

Influenza Japanese Encephalitis Legionellosis

INFLUENZA

Cause: Influenza viruses of types A, B and C; type A occurs in two subtypes (H1N1 and H3N2). Type A viruses cause most of the widespread influenza epidemics; type B viruses generally cause regional outbreaks, and type C are of minor significance for humans.

Influenza viruses evolve rapidly, changing their antigenic characteristics, so that vaccines need to be modified each year to be effective against currently circulating influenza strains.

Other types and subtypes of influenza viruses occur in animals and birds; transmission and reassortment between species may give rise to new subtypes able to infect humans.

Transmission: Airborne transmission of influenza viruses occurs particularly in crowded enclosed spaces.

Transmission also occurs by direct contact with droplets disseminated by unprotected coughs and sneezes and contamination of the hands.

Nature of the disease: An acute respiratory infection of varying severity, ranging from asymptomatic infection to fatal disease. Initial symptoms include fever with rapid onset, sore throat, cough and chills, often accompanied by headache, coryza, myalgia and prostration.

Influenza may be complicated by viral or more often bacterial pneumonia. Illness tends to be most severe in the elderly and in young children. Death

resulting from influenza occurs mainly in the elderly and in individuals with pre-existing chronic diseases.

Geographical distribution: Worldwide. In temperate regions, influenza is a seasonal disease occurring in winter: it affects the northern hemisphere from November to March and the southern hemisphere from April to September.

In tropical areas there is no clear seasonal pattern, and influenza may occur at any time of the year.

Risk for travellers: Travellers, like local residents, are at risk in any country during the influenza season. Travellers visiting countries in the opposite hemisphere during the influenza season are at special risk, particularly if they have not built up some degree of immunity through regular vaccination. The elderly, people with pre-existing chronic diseases and young children are most susceptible.

Prophylaxis: Vaccination before the start of the influenza season. However, vaccine for visitors to the opposite hemisphere is unlikely to be obtainable before arrival at the travel destination.

For travellers in the highest risk groups for severe and complicated influenza who have not been or cannot be vaccinated, the prophylactic use of antiviral drugs such as zanamivir and oseltamivir is indicated in countries where they are available. Amantidine and rimantidine may also be considered.

Precautions: Whenever possible, avoid crowded enclosed spaces and close contact with people suffering from acute respiratory infections.

JAPANESE ENCEPHALITIS

Cause: Japanese encephalitis (JE) virus, which is a flavivirus.

Transmission: The virus is transmitted by various mosquitoes of the genus *Culex*. It infects pigs and various wild birds as well as humans. Mosquitoes become infective after feeding on viraemic pigs or birds.

Nature of the disease: Most infections are asymptomatic. In symptomatic cases, severity varies; mild infections are characterized by febrile headache or aseptic meningitis. Severe cases have a rapid onset and progression, with headache, high fever and meningeal signs. Permanent neurological sequelae are common among survivors. Approximately 50% of severe clinical cases have a fatal outcome.

Geographical distribution: JE occurs in a number of countries in Asia and occasionally in northern Queensland, Australia.

Risk for travellers: Low for most travellers. Visitors to rural and agricultural areas in endemic countries may be at risk, particularly during epidemics of JE.

Prophylaxis: Vaccination, if justified by likelihood of exposure

Precautions: Avoid mosquito bites

LEGIONELLOSIS

Cause: Various species of *Legionella* bacteria, frequently *Legionella pneumophila*, serogroup I.

Transmission: Infection results from inhalation of

contaminated water sprays or mists. The bacteria live in water and colonize hot-water systems at temperatures of 20–50 °C (optimal 35–46 °C). They contaminate air-conditioning cooling towers, hot-water systems, humidifiers, whirlpool spas and other water-containing devices. There is no direct person-to-person transmission.

Nature of the disease: Legionellosis occurs in two distinct clinical forms:

Legionnaires disease is an acute bacterial pneumonia with rapid onset of anorexia, malaise, myalgia, headache and rapidly rising fever, progressing to pneumonia, which may lead to respiratory failure and death.

Pontiac fever is an influenza-like illness with spontaneous recovery after 2–5 days.

Susceptibility to legionellosis increases with age, especially among smokers and people with pre-existing chronic lung disease or other immuno-compromising conditions.

Geographical distribution: Worldwide.

Risk for travellers: Generally low. Outbreaks occasionally occur through dissemination of infection by contaminated water or air-conditioning systems in hotels and other facilities used by visitors.

Prophylaxis: None. Prevention of infection depends on regular cleaning and disinfection of possible sources.

Precautions: None.