

MISSION BRIEFING Vocabulary Terms

Vocabulary terms that are fundamental to understanding the concepts included in Mission Four are listed below. Some of the words will be encountered while playing Mission Four. They are hot-linked in the mission so you can click on them and get the definition as you play.

Anemia - a condition in which there is a reduction in the number of healthy red blood cells to carry oxygen to the body's tissues. It can result from blood loss, iron deficiency, and from certain infectious and inherited diseases. Some symptoms of anemia are fatigue, pale skin, dizziness, shortness of breath, chest pain, and coldness in the arms and legs.

***Anopheles* mosquitoes** - a genus of mosquito that has several hundred species. Only mosquitoes of this species can transmit malaria to humans. Worldwide there are over 370 species of *Anopheles* mosquito, yet fewer than 40 species are responsible for transmitting malaria.

Antibody - also known as an immunoglobulin, it is a protein produced in response to a foreign substance or germ.

Anti-malarial medication - drugs used to prevent or treat malaria. The right medicine depends on a variety of factors.

Endemic - a disease that is constantly present to some degree in a population of a particular location or region. Malaria is endemic currently in parts of Africa, Latin America and Asia and was once endemic in the United States.

Immune system - The body's principal defense network. The immune system defends the body in many ways. Some of its defenses are classified as nonspecific because they work against all pathogens. The immune system also has specific defenses that can target a particular germ.

Infectious disease - a disease caused by an infectious agent. The currently known types of infectious agents are bacteria, viruses, helminthes, protozoa, fungi, and prions.

Liver - the largest organ inside the body, it is about the size of a football in adults and about the size of a grapefruit in children. The liver controls cholesterol, makes bile, processes vitamins, removes toxins from the blood, produces hormones, as well as performs hundreds of other important functions.

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Malaria – a vector-borne disease common in hot, tropical areas. It is caused by a single-celled parasite (plasmodium) carried by the *Anopheles* mosquito. Chills, recurrent high fever, and anemia are some of its symptoms. Malaria was eradicated from the United States in the 1950s, but it remains a major health problem in many developing countries.

Parasite - an organism that lives in or on another organism (the host) and causes it harm. Leeches, malaria plasmodia, pinworms, and athlete's foot fungus are examples of this type of organism.

Phagocyte - a type of white blood cell that engulfs and digests germs. Examples of phagocytes are monocytes and macrophages. Monocytes circulate in the blood. When they migrate into tissues, these cells turn into macrophages.

Plasmodia - one-celled parasites that cause malaria. The singular is plasmodium. There are four types of plasmodia that can infect humans: *Plasmodium ovale*, *P. falciparum*, *P. vivax*, and *P. malariae*. *Plasmodium falciparum* can cause severe complications and even death. Between 700,000 and 2.7 million people a year are killed by this organism. The majority of these deaths occur in young children in Africa.

Protozoan - a type of simple single-celled organisms such as the amoeba and paramecium. Some have flagella or cilia and are capable of rapid movement. Protozoans can spread through food, water, or animals.

Toxin – any poisonous substance. Malaria parasites make glucose phosphate isomerase (GPI) and other toxic chemicals that act to produce the chills, shaking, and fever characteristic of the disease.

Vector - An organism, often an insect or rodent, which carries disease. Some examples are mosquitoes, ticks, flies, fleas, mites, and rats.

Vector-borne disease - a disease transmitted to a human by an organism. Examples of vector-borne diseases include malaria, West Nile virus, dengue fever, and Lyme disease.