importation of cases. In Morocco, the number of cases detected remained stable, with 839 in 1990 compared with 830 in 1989. Of the 781 cases of local origin (all *P. vivax*), 68% were detected in the Provinces of El Kelaa Sraghna (262), Settat (173) and Chefchaouen (100).

In Africa south of the Sahara, between 12 and 22 million cases per year were reported during 1985-1989, but based on levels of endemicity it has been estimated that about 100 million clinical malaria cases may occur every year, and the prevalence of infection may be in the order of 275 million parasite carriers. Africa experiences the highest levels of endemicity in the world, with very large areas classified as holoendemic (in forest or savannah at altitudes up to 1,000 m with an average rainfall over 2,000 mm/year). At altitudes over 1,500 m and with rainfall below 1,000 mm/year, endemicity decreases and the potential for epidemic outbreaks increases. Marked seasonality and quasi-cyclic occurrence of heavy rains have led to epidemics or serious exacerbations of endemicity in Botswana, Burundi, Kenya, Madagascar, Rwanda, Swaziland, Zaire and Zambia.

There are few studies on malaria mortality in Africa, but it is obvious that in highly endemic areas malaria mortality is concentrated in the younger age groups. In 1969, it was estimated that malaria might be responsible for the death of 1 million infants and children per year in tropical Africa. From data collected in 1970-1975, it was concluded in Kenya (Kisumu) and Nigeria (Garki) that malaria was responsible for about 20 to 30% of the infant mortality. A more recent study in the Gambia (1987) concluded that malaria mortality may be as high as 6.3 per 1,000 per year in infants and 10.7 per 1,000 per year in children 1-4 years old. In other areas of Africa, in Burkina Faso and the Congo, much lower infant and childhood mortality rates from malaria have been reported. The shortage of trained personnel for the planning, organisation, monitoring, and evaluation of programmes remains one of the major constraints. The Interregional Meeting on Malaria Control in Africa held in Brazzaville in October 1991 adopted a policy aimed at:

- (1) the prevention and reduction of malaria mortality by providing prompt diagnosis and adequate

treatment of malaria cases through the basic health services; this also implies the creation of efficient referral systems for the management of severe and complicated cases as well as for treatment failures;

- (2) the detection and prevention of epidemics and the selective application of vector control measures applicable to the local epidemiological situation and where the results can be sustained.

## The Americas

Since 1974, when only 269,000 malaria cases were recorded (corresponding to an annual incidence of 1.34 per 1,000 population in the originally malarious areas), the number of cases detected every year has been continually rising, with 1,114,000 cases reported in 1989 (3.9 per 1,000 population in originally malarious areas). In 1990, with 1,057,000 cases recorded, the increase seems to have come to a halt. More than half of the cases were registered in Brazil (53%); 25% originated from the Andean countries and 14% were from Central America.

*P. vivax* malaria continued to predominate in the Americas (67% of all infections). Its relative prevalence was 99.9% in Mexico and 97.6% in Central America. However, *P. falciparum* predominates in Haiti (100%), Suriname (99%) and the Dominican Republic (94%); and the proportion of *P. falciparum* infections was 57% in Guyana, 45% in Brazil, and 44% in French Guiana. Seventy-three per cent of all *P. falciparum* infections detected in the Americas occurred in Brazil.

Within each country malaria transmission is concentrated in certain regions which made it possible to identify priority areas for antimalaria activities. Countries have initiated epidemiological stratification of malarious areas in order to adapt antimalaria measures to local conditions and existing risk factors, and to make better use of the resources available.

Considering groups of contiguous countries with anti-malaria programmes, the situation in 1990 was as follows.

### Central America including Mexico

In Mexico, only 44,000 cases (in 11,000 localities) were reported in 1990, compared with 101,000 (in 16,100 localities) in 1989. Only 62 *P. falciparum* infections (compared with 150 in 1989) were recorded in rainforest areas near the border with Belize and Guatemala.

In Honduras, where cases increased from 19,000 in 1987 to 53,000 in 1990, the departments with high incidence were Yoro, Choluteca, Colón, Cortés, and Valle. In Belize, malaria incidence remained high, with 40 and 47 cases per 1,000 in Cayo and Toledo Districts. In Guatemala, the situation hardly changed; nearly 70% of the cases came from 5 of the 22 Departments: El Petén, Alta Verapaz, Escuintla, Izabal and El Quiché. In Nicaragua, malaria cases declined from 46,000 in 1989 to 36,000 in 1990. About 60% of them were from Region II (Leon and Chinandega Departments and 23 municipios). Within this region, only 6 municipios

reported 70% of the cases. In El Salvador, malaria cases decreased steadily from 96,000 in 1980 (with 16,000 *P. falciparum* infections) to 9,300 (with 18 *P. falciparum* infections) in 1990. The authorities of El Salvador have integrated malaria control into the general health services, basing antimalaria measures on epidemiological stratification and adapting them constantly to the evolution of the malaria situation. Panama has reported the lowest number of cases in this region (381 in 1990 compared with 427 in 1989). The local cases originated from 72 localities (less than 1% of the localities in malarious areas) situated in Darién Province, San Blas Comarca and in eastern Panama (Bayano region).

#### Caribbean

In this subregion, malaria transmission occurs only on the island of Hispaniola. In the Dominican Republic, where between 1,100 and 1,400 cases were recorded annually during 1986-1989, only 356 malaria cases were detected in 1990. A drought from January to May, months which traditionally are rainy, may have helped to limit the number of cases. In Haiti, malaria control is one of the priority programmes delegated to the health services. During the last 3 years, 31 to 37% of the blood specimens examined were found to be positive.

#### South America (Andean subregion)

Twenty-five per cent (267,000) of all cases detected in the Americas are from this region (Bolivia, Colombia, Ecuador, Peru, Venezuela); 64% occurred in Colombia (nearly 100,000 cases) and Ecuador (72,000). More than 25% of the cases recorded in Colombia, Ecuador and Venezuela were *P. falciparum* infections. In Colombia, 80% of all cases were detected in 6 regions: Pacific Coast, Lower Cauca, Urabá, Amazon, Sarare, and Magdalena Medio. However, only 12% of the localities in the malarious areas provided information. In Ecuador, the Provinces of Esmeraldas, Manabí, Guayas and Los Ríos registered 92% of all cases. These provinces represent the new frontiers for development with agricultural colonisation and mining activities. Esmeraldas continues to have the highest incidence of *P. falciparum* cases, reporting 40% of the country total. In Venezuela, which reported a total of 47,000 cases in 1990, 57% of the cases originated from Bolívar State (mainly from rainforest areas), 15% from Sucre State (the largest proportion from Santa Fe Municipio), and 11% from the Federal Territory of Amazonas where cases increased by 71% compared with 1989. In Bolivia, the number of cases decreased from 25,000 in 1989 to 20,000 in 1990, with an even greater decrease in the *P. falciparum* infections, from 1,400 to 650. In Peru, incidence remained stable, however, there was a resurgence of *P. falciparum* transmission (from 0 cases in 1988 to 131 in 1990) mainly in the region of Piura (Tumbes).

#### South America (French Guiana, Guyana, Suriname)

The main factor that led to a rapid deterioration of the situation during recent years is the intense migration between the coastal areas and the interior as well as across the borders. French Guiana and Guyana have the highest overall incidence in the Americas with 53

and 40 cases per 1,000 population, respectively. Guyana is the most affected country with 23,000 cases, representing 75% of all cases in this region. Incidences of up to 417 per 1,000 have been recorded in the region along the western border with Venezuela. In French Guiana, the Oyapock and Maroni river basins (incidence 546 and 204 per 1,000 respectively) continued to be the most affected areas. In Suriname, activities were very limited due to civil disturbances.

#### South America (Brazil)

In Brazil, with a total territory of more than 8.5 million km<sup>2</sup>, nearly 7 million km<sup>2</sup> have been malarious areas and 5 million of these occur in the Amazon region. Only 24 million people (15%) of Brazil's total population live in malarious areas. In 1990 the increase in the number of cases came to a halt with 560,000 cases recorded (578,000 in 1989), representing 53% of all cases in the Americas. The proportion of *P. falciparum* infections fell to 45% in 1990 (55% in 1986). Nearly 99% of all cases were detected in the Amazon region. The high incidence in this region is connected with activities in 'frontier areas' of economic development, such as mining by 'garimpeiros' in remote and inaccessible areas, and forest clearing for subsistence agriculture. Rondônia State had 33% of all cases, 10 out of the 23 municípios producing 90% of the cases. In Mato Grosso (25% of all cases), 90% of the cases originated from 10 municípios, with an annual incidence of 129 cases or more per 1,000 population. In Para (20% of all cases), 5 municípios had an annual incidence ranging from 27 to 584 cases per 1,000. Outside the Amazon region there is little malaria transmission. An outbreak in Foz de Iguaçu, Paraná, was contained by remedial measures carried out by the 3 countries concerned (Argentina, Brazil and Paraguay). In 1989, more than 1,000 indigenous cases were detected on the Brazilian side while in 1990 only 200 cases were recorded.

#### South America (southern cone)

In this subregion (Argentina, Chile, Paraguay and Uruguay), malaria is endemic only in Paraguay and in the north of Argentina; this situation is strongly affected by the influx of population from southern Brazil through Paraguay. In Argentina, incidence remained stable with 1,660 cases detected in 1990 (1,620 in 1989) and in Paraguay, vector control measures have brought down the incidence from 5,200 cases in 1989 to 1,700 in 1990.

#### Asia west of India

Endemic malaria is absent from Bahrain, Cyprus, Israel, Jordan, Kuwait, Lebanon, and Qatar. However, an episode of local transmission of *P. vivax* malaria occurred in the Kerak lowlands of Jordan during November-December 1990. The focus was eliminated through prompt and efficient remedial measures.

Among the 538,000 malaria cases reported in this region from countries where malaria is endemic, 317,000 (59%) were recorded in Afghanistan, 80,000 (15%) in Pakistan and 77,000 (14%) in the Islamic Republic of Iran. *P. falciparum* malaria cases are most numerous in Pakistan (43,000) and the Islamic Republic of Iran

(36,000), although the relative prevalence of this species is more important in Yemen (98%), Saudi Arabia (95%), and Oman (95%).

In Afghanistan, activities continued to be very limited because of the civil conflict; 317,000 malaria cases were reported in 1990 compared with 257,000 in 1989 and the portion of blood specimens found positive were 43% and 42%, respectively. *P. falciparum* infections increased from below 510 during 1982-1986 to 3,300 in 1987, 1,600 in 1989 and 2,800 in 1990 (less than 1% of the cases).

In Pakistan, the number of cases reported decreased from 108,000 in 1989 to 80,000 in 1990. Gradually, the participation of the general health services in case detection activities is improving; in Sind and North-West Frontier Provinces, 42% and 47% respectively of all fever case blood specimens have been collected by these services. Whereas the percentage of blood specimens found positive decreased in Punjab, Sind and Baluchistan, it rose sharply in the North-West Frontier Province, from 3.6% to 6.5%. Overall, the proportion of *P. falciparum* infections continued to rise (54% in 1990 compared with 34% in 1987). Within the country, it was 33% in Punjab (36% in 1989), 38% in North-West Frontier Province (32% in 1989), 77% in Sind (74% in 1989) and 77% in Baluchistan (42% in 1989). An important epidemiological feature is the influx of more than 3.5 million Afghan refugees mainly into the North-West Frontier Province. The majority of them are living in camps situated near local villages; the reported incidence of malaria continued to be significantly higher in these camps than in surrounding areas. In 1990, 83,000 malaria cases were detected in these camps, with a slide positivity rate of 20% (range: 4.6 to 31%); 17,000 of the cases (21%) were *P. falciparum* infections.

In the Islamic Republic of Iran, malaria incidence continued to increase with 77,000 cases reported in 1990 compared with 59,000 in 1989 and 53,000 in 1988. Nearly 7,000 cases were imported, mainly from Afghanistan. Few foci exist in the areas north of the Zagros mountain chain, and malaria is not so important in the west and south-west of the southern slopes of the Zagros mountains. However, in the south-eastern part of the country (Hormozgan, Sistan and Baluchistan, and the tropical part of Kerman Provinces), prevalence is high and transmission of malaria has never been interrupted.

In Oman, malaria cases increased from 18,000 in 1989 to 22,000 in 1990 due to heavy rains and extension of irrigation for agriculture. About one-third of the cases were recorded in Dhahira region; 95% of all cases were *P. falciparum* infections although this proportion was only 33% in the Southern region.

In Saudi Arabia, where malaria cases were reduced from 18,000 in 1987 to 65,000 in 1989, heavy and early rains caused a sharp increase to 16,000 cases in 1990. The most affected areas were Gizan (52% of the indigenous cases), the lowlands of Asir (31%) and the Western Region (17%).

In Yemen, malaria cases seem to have increased in recent years. In 1990, 11,000 cases were confirmed and the slide positivity rate was 14%, compared with 4.6% in 1985. The incidence and the rates tend to be higher in the southern governorates.

In the United Arab Emirates, among the 3,500 cases reported in 1990, less than 1% were of local origin, occurring sporadically in rural areas as secondary cases to imported infections. Pakistan, Oman and India were the principal source of the imported cases. In the Syrian Arab Republic, the malaria situation remained stable with 107 cases reported, 68 of local origin (Tatous 45, Al Hasakeh 17, Latakia 3, Damascus, Edlib and Hama, 1 each).

### Middle South Asia

Overall, there was a reduction of nearly 10% in the number of malaria cases reported; from 2.37 million in 1989 to 2.14 million in 1990. However, these figures are provisional and strongly influenced by the fact that more than 80% of all cases were recorded in India. With regard to malaria mortality, the existing systems of death registration probably underestimate the number of deaths from malaria, as only parasitologically confirmed malaria cases are taken into account. Studies in many endemic areas have indicated that although malaria deaths occur in fact more frequently than shown in official records, they are not such an important demographic factor as before the initiation of the malaria eradication campaign. In India, 268 malaria deaths were recorded in 1989 and 222 in 1990. In Bangladesh, it is estimated that 200-800 malaria deaths occur annually. In Nepal, official statistics indicate that such deaths only occur sporadically.

In India, 1.78 million cases were recorded in 1990, representing more than one-third of the total number of cases reported outside Africa. Compared with the 2.02 million cases in 1989, this corresponds to a reduction of 12%. The proportion of *P. falciparum* infections has not varied much during the years 1986-1990, ranging between 35% and 37%. Some 27% (489,000) of the total cases were notified in Gujarat State, where 599,000 cases were recorded in 1989 (30% of the total cases in India). Uttar Pradesh (99,000 cases), Rajasthan (86,000 cases) and Punjab (29,000 cases) also reported a reduction in malaria incidence. However, cases increased from 11,000 in 1989 to 12,000 in 1990 in Delhi. In Tamil Nadu, there were 76,000 malaria cases in 1988 and 90,000 in 1989; rising to 117,000 in 1990 (+ 30%). In Haryana, only 9,200 cases were registered in 1988, but 24,000 were detected in 1989 and 50,000 in 1990.

In Sri Lanka, malaria incidence rose sharply from only 38,500 cases in 1982 (37,000 *P. vivax*, 1,500 *P. falciparum*) to 676,000 in 1987 (493,000 *P. vivax*, 183,000 *P. falciparum*). The regions most affected were: Anuradhapura, Kurunegala, Puttalam and Matale. Most of the *P. falciparum* infections were reported from Kurunegala, Anuradhapura, Hambantota and Puttalam. In 1990, 287,000 cases were recorded compared with 259,000 in 1989. However, the percentage of *P. fal-*

*ciparum* infections decreased from 25% in 1989 to 20% in 1990.

In Bangladesh, incidence continued to rise with 54,000 cases reported in 1990 compared with 51,000 in 1989 and 34,000 in 1988. Almost two-thirds of all cases were *P. falciparum* infections originating mainly in Chittagong Division, near the eastern border of the country. In Nepal, the malaria situation remained stable with about 23,000 cases reported annually during 1988-1990. The incidence of *P. falciparum* infections declined, however, from 7,500 in 1985 to 2,300 in 1989 and 1,500 in 1990. In Bhutan, the incidence of malaria was still high (100 per 1,000 population).

In the Maldives, the last indigenous *P. falciparum* cases occurred in 1976 and indigenous malaria has not been detected since 1984. Only a few imported malaria cases are recorded.

### Eastern Asia and Oceania

Australia, Brunei Darussalam, the Democratic People's Republic of Korea, Hong Kong, Japan, Macao, Mongolia, the Republic of Korea, Singapore, large areas of China and most of Oceania are considered free from malaria. These countries and areas notify only imported cases, although a few introduced cases secondary to imported malaria, occur occasionally in some of them. These foci are promptly eliminated by appropriate remedial measures.

The endemic countries of this region reported some 1.27 million confirmed malaria cases in 1990 compared with 1.38 million in 1989. Three countries reported nearly half of all cases in region: 273,000 in Thailand (21%), 179,000 in Indonesia (14%) and 140,000 in Vietnam (11%).

In Thailand, the number of malaria cases decreased from 349,000 in 1988 to 299,000 cases in 1989 and 273,000 in 1990. However, the proportion of *P. falciparum* malaria rose from 53% to 64% during the same years. The highest incidence continued to be recorded in the border provinces of Trat (bordering Cambodia) and Tak (bordering Myanmar). Malaria cases increased by more than 70% in Trat (recording nearly one quarter of the cases), and also in Tak; both provinces, together with Chanthaburi and Kanchanaburi, registered nearly half of all cases in Thailand. One of the major problems is the increasing frequency of *P. falciparum* strains highly resistant to chloroquine and sulfadoxine/pyrimethamine, and to mefloquine in the border areas of Trat and Tak.

In Indonesia, surveillance activities are carried out only in Java and Bali. After a decline in the number of cases reported, from 32,000 in 1988 to 23,000 in 1989, incidence increased again in 1990, with more than 26,000 cases detected (provisional data). However, the proportion of *P. falciparum* cases continued to decrease, from 46% in 1988 to 44% in 1989 and 29% in 1990. Malaria control activities in the outer islands are limited to areas of socioeconomic importance and include indoor residual insecticide spraying, malariometric surveys and the provision of suppressive treatment to

clinical malaria cases at health centres. About 30% of the blood specimens examined were found positive and 153,000 malaria cases were reported.

In Vietnam, the number of parasitologically confirmed malaria cases did not vary much from 1989 to 1990 when 140,000 cases were recorded, but in the same year 1.9 million clinically diagnosed cases were registered. Between 1987 and 1990, severe or complicated malaria cases increased by 380% in the northern and 175% in the southern provinces. Mortality from malaria rose from 1,070 deaths in 1987 to 3,439 in 1989.

In China, the declining trend of malaria incidence continued, with 117,000 cases reported in 1990 compared with 138,000 cases in 1989. Some 89% of the population live in areas where malaria is absent or has been eliminated, or where its incidence is 0.1 per 1,000 population or less. Malaria incidence dropped in Hainan, Yunnan, Guangxi and Guizhou Provinces/Autonomous Region in South China, whereas there was a slight increase in Guangdong, Fujian and Sichuan Provinces. The number of cases in these provinces totalled 73,000 (62% of all cases). In Middle and East China, malaria declined to some extent in Anhui, Hubei, Henan and Hunan Provinces. A slight increase was recorded in Jiangsu, Jiangxi, Zhejiang and Shanghai Provinces/Municipality. The total number of cases for these areas was 44,000 (38% of all cases). There were only 274 malaria cases in North and Northwest China. Of the total number of 117,000 cases, 87,000 were diagnosed by microscopy and 10% of those were *P. falciparum* infections. Indigenous *P. falciparum* malaria occurred in Hainan, Yunnan, Guangxi and Anhui Provinces/Autonomous Region.

In Cambodia, the Lao People's Democratic Republic, Myanmar, Papua New Guinea and Vanuatu, the malaria situation has not changed significantly during the past few years. In the Solomon Islands, malaria incidence nearly doubled from 65,000 cases in 1989 to 117,000 in 1990 which is the highest level since 1983, corresponding to an annual incidence of 366 cases per 1,000 population. This increase is probably due to a discontinuation of antimalaria activities in most provinces and to the general shortage of resources.

In the Philippines, only 3 of the 75 provinces are non-malarious, but some municipalities within the endemic areas are considered free from malaria when no indigenous cases have been recorded during 3 consecutive years. The numbers of cases reported were 155,000 in 1988, 116,000 in 1989 and 86,000 in 1990. In Malaysia, malaria cases decreased from 65,000 in 1989 to 51,000 in 1990. In the Peninsula, some 90% of the population live in areas freed from malaria and the disease is only endemic in the hilly and less developed areas of the centre, the north and north-eastern part of the Peninsula. In 1990, 14,000 cases were notified, half of them among the security forces, the indigenous Orang Asli and workers in the land development schemes. In Sarawak, transmission is limited to the border areas; in 1990, the number of cases reported was 1,200. In Sabah, 35,000 cases were reported in 1990, compared with 48,000 in 1989.

**Europe, including Turkey and the former USSR**

Malaria continues to be endemic (*P. vivax* only) in the south-east and a few other foci in Turkey and in small foci in Azerbaijan and Tajikistan (former USSR). In Turkey, the number of malaria cases reported has declined continuously, from 67,000 in 1983 to 87,000 in 1990. The great majority of the cases are from Adana and south-east Anatolia. Few small foci continue to exist in other provinces. Some 8,000 imported cases of malaria were notified in Europe, but it is thought that there is under-reporting and the actual number of imported cases is considerably higher.

**CDI Editorial Comment**

The number of cases of malaria reported in Australia each year has risen markedly over the last two decades. In 1990, there were 813 cases reported, and in 1991, there were 939 cases (Australian Malaria Register, unpublished data). Although a small number of these cases are acquired in the Torres Strait each year, the vast majority of the cases are imported from the large areas of the world where malaria transmission occurs outside Australia.

The continuing increase in the number of cases reported in Australia highlights the fact that malaria chemoprophylaxis and/or anti-mosquito measures can be recommended for Australians travelling to the malarious regions of the world. Whether or not chemoprophylaxis is required, and what type of drug is to be used is a complex issue. It depends not only on the traveller's destination (and therefore on the species of parasites present and their resistance to anti-malarial drugs), but also on the length of stay, type of accommodation, age of the patient, and whether or not a female traveller is pregnant or lactating.

Detailed information on malaria risks and prophylaxis is available in *Health Information for International Travel*,

published by the Department of Health, Housing and Community Services in 1991. This book, which also covers other aspects of preventative medicine for travellers, 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) 89 7152  
(NT Government Information Centre)
- Hobart (002) 23 7151
- Melbourne (03) 663 3010
- Parramatta (02) 893 8466
- Perth (09) 322 4737
- Sydney (02) 299 6737
- Townsville (077) 21 5212  
(008) 80 5896.

A 24 hour on-line telephone order service is available for callers outside these areas on 008 02 0049.

Similar information is also available by phoning the International Travel Health Info-Line on 06 269 7815. This service is a computer based telephone message system which includes regularly updated information on malaria and other travel health topics.

The Info-Line is available 24 hours a day, 7 days a week, from any tone-dialling, push button telephone. Malaria information is accessed in this system by pressing 1 (to hear the main menu) and then 3 (to select malaria information).

## AUSTRALIAN HIV SURVEILLANCE REPORT, VOLUME 8 NUMBER 6

The National Centre in HIV Epidemiology and Clinical Research reports that as of 30 May 1992, a total of 16,154 diagnoses of HIV infection and 3,289 cases of AIDS had been reported in Australia. For the period 1 May to 30 May 1992, 5 new cases of AIDS and 36 new diagnoses of HIV infection were reported.

The following tables provide more detailed information on a State/Territory basis (Tables 1 and 2).

The cumulative figures are subject to retrospective revision, so there may be discrepancies between the number of new cases for the reporting month and the increment in the cumulative figure from the previous report.

**Table 1. New diagnoses of AIDS and deaths from AIDS occurring during the period 1 May to 30 May 1992, and cumulative to 30 May 1992, by sex and State/Territory in which diagnosis was made\***

State/ Territory	May 1992		Cumulative to 30 May 1992					
	Total Cases <sup>1</sup>	Total Deaths <sup>1</sup>	Cases			Deaths		
			Male	Female	Total	Male	Female	Total
ACT	0	0	42	2	44	28	1	29
NSW <sup>2</sup>	4	13	1918	61	1981	1273	38	1312
NT	1	0	11	0	11	5	0	5
Qld	0	1	252	9	261	166	7	173
SA	0	2	124	7	131	71	2	73
Tas	0	2	18	1	19	13	1	14
Vic <sup>3</sup>	0	4	664	14	679	467	9	476
WA	0	0	155	8	163	95	3	98
<b>Total</b>	<b>5</b>	<b>22</b>	<b>3184</b>	<b>102</b>	<b>3289</b>	<b>2118</b>	<b>61</b>	<b>2180</b>

1. All males unless otherwise specified.

2. Cumulative cases of AIDS for NSW includes 2 persons whose sex was reported as transsexual. One person whose sex was reported as transsexual died, included in Total Deaths.

**Table 2. Number of new diagnoses of HIV infection in the period 1 May to 30 May 1992 and cumulative diagnoses since the introduction of HIV antibody testing to 30 May 1992, by sex and State/Territory**

State/ Territory	May 1992	Cumulative to 30 May 1992			
	Total <sup>1</sup>	Male	Female	Sex not reported	Total <sup>6</sup>
ACT	0	130	7	0	137
NSW <sup>2</sup>	-	8395	432	2022	10853
NT	1	59	6	0	65
Qld <sup>3</sup>	15	1100	55	0	1159
SA	0	459	32	0	491
Tas <sup>2</sup>	-	60	3	0	63
Vic <sup>4</sup>	19	2614	102	67	2790
WA	1	562	33	0	596
<b>Total<sup>5</sup></b>	<b>36</b>	<b>13379</b>	<b>670</b>	<b>2089</b>	<b>16154</b>

1. All males unless otherwise specified.

2. Counts for New South Wales and Tasmania were unavailable for the period.

3. One new diagnosis in Queensland in May was a female.

4. One new diagnosis in Victoria in May was a female.

5. Two new diagnoses in May were females.

6. Sixteen persons (4 New South Wales, 4 Queensland, 7 Victoria and 1 Western Australia) whose sex was reported as transsexual are included in the total.

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## OVERSEAS BRIEFS

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In the last two weeks, the following information has been supplied by the World Health Organization.

### Cholera Update

In Tuvalu, the areas of Nanumea Island and Nuitao Island have been declared cholera infected.

In South America, Jalapa Department of Guatemala, San Luis Potosi and Tlaxcala States of Mexico and the

Nueva Esparta State of Venezuela have recently been declared infected.

Cases for May and June have been reported from Angola, Bolivia (9,203 cases and 100 deaths for the period 15 April to 27 June), Brazil, Ecuador, El Salvador, French Guiana, Ghana, Guatemala, Honduras, India, Kenya, Mexico, Mozambique, Nicaragua, Panama, Peru (10,317 cases and 26 deaths for the period 6 to 30 May), Rwanda, Tuvalu, Venezuela and Zaire.

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## CDI NOTICES TO READERS

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### CDI Bulletin Board System (CDI-BBS)

Parts of *Communicable Diseases Intelligence* and other regularly updated information on communicable diseases are now available through the *Communicable Diseases Intelligence* Bulletin Board System. This computer based system has been set up to make the *Communicable Diseases Intelligence's* data more freely and quickly available to those who require timely updates on communicable disease activity in Australia and around the world.

The phone number for the system is 06 281 6695, or from outside Australia, the appropriate 'international access code', followed by 61 6 281 6695. To access the system, a computer, a modem and communications software (for example NetComm, Telix or Procomm) are required. The recommended configuration is service type BBSANSI, speed 1200, 2400 or 9600 BAUD, data size - 8, parity - none, stopbits - 1. It will also support 'error correction'.

Follow these steps to gain access to the system:

1. Set up a dial-up service in your own communications software.
2. Dial the CDI-BBS, and note the ring and connection sounds.
3. Answer the 'Logon' questions as either a new or existing user. Most users will select 'G' for graphics screen when asked which screen configuration is required.
4. At the BBS Menu, select 'B' for Bulletins.
5. Select the required option from the Bulletin Menu, for example '1' for the 'Latest CDI'.
6. To print the bulletin, before selecting the bulletin, select 'Print Capture' from your own software.

(Remember to disable the 'Print Capture' option afterwards.)

7. To download a bulletin to a file, before selecting the bulletin, select 'File Text' from your own software. (Remember to disable the 'File Text' option afterwards.)
8. For Help, select '?' in any section.
9. To 'Logoff', select 'G' for 'Goodbye'. Answer 'Y' to disconnect, and 'N' to 'Leave Message' questions, or 'Y' if you want to leave a message.

Bulletins currently available on the system include the text for the Overseas Briefs, CDI Notices to Readers and Communicable Diseases Surveillance from the latest *Communicable Diseases Intelligence*, and the latest tables of Laboratory Reports and Notifiable Diseases.

Future contents will include other recent data on communicable diseases in Australia, and information on travel health, including recommendations for malaria chemoprophylaxis.

Further information about the system can be obtained from David Evans, Systems Manager, on 06 289 7705.

### Correction - *Haemophilus influenzae* type b Vaccines

A correction is required for the article *The New Haemophilus influenzae type b Vaccines* published in *CDI* 1992;16:186-188.

Lederle Laboratories, the manufacturers of the HbOC vaccine (non-toxic mutant diphtheria toxin carrier protein), have advised that the proposed schedule for the vaccine is 2, 4, 6 and 18 months, not 2, 4, 6, and 15 months as previously published.

## COMMUNICABLE DISEASES SURVEILLANCE

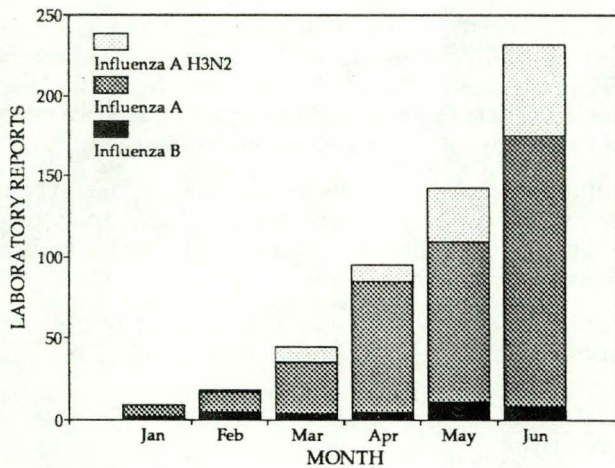
### Laboratory Reporting Schemes

There were 1,058 reports received in the *CDI* 'Viruses' Reporting Scheme this fortnight (Tables 5, 6 and 7). Reports from some laboratories were not able to be included because of earlier deadlines which were required this fortnight.

- There were 68 reports of influenza. Forty-six of these were influenza A, untyped (14 isolations, 6 antigen detections and 31 serological detections), and 18 were identified as H3N2 (5 isolations, 18 antigen detections).

There has now been a total of 552 reports of influenza this year (Figure 1): 400 untyped influenza A, 115 H3N2, 1 H1N1 and 36 influenza B. Reports had increased by June for all States and the ACT, except for Queensland (Figures 2 and 3). The decline in the number of reports from South Australia probably reflects the fact that reports from that State were not able to be included this fortnight.

Figure 1. Influenza laboratory reports, 1992, by type and month of specimen collection



Seventeen reports of influenza A (untyped) this fortnight were in persons over the age of 65 years, bringing the total for the year, for untyped and H3N2, to 102.

Cardiac symptoms were reported for 2 patients, a 77 year old female, investigated for endocarditis and diarrhoea, and a 67 year old male.

- Four reports of influenza B was also received this fortnight, all from Western Australia.

Correction - Please note that in the last issue of *CDI*, the numbers for influenza A untyped and influenza A H3N2 were inadvertently transposed in Table 8 on page 308. Thus, there were 114 reports

Figure 2. Influenza A H3N2 and untyped laboratory reports, South Australia, New South Wales and Queensland, 1992, by month of specimen collection

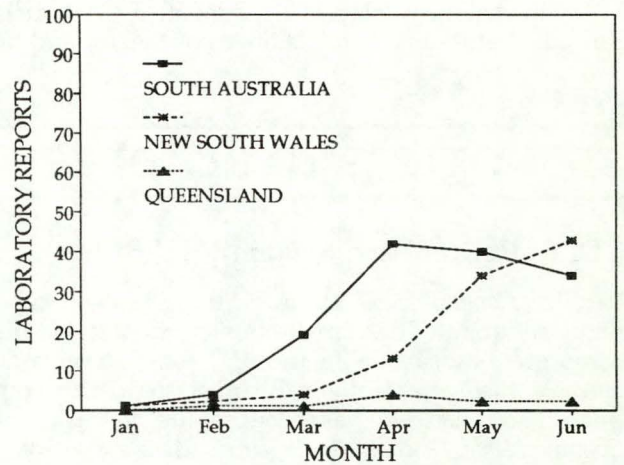
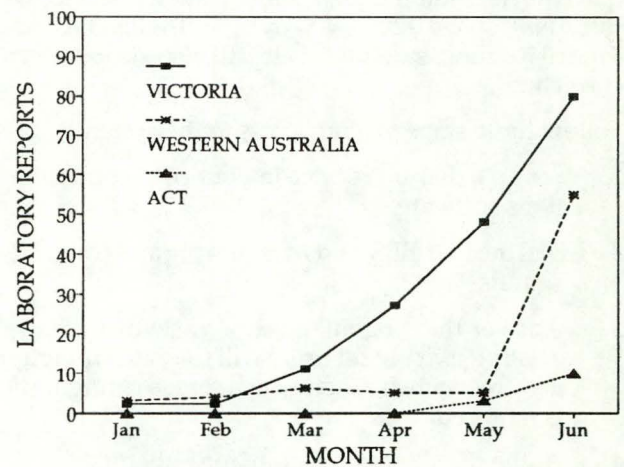


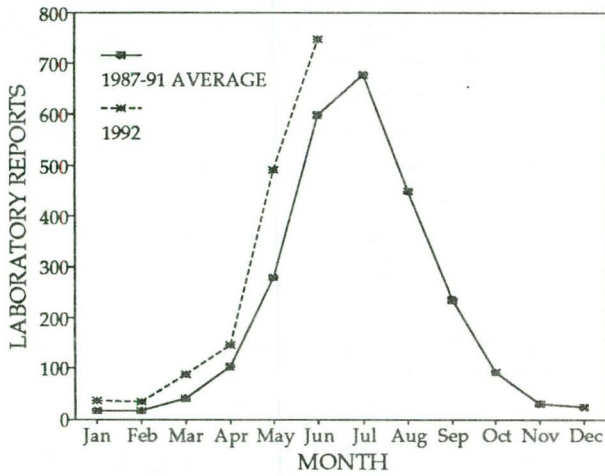
Figure 3. Influenza A H3N2 and untyped laboratory reports, Victoria, Western Australia and ACT, 1992, by type and month of specimen collection



of untyped influenza A, and 40 reports of influenza A H3N2 last fortnight.

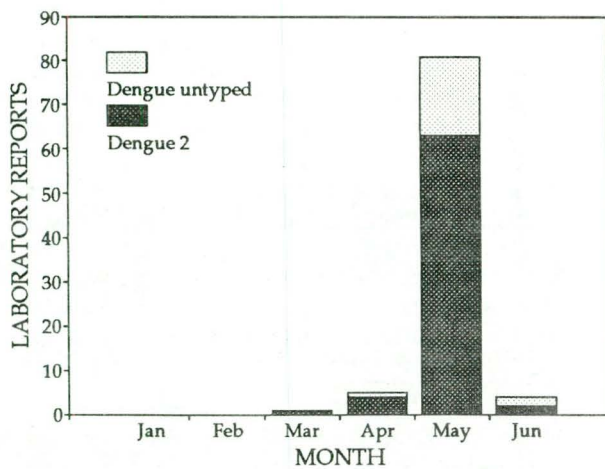
- Respiratory syncytial virus was reported for a total of 273 patients this fortnight. There continues to be a larger number of reports of this virus than the average for recent years (Figure 4).
- There were a further 38 reports of dengue 2 this fortnight, and 15 of untyped dengue, most associ-

**Figure 4. Respiratory syncytial virus laboratory reports, 1992 and 1987-91 average, by month of specimen collection**



ated with the outbreak in the Townsville area. There has now been a total of 70 reports of dengue 2 and 21 reports of untyped dengue from Townsville (Figure 5). Most reports have had specimen collection dates in May, but as for the notified cases from Townsville (discussed below), there were also a few cases in June. Symptoms reported have been severe fever (3 patients), respiratory tract disease (5 patients), skin disease (7 patients), joint disease (7 patients), general malaise (14 patients), gastrointestinal disease (1 patient) and glandular disease (2 patients).

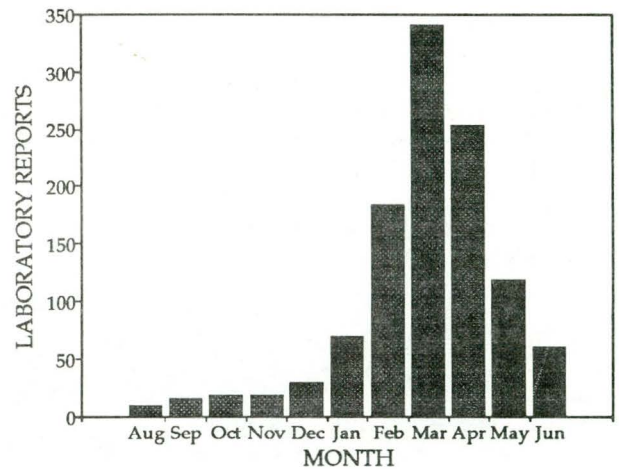
**Figure 5. Dengue 2 and untyped dengue laboratory reports from Townsville, 1992, by month of specimen collection**



- Ross River virus infection was reported for 41 patients this period, and specimen collection dates

for most were in June. Locations recorded were Albany, Carnarvon, Leedaville, Nhulunbuy (February and April specimen collection dates), Brisbane, Bundaberg, Cairns, Mackay, Maryborough, Rockhampton, Sunshine Coast, Townsville and Toowoomba. Ross River virus reports peaked in March for this season (Figure 6), and are in very good agreement with Ross River virus infection notifications, as discussed below.

**Figure 6. Ross River virus laboratory reports, August 1991 to June 1992, by specimen collection date**



- Nine reports of echovirus type 6 infection were received this fortnight. All were from Western Australia and all but 1 had meningitis as the reported syndrome and/or CSF as the specimen from which the virus was isolated. The age range of the patients was 2 months to 38 years.
- Echovirus type 9 was reported for 8 patients, 4 from Western Australia and 4 from New South Wales. Meningitis and/or CSF isolates were reported for 5 of the patients, and respiratory failure and suspected sepsis was reported for a 2 month old male. The age range was 1 month to 26 years.
- There were 27 reports of cytomegalovirus infection. They included a 1 year old male who had epiglottitis as the reported symptom, but who was *Haemophilus*-negative. The virus was isolated from a nasopharyngeal specimen.
- Hepatitis C was reported for 65 patients. A history of injecting drug use was reported for 13 patients, and 1 patient was a haemophiliac.
- There were 6 reports of Q fever, all from New South Wales. Locations were the Kempsey, Windsor, Box Hill, Orange and Fairfield areas.
- A report of *Bordetella pertussis* infection has been included in the 'viruses' laboratory reports this fortnight. Reports of this organism and other bacteria diagnosed by serology or antigen detection

**Table 1. Australian Sentinel Practice Research Network, Weeks 28 and 29 1992**

Condition	Week 28, to 12 July 1992		Week 29, to 19 July 1992	
	Reports	Rate per 1000 encounters	Reports	Rate per 1000 encounters
Influenza	93	14.27	97	17.57
Measles	0	0	0	0
Mumps	1	0.15	0	0
Rubella	4	0.61	3	0.54
Pertussis	0	0	0	0
Genital herpes	3	0.46	8	1.45
Gastroenteritis	64	9.82	49	8.87

will be incorporated into this laboratory reporting scheme, rather than the 'Pathogens' scheme, from now on. The organism was detected by immunofluorescence in a nasopharyngeal specimen from a 1 month old male patient who also had a respiratory syncytial virus infection.

### Australian Sentinel Practice Research Network

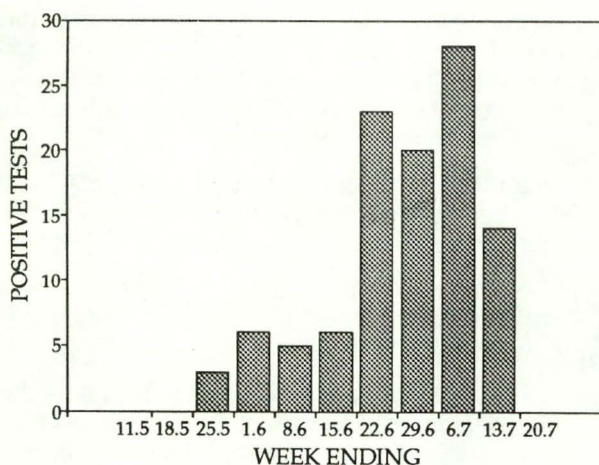
The Australian Sentinel Practice Research Network collected data from 6,516 patient encounters in Week 28 and 5,522 patient encounters in Week 29 (Table 1). Influenza continues to be reported at a rate of between 14 and 19 reports per 1,000 encounters, as for the last 4 weeks. Gastroenteritis was the other commonly reported condition.

### Rotavirus in Cairns

The number of stool samples positive for rotavirus at Cairns Base Hospital has continued to be higher than usual since the middle of June. A total of 105 cases had been identified by 19 July (Figure 7).

(Tropical Centre for Disease Control, Cairns)

**Figure 7. Positive rotavirus tests, Cairns Base Hospital, 11 May to 19 July, by week**



Rotavirus laboratory reports are currently being received in the 'Viruses' reporting scheme at about the average rate for this time of year.

### Australian Encephalitis: Sentinel Chicken Surveillance Programme - Serological Results for May and June 1992

Sentinel chicken serology was undertaken for 24 flocks in the Kimberley and Pilbara regions of Western Australia. Two chickens from Marble Bar seroconverted to flavivirus other than Murray Valley encephalitis virus in May 1992. This is a result of heavy rainfall in the Pilbara region of Western Australia during March and April this year.

Information on the location of sentinel chicken flocks in Western Australia was presented in *CDI* 1992;16:55-57.

### National Notifiable Diseases Reports, 28 June to 11 July 1992

For the period 28 June to 11 July 1992, 1,889 reports were received. The comments below apply to 1,484 reports, as 471 reports from Western Australia were not received in a format suitable for analysis.

- **Ross River virus** infection was notified on 43 occasions, 36 of these cases were from coastal Queensland, 22 were males and 21 females. The incidence of Ross River virus is waning after a year of high activity. To date 4,603 notifications of Ross River virus infection have been received where the date of onset of symptoms was recorded as being in 1992, 2,002 were males, 2,290 were females and for 311 sex was not recorded. All age groups have been affected. Australia-wide, the peak incidence of notified cases had onset dates in March (Figure 8). These data correlate well with the data from the 'Viruses' Reporting Scheme (discussed above).
- There were 51 notifications of **dengue** this period, all from Townsville and surrounding districts. Sixteen were males and 37 females; cases were recorded from a wide range of age groups. To date 148 notifications of dengue have been received, 53 males, 94 females and 1 of sex unknown, 79% were between the ages of 10 and 49. Of these 148 notifications, 127 have been from Townsville and

Figure 8. Ross River virus infection notifications 1992, by month of onset of symptoms

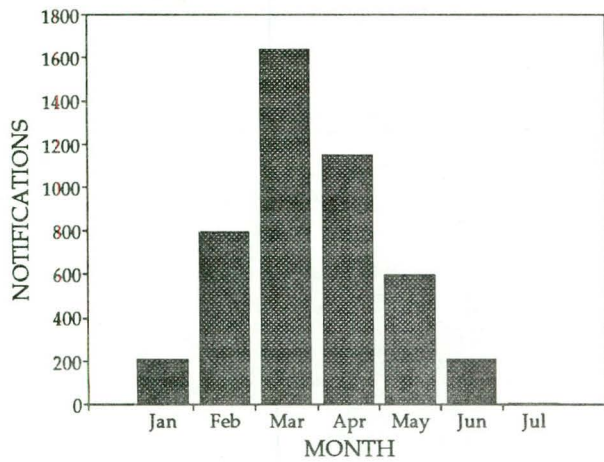
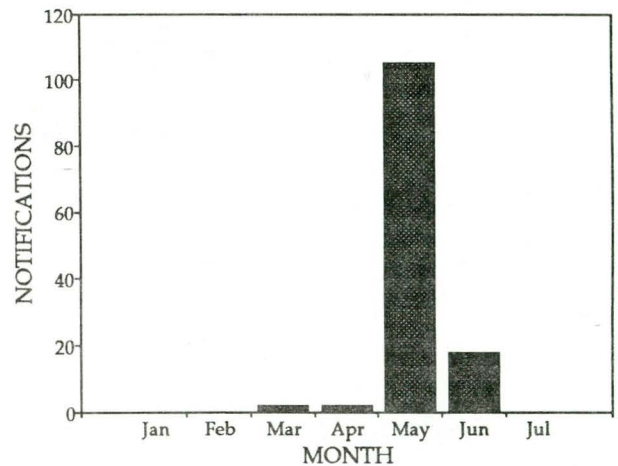
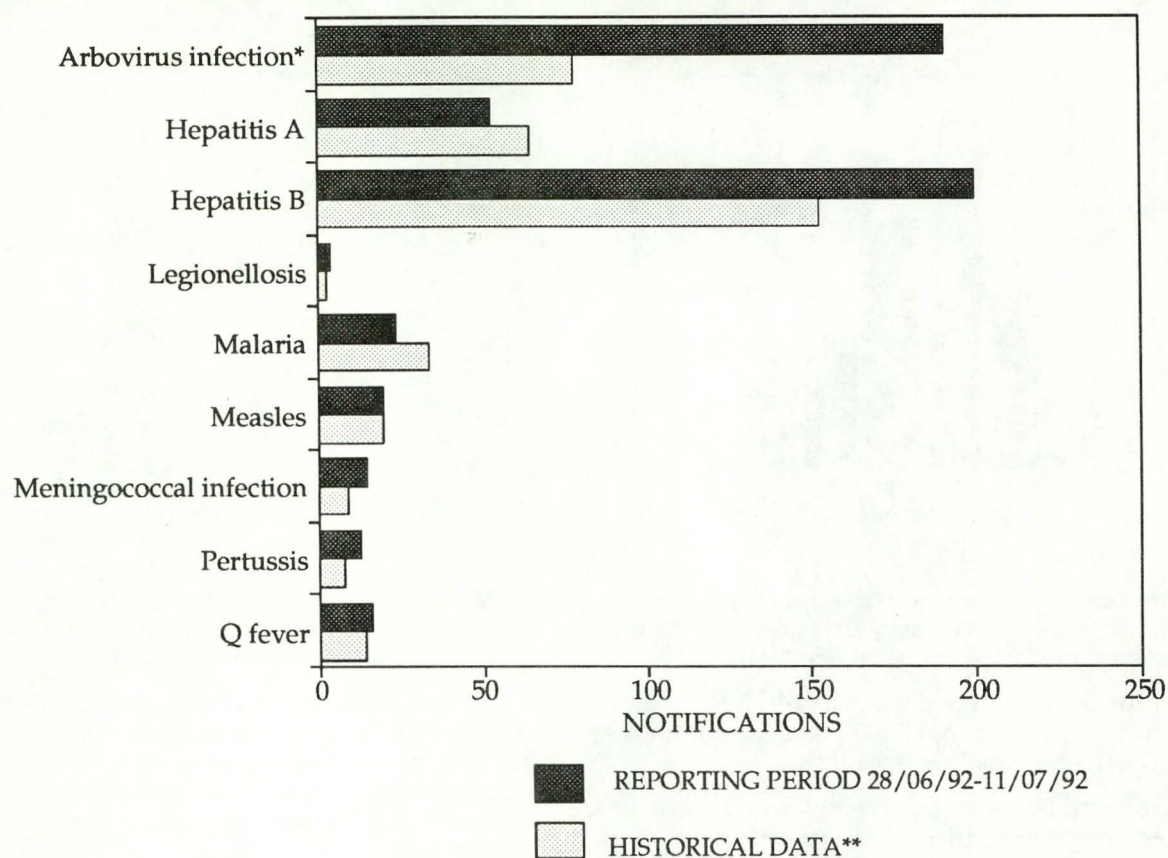


Figure 9. Dengue notifications, Townsville area, 1992, by month of onset of symptoms



surrounds. There was a marked increase in incidence in this area from May 1992 after a low level of activity in March and April (Figure 9).

- **Brucellosis** was notified in 3 patients, 2 males and a female. One case, aged 5-9 years was from the Melbourne metropolitan area.
- There were 30 cases of *Haemophilus influenzae* type b infection notified, 17 males and 13 females. Eleven were aged one or younger and 28 were aged less than 5 years. There were five clusters of 2 cases each occurring either on the same day or within 7 days from the same or contiguous postcode areas in three States.
- A single case of **hydatid infection** was notified, in a female aged 0-4 years.
- **Gonococcal infection** was notified in 96 patients. Of these, 16 were in patients under 19 years, 2 were aged 10-14 years and one was 0-4 years of age.
- There were 6 notifications of **leptospirosis** received, all from rural Queensland. Five were males, one was female.
- **Meningococcal disease** was notified in 13 patients, 6 males and 7 females. Two of these cases occurred within 3 days in the same postcode area.
- There were 17 notifications of **measles**, 5 males and 12 females. Sixteen cases were one year of age or older and the episode reported in South Australian country town in the last issue (*CDI* 1992;14:303) is continuing, but at a reduced incidence.
- There were 10 notifications of **pertussis**, 2 were age 3 years and the rest more than 7 years. Two cases were notified within 3 days from a single postcode area.
- There were 29 cases of **rubella** notified. Of these, 28 cases were over the age of one year and 9 were in females aged between 15 and 44 years. There were two apparent clusters occurring within 2 and 7 days in the same postcode areas.

**Figure 10. Selected National Notifiable Diseases Reports, 28 June to 11 July 1992**

\* Includes Ross River virus and dengue.

\*\* The Historical data are the averages of the number of notifications in 6 previous 2-week reporting periods: the corresponding periods of the last 2 years and the periods immediately preceding and following those.

**Table 2. Diseases preventable by vaccines recommended by the NHMRC for routine childhood immunisation for the reporting period 28 June to 11 July 1992**

DISEASES	ACT	NSW	NT	Qld	SA	Tas	Vic	WA	TOTALS FOR AUSTRALIA <sup>1</sup>			
									This Period 1992	This Period 1991	Year to Date 1992	Year to Date 1991
Diphtheria	0	0	0	0	0	0	0	0	0	0	8	5
Measles	0	4	1	7	3	0	2	3	20	45	459	644
Mumps	0	0	NN	NN	NN	NN	0	NN	0	NN	13	NN
Pertussis	0	2	0	3	1	0	4	3	13	3	225	203
Poliomyelitis	0	0	0	0	0	0	0	0	0	0	0	0
Rubella <sup>2</sup>	0	0	0	7	4	0	18	0	29	22	241	228
Tetanus	0	0	0	NN	0	0	0	1	1	0	7	5

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

2. NT, Tas, WA: CRS only; ACT, NSW, Qld: rubella only; SA, Vic: rubella and CRS  
NN Not Notifiable.

**Table 3. Other Notifiable Diseases<sup>1</sup>, for the reporting period 28 June to 11 July 1992**

DISEASES	ACT	NSW	NT	Qld	SA	Tas	Vic	WA	TOTALS FOR AUSTRALIA <sup>2</sup>			
									This Period 1992	This Period 1991	Year to Date 1992	Year to Date 1991
Arbovirus infection (NEC) <sup>3</sup>	0	0	NN	6	0	0	0	0	6	3	234	163
Ross River virus infection	0	1	1	36	-	NN	0	94	132	53	4797	3172
Dengue	0	0	0	53	-	NN	0	NN	53	0	150	40
Campylobacteriosis <sup>4</sup>	0	0	10	82	90	13	56	87	338	411	4271	4115
Chlamydial infection (NEC)	2	2	26	145	0	13	45	0	231	136	3187	2153
Donovanosis	0	NN	1	0	NN	NN	0	6	7	2	44	35
Gonococcal infection <sup>5</sup>	0	2	27	29	0	0	16	109	183	88	1577	1258
Haemophilus influenzae type b <sup>6</sup>	0	11	NN	7	5	0	7	NN	30	21	254	248
Hepatitis A	0	11	5	14	3	4	11	5	53	108	1068	768
Hepatitis B	2	23	11	54	2	3	85	20	200	165	3189	1831
Hepatitis C	2	73	2	69	NN	5	30	NN	181	170	4123	1690
Hepatitis (NEC)	0	0	0	0	2	0	0	NN	2	33	36	224
HIV infection <sup>7</sup>	3	0	0	0	2	0	0	6	11	3	138	17
Legionellosis	0	0	0	0	0	0	0	4	4	4	100	63
Leptospirosis	0	0	0	6	0	0	0	0	6	7	56	81
Listeriosis	0	0	NN	0	NN	0	0	0	0	3	19	20
Malaria	0	1	0	16	0	0	6	1	24	10	393	421
Meningococcal infection	0	2	0	3	1	1	6	2	15	12	109	127
Ornithosis	0	NN	0	0	1	0	1	1	3	11	48	57
Q fever	0	4	0	12	0	0	0	0	16	23	230	365
Salmonellosis (NEC)	0	4	7	34	4	6	25	67	147	219	2973	3439
Shigellosis <sup>4</sup>	0	0	3	4	0	0	4	19	30	39	346	534
Syphilis	0	10	31	25	0	0	0	38	104	65	1288	1051
Tuberculosis	0	12	0	10	2	1	0	4	29	30	371	237
Typhoid <sup>8</sup>	0	0	0	0	0	0	0	0	0	0	30	38
Yersiniosis <sup>4</sup>	0	0	0	10	3	0	2	0	15	21	373	336

1. For rarely notified diseases, see Table 4.
  2. Totals comprise data from all States and Territories. Cumulative figures are subject to retrospective revision so there may be discrepancies between the number of notifications and the increment in the cumulative figure from the previous period.
  3. NSW and SA: includes Ross River virus and dengue.
  4. NSW: only as 'foodborne disease' or 'gastroenteritis in an institution'.
  5. NT, Qld, SA and Vic: includes gonococcal neonatal ophthalmia.
  6. SA: only as 'bacterial meningitis'; meningococcal infection is separately notified; Tas: only as 'non-meningococcal meningitis'; Vic: eppiglottitis and meningitis only.
  7. More complete data on new diagnoses of HIV infections are presented in the monthly *Australian HIV Surveillance Report*.
  8. NSW and Vic: includes paratyphoid.
- NN Not Notifiable.  
 NEC Not Elsewhere Classified.  
 - Elsewhere Classified.

**Table. Rarely Notified Diseases<sup>1</sup> for the reporting period 28 June to 11 July 1992**

DISEASES	Total this period	Reporting States or Territories	Total for 1992 to Date
Botulism			0
Brucellosis	3	Qld (2), Vic (1)	9
Cholera			2
Chancroid	1	Qld	3
Hydatid infection	1	WA	21
Leprosy			7
Lymphogranuloma venereum			2
Plague			0
Rabies			0
Yellow fever			0
Other viral haemorrhagic fevers			0

1. Fewer than 50 cases of each of these diseases were notified each year during the period 1986 to 1991.

**Table 5. Laboratory reports by State or Territory of reporting laboratory for the reporting period 1 July to 14 July 1992, historical data<sup>1</sup>, and total reports for the year**

	STATE OR TERRITORY OF REPORTING LABORATORY						Total this fortnight	Historical data <sup>1</sup>	Total reported this year
	ACT	NSW	Qld	Tas	Vic	WA			
<b>MEASLES, MUMPS, RUBELLA</b>									
Measles virus			1				1	4.8	84
Rubella virus					1	1	2	4.8	97
<b>HEPATITIS VIRUSES</b>									
Hepatitis A virus		5				1	6	9.8	168
Hepatitis B virus	2	19	21	1		10	53	92.3	1,158
Hepatitis C virus	1	1		16		47	65	54.0	1,095
<b>ARBOVIRUSES</b>									
Ross River virus			19			22	41	21.5	1,073
Barmah Forest virus			16			4	20	.0	152
Dengue type 1			2				2	.0	7
Dengue type 2			38				38	.0	73
Dengue not typed			15				15	1.0	52
<b>ADENOVIRUSES</b>									
Adenovirus type 5		1					1	1.0	12
Adenovirus not typed/pending		10	5		9	3	27	35.3	500
<b>HERPES VIRUSES</b>									
Herpes simplex virus type 1		11	17		2	13	43	112.3	1,841
Herpes simplex virus type 2		14	22	1		35	72	146.3	2,223
Herpes simplex not typed/pending	3	26					29	31.0	474
Cytomegalovirus		7	14		4	2	27	64.5	1,042
Varicella-zoster virus		5	2			5	12	16.3	346
Epstein-Barr virus		8	5			5	18	36.0	823
<b>OTHER DNA VIRUSES</b>									
Molluscum contagiosum						1	1	.5	12
<b>PICORNA VIRUS FAMILY</b>									
Echovirus type 6						9	9	.7	68
Echovirus type 8		1					1	.0	2
Echovirus type 9		4				4	8	.5	128
Echovirus type 22		2					2	1.3	5
Poliovirus type 1 (uncharacterised)		1					1	3.2	31
Poliovirus type 2 (uncharacterised)		2					2	2.8	26
Poliovirus type 3 (uncharacterised)		2					2	2.0	16
Rhinovirus (all types)		6	1		15		22	24.0	365
Enterovirus not typed/pending		3	45		4	1	53	31.0	536
<b>ORTHO/PARAMYXOVIRUSES</b>									
Influenza A virus	7	16	2			21	46	1.2	413
Influenza A virus H3N2		5			13		18	.3	115
Influenza B virus						4	4	6.7	59
Parainfluenza virus type 1		2			1		3	11.3	244
Parainfluenza virus type 2			2		1		3	7.0	49
Parainfluenza virus type 3		2	3		1		6	15.5	247
Parainfluenza virus typing pending	2				2		4	4.5	74
Respiratory syncytial virus	7	91	74	5	92	4	273	247.2	1,718
<b>OTHER RNA VIRUSES</b>									
Rotavirus		18		1	15	3	37	96.5	576
Calici virus		1					1	1.2	13
Coronavirus		1					1	.5	18

**Table 5. Laboratory reports by State or Territory of reporting laboratory for the reporting period 1 July to 14 July 1992, historical data<sup>1</sup>, and total reports for the year, continued**

	STATE OR TERRITORY OF REPORTING LABORATORY						Total this fortnight	Historical data <sup>1</sup>	Total reported this year
	ACT	NSW	Qld	Tas	Vic	WA			
Small virus (like) particle		1					1	.5	34
OTHER									
<i>Chlamydia trachomatis</i> - A-K				1			1	1.3	3
<i>Chlamydia trachomatis</i> not typed	2	16	1	2	7	23	51	96.7	1,452
<i>Mycoplasma pneumoniae</i>	1	23	1		2	1	28	9.0	404
<i>Coxiella burnetii</i> (Q fever)		6					6	6.2	134
<i>Rickettsia</i> - Spotted fever group					1		1	.0	10
<i>Bordetella pertussis</i>		1					1	.0	1
<b>TOTAL</b>	<b>25</b>	<b>311</b>	<b>306</b>	<b>27</b>	<b>170</b>	<b>219</b>	<b>1,058</b>	<b>1,202.7</b>	<b>17,973</b>

1. The historical data are the averages of the numbers of reports in 6 previous 2 week reporting periods: the corresponding periods of the last 2 years and the periods immediately preceding and following those.

**Table 6. Laboratory reports by clinical information for the reporting period 1 July to 14 July 1992**

	Encephalitis	Meningitis	Other CNS	Congenital	Respiratory	Gastrointestinal	Hepatic	Skin	Eye	Muscle/joint	Genital	Other/unknown	Total
<b>MEASLES, MUMPS, RUBELLA</b>													
Measles virus					1								1
Rubella virus								1				1	2
<b>HEPATITIS VIRUSES</b>													
Hepatitis A virus							5					1	6
Hepatitis B virus							27					26	53
Hepatitis C virus							12					53	65
<b>ARBOVIRUSES</b>													
Ross River virus								4		18		19	41
Barmah Forest virus										6		14	20
Dengue type 1												2	2
Dengue type 2					4			6		1		27	38
Dengue not typed								1		3		11	15
<b>ADENOVIRUSES</b>													
Adenovirus type 5												1	1
Adenovirus not typed/pending		1			10	10			4			2	27
<b>HERPES VIRUSES</b>													
Herpes simplex virus type 1					3			25	1		12	2	43
Herpes simplex virus type 2								34			37	1	72
Herpes simplex not typed/pending					4			9			5	11	29
Cytomegalovirus		1		1	11		1			1	1	11	27
Varicella-zoster virus	3							7				2	12
Epstein-Barr virus					3		1					14	18
<b>OTHER DNA VIRUSES</b>													
Molluscum contagiosum								1					1
<b>PICORNA VIRUS FAMILY</b>													
Echovirus type 6		6				1						2	9

Table 6. Laboratory reports by clinical information for the reporting period 1 July to 14 July 1992, continued

	Encephalitis	Meningitis	Other CNS	Congenital	Respiratory	Gastrointestinal	Hepatic	Skin	Eye	Muscle/joint	Genital	Other/unknown	Total
Echovirus type 8					1								1
Echovirus type 9		5			1			1				1	8
Echovirus type 22						2							2
Poliovirus type 1 (uncharacterised)												1	1
Poliovirus type 2 (uncharacterised)						1						1	2
Poliovirus type 3 (uncharacterised)						1						1	2
Rhinovirus (all types)					21							1	22
Enterovirus not typed/pending		1	4		32	5		3				8	53
ORTHO/PARAMYXOVIRUSES													
Influenza A virus					34							12	46
Influenza A virus H3N2					16							2	18
Influenza B virus					3							1	4
Parainfluenza virus type 1					3								3
Parainfluenza virus type 2					3								3
Parainfluenza virus type 3					6								6
Parainfluenza virus typing pending					4								4
Respiratory syncytial virus					262			1				10	273
OTHER RNA VIRUSES													
Rotavirus						36						1	37
Calici virus						1							1
Coronavirus						1							1
Small virus (like) particle						1							1
OTHER													
<i>Chlamydia trachomatis</i> - A-K											1		1
<i>Chlamydia trachomatis</i> not typed						1			2		45	3	51
<i>Mycoplasma pneumoniae</i>					19			2				7	28
<i>Coxiella burnetii</i> (Q fever)					1							5	6
<i>Rickettsia</i> - Spotted fever group								1					1
<i>Bordetella pertussis</i>					1								1
TOTAL	3	14	4	1	443	60	46	96	7	29	101	254	1058

Table 7. Laboratory reports by contributing laboratories for the reporting period 1 July to 14 July 1992

STATE	LABORATORY	REPORTS
Australian Capital Territory	Woden Valley Hospital, Canberra	25
New South Wales	Institute of Clinical Pathology & Medical Research, Westmead	223
	Prince Henry/Prince of Wales Hospitals, Sydney	2
	Royal Alexandra Hospital for Children, Camperdown	46
	South West Area Pathology Service, Liverpool	40
Queensland	State Health Laboratory, Brisbane	306
Tasmania	Royal Hobart Hospital, Hobart	27
Victoria	Fairfield Hospital, Melbourne	1
	Microbiological Diagnostic Unit, University of Melbourne	7
	Royal Children's Hospital, Melbourne	162
Western Australia	State Health Laboratory Services, Perth	219
TOTAL		1058