

## What is MALARIA?

What's the most dangerous creature on earth? Without question the answer is: the mosquito. Mosquitoes and the diseases they spread have been responsible for killing more people than all the wars in history. Even today, mosquitoes transmitting malaria kill 2 million to 3 million people and infect another 200 million or more *every year*. Tens of millions more are killed and debilitated by a host of other mosquito-borne diseases, including filariasis, yellow fever, dengue and encephalitis.

- Malaria is a preventable and treatable disease.
- It is a public health problem today in more than 100 countries inhabited by some 2,400 million people -- 40 percent of the world's population.
- Malaria is estimated to cause 300- 500 million clinical cases and over one million deaths each year.
- Every second, a child somewhere dies of malaria. In any given year, nearly ten percent of the global population will suffer a case of malaria.
- Most survive after an illness of 10-20 days.
- Children are especially vulnerable to malaria. In Africa, where 80% of malaria cases are treated at home, the disease kills one child in twenty before the age of five.
- Pregnant women are also at high risk. They have an increase risk of disease and death, as well as adverse impacts for their developing babies- including low birth weight, growth retardation, still births and death.

- In African countries, up to 60% of hospital admissions may be for malaria; that's 6 out of 10 admissions!
- Travelers to Sub-Saharan Africa have the greatest risk of both getting malaria and dying from their infection. All travelers to any countries with malaria risk may get this potentially deadly disease, and thus taking proper precautions is essential.
- Other high-risk groups include refugees, displaced persons, or labor forces entering into endemic areas.
- Malaria is transmitted in large areas of Africa, Central and South America, the island of Hispaniola (includes Haiti, Jamaica and the Dominican Republic), Asia (including the Indian subcontinent, Southeast Asia and the Middle East), Eastern Europe, and the South Pacific

## QUICK FACTS ABOUT MALARIA

### **Resurgence of Malaria**

Malaria is returning to areas from which it had been eradicated, and spreading in to new areas, such as Central Asia, and Eastern Europe. More people are now dying of malaria than thirty years ago.

There are several factors which contribute to this:

- Drug resistance is a problem, chloroquine is an extremely safe and cheap drug, but in Asia and an increasing area of Africa and South America the resistance levels are high. In some areas of Asia there is resistance to all the major drugs.
- Mosquitoes are developing resistance to the major classes of insecticide which have been used to control the disease.
- Population and demographic changes have resulted in more people moving into densely populated areas, thereby increasing transmission.

- Human environmental changes such as road building, mining, deforestation, and new agricultural and irrigation projects have created new breeding sites.
- Migration, climatic change and the creation of new habitats have all resulted in people who have no natural immunity to the disease being exposed. This results in much higher rates of disease and death.
- In many regions, malaria control programs have deteriorated or been abandoned.

### **Reasons for the Resurgence of Malaria**

- Over the last decades control of malaria has been neglected and underfunded. Until the 1990s major agencies were wary at taking up the challenges posed by malaria because they are difficult.
- Many national health ministries need increased technical capacity and financial resources if they are to tackle infectious diseases effectively.
- Basic health services, which have been characterized by declining levels of funding, low staff morale and inadequate drug supplies, have been unable to address the challenges of effective diagnosis and prompt treatment.
- Pharmaceutical companies have spent relatively little on research.

### **Economic Costs and barriers to development**

- Over a quarter of a very poor family's income can be absorbed in the cost of malaria treatment, quite apart from the cost of prevention, or the opportunity cost of labor lost to illness.
- Each bout of malaria causes its victim to forego, on average, 12 days of productive output.
- Malaria infection can be chronic and unremitting in parts of the world with high transmission intensity, such as coastal Africa. Persons may receive hundreds of infectious mosquito bites a year, with the result they are perpetually weakened by the parasite. Children face particular risks.
- People are most at risk of malaria during the warm and rainy seasons; this is usually when there is most agricultural work that needs to be done.

- Malaria and fear of malaria prevents investment and tourism into new regions, further hampering economic development.
- Malaria is estimated to cost Africa more than US\$12 billion annually.

### **Infection Illness and Disease**

- The malaria pathogen is not a bacterium; it is not a virus.
- It is a unicellular parasite with 14 chromosomes and more than 5000 genes, most of them encoding hypothetical proteins.
- There are four different species of the malaria parasite capable of infecting humans. Two are most common. *Plasmodium falciparum*, which is found globally but is commonest in Africa, is the most aggressive species, often killing through coma or anemia. *Plasmodium vivax*, which ranges widely throughout Asia, Africa, the Middle East, Oceania and the Americas (and is resurgent in Eastern Europe), can cause recurring and debilitating infection, but rarely kills.
- Species of the Plasmodium parasite are also found in primates, rodents, bats and other mammals, birds and reptiles.
- Fever is the first symptom. Several hours later, the fever drops and chills set in. Two to four days later, the cycle repeats. More serious forms of malaria can affect the brain and the kidneys. Progression of symptoms from initial fever to death can take as little as 24 hours.
- Much of the long-standing disability from malaria is attributable to the anemia that it causes.