BORDER HEALTH NEWSLETTER – DECEMBER 2013

WELCOME!

Hi everyone. Hope you all had a fantastic Christmas break. We were extremely lucky that the sun really shone for us that day in Wellington, so it was a great for swimming and beach fun.

NIWA recorded a drier than normal December in much of the country, but I believe rain was had in many places on Christmas day. We hope you all enjoyed your Christmas none the less & had festive New Year celebrations!

Temperatures were above average (0.5-1.2°C above December average), or well above average (more than 1.2°C above December average), throughout much of New Zealand. The exceptions were parts of the Far North, Waikato, Bay of Plenty, and eastern parts of the South Island south of Christchurch, where near average temperatures (within 0.5°C of December average) were recorded.

Below normal rainfall (50-79 percent of December normal) or well below normal (less than 50 percent of December normal) was recorded across parts of Taranaki, the Central Plateau and the lower North Island, as well as northern Marlborough, the Mackenzie Country and parts of Central Otago, with near-record low rainfall totals observed in inland parts of the central and lower North Island. Well above normal rainfall (more than 150 percent of December normal) was observed in areas of Northland, the Coromandel Peninsula and Bay of Plenty, as well as around the Kaikoura coast and southwestern Southland.

If you would like to see NIWAs full outlook for your area you will find it here:
http://www.niwa.co.nz/climate/sco/seasonal-climate-outlook-october-december-2013

INCURSIONS/INTERCEPTIONS

There were four interception events during December, all involving Culex adults, mainly *Culex quinquefasciatus* and *Cx pervigilans*, along with some sticky trapped *Cx* spp. adults

SAMPLES

During December, 968 samples were collected by staff from 11 District Health Boards, with 220 positive. Samples collected were higher than last month and also than this time last year. Of the positive samples found, larval numbers were the significantly higher than last month, and last year. Adults were higher than last month and significantly more than this time last year. The specimens received were as follows:

Species	Adults	Larvae
NZ Mozzies		
Ae antipodeus	14	7
Ae. notoscriptus	241	1900
Culex pervigilans	144	1548
Cx. quinquefasciatus	302	432
Cq iracunda	14	0
Cq tenuipalpis	1	0
Opifex fuscus	0	65
Ae australis	0	6
Ae subalbirostris	0	1
Cx spp.	5	0
Exotics		
TOTAL MOSQUITOES	**721**	**3959**

WEBSITE

We hope everyone had a safe and happy festive season and enjoyed the warm weather as much as the mosquitoes are. Not only are the

mosquitoes abundant, some other insects of public health insects are making headlines. An interesting article in the Herald and Stuff recently regarding a bed bug incident, check out the Facebook page for easy access.

https://www.facebook.com/SMSL.MosquitoControl

The news letters are readily available in the documents section of the website

(http://www.smsl.co.nz/Documents++Links/Newsletters/NZBEL+2013.html).

And we have set up a new page for coming 2014 newsletters. As always if there is any information you would like to see in the newsletters that is not currently included, or if you have any queries about any of the information, please feel free to contact us through the website, or email us directly at enquiries@smsl.co.nz or taxonomy@nzbiosecure.net.nz.

INSECT-BORNE DISEASES

Powassan Virus- Maine and Massachusetts

Disease trackers in Massachusetts and Maine are investigating 2 cases of a rare and severe tick-borne illness, providing new evidence of the suffering that can be inflicted by ticks and prompting warnings that the threat can persist into December.

Investigators suspect that the infections were caused by Powassan virus or a related virus, which can spawn headaches, vomiting, confusion, seizures, memory loss, and long-term neurological problems in those who survive the infection. The virus is believed to be fatal in 10 to 15 percent of those who are exposed.

Blood tests show that a Maine woman who died last week was infected with the virus. Health officials said it appears the woman, from mid-coast Maine, had not been traveling and likely was infected locally.

According to the US Centers for Disease Control and Prevention (CDC) (<http://www.cdc.gov/powassan/>): Powassan (POW) virus is transmitted to humans by infected ticks. About 50 cases of POW virus disease were reported in the United States over the past 10 years. Most cases have occurred in the northeast and Great Lakes region. Signs and symptoms of infection can include fever, headache, vomiting, weakness, confusion, seizures, and memory loss. Long-term neurological problems may occur. There is no specific treatment, but people with severe POW virus illnesses often need to be hospitalized to receive respiratory support, intravenous fluids, or medications.

Reports of Powassan virus infection seem to have been more frequent in the current year (2013), and this report argues that this may perhaps be a consequence of greater prevalence of a strain of the virus adapted to transmission by deer ticks. - Mod.CP] [A HealthMap/ProMED-mail map can be accessed at: <http://healthmap.org/r/2JTs>.]

[If confirmed, this will be the first case of Powassan virus encephalitis confirmed in Massachusetts. - Mod.MPP]

JAPANESE ENCEPHALITIS AND OTHER - INDIA (21): (UTTAR PRADESH)

The menace of encephalitis continues unabated in eastern Uttar Pradesh as 3 more children succumbed to the disease at BRD Medical College Hospital, official sources said on Wednesday [25 Dec 2013]. With these deaths, which took place during the last 24 hours, the toll has reached 640 this year [2013].

Sources in the office of Additional Director (Health) said all 3 deaths occurred at BRD Medical College Hospital.

The deceased hailed one each from Gorakhpur, Kushinagar [both in Uttar Pradesh state] and an adjacent area in Bihar [state], they said, adding, the patients were admitted to the medical

college hospital during the last 24 hours while 46 patients are undergoing treatment.

Sources said that this year [2013] as many as 3008 encephalitis patients were admitted to different government hospitals of eastern region, of which 640 died.

The disease causes death in 33 per cent of cases, while over 50 per cent of patients suffer from various forms of mental and physical disabilities, they said.

The disease is caused due to mosquito bite [that transmutes Japanese encephalitis virus] or consumption of contaminated water.

Central and state agencies are continuously conducting awareness campaigns on sanitation and safe drinking water.

Japanese encephalitis (JE) for children up to 15 years have also been conducted, adding that the move has [caused JE cases to go down by 15 per cent].

Communicated by: ProMED-mail from HealthMap Alerts <promed@promedmail.org>

[As noted in previous comments, reports of viral encephalitis in Uttar Pradesh state provide no indication of the proportion of these cases due to Japanese encephalitis virus infections or to other, undetermined causes. In previous reports, some have been diagnosed as due to Japanese encephalitis virus (JEV) infections and others associated with contaminated water, suggesting enterovirus infections.
The massive Japanese encephalitis virus vaccination campaigns in Uttar Pradesh and Bihar states has resulted in a significant reduction in cases due to infection with that virus.

The cause of the majority of the AES (acute encephalitis syndrome) cases remains undiagnosed. A study of encephalitis in Udorn, Thailand indicated that the histopathologic features from autopsies conducted on 40 children were characterized by those findings associated with acute Reye syndrome. The latter report also details the evidence pointing to acute aflatoxin poisoning as the etiology of the condition in Udorn (see ProMED-mail archive no. 20131011.1995836). No autopsy results have been reported for the above cases of acute encephalitis syndrome.

One hopes that the scientists involved in attempting to determine the etiologies of these undiagnosed cases will continue to attempt to find out what is going on, so that scientifically sound preventive measures may be devised and implemented. As mentioned previously, although JEV outbreaks may continue to be prevented through vaccination, preventing enterovirus infections, in the absence of vaccines, requires improvement of sanitation infrastructure to assure adequate human waste disposal and uncontaminated potable water supplies, a very costly effort.

A HealthMap/ProMED-mail map of India showing the location of Uttar Pradesh and Bihar states can be accessed at <http://healthmap.org/r/1-k3>. - Mod.TY]

PLAGUE - PERU: (LA LIBERTAD) BUBONIC

The regional manager of health of La Libertad region, Jose Evangelista, reported a new case of bubonic plague in an adult woman who became infected in her house in the district of Casa Grande, in the province of Ascope.

The authority indicated that the woman is stable after receiving specialized care in the city of Trujillo. With this case, there are 6 confirmed cases of plague in La Libertad region. Among those infected there are 2, a doctor and a 9-year-old, infected with pneumonic plague, a 7-year-old who died for septicemic plague, and 2 other cases of bubonic plague detected in Ascope province.

Plague - Madagascar

The number of plague cases and deaths are up to 84 and 42, respectively, in 4 of the country's 112 districts since September [2013] according to the Madagascar Health Ministry.

Dr Voahangy Ravaoalimalala, vice-director of the Malagasy Institut Pasteur, which performs pathogen tests for the health ministry in Antananarivo, told IRIN: "Bubonic plaguecan be treated easily with antibiotics, and it takes longer to develop, but this time some cases of pneumonic plague have also been identified. This form of plague is harder to treat, as it can kill people within 3 days."

IRIN, the humanitarian news and analysis service of the UN Office for the Coordination of Humanitarian Affairs reports the health ministry says that between 300 and 600 cases of bubonic plague occur annually in Madagascar, usually between October and March.

According to the World Health Organization (WHO), 21 725 persons were infected with plague worldwide in the 1st decade of the 21st century, accounting for 1612 deaths and a case fatality rate of 7.4 percent.

Plague is an infectious disease caused by the bacterium, _Yersinia pestis_. It is found in animals throughout the world, most commonly rats but other rodents like ground squirrels, prairie dogs, chipmunks, rabbits, and voles. Fleas typically serve as the vector of plague. Human cases have been linked to the domestic cats and dogs that brought infected fleas into the house.

People can also get infected through direct contact with an infected animal, through inhalation and in the case of pneumonic plague, person to person. _Y. pestis_ is treatable with antibiotics if started early enough.

There are 3 forms of human plague; bubonic, septicemic, and pneumonic.

Bubonic plague: this is the most common form. In this form, the bacteria enter the body through the bite of an infected flea or rodent. Here the bacteria infect the lymphatic system. After a few days to week, the person will experience fever, chills, weakness, and swollen lymph glands. These are called buboes.

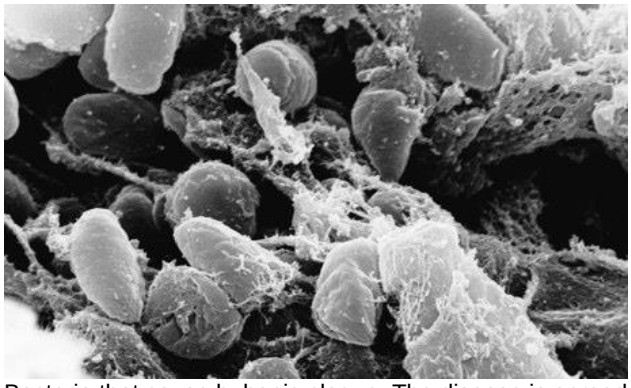
Untreated bubonic plague is fatal about half the time.

Septicemic plague: this form is also contracted from a flea or rodent bite. Sometimes it appears subsequent to untreated bubonic or pneumonic plague. It involves bloodstream dissemination to all areas of the body. Buboes do not occur. Symptoms are endotoxic shock and disseminated intravascular coagulation. Untreated septicemic plague is nearly always fatal.

Pneumonic plague: probably the most serious form of plague, when the bacteria infect the lungs and cause pneumonia. It is contracted when the bacterium is inhaled (primary) or develops when bubonic or septicemic plague spreads to the lungs.

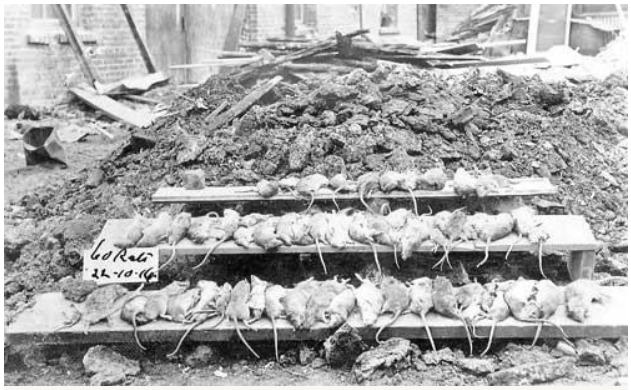
Pneumonic plague is contagious and can be transmitted person to person. It is highly communicable under appropriate climate conditions, overcrowding and cool temperatures. Untreated pneumonic plague is frequently fatal.
Communicated by: ProMED-EAFR <promed-eafr@promedmail.org>
[Half of the cases reported during the current plague outbreak in Madagascar have died. Most of the fatal cases have been attributed to pneumonic plague, the most severe form of the disease. Effective plague control requires prompt detection and initiation of case treatment using recommended antibiotics. Interventions tailored to local settings should also be used to exclude rodents and fleas from homes, workplaces, and recreation areas. Maps of Madagascar can be seen at <http://www.lib.utexas.edu/maps/africa/madagascar_pol_2003.jpg> and <http://healthmap.org/r/1kSe>. - Mod JFW]

Photo of the Month



Bacteria that cause bubonic plague. The disease is spread by *Xenopsylla cheopis*fleas, whose main host is the black rat. Photograph: Rocky Mountain Laboratories/AP

Cara Brook and Christian Ranaivoson prepare the sampling table in their search for rodent-borne diseases (chiefly bubonic plague and Leptospirosis) in Ambohitantely Special Reserve, Madagascar. Photo courtesy of Evaline Cheng.



Bubonic plague first appeared in New Zealand in 1900. There were only a small number of deaths and the disease disappeared around 1911. Rats were known to be a carrier of the disease and efforts to kill them increased in the wake of plague fears. These rats were killed during a clean-up in Dunedin.