

## Overseas briefs

### *ProMED-mail*

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### *Dengue update*

#### **Hawaii**

*Source: Centers for Disease Control and Prevention, Travellers' Health; Released 2 October 2001; updated 4 March 2002 (edited)*

As of 15 March 2002, Hawaii state health officials reported one additional recent case of dengue fever and 6 cases that occurred last year but were not confirmed by laboratory testing until 2002. The single recent case occurred in February 2002 in Haiku, Maui, and 5 of the cases from last year occurred among residents of Hana, Maui. The other case from last year occurred in early December 2001 in a visitor from New Mexico who stayed in a private residence in a forested area of Hana. A total of 118 cases of dengue fever have been reported in Hawaii since 10 June 2001. Of these, 77 occurred in the Hana area. Overall, the severity of illness has been relatively mild and the outbreak appears to be waning. Available data suggest that the risk of dengue infection to most visitors to Hawaii is very low.

#### **Ecuador**

*Source: El Comercio (Ecuador), 26 March 2002 (edited)*

According to a spokesperson from the State Tropical Medicine Secretariat in Guayaquil, the intense rainstorms that have hit the coastal provinces of Ecuador beginning in February 2002, have unleashed epidemics of dengue and malaria. The spokesperson reported that, to date, there were 816 cases of suspected dengue fever, 23 of which have been confirmed, including 2 cases of dengue haemorrhagic fever (DHF). The Ministry of Health indicated that an additional 21 cases of suspected DHF were being investigated. The Tropical Medicine Secretariat revealed that cases of Asiatic (serotype 2) and serotype 3 dengue virus infection have been identified, and that they

probably reached Ecuador through Venezuela and Central America. The severity of the winter season has forced the government to declare a state of public health and economic emergency in the coastal states as well as in 2 Andean states also affected by torrential rains.

#### **Cuba**

*Source: Associated Press report, 28 March 2002 (edited)*

"The dengue virus has been eradicated in our homeland," said President Castro on 27 March 2002. The Cuban leader, on 12 January 2002, launched a highly organised and widespread education and fumigation campaign aimed at wiping out the mosquito that transmits the virus. During the campaign in Cuba, homes and other buildings, especially in the hard-hit capital of Havana, were repeatedly sprayed over a period of more than 3 months, sometimes several times a week. Cuba's government-controlled newspapers printed educational articles about clean-up efforts. Because the virus was seen here as a matter of national security, cooperation in the campaign was obligatory. Residents who refused to let their homes be fumigated were sometimes fined. Cuba suffered a serious dengue epidemic in 1977 that made more than 400,000 people sick. During another dengue epidemic 10 years later, Cuba reported 350,000 cases.

#### **Brazil**

*Source: Agencia EFE 31 March 2002 (edited)*

Dengue cases reported in Brazil in the first quarter of the 2002 were more than twice the number of those in the same period last year. Between January and March 2002, 317,787 cases of dengue were reported in Brazil, compared with 153,148 in the same period last year, based on health department data from each of the States in the country. Haemorrhagic dengue has killed 59 people around the country in the first quarter of 2002, more than doubling the 28 deaths last year, and could exceed the total of 75 deaths reported between 1990 and 2001, according to Health Ministry data. The campaign against dengue has mobilised various sectors of Brazilian society, including the army, whose members in some States go house-to-house to eliminate breeding sites of *Aedes aegypti*.

## *Poliomyelitis in Haiti and Dominican Republic*

Source: Reuters Health eLine, 14 March 2002 (edited)

A recent outbreak of poliomyelitis in Haiti and the Dominican Republic has been traced to a strain of oral polio vaccine (OPV) that mutated back to virulence. Based on genetic analysis of viral samples, the outbreak, which struck nearly 2 dozen children in both countries between 2000 and 2001, arose from OPV given to one child in 1998/1999. The cases in Haiti and the Dominican Republic illustrate a potential risk with OPV when it is given in a population where many people are unvaccinated. After a person receives OPV, virus from the vaccine is shed in the stools for a short period of time. In this outbreak, shed virus from a single OPV dose spread and mutated back to a virulent state, causing paralytic disease in a group of children who had either not been vaccinated or had not received a complete course of OPV. The findings were published in Science (<http://www.sciencemag.org/scienceexpress/recent.shtml>).

## *Variant CJD is confirmed as a new disease*

Source: Reuters report, 25 March 2002 (edited)

A systematic review of Welsh death records and autopsy samples confirms the description of variant Creutzfeldt-Jakob disease (vCJD) as a new disease entity, rather than a result of better case ascertainment. Researchers at the University Hospital of Wales in Cardiff obtained death certificate data from the Office of National Statistics for deaths of individuals aged 15 to 45 between 1985 and 1995, to search for cases of vCJD that might not have been recognised before the first cases were reported in 1996. They compiled a list of International Classification of Diseases version 9 (ICD-9) codes that might be mistaken for vCJD, which they called 'non-specific fatal disorders compatible with vCJD.' For cases that fit within this classification, the group obtained postmortem brain material whenever possible, for examination by immunocytochemical staining for prion protein. Of 12,091 deaths, excluding external injury and poisoning, 3,322 fit within the ICD-9 classification scheme. Deaths were excluded where the maximum duration of illness from onset of symptoms exceeded 36 months, given that the first published vCJD cases had a maximum

duration of 35 months. They also excluded illnesses for which clinical, laboratory, or pathological evidence for the disease existed. None of the more than 250 brain tissue specimens examined exhibited the pattern of prion protein immunoreactivity associated with vCJD, even though nearly half exhibited some immunoreactivity. In the few cases in which vacuolation was observed, it appeared to result from brain edema, recent lack of oxygen, or procedural artefacts. No spongiform changes or pathological plaques were observed.

Based on these data, the upper 95 per cent confidence interval for the incidence of death from vCJD would be 0.12 per million/year, which is markedly different from the actual mortality rate for 1995 to 2000 of 0.29 per million/year. This indicates "an increase in incidence in the past 5 years which is unlikely to be due to chance alone", the investigators write. "It suggests that vCJD is indeed a new disease."

### **Reference**

Hillier CE, Salmon RL, Neal JW, Hilton DA. Possible under-ascertainment of variant Creutzfeldt-Jakob disease: a systematic study. *J Neurol Neurosurg Psychiatry* 2002;72:304-309.

## *Brucellosis in New Zealand*

Source: Official news release, New Zealand MAF (edited)

In early March 2002 public health authorities notified the Ministry of Agriculture and Forestry (MAF) of a case of human brucellosis. Blood cultures confirmed the infection, and biochemical profiling suggests the isolate was *Brucella suis*. The isolate was sent to Veterinary Laboratory Agency (VLA), Weybridge UK, for typing. The VLA report it is likely to be *Brucella suis* biovar 3 (confirmation pending). Officials believe on clinical and epidemiological grounds, that the case most likely acquired the infection in December 2001 in New Zealand. At that time the case purchased 2 pigs that were killed and butchered in a home-kill situation for consumption at 2 family feasts. The case had not travelled outside New Zealand for 10 years. The case did visit a country 10 years ago where *Brucella suis* is endemic. *Brucella suis* has not previously been recorded in New Zealand livestock. A previous human case of *Brucella suis* in New Zealand has been attributed to infection acquired in the Pacific Islands,<sup>1</sup> where the disease is known to be present in some countries.<sup>2</sup> Imported human brucellosis cases caused by other species are also occasionally diagnosed.

Animal surveillance performed by MAF since notification of the human case, includes trace back of the 2 pigs to the point of purchase, from there to a sale-yard, and to likely farms of origin. Testing using the competitive ELISA (sensitivity 90.8%, specificity of 96.6%) has produced all negative results to date. Public health authorities in conjunction with clinicians are following up people associated with the confirmed case, with the putative exposure event, or possible farms of origin. The index case remains the only confirmed case.

### References

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2. Alton GG. *Brucella suis*. In: Animal brucellosis (Eds: Nielsen K, Duncan JR). CRC Press, Florida, USA. 1990:411-422.

## *Ebola haemorrhagic fever in Gabon and the Republic of the Congo*

Source: World Health Organisation (WHO) Disease outbreaks report, 22 March 2002 (edited)

On 20 March 2002, the Gabonese Ministry of Health reported 60 confirmed cases of Ebola haemorrhagic fever, including 50 deaths. Suspected cases continue to be investigated. As of 22 March 2002, 32 confirmed cases, including 19 deaths, have been reported in villages in Cuvette region, Republic of the Congo. Eighteen contacts are being followed up in the Republic of the Congo. Ebola haemorrhagic fever has now been laboratory confirmed in the Kelle area. WHO, Medecins sans Frontieres, International Federation of Red Cross and Red Crescent Societies, and other partners in the Global Outbreak Alert and Response Network are responding.

## *A candidate vaccine for West Nile virus*

Source: *Newsday.com*, 12 March 2002 (edited)

The most recent research, published last week in the Proceedings of the National Academy of Sciences, details the efforts of scientists from the National Institute of Allergy and Infectious Diseases in Bethesda, Maryland, and Walter Reed Army Institute of Research in Silver Spring, Maryland. The collaborators spliced 2 genes for

West Nile coat proteins into a dengue virus backbone stripped of its own corresponding genes. West Nile virus and dengue virus belong to the flavivirus family of tick- and mosquito-borne viruses, a family that also includes yellow fever virus and Japanese encephalitis virus. The vaccine is still in the early stages of development, with only a few animal experiments conducted and human trials still a long way off.

## *Eosinophilic meningitis in Jamaica*

Source: Emerging Infectious Diseases, March 2002, vol 18 no3 (edited)

A recent study reported that an outbreak in 2000 of eosinophilic meningitis in tourists visiting Jamaica was due to *Angiostrongylus cantonensis* and that the parasite was recently found in rats and snails on the island. Overall, 22 per cent (24/109) of rats harboured adult worms, and 8 per cent (4/48) of snails harboured *A. cantonensis* larvae. This report is the first of enzootic *A. cantonensis* infection in Jamaica. The paper describes how 12 persons in a group of 23 United States of America tourists who visited Jamaica for a week developed eosinophilic meningitis within 6-30 days (median 11) of returning home. Though 9 persons required hospitalisation, there were no deaths. There was serologic evidence of exposure to *A. cantonensis* in 8 persons who had eaten salad at the same restaurant, a common exposure that might account for all cases.

## *Unexplained rash in the USA*

Source: *MMWR* 2002;51;161. 1 March (edited)

The first reported rash occurred in Indiana on 4 October 2001, followed by cases in Virginia that began on 20 November 2001. Subsequent cases of rashes began in late January and occurred as recently as 21 February 2002. Rashes have been reported primarily from elementary schools but also among students in a few middle and high schools. The number of affected students in each state ranges from <10 to about 600. Characteristics of the rashes vary, but onset has generally been acute, typically with maculopapular erythematous lesions (possibly in a reticulated pattern) on the face, neck, hands, or arms. Duration of the rash varied but in most reports it was highly pruritic. The rashes were not attributed to a defined environmental exposure or infectious agent. Children with rashes were afebrile and usually had no other associated signs or symptoms. The rashes lasted from a few hours to 2 weeks and appeared to be self-limiting.

Secondary transmission has not been reported, but in-school 'sympathy' cases have reportedly occurred. Diagnoses by clinicians who have examined children have included viral exanthem, contact or atopic dermatitis, eczema, chemical exposure, impetigo, and poison ivy. About 40 serum samples collected in 4 states have been PCR or IgM negative for parvovirus B19 and 22 nasal swab samples have been negative for enterovirus. Environmental assessments have not identified any environmental causes.

The CDC is working with state and local health and education agencies in these investigations to determine if affected children within and between schools have developed rash as a result of a common etiology.

### *Hospital-acquired malaria in England*

Source: Eurosurveillance 21 February 2002 (edited)

An elderly man admitted for an orthopaedic procedure in late December 2001 to a hospital in England developed *Plasmodium falciparum* malaria at the end of January. As the patient had no known risk factors for malaria, this was deemed to be a hospital acquired infection. Investigations focused on transmission from healthcare workers or inpatients with malaria. There were no patients with malaria whose admission overlapped that of the index case. Blood samples were obtained from all healthcare workers (HCWs) who were potentially chronic carriers and had participated in invasive procedures on the index patient, with the exception of one HCW who has not yet been contacted. All samples obtained tested negative for malaria antibodies and on film.

On the assumption that infection was probably transmitted in the operating theatre or ward where the patient was treated, all other patients exposed to these 2 areas are being traced. Test results from this group of patients have all been negative for malaria thus far. These patients have also been given advice about seeking medical attention should they develop a fever in the following 3 months.

The HCW who has yet to be contacted was subsequently employed at a second hospital in the NHS South West Region and currently cannot be excluded as the source of infection. Patients who may have been exposed to this person in the second hospital have also been contacted and

advised to seek medical attention in case they develop a fever.

This is the second case of hospital-acquired malaria in England in the past 3 years. In the previous incident, transmission is believed to have occurred through repeated use of a bottle of intravenous saline contaminated with blood from a malarious patient. This resulted in 3 cases of infection and one death. These 2 cases mean that exotic bloodborne infections should be considered when inpatients with no personal history of travel develop pyrexia of unknown origin. In the case described here the source of infection has not been determined; possibly transmission occurred from an infected HCW during an exposure-prone procedure.

### *Plague in India*

Source: WHO 20 February 2002 Disease outbreaks reported

As of 19 February 2002, the Ministry of Health, India has reported a total of 16 cases of pneumonic plague including 4 deaths in Hat Koti village, Shimla district, Himachal Pradesh State, since the onset of the outbreak on 4 February 2002. The series of tests carried out by the National Institute of Communicable Diseases (NICD) confirm the presence of *Yersinia pestis* in clinical samples. A team from the NICD visited the village, and found that all the cases could be linked to residents of one hamlet. Under the guidance of the team, the local health administration has taken the following measures:

- administration of chemoprophylaxis to contacts of the patients, to residents of the affected and neighbouring village and to doctors/paramedics and health workers;
- fumigation in the affected villages and transport vehicles to kill infected fleas;
- public education campaign.

The last reported case had a date of onset of 8 February 2002. Careful surveillance in the area and in the state is continuing. WHO recommends no special restrictions on travel or trade to or from India.

## *Identification of a new subtype of influenza virus A(H1N2)*

Source: Eurosurveillance Weekly, Issue 6, 7 February 2002 (edited)

A meeting of influenza experts at the World Health Organization (WHO) in Geneva this week has considered the recent isolation of a new subtype of the influenza A virus, A(H1N2).<sup>1</sup> The meeting was held to review the global influenza situation and decide the composition for the influenza vaccine for the northern hemisphere for winter 2002/03. This was based on information from the WHO global influenza surveillance programme and the Public Health Laboratory Service (PHLS) surveillance of influenza in England and Wales.

In recent years, 2 subtypes of influenza A have been circulating and causing illness in humans: the H1N1 subtype and the H3N2 subtype. A new subtype, H1N2, has emerged which contains a haemagglutinin (H) component which is very similar to that contained in the recent H1N1 strains and a neuraminidase (N) component which is very similar to that contained in the currently circulating H3N2 strains. The new subtype appears to have arisen by reassortment of the 2 human viruses. The new subtype of the influenza A virus has so far been isolated from humans in England, Israel, and Egypt in the last few weeks. A similar event occurred in China during the 1988/89 influenza season when a number of influenza A(H1N2) isolates were detected which were determined to have arisen as a result of reassortment. Further spread of these reassortant viruses in humans did not occur at that time.<sup>2,3</sup>

### References

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3. Li XS, Zhao CY, Gao HM, Zhang YQ, Ishida M, Kanegae Y et al. Origin and evolutionary characteristics of antigenic reassortant influenza A (H1N2) viruses isolated from man in China. *J Gen Virol* 1992;73:1329–1337. <http://vir.sgmjournals.org/>

## *Nasopharyngeal Corynebacterium ulcerans diphtheria in the Netherlands*

Source: Dam A. van (M.M.)

A 59-year-old woman was admitted to the hospital with a 3-day history of a sore throat and increasing dysphagia during treatment with oral penicillin for 1 day. On admission, the patient was afebrile, the soft palate and uvula were swollen and a membranous exudate was seen on the soft palate and nasopharynx. There was no palpable cervical lymphadenopathy or soft tissue swelling. The patient had not recently travelled abroad and had no contact with people who had recently travelled. The patient was not vaccinated against diphtheria. Diphtheria was included in the differential diagnosis.

The patient was barrier nursed and treated with intravenous penicillin. She recovered fully within 4 days. A throat smear grew no *Corynebacterium diphtheriae*, but *Corynebacterium ulcerans* was cultured from this specimen. The strain contained the gene encoding diphtheria toxin, as shown by PCR performed at the Dutch National Institute for Public Health. Although person-to-person transmission has not been documented, a contact investigation was initiated, but no *C. ulcerans* was grown from the 2 household contacts of the patient. The patient had not recently been in contact with horses, cattle or other animals except her domestic cat. Therefore, the source of the infection is unclear.

The most recent case of diphtheria caused by *C. diphtheriae* was reported in the Netherlands in 1991. We conclude that in countries where *C. diphtheriae* is no longer endemic, one should also be aware of the possibility of diphtheria caused by *C. ulcerans*.

## *UK and US on verge of eliminating rubella*

Source: The Times, 23 January 2002 (edited)

Rubella has been almost eliminated from Britain and the United States of America (USA), thanks to vaccination. The study, published in *JAMA*, shows that in the USA, the number of cases of the disease has declined from 57,600 in 1969 when vaccination began, to a few hundred cases a year, mostly in immigrants from countries where vaccination is newly established (<http://jama.amaassn.org/issues/v287n4/abs/joc11125.html>). Almost all cases of the disease in the United States now are among Hispanic adults born in other countries, primarily Mexico, meaning that the virus may no longer be circulating in the general USA population.

In Britain in the last quarter of 2000 (the most recent period for which data have been published by the Public Health Laboratory Service) not a single case of rubella was confirmed in England or Wales. General practitioners (GPs) diagnosed 1600 or so cases in 2000, of which only 9 cases were confirmed. It has become so rare that GPs are no longer skilled at diagnosing it. There has also been a sharp decline in the number of children born with birth defects as a result of their mother catching rubella in pregnancy.

## *Progress towards a malaria vaccine*

Source: Bojang, KA et al. *Lancet* 2001; 358: 1927-1934 (edited)

A study in Gambia of a new malaria vaccine construct including the major surface protein of the *P. falciparum* circumsporozoite protein, CSP, fused to the hepatitis B surface antigen HBsAg and adsorbed to the adjuvant AS0, showed partial short-time protection. Adult Gambians received 3 injections with the vaccine and were followed for 15 weeks. During the first 9 weeks, the protective efficacy against parasitemia was 71 per cent, but there was no protective efficacy during the last 6 weeks of the observation period. A fourth dose was given a year later and the subjects were followed for 9 weeks. The protective efficacy in this period was 47 per cent. The study identified the vaccine as immunogenic, safe, and the first to show any protection against the pre-erythrocytic stages of *P. falciparum*.