COBA
COALITION OF BLOOD FOR AFRICA

World Malaria Day Report

Blood: The Neglected Therapy in Malaria Management

Tuesday, 23rd April 2024 | Time: 15:00 - 17:00 (EAT) | Venue: Virtual

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Speakers

MODERATOR
Dr. Amit N Thakker
Executive Chairman, AHB

KEYNOTE SPEAKER
Hanna Amanuel Tesfahunei
Technical Officer Endemic and Neglected Tropical Diseases, Africa CDC

Dr. Nathan Mulure
Head of Government Affairs & Public Policy, TERUMO BCT

Dr. Herry Mapesi
Medical Lead,
Pan Africa - Infectious Diseases,
Roche Diagnostics

Dr.Angela Harrison
Medical & Scientific Affairs Manager, Sysmex Southern and East Africa

Dr.Joseph Mulenga
Medical Director, Zambia National Blood Transfusion Services, (ZNBTS)

Dr.Millicent Wanyama
Paediatrician and Sickle cell Program Lead,
Webuye County Hospital

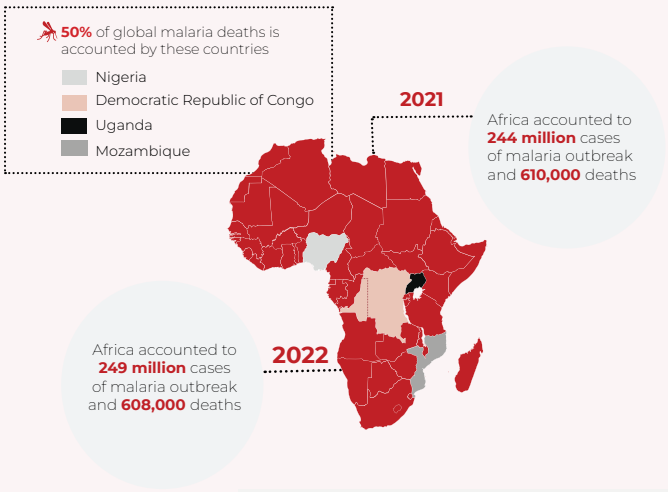
Advocacy on World Malaria Day

World Malaria Day serves as an annual reminder of the persistent threat posed by malaria, particularly in regions where its impact is most profound. This year, during the ongoing battle against this ancient scourge, the Coalition of Blood for Africa (CoBA) stands as a beacon of hope, advocating for the availability of safe blood to combat malaria-induced anaemia, a silent yet deadly consequence of the disease.

Executive Summary:

In the context of global public health challenges, few issues demand as much focus and immediate action as malaria, a longstanding menace that continues to devastate communities around the world. The statistics from 2022 - 249 million cases and 608,000 deaths underscore the severity of this issue, especially in the WHO Afro region, where malaria's impact is particularly pronounced. Notably, Nigeria, the Democratic Republic of Congo, Uganda, and Mozambique contributed to over 50% of all malaria deaths worldwide, with Nigeria alone accounting for 26.8% of these fatalities.

Within this context, it is imperative that we recognize not just the numbers, but the profound human impact they represent Children under 5 years of age, bearing the brunt of malaria-related mortality, alongside pregnant women facing heightened risks, underscore the urgency of our collective response. The mortality patterns observed in endemic regions serve as a stark reminder of the formidable challenges we face in combating this ancient scourge.



***94%** of all malaria cases and **95%** of deaths arise from the WHO Africa region, children under **5 years** account for **78%** of malaria deaths in the region.*

Key Areas of Discussion:

- Challenges in Blood Supply for Severe Malarial Anaemia
- Opportunities in Blood Transfusion Management for Severe Malaria Anaemia
- Policy Initiatives and Implementation Strategies

Objectives:

Disease management:
Stronger positioning of blood as an essential therapeutic intervention in management of severe malaria anaemia.

Awareness and Education:
World malaria bodies and advocates to recognize the importance of blood in management of malaria and design interventions and pursue actions towards availing this essential medicine

Collaboration:
World malaria bodies and advocates to recognize the importance of blood in management of malaria and design interventions and pursue actions towards availing this essential medicine

KEYNOTE SPEAKER
Hanna Amanuel Tesfahunei
Technical Officer Endemic and Neglected Tropical Diseases, Africa CDC

Keynote Address:

Dr. Hanna Amanuel Tesfahun, in her keynote address, highlighted the profound impact of malaria in Africa and emphasized the imperative role of Africa CDC in spearheading strategic initiatives to combat this persistent challenge. Through collaborative partnerships, particularly with entities like the Coalition of Blood for Africa (CoBA), Africa CDC is actively engaged in efforts to mitigate severe malaria anaemia and ensure the provision of safe blood transfusions, especially for vulnerable demographics such as children under five and pregnant women. By prioritizing malaria within its broader plans and advocating for coordinated action, Africa CDC underscores the vital need for sustainable solutions and unified efforts in the ongoing fight against malaria. This approach lays the foundation for a healthier and more resilient future across the continent.

> ***We must advocate tirelessly to ensure that blood becomes a focal point in strengthening healthcare systems worldwide. It deserves the same level of attention and priority as access to essential medicines like anticancer drugs, antimalarials, and cardiovascular medications. Just as these areas receive significant focus, so too should blood supply and management.***
>
> Dr. Nathan Mulure,
> Head of Government Affairs & Public Policy, TERUMO BCT

Key Takeaways:

The Unhappy Triad: Malaria, Sickle Cell Disease, and Blood

The connection between blood, malaria, and sickle cell disease (SCD), known as the "Unhappy Triad," underscores their historical significance in Africa. Certain genetic mutations in the haemoglobin gene, especially in SCD carriers, offer some defense against malaria, while individuals with SCD, particularly those with the SS type (sickle cell anemia), face increased vulnerability to severe malaria, leading to disproportionately high mortality rates, notably among young children. This highlights the profound impact of SCD on African healthcare systems, with many cases going undiagnosed, contributing to mismanagement and higher mortality rates. Early detection and treatment of SCD are crucial for better patient outcomes, as demonstrated by higher survival rates in regions like the United States compared to Africa.

Blood plays a crucial role in treating both malaria and sickle cell disease (SCD). Severe malaria cases often require blood transfusions to replenish red blood cells and support the body's functions. Similarly, individuals with SCD may need blood transfusions to manage complications such as anaemia or acute chest syndrome. Solving blood challenges in Africa involves improving blood donation systems, enhancing blood storage facilities, and ensuring safe transfusion practices to meet the demands of treating both conditions.

Without a comprehensive approach that includes addressing SCD, efforts to control malaria may not achieve desired outcomes, resulting in a significant portion of mortality linked to SCD being overlooked. Therefore, governments, agencies, and partners must concentrate on addressing SCD alongside malaria interventions to prevent unnecessary deaths from both diseases.

Moreover, additional efforts should be directed towards ensuring an adequate blood supply and proper infrastructure for blood transfusions. This is vital for effectively managing both malaria and SCD, especially in resource-limited settings like Africa.

Challenges in Zambia's Blood Supply

There is a significant burden of malaria in Zambia, especially in rural areas, where severe cases necessitate a considerable proportion of blood units. Despite the establishment of provincial blood centers for collection, testing, and distribution, challenges persist in meeting national blood supply needs, exacerbated by specialized medical procedures and emergencies like obstetric hemorrhage and trauma. To address this, the Zambian government has prioritized blood transfusion services, aiming to collect 400,000 units annually by 2026. However, achieving this target requires robust donor mobilization campaigns and strengthening partnerships to increase awareness and participation in blood donation. Additionally, early detection and management of malaria are crucial in alleviating strain on healthcare systems and improving patient outcomes, highlighting the importance of comprehensive strategies to address these challenges effectively.

Blood Supply Challenges in Rural Kenya

At Webuye County Hospital, a level four government facility in rural western Kenya near the eastern border of Uganda, sickle cell disease and malaria are highly endemic. Each day, healthcare workers encounter numerous cases of malaria, ranging from uncomplicated to severe cases, with approximately 80% of severe cases accompanied by severe anaemia. The endemicity of sickle cell disease exacerbates the severity of malaria in the region, often leading to critical complications such as severe anemia. However, the availability of blood for transfusion is a persistent challenge, resulting in tragic losses of patients who require urgent transfusions. In some instances, healthcare workers have resorted to donating blood themselves to save lives. This dire situation underscores the urgent need for improved blood supply management in the public health facilities and throughout the country.

Advancements in Malaria Testing

Testing for malaria has significantly improved over the past decade. Presently, testing is conducted before initiating antimalarial treatment, a marked improvement from previous practices. Several factors contribute to this advancement. Firstly, the utilization of Community Health Volunteers (CHVs) who are trained to educate community members about malaria and conduct Rapid Diagnostic Tests for Malaria (RDTs) has been instrumental. These volunteers not only educate but also test community members, referring them to healthcare facilities when necessary.

Additionally, government facilities now require proof of malaria diagnosis before dispensing medication. Patients must present either a positive RDTs or a positive blood slide to receive treatment. This systematic approach has not only enhanced malaria testing but has also aided in ruling out other febrile illnesses. Previously, fever and headache presentations in malaria-endemic regions were often assumed to be malaria. However, with improved testing, healthcare providers can now accurately diagnose and manage various febrile illnesses, thus improving patient care and outcomes.

Advancing Malaria Testing: An Integrated Approach

In the past decade, there have been significant advancements in malaria testing methods, with different platforms serving important functions. While RDTs are crucial for rural areas with limited resources, microscopy remains the gold standard. Diagnostics organizations such as Sysmex have been at the forefront of integrating hematology and malaria diagnostics, offering analyzers that provide complete blood counts alongside malaria parasite levels. This combined analysis enables early detection of conditions like anaemia and thrombocytopenia, common in malaria cases, allowing for prompt treatment before the need for blood transfusions arises. However, challenges persist in blood supply, particularly with malaria-positive blood. Striking a balance between treatment necessity and antimicrobial resistance is vital. We now have sensitive analyzers that aid in early malaria detection, especially crucial for maternal and child healthcare, where asymptomatic yet heavily parasitized individuals may require transfusions. The goal is to preemptively treat patients before complications escalate, particularly in remote areas with limited healthcare access.

Embracing AI in Healthcare

AI is rapidly emerging in the healthcare sector, particularly in the global north where significant research is underway to train automated microscopes for various diagnostic purposes, including identifying blood-borne parasites, oncology markers, and sickle cell patients. Many companies are exploring AI's potential in microscopy, although FDA clearance remains a hurdle. While digital microscopy presents an advanced yet costly option, this technology offers a more accessible solution in terms of individual test costs. It's crucial for all stakeholders, including companies, doctors, hospitals, and clinicians, to acknowledge AI's imminent integration into healthcare. While the timeline for widespread adoption remains uncertain, staying informed and ensuring access to cutting-edge technologies is essential, particularly for regions like Africa that may face neglect in technological advancements.

Expanding Access to Diagnostics

The continent has come a long way in addressing safety issues in blood and blood products, but challenges still persist, and there is still a long way to go. When promoting access to diagnostics, we promote safe blood. In low-middle-income countries, over 80% of people lack access to basic diagnostics, potentially leading to over 1.1 million deaths. This staggering statistic underscores the critical importance of diagnostics in clinical decision-making, with 60-70% of medical decisions relying on diagnostic results. Recognizing this, Roche Diagnostics aims to address this gap by increasing access to diagnostics across continents, particularly in Africa. The signing of the diagnostics resolution at the 2023 World Health Assembly marked a significant milestone, highlighting the pivotal role of diagnostics in healthcare systems globally. Roche Diagnostics envisions expanding patient access by tenfold by 2030, focusing on innovative solutions like point-of-care testing to reach underserved rural areas and bridge the diagnostic gap.

> *No child should die from severe anemia secondary to severe malaria or sickle cell disease. It's imperative to improve the availability and accessibility of blood for grassroots healthcare workers within the healthcare system.*

Dr.Millicent Wanyama,
Pediatrician and Sickle cell Program Lead, Webuye County Hospital

Overcoming Funding Challenges in African Blood Centers

Funding remains a major obstacle for blood centers across many African countries, with heavy reliance on donor support often proving insufficient. This financial strain not only hampers blood collection efforts but also impacts the broader healthcare system by denying African health systems an essential medicine used to manage multiple clinical conditions. However, there is a growing call for innovation to overcome these hurdles and establish sustainable blood services. Automation offers potential for improved efficiency in collection, processing, and transfusion processes, while prioritizing blood components can expand donor pools, enhance recipient access, and reduce the incidence of adverse effects.

Additionally, fostering self-sustainability and revenue generation, such as through the production of plasma-derived products and/or export of excess plasma, is essential for long-term viability. While philanthropic donations have helped, they are decreasing, necessitating innovative solutions to ensure sustainable access to high-quality blood for patients. Embracing technologies like pathogen reduction can further bolster blood quality, minimize wastage, and ultimately improve the effectiveness and accessibility of transfusion services.

> *In order to bring diagnostics to rural areas, collaboration between the private sector and government policymakers is essential. By working together, we can develop partnerships that facilitate the delivery of diagnostic tools to under-served communities.*
>
> Dr. Herry Mapesi,
> Medical Lead, Pan Arica - Infectious Diseases,
> Roche Diagnostics

Snapshots:

> *Africa CDC remains committed in addressing the challenges associated with malaria management through coordinated collaboration and with partners, we are striving to strengthen disease management and raise awareness and establish collaborations that saves lives let us join in this momentum and work in cohesion to enable sustainable access to safe blood in Africa, together lets make a lasting impact in the fight against malaria and create a healthier future for all.*

Hanna Amanuel Tesfahunei,Technical Officer Endemic and Neglected Tropical Diseases, Africa CDC

> *Education is key. As private entities like CoBA, let's prioritize educating the public about critical health topics like blood supply and malaria prevention. By reaching grassroots levels and engaging communities directly, we can make a significant impact on healthcare outcomes. Let's take proactive steps to empower individuals with knowledge for better health.*

Dr. Angela Harrison, Medical & Scientific Affairs Manager, Sysmex Southern and East Africa

> *The challenges of managing blood systems, particularly in malaria-prone regions, are complex, especially regarding the necessity of malaria testing before transfusion. Prioritizing campaigns for malaria elimination is vital. Ensuring thorough pathogen inactivation is also crucial for preventing transmission. However, implementing widespread malaria testing protocols faces obstacles due to cost constraints. It's essential to weigh the benefits and risks carefully, directing resources toward elimination efforts and pathogen inactivation. While clinicians prioritize saving lives over addressing transfusion-related risks, effective systems for monitoring such risks are necessary.*

Dr. Joseph Mulenga, Medical Director, Zambia National Blood Transfusion services (ZNBTS)

Call to Action

Safe blood transfusions are essential for effectively managing severe malaria cases. CoBA asserts that optimal and sustainable collaboration and awareness efforts about the need for blood can significantly lower the current high morbidity and mortality rates associated with malaria.

CoBA is dedicated to forming partnerships with policymakers across the continent, the private sector, and communities to ensure safe and sustainable blood supplies throughout the region.

Coalition of Blood for Africa (CoBA) is a platform of non-state actors that have unified towards adequate, safe, and sustainable blood in Africa. With a collaborative and inclusive approach, CoBA brings to- gether diverse stakehold- ers. The coalition work with development partners and NGOs, private sector, global health institutions, and government ministries.

Africa Health Business is a leading pan-African health consulting firm. that provids specialized research and market insights to help health & health related organisations enter and grow in the Africa health market.

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