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UPDATE NO. 7 ON THE SAFETY MONITORING OF THE MALARIA VACCINE

Background

This update summarizes adverse event following immunization reports received between May 2019 and December 2021 from the Malaria Vaccine Implementation Programme (MVIP).

The Ministry of Health launched the first malaria vaccine (Mosquirix or RTS,S/AS01) on 30th April 2019 to be given to young children in routine immunization programme as a complementary malaria control tool that could be added to (and not replace) the core package of WHO-recommended preventive, diagnostic and treatment measures.

In Ghana, the MVIP is taking place in seven regions, namely, Ahafo, Bono, Bono East, Central, Oti, Volta and Upper East Regions of Ghana. Other African countries taking part in the MVIP are Kenya and Malawi.

The pilot is expected to end by 2023 after which a policy decision is required on the potential wider scale use of the vaccine.

What is Adverse Event Following Immunization (AEFI)?

The World Health Organization (WHO) defines an AEFI as any untoward medical occurrence which follows immunization and which **does not necessarily** have any causal relationship with the usage of the vaccine. Before the launch of the Malaria Vaccine Implementation Programme (MVIP), healthcare workers were trained to report all AEFIs in children who receive Mosquirix to the FDA.

Update on safety monitoring

Review of AEFI reports by the Joint Malaria Vaccine Committee

AEFI reports received in Ghana are reviewed by a seven-member Safety Committee of independent experts, known as the Joint Malaria Vaccine Committee (JMVC).

During this reporting period (May 2019 to December 2021) a total of 1,017,067 doses of Mosquirix have been given with 2,126 AEFI reports received. This gives a reporting rate of about 21 AEFI reports per 10,000 vaccinated. Out of the 2,126 AEFI reports, 2017 (96.7%) were received from the phase 4 study (EPI-MAL-003) in the Upper East and Bono East regions where children who received the vaccine are actively followed up and all events after vaccination are documented.

Report by source

- GSK Phase IV study sites (EPI-MAL-003) 2,055 (96.7%)
- Spontaneous reporting (GHS/ FDA) 37 (1.7%)
- Malaria Vaccine Pilot Evaluation (MVPE) 34(1.6 %)

Monthly distribution of AEFI reports received from May 2019 to December 2021 is presented in Figure 1.

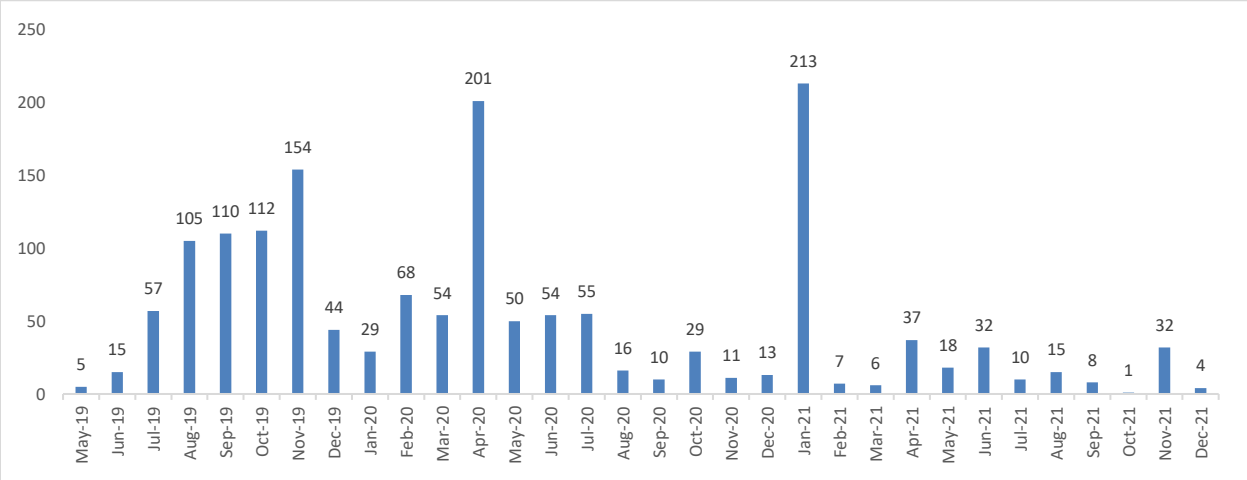

Fig. 1: Number of AEFI reports received by month from May 2019 to September 2021

Out of the 2,126 AEFI reports received, 341 (16%) were serious[1] and the remaining 1,787 (84%) were non-serious. Causality assessment by the Joint Malaria Vaccine Committee of the serious AEFI reports showed that there was no direct relationship between the vaccine and AEFIs reported with the exception of febrile convulsions, fever, gastroenteritis and allergic reaction which were listed in the product information.

[1] An AEFI is serious if it results: in death, is life-threatening, requires in-patient hospitalization or prolongation of existing hospitalization, results in persistent or significant disability/incapacity, is a congenital anomaly/birth defect, or requires intervention to prevent permanent impairment or damage.

Demographic characteristics of persons who reported adverse events

- Report by gender

The details on those who reported AEFIs were:

○ Males	1,111 (52.3%)
○ Females	965 (45.4%)
○ Not indicated	50 (2.3%)

It is unknown the total number of males and females vaccinated because this information is not routinely collected.

Review of Safety Reports by the Data Safety and Monitoring Board

In order to safeguard the well-being of children participating in the MVIP, a seven-member Programme-specific Data Safety and Monitoring Board (DSMB) was set up by the World Health Organization which also regularly review the safety data from the three countries in order to identify, assess causality and monitor any accumulating safety signals.

The DSMB held quarterly meetings in 2021. At its 3rd quarter meeting held on 26th October 2021, the DSMB concluded after review of the safety data from the 3 countries, namely, Malawi, Kenya and Ghana, that there were no significant safety concerns which negatively affect the benefit-risk profile of the vaccine. The DSMB therefore, recommended that the MVIP should continue.

The WHO's Strategic Advisory Group of Experts on Immunization and the Malaria Policy Advisory Group on 6th October 2021 recommended that the RTS,S/AS01 (RTS,S) malaria vaccine should be used for the prevention of *P. falciparum* malaria in children living in regions with moderate to high transmission to reduce the burden of malaria.