Organisation mondiale de la Santé

FREQUENTLY ASKED QUESTIONS

Q 1: What is plague?

A: Plague is an infectious disease caused by the bacterium *Yersinia Pestis*, usually found in small mammals and their fleas. It is transmitted between animals and humans by the bite of infected fleas, direct contact with infected tissues, and inhalation of infected respiratory droplets. Common antibiotics are efficient to cure plague, if they are delivered very early, because the course of the disease is usually rapid.

WHO factsheet on plague: http://www.who.int/mediacentre/factsheets/fs267/en/

Q 2: Is plague known to Madagascar?

A: Plague is endemic to Madagascar, where around 400 cases of – mostly bubonic – plague are reported annually. Plague is a disease of poverty, because it thrives in places with poor sanitary conditions and health services. Plague appeared in the ports of Madagascar for the first time in 1898. In 1921 it spread to the high plateau (above 700 metres), where it has persisted.

Q 3: What are the types of plague?[i]

A: There are three forms of plague infection, depending on the route of infection: bubonic, septicaemic and pneumonic. All forms are treatable if detected early enough.

- ***Bubonic plague*** (known in mediaeval Europe as the 'Black Death') is the most common form of plague globally and is caused by the bite of an infected flea. Plague bacillus, *Y. pestis*, enters at the bite and travels through the lymphatic system to the nearest lymph node where it replicates itself. The lymph node then becomes inflamed, tense and painful, and is called a "bubo". At advanced stages of the infection the inflamed lymph nodes can turn into open sores filled with puss.
- ***Pneumonic plague*** – or lung-based plague – is the most virulent form of plague. Incubation period can be as short as 24 hours. Typically, the pneumonic form is caused by spread to the lungs from advanced bubonic plague. However, a person with secondary pneumonic plague may form aerosolized infective droplets and transmit plague via droplets to other humans. Untreated pneumonic plague is always fatal.
- ***Septicaemic plague*** occurs when infection spreads through the bloodstream, following a bubonic or a pneumonic plague.

Q 4: What are the symptoms of plague?

A: Symptoms typically include the sudden onset of fever, chills, head and body aches and weakness, vomiting and nausea. In case of the bubonic form, painful and inflamed lymph nodes can also appear. The pneumonic (or pulmonary) form has a shorter incubation period (sometimes less than 24h), and includes severe respiratory symptoms such as shortness of breath and coughing, with often blood-tainted phlegm.

Q 5: How does pneumonic differ from bubonic plague?

A: *Bubonic plague* is the most common form of plague, but cannot be transmitted human-to-human. However, out of the human cases with bubonic plague, around 10% develop *pneumonic plague*, meaning the infection continuing to spread in the organism gets into their lungs. *Pneumonic plague* is much rarer, but more serious, and can be more easily transmissible from human-to-human through coughing. *Bubonic plague* has a mortality rate of 30% to 60%, while the pneumonic form is usually fatal in the absence of treatment.

Q 6: How do you diagnose plague?

A: Diagnosis of plague requires laboratory testing of specimens of blood, sputum or infected lymph nodes. A reliable rapid test also exists.

Q 7: How can plague be treated?

A: Plague can be treated with antibiotics and supportive therapy, and recovery is usually the norm if treatment starts early on. Patients with *pneumonic plague* must be isolated and treated by trained medical staff with personal protective equipment. Close contacts of cases must be kept under medical surveillance and must receive antibiotic prophylaxis.

Q 8: Is there a vaccine that can be used?

A: A vaccine exists, but due to low effectiveness, vaccine against plague is not recommended. WHO does not recommend vaccination, except for high-risk groups (e.g. laboratory personnel who are constantly exposed to the risk of contamination).[ii]

Q 9: Are health workers at risk?

A: Because we are seeing cases among health workers, we know that it is important to strengthen infection prevention and control (IPC) in health centres. WHO is working with the Ministry of Health to ensure health workers are aware of how to protect themselves, and they have the supplies (i.e., personal protective equipment/PPE) to do so.

Q 10: Are all of these confirmed cases of pneumonic plague?

A: The 73 cases of pneumonic plague identified so far are a combination of suspected, probable and confirmed cases.

Q 11: If plague is endemic to Madagascar, then why are you concerned about this outbreak?

A: WHO is concerned because this is confirmed pneumonic plague, with a documented chain of human-to-human transmission affecting several cities. Pneumonic plague requires immediate intervention because of the associated higher case fatality rate and higher transmissibility. Contrary to past outbreaks, this one is affecting large urban areas such as Antananarivo, Toamasina and Majenga (the latter two are port towns, while Antananarivo is the capital with more than 2 million inhabitants).

Q 12: How is the plague spreading to coastal and urban areas?

A: Coastal regions are non-endemic areas for plague, which usually develops in highland areas above 700 metres of altitude. Many of the cases identified in the coastal region and other affected districts are directly or indirectly linked to the first detected case, which is evidence of person-to-person transmission of pneumonic plague.

Q 13: How do you assess the risk of the outbreak spreading?

A: WHO is concerned that plague could spread further because it is already present in several cities and this is the start of the epidemic season, which usually runs from September to April. The overall risk of further spread at the national level is high, at the regional level is moderate due to frequent flights to neighbouring Indian Ocean islands, and at the international level is low.[iii]

Q 14: How could it spread regionally or internationally?

A: There is a potential risk at regional/ international level if a person in incubation or at the beginning of the course takes one of the daily flights or boat to a neighbouring island or elsewhere.

Q 15: Should people living in areas with plague take antibiotics?

A: Plague is endemic in Madagascar and cases are reported nearly every year between the months of September and April. These epidemics usually provoke fear in the communities, which in turn leads to indiscriminately obtaining over-the-counter prophylactic antibiotics directly from pharmacies. Other people wear masks to protect themselves. These exaggerated behaviours stigmatise cases and their relatives, and could promote antimicrobial resistance. More measures need to be put in place to educate communities on appropriate preventive measures. The focus should be on hygiene promotion in surrounding areas.

Q 16: Should travellers avoid Madagascar?

A: WHO advises against any restriction on travel or trade on Madagascar based on the current information available. International travellers to Madagascar should be informed about the outbreak and the necessary protection measures. Travellers should protect themselves against flea bites, avoid contact with dead animals, infected tissues or materials, and avoid close contact with patients with pneumonic plague.

Q 17: But wouldn't it be safer for countries to place travel and trade restrictions on Madagascar?

A: It may seem counterintuitive but epidemiology tells us that the risks associated with shutting borders are higher than keeping them open. Shutting borders creates social disruption, suspicion, underground routes and other negative effects that interfere with an effective response. It is far more effective to keep society functioning as normal and to concentrate on the most effective actions, such as informing and protecting the public, training health workers, following up on cases and their contacts and so on.

Q 18: What should a traveller do if they suspect plague?

A: In case of sudden symptoms of fever, chills, painful and inflamed lymph nodes, or shortness of breath with coughing and/or blood-tainted expectoration, travellers should immediately contact a medical service. Travellers should avoid self-medication, even for antibiotics. Prophylactic treatment is only recommended for persons who have been in close contact with cases, or with other high-risk exposures (such as bites from infected fleas or direct contact with body fluids or tissues of infected animals).

Q 19: How does plague compare to Ebola?

A: Each disease outbreak, in the context in which it occurs, brings with a specific set of challenges. We are dealing with a different disease in an entirely different setting. One difference is that plague is more easily treatable than Ebola if detected early, and with relatively simple interventions. People at risk should know that their best chance of survival is to come forward for treatment as early as possible. WHO is working to ensure that medicines are widely available in-country and in all areas at risk.

Q 20: How does the WHO response to this outbreak compare to Ebola?

A: WHO has learnt important lessons from the West African Ebola outbreak and we have made comprehensive reforms to the way we respond to health emergencies. We have developed a Health Emergencies programme that addresses the full risk management cycle from preparedness, to detection, to response, to recovery. In Madagascar, the three levels of the organization are working together to quickly identify gaps and to ensure we send the experts or supplies that are needed. We have funding in place that can be released quickly. We are working closely with the Government to develop response plans and we are engaging with affected communities. It is critical to address rumours early on and to find solutions that are acceptable to local communities.

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[i] http://www.who.int/mediacentre/factsheets/fs267/en/
[ii] http://www.who.int/mediacentre/factsheets/fs267/en/
[iii] From Rapid Risk Assessment