

## PLAGUE PROPHYLAXIS (BIOTERRORISM)

### I. DEFINITION:

Plague is caused by *Yersinia pestis*, a Gram-negative bacillus. The bacteria maintain their existence in a cycle involving rodents and the fleas that live on them. Plague is a zoonotic disease of rodents that is transmitted to humans and other mammals from the bite of an infected rodent flea. Percutaneous inoculation of the bacteria in humans initiates inflammation of the lymph nodes that drain the site of the flea bite resulting in bubonic plague, the most common clinical presentation among naturally acquired infections. Symptoms of the disease may be non-specific with sudden onset fever, chills, malaise, myalgia, nausea, prostration, sore throat and headache. If the bacteria invade the bloodstream, this may lead to septicemic plague or to infection of other organ systems, such as the lungs (pneumonic plague) or meninges (plague meningitis). The clinical presentation is dependent upon how the patient was exposed to the plague bacteria.

### II. EPIDEMIOLOGY:

- A. The oriental rat flea (*Xenopsylla cheopis*) is the insect vector that has been implicated in the largest number of cases of human bubonic plague around the world. However, it is associated only with urban outbreaks, which no longer occur in the U.S. The last urban plague epidemic in the U.S. occurred in Los Angeles from 1924 – 1925. Plague spread from urban rats to rural rodent species, and became endemic in many areas of the western U.S.
- B. Over 80% of U.S. plague cases have been the bubonic form. In recent decades, an average of seven human plague cases have been reported each year in the U.S. (range: 1 – 17 cases per year). Most cases in the U.S. occur in two regions: 1) Northern New Mexico, northern Arizona, and southern Colorado and 2) California, southern Oregon, and far western Nevada. A variety of wild rodents (ground squirrels, prairie dogs, marmots) and their fleas are associated with an enzootic transmission cycle in these areas. Domestic cats are also quite susceptible to plague and infected cats have been the source of infection with pneumonic plague to animal owners and veterinarians. Dogs and cats may also bring plague-infected fleas into the home.
- C. Man is an accidental host in the plague cycle and is not necessary for the persistence of the organism in nature. Humans usually acquire plague from:
  1. Flea bites: Plague bacteria are most often transmitted by the bite of an infected flea whose usual host is another mammal. These fleas may be seeking another blood source after their host dies, or they may be brought into the home by domestic cats and dogs. This type of exposure may result in primary bubonic plague or septicemic plague.
  2. Contact with contaminated animal fluid or tissue: Humans can become infected when handling tissue or body fluids of a plague-infected animal. This form of exposure most commonly results in bubonic plague or septicemic plague.
  3. Infectious droplets: When a person has plague pneumonia, they may cough respiratory droplets containing the bacteria into the air. If these bacteria-containing droplets are breathed in by another person, they can cause pneumonic plague. Typically this requires direct or close contact with the ill person. Transmission of these droplets is the only way that plague can spread person-to-person. Cats infected with plague also pose a risk of transmitting bacteria-containing droplets to their owners and veterinarians.

III. CLINICAL FORMS:

- A. Bubonic plague is characterized by abrupt onset of high fever, shaking chills, prostration or severe malaise, headache, nausea, vomiting, and painful swollen regional lymph nodes (i.e. a bubo). Buboes manifest after 2 to 8 eight days incubation period and may suppurate. If the patient is not treated with appropriate antibiotics, the bacteria can spread to other parts of the body.
- B. Septicemic plague—Septicemic plague may occur primarily, or secondarily from hematogenous dissemination. Symptoms of septicemic plague are fever, chills, extreme weakness, abdominal pain, nausea, vomiting, diarrhea; later hypotension, acute respiratory distress, purpuric skin lesions, disseminated intravascular coagulation (DIC), acral cyanosis and necrosis, and organ failure.
- C. Pneumonic Plague—Pneumonic plague may occur primarily from inhalation of aerosols, or secondarily from hematogenous dissemination. It is the most fulminating and fatal form of plague. Symptoms of pneumonic plague are sudden onset chills, fever, headache, weakness, body pains, rapidly developing pneumonia with shortness of breath, chest pain, cough, and hemoptysis. Patients typically have blood tinged sputum within 24 hours after onset of symptoms, which progresses to copious hemoptysis. The most common x-ray findings are bilateral alveolar infiltrates. The pneumonia may cause respiratory failure and shock. The incubation period for pneumonic plague is less than one day up to four days and is usually short. Untreated pneumonic plague is almost always fatal, and mortality is very high in person whose treatment is delayed beyond 18 to 24 hours after symptom onset.
- D. Plague Meningitis—Plague meningitis may be a primary manifestation, but it usually occurs a week or more after onset of bubonic or septicemic plague. It is often associated with delayed, inappropriate, or bacteriostatic antibiotic therapy. It is also more common in patients with axillary buboes. Symptoms are similar to other forms of bacterial meningitis such as: fever, headache, stiff neck, sensorial changes, and meningismus.

IV. LABORATORY TESTING:

- E. Isolation of *Y. pestis* from a clinical specimen
- E. Fourfold or greater change in serum antibody titer to *Y. pestis* F1 antigen.

V. PLAGUE AS A BIOLOGICAL TERRORISM AGENT:

- A. Advances in living conditions, public health, and antibiotic therapy make future naturally occurring pandemics improbable. However, plague outbreaks following use of a biological weapon are a plausible threat. In 1970, the World Health Organization reported that, in the worst case scenario, if 50 kg of *Y. pestis* were released as an aerosol on a city of 5 million, pneumonic plague could infect up to 150,000 persons, 36,000 of whom would be expected to die.
- B. Though naturally occurring plague most commonly presents as bubonic plague, purposeful aerosol dissemination as a result of biowarfare or a terrorist event would manifest primarily as pneumonic plague.
- C. Epidemiology:
  - 1. Human plague most commonly occurs following a bite from a plague-infected flea. Humans then develop bubonic plague. Die-offs of wild rodents, in which

rodent fleas lose their hosts and seek new ones, may precede human cases, but rodent die-offs are not a necessary precursor to human infections.

2. Neither bubonic nor septicemic plague spreads directly person to person.
3. The epidemiology of plague caused by a bioterrorist event would differ from the naturally occurring disease. Intentional dissemination of plague would most probably occur via an aerosol of *Y. pestis*, a mechanism that has been shown to produce disease in nonhuman primates. A pneumonic plague outbreak would result with symptoms initially resembling those of other severe respiratory illnesses.
4. Symptoms would begin to occur within 1 – 6 days (most often 2 – 4 days) following exposure, and people would die quickly following onset of symptoms. Possible clues that plague has been artificially disseminated include:
  - a. The sudden occurrence of a large number of previously healthy persons with fever, cough, shortness of breath, and chest pain. The presence of hemoptysis in this situation would strongly suggest plague.
  - b. Disease in persons without known risk factors for acute pneumonia.
  - c. Many patients with unusually fulminant course and high mortality.
5. Clinical Features
  - a. Signs and Symptoms
    - 1) Subjective:
      - a) Incubation period 1 – 6 days (most often 2 – 4 days)
      - b) Fever
      - c) Cough
      - d) Dyspnea
      - e) Bloody, watery, or purulent sputum
      - f) Chest pain
      - g) Nausea
      - h) Vomiting
      - i) Abdominal pain
      - j) Diarrhea
    - 2) Objective:
      - a) Chest x-ray, bilateral infiltrates and consolidation
      - b) Leukocytosis with toxic granulations
      - c) Coagulation abnormalities
      - d) Aminotransferase elevations
      - e) Azotemia
      - f) Other evidence of multiorgan failure
      - g) Absence of buboes (except rarely, cervical buboes)
  - b. Complications:
    - 1) Adverse drug reactions
    - 2) Disseminated Intra-vascular Coagulation (DIC)
    - 3) Adult respiratory distress syndrome
    - 4) Shock
    - 5) Multiorgan failure
    - 6) Death

VI. MANAGEMENT PLAN:

A. Laboratory Studies

1. Whole Blood for culture or gram stain.
2. Sputum for culture or gram stain.
3. Serum for acute and/or convalescent titer.

B. Treatment of Pneumonic Plague

1. Plague pneumonia is often fatal if treatment is not initiated within 18 – 24 hours of symptom onset.
2. Physicians may be asked to obtain informed consent for administration of certain medications supplied by the Strategic National Stockpile (SNS).

C. Post-Exposure Prophylaxis (PEP)

1. An exposed person is defined as a person who has been exposed to aerosolized *Y. pestis* or has been in close contact with a confirmed pneumonic plague patient.
2. Close contact with a case patient is defined as less than 2 meters away from the case during a period when a case was symptomatic (coughing) and before the case had received 48 hours of antibiotics.
3. Household contacts and healthcare worker contacts to a case should be considered exposed close contacts and should receive PEP.
4. All antibiotic therapy should continue for 7 days after the last exposure to the case.
5. PEP for a person who has been exposed to aerosolized *Y. pestis* or has been in close contact with a confirmed pneumonic plague patient.

Category	Primary Drug <sup>β</sup>	Alternate Drug
Adults <sup>α</sup>	Doxycycline 100 mg orally twice daily for 7 days	Ciprofloxacin 500 mg orally twice daily for 7 days
Children <sup>α *</sup>	Doxycycline	Ciprofloxacin*
Pregnant women <sup>α</sup>	Doxycycline 100 mg orally twice daily for 7 days	Ciprofloxacin 500 mg orally twice daily for 7 days

\*See Dosage Schedule for Children

<sup>α</sup>See the Medication Interaction Table for alterations in therapy.

<sup>β</sup>The State Health Officer or designee will determine which medication will be primary based on supply issues

6. Follow the attached algorithm to determine which antibiotic to issue.
7. During Mass Antibiotic Prophylaxis Clinics, when possible, all family members should receive the same medications. For example, if one family member is allergic to Doxycycline, but all family members can take Ciprofloxacin, then all family members would receive Ciprofloxacin, the secondary drug of choice. It is important to note that this might not be possible with a family with multiple drug allergies and issues.
8. Persons receiving PEP should be monitored for fever and cough. Also persons refusing PEP should be closely monitored for fever or cough for the first 7 days after exposure and should receive treatment immediately if either occurs.

9. Special measures should be taken for PEP of those unaware of the outbreak or those requiring special assistance, such as persons who are homeless or who have cognitive disorders.

E. Infection Control:

1. The use of disposable surgical masks is recommended to prevent transmission via respiratory droplets.
2. Other respiratory droplet precautions (gown, gloves, and eye protection) should also be used by persons caring for pneumonic plague cases.
3. Patients with pneumonic plague should be isolated until they have had at least 48 hours of antibiotic therapy and shown clinical improvement.
4. If large numbers of patients make isolation impractical, pneumonic plague patients may be cohorted. Patients should wear surgical masks while they are being transported.
5. Bodies of patients who have died should be handled with routine strict precautions. Aerosol-generating procedures (bone-sawing associated with surgery or post-mortem examinations) should be avoided.

E. Contamination of personnel

1. Remove outer clothing where exposure occurred and place in a labeled, plastic bag for later incineration or steam sterilization.
2. Remove rest of clothing in the locker room and place in a labeled, plastic bag for later incineration or steam sterilization.
3. Shower thoroughly with soap and water.

F. If exposure to contaminated sharps occurs:

1. Follow standard reporting procedures for sharps exposures.
2. Notify the Oklahoma State Department of Health Acute Disease Service at (405) 271-4060.
3. Bubonic or septicemic plague would be the risk associated with a sharps exposure.

G. Decontamination of environment:

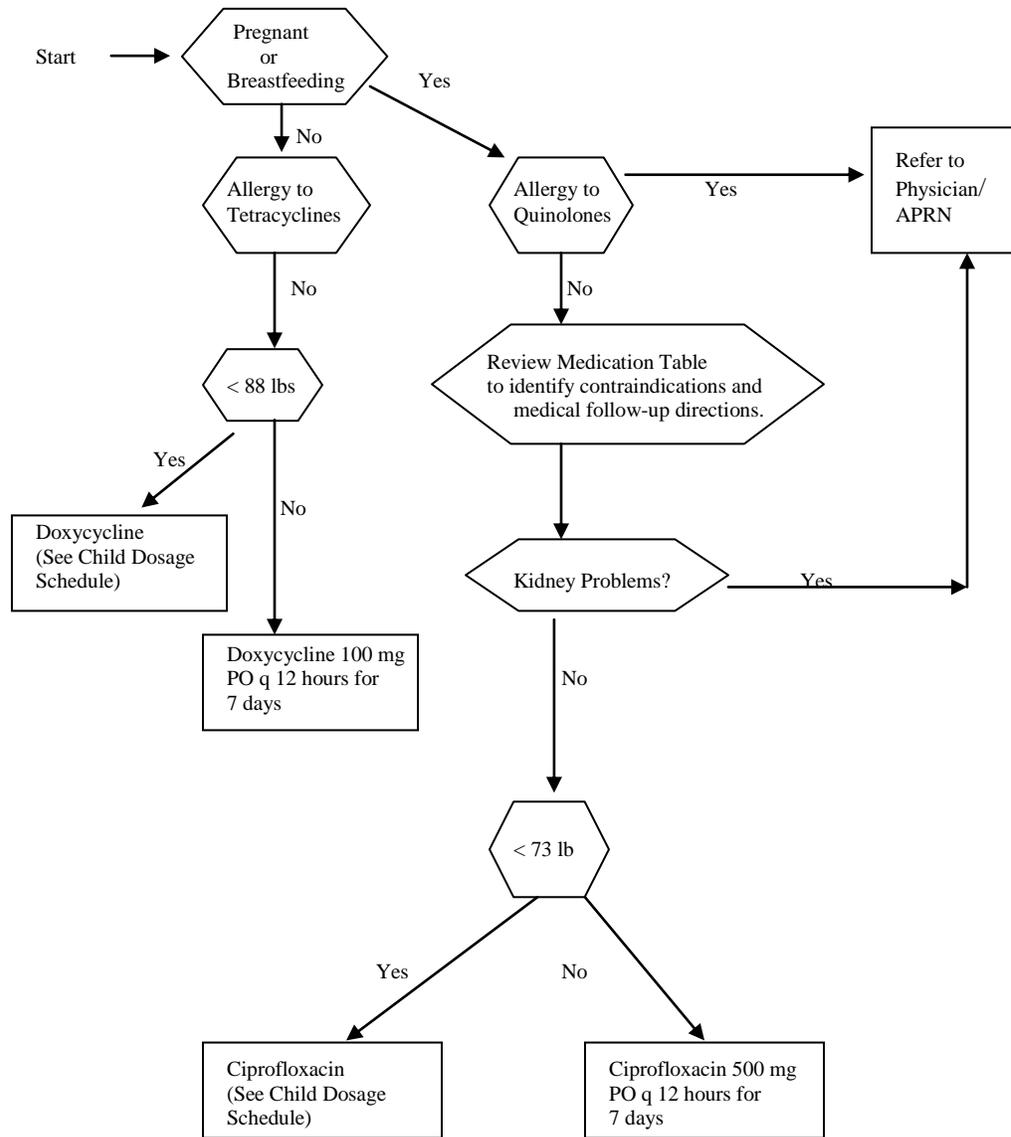
1. There is no evidence to suggest that environmental decontamination following an aerosol release is warranted. *Y. pestis* is very sensitive to sunlight and heating and does not survive long outside its host. According to a WHO analysis, a plague aerosol would be viable for 1 hour after release, long before the first cases would alert medical personnel and public health officials. If concerned about environmental contamination, a solution of 0.5% hypochlorite (a 1:10 dilution of household bleach) could be used for surfaces.
2. Cremation should be considered because of potential risk associated with embalming.

H. Plague Vaccine: A plague vaccine is no longer manufactured or available in the United States.

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- Mandell, Douglas, and Bennett's principles and practice of infectious disease. [edited by] Gerald L. Mandell, John E. Bennett, Raphael Dolin. 7<sup>th</sup> ed., 2010. pp. 2943 – 2953.
- Poland JD and Dennis DT. *Plague Manual: Epidemiology, Distribution, Surveillance, and Control. Chapter 2: Diagnosis and Clinical Manifestations*. World Health Organization, Geneva, 1999.
- Plague Prophylaxis, CDC website: <http://www.bt.cdc.gov/agent/plague/index.asp>

Plague Post-Exposure Mass Antibiotic Prophylaxis Issuing Algorithm  
**Doxycycline** as primary drug



**Quinolones**

Eradacil; Cinobac; Cipro; Ciloxan; Tequin; Raxar; Levaquin; Quixin; Maxaquin; Avelox; ABC Pak; Acuatim; Chibroxin; Noroxin; NegGram; Floxin; Ocuflor; oxalinic acid; Peflacin; rufloxacin; Zagam; Respipac; temafloxacin; Trovan

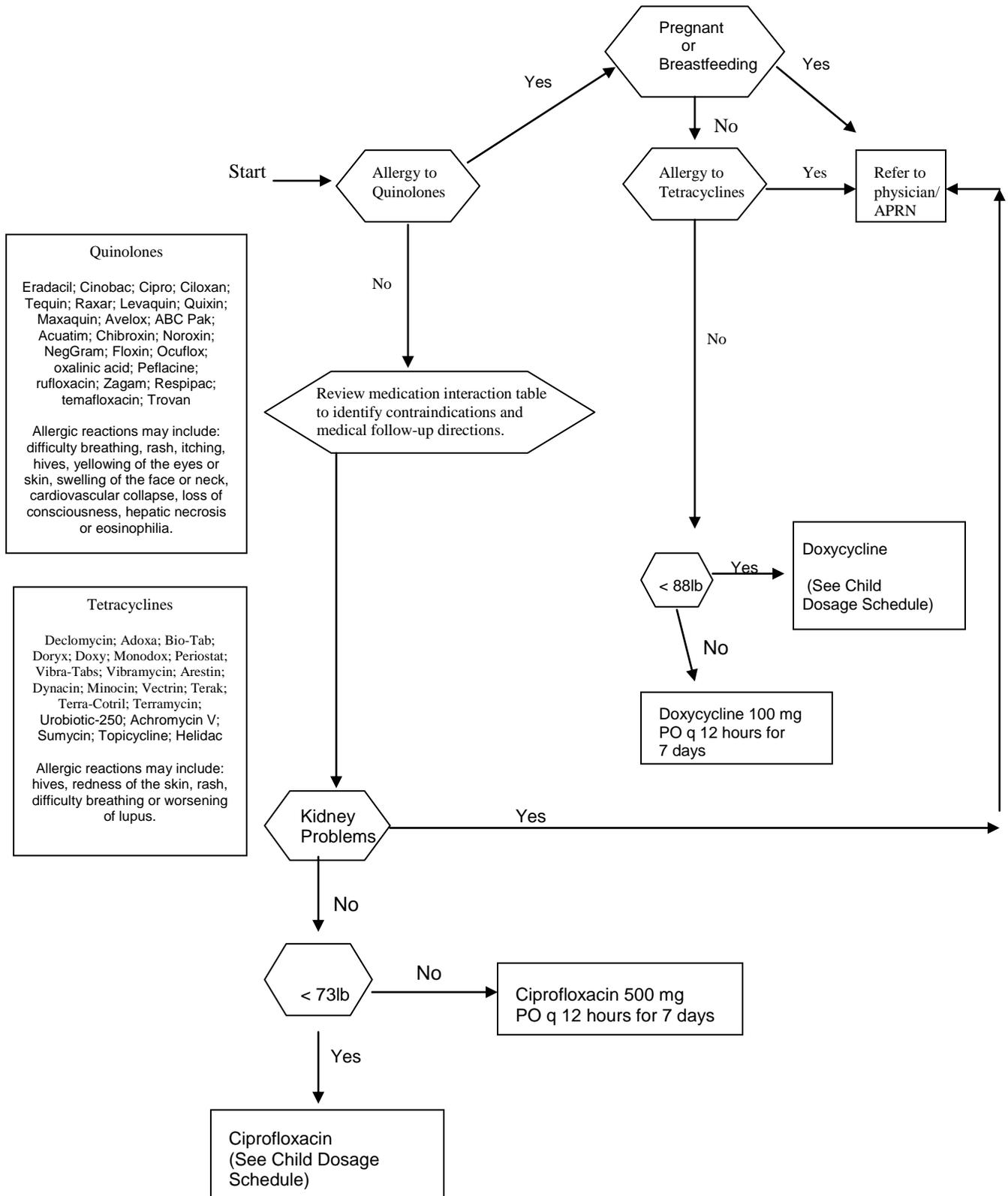
Allergic reactions may include: difficulty breathing, rash, itching, hives, yellowing of the eyes or skin, swelling of the face or neck, cardiovascular collapse, loss of consciousness, hepatic necrosis or eosinophilia.

**Tetracyclines**

Declomycin; Adoxa; Bio-Tab; Doryx; Doxy; Monodox; Periostat; Vibra-Tabs; Vibramycin; Arestin; Dynacin; Minocin; Vectrin; Terak; Terra-Cotril; Terramycin; Urobiotic-250; Achromycin V; Sumycin; Topicycline; Helidac

Allergic reactions may include: hives, redness of the skin, rash, difficulty breathing or worsening of lupus.

Plague Post-Exposure Mass Antibiotic Prophylaxis Issuing Algorithm  
**Ciprofloxacin** as primary drug



**MEDICATION INTERACTION TABLE FOR CLIENT USE**

<b>HEALTH HISTORY OR CURRENT MEDICATION</b>	<b>INTERACTION</b>	<b>RECOMMENDATION</b>
SEIZURE DISORDER	Ciprofloxacin (CIPRO) may increase number of seizures or duration of seizures	Use Doxycycline if available or check with your private provider
KIDNEY DISEASE	Ciprofloxacin (CIPRO) or Doxycycline (DOXY) - You may experience increased levels of this antibiotic in your system	It is recommended that you see your private provider for further evaluation to adjust the dosage by creatinine clearance levels
MYASTHENIA GRAVIS	Ciprofloxacin (CIPRO) may increase muscle weakness and cause serious adverse events in people with this condition.	It is recommended that you take Doxycycline if available but may talk with your private provider about taking the other.
COUMADIN – If you take this or other blood thinner	Ciprofloxacin (CIPRO) or Doxycycline (DOXY) may increase the effects of the medication by increasing bleeding time	See private provider in 3-5 days for further evaluation and PT/INR lab levels for recommendation of adjustment of dose
PROBENECID – If you take this medication	Ciprofloxacin (CIPRO) or Doxycycline (DOXY) may increase the effects of the medication	You may need to stop taking this medication while taking the antibiotic. It is recommended you see your private provider for further evaluation
THEOPHYLLINE – If you take this medication	Ciprofloxacin (CIPRO) – Increases the level of Theophylline in your system	It is recommended that you reduce the Theophylline dose by ½ and contact your private provider within 3-5 days for further evaluation
DILANTIN – If you take this medication	Ciprofloxacin (CIPRO) – May alter your Dilantin levels	It is recommended that you take Doxycycline if available. It is also recommended that you contact your private provider.
CYCLOSPORINE – If you take this medication	Ciprofloxacin (CIPRO) May increase blood creatinine levels	It is recommended that you contact your private provider to see if a blood creatinine and drug level is necessary.
ROPINIROLE – If you take this medication	Ciprofloxacin (CIPRO) may cause a Ropinirole toxicity (a toxic build up of the medication)	It is recommended you contact your private provider for further follow up of any dosage adjustments
ORAL CONTRACEPTIVES – If you take this medication	Ciprofloxacin (CIPRO) and Doxycycline (DOXY) may lessen the effectiveness of your birth control pills	It is recommended that you use additional methods of birth control while taking these antibiotics
ISOTRETINOIN – If you take this medication	Doxycycline (DOXY) – There is a slight increased risk of developing a condition that causes neurological symptoms	It is recommended that you report increased and persistent headaches, vomiting, or blurred vision to your private physician
GLYBURIDE – If you take this medication or if you are a diabetic	Ciprofloxacin (CIPRO) may decrease your blood sugar levels	It is recommended that you increase the monitoring of blood sugar levels and report this to your local provider if necessary

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This card explains how to prepare emergency dosages of  
**Ciprofloxacin**  
for infants and children exposed to **plague**

Once you have been notified by your federal, state, or local authorities that you have been exposed to plague, it may be necessary to prepare **emergency** doses of ciprofloxacin for infants and children using ciprofloxacin tablets.

**You will need:**

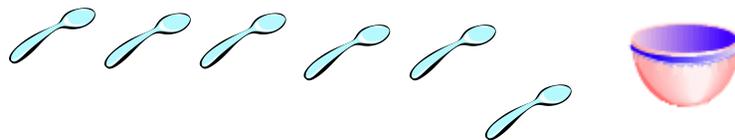
- One (1) 500 milligram (mg) ciprofloxacin tablet
- Metal teaspoon
- Measuring spoons [1 teaspoon (tsp); and ½ teaspoon (tsp)]  
(NOTE measuring spoons are preferred, however if not available, use the metal spoon to grind, measure and give the medicine)
- 1 small bowl
- One of these foods
  - chocolate syrup
  - maple syrup
  - caramel syrup
  - ketchup

**Directions:**

1. Put one (1) 500-mg ciprofloxacin tablet into a small bowl. Crush the tablet with the back of the metal spoon until no large pieces are seen.



2. Add six (6) level teaspoons (tsp) of a food to the crushed ciprofloxacin. Stir them together until the drug looks evenly mixed with the food.



**How Much of the Ciprofloxacin Mixture to Give a Child**

The number of teaspoons of the ciprofloxacin mixture to give a child depends on the child's weight. **If child's weight is unknown, weigh child before giving the first dose.** The chart tells you how much to give a child for one dose. You should give child two doses each day (one in the morning and one in the evening) **for 7 days.**

<i>If the child weighs</i>	<b>Give the child</b>
4 – 5 pounds (lbs.)	<b>One half (1/2) teaspoon (tsp) (2.5mL)</b> of the ciprofloxacin mixture
5.5 -10 (lbs.)	<b>One (1) teaspoon (5mL)</b> of the ciprofloxacin mixture
11 – 15 (lbs.)	<b>One and one half (1 ½) teaspoons (7.5mL)</b> of the ciprofloxacin mixture
16 - 20 (lbs.)	<b>Two (2) teaspoons (10mL)</b> of the ciprofloxacin mixture
21 – 25 (lbs.)	<b>Two and one half (2 ½) teaspoons (12.5mL)</b> of the ciprofloxacin mixture
26 -30 (lbs.)	<b>Three (3) teaspoons (15mL)</b> of the ciprofloxacin mixture
31 – 35 (lbs.)	<b>Three and one half (3 ½) teaspoons (17.5mL)</b> of the ciprofloxacin mixture
36 – 40 (lbs.)	<b>Four (4) teaspoons (20mL)</b> of the ciprofloxacin mixture
41 – 45 (lbs.)	<b>Four and one half (4 ½) teaspoons (22.5mL)</b> of the ciprofloxacin mixture
46 – 50 (lbs.)	<b>Five (5) teaspoons (25mL)</b> of the ciprofloxacin mixture
51 – 55 (lbs.)	<b>Five and one half (5 ½) teaspoons (27.5mL)</b> of the ciprofloxacin mixture
56 -60 (lbs.)	<b>Six (6) teaspoons (30mL)</b> of the ciprofloxacin mixture (or 1 tablet)

Children heavier than 60 pounds who are exposed to plague should take one (1) 500-mg tablet of ciprofloxacin two times a day (at the same time each day if possible) **for 7 days.** If the child cannot swallow tablets, use the directions for preparing a mixture and give 6 teaspoons twice a day

**How already prepared Ciprofloxacin mixture should be stored**

- Prepare the Ciprofloxacin mixture daily; store mixture in covered container and refrigerate. Mixture will keep for at least 24 hours refrigerated.
- Throw away any unused portions.

This card explains how to prepare emergency dosages of

## Doxycycline

for infants and children exposed to **plague**

*Once you have been notified by your federal, state, or local authorities that you have been exposed to plague, it may be necessary to prepare **emergency doses of doxycycline** for infants and children using doxycycline tablets.*

### You will need:

- One (1) 100 milligram (mg) doxycycline tablet
- Metal teaspoon
- Measuring spoons [1 teaspoon (tsp); and ½ teaspoon (tsp)]  
(NOTE measuring spoons are preferred, however if not available, use the metal spoon to grind, measure and give the medicine)
- 1 small bowl
- One of these foods
  - chocolate syrup
  - maple syrup
  - caramel syrup
  - applesauce

### Directions:

- Put one (1) 100-mg doxycycline tablet into a small bowl. Crush the tablet with the back of the metal spoon until no large pieces are seen.



- Add four (4) level teaspoons (tsp) of a food to the crushed doxycycline. Stir them together until the drug looks evenly mixed with the food.



### How Much of the Doxycycline Mixture to Give a Child

The number of teaspoons of the doxycycline mixture to give a child depends on the child's weight. **If child's weight is unknown, weigh child before giving the first dose.** The chart tells you how much to give the child for one dose. You should give the child **two doses** each day (one in the morning and one in the afternoon) **for 7 days.**

<i>If the child weighs</i>	<b>Give the child</b>
4 – 11 pounds (lbs.)	<b>One half (1/2) teaspoon (tsp) (2.5mL)</b> of the doxycycline mixture
12 – 22 (lbs.)	<b>One (1) teaspoon (5mL)</b> of the doxycycline mixture
23 – 33 (lbs.)	<b>One and one half (1 ½) teaspoons (7.5mL)</b> of the doxycycline mixture
34 - 45 (lbs.)	<b>Two (2) teaspoons (10mL)</b> of the doxycycline mixture
46 - 55 (lbs.)	<b>Two and one half (2 ½) teaspoons (12.5mL)</b> of the doxycycline mixture
56 - 65 (lbs.)	<b>Three (3) teaspoons (15mL)</b> of the doxycycline mixture
66 - 77 (lbs.)	<b>Three and one half (3 ½) teaspoons (17.5mL)</b> of the doxycycline mixture
78 - 88 (lbs.)	<b>Four (4) teaspoons (20mL)</b> of the doxycycline mixture (or 1 tablet)

Children heavier than 88 pounds who are exposed to plague should take one (1) 100-mg tablet of doxycycline two times a day (at the same time each day if possible) **for 7 days.** If the child cannot swallow tablets, use the directions for preparing a mixture and give 4 teaspoons twice a day.

### **How already prepared Doxycycline mixture should be stored**

- Prepare the doxycycline mixture daily; store in covered container and refrigerate.
- Doxycycline mixed with any of the recommended foods will keep for at least 24 hours.
- Throw away any unused portions.

Esta hoja le explica cómo preparar dosis de emergencia de  
**Doxiciclina**  
para bebés y niños expuestos al **plaga**

Una vez que haya sido notificado por sus autoridades federales, estatales y locales que la población ha sido expuesto a **plaga**, puede ser necesario que tenga que preparar dosis de emergencia de Doxiciclina para infantes y niños usando tabletas de Doxiciclina.

**Se necesita:**

- Una tableta de (1) 100 miligramos (mg) de doxiciclina
- Una cucharilla de metal
- Cucharas para medir [1 cucharilla; and ½ cucharilla]  
(NOTA: Las cucharas de medir son preferibles; no obstante, si no están disponibles, se puede usar la cuchara de metal para moler, medir y administrar la medicina)
- 1 tazón pequeño
- Una de las siguientes comidas o bebidas:
  - almíbar de chocolate
  - almíbar de caramelo
  - puré de manzana

**Direcciones:**

1. Ponga una (1) tableta de doxiciclina de 100 mg. dentro del tazón. Triture la tableta con el dorso de la cuchara hasta que ya no se vean pedazos grandes.



2. Agregue cuatro (4) cucharillas niveladas de comida a la mezcla de doxiciclina. Revuélvalas hasta que la droga esté bien disuelta.



**Cuánta Mezcla de doxiciclina hay que suministrar al niño**

El número de cucharillas de la mezcla de doxiciclina suministrada al niño depende del peso del niño. **Si no se conoce el peso del niño, hay que pesarlo antes de suministrar la primera dosis.** La tabla le explica que cantidad debe darle a su niño por dosis. Debe de suministrarle dos dosis diarias (una por la mañana y una por la tarde) por 7 días.

Si el niño pesa	Suministre
4 – 11 libras	Media (2.5 ml) cucharilla de la mezcla de doxiciclina
12 – 22 libras	Una (5 ml) cucharilla de la mezcla de doxiciclina
23 – 33 libras	Una y media (7.5 ml) cucharillas de la mezcla de doxiciclina
34 - 45 libras	Dos (10 ml) cucharillas de la mezcla de doxiciclina
46 - 55 libras	Dos y media (12.5 ml) cucharillas de la mezcla de doxiciclina
56 - 65 libras	Tres (15 ml) cucharillas de la mezcla de doxiciclina
66 - 77 libras	Tres y media (17.5 ml) cucharillas de la mezcla de doxiciclina
78 - 88 libras	Cuatro (20 ml) cucharillas de la mezcla de doxiciclina (o una tableta)
Niños que pesan más de 88 libras que son expuestos al plaga deben tomar una (1) pastilla de 100 mg. de Doxiciclina dos veces diarias (a la misma hora cada día, si es posible) durante 7 días. Si el niño no se puede tragar las pastillas, siga las indicaciones previas para preparar una mezcla y déle 4 cucharillas dos veces cada día.	

**Como se debe almacenar la mezcla de doxiciclina**

- Prepare la mezcla de Doxiciclina diariamente, guarde la mezcla en un recipiente cubierto y refrigérelo.
- La Doxiciclina mezclada con las comidas recomendadas se mantendrán bien por lo menos 24 horas.
- Descarte las porciones no usadas.

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Thẻ này giải thích cách pha chế lượng thuốc khẩn cấp của  
**Ciprofloxacin**  
 cho các bé thơ và trẻ em bị nguy hiểm về **plague/dịch hạch**

Khi bạn được thông báo bởi liên bang, tiểu bang, hay chính quyền địa phương rằng bạn bị nguy hiểm về dịch hạch, điều cần thiết là pha chế **khẩn cấp** lượng thuốc của ciprofloxacin cho các bé thơ và trẻ em, dùng các viên ciprofloxacin.

### Bạn sẽ cần:

- Một (1) viên ciprofloxacin 500 milligram (mg)
- Muỗng trà kim loại
- Muỗng phan lượng (1 muỗng trà; và ½ muỗng trà)  
(GHI CHÚ muỗng lường thuốc được cấp, tuy nhiên nếu không có sẵn, hãy dùng muỗng kim loại để nghiên, đo lường và cho uống thuốc)
- 1 chén nhỏ
- Một trong các thực phẩm này
  - Nước ngọt sôcôla
  - Nước ngọt của maple/cây thích
  - Nước ngọt caramel/đường trắng
  - Ketchup/sốt cà chua

### Hướng Dẫn:

1. Để một (1) viên ciprofloxacin 500-mg vào một cái chén nhỏ. Nghiền nát viên thuốc bằng phần lưng của cái muỗng kim loại cho đến khi không còn thấy các mảnh thuốc lớn.



2. Thêm sáu (6) muỗng trà của thực phẩm vào ciprofloxacin nghiền nát. Khuấy đều cho đến khi thuốc hòa tan với thực phẩm.



OCCDHPEDCIPRO-01/11/07

VN-02/06/07

Vietnamese

## Bao nhiêu Ciprofloxacin Hồn hợp Cho một Đứa trẻ

Số muỗng trà của ciprofloxacin hỗn hợp cho một đứa trẻ tùy thuộc vào sức nặng của đứa trẻ, ***Nếu không biết sức nặng của đứa trẻ, hãy cân đứa trẻ trước khi cho uống lượng thuốc đầu tiên.*** Biểu đồ định đủ bao nhiêu trong một lượng thuốc cho đứa trẻ. Bạn nên cho đứa trẻ **hai lượng thuốc** mỗi ngày (một vào buổi sáng và một vào buổi tối) **đến 7 ngày.**

<b>Nếu đứa bé cân</b>	<b>Cho đứa bé</b>
4 – 5 can (lbs)	một nửa (1/2) muỗng trà (2.5ml) của Ciprofloxacin hỗn hợp
<b>5.5 – 10 (lbs)</b>	<b>một (1) muỗng trà (5ml) của Ciprofloxacin hỗn hợp</b>
11 – 15 (lbs)	một và một nửa (1 ½) muỗng trà (7.5ml) của Ciprofloxacin hỗn hợp
<b>16 – 20 (lbs)</b>	<b>hai (2) muỗng trà (10ml) của Ciprofloxacin hỗn hợp</b>
21 – 25 (lbs)	hai và một nửa (2 ½) muỗng trà (12.5ml) của Ciprofloxacin hỗn hợp
<b>26 – 30 (lbs)</b>	<b>ba (3) muỗng trà (15ml) của Ciprofloxacin hỗn hợp</b>
31 – 35 (lbs)	ba và một nửa (3 ½) muỗng trà (17.5ml) của Ciprofloxacin hỗn hợp
<b>36 – 40 (lbs)</b>	<b>bốn (4) muỗng trà (20ml) của Ciprofloxacin hỗn hợp</b>
41 – 45 (lbs)	bốn và một nửa (4 ½) muỗng trà (22.5ml) của Ciprofloxacin hỗn hợp
<b>46 – 50 (lbs)</b>	<b>năm (5) muỗng trà (25ml) của Ciprofloxacin hỗn hợp</b>
51 – 55 (lbs)	năm và một nửa (5 ½) muỗng trà (27.5) của Ciprofloxacin hỗn hợp
<b>56 – 60 (lbs)</b>	<b>sáu (6) muỗng trà (30ml) của Ciprofloxacin hỗn hợp</b>

Các em nặng hơn 60 cân bị nguy hiểm về dịch hạch nên uống một (1) viên ciprofloxacin 500-mg hai lần mỗi ngày (cùng giờ mỗi ngày nếu có thể) **đến 7 ngày.** Nếu bé không thể nuốt trọn được những viên thuốc, hãy dùng cách hướng dẫn pha chế một hỗn hợp và cho uống 6 muỗng trà hai lần một ngày.

### Cách Nên giữ hỗn hợp Ciprofloxacin đã được pha chế

- Pha chế hỗn hợp Ciprofloxacin mỗi ngày, giữ hỗn hợp trong vật chứa đậy bọc kín trong tủ lạnh. Hỗn hợp được giữ lạnh ít nhất 24 giờ.
- Bỏ đi những phần không sử dụng.

Vietnamese

Thẻ này giải thích cách pha chế lượng thuốc khẩn cấp của  
**DOXYCYCLINE**  
cho bé thỏ và trẻ em bị nguy hiểm về **plague/dịch hạch**

Một khi bạn được thông báo bởi liên bang, tiểu bang, hay chính quyền địa phương rằng bạn đã bị nguy hiểm về dịch hạch, điều cần thiết là pha chế lượng thuốc **khẩn cấp** từ các viên doxycycline cho bé thỏ và trẻ em.

**Bạn sẽ cần:**

- một (1) viên doxycycline 100 milligram (mg)
- muỗng trà kim loại
- muỗng đo lường (1 muỗng trà; và ½ muỗng trà  
(GHI CHÚ muỗng đo lường được cấp, tuy nhiên nếu không có sẵn, dùng muỗng kim loại để nghiền, đo lường và cho uống thuốc)
- 1 chén nhỏ
- Một trong những thực phẩm này
  - nước ngọt sôcôla
  - nước ngọt maple/cây thích
  - nước ngọt đường thẳng/caramel
  - sốt trái táo

**Hướng dẫn:**

1. Để một (1) viên doxycycline 100-mg vào trong chén nhỏ. Nghiền viên thuốc với phần lưng của muỗng kim loại cho đến khi không còn thấy những mảnh lớn.



2. Thêm bốn (4) muỗng trà bằng phẳng của thực phẩm vào doxycycline nghiền nát. Khuấy trộn đều cho đến khi không còn thấy những mảnh lớn.



OCCHDPEDDOXY-JAN2007  
VN-FEB2007

Vietnamese

## Bao nhiêu Doxycycline Hồn hớp để Cho một Em bé

Số muỗng trà của hồn hớp doxycycline để cho một em bé tùy thuộc vào sức nặng của bé. **Nếu sức nặng của bé không được biết, hay cần bé trước khi cho uống lượng thuốc đầu tiên.** Biểu đồ định bao nhiêu trong một lượng thuốc cho bé. Bạn nên cho bé **hai lượng thuốc** mỗi ngày (một vào buổi sáng và một vào buổi chiều) **đến 7 ngày.**

Neu be cân	Cho bé
4 – 11 cân (lbs)	một nửa (1/2) muỗng trà (2.5ml) của Doxycycline hồn hớp
12 – 22 (lbs)	<b>một (1) muỗng trà (5ml) của Doxycycline hồn hớp</b>
23 -33 (lbs)	một và một nửa (1 ½) muỗng trà (7,5ml) của Doxycycline hồn hớp
34 – 45 (lbs)	<b>hai (2) muỗng trà (10ml) của Doxycycline hồn hớp</b>
46 – 55 (lbs)	hai và một nửa (2 ½) muỗng trà (12.5ml) của Doxycycline hồn hớp
56 – 65 (lbs)	<b>ba (3) muỗng trà (15ml) của Doxycycline hồn hớp</b>
66 – 77 (lbs)	ba và một nửa (3 ½) muỗng trà (17.5ml) của Doxycycline hồn hớp
78 -88 (lbs)	<b>bốn (4) muỗng trà (20ml) của Doxycycline hồn hớp (hay 1 viên)</b>

Các em nặng hơn 88 cân bị nguy hiểm về dịch hạch nên uống một (1) viên doxycycline 100-mg hai lần một ngày (cùng giờ mỗi ngày nếu có thể) **đến 7 ngày.** Nếu bé không thể nuốt trong những viên thuốc, dùng cách hướng dẫn pha chế hồn hớp và cho uống bốn (4) muỗng trà hai lần một ngày.

### Cách nên giữ hồn hớp doxycycline đã được pha chế

- Pha chế hồn hớp doxycycline mỗi ngày; giữ trong vật chứa đậy kín trong tủ lạnh.
- Doxycycline trộn lẫn với bất cứ thực phẩm nào được đề nghị sẽ giữ lâu ít nhất 24 giờ.
- Bỏ đi các phần không dùng.