



Malaria Quick Facts (from www.cdc.gov/malaria)

Malaria in the United States

- On average, 1500 cases of malaria are reported every year in the United States, even though malaria has been eradicated in this country since the early 1950s.
- The vast majority of the 1500 cases in the United States are in travelers and immigrants returning from countries where malaria transmission occurs, mostly from sub-Saharan Africa and South Asia.

Malaria transmission

- Usually people get malaria by being bitten by an infected female *Anopheles* mosquito. Only *Anopheles* mosquitoes can transmit malaria, and only after biting an infected person.
- Because the malaria parasite is found in red blood cells of an infected person, malaria can also be transmitted through blood transfusion.

Malaria worldwide

- 3.3 billion people (half the world's population) in 109 countries and territories live in areas where malaria is prevalent.
- In 2008, an estimated 190-311 million cases of malaria occurred worldwide; 708,000-1,003,000 people died.
- 89 percent of the malaria deaths worldwide occur in Africa, especially among young children and pregnant women.
- Malaria is the second-leading cause of death from infectious diseases in Africa, after HIV and AIDS, and the fifth-leading cause of death from infectious diseases worldwide (after respiratory infections, HIV and AIDS, diarrheal diseases and tuberculosis).

Malaria life cycle

- The life cycle of malaria parasites (*Plasmodium*) occurs in two different hosts: humans and female *Anopheles* mosquitoes. In humans, the parasites grow and multiply, first in the liver cells and then in the red blood cells. Parasites grow inside human red blood cells, destroying them and releasing daughter parasites that invade other cells.
- Malaria symptoms occur when the parasites reach the blood. At this stage they are picked up by a mosquito as it bites the infected person, and the parasite continues its cycle of growth and multiplication in the mosquito.
- After 10 to 18 days, the parasites move to the mosquito's salivary glands. When the *Anopheles* mosquito bites another

Working through Lutheran churches in Africa, the ELCA Malaria Campaign is uniquely positioned to provide mosquito nets, insecticides, medication, health care, education and more to eliminate deaths from this disease — for good.

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human, the parasites are injected into the human and move to the liver, where they start another infection.

- Thus the mosquito carries the disease from one human to another (acting as a “vector”). Unlike the human host, the mosquito does not suffer from the presence of the parasites.

Malaria symptoms and complications

- A patient with malaria usually presents with a combination of the following symptoms: fever, chills, sweating, headaches, nausea and vomiting, body aches and general malaise.
- Severe malaria occurs when infections are complicated by serious organ failures or abnormalities in the patient’s blood or metabolism. The manifestations of severe malaria include neurologic abnormalities, anemia, acute respiratory distress, abnormalities in blood coagulation, low blood pressure, kidney failure, metabolic acidosis (excessive acidity in the blood and tissue fluids) or hypoglycemia.
- Recurrent infections with malaria may result in severe anemia. This occurs especially in young children in Africa who experience frequent, untreated infections.
- Malaria during pregnancy may cause severe disease in the mother, and may lead to premature delivery or delivery of a low-birth-weight baby.

Malaria treatment

- People who are sick with malaria should be treated promptly and correctly, both for their own health and in order to eliminate malaria parasites and interrupt the transmission cycle.
- Treatment of malaria depends on many factors including disease severity, exact species of malaria parasite and geography. Drug resistance is also an important factor in malaria treatment. Additional factors such as age, weight and pregnancy status may limit the available options for malaria treatment.
- Two important anti-malarial drugs in current use are derived from plants whose medicinal values had been noted for centuries: artemisinin from the Qinghao plant (China, 4th century) and quinine from the cinchona tree (South America, 17th century).
- Artemisinin-based combination therapies, consisting of a combination of anti-malarial drugs, are considered the first-line drug therapy for the strain of malaria most prevalent in sub-Saharan Africa.
- Malaria can be fully cured if the right drugs are used. However, if left untreated or treated with the wrong drug, the disease can continue. Some drugs are not effective because the parasite is resistant to them or they were administered at an incorrect dosage.

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Malaria prevention

- Long-lasting insecticide-treated mosquito nets, which can retain their insecticidal properties for up to five years or 20 washes, are an effective malaria-prevention tool. Nets treated with insecticide both repel and kill malaria-carrying mosquitoes.
- Indoor residual spraying is a highly effective method of malaria prevention that involves the spraying of an approved pesticide on the indoor surfaces of a home. This repels or kills a significant portion of the mosquitoes attempting to enter the home.
- If high community coverage is achieved with bed nets and residual spraying, the numbers and life spans of mosquitoes will be reduced. When this happens, all members of the community are protected, regardless of whether they are personally using a bed net.
- Some anti-malarial drugs are available as malaria prophylaxis. However, in sub-Saharan countries, cost and availability can be limiting factors.
- To be most effective, each of these prevention tools must be coupled with comprehensive education about malaria transmission, prevention, symptoms and treatment.

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