

Forum: Economic and Social Council I

Issue: Expanding measures to prevent and eradicate malaria

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Introduction

Malaria is an infectious, mosquito-borne disease caused by a parasite called *Plasmodium*. Widespread in tropical regions (primarily Asia, the Americas and Africa), the disease spreads worryingly rapidly. Each year 400 million cases of malaria are identified; malaria kills two to three million people a year. Deaths occur especially amongst children and pregnant women - 90% of all of these deaths occur in Sub-Saharan Africa. A child dies of malaria every 30 seconds.

Once a victim is bitten, the parasite is transmitted from the mosquito's saliva into the person blood system. This results in the multiplication of the parasite in the victim's liver causing symptoms such as fever and headache. If the disease worsens, the victim enters a state of coma and, finally, dies.

Antimalarial drugs have been developed and have proven to be effective for the disease's treatment. However, a highly available vaccine is yet to be found. Fortunately, both the United Nation's and the World Health Organisation's preventive measures have proven to be relatively efficient. Mosquito nets and insect repellents have reduced malaria rates. Of course, implementation has to be improved upon.

Definition of Key Terms

Anopheles

A genus of mosquito; some species of which where the female is able to transmit human malaria.

Plasmodium

The genus of the parasite that causes malaria. The genus includes four species that infect humans: *P. Falciparum*, *P. Vivax*, *P. Ovale* and *P. Malariae*.

Antimicrobial Resistance

The result of microbes changing in ways that reduce or eliminate the effectiveness of drugs, chemicals, or other agents to cure infections. This has proven to be the hardest challenge for scientists in their research for antimicrobial agents.

Vaccine

A preparation that stimulates an immune response that can wholly prevent an infection or create resistance to the infection. Once a vaccine is found for Malaria, the fight has ended.

Congenital Malaria

Malaria in a newborn child, transmitted from the mother at birth.

Induced Malaria

Malaria acquired through artificial means (blood transfusion, shared needles, etc)

General Overview

The nature of the disease

Biological understanding

The dangerous parasitic diseases tend to be common in tropical and subtropical areas. Although the actual parasite is named *Plasmodia*, the insect that transmits the disease is the female *Anopheles* mosquito. There are four type of malaria, each caused by a different species of *Plasmodium*. The intensity of the disease and its impact on its victims varies greatly and heavily depends on the type of malaria involved.

Symptoms

Malaria causes periodic chills, with fevers that may reach as high as 41 Celsius. These chills are known to recur every forty eight to seventy two hours. A malarial attack lasts for two or more hours and is always accompanied by headache or muscular pain. In worse cases, nausea is reported to be a side-symptom. After a malarial attack, the victim returns to a state of anaemic weakness and his/her body temperature drops to normal.

The most serious and fatal type of malaria involves one of the four types of *Plasmodium*: *P. Falciparum*. Its victims become weaker with each attack of fever and, if untreated, most fail to survive. The *P. Falciparum* thread of the disease is what the UN worries most about.

Spread

The life cycle of the *Plasmodium* bacteria includes three basic stages. The first occurs in the mosquito's body; the mosquito bites someone with malaria. *Plasmodium* enters the insect's body and reproduces in its stomach. The young travel to the mosquito's saliva. The second stage occurs after the mosquito bites another person. *Plasmodium* is transmitted into the person's blood and travels to the liver where they multiply and form clumps of parasites. The third stage involves the *Plasmodium* invading red blood cells, where it reproduces; this result in the bursting of the cell - causing the cyclic fever attacks. A mosquito bits the infected person again and the cycle continues.

Treatment of the disease

Doctors are only able to identify and diagnose malaria when they trace the *Plasmodium* in the victim's blood. Most cases can be cured by the usage of Antimalarial drugs – but the problem lies in the inability to grant and produce these drugs due to socio-political reasons.

Another issue involves the way more deadly types of Malaria such as *P. Falciparum* have turned resistant to the Antimalarial drugs developed. This has only added to the challenge of scientists and pharmaceutical research professionals, lengthening the eradication of Malaria.

Prevention of malaria may also involve the control of the spread female mosquito, *Anopheles*. To do so, vulnerable residents of malaria-stricken areas spray their homes with insecticides. Of course, this has its environmental drawbacks. Campaigns regarding stagnant water have encouraged people to drain or fill in bodies of stagnant water where insects may breed.

During the 1950's and the 1960's, the World Health Organisation endeavoured to eradicate malaria once and for all. At first, widespread use of strong insecticides were used: DDT was one of them. This eliminated malaria in some areas but as the fight against the disease slackened, malaria rates shot up again. *Anopheles* mosquitoes became resistant to DDT. The cost to fight malaria turned out to be increasingly high.

A one-time solution to the disease involves the development of a **vaccine**. This way malaria can never be contracted and the disease will reach its end.

Timeline of Events

Date	Description of event
1945	DDT discovered by Paul Hermann Muller. He receives the Nobel Prize.
1955	Global Malaria Eradication Campaign is launched by the WHO. The campaign <i>ignores and excludes</i> Sub-Saharan Africa and ends up abandoned.
1992	Today's most advance candidate for a malarial vaccine is discovered: RTS,S
2001	Millennium Development Goals adopted at the GA of the UN. Goal: to end

	malaria incidence by 2015.
2002	Global fund to fight malaria, AIDS and TB is established
2007	Long lasting insecticidal nets (LLINs) recommended and stressed for usage by the WHO.
2008	First World Malaria Day adopted by the General Assembly of the UN
2008	Global Malaria Action Plan (GMAP) announced by endemic countries

UN Involvement, Relevant Resolutions, Treaties and Events

- Malaria Control, 23rd May 2005 (284)

Urged member states to establish policies to ensure that at least 80% of those suffering from malaria benefit from preventive or curative intervention.

- 2001-2010: Decade to Roll Back Malaria in Developing Countries, Particularly in Africa, 7th March 2008 (180)

The UNICEF, WHO, UNDP and the World Bank launched a joint partnership in 1998: the Roll Back Malaria Partnership (RBM). This effort provided a coordinated global response to the disease. They shared a goal of halving malaria incidence and mortality by 2010. Experts say this target cannot be reached.

This resolution also welcomed the World Health Assembly to commemorate World Malaria Day annually on the 5th of April.

- The United Nations Foundation's *Nothing But Nets* campaign was created in 2006. The campaign raises awareness amongst people of the globe about malaria and seeks for donations in the form of bed nets to save children in Africa. Since then, the campaign has been partnered with and supported by thousands of organisations such as the UNICEF, the WHO, NBA Cares and the people of the United Methodist Church. Together, to this date, the *Nothing But Nets* campaign has raised more than \$30 million dollars to send bed nets to Africa, saving children's lives.

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