

## **Outbreak of Plague in Madagascar**

The following information is being disseminated by both the International Chamber of Shipping and The International Transport Workers Federation to draw attention to the current outbreak of Madagascan Plague otherwise known as Pneumonic Plague. Shipping companies employing Seafarers of Madagascan origin or whose ships are trading in Madagascan ports or who are changing crews are requested to take heed of the advice below which has been disseminated by both the IMO and World Health Organisation. They are also requested to bring it to the ships' officers responsible for medical care on board.

### **Purpose**

1. The purpose of this advisory is to provide guidance on the plague outbreak in Madagascar issued by the World Health Organization (WHO), IMO and the US CDC.
2. According to the information provided by the WHO, there is no justification at this stage for restrictions on travel or trade.
3. Further updates will be issued as and when provided by WHO, IMO and CDC.

### **Background**

Since August 2017, Madagascar has been experiencing a large outbreak of plague affecting major cities, including the port city of Toamasina and other non-endemic areas. This outbreak is more severe than the normal ones.

From 1 August to 8 November 2017, a total of 2 034 confirmed, probable and suspected cases of plague, including 165 deaths (case fatality rate 8%), have been reported from 55 of the 114 districts in the country.

### ***Advice for international seafarers calling at Madagascan ports***

Based on the available information to date, the risk of international spread of plague appears very low. WHO advises against any restriction on travel or trade on Madagascar based on the available information. Seafarers should be informed about the current plague outbreak, the fact that plague is endemic in Madagascar, and should receive advice on prevention, post exposure chemoprophylaxis, and where to seek medical treatment should they develop plague related symptoms. The shipping agent should ensure that the antibiotics are available from the ship's medical chest.

Madagascar is also endemic for malaria and seafarers and the officer responsible for medical care on board the ship should consider the antimalarial prophylaxis recommended by the WHO when travelling there.

Risk of infection of *Yersinia pestis* for seafarers in port in Madagascar is generally low.

In case of sudden symptoms of fever, chills, painful and inflamed lymph nodes, or shortness of breath with coughing and/or blood-tainted sputum, should immediately contact a medical service and advise the officer on board responsible for medical care.

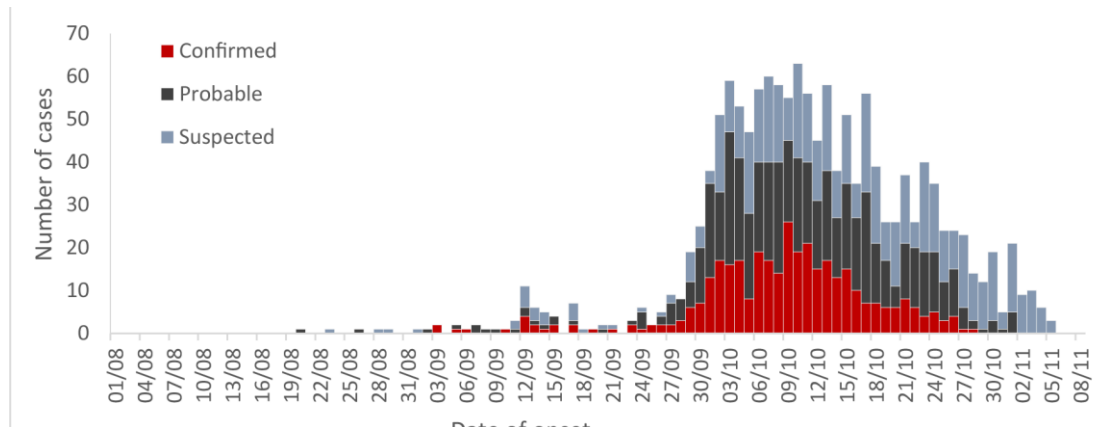
Prophylactic treatment is only recommended for persons who have been in close contact with plague cases, or with other high risk exposures (such as bites from infected fleas or direct contact with body fluids or tissues of infected animals). Seafarers should immediately notify the officer responsible for medical care. Seafarers should avoid self-administration with antibiotics as prophylaxis, unless recommended by medical

professionals or the officer responsible for medical care. Upon return from travel to Madagascar, seafarers should be on alert for the above symptoms, and if symptoms appear, they should seek medical care and inform their physician about their travel history to Madagascar.

In Madagascar, plague cases are highest during the period of September through April. Thus control measures will continue through to the end of April 2018.

### Figure 1. Confirmed, probable & suspected plague cases reported in Madagascar

From 1 August to 8 November 2017, a total of 2 034 confirmed, probable and suspected cases of plague, including 165 deaths (case fatality rate 8%), have been reported from 55 of the 114 districts in the country.



### Public health response

Enhanced measures for exit screening have been implemented at Antananarivo International Airport. Measures include: filling a special departure form at the airport (to identify passengers at risk); temperature screening of departing passengers, and referring passengers with fever to airport physicians for further consultation; passengers with symptoms compatible with pneumonic plague are immediately isolated and investigated using a rapid diagnostic test and notified according to the response alert protocol. Symptomatic passengers are not allowed to travel.

Nine countries and overseas territories in Africa (Comoros, Ethiopia, Kenya, Mauritius, Mozambique, La Réunion (France), Seychelles, South Africa, and Tanzania) have been identified as priority countries for plague preparedness and readiness by virtue of their trade and travel links to Madagascar. These countries are implementing readiness activities including increased public awareness of plague, enhancing surveillance for the disease particularly at points of entry and prepositioning of equipment and supplies.

### WHO Risk Assessment

While the decline in new plague case reports and reduction in hospitalizations due to plague is encouraging, WHO expects more plague cases to be reported from Madagascar until the typical plague season ends in April 2018.

Based on available information and response measures implemented to date, WHO estimates the risk of potential further spread of the plague outbreak at national level remains high. The risk of international spread is mitigated by the short incubation period of pneumonic plague, implementation of exit screening measures. Advice on prevention and control measures, treatment options have been provided to Madagascar and to priority countries in the region. For further information on plague and the latest

information about the plague outbreak in Madagascar please see WHO Plague website and the Madagascar Plague Outbreak Situation Reports website.

- [WHO Plague website](#)
- [Madagascar Plague Outbreak Situation Reports website](#)

### **WHO advice on travel**

Based on available information to date, the risk of international spread of plague appears low. WHO advises against any restriction on travel or trade on Madagascar based on the information available. Seafarers arriving in Madagascar should be informed about the current plague outbreak and the necessary protection measures. Seafarers should:-

- protect themselves against flea bites,
- avoid contact with dead animals, infected tissues or materials,
- avoid close contact with patients with pneumonic plague.
- In case of sudden symptoms of fever, chills, painful and inflamed lymph nodes, or shortness of breath with coughing and/or blood-tainted sputum, travellers should immediately contact a medical service or the officer responsible for medical care.
- Upon return from travel to Madagascar, be on alert for the above symptoms.
- If symptoms appear, seek medical care and inform their physician about their travel history to Madagascar.

### **CDC Advice**

Further useful information is also available on the US CDC website:-

<https://wwwnc.cdc.gov/travel/notices/alert/plague-madagascar>

Travellers to Madagascar should:

- Use EPA-registered insect repellent that lists protection against fleas on the label and contains at least 25% DEET.
- Avoid close contact with sick or dead animals.
- Avoid close contact with seriously ill people, especially those coughing up blood.

## Key facts

- Plague is caused by the bacteria *Yersinia pestis*, a zoonotic bacteria usually found in small mammals and their fleas.
- People infected with *Y. pestis* often develop symptoms after an incubation period of one to seven days.
- There are two main clinical forms of plague infection: bubonic and pneumonic. Bubonic plague is the most common form and is characterized by painful swollen lymph nodes or 'buboes'.
- Plague is transmitted between animals and humans by the bite of infected fleas, direct contact with infected tissues, and inhalation of infected respiratory droplets.
- Plague can be a very severe disease in people, with a case-fatality ratio of 30% to 60% for the bubonic type, and is always fatal for the pneumonic kind when left untreated.
- Antibiotic treatment is effective against plague bacteria, so early diagnosis and early treatment can save lives.
- From 2010 to 2015 3248 cases were reported worldwide, including 584 deaths.
- Currently, the three most endemic countries are the Democratic Republic of the Congo, Madagascar, and Peru.

Plague is an infectious disease caused by the bacteria *Yersinia pestis*, a zoonotic bacteria, usually found in small mammals and their fleas. It is transmitted between animals through fleas. Humans can be infected through:

- the bite of infected vector fleas
- unprotected contact with infectious bodily fluids or contaminated materials
- the inhalation of respiratory droplets/small particles from a patient with pneumonic plague.

Plague is a very severe disease in people, particularly in its septicaemic (systemic infection caused by circulating bacteria in bloodstream) and pneumonic forms, with a case-fatality ratio of 30% to 100% if left untreated. The pneumonic form is invariably fatal unless treated early. It is especially contagious and can trigger severe epidemics through person-to-person contact via droplets in the air.

## Signs and symptoms

People infected with plague usually develop acute febrile disease with other non-specific systemic symptoms after an incubation period of 1 to 7 days, such as sudden onset of fever, chills, head and body aches, and weakness, vomiting and nausea.

There are two main forms of plague infection, depending on the route of infection: bubonic and pneumonic.

- **Bubonic** plague is the most common form of plague and 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 called a 'bubo'. At advanced stages of the infection the inflamed lymph nodes can turn into open sores filled with pus. Human to human transmission of bubonic plague is rare. Bubonic plague can advance and spread to the lungs, which is the more severe type of plague called pneumonic plague.

- **Pneumonic** plague, or lung-based plague, is the most virulent form of plague. Incubation can be as short as 24 hours. Any person with pneumonic plague may transmit the disease via droplets to other humans. Untreated pneumonic plague, if not diagnosed and treated early, can be fatal. However, recovery rates are high if detected and treated in time (within 24 hours of onset of symptoms).

## **Diagnosing plague**

Confirmation of plague requires lab testing. The best practice is to identify *Y. pestis* from a sample of pus from a bubo, blood or sputum. A specific *Y. pestis* antigen can be detected by different techniques. One of them is a laboratory validated rapid dipstick test now widely used in Africa and South America, with the support of WHO.

## **Treatment**

Untreated pneumonic plague can be rapidly fatal, so early diagnosis and treatment is essential for survival and reduction of complications. Antibiotics and supportive therapy are effective against plague if patients are diagnosed in time. Pneumonic plague can be fatal within 18 to 24 hours of disease onset if left untreated, but common antibiotics for enterobacteria can effectively cure the disease if delivered early.

## **Prevention**

Preventive measures include informing people when zoonotic plague is present in their environment and advising them to take precautions against flea bites and not to handle animal carcasses. Generally people should be advised to avoid direct contact with infected body fluids and tissues. When handling potentially infected patients and collecting specimens, standard precautions should apply.