

COMMUNICABLE DISEASES INTELLIGENCE

ISSN 0725-3141 VOLUME 17 NUMBER 20 4 October 1993

CONTENTS

ARTICLES

Page

World Malaria situation in 1991

446

OVERSEAS BRIEFS

453

COMMUNICABLE DISEASES SURVEILLANCE

454

Editor: Robert Hall
Deputy Editor: Jenny Hargreaves

Editorial and Production Staff: Leslee Roberts, Sheila Beaton, Ana Herceg, David Evans, Michelle Wood and Gloria Konig

CDI is produced fortnightly by:
AIDS/Communicable Diseases Branch
Department of Health, Housing, Local Government and Community Services
GPO Box 9848 Canberra ACT 2601
Fax: (06) 289 7791 Telephone: (06) 289 1555

Contributions covering any aspect of communicable diseases are invited. Publication does not preclude authors from arranging publication of their material elsewhere.

Opinions expressed in *CDI* are those of the authors and not necessarily those of the Department of Health, Housing, Local Government and Community Services or other Communicable Diseases Network - Australia affiliates. Figures given may be subject to revision.

Consent for copying in all or part can be obtained from:
Manager, Commonwealth Information Service
Australian Government Publishing Service
PO Box 84 Canberra ACT 2600



DEPARTMENT OF
HEALTH, HOUSING,
LOCAL GOVERNMENT AND
COMMUNITY SERVICES

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

WORLD MALARIA SITUATION IN 1991

(Reproduced in part from *Weekly Epidemiological Record* 1993;68:245-252 and 253-258, 20 and 27 August 1993)

In 1991, some 90 countries or areas were considered malarious (Map 1). In nine of these, falciparum malaria does not exist or its proportion is less than 1%. For comparison, there were 140 countries or areas where malaria was considered endemic in 1955.

The total world population of about 5340 million people may be classified according to the status of malaria and their residence as follows:

1. Areas, situated mainly in tropical Africa, where endemic malaria remains basically unchanged and most control programs are still at a planning or early implementation stage (490 million people, or 9%).
2. Areas where endemic malaria was considerably reduced or even eliminated but where transmission was reinstated and the situation is unstable or deteriorating (1750 million people, or 33%). These areas include zones where severe malaria problems have developed following major ecological or social changes, such as agriculture or other economic exploitation of jungle areas, sociopolitical unrest; such zones comprise only about 1% of the world population.
3. Malaria-free areas (3100 million people, or 58%). The disease has disappeared or has been eliminated by anti-malaria campaigns, and the malaria-free status has been maintained in areas inhabited by 1660 million people (31%); in areas with a total population of 1440 million people (27%), malaria has never existed or has disappeared without specific antimalarial measures.

Malaria reporting to the World Health Organization

Traditionally, the malaria situation is described in terms of numbers of microscopically confirmed cases reported by Member States to the World Health Organization (WHO) through regional offices. However,

the implementation of locally feasible and effective malaria control implies that malaria must primarily be defined in association with disease symptoms and that priority must be given to surveillance of severe and complicated cases as well as malaria deaths. WHO is collaborating with Member States in order to arrive at revised recommendations for the reporting of malaria. In the meantime, this article will continue to use the case definition based on microscopical confirmation. Inadequate and irregular reporting, particularly in areas known to be highly endemic and often out of the reach of established health services, makes it difficult to obtain accurate information on the incidence of malarial disease in many areas. The available notifications supplemented by research results nevertheless do allow assessment of trends and comparisons between regions.

The most recent estimates indicate that the incidence of malaria in the world may be in the order of 300-500 million clinical cases each year with countries in tropical Africa accounting for more than 90% of them.

In the great majority of countries of the WHO African Region, strict notification of cases does not exist and reporting is fragmentary. The number of cases registered is not comparable with that from other Regions and is therefore not included in the total figures (Table). In the other Regions, the total number of cases did not change much over the last years; however, trends in the individual countries vary. Some 5.6 million cases were reported during 1991, but the actual number of cases is estimated to be about four to five times higher. Of the total number of cases reported annually to WHO (excluding the African Region), 90% come from only 19 countries. More than 70% are concentrated in seven countries (in decreasing order): India, Brazil, Sri Lanka, Afghanistan, Thailand, Viet Nam, and Colombia. India and Brazil alone account for 38% and 11% of all cases reported, respectively. Furthermore, within countries, malaria is concentrated in certain areas.

Table 1. Number of malaria cases reported, by WHO Region (thousands), 1983-1991^a

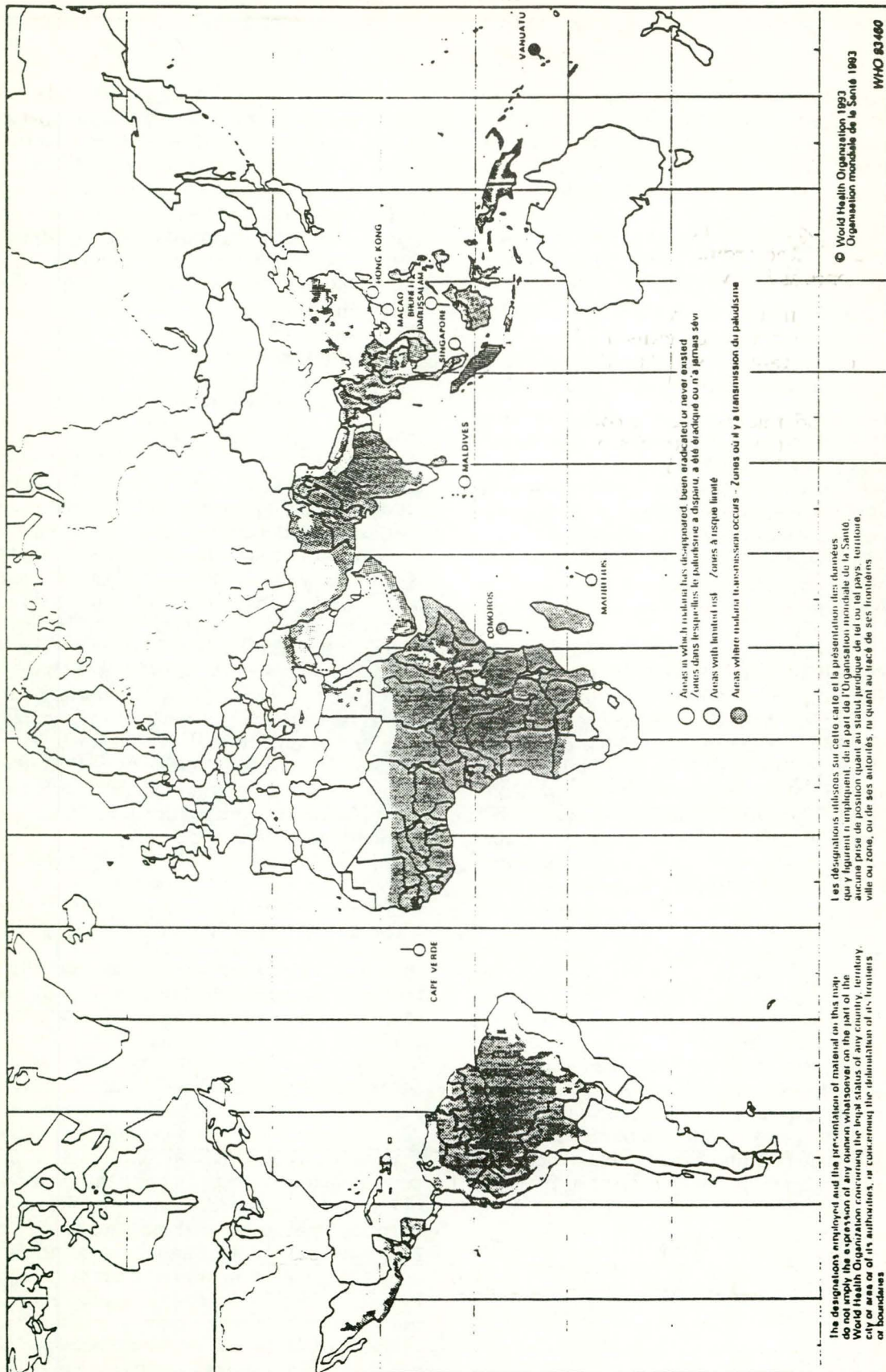
WHO Region	1983	1984	1985	1986	1987	1988	1989	1990	1991 ^c
Africa ^{b,c}	2726	4523	11634	17442	19463	21957	13835		
America	831	932	911	951	1018	1120	1114	1057	1231
South-East Asia	2731	3004	2503	2689	2823	2789	2957	2724	3027
Europe	73	62	57	47	28	25	21	14	16
Eastern Mediterranean	305	335	391	611	566	602	532	584	535
Western Pacific	1839	1410	1178	1012	893	774	829	790	817
Total (excluding Africa)	5779	5743	5040	5310	5328	5310	5453	5169	5626

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

b Mainly clinically diagnosed cases.

c Incomplete figures.

Map 1. Epidemiological assessment of the status of malaria, 1991¹



1. Reproduced by permission of the World Health Organization, from : World Malaria Situation in 1991, Parts I/II. *Weekly Epidemiological Record* 1993;68(34,35):245-252, 253-258.

Malaria mortality

Plasmodium falciparum, which is the predominant species in tropical Africa, eastern Asia, Oceania and the Amazon area, causes severe malaria and mortality. In the rest of the world it is far less common. WHO receives very limited and irregular reports on malaria deaths. Endemic countries currently concentrate on measuring infection and pay less attention to the reporting of severe malaria and malaria mortality, for which registration is particularly poor in 'frontier areas' of economic development and in areas burdened with armed conflicts, illegal trade and mass movements of refugees, where the problems may be the most severe. The available figures are therefore gross underestimates.

The vast majority of malaria deaths occurs in Africa. Outside tropical Africa, deaths from malaria occur principally among non-immunes becoming infected with *falciparum* malaria in areas where appropriate treatment is not available. Estimates of malaria mortality vary from 1.5 to 3 million malaria deaths worldwide per year. One million deaths among children under five years of age must be attributed to malaria, although in some of these malaria may not be the only cause.

Global trends

In India in 1976, there was a massive resurgence of malaria, controlled in the following years (Figure). The reduction of the reported malaria cases in India has now come to an end, and the situation seems to be stagnating. In China, malaria incidence has continued to fall. Excluding India and China, the overall malaria situation seems to have deteriorated slowly but steadily since the late 1970s. 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.

Among the countries where *falciparum* malaria exists, only those in Central America have not recorded the resistance of *P. falciparum* to chloroquine. The rapid evolution of this resistance in Africa is making the provision of adequate treatment increasingly complicated. Resistance to sulfadoxine/pyrimethamine has developed in South-East Asia, South America and focally in Africa. In Thailand, there are indications that more than 50% of cases in certain border areas no longer respond to mefloquine therapy, while the sensitivity to quinine is also diminishing in areas of Thailand and Viet Nam.

In addition, the resistance of vivax malaria to chloroquine, of which so far only occasional occurrence was known, seems to become less rare. It has been confirmed in Papua New Guinea and also reported in Indonesia.

Details regarding the malaria situation by major epidemiological areas are given hereafter.

Africa

In Africa north of the Sahara, the total number of cases reported annually has been in the order of 1000 during recent years. The Libyan Arab Jamajiriya and Tunisia are considered free from malaria transmission. In Egypt, the number of cases recorded declined from 75 in 1990 to 24 in 1991. Most of them (*falciparum* infections) were from a new focus in Biahmo, Sennoris District of El Faiyûm Governorate. No cases were found in the previous foci of Khour Saoudi (1990) and Terssa (1989) in the same district. In Algeria, 42 local cases were reported, all vivax infections, in two foci of Ain-Defla (Arib) and Illizi (Ihrir) Wilayas. In Morocco, the number of cases detected decreased from 839 in 1990 to 494 in 1991. The situation improved in El Kelaa Sraghna and Settat Provinces. Transmission continued in the foci of Khenifra, Khouribga, Taza, Khemisset, Beni Mellal and Larache Provinces.

In Africa south of the Sahara, between 12 and 22 million cases per year were reported during 1985 and 1989. Based on the population exposed to malaria risk and on the number of fever episodes (less than one up to more than six, depending on the age group) from which a person will be suffering every year and about half of which are typically due to malaria, it has been estimated that between 270 and 480 million clinical malaria cases may occur every year. About 140 to 280 million of these clinical malaria attacks will occur in children less than five years old. Africa has the highest levels of endemicity in the world, with very large areas classified as holoendemic (in forest or savannah at altitudes up to 1000m with an average rainfall over 2000mm/year). At altitudes over 1500m and rainfall below 1000mm/year, endemicity decreases and the potential for epidemic outbreaks increases. Ecological, demographical and meteorological factors including quasi-cyclic occurrence of heavy rains have led to epidemics or serious exacerbations of endemicity (Botswana, Burundi, Ethiopia, Kenya, Madagascar, Rwanda, Swaziland, Sudan, Zaire and Zambia).

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 one million infants and children per year in tropical Africa. Data collected in 1970-1975 in Kenya (Kisumu) and Nigeria (Garki) indicate 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 1000 per year in infants and 10.7 per 1000 per year in children one to four years old. Among children referred to hospitals with severe malaria, case-fatality rates of 10-30% have been noted, and in rural areas with little access to adequate treatment these rates might be even higher. Taking into account the above morbidity estimates, one could expect malaria mortality to be in the order of 1.4 to 2.8 million annually, of which approximately one million deaths will occur in children below the age of five years; for some of the deaths malaria may not be the only cause.

Chloroquine-resistant *P. falciparum* spread over almost all of tropical Africa in the 1980s. Recently, high levels of resistance to chloroquine have become common in some East African countries. Surveillance in some countries (for example Malawi and Zaire) has indicated that the spread of resistance to chloroquine has been accompanied by increasing incidence of severe malaria. Research results from Malawi and Kenya suggest that the prevalence of anaemia in very young children may be increasing in areas where the routine treatment of malaria is often only partly effective. These problems will probably be among the major challenges to malaria control programs in Africa in the coming years.

The Americas

Since 1974, the number of cases detected every year has steadily risen, with 1,231,000 cases reported in 1991 (4.4 cases per 1000 population in originally malarious areas). Taking into account data available on the quantity of 4-aminoquinolines used for various treatments, and also the fact that other antimalarials are used for the treatment of cases, it would appear that the 1.2 million registered cases represent only a fraction of what might be at least 2.2 to 5.6 million cases for the Americas in 1991.

Half of all the cases were registered in Brazil; 28% originated from the Andean countries and 16% were from Central America and Mexico.

Vivax malaria continued to predominate in the Americas (66% of all infections). Its proportion was 99% in Mexico and 97% in Central America. Falciparum malaria predominates in Haiti (100%), the Dominican Republic (97%) and Suriname (94%); and the proportion of 64% of all falciparum infections detected in the Americas occurred in Brazil.

Considering groups of contiguous countries with anti-malarial programs, the situation in 1991 was as follows:

Central America including Mexico

Of the 200,000 cases registered in this region (16% of the total for the Americas) about 3% were falciparum infections. In Mexico, where reported malaria cases rose from 18,000 in 1976 to 134,000 in 1984, the situation has improved further: only 27,000 cases (in 8100 localities) were recorded in 1991, compared with 45,000 cases (in 10,000 localities) in 1990, and 101,000 (in 16,100 localities) in 1989. Transmission of falciparum infections was sporadic and limited to rainforest areas near the border with Belize and Guatemala (Tabasco, Chiapas and Quintana Roo States), although the number increased from 62 in 1990 to 278 in 1991.

In the other countries, the overall malaria incidence was 0.47 per 1000 population in malarious areas in Panama and between 1.2 and 6.9 per 1000 in Costa Rica, El Salvador and Nicaragua. Guatemala, Belize and Honduras had the highest incidence with 15, 17 and 20 per 1000, respectively. The most striking deterioration occurred in Costa Rica and Honduras. In Costa Rica, cases rose from 700 in 1989 to 1200 in 1990 and 3300 in 1991. Transmission continued to increase mainly in the

border areas and in the Atlantic region and these areas have accounted for 91% of the cases (linked to earthquakes, persistent rains, shortage of funds and strikes). In Honduras, there was a steady increase in cases from 19,000 in 1987 to 53,000 in 1990 and 73,000 in 1991. The most affected departments were Yoro, Choluteca, Colón, Cortés and Valle.

Caribbean

In this subregion, most of the population lives in malaria-free areas; however, cases imported from other countries that may lead to renewed local transmission are a cause for concern. This happened on a small scale in Cuba and in Trinidad, in each of which 10 introduced cases (that is, secondary to imported cases) were detected. Malaria transmission, exclusively due to *P. falciparum*, occurs only on the island of Hispaniola. In the Dominican Republic, where between 1100 and 1400 cases were recorded annually during 1986-1989, only 356 and 377 malaria cases were detected in 1990 and 1991, respectively, nearly 60% during outbreaks in El Salado (La Altagracia Province), in La Puya (National District) and in Las Carreras (Peravia Province). In Haiti, malaria occurs mostly in the coastal areas, with local outbreaks especially between May and November. During the last 3 years, 31% to 37% of the blood specimens examined were found positive.

Andean area

Twenty-eight per cent (339,000) of all cases detected in the Americas are from this region (Bolivia, Colombia, Ecuador, Peru and Venezuela); 72% of this total occurred in Colombia (184,000 cases) and Ecuador (59,000). In these two countries, 38% and 23% of the cases recorded were falciparum infections.

Colombia reported 184,000 cases in 1991, compared with 99,000 in 1990. This sharp increase reflects a modernisation of the program rather than a worsening of the situation. Prior to 1991, the former Direct Campaigns Administration did not recognise the detection, diagnosis and treatment of cases carried out by the Sectional Health Service in Antioquia Department as reportable cases of malaria. With decentralisation, these cases are now included in the overall report. A total of 71,000 cases (39%) were detected in the Bajo Cauca region, 90% of them concentrated in 14 municipios. In the Pacific region, 38,000 cases were recorded, 30,000 of them registered in seven of the 23 municipios in the region, which is characterised by high incidence and persistence of *P. falciparum*. In Ecuador, the epidemic situation continued despite a reduction in cases from 72,000 in 1990 to 59,000 in 1991. In the eight provinces accounting for more than 90% of all cases and falciparum infections (Esmeraldas, Manabí, Guayas, Los Ríos, Pichincha, Sucumbios, Napo, El Oro), incidence was reduced by 17% and falciparum infections by 37%. The major development poles of the country, the Provinces of Sucumbios and Esmeralda, where oil is exploited and refined, have the highest malaria incidence, with 40 and 85 cases per 1000 population, respectively.

Venezuela reported 43,000 cases (47,000 in 1990); 50% originated from Bolívar State (mainly from rainforest areas), 19% from Sucre State (mainly from Sante Fe municipio), and 11% from the Federal Territory of Amazonas (more than 90% of the cases from Atures Department). Most falciparum infections occur in jungle areas of the Amazon region (Federal Territory of Amazonas and Bolívar State). In Bolivia, high levels of transmission persisted in the Departments of Pando, Beni (Riberalta and Guayaramerin), and Tarija, with incidence rates higher than 20 cases per 1000 population. Annual incidence rates in La Paz Department varied from 1.6 to 8.2 cases per 1000 during the past five years compared with less than one per 1000 in the previous years. In Peru, 76% of the cases were concentrated in 17 of the 151 provinces. Of the 187 falciparum infections detected (131 in 1990 and nil in 1988), 80% were from Piura Province, the remainder originating from four other provinces.

Amazon area

This comprises the tropical jungle transmission areas in Brazil, French Guiana, Guyana and Suriname. The highest overall incidence in the Americas is found in Guyana and French Guiana, with 53 and 35 cases per 1000 population, respectively. Incidence was 31 cases per 1000 in the Amazon region in Brazil.

Guyana is the most severely affected country, with 42,000 cases (compared with 23,000 in 1990). Falciparum infections increased from 13,000 in 1990 to 23,000 in 1991; the highest incidence (616 cases per 1000) was recorded in the region along the border with Venezuela. In French Guiana, the situation improved in the most affected areas, namely the Orapock and Maroni river basins. Transmission continued in the settlements surrounding Cayenne, but the number of cases reported was less than in 1990. Malaria was also reported from elsewhere along the coast, but transmission was not intense. In Suriname, 1500 cases were reported in 1991; 94% of them were falciparum infections.

In Brazil, the number of cases increased from 560,000 in 1990 to 614,000 in 1991, representing 50% of all cases in the Americas. The proportion of falciparum infections was 43%, and their number accounted for 64% of all falciparum cases in the Americas; 98% of the reported cases originated from the Amazon region. Within this region, 79% of the cases were from three states: Rondônia (32%), Mato Grosso (27%), and Pará (20%). In Rondônia, the highest incidence was found in the municipios of Costa Marques (849 cases per 1000 population), Machadinho d'Oeste (798 per 1000), Nova do Mamore (748 per 1000) and Ariquemes (499 per 1000). In Mato Grosso, Matupa (2206 per 1000), Nova do Norte (820 per 1000), Peixoto de Azevedo (738 per 1000), and Aripuaná (448 per 1000) had the highest incidence. As to Pará, incidence was highest in Santa Maria das Barreiras (1076 per 1000), Itaituba (240 per 1000) and Ourilandia do Norte (200 per 1000). The persistence of malaria transmission in the Amazon region is linked to mining in remote forest areas and to agricultural activities in forest fringe areas where new

settlers initially live in houses without walls. In the rest of Brazil, localised malaria outbreaks occur related to migration of malaria patients from the Amazon region.

Southern Cone area

In this subregion (Argentina, Chile, Paraguay, Uruguay and also Brazilian border states), malaria is endemic only in Paraguay and in the north of Argentina, the situation being strongly affected by the influx of population from Brazil through Paraguay. In Argentina, incidence decreased from 17,000 cases in 1990 to 800 in 1991, but in Paraguay, where vector control measures brought down the incidence from 5200 cases in 1989 to 1700 in 1990, malaria rose again to 3000 cases in 1991; 80% of the cases occurred in the Special Area comprising the Department of Alto Paraná and parts of Canendiyu and Caaguazú Departments.

Asia west of India

Endemic malaria is absent from Bahrain, Cyprus, Israel, Jordan, Kuwait, Lebanon and Qatar.

Among the 510,000 malaria cases reported in this region from countries where malaria is endemic, 298,000 (58%) were recorded in Afghanistan, 96,000 in the Islamic Republic of Iran (19%) and 67,000 in Pakistan (13%). Falciparum malaria cases are most numerous in the Islamic Republic of Iran (45,000) and Pakistan (27,000), although the proportion of this species is more important in Yemen (97%), Oman (92%), and Saudi Arabia (86%).

In Afghanistan, malaria activities continued to be very limited because of civil unrest. A total of 298,000 malaria cases were reported in 1991, but they are estimated to be in the order of two to three million annually. The percentage of blood specimens found positive was in the order of 40% in recent years. Falciparum infections increased from below 510 during 1982-1986 to 4300 in 1991, representing 1.4% of the cases detected in that year.

In the Islamic Republic of Iran, malaria incidence continued to increase with 96,000 cases (47% of which were falciparum infections) reported in 1991 compared with 77,000 in 1990. There were 53,000 cases in 1988. A total of 8400 cases was imported, 8200 of which from Afghanistan. The great majority of cases occur (1) in the west and south-west, where transmission continues but where the situation is under control (part of Bakhtarana and Lorestan, as well as Ilam, Chaharmahal, Khuzestan, Kohkiluyeh, Fars and Bushehr Provinces) and (2) in the south-east, where ecological and technical problems affect prevalence and transmission and render program implementation difficult (Hormozhan, Sistan and Baluchistan, and the tropical part of Kerman Province). Between 53% and 71% of nearly 600 falciparum infections tested *in vitro* were found resistant to chloroquine in Baluchistan, Hormozgan and Kerman.

In Pakistan, the number of cases detected decreased from 108,000 in 1989 to 80,000 in 1990, and to 67,000 in 1991. The participation of the general health services

in case detection activities is gradually improving, but 68% of all blood specimens are still collected during house-to-house searches. The percentage of blood specimens found positive decreased in all four provinces (percentage for the specimens collected by the curative services in brackets): it was 0.9% (2.4%) in Punjab, 3.8% (6.3%) in Sind, 5.0% (15.5%) in Baluchistan and 5.5% (9.6%) in the North-West Frontier Province. The proportion of falciparum infections has decreased from 54% in 1990 to 41% in 1991, after several years of continued increase. This proportion was 21% in North-West Frontier Province, 30% in Punjab, 61% in Baluchistan and 69% in Sind.

In Oman, malaria cases had increased from 15,000 in 1989 to 33,000 in 1990 because of heavy rains and the extension of irrigation for agriculture. About one-third of the cases were recorded in Dhahira region; 95% of all cases were falciparum infections although this proportion was only 33% in the Southern region. In 1991, the situation improved, with only 19,000 cases detected.

In Saudi Arabia, heavy and early rains had caused a sharp increase to 16,000 cases in 1990. Gizan, the lowlands of Asir and the Western Region were the areas most affected. Although fewer cases were reported in 1991 (10,000), the situation seems to not have improved.

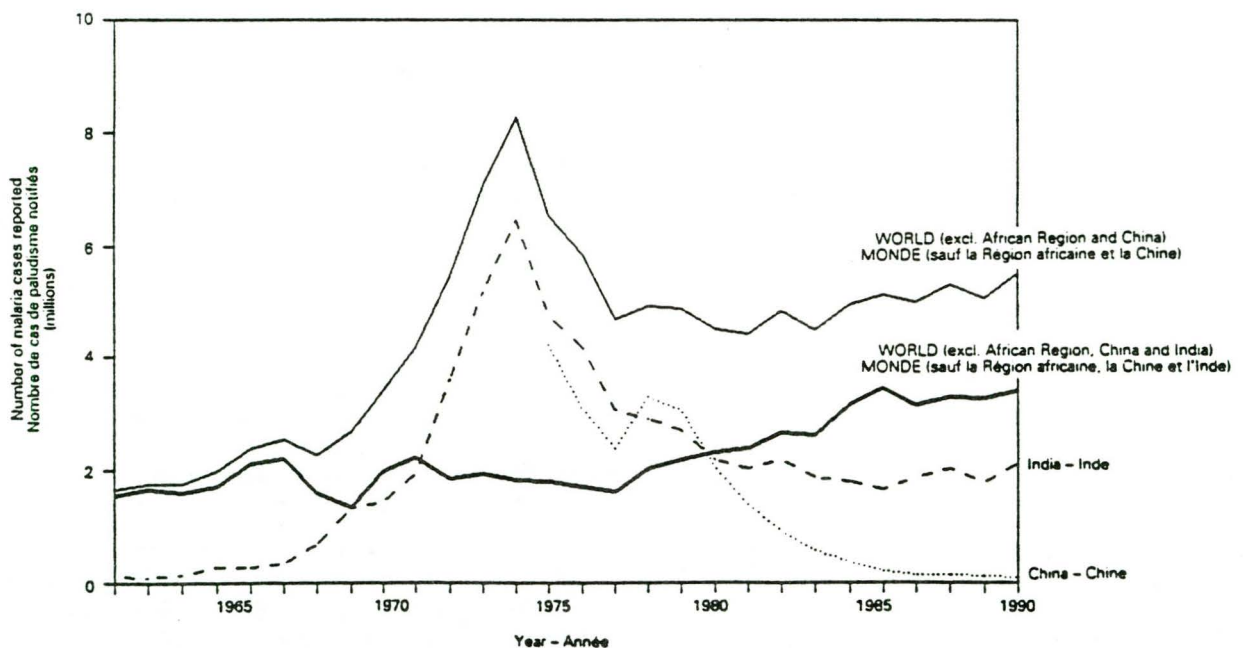
There was not much change in Gizan; the outbreaks in the Western Region (Lith, Qunfedah, Thriban) and Wadi Aya were not contained, and new outbreaks occurred in Almadina all Munawara and Geddah Valleys.

In Yemen, malaria cases seem to have increased in recent years. In 1991, 13,000 malaria cases were recorded (11,000 in 1990). The slide positivity rates were 12% and 14%, respectively; these rates were at a low in 1985 with 4.6%, and increased over the years to 12% in 1989. The number of confirmed cases rose from approximately 3000 in 1985 to 6000 in 1987 and to 11,000 in the following years. Both the incidence and the positivity rates tend to be higher in the southern governorates. However, data are incomplete and cover at best half of the malarious areas of the country.

In the United Arab Emirates, less than 1% of the 3500 cases reported in 1990 as well as in 1991 were of local origin, occurring sporadically in rural areas as secondary cases to imported infections. Pakistan, Oman and India are the main source of the imported cases.

In Iraq, some 1800 cases were recorded in 1991 as well as in 1990. Transmission, exclusively due to *P. vivax*, occurs only in four of the five provinces of the Northern Region: Arbil, Kohok, Ninervah and Sulaimaniya.

Figure. Number of malaria cases reported, 1964-1991



In the Syrian Arab Republic, the situation seems to have improved, only 54 malaria cases being reported in 1991; 43 of them were classified as imported. In the previous year, there were 107 cases, 68 of them of local origin (Tatous 45, Al Hasakeh 17, Latakia 3, Damascus, Edlib and Hama one, each).

Middle South Asia

Overall, the number of malaria cases reported varied between 2.37 million in 1989 and 2.63 million in 1991. These figures are strongly influenced by the figures from India, which represent more than 80% of all cases recorded. During 1991, the reported malaria increased in all the five malarious countries of this area. The highest relative rise in the number of cases was recorded in Nepal (+43%) and in Sri Lanka (+39%).

In India, 2.11 million cases were recorded in 1991, representing 38% of the total number of cases reported outside Africa. Compared with the 1.77 million cases in 1990, this corresponds to an increase of 19%. The proportion of falciparum infections, which had not varied much during the years 1986-1990, ranging between 35% and 37%, increased to 43% in 1991. In 1990, some 28% (489,000) of all cases were notified in Gujarat State, followed by Tamil Nadu (117,000 cases), Uttar Pradesh (99,000 cases), Rajasthan (86,000 cases). Haryana had 50,000 cases, Punjab 29,000 and Delhi 12,000.

In Sri Lanka, recorded malaria incidence rose sharply from only 38,500 cases in 1982 (1500 falciparum infections) to 676,000 (183,000 falciparum infections) in 1987. By 1989, cases declined to 259,000. In 1990, cases increased again to 287,000, and a sharp rise in incidence occurred in 1991 with 400,000 cases recorded. The percentage of falciparum infections decreased, however, from 25% in 1989 to 19% in 1991.

In Bangladesh, the malaria situation has been deteriorating since 1988. Incidence rose from 34,000 cases in 1988 to 64,000 cases in 1991. While in 1989 66% of all cases were falciparum infections originating mainly from Chittagong Division near the eastern border of the country, this proportion decreased to 48% in 1991.

In Nepal, where the malaria situation had remained stable from 1988 to 1990 with about 22,000 cases reported annually and falciparum infections declining from 7500 in 1985 to 1500 in 1990, incidence increased in 1991 to 29,000 cases, 5100 of which were falciparum infections.

In Bhutan, the number of cases reported went up from 19,000 in 1989 to 22,000 in 1991. The proportion of falciparum infections also increased from 44% in 1989 to 59% in 1991. Deaths attributed to malaria were 14 in 1988 and 38 in 1991.

In the Maldives, indigenous malaria has not been detected since 1984. Only a few imported malaria cases are recorded. Surveillance is carried out through primary health care workers.

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 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.

In the endemic countries of this region, the reported number of confirmed malaria cases did not change much from 1990 to 1991. About 18% occurred in Thailand (198,000), 17% in Viet Nam (188,000), and 13% in the Solomon Islands (141,000). These three countries reported nearly half of all confirmed cases in the region.

In Thailand, the number of malaria cases decreased from 349,000 in 1988 to 198,000 cases in 1991. The proportion of falciparum malaria rose from 53% in 1988 to 64% in 1990, and then declined to 58% in 1991. The highest incidence figures were recorded in the border provinces of Trat (bordering Cambodia) and Tak (bordering Myanmar). There has been an increase in foci of falciparum malaria resistant to drugs, especially along the border with Cambodia. These falciparum strains are highly resistant to chloroquine and sulfadoxine/pyrimethamine, and, in the border areas of Trat and Tak, to mefloquine also.

In Viet Nam, the number of malaria cases increased from 140,000 in 1990 to 188,000 in 1991, but the number of clinical cases is estimated to be in the order of 1.5 million yearly. The increase in the number of cases during recent years can be attributed to a number of factors, including widespread multidrug resistant falciparum malaria, migration into forestry and mining activities and new economic zones, lack of resources including antimalarial drugs, and problems in health delivery. Between 1987 and 1990, the number of severe or complicated malaria cases increased by 380% in the northern and 175% in the southern provinces. Mortality from malaria rose from 1070 deaths in 1987 to 3439 in 1989. The case-fatality rate among hospitalised cases of severe malaria is more than 30%.

In the Solomon Islands, malaria incidence nearly doubled from 65,000 cases in 1989 to 141,000 in 1991, the latter corresponding to an annual incidence of 418 cases per 1000 population. Many factors have contributed to this situation, which led to a complete reorientation of the program from the beginning of 1992.

In China, malaria incidence continued to decline with 102,000 cases reported in 1991 (117,000 cases reported in 1990 and 138,000 in 1989); there had been 904,000 cases in 1984. Only some 2% of the population reside in areas where annual incidence exceeds one per 1000 population. In the southern parts of the country, some focal outbreaks occurred, mainly because of migration, and the incidence increased in Guangdong, Guizhou, Yunnan and Guangxi Provinces/Autonomous Region. In Hainan, Sichuan and Fujian, malaria incidence de-

creased, although in some places at district/city and county levels increases were observed. In these seven Provinces/Autonomous Region, the 67,000 cases recorded account for two-thirds of the total cases in China. In the central and eastern parts of the country, intensified antimalarial activities resulted in a decline in incidence between nine and 41% and successfully prevented epidemics in areas affected by floods in Anhui, Hubei, Hunan and Jiangsu Provinces. Incidence also decreased in most areas of Shandong, Jiangxi, Shanghai and Zhejiang Provinces/Municipality. The number of cases in these eight Provinces/Municipality was 34,000 (34% of all cases in China). In the north and north-eastern parts of the country, only 244 malaria cases were reported (less than 1% of the country total). Of the total number of 102,000 cases, 83,000 were diagnosed by microscopy; among them 12% were falciparum infections; nearly all indigenous falciparum malaria cases occurred in Hainan and Yunnan Provinces; the others (about 2%) were recorded sporadically in Guangxi Autonomous Region.

In the Philippines, the number of cases reported decreased from 155,000 in 1988 to 86,000 in 1991, a reduction of almost 50%. Increased financial and logistical support from the government permitted wider coverage of residual house spraying and intensified case-finding activities contributed to the improvement of the situation.

In Indonesia, surveillance activities are carried out in Java and Bali only. The number of cases reported declined from 26,000 in 1990 to 16,000 in 1991. However, the proportion of falciparum cases, which had decreased from 46% in 1988 to 29% in 1990 rose to 49%. 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 18% of the blood specimens examined were found positive and 59,000 malaria cases were reported.

In Malaysia, malaria cases decreased from 65,000 in 1989 to 39,000 in 1991. In the Peninsula, some nine-tenths of the population live in areas freed from malaria and the disease is endemic only in the hilly and less developed areas of the centre, the north and north-eastern part of the Peninsula. In 1991, 9900 cases were recorded (14,000 in 1990). In Sarawak, transmission is limited to the border areas; from 1200 cases in 1990, incidence increased to 2100 in 1991. In Sabah, the situation continued to improve: 27,000 cases reported in 1991 compared with 35,000 in 1990 and 48,000 in 1989.

In Cambodia, malaria is the most important public health problem. There are about 115,000 microscopically confirmed cases per year, but it is estimated that more than 500,000 clinical cases occur each year. Because of high levels of malaria resistance to drugs, poor drug supply, poor community awareness, few vector control measures and a fragile health infrastructure, malaria mortality is high, with an estimated number of deaths between 5000 and 10,000 per year.

In the Lao People's Democratic Republic, Myanmar, Papua New Guinea and Vanuatu, the malaria situation has not changed significantly during the past few years.

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 some small foci in Azerbaijan and Tadjikistan. In Turkey, the number of malaria cases reported declined continuously from 67,000 in 1983 to 87,000 in 1990. However, an increase to 12,000 cases has been reported in 1991. The majority of cases are from south-east Anatolia and the Adana area, the increase occurring principally in south-east Anatolia. A few small foci continue to exist in other provinces. Some 8000 imported cases of malaria were notified in Europe, but it is thought that the actual number of imported cases is considerably higher because of underreporting.

OVERSEAS BRIEFS

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

Cholera Update

Newly cholera infected areas are Distrito Federal, Espirito Santo and São Paulo States in Brazil.

Cases of cholera have been reported for May, June, July, August and September from Afghanistan, Belize, Bolivia, Brazil, Colombia, Ecuador, El Salvador, Ghana, Guatemala, Honduras, Hong Kong, Malaysia, Mexico, Nicaragua, Peru and the Russian Federation.

COMMUNICABLE DISEASES SURVEILLANCE

Virology and Serology Reporting Scheme

There were 1484 reports received in the *CDI* Virology and Serology Reporting Scheme this fortnight (Tables 6, 7 and 8).

- **Measles** was reported for 9 patients, 2 from Queensland, one from New South Wales, 2 from Tasmania and 4 from Victoria.
- **Rubella** was reported 27 times this fortnight. Included were 4 females in the 15 to 44 years age group.
- There were 3 reports of **Ross River virus** infection this fortnight, all presumptive. Specimen collection dates were in August for them all. The peak in reports this year was in March.
- There was a single report of a presumptive **Barmah Forest virus** infection. The specimen collection date was in August.
- There was a single report of an **untyped flavivirus** (confirmed). The 23 year old male patient had a history of overseas travel.
- There were 104 reports of **influenza**, 42 of **untyped influenza A** (4 isolations, 8 antigen detections, 11 IgM, 8 fourfold changes, 10 single high titres, one other serological), 4 of **influenza A H₃N₂** (3 isolations and one antigen detection) and 58 reports of **influenza B** (21 isolations including 15 reported as B/Panama/45/90-like, 10 antigen detections, 5 IgM, 2 fourfold changes, 20 single high titres).

Ten influenza A reports and 4 influenza B reports were for patients aged over 65 years. Seven

untyped influenza A reports were from an outbreak in a nursing home in Victoria. The patients were aged between 40 and 87 years. Another untyped influenza A report was for a 62 year old male who died.

Thirteen influenza B reports this year have had muscle/joint disease as the reported syndrome. Myositis or myalgia has been reported for 4 of these, children aged 10 years, 9 years, 9 years and 5 years. Most influenza B reports this year have been received from Queensland (121), Western Australia (105) and South Australia (92).

There have been 386 reports of influenza B so far this year, more than by this time in 1991, the last year in which influenza B predominated (Figure 1).

- **Respiratory syncytial virus** infection was reported for 116 patients, bringing the total for the year to 3110. These reports have now begun to decline, after peaking in July this year.
- There were 120 reports of **rotavirus** infection, more than the average for this time of year over the last 5 years (Figure 2). This year, there have been 190 reports from the ACT, 446 from New South Wales, one from the Northern Territory, 50 from Queensland, 168 from South Australia, 350 from Victoria and 279 from Western Australia.
- **Mycoplasma pneumoniae** infection reports continue at a high rate; 83 were received this fortnight. Included was a 13 year old male for whom encephalitis was the reported syndrome.

Figure 1. Influenza B laboratory reports, 1991 and 1993, by month of specimen collection

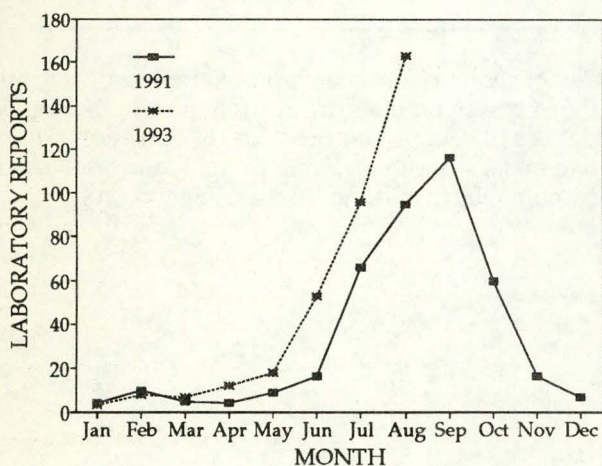
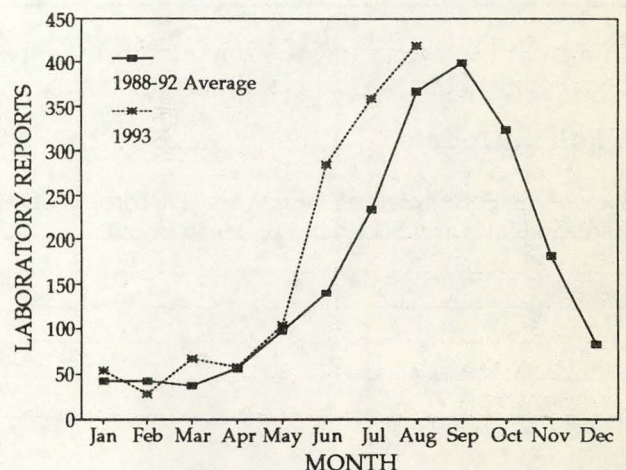
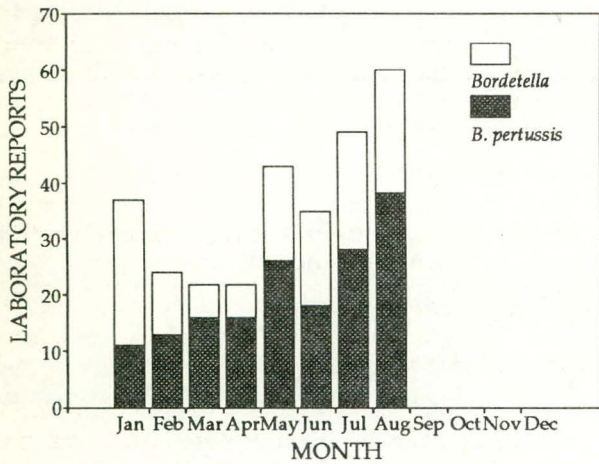


Figure 2. Rotavirus laboratory reports, 1993 and 1988-92 average, by month of specimen collection



- Thirty-two reports of *Bordetella pertussis* and 11 reports of *Bordetella* species were received. The number of these reports has increased over the last few months (Figure 3).

Figure 3. *Bordetella pertussis* and *Bordetella* species laboratory reports, 1993, by month of specimen collection



Australian Sentinel Practice Research Network

The Australian Sentinel Practice Research Network collected data from 7035 patient encounters in Week 38 and from 5295 patient encounters in Week 39 (Table 1).

Sterile Sites Surveillance (LabDOSS)

Data for this fortnight has been provided by 5 laboratories.

A total of 51 reports have been included: Central Queensland Pathology Laboratory, Mackay 4, Nam-

bour General Hospital 10, Northern Tasmanian Pathology Service 8, Sullivan and Nicolaidis Partners, Queensland 11 and Woden Valley Hospital, ACT 18.

Organisms reported 5 or more times from blood are detailed in Table 2. Other blood isolates not included in Table 2 were:

Gram positive: *Staphylococcus epidermidis* 1, *Streptococcus* group A 1, *Streptococcus* group G 1, *Streptococcus pneumoniae* 3, *Streptococcus viridans* 1.

Gram negative: *Campylobacter jejuni* 1, *Haemophilus influenzae* type b 1 (61 year old female with acute epiglottitis), *Klebsiella oxytoca* 1, *Klebsiella pneumoniae* 3, *Neisseria meningitidis* group B 1 (11 month old female), *Pseudomonas aeruginosa* 2.

Anaerobes: *Bacteroides fragilis* 1, *Fusobacterium* species 1.

Fungi: *Torulopsis glabrata* 1, *Candida albicans* 1.

Most patients were over the age of 55 years (Figure 4).

Figure 4. LabDOSS reports of blood isolates, by age group

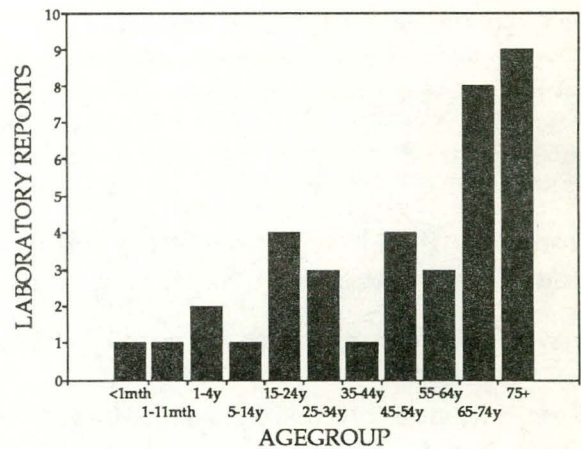


Table 1. Australian Sentinel Practice Research Network, Weeks 38 and 39 1993

Condition	Week 38, to 19 September 1993		Week 39, to 26 September 1993	
	Reports	Rate per 1000 encounters	Reports	Rate per 1000 encounters
Influenza	122	17.3	91	17.2
Measles	3	0.4	2	0.4
Rubella	1	0.1	3	0.6
Pertussis	1	0.1	0	0
Genital herpes	2	0.3	4	0.8
Gastroenteritis	85	12.1	41	7.7

Table 2. LabDOSS reports of blood isolates, by organism and clinical information

Organism	Clinical Information						Risk Factors					Total ¹	Total reported this year
	Bone/Joint	Lower respiratory	Endocarditis	Gastrointestinal	Urinary Tract	Skin	Surgery	Immunosuppressed	IV line	Hospital acquired	Neonatal		
<i>Staphylococcus aureus</i>							1		1	1		6	564 ²
<i>Staphylococcus coagulase negative</i>									2			5	198
<i>Escherichia coli</i>					3		1					6	590

1. Only organisms with 5 or more reports are included in this table.
 2. MRSA 65.

CSF isolates and meningitis reports

One report of meningitis was received, *Haemophilus influenzae* type b in an 11 month old female.

Isolates from sites other than blood or CSF

Joint fluid: *Pseudomonas aeruginosa* 1, *Staphylococcus aureus* 3.

Peritoneal dialysate: *Staphylococcus epidermidis* 1, *Streptococcus viridans* 1.

Other: *Enterococcus* species 1, *Enterobacter* species 1, *Escherichia coli* 1, *Staphylococcus aureus* 1, *Staphylococcus coagulase negative* 1, *Streptococcus* group A 1, *Streptococcus sanguis* 1.

National Notifiable Diseases Surveillance System, 5 September to 18 September 1993

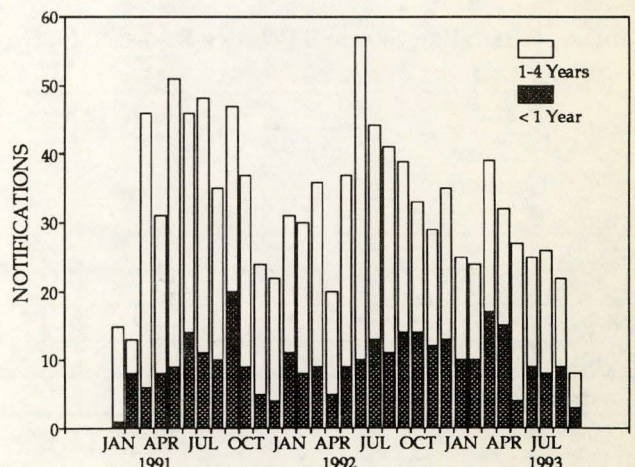
There were 1,847 reports received this period (Tables 3, 4 and 5, and Figure 8).

- **Ross River virus infection** was notified for 51 cases for this period. There were 22 males and 29 females. Recorded ages were between the 10-14 years and 80-84 years age group. Onset dates were recorded as January (1), February (1), March (1), April (1), June (6), July (3), August (28), and September (15). Cases were reported from statistical divisions in Brisbane and much of rural Queensland and New South Wales.
- There were 15 cases of **dengue** notified. These reports comprised cases in 9 males and 6 females. Recorded ages range from the 10-14 years to the

65-69 years age group. Fourteen cases were resident in Townsville and one in Charters Towers. Onset dates were recorded as May (6), June (8) and August (1).

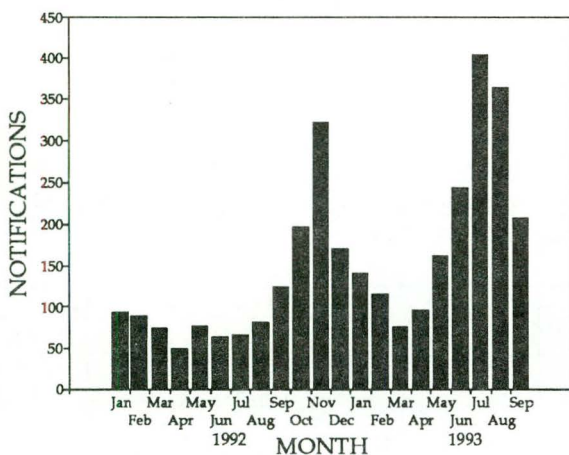
- There was a single case of **brucellosis** in a male from rural Queensland in the 20 to 24 age group.
- **Gonococcal infection** was notified for 51 cases. Of these, 43 were male, 7 were female and the sex was not recorded in one case. They were aged between the 5-9 years and 70-74 year age groups.
- There were notifications of 12 cases of *Haemophilus influenzae* type b to bring the total for the year to date to 323, compared with 372 for the equivalent period last year (Figure 5). The cases comprised 5 males and 7 females. Three cases were less than one year, 4 cases were less than 5 years. Other cases were in the 5-9 (2), 10-14 (2), and 30-34 (1) years age group. There were no apparent clusters of cases.

Figure 5. *Haemophilus influenzae* type b infection notifications, January 1991 to September 1993, by month



- There were 60 notifications of **hepatitis A** this period. There were 30 males, 28 females and 2 cases where sex was not recorded. Ages ranged from 0-4 to 85-89 years age group. The peak incidence was in the 10-14 year age group (11 cases).
- There were 5 notifications of **legionellosis** received. Three were male in the 35-39, 50-54, and 70-74 years age groups. Two were female in the 35-39 and 70-74 years age groups.
- There was one case of **leprosy** notified in this period from a male in the 25-30 years age group.
- Two cases of **leptospirosis** were reported this period from rural Victoria. Both were males, in the 30-34 and 95-99 years age groups.
- A total of 8 cases of **malaria** was notified, 7 males and one female. Ages ranged between the 15-19 and 40-44 years age groups.
- **Measles** activity is continuing with 258 cases notified. The total for the year is now 1834 compared with 653 for the equivalent period last year (Figure 6). There were 146 males and 112 females. Seventeen cases were less than one year, and the mean age was 11.0 years. There were 44 apparent clusters with up to 34 cases each in separate postcode areas. Apparent clusters were in New South Wales and the Australian Capital Territory (30), Queensland (4), and Tasmania (10).

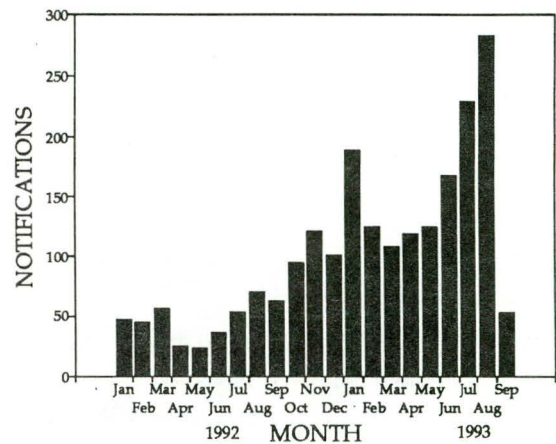
Figure 6. Measles notifications, January 1992 to September 1993, by month of onset



- There were 18 notifications of **meningococcal infection**, 9 males and 9 females. Ten cases had recorded ages in the 0-4 years age group and the oldest case was in the 70-74 years age group.
- **Pertussis** was notified for 123 cases to bring the total to 1472 compared with 353 for the equivalent

period last year (Figure 7). Five of these cases were aged less than one year, 17 were aged less than 5 years and ages ranged up to the 80-84 years age group. There were 14 apparent clusters with 2 to 9 cases each in separate postcode areas.

Figure 7. Pertussis notifications, January 1992 to September 1993, by month of onset

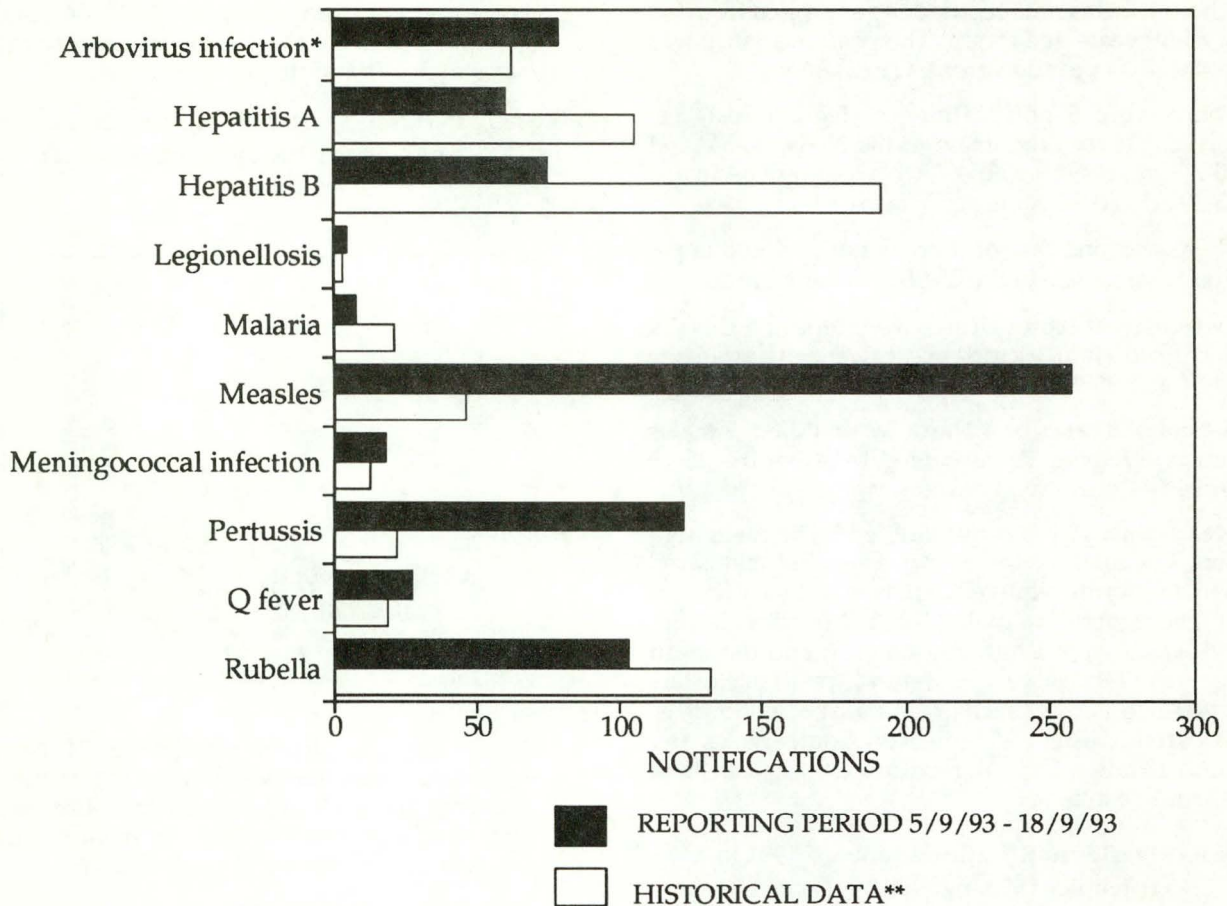


- There were 28 notifications of **Q fever**, 21 males and 7 females. Ages ranged from the 0-4 to the 55-59 years age groups. Six cases were from Brisbane and one from Melbourne, with the remainder from rural New South Wales and Queensland.
- **Rubella** continues to be reported at elevated rates. There were 103 notified cases this period, 63 males and 40 females. The mean age was 23.7 years and there were 15 reports for females in the 15-44 years age group. There were 12 apparent clusters of 2 to 9 cases each in separate postcode areas.
- There were 81 notifications of **syphilis** received this period. Of these, 42 were male, 44 were female and sex was not recorded in 1 case.
- There were 37 notifications of **tuberculosis**, 17 males, 16 females and sex was not recorded in 4 cases. Ages ranged from the 10-14 to the 80-84 years age group and age was not recorded for 3 cases.

Correction

Figure 11 in last fortnight's issue of *CDI* (page 437) was incorrect. The caption was for the National Notifiable Diseases Surveillance System historical comparison figure which is usually included, but the graph was for *Haemophilus influenzae* type b notifications for children aged under 5 years, 1991 to 1993, by month of onset.

Figure 8. Selected National Notifiable Diseases Surveillance System reports, and historical data **



* 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 3. Notifiable Diseases preventable by vaccines recommended by the NHMRC for routine childhood immunisation for the reporting period 5 to 18 September 1993

DISEASES	ACT	NSW	NT	Qld	SA	Tas	Vic	WA	TOTALS FOR AUSTRALIA ¹			
									This Period 1993	This Period 1992	Year to Date 1993	Year to Date 1992
Diphtheria	0	0	0	0	0	0	0	0	0	0	39	12
<i>Haemophilus influenzae</i> b infection ²	1	5	0	3	1	1	1	0	12	26	323	372
Measles	23	154	0	19	1	45	16	0	258	48	1834	653
Mumps	0	2	NN	NN	0	NN	0	0	2	2	7	18
Pertussis	5	32	0	21	22	0	42	1	123	29	1472	353
Poliomyelitis	0	0	0	0	0	0	0	0	0	0	0	0
Rubella ³	4	10	0	60	21	0	8	0	103	197	1964	686
Tetanus	0	0	0	NN	0	0	0	0	0	1	7	10

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: CRS only.
NN Not Notifiable.

Table 4. Other Notifiable Diseases¹, for the reporting period 5 to 18 September 1993

DISEASES	ACT	NSW	NT	Qld	SA	Tas	Vic	WA	TOTALS FOR AUSTRALIA ²			
									This Period 1993	This Period 1992	Year to Date 1993	Year to Date 1992
Arbovirus infection (NEC) ³	0	2	NN	10	0	1	0	0	13	15	453	229
Ross River virus infection	0	11	3	37	-	NN	0	NN	51	40	4957	5083
Dengue	0	-	0	15	-	NN	0	NN	15	22	635	268
Campylobacteriosis ⁴	3	-	8	74	61	16	103	8	273	418	5512	5830
Chlamydial infection (NEC) ⁵	2	NN	3	119	0	10	47	5	186	202	4685	4630
Donovanosis	0	NN	1	1	NN	NN	0	0	2	3	44	61
Gonococcal infection ⁶	0	12	2	24	0	0	10	3	51	133	2084	2110
Hepatitis A	1	13	1	35	0	0	10	0	60	73	1407	1484
Hepatitis B	4	0	5	59	0	1	1	5	75	200	1654	3800
Hepatitis C	9	2	12	107	0	11	153	11	305	348	5012	6175
Hepatitis (NEC)	0	0	0	0	0	0	4	NN	4	1	53	45
Legionellosis	0	3	0	0	2	0	0	0	5	5	119	149
Leptospirosis	0	0	0	0	0	0	2	0	2	4	114	85
Listeriosis	0	0	NN	0	0	0	0	0	0	1	33	28
Malaria	0	4	0	0	0	1	3	0	8	15	454	563
Meningococcal infection	1	8	0	3	1	0	5	0	18	19	222	202
Ornithosis	0	NN	2	0	1	0	2	0	5	4	63	70
Q fever	0	17	0	9	1	0	1	0	28	31	623	368
Salmonellosis (NEC)	0	11	3	23	11	1	15	2	66	124	3411	3622
Shigellosis ⁴	0	-	5	8	1	0	7	0	21	26	555	457
Syphilis	0	29	13	42	0	0	3	0	87	91	1675	1920
Tuberculosis	1	15	0	4	0	1	16	0	37	27	658	603
Typhoid ⁷	0	0	0	1	0	0	0	0	1	2	25	41
Yersiniosis (NEC) ⁴	0	-	0	11	4	0	3	0	18	14	337	455

1. For HIV and AIDS, see Tables 2 and 3, *CDI* 1993:17:432. For rarely notified diseases, see Table 5.
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 new notifications and the increment in the cumulative figure from the previous period.
3. SA, Tas: includes Ross River virus and dengue.
WA: includes dengue.
4. NSW: only as 'foodborne disease' or 'gastroenteritis in an institution'.
5. WA: genital only.
6. NT, Qld, SA and Vic: includes gonococcal neonatal ophthalmia.
7. NSW and Vic: includes paratyphoid.
NN Not Notifiable.
NEC Not Elsewhere Classified.
- Elsewhere Classified.

Table 5. Rarely Notified Diseases¹ for the reporting period 5 to 18 September 1993

DISEASES	Total This Period	Reporting States or Territories	Year to Date 1993
Botulism	0		0
Brucellosis	1	Qld	14
Chancroid	0		1
Cholera	0		2
Hydatid infection	0		18
Leprosy	1	NT	9
Lymphogranuloma venereum	0		1
Plague	0		0
Rabies	0		0
Yellow fever	0		0
Other viral haemorrhagic fevers	0		0

1. Fewer than 50 cases of each of these diseases were notified each year during the period 1987 to 1992.

Table 6. Laboratory reports by State or Territory¹ for the reporting period 9 to 22 September 1993, historical data², and total reports for the year

	State or Territory ¹								Total this fortnight	Historical data ²	Total reported this year
	ACT	NSW	NT	Qld	SA	Tas	Vic	WA			
MEASLES, MUMPS, RUBELLA											
Measles virus		1		2		2	4		9	11.2	257
Mumps virus		1			1				2	1.2	56
Rubella virus	1	4		8	10			4	27	22.0	732
HEPATITIS VIRUSES											
Hepatitis A virus		2		8			2	3	15	20.3	432
Hepatitis B virus	2	25		21	2		15	15	80	98.2	1,933
Hepatitis C virus	9	7	2	36	78		3	54	189	104.2	3,204
Hepatitis D virus							2		2	1.7	42
ARBOVIRUSES											
Ross River virus				2				1	3	11.7	1,676
Barmah Forest virus				1					1	3.5	171
Flavivirus (unspecified)							1		1	.8	102
ADENOVIRUSES											
Adenovirus type 1		1			2		1		4	4.0	66
Adenovirus type 2		1			3				4	8.0	96
Adenovirus type 3		3			1		3		7	4.7	186
Adenovirus type 4							1		1	2.5	61
Adenovirus type 6					1				1	.2	5
Adenovirus type 8							1		1	3.2	18
Adenovirus not typed/pending		4		1	10		10	3	28	48.2	945
HERPES VIRUSES											
Herpes simplex virus type 1	1	14	1	36	19	2	49	17	139	128.7	3,155
Herpes simplex virus type 2		20		62	26		21	30	159	173.5	3,796
Herpes simplex not typed/pending	7	16		1	2	1	3		30	38.8	525
Herpes virus type 6		1							1	.0	4
Cytomegalovirus	1	4		7	3		23	1	39	76.7	1,279
Varicella-zoster virus		1		14	1	1	5	3	25	29.5	751
Epstein-Barr virus		7		8	20		4	5	44	63.8	1,369
OTHER DNA VIRUSES											
Papovavirus group								1	1	.0	4
Poxvirus group not typed							1		1	.2	8
Parvovirus								1	1	3.0	97
PICORNA VIRUS FAMILY											
Coxsackievirus A9	2								2	1.0	53
Coxsackievirus A16		1							1	.0	10
Coxsackievirus B3		1							1	.2	14
Coxsackievirus B5	1								1	1.2	38
Echovirus type 7		1						1	2	.7	97
Echovirus type 11	4	4							8	.5	81

Table 6. Laboratory reports by State or Territory¹ for the reporting period 9 to 22 September 1993, historical data², and total reports for the year, continued

	State or Territory ¹								Total this fortnight	Historical data ²	Total reported this year
	ACT	NSW	NT	Qld	SA	Tas	Vic	WA			
Echovirus type 30							2		2	.2	44
Poliovirus type 1 (uncharacterised)		3					1		4	2.2	42
Poliovirus type 2 (uncharacterised)		1							1	1.2	29
Poliovirus type 3 (uncharacterised)		1							1	2.0	27
Rhinovirus (all types)		13				1	19	5	38	28.7	580
Enterovirus not typed/pending		3	1				8	11	23	19.7	594
ORTHO/PARAMYXOVIRUSES											
Influenza A virus		1			15		22	4	42	39.7	271
Influenza A virus H ₃ N ₂							4		4	2.8	16
Influenza B virus		4	1	6	16		25	6	58	30.7	391
Parainfluenza virus type 2					3		1		4	3.8	116
Parainfluenza virus type 3	1	2		3	4		6	1	17	27.8	402
Parainfluenza virus typing pending							1		1	1.7	40
Respiratory syncytial virus		8		10	46	8	43	1	116	207.0	3,131
OTHER RNA VIRUSES											
HTLV-1								1	1	.2	11
Rotavirus	13	53		1	25	1	27		120	250.2	1,676
Reovirus (unspecified)							3		3	.0	9
Coronavirus		1							1	1.0	13
Small virus (like) particle		2							2	3.2	35
OTHER											
<i>Chlamydia trachomatis</i> not typed	2	9		17	10		1	29	68	142.5	2,267
<i>Chlamydia psittaci</i>							1		1	2.8	63
<i>Chlamydia</i> species			1					1	2	.3	12
<i>Mycoplasma pneumoniae</i>		2		52	4		24	1	83	70.5	1,574
<i>Coxiella burnetii</i> (Q fever)		1		1			3		5	11.0	415
<i>Streptococcus</i> group A		3		7					10	1.5	225
<i>Bordetella pertussis</i>				1			31		32	.3	203
<i>Bordetella</i> species				11					11	1.0	173
<i>Treponema pallidum</i>		4							4	9.0	511
TOTAL	44	230	6	316	302	16	371	199	1,484	1,723.8	34,134

1. State or Territory of postcode, if reported, otherwise State or Territory of reporting laboratory.
 2. 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 7. Laboratory reports by clinical information for the reporting period 9 to 22 September 1993, continued

	Encephalitis	Meningitis	Other CNS	Congenital	Respiratory	Gastrointestinal	Hepatic	Skin	Eye	Muscle/joint	Genital	Other/unknown	Total
Echovirus type 30				1								1	2
Poliovirus type 1 (uncharacterised)					2							2	4
Poliovirus type 2 (uncharacterised)												1	1
Poliovirus type 3 (uncharacterised)												1	1
Rhinovirus (all types)			1		32							5	38
Enterovirus not typed/pending		4	1		5	6		2				5	23
ORTHO/PARAMYXOVIRUSES													
Influenza A virus					29							13	42
Influenza A virus H ₃ N ₂					4								4
Influenza B virus					36					2		20	58
Parainfluenza virus type 2					2							2	4
Parainfluenza virus type 3					15					1		1	17
Parainfluenza virus typing pending					1								1
Respiratory syncytial virus					90			1				25	116
OTHER RNA VIRUSES													
HTLV-1												1	1
Rotavirus						116						4	120
Reovirus (unspecified)					3								3
Coronavirus												1	1
Small virus (like) particle						1						1	2
OTHER													
<i>Chlamydia trachomatis</i> not typed									1		35	32	68
<i>Chlamydia psittaci</i>					1								1
<i>Chlamydia</i> species					2								2
<i>Mycoplasma pneumoniae</i>	1				42			1				39	83
<i>Coxiella burnetii</i> (Q fever)												5	5
<i>Streptococcus</i> group A					2			1		1		6	10
<i>Bordetella pertussis</i>					32								32
<i>Bordetella</i> species					3							8	11
<i>Treponema pallidum</i>												4	4
TOTAL	1	8	2	2	338	143	66	187	14	9	185	529	1484

Table 8. Laboratory reports by contributing laboratories for the reporting period 9 to 22 September 1993

STATE OR TERRITORY	LABORATORY	REPORTS
Australian Capital Territory	Woden Valley Hospital, Canberra	42
New South Wales	Institute of Clinical Pathology & Medical Research, Westmead	96
	Prince Henry / Prince of Wales Hospitals, Sydney	8
	Royal Alexandra Hospital for Children, Camperdown	31
	South West Area Pathology Service, Liverpool	68
Queensland	Queensland Medical Laboratory, West End	344
South Australia	Institute of Medical & Veterinary Science, Adelaide	301
Tasmania	Northern Tasmanian Pathology Service, Launceston	6
Victoria	Monash Medical Centre, Melbourne	16
	Royal Children's Hospital, Melbourne	146
	Victorian Infectious Diseases Reference Laboratory, Fairfield Hospital	221
Western Australia	State Health Laboratory Services, Perth	205
TOTAL		1484