



Independent observer
of the Global Fund

Second malaria vaccine: challenges and prospects

The recommendation of a second malaria vaccine by the World Health Organization (WHO) in October 2023 raises concerns in Africa. These concerns revolve around the availability and accessibility of these vaccines in the places and for the people who need them most. This in turn raises the issue of technology transfer.

In a [press](#) release published on October 2, 2023, WHO recommended a second vaccine to prevent malaria in children, namely R21/Matrix-M. According to the release, the R21 vaccine is highly effective when administered just before the peak malaria transmission season.

“In areas with high seasonal malaria transmission (where malaria is essentially transmitted four or five months a year), the R21 vaccine has been shown to reduce the number of symptomatic cases by 75% in the 12 months following a series of three doses. A fourth dose administered one year after the third maintains the vaccine’s efficacy”, explains the Organization in this information note.

The press release adds that “this high efficacy is similar to that demonstrated during the seasonal administration of RTS, S”, the very first malaria vaccine, which has been recommended since 2021. In other words, with the recommendation of R21, there are now two vaccines available on the market to combat this disease.

In a [second press](#) release issued on December 21, 2023, WHO announced the prequalification of this second malaria vaccine, calling it “a major step forward in the diseases prevention”.

“WHO vaccines prequalification ensures that vaccines used in global immunization programs are safe and effective under the conditions of use of the targeted health systems”, explains Rogério Gaspar, Director of WHO's Regulation and Prequalification Department, in this press release.

As can be imagined, this news has raised many hopes in the ranks of those involved in the fight against malaria worldwide, particularly in sub-Saharan Africa, where malaria remains an endemic disease that claims the lives of several hundred thousand people every year.

With two vaccines now available, complementing the array of tools available to combat this disease (such as insecticides, mosquito nets, and hygiene), the chances of eliminating this pathology or reducing it to its simplest form are considerably multiplied.

Indeed, 2024 promises to be a pivotal year in the fight against malaria in Africa. Following a pilot phase initiated in 2019 in Kenya, Malawi, and Ghana, where the first RTS,S (Mosquirix) vaccine from the British laboratory GSK was deployed against the parasitic disease, the product is currently being distributed in thirteen of the 28 African countries scheduled for implementation in 2024 during specific vaccination campaigns. In November, Senegal, Burkina Faso, Liberia, Niger, and Sierra Leone received 1.7 million doses, followed by Benin, Burundi, Uganda, the Democratic Republic of Congo (DRC) and Cameroon in January. These deliveries will make it possible to vaccinate millions of people, mainly children, who are the hardest hit by the disease that causes 600,000 deaths a year, 95% of them in Africa. Cameroon has broken new ground by integrating the RTS,S vaccine into its national routine immunization strategy, (known as the Expanded Programme on Immunization – EPI) a first in Africa, marking a turning point in the fight against malaria, [according to Aurelia Nguyen, Program Director of GAVI, the Vaccine Alliance, which is overseeing this large-scale deployment.](#)

Concern

Charles Michael Adekunle, the Executive Director of the RBM Partnership to End Malaria, believes that the development of a new vaccine alongside the existing one will boost the global supply and lower the average costs. This strategy will also expand the capacity to protect a greater number of children who are at risk.

However, for this hope to become a reality, at least two major challenges must be surmounted. Firstly, ensuring the ample availability of vaccine doses wherever needed on the continent is crucial. Secondly,

the capacity of African countries to independently produce these vaccines at any given time is vital.

There is some concern on the continent about the availability of vaccines in sufficient quantities for all requesting countries. Indeed, “at the beginning of 2023, the Vaccine Alliance (GAVI), the United Nations Children’s Fund (UNICEF) and WHO decided to allocate 18 million doses of the vaccine to areas of greatest need in 12 African countries for the period 2023-2026. However, estimates suggest that at least 80 to 100 million doses will be needed each year to protect all children at risk,” notes Charles Michael Adekunle. As a result, the situation regarding the RTS,S vaccine is causing palpable apprehension among observers.

However, in its December 21, 2023 press release, WHO reassured that: “Demand for malaria vaccines is strong, but supply has been limited to date. The availability of two malaria vaccines recommended and prequalified by the WHO should make it possible to increase supply to meet the strong demand from African countries, and to obtain sufficient doses of vaccine for all children living in areas where malaria is a major public health risk”.

In an interview with us in October 2023, Dorothy Achu, head of the Tropical and Vector-borne Diseases team at the WHO Regional Office for Africa, believes that “additional resources, including funding and manpower, will be required to administer the vaccine in highly seasonal settings. Weak capital investment continues to hamper malaria control and elimination efforts in the region.”

For this expert, countries are particularly encouraged to increase their national resources and devote them to the most effective malaria control tools. “Several innovative tools such as vaccines, new vector control products and chemoprevention now exist and should be deployed in combination for quality case management”, insists Dorothy Achu, who was Permanent Secretary of the National Malaria Control Program (PNLP) in Cameroon before joining the WHO.

She also maintains that efforts should be made to ensure that these products are always available where and when they are needed, in order to increase the population’s access to these “life-saving” interventions.

Allocations

For this to happen, Nicaise Ndembi, advisor to the Director General of the Africa CDC (Africa Centres for Disease Control and Prevention) believes that the involvement of all stakeholders will be essential.

In particular, he hopes that the African Union, the Africa CDC and all the key players in the chain will be genuinely involved in discussions concerning the distribution of these vaccines across the continent, and that allocations will be made on the basis of genuine equity between the various member states.

“We did this during COVID-19, and it worked perfectly. And to ensure that all member states have access to these vaccines, we can start with those that were eligible for the GAVI initiative. And then we find a mechanism to make these vaccines available to all 55 member states on the continent”, Nicaise Ndembi maintains.

According to him, it is very important to engage with the African Union and the Africa CDC to ensure that the vaccines are available and affordable, and that they can also be used even in rural areas where there may, for example, be problems in terms of storage and preservation capacity.

However, the presence of vaccines alone does not guarantee true accessible for the population. This is a common and well-known situation in low- and middle-income countries, particularly in Africa. The pricing of medicines available on the market is often beyond the reach of a large proportion of the population, leading to the prevalence of counterfeit and street medicines.

Several African specialists in the fight against diseases such as malaria emphasises that the availability and accessibility of vaccines and other medicines in Africa is contingent upon the continent reducing its heavy reliance on imported therapeutic products. This shift is crucial to ensuring that these vital resources reach the places and the people in need at the right times.

Local production

They underline the need for the continent to focus on the local production of medicines, particularly vaccines against malaria and other diseases most prevalent in Africa.

This project is one of the main focuses of Africa CDC, which has a program entitled “Partnership for African Vaccine Manufacturing” (PAVM), to be launched in 2021.

At its third conference on public health in Africa, held from November 27 to 30, 2023 in Lusaka (Zambia), Africa CDC identified the three main challenges that need to be overcome to effectively develop vaccine production on the continent. These are the lack of appropriate training programs, the brain drain, and sustainable funding.

Alongside tuberculosis and HIV/AIDS, malaria is one of the diseases targeted by the PAVM as it is one of the continent's biggest killers. African experts believe that producing a vaccine in Africa to prevent this disease, especially in children, would be of the utmost public health importance.

Referring to this subject in the October 2023 interview, Nicaise Ndembi said that the PAVM is an important project that targets twenty-two diseases selected on the basis of the burden they represent for our States and patients, and on the basis of their lethality rates, which underline the need to manufacture their vaccines on the continent as soon as possible.

“The ambition of the African Union and Africa CDC is to ensure that we manufacture these vaccines for a healthier and safer continent. And you’ll agree with me that making these vaccines available for children could be a real game-changer for public health in Africa,” he analyzes.

Technology transfer

For this expert, this is where the delicate issue of technology transfer comes in. In his opinion, we need to open up the conversation on this issue. Because all the pharmaceutical companies currently producing the vaccines in question are not based in Africa, and the problem lies in Africa.

“So we want to start this conversation. The vaccines are available. Can there be a technology transfer to the 30 drug manufacturers we’ve identified on the continent so that we can produce them here and make them available to our populations?” asks the advisor to the CEO of Africa CDC.

For Nicaise Ndembi, manufacturing these vaccines locally in Africa should help solve two central problems: that of vaccine availability and that of accessibility.

“We spend many billions every year on some of these infectious diseases. If we can spend or probably save money to manufacture their vaccines locally, that would make these vaccines both available and accessible,” he says.

The uncertainty at present revolves around whether the international pharmaceutical companies that own the intellectual property on these vaccines are willing to take part in discussions aimed at transferring their knowledge to African companies.

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