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# AAP News

## Neonates, breastfeeding infants included in new CDC guidance on plague

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A **new report** offers recommendations on the antimicrobial treatment and prophylaxis of plague, both naturally occurring and in a bioterror attack, including guidance related to neonates and breastfeeding infants.

The evidence-based guidance published today in *Morbidity and Mortality Weekly Report* (MMWR) from the Centers for Disease Control and Prevention (CDC) is aimed at clinicians, public health professionals and first responders. Organizations, hospitals and communities can use the information for treating patients and in a mass casualty.

*Yersinia pestis*, the agent that causes plague, is in the highest risk category of biologic agents and toxins. An attack would require rapid and informed decision-making by clinicians and public health agencies, according to the report *Antimicrobial Treatment and Prophylaxis of Plague: Recommendations for Naturally Acquired Infections and Bioterrorism Response*.

New data have become available and the Food and Drug Administration has approved additional countermeasures since plague guidelines were published in 2000. AAP experts were among those in clinical medicine, bioterrorism preparedness and public health who took part in forums beginning in 2018 and contributed to the updated publication.

### Transmission, types

*Y. pestis* transmitted to humans through the bite of an infected vector (often a rodent flea), through direct contact with infected tissues or fluids, or via inhalation of infected droplets. The route of transmission determines the primary clinical form of plague, such as bubonic, pneumonic, septicemic (fever and sepsis without localizing signs), meningial and pharyngeal (with or without cervical lymphadenopathy).

Pneumonic is the only clinical form that can be transmitted from person to person, but bubonic plague is the



most common clinical presentation in humans.

Naturally occurring plague frequently affects children, although they don't appear to be at greater risk for death or serious complications compared with adults, the report stated.

Despite its high case-fatality rate, plague is treatable with antimicrobials and supportive care. Aminoglycosides and fluoroquinolones are the mainstays of treatment, and early recognition is critical.

## Neonates

Plague in neonates has not been documented often. Treatment should be initiated as soon as possible for those who are symptomatic and infected with *Y. pestis* before, during or after birth. Tables in the report outline first-line and alternative treatments. Postexposure prophylaxis should be given to all neonates exposed postnatally. Consult the report for more detail.

When selecting antimicrobials for treatment and prophylaxis of plague among neonates, consider the following factors:

- Many medications must be administered intravenously to ensure the full dose is taken. Some neonates have gastroesophageal reflux, which makes it difficult for them to get a full dose of medication orally. Breast milk or formula contain substantial amounts of calcium and other minerals that can inhibit absorption of some antimicrobials.
- Many antimicrobials have not been evaluated or approved for use in neonates.
- Some antimicrobials carry risks for this age group, such as bilirubin displacement and the potential for kernicterus associated with sulfonamides. General adverse reactions can include disruption of the gut microbiome.

## Breastfeeding infants

While studies have not assessed the presence of *Y. pestis* in breast milk of infected mothers, suspected transmission from mother to child has not been reported and risk is considered to be low. Mothers with the *pneumonic* form can continue breastfeeding if they are receiving antimicrobial treatment and their infant is receiving microbials or postexposure prophylaxis.

The report also discusses selection of antimicrobials for lactating mothers and concentrations of the medications that are detected in breast milk. With the exception of chloramphenicol, most of the antimicrobials recommended for *Y. pestis* treatment or prophylaxis produce low concentrations in breast milk and have an acceptable safety profile.

## Resource

- [Information from the AAP Red Book on plague](#)