

# United Nations Medical Directors

## Reducing the Risk of Acquiring Plague in Madagascar

### Recommendations for UN Personnel

- The following occupational health recommendations are provided by the UN Medical Directors to all Organizations and UN personnel so as to reduce the risk of UN personnel acquiring plague.
- These recommendations should be applied to UN personnel travelling to or residing in Madagascar.
- If this is a hard copy of the document, please be sure to check the [Plague in Madagascar](#) page on the HR Portal for the latest version.
- Please contact [msdpublichealth@un.org](mailto:msdpublichealth@un.org) if you have any questions on this document.

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#### UN Personnel Risk Categories

#### UN Medical Directors Recommendations

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##### 1 **UN personnel travelling to or residing in Madagascar**

- Ensure that you take all measures to protect against flea bites especially when in areas of potential exposure (e.g. rural areas, slums). These include:
  - Using insect repellent that lists protection against fleas on the label, and which contains at least 25% DEET. WHO recommends formulations (lotions or sprays) that have the following active ingredients: DEET, IR3535, Icaridin (KBR3023) or Picaridin.
  - Cover up by wearing light-coloured, long-sleeved shirts and long pants and closed shoes.
- Do not pick up or touch sick or dead animals.
- Ensure that your accommodation and living area is free of rodents and avoid contact with rodent nests and burrows as these could contain fleas.
- Avoid crowded areas where cases of pneumonic plague have recently been reported.
- Avoid close contact with persons who are sick or persons suspected of infection with pneumonic plague, unless for professional reasons.
- Wash your hands frequently with soap and water for at least 20 seconds. Use an alcohol-based hand sanitizer if soap and water are not available.
- Do not let pets sleep in the bed with you. Treat dogs and cats for fleas regularly.

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**1 UN personnel  
travelling into or  
residing in  
Madagascar  
(con't)**

- If you have had close contact with people with plague pneumonia, you should immediately notify a health care provider as you may need to take antibiotics to prevent plague. During or after travel to Madagascar, be alert for symptoms of plague, including fever and chills, headache, fatigue or malaise and muscle ache. If any suspicion or if you are feeling ill, seek medical advice immediately and remember to inform your medical practitioner, UN physician or your Organisation's Medical Services about your recent travel to Madagascar.
- Be aware that Madagascar is endemic for malaria and take the WHO recommended antimalarial prophylaxis (*doxycycline, atovaquone-proguanil or mefloquine*) when travelling to Madagascar. Malaria medications should be selected according to reported side-effects and contraindications.

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**2 UN personnel  
conducting or who  
will be conducting  
high-risk operations  
in plague-active  
areas of  
Madagascar  
where exposure to  
plague sources  
(patients, fleas) is  
difficult or  
impossible to  
prevent**

- Implement all of the above advice, plus
- Seek advice from your medical practitioner, UN physician or your Organisation's Medical Services to assess your personal risk and evaluate the need for prophylactic antibiotics (See Annex)

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**3 UN personnel who  
has been exposed  
through face-to-  
face contact with  
suspected or  
confirmed  
pneumonic plague  
patients**

- Immediately notify and seek advice from your medical practitioner, UN physician or your Organisation's Medical Services to assess your personal risk and evaluate the need for post-exposure antibiotics (See Annex)
  - Such contacts should also be monitored for symptoms during that period.
  - If such individuals refuse prophylactic antibiotics, they should be in strict isolation and monitored carefully for symptoms for 7 days.
  - Contacts should also receive advice about appropriate measures they can take to protect themselves and their families from plague.
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**4 UN health care workers in close contact with or clinically managing suspected or confirmed plague patients**

- For all bubonic and pneumonic plague patients (including suspect patients), apply standard patient-care precautions (Annex) including frequent hand-washing with soap and water or use of alcohol hand rub, and use of personal protective equipment (gloves, gowns, masks) based on risk assessment.
- For all pneumonic plague patients (including suspect patients), apply respiratory droplet precautions (Annex) including placing patients in strict isolation and provision of surgical masks, until 48 hours of appropriate antibiotics have been completed and there has been a favourable clinical response.
- Disinfect medical areas using 10% of diluted household bleach (made fresh daily).
- Such health care workers should consider taking chemoprophylaxis with antibiotics for the duration of seven days or as long as they are exposed to infected patients.

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**5 Any UN personnel involved in environmental and vector control**

- Assess risk and use appropriate precautionary measures according to national guidance, as plague can be acquired from rodent flea bites and handling infected animals or their remains.
- Mask and eye protection should be used when spraying insecticide according to the instruction provided with the product.

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**References:**

- WHO's Plague webpage: <http://www.who.int/csr/disease/plague/en/>
- CDC's Plague webpage: <https://www.cdc.gov/plague/index.html>
- WHO: Madagascar Plague Outbreak – General Information for Responders (Oct 2017) in English and French (Annex)



## Madagascar plague outbreak – General information for responders

### How to protect yourself from infection

Version 3. 12 October 2017

#### Key points

- The most important and dangerous route of transmission of plague is through inhalation of infectious respiratory droplets/particles from a person with pneumonic plague. This can result in development of pneumonic plague in the exposed person. Pneumonic plague is a life-threatening disease with very high case fatality.
- Also, ruptured pus from bubonic plague patients is infectious.
- As a precautionary measure, if you are not trained in infection control, avoid contact with patients presenting plague symptoms or deceased from the disease as any of their body fluids might contain the plague bacteria.
- Laboratory specimens are considered infectious. According to the Guidance on Regulations for the Transport of Infectious Substances, transport of the sample should be done in the standard triple packaging and handled by trained personnel. Samples are classified as Category B and Culture as Category A
- For responders involved in environmental and vector controls: assess risk and use appropriate precautionary measures. Plague can be acquired from rodent flea bites and handling infected animals or their remains.
- If you suspect that you have had an accidental exposure, you should report immediately and seek for medical follow-up. Post-exposure prophylaxis, may be prescribed. All responders should monitor their health for fever and chills, headache, fatigue or malaise and muscle ache; if any suspicion or if you are feeling ill, seek medical advice. **PLAGUE IS PREVENTABLE AND CURABLE IF TREATED EARLY AND APPROPRIATELY.**
- Plague post-exposure Prophylaxis (PEP): Doxycycline 200mg a day (100mg twice a day) for 7 days.
- Plague chemoprophylaxis for high-risk operations\*: Doxycycline 200mg a day (100mg twice a day), starting a day before the operation, continuing during the operation, and 7 days after the last exposure.

\*including suboptimal IPC competencies of individuals performing the operation. The first pre-operation administration could be 200mg in one time.



## Recommended actions for protection from plague

Activity	When dealing with Bubonic Plague patient (including suspected patients)	When dealing with pneumonic plague patient (including suspected patients)
Healthcare Staff	Apply standard Precautions (Appendix A)	Apply standard Precautions (Appendix A) and Droplet Precautions (Appendix B)
Contact Tracing staff	Perform hand hygiene during activities. Avoid close contact (less than 2m) with patients presenting plague symptoms, if required, get trained and be accompanied by a person to supervise IPC measures.	
Safe and Dignified Burial Teams	Apply standard Precautions (Appendix A) and Droplet Precautions (Appendix B)	Apply standard Precautions (Appendix A) and Droplet Precautions (Appendix B)
Vector and Rodent Control Teams	Assess exposure risk and select appropriate PPE according to the national guidance. Mask and eye protection should be used when spraying insecticide according to the instruction provided with the product.	
For Social Mobilization Teams	Perform hand hygiene during activities. Avoid close contact (less than 2m) with patients presenting plague symptoms, if required, get trained and be accompanied by a person to supervise IPC measures.	
Office workers	None required	

Antimicrobial prophylaxis	
Healthcare Staff	In case of unprotected exposure to a suspected or confirmed plague patient, particularly who have come into close contact (less than 2 meters) or to their body fluids within the previous 7 days. PEP recommended and place the person under medical observation <sup>1</sup> . If symptoms <sup>2</sup> , seek medical attention.
Vector and Rodent Control Teams, Laboratory Teams, Contact Tracing staff	Persons who are likely to have been exposed to <i>Y. pestis</i> -infected fleas bites, to <i>Y. pestis</i> bacteria (e.g. during a laboratory accident), to a <i>Y. pestis</i> -infected mammal (direct or through contact with its body fluids or tissues). PEP recommended and place the person under medical observation. If symptoms <sup>2</sup> , seek medical attention.
Safe and Dignified Burial Teams	Assess risk and skill of the individual, consider starting chemoprophylaxis 1 day prior to the operation, continue during the operation and 7 days after the last exposure as precaution by taking doxycycline 200mg a day.
Social Mobilization Teams	Not requiring PEP except for an accidental exposure. Avoid exposure/contact.
Office Workers	Not required

- 1) Healthcare workers are at increased risk if exposed to symptomatic patients while not wearing PPE. We recommend active and systematic monitoring of the HCWs' health including direct observation treatment short course (DOTS)-PEP.
- 2) Including fever and chills, headache, fatigue or malaise and muscle ache



### Appendix A<sup>1</sup> STANDARD PRECAUTIONS

<b>Hand hygiene</b>	<ul style="list-style-type: none"> <li>Practice hand hygiene after contact with patient or suspect case or he/she environmental or any other contact with contaminated surface.</li> <li>In a health care setting perform hand hygiene according to the WHO Five Moments and use the appropriate technique (see posters below and the tool “Hand hygiene: why, how and when” at <a href="http://www.who.int/infection-prevention/tools/hand-hygiene/en/">http://www.who.int/infection-prevention/tools/hand-hygiene/en/</a> )</li> <li>Clean your hands by rubbing them with an alcohol-based formulation (hand sanitizer), as the preferred mean for routine hygienic hand antisepsis if hands are not visibly soiled. It is faster, more effective, and better tolerated by your hands than washing with soap and water.</li> <li>Wash hands soap (plain soap is fully acceptable) and water when visibly dirty or visibly soiled with blood or other body fluids or after using the toilet, whether or not gloves are worn.</li> <li>Practice hand hygiene immediately after gloves and/or gown are removed</li> </ul>
<b>Gloves</b>	<ul style="list-style-type: none"> <li>Wear gloves (clean, non-sterile gloves are adequate) when touching blood, body fluids, secretions, excretions, and contaminated items/environment.</li> <li>Put on clean gloves just before touching mucous membranes and non-intact skin.</li> <li>Change gloves between tasks and procedures on the same patient after contact with material that may contain a high concentration of microorganisms. Always perform hand hygiene when changing gloves.</li> <li>Remove gloves promptly after use and immediately perform hand hygiene, before touching uncontaminated items and environmental surfaces, and before going to another patient</li> </ul>
<b>Mask, eye protection, face shield</b>	<ul style="list-style-type: none"> <li>Wear a mask* and eye protection or a face shield to protect mucous membranes of the eyes, nose, and mouth during procedures and patient-care activities that are likely to generate splashes or sprays of blood, body fluids, secretions, and excretions.</li> </ul>
<b>Gown</b>	<ul style="list-style-type: none"> <li>Wear a gown (a clean, non-sterile gown is adequate) to protect skin and to prevent soiling of clothing during procedures and patient-care activities that are likely to generate splashes or sprays of blood, body fluids, secretions, or excretions.</li> <li>Select a gown that is appropriate for the activity and amount of fluid likely to be encountered.</li> <li>Remove a soiled gown as promptly as possible</li> </ul>
<b>Patient-care equipment</b>	<ul style="list-style-type: none"> <li>Put a mask on the patient if the patient is presenting with cough.</li> <li>Prevent skin and mucous membrane exposures or contamination of clothing from contact with equipment used for patient-care. It transfers of micro-organisms to other patients and environments.</li> <li>Ensure that reusable equipment is not used for the care of another patient until it has been cleaned and reprocessed appropriately.</li> <li>Ensure that single-use items are discarded properly.</li> </ul>
<b>Environmental Control</b>	<ul style="list-style-type: none"> <li>Ensure that the hospital has adequate procedures for the routine care, cleaning, and disinfection of environmental surfaces, beds, bedrails, bedside equipment, and other frequently touched surfaces</li> <li>Ensure that these procedures are being followed.</li> </ul>
<b>Linens</b>	<ul style="list-style-type: none"> <li>Handle, transport, and process used linen soiled with blood, body fluids, secretions, and excretions in a manner that prevents skin and mucous membrane exposures and contamination of clothing and that avoids transfer of microorganisms to other patients and environments.</li> </ul>
<b>Occupational Health and Blood-Borne Pathogens</b>	<ul style="list-style-type: none"> <li>Take care to prevent injuries when using needles, scalpels, and other sharp instruments or devices</li> <li>Never recap used needles or direct the point of a needle towards any part of the body</li> <li>Use either a one-handed “scoop” technique or a mechanical device designed for holding the needle sheath.</li> <li>Do not remove used needles from disposable syringes by hand</li> <li>Do not bend, break, or otherwise manipulate used needles by hand.</li> <li>Place used disposable syringes and needles, scalpel blades, and other sharp items in appropriate puncture-resistant containers</li> <li>Use mouthpieces, resuscitation bags, or other ventilation devices as an alternative to mouth-to-mouth resuscitation methods in areas where the need for resuscitation is predictable.</li> </ul>

\*mask – fluid-resistant medical/surgical mask

<sup>1</sup> Adapted from Plague Surveillance and Control In Sub-Saharan Africa (Revision EB 15/06/12)



## Appendix B<sup>2</sup> DROPLET PRECAUTIONS

In addition to standard precautions for suspected or confirmed pneumonic plague patients.

<b>Patient Placement</b>	<ul style="list-style-type: none"><li>• Establish screening on entry to the health facility.</li><li>• Place a surgical mask on any patient meeting the screening definition for suspected plague upon entry to the facility.</li><li>• Place patients suspected of having any form of plague in a separate, individual room on strict droplet precautions until pneumonia has been ruled out, until sputum cultures are negative, and until at least 48 hours of effective antimicrobial therapy has been administered.</li><li>• If a separate room is not available, consult with infection control professionals regarding patient placement or other alternatives e.g. designated area with good ventilation, respecting space (2 meters) between beds.</li></ul>
<b>Mask, eye protection, face shield, gowns</b>	<ul style="list-style-type: none"><li>• Wear a mask* upon entering the room and in particular when working within 2 meters of the patient.</li><li>• Wear a gown for close contact with patient or his/her environment.</li><li>• Avoid staying in front of the face of the patient.</li><li>• Wear a mask and eye protection or a face shield to protect mucous membranes of the eyes, nose, and mouth during procedures and patient-care activities that are likely to generate splashes or sprays of blood, body fluids, secretions, and excretions.</li></ul>
<b>Patient Transport</b>	<ul style="list-style-type: none"><li>• Restrict the movement and transport of the patient</li><li>• If transport or movement is necessary, minimize patient dispersal of droplets by masking the patient.</li></ul>

\*mask – fluid-resistant medical/surgical mask

<sup>2</sup> Adapted from Plague Surveillance and Control In Sub-Saharan Africa (Revision EB 15/06/12)