

## OVERSEAS BRIEF

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

**Reporting period 1 October to 31 December 2007**

### Chikungunya

#### Indonesia

An extensive outbreak of chikungunya was reported from the Indonesian islands of Java and Sumatra in late 2007. Between 11 and 24 November 2007, regional health authorities in Bogor, West Java reported 60 suspected cases of chikungunya infection. Numerous reports of chikungunya in Central and East Java occurred with outbreaks in these areas thought to have begun in early October 2007. Both *Aedes aegypti*, (the principal vector of chikungunya virus) and *Aedes albopictus* mosquitoes were thought to be transmitting the virus in some areas.<sup>1</sup> In a five day period between 10 and 15 December 2007, 997 suspected cases were reported by the Japara Regency Health Service in Central Java. In Sumatra, attacks rates of up to 90% were reported in some neighbourhoods in the worst affected areas of Wayadadi sub-district. Thousands of people were reportedly infected during December 2007 in the city of Bandar Lampung in South East Sumatra.<sup>2</sup> Outbreaks continued into 2008 in some areas.

Chikungunya occurred sporadically in Indonesia until 1985, but there were no reports of the disease between 1986 and 2000. Between 2001 and 2007, Indonesia reported several outbreaks, including 30 cases in central Jakarta (on the island of Java) in May 2007.<sup>3</sup> There are few reported laboratory confirmations of chikungunya cases in Indonesia and widespread under-reporting is likely.<sup>4</sup>

#### Taiwan (ex Indonesia)

The Taiwan Centre for Disease Control reported two imported cases of chikungunya in Indonesia nationals, identified through fever screening at Taiwan's international airport on 28 and 30 December 2007.<sup>5</sup> Blood samples were taken from the cases after fever was identified at the airport and chikungunya was subsequently confirmed by polymerase chain reaction.<sup>6</sup>

### Cholera

An outbreak of cholera in the Vietnamese capital Hanoi began on 23 October 2007 and spread to 14 out of 64 provinces and cities across Vietnam.<sup>7</sup> National media reported nearly 2,000 people were hospitalised with acute diarrhoea in October and November 2007, with a total of 295 cases testing positive for cholera, including three foreign nationals from the Philippines, Belgium and Japan.<sup>7,8</sup> No deaths were reported and the epidemic was declared under control in December 2007 following extensive control campaigns by the Vietnamese Ministry of Health to improve food safety, disease surveillance, environmental hygiene and education.<sup>8</sup>

The outbreak originated in flood affected areas and health officials linked the initial source of illness to a popular fermented shrimp paste and other raw foods. Transmission is thought to then have occurred via contact with infected persons or contaminated water.<sup>7</sup>

Cholera was first reported in Vietnam in 1964 and is now endemic in 35 out of the 45 provinces.<sup>9</sup> The infection is found predominantly along the central coastal regions of the country and is positively correlated with rainfall and drinking water from public wells.<sup>10</sup> The last widespread cholera outbreak in Vietnam occurred in 2004.

### Dengue fever

#### South East Asia

Across the South East Asia region in 2007, the number of cases of dengue fever reported has increased by 18% and fatal cases by 15% compared with 2006. The seasonal nature of dengue fever is well established in most countries with studies suggesting that peak dengue transmission occurs about six to eight weeks after peak rainfall.<sup>11</sup>

Thailand, Indonesia and Myanmar have all reported significantly increased numbers of dengue fever cases during 2007. Case fatality rates (CFRs) in urban areas are low: approximately 0.2% in Thailand and 1% in Indonesia and Myanmar where good health facilities are available, with much higher CFRs of up to 5% during localised outbreaks outside urban areas in both Indonesia and Myanmar.<sup>11</sup>

## Indonesia

Dengue fever is endemic across more than 300 regencies in Indonesia with the principle vector, *Aedes aegypti*, breeding extensively throughout all the country's islands. Dengue is endemic in predominantly urban areas with all serotypes (DEN 1 to 4) present in the majority of the large cities. The transmission season begins in November/December each year with the peak usually reached by February. Between January and November 2007 Indonesia reported 127,687 cases compared with 106,425 cases between January and September 2006.

Jakarta and West Java reported more than 25,000 cases each in 2007 (approximately 279 cases per 100,000 population in Jakarta and 63 cases per 100,000 population in West Java). East and Central Java each reported between 10,000 and 20,000 cases while Bali, East Kalimantan, Lampung, South Sumatra, Yogyakarta, West Sumatra, North Sumatra, North Sulawesi, South Kalimantan and South Sulawesi reported between 1,000 and 5,000 cases with the remainder of the provinces reporting less than 1,000 cases each.<sup>11</sup>

## Thailand

Thailand reported 58,836 cases of dengue fever between January and November 2007, a 43% increase compared with 2006 when 41,116 cases were reported. Thailand reports cases of dengue fever annually from all its four regions: Northern, Central, North-eastern and Southern with peaks occurring in the months of June and July in recent years.<sup>11</sup>

## Myanmar

Between January and September 2007, Myanmar reported 9,578 cases of dengue fever compared to 8,674 cases during the same period of 2006. Similar to recent years, the peak number of cases in 2007 occurred in July, with the states/divisions of Mon, Yangon, Ayayarwaddy, Kayin, Yanintharyi, Rakhine, Mandalay, Bago (W), Bago (E), Magway and Sagaing reporting the most cases.<sup>11</sup>

## Ebola haemorrhagic fever

The World Health Organization (WHO) and the Ugandan Ministry of Health reported an outbreak of ebola haemorrhagic fever in the Bundibugyo District. Initial field investigations indicated that the outbreak began in September 2007. Confirmation of the outbreak was not obtained until 28 November 2007, after eight of the 20 samples collected by the national field team were sent to the national reference laboratories and to the United

States Centers for Disease Control and Prevention (CDC) Special Pathogens Branch in Atlanta, tested positive for the infection.

A National Task Force was set up to co-ordinate the outbreak response and included the Ugandan Ministry of Health, the WHO and other experts from international NGOs including Médecins Sans Frontières; African Field Epidemiology Network; International Federation of Red Cross and Red Crescent Societies and the CDC, Atlanta. The Global Outbreak and Alert Response Network along with other regional networks and technical institutions, supported international and operational co-ordination efforts. An active surveillance system for case detection and contact follow-up was established and isolation wards set up at hospitals in Kikyo and Bundibugyo. The Ugandan National Task Force reported 148 cases including 37 deaths (CFR 25%) by 3 January 2008.<sup>12</sup> The outbreak was officially declared over on 20 February 2008, 42 days after the last infected person was discharged from hospital on 8 January 2008.

There are currently four known species of Ebola virus, three of which are found in Africa (Zaire, Sudan and Ivory Coast species). Genetic sequencing conducted by the CDC in Atlanta of samples collected during this outbreak has confirmed that this Ebola virus is a new fifth species.<sup>13,14</sup>

## Influenza (avian)

The World Health Organization confirmed 19 cases of human H5N1 with dates of onset between 1 October and 31 December 2007<sup>15</sup> compared with 10 cases during the same period of 2006 (CFR 74%).<sup>16</sup> These WHO-confirmed cases were from six countries including the first ever confirmed cases in Burma and Pakistan (one case each). The remaining cases were reported from China (2 cases), Egypt (5 cases), Indonesia (9 cases) and Vietnam (1 case). The source of infection for nearly all cases was established as exposure to sick and dead poultry.<sup>15</sup>

There was no evidence of sustained human-to-human transmission of avian influenza during the reporting period, but a number of suspected clusters were investigated by the WHO and Ministries of Health in Burma, China and Pakistan. The son of one of the Chinese cases had initially been monitored as a suspected case. The case confirmed from Pakistan was a veterinarian who had worked on culling operations during H5N1 outbreaks in poultry. Up to 10 family members and contacts of this confirmed case had initially been suspected to have been infected with the virus, but none were confirmed and at least one was ruled out (by the US CDC) as ever having been infected. Similarly, four contacts of the Burmese cases had been symp-

tomatic, but none were confirmed as definite cases. If there was any human-to-human transmission amongst any of the confirmed or suspected cases it was limited and not sustained.

Indonesia reported the largest number of cases between 1 October and 31 December 2007 (9 cases, 7 of them fatal) and continues to report the highest number of cases of all countries since the beginning of the global outbreak in November 2003.<sup>17</sup>

### Plague (bubonic)

The Minister of Primary Healthcare in Uganda reported an outbreak of bubonic plague in the Nebbi district in the north-west of the country, with 100 cases between October and November 2007 (CFR 20%). The majority of fatal cases were women, who are at increased risk of exposure through sleeping on the floor (their indigenous Nebbi custom). There was no suggestion of any pneumonic plague cases in this outbreak.<sup>18</sup> Plague outbreaks are regularly reported from Uganda with the Nebbi district in the western region and the Arua district in the northern region considered to be endemic for the disease.<sup>19</sup>

### Poliomyelitis

#### Global update

In 2007, the Global Polio Eradication Initiative (GPEI) intensified efforts to eradicate wild poliovirus type 1 (WPV1), because it is more highly transmissible and has higher attack rates of paralysis than WPV3.<sup>20</sup> This intensified effort has resulted in an 84% decrease in reported cases of WPV1 worldwide compared with 2006 (246 cases in 2007 compared with 1,463 cases in 2006) and limited transmission to small areas in the four endemic countries of Afghanistan, India, Nigeria and Pakistan.<sup>20,21</sup> The majority of this reduction in WPV1 case numbers has been from Nigeria.

Between 11 October and 4 January 2008, the GPEI reported 231 cases of wild poliovirus infection from the endemic countries of Afghanistan (1), India (177), Nigeria (50) and Pakistan (3) and 24 cases of wild poliovirus from the re-infected countries of Chad (11), the Democratic Republic of Congo (DRC) (7) and Niger (5).<sup>22</sup>

#### India

In 2007 there were a total of 831 cases of wild poliovirus reported in India consisting of 76 WPV1, 752 WPV3 and three cases which were positive for both WPV1 and WPV3. This represents a 23% increase in the total number of polio cases in

2007 compared with 2006 but an 88% decrease in WPV1. The overall increase in cases is due to, not unexpectedly, outbreaks of WPV3 in Bihar. The impact of two large-scale supplementary immunisation campaigns using the monovalent oral polio vaccine type 3 won't start to impact these case numbers until mid-February 2008.<sup>20</sup>

### Afghanistan, Nigeria and Pakistan

In Nigeria, Pakistan and Afghanistan, (all of them considered polio-endemic) have all reported dramatic declines in total polio case numbers compared with 2006, with 90% fewer in Nigeria, 20% fewer in Pakistan and 45% fewer in Afghanistan.

#### Chad

Chad (a re-infected country) reported 19 cases of polio in 2007, 11 of these between 1 October and 31 December 2007. Two of these cases were reported from the previously polio-free southern province of Tandjile. This area of southern Chad was not covered by the recent December supplementary immunisation campaign, increasing the risk of transmission and importation to the neighbouring countries of Sudan, Cameroon and the Central African Republic. The risk has since increased further with the movement of large numbers of Chadian refugees (estimated at over 30,000) into Cameroon following fighting between the government and opposition groups in the capital N'Djamena between 1 and 6 February 2008.<sup>23</sup>

### Democratic Republic of Congo

The DRC reported more cases of polio than any other re-infected country, with a total of 41 cases during 2007. Between 1 October and 31 December, the DRC reported six cases of wild poliovirus infection.<sup>22</sup>

#### Nepal

Nepal reported four cases of WPV3 infection, all of which had onset of paralysis in December 2007. These were the first cases reported from Nepal since 2006. All of these cases were reported from areas bordering Bihar, India where an outbreak of WPV3 is continuing. Nepal remains at high risk of continued infection due to its proximity to the endemic areas of India and the movement of people across this border.<sup>20,22</sup>

### Rift Valley fever

An outbreak of Rift Valley fever (RVF) in the Sudan that was first reported in mid-October 2007 affected 15 localities in three states (White Nile, Sinnar and Gazeera) in the country. The Sudanese Federal Ministry of Animal Resources and Fisheries

reported confirmation of RVF in samples taken on 29 October 2007 from animals in the White Nile State.<sup>24</sup> A total of 698 human cases, including 222 deaths (CFR 32%), were reported between mid-October 2007 and 5 January 2008, the majority from Gazeera State. There have been no new cases reported since 5 January 2008, with active surveillance continuing in all affected states.<sup>25</sup>

RVF is endemic in the Sudan, but the last major outbreak was in 1976. The first outbreak of RVF outside sub-Saharan Africa occurred in Egypt in 1977–1978 (with 18,000 human cases including 598 deaths) and was thought to have begun with imported a case(s) from the Sudan. A later epizootic in Egypt in 1997 was also believed to have been imported from the Sudan. In September 2000, outbreaks of RVF were reported for the first time outside the continent of Africa, in Yemen and Saudi Arabia.<sup>26,27</sup>

## Tuberculosis

Approximately two million people in the Western Pacific Region become infected with tuberculosis (TB) annually with the potential for a rapid increase in the number of extensively drug-resistant TB (XDR-TB) cases if drug management is not optimal.<sup>28</sup> Access to appropriate treatment for multi-drug-resistant TB (MDR-TB) is not uniformly available increasing the risk of XDR-TB developing.

TB is one of the three leading infectious causes of mortality in Papua New Guinea (PNG), with a mortality rate of 42 deaths per 100,000 population and an annual incidence of 233 cases per 100,000 population. There is a high risk of TB infection spreading to northern Queensland because of Australia's close proximity to PNG and the Torres Strait Treaty arrangements that facilitate movement of people between PNG and the Torres Strait Islands. This risk is highlighted by 10 of the 30 MDR-TB strains isolated in Australia in the past two years originating from the Western Province of PNG.<sup>29</sup>

A recent study found that 15 out of 60 cases of tuberculosis amongst PNG nationals from the Western Province presenting to health clinics in Queensland between 2000 and 2006 were infected with MDR-TB strains, with evidence of primary transmission of the infection. These 15 cases were all infected with the *Mycobacterium tuberculosis* Beijing genotype, which is increasingly linked to MDR-TB and is highly transmissible.<sup>29</sup>

While introduction of the 'directly observed therapy short course program (DOTS)' prevents resistant strains developing, this optimal therapy is not consistently available or utilised in PNG. The magnitude of MDR-TB transmission in PNG is not

known but its control is essential to stop it becoming an emerging issue in Queensland with long term social and economical sequelae.<sup>29</sup>

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## CDI Instructions for authors

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