

World Mosquito Day and Humanitarian Emergencies

Sunday August 20 is “World Mosquito Day” commemorating the day, August 20, 1897, the British medical officer in India, Ronald Ross found the malaria parasite in the “dapple-winged” mosquito. Ross marked the scientific breakthrough by penning:

O million-murdering Death; I know this little thing; A myriad men will save.

This “little thing” Ross discovered changed the world, breaking from the past “bad air” theories of malaria transmission and initiating the new science of “malariology” that has saved many millions over the decades. Now in 2023, the staggering increases in population displacement and humanitarian emergencies demand further change toward more focused efforts, policy flexibility and funding for these most vulnerable populations.

Strategy success and stagnation

The global struggle against malaria has seen successes and stalemates this past century. The “Malaria Eradication Era” of the late 1950’s and early ‘60s, implementing the new technologies of Indoor Residual Spraying (IRS) with DDT and large-scale access to inexpensive and safe chloroquine showed tremendous gains and saved millions of lives across much of the world, with the exception of most of Africa. Gains stagnated, and in several countries reversed, due to insecticide and drug resistance, financial constraints and what some saw as the overreliance on narrow, universally applied control tools, the “eradication of malariologists” and lack of adaptation and problem solving.

The second wave of global efforts in the late ‘90s came with the new tools of insecticide treated nets (ITN), improved diagnostics and drug strategies and the revolution of information communication technologies. Over the past five years progress has again slowed, due in part to the challenges of insecticide and drug resistance; and possibly, overreliance on a single universal control tool – this time ITNs rather than DDT. As the number of people protected by IRS fell from 153 million in 2010 to 80 million in 2021, the focus turned to ITNs, with almost 3 billion distributed over the past two decades. But we are again at an impasse. From 2015 to 2021 global deaths increased 41% from 438,000 to 619,000.

Most of those global deaths occur in just a handful of countries across the central tropical belt of Africa, a belt that holds the highest concentration and duration of conflicts and forced mass population displacement.

Humanitarian Emergencies and Vector Control

Forcibly displaced persons now total more than 110 million according to UNHCR¹; many are at increased risk for vector-borne diseases: malaria throughout much of Africa, leishmaniasis in Syria, Turkey and Iraq,

¹ <https://www.unhcr.org/news/press-releases/unhcr-calls-concerted-action-forced-displacement-hits-new-record-2022>

dengue in Yemen and Bangladesh, among others. While some are in camps or settlements where standard tools can be deployed, many others are mobile, in makeshift shelters and situations where these tools are not practical. There is a gap where new tools in development could play a life-saving role, preventing disease proliferation and further health and economic impacts. A recent systematic review and meta-analysis of vector control in humanitarian emergencies noted support for WHO policy recommendations to deploy insecticide-treated nets during **chronic** humanitarian emergencies. There is an urgent need to evaluate and adopt novel interventions for malaria control in the **acute phase** of humanitarian emergencies.²

We will not reach global malaria targets unless we address these ever-expanding challenges, especially during the acute phase of humanitarian emergencies. There is urgent need to strengthen collaborations among industry, approval and procurement agencies and implementing partners to expand use of existing vector surveillance and control tools and facilitate the development of new tools and processes for communities burdened by vector-borne diseases beyond the reach of current strategies. Vector control in the acute aftermath of an emergency or disaster is NOT traditional vector control. It must not circumscribe interventions framed by "traditional" malaria or dengue vector control but address the broad spectrum of pests and vectors caused by crowding, inadequate housing and sanitation, environmental challenges and often a disruption of community systems.

Among the countries with the highest need in 2021 in terms of people affected were Afghanistan, Colombia, the Democratic Republic of the Congo, Ethiopia, Mali, Myanmar, Nigeria, Somalia, South Sudan, the Sudan, Uganda and Yemen.³

Mechanisms and Initiatives to refocus attention on these most vulnerable families exist.

The RBM Partnership to End Malaria includes an initiative on Vector Control in Humanitarian Emergencies to address these growing needs.^{4a} In 2022 RBM VCWG established a Task Team (under Work Stream 3) focused on Humanitarian Emergencies^{4b}. The purpose of this Task Team is to reduce human suffering and death in acute emergencies by:

- a) improving delivery, uptake, integration and evaluation of existing vector surveillance and control tools;
- b) facilitating the development of an evidence-base and uptake of supplementary and emerging tools.

In 2022 RBM, the United Nations Foundation (UNF) in collaboration with Catholic Relief Services (CRS), the Alliance for Malaria Prevention's Innovation and Evaluation Working Group, the International Federation of the Red Cross, and Red Crescent (IFRC) convened 3 international roundtables in Washington DC United States, Accra Ghana and Nairobi Kenya to develop an action agenda on malaria and vector borne disease prevention and control in complex operating environment countries. The roundtable series brought together 140 representatives from national malaria programs global malaria stakeholders UN agencies (WHO, UNHCR, UNICEF, UNFPA and IOM), non-governmental organizations, the private sector and academia. The round tables identified and addressed key operational funding and technical gaps in

² Messenger LA, Furnival-Adams J, Chan K, Pelloquin B, Paris L, Rowland M. Vector control for malaria prevention during humanitarian emergencies: a systematic review and meta-analysis. *Lancet Glob Health*. 2023 Apr;11(4):e534-e545. doi: 10.1016/S2214-109X(23)00044-X. PMID: 36925174.

³ WHO (2023) World Malaria Report 2022

^{4a} <https://endmalaria.org/vector-control-humanitarian-emergencies>

^{4b} <https://endmalaria.org/implementing-global-vector-control-response>

delivering vector control for malaria and other vector borne diseases. Topics included multisectoral and population level responses financing malaria control efforts and research and innovation for vector control in humanitarian emergencies⁵.

Concurrently, UNHCR and WHO have established a Group of Friends of Health for Refugees and Host Communities⁶. The group is an effort to contribute and foster engagement on health-specific pledges among relevant stakeholders (states, individuals, private sector, NGOs, and international organizations) from all over the world. The Group aims to mobilize high quality, joint pledges, and contributions to foster sustainable access to quality health services at all levels, at affordable costs, for refugees and host communities alike to achieve lasting change. It is envisioned that the group will develop two or more joint health pledges to be announced at the December Global Refugee Forum⁷ and aimed to strengthen access to healthcare for refugees and their host communities, including for malaria treatment and prevention. The sustained inclusion of displaced populations in national and sub-regional policies, plans and strategies remains critical as well as support to countries to ensure equitable access to malaria treatment and prevention tools including vaccines, where applicable.

This is our opportunity, through RBM, WHO and UNHCR to change from what has gone before for two decades and emerge from the current crisis. We need to fast-track development and deployment, learning by doing, providing emergency-use authorization for emerging vector control tools including spatial repellents, Attractive Targeted Sugar Baits, IRS adapted for temporary shelters, insecticide treated materials and improved targeting and delivery of larvicides. We must add to ITNs and IRS, but adapt to contexts in which communities cope, surviving in the high malaria burden counties affected by crises.

Arundhati Roy published “The Pandemic Is a Portal” in the Financial Times on April 3, 2020,⁸

Historically, pandemics have forced humans to break with the past and imagine their world anew. This one is no different. It is a portal, a gateway between one world and the next. We can choose to walk through it, dragging the carcasses of our prejudice... our data banks and dead ideas. Or we can walk through lightly, with little luggage, ready to imagine another world. And ready to fight for it.

Recognizing the crisis of malaria and vector-borne diseases in humanitarian emergencies is our portal, our chance to break from the stagnating strategies of the past decades and imagine a new wave in the global fight with a focus on flexibility, adaptation and problem solving for these vulnerable displaced populations so much in need.

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⁵ <https://allianceformalariaprevention.com/resource-library/resource/vector-control-in-humanitarian-contexts/>

⁶ <https://globalcompactrefugees.org/group-friends-health-refugees-and-host-communities>

⁷ <https://globalcompactrefugees.org/about/global-refugee-forum/global-refugee-forum-2023>

⁸ <https://www.ft.com/content/10d8f5e8-74eb-11ea-95fe-fcd274e920ca>

⁹ <https://endmalaria.org/vector-control-humanitarian-emergencies>