OVERSEAS BRIEF

The Overseas brief highlights disease outbreaks during the quarter that were of major public health significance world-wide or those that may have important implications for Australia.

Reporting period 1 January to 31 March 2008

Chikungunya

Indonesia

Outbreaks of chikungunya in Indonesia have continued throughout the first quarter of 2008, particularly in the city of Bandar Lampang, Lampung Province, on the south east end of the island of Sumatra.[1]

Chikungunya is difficult to distinguish from dengue fever without laboratory confirmation, so that some cases in the outbreak may have been due to dengue fever. Community health centres do not routinely report their cases to the health office, which may lead to widespread under-reporting.[1]

Sri Lanka

In February 2008, military officials reported an outbreak of chikungunya among troops in the northern war zone of Sri Lanka. Blood samples sent to the Medical Research Institute confirmed chikungunya in the majority of cases, however dengue fever infection may also be involved. Approximately 500 troops were treated at local hospitals in the Anuradhapura district. The outbreak was attributed to heavy rains and resultant floods leading to the proliferation of mosquito breeding sites.[2]

Dengue and dengue haemorrhagic fever

Global update

Dengue virus infection has become the most common arboviral disease of humans with more than 2.5 billion people living in areas where dengue virus infection can be locally acquired. Epidemics caused by all 4 virus serotypes have progressively increased in size and frequency over the last 25 years. Since 2005, dengue virus infection has become endemic in most tropical countries of the South Pacific, Asia, the Caribbean, the Americas, and Africa.

The presence of multiple dengue virus serotypes circulating simultaneously (hyperendemicity) in most tropical urban centres in the endemic regions is of particular concern. Hyperendemicity is associated with increased transmission rates and increased rates of dengue haemorrhagic fever (DHF). The incidence of DHF over the past 25 years has increased significantly in South East Asia, the South Pacific and the American tropics with major epidemics now occurring in many countries every 3 to 5 years. DHF is more commonly seen in children under the age of 15 years in Asia. In contrast, in the Americas and the Pacific, primary infection at a young age is not common. International travellers from non-endemic countries who have not had a primary infection are usually at low risk for DHF.[3]

New Caledonia

On 22 February 2008 New Caledonian health authorities declared a dengue virus infection epidemic. The declaration was made following an outbreak that initially involved the townships of greater Noumea but then extended to the north-eastern island of Lifou and the Isle of Pines, south of the capital Noumea. Up to 31 March 2008, 284 positive cases of dengue virus infection had been reported to the Department of Health.[4] Local transmission of serotype DEN 1 had been confirmed in the majority of cases. The last dengue virus infection epidemic in New Caledonia was in 2003 (also serotype DEN 1) with approximately 20 deaths.[5]

Tonga

Health officials in Tonga have reported more than 200 cases of dengue virus infection[6] in the first 2 months of 2008, including 3 deaths as of 19 March 2008.[7] The deaths included a 23-year-old and an infant who both died as a result of the more severe DHF.[6] An Auckland medical health officer reported on 2 April 2008 at least 23 cases of dengue virus infection imported from Tonga to New Zealand, confirming that this outbreak is continuing.[8]

South East Asia

A number of South East Asian countries including East Timor, Malaysia, the Philippines, Singapore, Sri Lanka and Thailand reported continuing outbreaks of dengue virus infection during the reporting period. While dengue virus infection is endemic in these countries and high case numbers are expected for this time of year (due to the onset of the rainy season) increased incidences were reported compared with 2007, particularly in Singapore and Thailand.[9]

Malaysia

The Malaysian Ministry of Health reported 9,889 cases of dengue virus infection including 26deaths in the first 3 months of 2008. While this is less than the 13,949 cases (including 34 deaths) reported for the same time for 2007, case numbers are continuing to rise. The majority of cases to date have occurred in the central Selangor State (262 cases) followed by the capital Kuala Lumpur and the southern State of Johor.[9]

Singapore

The Singapore Ministry of Health reported 1,228 dengue virus infection cases in the first quarter of 2008 (a 68% increase compared with the same period in 2007) but no increase in the number of DHF cases.[10]

Thailand

The Thai Public Health Minister reported 7,413 cases of dengue virus infection (including 9 deaths across 8 provinces) between 1 January and 31 March 2008, a 76% increase compared with the same period in 2007.[9]

Human immunodeficiency virus

Global update

The number of people globally who are living with human immunodeficiency virus (HIV) is increasing due to the continued accumulation of new infections in a growing population and longer survival times, but prevalence has remained steady. The estimated number of people living with HIV worldwide in 2007 was 33.2 million (30.6–36.1 million).[11]

South East Asia and Pacific Region

South East Asia continues to have the highest prevalence of HIV in the Asian region. Myanmar, Thailand and Cambodia all demonstrate evidence of decreasing prevalence in contrast to Indonesia and Vietnam where prevalence is increasing.[11]

Indonesia

The HIV epidemic in Indonesia now affects 32 of its 33 provinces and has expanded from localised populations of injecting drug users in Bali, Jakarta and West Java to their non-injecting partners, sex workers and their clients and prisoners. In Papua province the adult HIV prevalence was estimated as 2.4% (ranging from 3.2% in remote highlands and 2.9% in less-accessible lowland areas) and 3% among 15–24 year olds. Unprotected sex is the main mode of transmission in Papua.[11]

Papua New Guinea

Seventy per cent of the 75,000 people living with HIV in the Oceania region in 2007 were from Papua New Guinea (PNG) where the epidemic continues to expand. Unsafe heterosexual intercourse remains the main mode of transmission in PNG with the majority of infections occurring in rural areas.[11]

New Zealand

In New Zealand unsafe sex between men remains the predominate mode of HIV transmission. However, there has been an increase in diagnoses through unsafe heterosexual intercourse with the majority of these infections contracted in Asia and sub-Saharan Africa.[11]

Pacific nations (other)

While no other country or territory within Oceania has reported more than 300 HIV cases since the start of testing and reporting, risk factors (such as low uptake of condom use in the small island states of Fiji, Kiribati and Tonga) associated with HIV infection are prevalent across the region.[11]

Influenza (avian)

During the first quarter of 2008 the World Health Organization (WHO) has confirmed 28 cases of human H5N1,[12] 22 of which were fatal giving a case-fatality rate (CFR) of 78%. This is lower than the number of cases confirmed during the same period in 2007 (39 cases, CFR 61%).[13] These WHO-confirmed cases were from 4 countries; China (3 cases), Egypt (5 cases), Indonesia (15 cases), and Vietnam (5 cases).[13] There was no evidence of human-to-human transmission of avian influenza during the reporting period.

In April 2008 the WHO released a final report on test results for the family cluster of H5N1 cases in Peshawar, Pakistan in late 2007.[14] In addition to the 1 human H5N1 case confirmed by the WHO in December 2007, 2 additional cases (1 fatal) were confirmed by serological testing. The report stated that the results support the epidemiological findings that limited human-to-human transmission was likely among some of the family members. The report also stated that there was a further probable human case, but that no sample was available for testing.

Influenza (seasonal)

During the 2007–2008 Northern Hemisphere influenza season in Europe,[15] Canada[16] and the United States of America (USA)[17] there was a mismatch between the majority of influenza A (H3) and influenza B virus strains typed from respiratory specimens and those recommended by the WHO for inclusion in the Northern Hemisphere 2007–2008 influenza vaccine. The strain of influenza A (H1) virus typed from respiratory specimens and that recommended by the WHO for inclusion in the 2007–2008 influenza vaccine were more closely matched.

The composition of the WHO recommended influenza vaccine for the upcoming 2008 Southern Hemisphere influenza season includes those virus strains that made up the majority of strains circulating in the 2007–2008 European and USA influenza seasons. The Australian Influenza Vaccine Committee has agreed to adopt the WHO recommendations for the composition of the vaccine for the 2008 season (influenza A: (H1N1): an A/Solomon Islands/3/2006 (H1N1)-like strain, influenza A: (H3N2): an A/Brisbane/10/2007 (H3N2)-like strain, and influenza B: B/Florida/4/2006-like strain).[18]

Following similar results during the 2007 Southern Hemisphere season, a significant proportion of influenza A (H1N1) virus isolates from the 2007–2008 Northern Hemisphere influenza season were resistant to oseltamivir. In the USA 10.2% of influenza A (H1N1) viruses tested have been found to be resistant to oseltamivir,[19] while in Europe influenza A (H1N1) viruses resistant to oseltamivir have been found in 19 countries with an overall prevalence of 23%[20] and in Canada[16] 20.3% of the H1N1 isolates tested were resistant to oseltamivir.

Measles

Despite the success of the Measles Initiative, particularly in Africa where measles deaths have decreased by more than 91% between 2000 and 2006, large outbreaks continue to occur across the world.[21] During the first 3 months of 2008 many countries reported new or continuing outbreaks of measles with several of these linked via imported cases to outbreaks in other countries. Viral genotyping is an increasingly important measles surveillance tool in non-endemic countries. Countries where measles remains endemic tend to have one predominant genotype or a small number of genotypes and so genotyping can facilitate the identification of imported measles virus infections.

European Region

Despite an overall decrease of 53% in measles cases (from 31 countries that report to EUVAC.NET) in 2007 compared with 2006, concern remains about the high incidence of measles reported in some countries. The World Health Organization Regional Office for Europe reported that in 2007 the majority (60%) of measles cases in the WHO European Region occurred in Western European countries. The highest incidence rates in Western Europe were in Switzerland with 14.06 cases per 100,000 population, followed by the United Kingdom (UK) with 1.64 cases per 100,000 population. The majority of all measles cases (87%) across the European Region were unvaccinated.[21]

Switzerland

An outbreak of measles in Switzerland, which began in November 2006, is continuing with 2,250 cases reported between November 2006 and 14 April 2008.[22] It is the largest outbreak registered in the country since measles notification began in Switzerland in 1999 and could be attributed to low vaccination coverage rates, 86% for first dose and 70% for second dose.[22] Cases have been predominantly among school aged children with 98% of cases unvaccinated or only partially vaccinated. Measles virus genotype D5 has been continuously transmitted within Switzerland over at least the past 15 months and has been linked to outbreaks in neighbouring countries and the USA.[23]

United States of America

In 2000, the WHO declared measles eliminated in the USA with successful interruption of endemic transmission at this time. Measles case numbers have declined to fewer than 150 cases annually since 1997. However, case numbers so far this year (up to 25 April 2008) are the highest for any year since 2001. The US CDC reported 61 confirmed cases of measles attributed to outbreaks, which began within this reporting period with 48 (79%) of these linked to imported cases as follows: San Diego, California (11 cases between 25 January and 16 February 2008, ex Switzerland, genotype D5); Pima County, Arizona (15 cases between 13 February and 23 April 2008, ex Switzerland, genotype D5); Honolulu, Hawaii (3 cases spread from San Diego and an additional 2 cases between 5 and 25 February, ex Italy); Fairfax, Virginia (1 case in February, ex India); New York City (14 cases between 7 February and 20 April, ex Israel and Belgium, genotype D4) and Milwaukee County, Wisconsin (4 cases between 19 March and 9 April, likely ex China, genotype H1).[24,25]

Nipah virus

The Institute of Epidemiology Disease Control and Research in Dhaka, Bangladesh reported an outbreak of Nipah virus in the Manikgonj and Rajbari districts of west-central Bangladesh with 8 suspected cases (all of them fatal) in February 2008. Two of the cases (siblings) tested positive for Nipah antibody. The index case became sick on 20 February 2008 and died on 29 February 2008. All cases in the Rajbari district were clustered in time and place (all from the same village). Seven of the 8 cases from this village had consumed date palm juice 10 to 15 days prior to becoming ill, as had the 3 cases (all from the same family) from Bishnupur village in Manikgonj district.[26]

Nipah outbreaks have occurred repeatedly in Bangladesh since 2001. The outbreaks occur seasonally between January and May and are associated with the harvesting and consumption of date palm juice during this time. Fruit bats are the animal reservoir for Nipah virus in Bangladesh with date palm juice a plausible agent for its transmission.[26]

Plague

Global trends

While the number of human cases of plague remain steady in Asia, there has been an increase in both the proportion of global cases of plague that are reported from Africa and the number of African countries that are reporting cases over the past 20 years with 90% of all cases over the last 5 years reported from Madagascar, Tanzania, Malawi, Uganda and the Democratic Republic of Congo.[27] In the last 15 years 45% of all human cases of plague in Africa have been reported from Madagascar.[28]

Poliomyelitis

Between 1 January and 2 April 2008, the Global Polio Eradication Initiative reported a total of 256 cases of wild poliovirus infection (with confirmations and dates of onset in 2008) from the endemic countries of Afghanistan (4), India (165), Nigeria (84) and Pakistan (3). In addition, 1 case of wild poliovirus was reported during this time from the re-infected country of the Democratic Republic of Congo and 2 from Angola. Chad and Angola are the only 2 re-infected countries in which the transmission of the originally imported poliovirus has never been interrupted and from where the virus has spread internationally. Somalia was declared polio-free on 25 March 2008 with no cases reported in the previous 12 months.[29]

India

Recent control efforts in India have focussed on the interruption of wild poliovirus type 1 (WPV1) transmission and the maintenance of high levels of population immunity against WPV1 in areas free of this serotype. This strategy appears to be successful with only 2 of the 165 cases reported in India with onset in 2008 being WPV1. There have been no WPV1 cases reported from the previously highly endemic area of Uttar Pradesh State since 10 November 2007. Low levels of WPV1 transmission are only likely to continue in remote areas of Bihar where access is restricted. An outbreak of WPV3 in mid-2007 is responsible for the higher numbers of this serotype in 2008, but this is being addressed via the implementation of 2 rounds of monovalent OPV type 3 in 2008.[29]

Nigeria

A significant increase in WPV1 cases have been reported from Nigeria in 2008 (75 cases) compared with the same time last year (8 cases). Fifty per cent of the cases in 2008 are geographically localised to 3 states: Kano, Jigawa and Sokoto. The next immunisation activity will occur in the high risk northern states from 5 to 8 April 2008.[29]

Chad

Large numbers of refugees from Chad moving across the border to neighbouring Cameroon and the Central African Republic has increased the risk of spreading polio infection (a case reported in February from Cameroon with date of onset in November 2007 was genetically linked to the virus circulating in Chad).[29]

Tuberculosis

The World Health Organization's fourth report on *Anti-Tuberculosis Drug Resistance in the World* states that levels of multi-drug resistant tuberculosis (MDR-TB) are much higher than expected and that extensively drug resistant TB (XDR-TB) is present and virtually untreatable in 45 countries. The report concludes that there is an urgent need to address the problem, including improving diagnostic capacity in some countries (including PNG) which cannot diagnose or treat MDR cases.[30]

Africa

Outbreaks of drug-resistant TB in Africa continue unabated and are often further complicated by co-infection with HIV/AIDS.[31] During this report-

ing period the Ministry of Health in Botswana reported the first ever cases (2) of XDR-TB in the country and 100 cases of MDR-TB.

United Kingdom ex Somalia

In March 2008, UK Health officials confirmed the first case of XDR-TB in the UK. The case is a 30-year-old immigrant from Somalia who was found to have inactive pulmonary TB when screened on arrival in the UK in November 2007. Cultures later identified the XDR strain of tuberculosis and public health officials began to trace and monitor those potentially exposed.[32]

Yellow fever South America

In this quarter there have been major outbreaks of yellow fever in Argentina , Brazil and Paraguay.

The Argentinan Ministry of Health reported the country's first official case of human yellow fever since 1967, on 3 March 2008 in Misiones Province in the north-eastern corner of Argentina. As of 17 March 2008, the Argentinan MoH has reported a total of 5 cases of human yellow fever, including 1 death, all from Misiones Province.[33,34]

Between 8 January and 4 April 2008, the Brazilian Ministry of Health reported 70 human cases (40 of them confirmed) including 21 deaths from sylvan (jungle) yellow fever. Ninety per cent of the confirmed cases had no proven vaccination history or were vaccinated greater than 10 years previously.[35]

The Paraguayan Ministry of Health reported the first cases of yellow fever in the country in more than 30 years. Between 15 January and 31 March 2008, the MoH reported 26 confirmed cases of human yellow fever (including 8 deaths).

While some rural, forested areas of Paraguay have previously been known risk areas for yellow fever this recent outbreak has demonstrated the presence of yellow fever in other areas including possible urban transmission.[36,37]

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