

Overseas briefs

World Health Organization

This material has been summarised from information on the World Health Organization Internet site. A link to this site can be found under 'Other Australian and international communicable Diseases sites' on the Communicable Diseases Australia homepage.

Yellow fever in Liberia

WHO has reported 3 suspected cases of yellow fever in the south-eastern part of the country. One case with disease onset on 1 August 2001 has been confirmed (IgM positive) by the Institut Pasteur in Abidjan, Côte d'Ivoire. All 3 cases have died. The Ministry of Health's Epidemic Management Committee is planning a vaccination campaign in the affected county, but additional vaccine stocks will be needed to implement the emergency immunisation program.

Cholera

Chad

As of 21 August 2001, WHO has reported a total of 2458 cases of cholera in Chad, including 88 deaths, with a case-fatality rate of 3.5 per cent in the south-western part of the country. The Ministry of Health, with the assistance of WHO and Médecins sans Frontières, is continuing its surveillance and health education activities.

India

Since 7 July 2001 the Government of Orissa has reported 34,111 cases of diarrhoea including 33 deaths, in 24 districts in Orissa State. The cases related to the floods that occurred at that time and were detected through its early warning surveillance system. Orissa has a population of 37 million people, of which 8 million were affected by the floods. Among the cases of severe, acute diarrhoea in a cluster of 121 samples (taken from 5 districts) positive for *Vibrio cholerae*, 46 per cent were positive for serogroup O139. This proportion of O139 is high compared to the rates found in neighbouring Bangladesh, where there were 24 per cent positive isolates for O139 in non-coastal areas and 7.2 per cent in coastal areas in 2000. WHO is assisting the national health authorities in continuing surveillance.

Afghanistan

As of 25 July 2001, WHO has reported a total of 4499 cases of cholera, including 114 deaths. WHO and Médecins sans Frontières are assisting the Ministry of Public Health of Afghanistan to co-ordinate the response to the outbreak.

United Republic of Tanzania

WHO has reported 109 cases of cholera with 3 deaths between 18 May and 20 July 2001, in Dar es Salaam. The Tanzanian Ministry of Health is implementing control measures including chlorination of all water sources, provision of medical supplies to all cholera treatment centres and health education measures.

Meningococcal disease in Angola

Since the third week of May 2001, 77 cases and 17 deaths (a case-fatality rate of 22%) have been reported to WHO in the Balombo district of Angola. *Neisseria meningitidis* serogroup A has been laboratory confirmed. The cumulative attack rate since the beginning of the year is 212 per 100,000 population. Data from other districts are unavailable at the present time. On 13 August 2001, a mass vaccination campaign was launched targeting the population of Balombo district over 2 years of age.

Meningococcal disease, serogroup W135 - update 2

During 2001 the following countries have reported cases of W135 meningococcal disease to WHO.

Most cases are associated with international travel or contact with travellers to Saudi Arabia.

Burkina Faso

Following a joint mission of the Institut Pasteur, Paris and Association pour la Médecine Préventive (AMP) to investigate the epidemic meningitis situation, 10 additional cases of *N. meningitidis* W135 were laboratory confirmed. The samples were taken from documented cases between 10 and 24 April 2001 and the proportion of *N. meningitidis* isolates belonging to the W135 serogroup was found to be 37 per cent of the total *N. meningitidis* isolates identified by PCR on collected specimens. None of the cases had any relationship with the 2001 Haj pilgrimage (travel or contact history). Among 4 strains that were cultured from the same period, 3 were W135:2a:P1-2,5 and belong to the ET-37 complex.

Niger

The joint Institut Pasteur AMP mission to investigate the epidemic meningitis situation identified 10 laboratory confirmed cases of *N. meningitidis* W135. The samples were taken from documented cases between 10 and 16 April 2001 and the proportion of *N. meningitidis* isolates belonging to the W135 serogroup was found to be 40 per cent of the total *N. meningitidis* isolates identified by PCR on collected specimens. None of the cases had any relationship with the 2001 Haj pilgrimage (travel or contact history).

Central African Republic

Three reported cases of meningococcal disease in Haj pilgrims have been laboratory confirmed as *N. meningitidis* serogroup W135.

Denmark

Two cases (one case close contact with Haj pilgrims, the travel/contact history of the second case is not yet known) have been reported. *N. meningitidis* serogroup W135 has been laboratory confirmed.

France

Two cases (close contacts with Haj pilgrims) have been reported. *N. meningitidis* serogroup W135 has been laboratory confirmed.

Norway

Four cases (2 contacts with Haj pilgrims) have been reported. *N. meningitidis* serogroup W135 has been laboratory confirmed.

Saudi Arabia

Between 9 February and 22 March 2001 109 cases, predominantly Haj pilgrims from outside Saudi Arabia, including 35 deaths have been reported. *N. meningitidis* serogroup W135 has been laboratory confirmed in more than half of the cases.

Singapore

Four cases (3 close contacts with Haj pilgrims, one with history of travel to Saudi Arabia), including one death have been reported. Two of the cases occurred in January 2001, before the main period of pilgrimage to Saudi Arabia. *N. meningitidis* serogroup W135 has been laboratory confirmed.

United Kingdom

Forty-one cases (8 pilgrims returning from the Haj, 19 cases in close contacts and data outstanding on the remaining cases) including 11 deaths of laboratory confirmed invasive *N. meningitidis* serogroup W135 have been reported. WHO recommends that chemoprophylaxis be given to close contacts of the cases, such as persons sleeping in the same dwelling. In most countries rifampicin is recommended.

In preparation for the Umrah and the Haj seasons for next year, the Ministry of Health of the Government of Saudi Arabia has notified the Ministries of Health of all countries from which pilgrims arrive, that the vaccination against meningococcal meningitis with the quadrivalent vaccine (serogroups A, C, Y & W135) has been added to the health requirements for arrivals coming to the Umrah and Haj. WHO encourages national reference laboratories to closely monitor meningococcal disease.

For further information, see the Control of Epidemic Meningococcal Disease. WHO Practical Guidelines. <<http://www.who.int/emc-documents/meningitis/docs/whoemcbac983.pdf>>.

ProMED-mail

This material has been summarised from information provided by ProMED-mail (<http://www.promedmail.org>). A link to this site can be found under 'Other Australian and international communicable Diseases sites' on the Communicable Diseases Australia homepage.

Variant CJD cases in UK

Source: Reuters Health Online, 8 August 2001 (edited)

London: On 6 August 2001, the Department of Health reported that the number of 'definite and probable' cases of variant Creutzfeldt-Jakob disease (vCJD), thought to be the human form of bovine spongiform encephalopathy (BSE) or 'mad cow' disease, had risen to 106 in the United Kingdom (UK).

A monthly update on the disease from the National CJD Surveillance Unit showed that as of 3 August 2001, 14 people have died and been confirmed to have had vCJD this year. One other person thought to have the disease has died, but the brain biopsy needed to confirm vCJD has not yet been performed. Another 7 people have symptoms of the fatal condition, which classifies them as 'probable' cases. That brings the overall number of definite and probable cases of vCJD recorded by the surveillance unit since 1995, to 106.

Earlier this year, a member of the Spongiform Encephalopathy Advisory Committee, which advises the government on BSE, told BBC radio that the average incubation period for the disease in humans could 'well be in the region of 30 years. He said thousands or tens of thousands more cases could emerge. The director of the UK's National CJD Surveillance Unit, which monitors the epidemic, told Reuters Health that the latest figures are in line with current predictions that in the short term, the number of vCJD cases in the UK will double every 3 years. As to what will happen in the longer term, he said, 'My own personal view is that we can't say at the moment. We don't know for how long these trends will be maintained.'

CJD diagnostic test 'Ready in a year'

Researchers in Israel claim to have developed a simple diagnostic test for variant Creutzfeldt-Jakob disease (vCJD), the human form of bovine spongiform encephalopathy (BSE). They say their method can reliably distinguish between urine samples from healthy humans and samples preserved from people who died of vCJD. Ruth Gabizon, who leads the team at the Hadassah Medical Organisation in Israel, said that the procedure was developed using urine from humans, hamsters, and cattle. British specialists said the work is interesting, but raised questions about its accuracy.

vCJD, which is a fatal degenerative disease affecting the brain, is hard to distinguish from other degenerative Diseases like Alzheimer's disease. Doctors often cannot be sure that a person has vCJD until after death. So a urine test would make diagnosis much simpler and might even be used to work out how far and how quickly the disease has spread through the general population.

vCJD in humans, BSE in cows, and scrapie in hamsters are believed to be related forms of the same disease, known as transmissible spongiform encephalopathies. 'We had urine samples from all the cases of CJD in Israel in the last year,' she told BBC News Online. The team compared these samples with urine from non-infected people, and carried out the same procedure on urine from British BSE-infected cattle and scrapie-infected hamsters. 'We were able to detect all the positives as positives and all the negatives as negatives,' she said, adding that in some cases the team could detect scrapie infection in hamsters which had not yet shown any symptoms.

The debate about the test arises from the difficulty in detecting CJD. Ms Gabizon says that there is only one substance which all scientists agree is evidence of CJD infection. This substance is known as PrPSc and forms part of the prion or rogue protein believed to cause the disease. Her test detects a related substance that she calls UPrPSc. She says that she is confident that the 2 are linked because her test produced reliable results. Researchers from

Britain's MRC Prion Research unit, who are world leaders in the field, however, have their doubts. They do not believe that there have been sufficient controls to show that the Israeli team really are detecting prions. (Since there have been no deaths from vCJD in Israel, the precise identity of the human samples utilised by the Israeli group is unclear from this press statement. - Mod. CP)

The question is whether prions really do move from the brain to urine. If prions move into urine, the British team thinks it is likely that the rogue proteins would accumulate in the kidneys, where they would be found by doctors conducting postmortem examinations.

Canada (British Columbia) - primary multi-drug resistant HIV cases

Source: *The Vancouver*, 9 August 2001

Doctors at St. Paul's Hospital in Vancouver, British Columbia have seen about 6 cases of multi-drug resistant HIV in the past year, raising concerns that this may signal a new epidemic of resistant strains of HIV. While it is not uncommon for patients to develop a form of resistance to some of the drugs they are taking, there have only been a few reported cases worldwide where patients are newly infected with a type of HIV that is resistant to all 3 classes of antiretroviral drugs.

Patients infected with a multi-drug resistant strain are less likely to respond to different combinations of the drugs. Doctors at St. Paul's who recently treated 2 patients infected with multi-drug resistant HIV stated that in both cases, the virus spread very rapidly within a few months. It is not currently clear whether these strains are more aggressive than those that have been reported in other parts of the world.

Salmonella Typhimurium outbreak in Sweden from contaminated jars of helva (or halva)

From: Birgitta de Jong <birgitta.de.jong@smi.ki.se>

In early June 2001, at least 10 people resident in the south of Sweden were found to be infected with *Salmonella Typhimurium* definitive phage type (DT)104. They were mostly children with a predominance of Arabic names. An earlier outbreak of *S. Typhimurium* infection, involving both

DT9, DT30, and probably also not specifically typable (NST) strains of *S. Typhimurium* that had a common phage type pattern, was associated with the consumption of tahini (sesame paste), with most cases also in the south of Sweden. It was therefore suspected that the new cases had acquired the infection in a similar way.

The first interviews showed, however, that the cases had not been eating tahini, but imported helva (or halva)- a type of dessert or sweet made from sesame seeds. The first case in the recent outbreak of *S. Typhimurium* DT104 infection fell ill on 13 April 2001 and the latest reported case on 19 June 2001. The investigation showed that 27 people (23 from the south of Sweden - 2 of them asymptomatic - and 4 from another county) had become infected after consuming helva. Of the 4 people in the nearby county, 3 belonged to the same family.

Salmonella of the same type has also been directly isolated from 5 jars of helva, 4 with pistachio and one with cocoa flavouring. Information about salmonella isolated from helva (pistachio flavour) was first disseminated by the Swedish Food Administration on 11 June 2001, with notification on 20 June that cocoa-flavoured helva was also contaminated.

In recent years, Smittskyddsinstitutet (SMI, Swedish Institute for Infectious Disease Control) has seen an increase of salmonella infection from outbreaks and from food samples associated with different types of imported vegetables, spices, and seeds, including tahini, fresh and dry spices, banana leaves, and bean sprouts.

Malaria emerging in former southern Soviet republics

Source: WHO regional office Europe, 4 June 2001 (edited)

Data extracted from the database of notified Diseases held by the WHO Regional Office for Europe, show that malaria has been emerging in the former Soviet republics of Armenia, Azerbaijan, Georgia, Russia proper, Tajikistan and to a lesser degree Turkmenistan and Uzbekistan. It seems that the number of recorded cases are decreasing in Armenia, Azerbaijan and Tajikistan (Table). Almost all cases are *Plasmodium vivax*.

Table. Notifications of malaria, former southern Soviet republics, 1992 to 2000

	2000	1999	1998	1997	1996	1995	1994	1993	1992
Armenia	141	329	542	567	149	0	1	0	0
Azerbaijan	1526	2311	5157	9911	13,135	2840	667	23	27
Belarus	-	1	2	0	0	0	0	0	0
Georgia	164	35	14	0	3	0	0	0	0
Kazakstan	6	1	4	0	1	0	1	0	1
Kyrgyzstan	7	0	5	0	1	0	0	0	0
Russia	47	77	63	31	10	4	1	1	0
Tajikistan	18,446	13,493	19,351	29,794	16,561	6103	2411	619	404
Turkmenistan	18	10	115	4	3	0	1	1	5
Uzbekistan	46	7	0	0	0	0	0	0	0

Linezolid-resistant MRSA isolated from a patient in the United States

Source: *Eurosurveillance Weekly* (edited)

A strain of methicillin-resistant *Staphylococcus aureus* (MRSA) that was resistant to the new antibiotic linezolid was isolated from an 85-year-old patient undergoing peritoneal dialysis in the United States, according to a report published in the *Lancet* last week.¹

MRSA infections are a major problem in many hospitals, and treatment with other antibiotics, usually vancomycin, may be indicated. Linezolid is a new antibiotic that may be an alternative to vancomycin.² It prevents the formation of functional ribosomal complexes, thus inhibiting protein synthesis, and it is active against MRSA, *S. epidermidis*, streptococci (including penicillin-resistant strains of *S. pneumoniae*), and enterococci (including vancomycin-resistant strains of *Enterococcus faecalis* and *E. faecium*). It is bacteriostatic against most susceptible bacteria.

Over a 3-week period, 11 linezolid-susceptible isolates were recovered from the patient's peritoneal dialysis fluid, during which time the patient (who was intolerant of vancomycin) received treatment with linezolid. The isolates had identical susceptibility profiles and were indistinguishable by pulsed field gel electrophoresis (PFGE). Of the subsequent isolates, 3 were resistant to linezolid and differed from earlier isolates in their other antimicrobial susceptibilities. Minimum inhibitory concentrations of linezolid were 2 mg/L for linezolid-susceptible and >32 mg/L for linezolid-resistant isolates.

By PFGE, the linezolid-resistant isolates were unrelated to the earlier susceptible isolates. Of the resistant isolates, two were indistinguishable from each other, and a third differed by just one band. Linezolid treatment was discontinued when the resistant isolate was identified, and during the remainder of his hospital stay, the patient received ampicillin, azithromycin, gentamicin, levofloxacin, and quinupristin-dalfopristin for the MRSA and for *E. faecalis*, which was grown from blood cultures, and *Pseudomonas aeruginosa*, which was also isolated from peritoneal fluid. All cultures were negative within one week, but 3 weeks after the last positive cultures, the patient died of his underlying disease.

Possible explanations for this unexpected finding include the acquisition of an unrelated linezolid-resistant MRSA isolate from an external source; the appearance of a previously undetected linezolid-resistant clone within the patient; or the emergence of resistance to linezolid in a previously undetected susceptible clone that was coinfecting the patient. No linezolid-resistant *S. aureus* was recovered from any other patient at the institution, suggesting that the third of these possibilities is the most plausible. The emergence of resistance to linezolid in MRSA is an unwelcome development, and future cases will have to be watched closely. Strict infection control measures are essential as and when such strains are encountered in the future.

References

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Increased *Aedes aegypti* mosquitoes in Indian ports

Source: *The Lancet*, 28 April 2001 (edited)

Indian health experts have been alarmed by rising numbers of *Aedes aegypti* mosquitoes, the key vector of yellow fever, around sea and airports. Experts are concerned that the virus may be introduced into India if precautions are not taken. India and other Asian countries have so far been free from the virus, which is found in Africa and South America. Studies by the National Institute of Communicable Diseases (NICD) and the National Anti-Malaria Programme in different parts of India have pointed towards this increasing trend.

Under the International Health Regulations of 1969, all international airports and seaports should be kept free from larvae and adult mosquitoes and their index should be less than 1 per cent. According to a report by India's NICD, the larval premises index at international seaports increased from 8.8 per cent in 1997 to 29.6 per cent in 2000 in Calcutta, from 0 per cent in 1964 to 22.8 per cent in 1999 in Chennai, and from 0 per cent in 1961 to 12.2 per cent in 1995 in Bombay. The larval index has also been rising at international airports: from 0 per cent in 1978 to 26.9 per cent in 2000 in Calcutta, 13.5 per cent in 1998 to 38.8 per cent in 1999 in Chennai, 0 per cent in 1956 to 9.2 per cent in 1995 in Bombay. In Delhi, it rose from 0 per cent in 1977 to 60.7 per cent in 2000.

Experts point out that yellow fever could be introduced to India through the unnoticed arrival of any subclinically infected patient or mosquitoes infected with yellow fever (virus) carried on aircraft or ships. NICD officials claim that it is the responsibility of the civil aviation and seaport authorities to keep the mosquito populations in check. They also say that India, with an unvaccinated and susceptible population, is a yellow fever 'receptive area'. *Aedes aegypti* mosquitoes are seen in abundance in both urban and rural areas. 'The only missing link in the chain of disease transmission is the yellow fever virus,' stated the director of NICD.

'This situation is a cause of serious concern,' say the WHO. 'Given the eastward movement of the virus, we are very concerned about the introduction of yellow fever into this part of the world'. 'The *Aedes aegypti* population in India is definitely increasing,' said the NICD. 'If this rising trend is not checked via regular monitoring, the chance of introduction of yellow fever will increase,' he added.

Man hospitalised in Kazakhstan with plague

Source: *ITAR/TASS News Agency*

A 41-year-old man has been hospitalised with plague in Aralsk, Kyzyl-Orda region of Kazakhstan. Medics are taking anti-epidemic measures in the place of his residence, the Agency for Emergency Situations told Itar-Tass on Saturday. The first death from plague in the last 25 years was reported in Kazakhstan in 1999 when a 13-year-old boy died from bubonic plague in Aralsk. Natural plague foci are found in the western and southern regions of the country.

Deaths following yellow fever vaccination

Source: *Eurosurveillance Weekly* 26 July 2001 (edited)

The *Lancet* of 14 July 2001 collated reports of 6 deaths following yellow fever vaccination in Brazil, the USA, and Australia in the period 1996-2001.^{1,2,3} The clinical pictures were not consistent and different vaccine strains had been used on each continent.

The Brazilian cases (aged 5 and 22) were confirmed as vaccine-derived, but represent 2 deaths in over 85 million vaccinations over a 10-year period. The investigators were surprised by the clinical features of the vaccine-related Diseases, which included significant organ damage normally only associated with wild-type yellow fever. Since neither the vaccine nor its stabiliser had changed, it is possible that the 2 deaths were due to unidentified host factors.

The 4 US cases were all more than 62 years of age and had co-morbidity. Although the clinical features and their timing suggest yellow fever vaccine as the cause of the 3 deaths and one severe illness, only one of these cases had antigenic evidence of vaccine-derived virus. Unlike the Brazilian cases, the US cases showed significant central nervous system involvement and a lesser degree of organ damage.

The one Australian case was aged 56 years and died of multi-system disease. His death can be attributed by virus isolation to vaccine-derived yellow fever. The same day, however, 20 other people were immunised with yellow fever vaccine from the same batch and remained well.

It is a feature of all 7 cases that death or severe illness occurred in a small number of people among a much larger population who received the same batch of vaccine. No obvious risk factors, apart from age in the American cases, could be identified, and an accompanying *Lancet* commentary concludes that 'the use of 17D vaccination remains highly advisable for people living in or travelling to endemic and epidemic zones, but that these reports raise questions about the mechanisms of attenuation of yellow fever virus that should be urgently investigated'.⁴ This view

is supported by WHO. However, WHO cautions that 'travellers should be carefully assessed regarding their need for the vaccine and their personal level of risk'.⁵

Yellow fever is caused by a flavivirus and produces an acute disease with a mortality rate of up to 50-60 per cent in non-immunes. An anthrozoosis, it is transmitted to man by mosquitoes within the endemic zones of Africa and South America. The main reservoirs of infection are mosquitoes and vertebrates (usually monkeys) in forest areas (forest or sylvan yellow fever), except for when there is transmission in towns from person to person by mosquitoes (urban yellow fever) when humans become part of the reservoir.⁶

A live attenuated vaccine based on a 17D version of the virus was developed (by Nobel prize winner Max Theiler of The Rockefeller Foundation) in 1937, and all the currently produced vaccines are based on this. The strains of vaccine used around the world are essentially similar, but contain at least 2 different substrains, 17DD and 17D-204. The vaccine is highly protective, and until recently has been regarded as extremely safe. (It should still be regarded as such; as few as 6 deaths, while regrettable, in 150 million doses is a safety record unmatched by any other highly effective live attenuated vaccine except, perhaps, the Sabin vaccine for polio.)

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