MODULE CONTENT

Structure of the Presentation

A standard presentation on malaria at the basic level for peacekeepers should cover:

- How malaria affects the world
- How malaria affects you
- Preventing malaria.

SLIDE 1

- **How malaria affects the world**
- **How malaria affects you**
- **Preventing malaria**

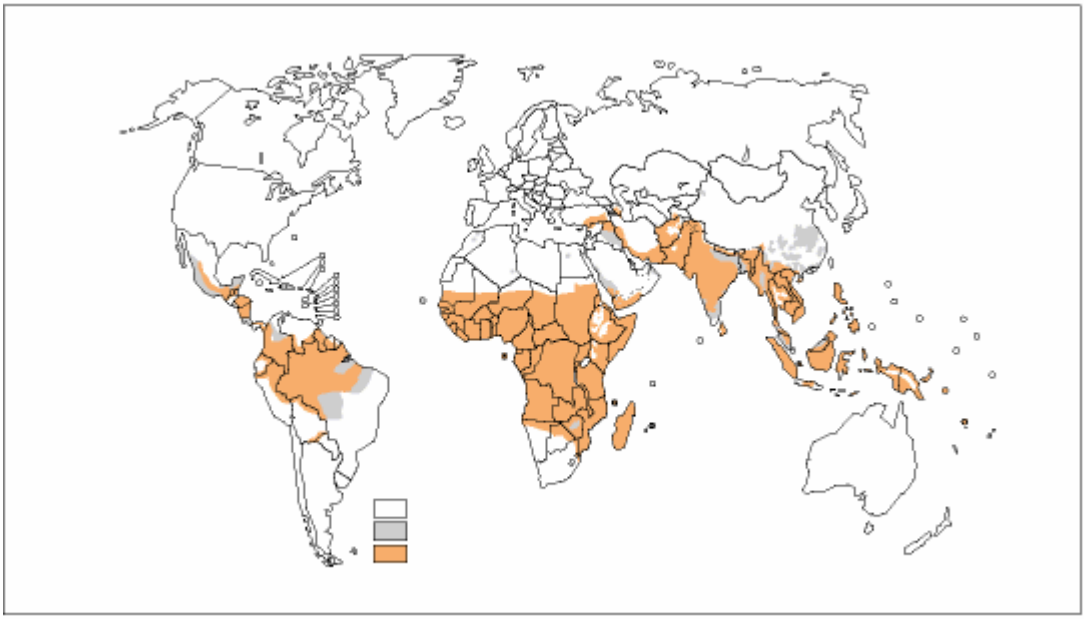
How Malaria Affects the World

Why is the United Nations concerned about malaria? Malaria is a very common life-threatening disease that is found in more than 100 countries throughout the tropical and subtropical regions of the world. More than 200 million people in the world become infected with malaria each year. More than 1 million people die of the disease every year, with 75 per cent of them being children.

Malaria occurs most often and most severely in persons with low immunity such as young children, pregnant women and people who come from non-malarious areas or who have been weakened by other diseases such as HIV/AIDS.

The World Health Organization has identified malaria as a challenge in setting Millennium Development Goals for Health.

SLIDE 2



Above: World malaria situation. Malaria is endemic to tropical and subtropical regions.

SLIDE 3

Every year:
- **200 million cases**
- **1 million deaths, 75% of them children**

Why is malaria a concern in peacekeeping? Malaria has more impact on the operational effectiveness of a peace operation than any other disease.

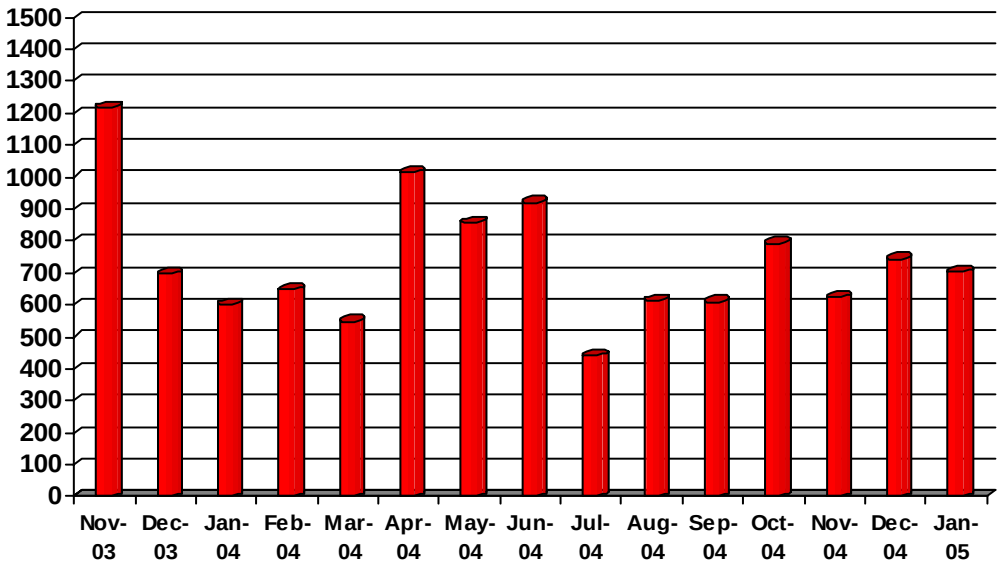
Malaria affects almost all United Nations peacekeeping missions. More than 1,000 peacekeepers every month fall ill with malaria. Sometimes more than 10 per cent of an entire peacekeeping force can be incapacitated by the disease.

An average of 1 United Nations peacekeeper dies every month from malaria and its complications.

SLIDE 4

Malaria in peacekeeping:
- **10% or more of peacekeepers have malaria at one time**
- **1 peacekeeper dies on average every month from malaria**

SLIDE 5



Incidence of malaria among peacekeepers in the United Nations mission in Liberia.

How Malaria Affects You

Malaria is an infection caused by a parasite that invades the liver and the red blood cells. The disease develops when the parasite multiplies in the body. Among the many possible effects are anaemia (loss of red blood cells), enlargement of the liver and spleen, kidney failure, collapse of the heart, coma and death.

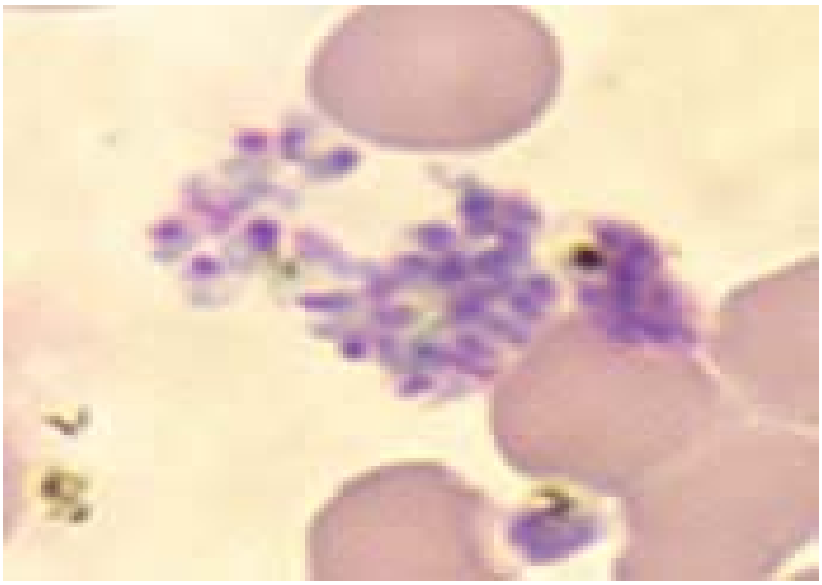
What happens to the malaria parasite inside our bodies? Once inside the liver cells of its human host, the parasite multiplies. After 10 to 20 days, the new parasites break out into the bloodstream where they invade red blood cells. They continue multiplying in the blood cells until the red blood cells burst. A new wave of parasites is released and infects other red blood cells, starting a vicious cycle that repeats itself. The recurring cycles cause the feverish symptoms of malaria.

By-products from destroyed red blood cells are also released into the blood. They eventually cause swelling of the liver and spleen and may cause jaundice (yellowing of the skin and eyes).

Infected red blood cells can also get stuck in small blood vessels. That can damage such organs as the brain and kidney.

When the body is no longer able to cope with the disease, the heart and lungs may collapse, or the individual may go into a coma. Death follows shortly.

SLIDE 6



Malaria parasites bursting out of red blood cells.

SLIDE 7

Malaria affects the:

- **Red blood cells**
- **Liver**
- **Spleen**
- **Kidney**
- **Brain**
- **Heart and lungs**

What does malaria feel like? When the cycle of infection is established in the patient's blood, he or she begins to feel clinical symptoms of malaria that include fever, headache and pain in the muscles and joints. The patient often develops chills and shivering followed by sweating when the fever subsides. The symptoms generally recur in 2-day or 3-day cycles.

Eventually, the malaria patient loses so many red blood cells that he or she develops anaemia, causing tiredness and reducing the capacity to work and do other activities.

It is important to seek medical attention early because timely treatment can reduce complications of the disease and may be life-saving. You should suspect malaria if you

- Feel unusually tired and worn out after a "two-day flu".
- Develop a high fever that does not improve.

Early symptoms of malaria are often confused with those of the common cold or viral fevers.

Treating malaria. An experienced doctor may be able to diagnose malaria based on the clinical symptoms, but a blood test is required to confirm the diagnosis. Except for patients with a history of malaria, any attack of malaria should be considered a potential emergency and the patient

hospitalized for treatment and observation. Those with serious attacks of malaria or complications should always be treated in a hospital.

SLIDE 8

Symptoms:
- **Fever**
- **Headache and joint pains**
- **Chills and shivering**
- **Sweating**
- **Unusual tiredness**

Always seek medical attention!

How does malaria spread? Malaria cannot be transmitted from person to person like a cold or the flu. The only way for the malaria parasite to become introduced into a person's bloodstream is through the
- Bite of an infected mosquito.
- Use of needles or syringes shared with an infected person.

The anopheles mosquito, common in tropical climates, carries the parasite. Female anophelines transmit the parasite to humans or other creatures through biting, when they need a meal of blood. They bite at night, at different times according to the particular anopheline species, beginning at dusk and ending at daybreak.

When an anopheline that is carrying the malarial parasites bites someone, the parasites pass into the victim's bloodstream and make their way to the liver. There they begin to multiply within liver cells and later in the red blood cells. After they have established themselves in the host and begin circulating in the bloodstream, they can spread to the next mosquito that bites and sucks the blood of the host.

Scientists discovered the malaria parasite in 1880 and its transmission from person to person through the female mosquito. People used to think that malaria came from the "bad air" of swamplands (*mal aria* in the Latin language).

SLIDE 9

Malaria spreads by:
- **Bite of female anopheline carrying parasite**
- **Injection with needle carrying infected blood**

Preventing Malaria

Malaria is a preventable disease. Effective prevention of malaria also results in a decrease in other mosquito-borne diseases such as dengue fever, yellow fever and Japanese encephalitis.

Key strategies in disease prevention are

A. Controlling the mosquito population.

B. Reducing chances of being bitten by mosquitoes, especially at night.
C. Taking anti-malaria pills to kill parasites that invade the body.

Protecting yourself is an individual responsibility.

For military personnel, the contingent commander is responsible for ensuring that all peacekeepers follow preventive measures to protect themselves from malaria.

A. Controlling the mosquito population

Environmental measures to reduce the mosquito and larval populations include

- Draining stagnant water, in which mosquitoes breed, or treating it with oil or larvicidal agents.
- Removing portable breeding sites (such as old tires, plastic containers).
- Keeping grass and vegetation short within camps.
- Spraying or fogging the grounds weekly with insecticides.

SLIDE 10

Controlling the mosquito population

- **Draining stagnant water**
- **Eliminating breeding sites**
- **Keeping vegetation short**
- **Fogging grounds with insecticides**

B. Reducing your exposure to mosquito bites

- Covering windows with insect screens.
- Keeping doors closed at night.
- Fully covering beds with treated mosquito netting.
- Treating or impregnating uniforms and mosquito netting with chemicals that repel mosquitoes (such as Permethrin®).
- Spraying mosquito repellant on external clothing and exposed skin (preferably with greater than 30 per cent concentration of DEET-base repellents, particularly sustained-release formulations).
- Dressing in long-sleeved shirt and long pants from dusk to dawn.

SLIDE 11

Reducing your exposure

- **Screening windows**
- **Using treated bed nets, uniforms**
- **Using insect repellants**
- **Wearing appropriate clothes**

C. Taking antimalarial pills (drug prophylaxis)

Medications are the last line of defence against malaria. While antimalarial pills do not stop you from becoming infected, they nearly always protect you from developing clinical malaria.

Compliance with drug prophylaxis reduces chances of developing the disease by a hundred-fold. The choice of drug depends on the country, but mefloquine (Lariam®) is commonly recommended. It may be combined with other medications such as doxycycline.

Currently, no vaccine is yet available for preventing malaria.

Some people are concerned about the long-term effects of antimalarial pills. Serious side effects are uncommon, while the lesser side effects are generally reversible.

Clinical infection of malaria and its complications can lead to death. The disease is more serious than potential side effects of antimalarial pills.

SLIDE 12

- **Antimalarials prevent you from developing clinical malaria**
- **No vaccine available for preventing malaria**
- **Malaria is worse than side effects of antimalarials!**

The United Nations reimburses troop- and police-contributing countries for providing their peacekeepers with malarial prophylaxis. All United Nations peacekeepers must take antimalarial pills according to a regular schedule, even if they come from malarial regions and they think that they have developed a personal "immunity" to the disease.

Individuals who cannot tolerate antimalarial pills, or for whom antimalarial pills are contraindicated for medical reasons, should be considered medically unfit for peacekeeping duties.

SLIDE 13

- **All peacekeepers are required to take anti-malaria pills regularly!**
- **If you can't tolerate antimalarials, you may be considered medically unfit for duty**

Is there immunity to malaria? Peacekeepers who come from malarious regions and who have had the disease may develop partial immunity to malaria. That does not prevent them from contracting the disease again; they may experience it in a milder form with less severe complications than do others. Some people with such partial "immunity" still become infected and may die from the disease.

SLIDE 14

"Immune"?

- **Partial immunity possible after many attacks of malaria**
- **Prophylaxis is safer: take antimalarial pills on time!**

Summary

- Malaria impacts the operational efficiency of peacekeeping forces.
- Command emphasis on malaria prevention is essential.
- Contingent commanders are responsible for ensuring that their forces take all appropriate antimalarial measures.
- All peacekeepers must follow the recommended precautions against malaria.
- All peacekeepers must take antimalarial pills on a regular schedule.
- All peacekeepers must be made aware of the typical symptoms of malaria and advised to seek medical attention when they have a fever.