

GM drive against malaria: Treading a fine line



Photo Credit: Panos

An international group of scientists is pushing a groundbreaking DNA editing programme known as “mosquito gene drive” for a long-term solution to the spread of malaria in Africa.

Malaria, which is a preventable and a treatable disease, remains a leading cause of death in the world’s hottest regions, including most of Sub-Saharan Africa. In 2015, there were roughly 212 million cases of the disease worldwide and an estimated 429,000 deaths, according to the World Health Organization (WHO).

The *Anopheles* mosquito that transmits malaria feeds on infected people and picks up the *Plasmodium* parasite that causes the disease. The parasite then develops in the mosquito for about a week or two. When it feeds on another person, it passes on the malaria parasite.

As part of the mosquito gene drive project, scientists are working to genetically create a new population of mosquitoes that would be unable to spread the parasite that causes malaria, resulting in the eradication of the deadly disease.

However, as with any scientific research involving DNA editing, the programme raises concerns, with some scientists saying total openness and transparency are necessary.

A novel technology

The mosquito gene drive project is being conducted by the Target Malaria initiative, a not-for-profit research consortium that aims to develop and share novel technologies for malaria control. Target Malaria is hosted at Imperial College London in the United Kingdom, with partner teams in Burkina Faso, Mali and Uganda.

“We are working in our laboratories in London to develop a mosquito whose reproductive capacities are modified,” Austin Burt, the global principal investigator of Target Malaria, told *SciDev.Net*. “By either reducing female mosquito fertility, or increasing the ratio of males to females, we hope to reduce the population of malaria-carrying mosquitoes to the point where malaria transmission is interrupted.”

Gene drive is a technique that allows scientists to speed up the evolutionary process of a species.

To modify the *Anopheles* mosquito, the scientists are investigating the use of genes which, at a cellular level, produce a biochemical substance (or enzyme) called nuclease. The production of nuclease sets off a process which disrupts specific sequences of DNA.

"When introduced in the malaria mosquito, they [the nucleases] work by identifying and cutting through essential genes targeted by our researchers, such as fertility genes," Burt says. "The interrupted gene will no longer function, and modified mosquitoes will be affected according to the nature and importance of the gene."

The ultimate goal of all the strategies involved in the research is to produce modified malaria mosquitoes that can pass on their new genetic makeup to a "disproportionately" high percentage of their offspring. It is the artificial mechanism of achieving genetic modification that quickly cascades throughout a population — in this case, *Anopheles* mosquitoes — which is called gene drive.

In other words, gene drive is a technique that allows scientists to speed up the evolutionary process of a species. With this speedy technique, instead of having the normal rate of inheritance (or Mendelian Inheritance), where a gene is passed on to the offspring 50 per cent of the time, the genetic inheritance occurs at a much higher rate.

"To this date, we have proven in our laboratories in London that we can pass a gene to up to 95 per cent of the progeny," Burt says.

Long-term solution

Fighting malaria by permanently interrupting the way the disease is spread by mosquitoes using genetics has never been attempted before. The researchers hope it will provide a sustainable and cost effective malaria prevention tool. But as things stand, the GD programme is not expected to be saving people from malaria for at least another 10 years. This is because it involves a number of steps.

"We conduct our research around three main stages," Burt says. "In the first stage, we are producing a mosquito strain where males are sterile. The primary aim of this first stage is to allow us to validate some of our expectations and build capacity and operational experience amongst the teams."

The team has now made it past this first stage. Today, they are able to switch on a fertility-disabling enzyme in male *Anopheles* mosquitos, which prevents fertilisation of an egg after mating with a female.

"To this date, we have proven in our laboratories in London that we can pass a gene to up to 95 per cent of the progeny."

Austin Burt, Target Malaria

However, the scientists have yet to figure out a way to pass on to future generations of mosquitoes this new genetic property that interrupts fertility. That is because the goal is not just to cause 'infertility' among male mosquitoes but to reduce — if not wipe out — the female mosquito population.

"In the second stage, we will progress to self-limiting but fertile males producing male-biased offspring — meaning that most (more than 90 per cent) of the progeny will be males," Burt told *SciDev.Net*. "This

is an interim stage to evaluate the safety and efficacy of our technology," he added.

Eventually, the researchers hope to progress to developing modified male mosquitoes that are fertile and able to pass on a genetic change that becomes permanent. They are looking at two options to achieve this. The first one is to develop fertile male mosquitoes which produce male-dominated offspring; the second is to develop fertile males carrying a gene that will spread through the mosquito population, and as it does so, cause females that inherit the gene from both parents to be sterile.

Credit: Scidev.net

Gambia: The Country On Funding Drive to Become First Sub-Saharan Nation Free of Malaria



Photo: [The Citizen](#) A child under mosquito net to prevent malaria.

This last mile is the most difficult - we need more support to sustain the gains we have made yet donors often turn their attention elsewhere as cases drop.

Gambia could become the first country in sub-Saharan Africa to eliminate malaria on its track record of combating the mosquito-borne disease but more donor funds are needed for the "last mile" of the drive, health experts said on Wednesday.

The prevalence of the malaria parasite in children under five has plunged to 0.2 percent from 4 percent in 2011, according to the National Malaria Control Programme (NMCP).

The total number of new malaria cases across the West African nation has fallen by about 40 percent in that time - to 155,450 last year down from 262,000 in 2011, NMCP data shows.

Gambia is aiming to achieve the milestone of having no new malaria cases by 2020, but donor fatigue is a concern with a funding gap of over \$25 million, said NMCP head Balla Kandeh.

"This last mile is the most difficult - we need more support to sustain the gains we have made yet donors often turn their attention elsewhere as cases drop," he said, adding that malaria rates in Gambia may rebound if more funding is not secured soon.

Kandeh hopes that Gambia's new leadership under President Adama Barrow, who won a December election to bring an end to 22 years of autocratic rule under Yahya Jammeh, will attract back donors after many left during the previous regime.

"There is a better working environment under Barrow, with less constraints and less political uncertainty," he told the Thomson Reuters Foundation. "The fear of the unknown has gone."

Aside from the usual control measures, such as antimalarial drugs, insecticide-treated bed nets and indoor spraying, Gambia has successfully used technology to tackle malaria, according to Carla Fajardo of aid agency Catholic Relief Services (CRS).

Tablets, online platforms and GPS have been used to track delivery of the above strategies, with real-time data enabling decisions to be made on the fly, while internet service providers have boosted bandwidth in remote areas, Fajardo said.

The world has made huge strides against malaria since 2000, with death rates plunging by 60 percent and at least six million lives saved globally, the World Health Organization (WHO) says.

But efforts to end one of the world's deadliest diseases - which kills about 430,000 people a year, mostly children in sub-Saharan Africa - are under threat as mosquitoes become increasingly resistant

Credit: Kieran Guilbert, Editing by Belinda Goldsmith

Thomson Reuters Foundation/allafrica.com

Africa: Malaria Rapid Diagnostics Fuel Overuse of Antibiotics

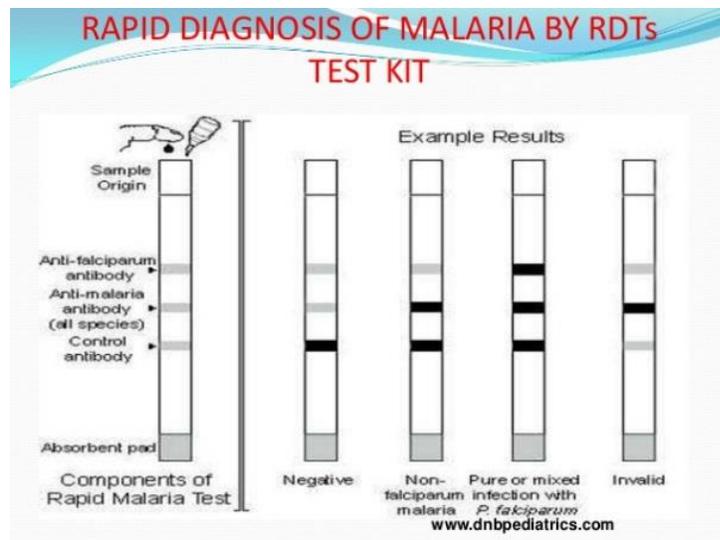
Nairobi - Malaria rapid diagnostic tests (mRDTs) introduced to improve the use of antimalarials may have unintended negative consequences, such as overuse of antibiotics, a study has found.

A WHO policy change in 2010, requiring that malaria cases should be confirmed before treatment, has increased the use of mRDTs on a large scale, according to the team of researchers from countries including Afghanistan, Ghana, Nigeria, Sweden, Tanzania, Uganda and the United Kingdom.

Heidi Hopkins, co-author of the study and an associate professor of malaria and diagnostics at the UK-based London School of Hygiene and Tropical Medicine, says that negative test results for malaria prompted a significant shift to antibiotic prescriptions - thus trading one potential problem of overuse of malaria drugs with overuse of antibiotics.

"To our knowledge, this is the largest and most comprehensive analysis that directly compares treatment practices in settings with and without mRDTs," Hopkins tells SciDev.Net.

The study was published in the American Journal of Tropical Medicine and Hygiene in August. The researchers analysed harmonised data from ten artemisinin-based combination therapy (ACT) Consortium studies conducted between 2007 and 2013. Looking at more than 500,000 patient visits across five African countries - Cameroon, Ghana, Nigeria, Tanzania and Uganda - and Afghanistan, they found that even patients who were not confirmed by mRDTs as having malaria were prescribed ACTs, and some who had malaria were denied ACTs.



"Prescribing did not always adhere to malaria test results," write the authors. "In several settings, ACTs were prescribed to more than 30 per cent of test-negative patients or to fewer than 80 per cent of test-positive patients. Either an antimalarial or an antibiotic was prescribed for more than 75 per cent of patients across most settings."

Simon Kariuki, chief research officer at the Kenya Medical Research Institute, says that the findings are not totally unexpected given that the introduction of mRDTs was meant to curb the indiscriminate use of antimalarials.

He adds that the increase in antibiotic prescriptions is an interesting and significant finding, although again not totally unexpected: "This is because many countries in Sub-Saharan Africa don't have the laboratory capacity to investigate other causes of fever in those who are mRDT negative, which could be due to viral or bacterial infection."

Whereas mRDTs help healthcare workers diagnose malaria, there are still no such simple point-of-care diagnostics for other common illnesses that cause fever. This means that when a malaria test is negative, healthcare workers are not sure what to do, Hopkins explains.

Unnecessary use of antimalarials and antibiotics drives malaria resistance. Hopkins says there is a need to ensure that the benefits of introducing mRDTs do not come at the cost of increasing antibiotic use.

According to Kariuki, the findings call for an urgent need to strengthen diagnostic capacities in malaria-endemic areas when mRDTs are introduced.

To prevent the complex situation where those who test positive are not being treated with an antimalarial, or those who test negative are being treated with the drugs, Kariuki says the measures to be taken involve training for healthcare workers, patient perceptions and the lack of availability of antimalarials at certain times. "These findings call for strengthening of health systems in malaria-endemic areas, especially diagnostic capacity and training of healthcare workers at all levels," he tells SciDev.Net.

Credit: SciDev.Net's Sub-Saharan Africa English desk.

Namibia: Training On Indoor Spraying Starts in Zambezi

ABOUT 177 volunteers in the Zambezi region have started a two-week training course for indoor residual spraying that will help control and eliminate mosquitoes which transmit malaria.

The indoor residual spraying (IRS) programme is an annual initiative of the health ministry. It is expected to last three months.

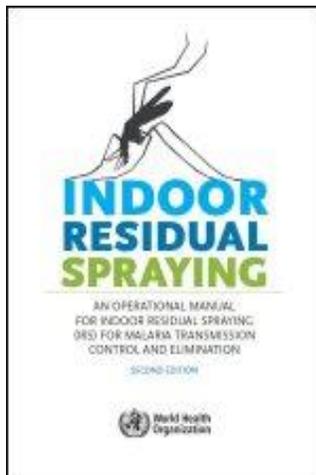
There are 10 clusters in the region where malaria outbreaks have been common. These are Lisikili, Mubeza, Bukalo, Ngoma, Schuckmansburg, Chinchimani, Sangwali, Sheseke, Sibbinda and Cheto.

Zambezi regional health director Agnes Mwillima, who spoke at the official opening of the training course, urged the volunteers to take the training seriously, and to work hard.

"Volunteers should note that they play a very important role in the success of this indoor residual spraying campaign, so they should take ownership of the malaria elimination battle and work harder. "As we are all aware, Namibia almost won the fight against malaria, but the numbers have increased drastically over the past two years," she stated.

Mwillima further urged the volunteers to treat community members with respect, and to explain to them the importance of the indoor residual spraying.

"When you go out in the field to do the indoor residual spraying, you should respect community members at all times, and ensure that you ask for permission instead of thinking you can just enter people's houses. "You should explain to them the benefits of such an activity," she stressed, adding that in the past, miscommunication had posed a challenge, and people refused to allow the teams to spray their homes.



Katima Mulilo council chief executive officer Raphael Liswaniso, who also spoke at the event, urged the volunteers not to do this for the money, but to save people's lives. "You should bear in mind that the fight against malaria is bigger than the money you will get at the end of the month.

"Therefore, I urge you not to make this a money-making scheme by leaving people to die, just for you to be called back next year, instead of doing a proper job now to save lives. "I wish that you also take

ownership and inform people about the importance of this indoor residual spraying, and the consequences of malaria," he stressed.

Credit: Lugeretzia Kooper

The Namibian

Kenya Set for New Malaria Drug Trials



Photo: Benoit Matsha-Carpentier/IFRC

Kenya is among nine countries across Africa and Asia where clinical trials will be conducted for a new anti-malarial drug. Developed by the Swiss pharmaceutical company Novartis, alongside Medicines for Malaria Venture (MMV), the new medicine - known as KAF156 - is aimed at dealing with the tough-to-treat drug-resistant malaria.

Clinical trials have already begun at one centre in Mali. This will be followed by trials at 16 additional centres, some in Kenya, over the next couple of months.

EFFICACY

Initial tests suggest that KAF156 has the potential to rapidly clear malaria infection, including resistant strains, as well as block transmission of the mosquito-borne parasite.

"To build on the gains made against malaria since the turn of the century, we need new medicines that are effective across all types of resistance patterns and geographies, and that are easy to administer, especially to children," Dr David Reddy, the chief executive officer of MMV, said.

The first centre in the country will be set up in Siaya County, with the first patient expected at the site by December 4.

INNOVATION

Another centre will be established in Kisumu County and the first patient will be enrolled on March 27, 2018.

"Developing new anti-malarial medicines is critical to achieving malaria elimination. "Innovative science continues to be our best weapon against the disease," Dr Vas Narasimhan, global head of drug development and chief medical officer at Novartis, said.

KAF156 belongs to a new class of anti-malarial compounds called imidazolopiperazines.

THERAPIES

The drug is designed to be used in combination with an improved formulation of the existing anti-malarial lumefantrine. The World Health Organization recommends five different artemisinin-based combination therapies for the treatment of uncomplicated malaria.

In Kenya, the Ministry of Health only recommends Coartem (artemether-lumefantrine) as the drug that can be dispensed at public health institutions. Early this month, the government announced that it is setting up an online portal to track drug resistance in the country.

ANTIBIOTICS

The platform, dubbed Antimicrobial Resistance Surveillance System, will enable the Health ministry to collect data on different types of bacteria that have developed resistance to antibiotics used for treating the ailments they cause. The information captured by this system - currently in the final stages of completion - will also provide an insight into commonly used antibiotics that are no longer effective in disease control.

Credit: By Elizabeth Merab

The Nation (Nairobi)

Africa: Next-Generation Mosquito Nets On the Way

The World Health Organization (WHO) has provisionally recommended the use of a new generation of insecticide-treated mosquito nets - a step forward for the prevention of malaria.

Interceptor G2, developed by the German chemical company BASF, is treated with a blend of two classes of insecticide. According to articles published in the Malaria Journal and PLoS ONE, the first is alpha-cypermethrin - known as a pyrethroid, this is the insecticide currently added to mosquito nets. Interceptor G2 also incorporates chlorfenapyr, a type of insecticide typically used in agriculture and to combat pests in urban environments - it had not previously been used to prevent disease.

"We observed that Interceptor G2 systematically eradicated a significant proportion, around 75 per cent, of malaria vectors that had become resistant to pyrethroids," Corine Ngufor, a researcher at the London School of Hygiene and Tropical Medicine (LSHTM) in the UK, and one of the authors of the study, told SciDev.Net.

According to Egon Weinmueller, who is responsible for public health business at BASF, Interceptor G2 "is more appropriate for use on the netting mesh and the polyester used in nets". He said that its insecticide formula is longer-lasting than that used in currently available nets, and this means the nets are more effective and safer.

"However", adds Weinmueller, "its key characteristic is that it acts in a completely different way to conventional public health insecticides; this makes it an ideal tool to combat insecticide resistance".

It works by affecting the mitochondria of cells and the mosquito's ability to produce energy, he explains. "Because it is metabolised by the insect before it starts to affect the production of energy, it is very difficult for the mosquito to develop resistance and transmit it to its offspring."

African trials

Tarik Jasarevic, a communications officer at the WHO says the agency made its recommendation after "the results of Interceptor G2 trials carried out in laboratory conditions and on the ground at a small scale were discussed by the WHO Pesticide Evaluation Scheme (WHOPES) when it met from March 20-24 this year".

The trials were conducted in several countries in Sub-Saharan Africa including Benin, Burkina Faso, Côte d'Ivoire and Tanzania.

Ngufor is one of the researchers who worked in Benin, under a collaborative project between the LSHTM and the Cotonou Centre for Entomological Research (CREC).

"The nets were tested for effectiveness against mosquitos both before and after having been washed, and in laboratory trials," she explained for SciDev.Net, adding that this new net continues to work even after having been washed up to 20 times.

Ngufor said the nets were tested in households in the south of Benin, where mosquitos are known to have become resistant to existing insecticides.

Similar results from Burkina Faso were described in a separate study where researchers carried out trials in experimental huts with nets treated either with alpha-cypermethrin, chlorfenapyr, or a blend of the two insecticides. The research team concluded that "among all the nets trialled, the combination of chlorfenapyr and alpha-cypermethrin led to better mortality [of mosquitos] after 20 washes". They noted, however, that the nets do become less effective with washing.

"This new type of insecticide-treated mosquito net will remain effective for at least three years," says Weinmueller.

Fighting resistance

The production of Interceptor G2 is the end result of a decade of collaborative research that brought together BASF, the LSHTM, the CREC and the Innovative Vector Control Consortium (IVCC) at the Liverpool School of Tropical Medicine. Their aim was to solve the problem of growing resistance to the insecticides currently available.

Ngufor says that the research team faced numerous challenges from start to finish. "Chlorfenapyr is a new insecticide in the context of vector control and current methods for the evaluation of products [that contain it] are not necessarily appropriate."

The team had to be creative and patient, while remaining within WHO guidelines, in order to fully explore Interceptor G2's potential, according to Ngufor. According to Weinmueller, there are no known cases of resistance after 20 years of using chlorfenapyr-based formulations in agriculture and to control urban pests.

"We can't be 100 per cent certain of course, but scientists believe that there is little chance of vectors becoming resistant to the active ingredient," he says.

More testing ahead

Despite the promising results, the researchers recognise that no product can be guaranteed to work in all circumstances. And the WHO is not yet entirely convinced of Interceptor G2's viability, and emphasises that its recommendation is 'provisional'.

Jasarevic notes that the provisional recommendation is based only on tests of it "as a mosquito net treated with a long-lasting pyrethroid insecticide", noting that the impact on public health of the addition of chlorfenapyr has not been evaluated or established yet.

"In order that we can ascertain the combined effect of Interceptor G2 on malaria and public health, BASF has been asked to outline its plans for epidemiological trials and to share the results of these studies so that a further review can take place", Jasarevic told SciDev.Net.

While working to produce the additional data required, the German chemical company is already taking steps to distribute the product free of charge by the end of 2017 in countries where the disease is endemic.

Credit: SciDev.Net's Sub-Saharan Africa-French edition.



Breakthrough' mosquito trap uses human smell and heat

Copyright: James Gathany, Centers for Disease Control

LONDON- A mosquito trap that uses a person's smell combined with warm water and a dark cylindrical shape could transform how the insects are caught in developing countries, say its creators. The trap, developed at the University of Greenwich in the United Kingdom, collected many more mosquitoes than so-called human landing catches, where collectors gather mosquitoes from their own exposed skin, during field tests in Burkina Faso.

"This is a major breakthrough," says Gabriella Gibson, who led the research.

Nearly half the world's population is at risk from mosquito-borne malaria, and in 2015 there were more than 200 million infected people and half a million deaths from the disease, according to the WHO. More than 90 per cent of cases were in Africa. Though treatments exist, controlling the mosquitoes that carry malaria is one of the most effective ways of reducing cases.

The new trap, called a human decoy trap, is a cylindrical drum filled with warm water and covered in sticky tape. It emits human body odour through air that has been pumped from a tent where someone is sleeping.

Frances Hawkes, who worked on the prototype, explains how the human decoy trap works. While using human body odour in traps is not new, the difference here is that the trap has the right shape and temperature to encourage mosquitoes to land on its surface.

“They come to the odour, but then it is hard to ensnare them,” said Gibson on the sidelines of an International Society for Neglected Tropical Diseases conference in London this month (19 July).

The researchers chose a cylinder after conducting tests in a wind tunnel impregnated with human odour to see which shape would encourage mosquitoes to land. They then realised that the difference between inanimate objects and humans was the temperature.

“So [we thought] let’s put warm water in this black object and see if it works and that is what nailed it,” explained Gibson.

The technology is being developed with a grant from the UK’s Medical Research Council (MRC) as a way to replace human landing catches in surveillance work. The prototype, built by trap development company Biogents, is being tested in Benin, Burkina Faso and Cameroon. The longer term plan is to develop the trap as a way of steering mosquitos away from houses during the night, the time when they feed.

“Every village could have one every three houses and [if] it was made of materials that are locally appropriate, any community can do it,” said Gibson. “But that is beyond the remit of our current MRC-funded project as it is likely to take a lot of development to get it right.”

Credit: scidev.net



Credit:Panos

CAPE TOWN- Exposing malaria-transmitting mosquitoes to light at two-hour intervals during the night or at late daytime could inhibit their biting behaviour and reduce malaria transmission, says a study.

According to the World Health Organization, 214 million people worldwide were infected with malaria in 2015, resulting in 438,000 deaths, with 88 per cent of the cases and deaths occurring in Africa.

The team behind the research, from the University of Notre Dame in the United States, note that the

development of resistance to insecticides requires innovative approaches for controlling the malaria vector.

Therefore, they explored the potential of using light to control mosquitoes' feeding behaviour by exposing *Anopheles gambiae* mosquitoes — a key vector of malaria in Sub-Saharan Africa — to multiple pulses of bright light, especially in the night, when they are most likely to feed on human blood.

“When we subjected the mosquitoes to a series of pulses of light with a two-hour interval and presented throughout the entire night, we observed suppression of biting activity during most of the night,” says Giles Duffield, a co-author of the study published in the journal *Parasites & Vectors* in June.

Giles, an associate professor of biological sciences at the University of Notre Dame, tells *SciDev.Net* that the finding was most prominent during the early to middle of the night and at dawn, when people are least protected by the barrier of a bed net.

“Conversely, biting levels were significantly elevated when mosquitoes were exposed to a dark treatment during the late day, suggesting that light suppresses biting behaviour even during the late daytime,” the researchers note in the paper.

This is an interesting study, says Maureen Coetzee, director at the Wits Research Institute for Malaria, Witwatersrand University, South Africa. But Coetzee notes that most Africans live in rural areas with no electricity. This means a lighting system would have to be set up using batteries or a generator, making the practical implementation of the method a big challenge.

“I wonder how many people would be able to afford to set this up themselves, and I can't see governments providing such equipment,” she tells *SciDev.Net*.

Credit: SciDev.Net.

Nigeria: 'Malaria in Pregnancy Causes Miscarriage, Premature Births, Maternal Deaths, Others'

Public health experts have said that one of the major causes of premature births, maternal deaths, maternal anaemia, miscarriages and low birth weights in Nigeria is malaria in pregnancy. They said malaria in pregnancy often starts without symptoms, and if not treated properly can become complicated leading to several unhealthy situations for the unborn baby, mother or even children under five years.

Stating this during a media chat on Malaria in Pregnancy organised by the National Media Elimination Programme (NMEP) in collaboration with Health Writers Association of Nigeria (HEWAN) at the National Institute of Medical Research (NIMR) in Lagos recently, they said the health condition can be prevented, as well as effectively managed.

According to the Head of Advocacy, Communications and Social Mobilisation, NMEP, Mrs. Itohowo Ukoone of the surest ways of overcoming this was through early commencement of antenatal care, adding that this could aid early diagnosis and prompt treatment of the condition.

"Other ways are through uptake of Intermittent Preventive Treatment in Pregnancy (IPTp), regular and appropriate use of Long Lasting Insecticidal Nets (LLINs) and keeping the environment clean and free from stagnant water. All these can prevent malaria in pregnancy," she noted.

While urging women to report to the hospital immediately they notice they are pregnant, she said malaria parasites can hide in the placenta and do damage to the flow of oxygen and nutrients to the fetus. She said the 2015 Nigeria Malaria Indicator Survey (NMIS) showed that 37 per cent of pregnant women take two doses of SP Sulphadoxine Pyrimethamine even though the recommended dose is three, which must be taken at least one month apart.



Nigeriaflag.facts.co

A health expert with the World Health Organisation, Dr. Tolu Arowolo, said "IPTp is based on the assumption that every pregnant woman living in an area of high malaria transmission has malaria in her blood stream or placenta, whether or not she has symptoms.

"IPT of malaria in pregnancy with SP remains a key intervention but there are still missed opportunities as lesser women who registered for ANC are reported to having had at least two doses."

The National Coordinator, NMEP, Dr. Audu Mohammed, represented by the Head, Integrated Vector Management, NMEP, Dr. Joel Akilah, said that malaria is a problem that requires a multi-pronged approach, adding that the media is key to disseminating information on prevention and management of the scourge.

He said though Nigeria has made giant strides in the fight against malaria noting that a lot of work still needs to be done to eliminate it in Nigeria. "Over 90 per cent of Nigerians are at risk of malaria, while children under-five and pregnant women are seen to be more vulnerable to this disease, hence the focus of this discussion."

The President of HEWAN, Mrs. Chioma Obinna, while commending NMEP for their efforts towards malaria elimination in the country, called on pregnant women to start ante natal immediately they realise they are pregnant.

She said NMEP collaboration with health writers will go a long way in eliminating malaria. "People depend on the media to give them information about what is happening in the society and we are obliged

to give them timely and accurate messages too. With this collaboration, there will be smoother synergy in getting the right perspective and information on issues relating to malaria from the right sources for onward dissemination to Nigerians," she said.

Credit: Martins Ifijeh

This Day (Lagos)

Tanzania: 27 Million Mosquito Nets to Be Distributed for Malaria Control



Photo: *The Citizen* Mosquito net (file photo)

Dar es Salaam - At least 27 million long lasting insecticide treated mosquito nets (LLIN) will be distributed across the country as the government embarks on enhancing malaria control interventions.

This was revealed by Mr Charles Mwalimu, the Head of Malaria Vector Control from National Malaria Control Programme (NMCP) in the Health Ministry when he spoke to reporters during one day seminar on malaria held in Dar es Salaam on August 23.

He noted that the funds for procurement of the mosquito nets were granted by Global Fund for Aids, Tuberculosis and Malaria.

He stated: "Each net costs around \$3.1 and it lasts for 3 years. It protects, on average, two people. Mosquito nets will be distributed through mass campaigns and Reproductive and Child Health (RCH) programme," he elaborated.

He pointed out that out of 27 million nets, over 15 million nets will be distributed to 12 regions through mass campaigns while some 12 million nets will be distributed to all the remaining regions targeting children aged below 1 year and pregnant women.

The RCH initiative will be implemented in three phases between 2018 and 2020, while mass campaigns will be held in 2019, confirmed Mr Mwalimu.

For his part, NMCP Head of Malaria case management department, Dr Sixbert Mkude noted that shortage of sufficient resources hinder full implementation of various malaria control efforts in the country. He said majority of malaria control interventions were mostly funded by donors including Global Fund and

the US President Malaria Initiative (PMI), urging the government to allocate enough funds for malaria control.

"Most of the grants from donors are coming with specific conditions, thus tying us from rolling out plans according to our strategies," he said.

He added: "Government involvement particularly through budgetary allocations and increased in-kind contribution needs to be encouraged for malaria control efforts to be locally owned, managed and sustained." He also called upon Tanzanians to keep their environment clean so as to avoid transmission of the disease.

Credit: John Namkwahe

The Citizen