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Operational feasibility and acceptability of the addition of R21 malaria vaccine and intermittent preventive therapy for children to existing malaria control initiatives in Kule, Ethiopia

Yigramachew Girma[1], Kayla. Lavilla[1], Ali Tassawar[1], Kumilachew Siferaw[2], Domach Koang[3], David Tugizimana[1], Armand Dirks[1], Gudissa Assefa[4], Melkamu Ayalew[4], Jeanine Loonen[5], Cono Ariti[6], George Mapiye[1], Winston Mulanda[1], Alan De Lima Pereira [1], Agatha Bestman[7], Kalyan Velivela[7], Bhargavi Rao[8], Beverley Stringer[8], Rosie Wilson[8], Aula Abbara[8], *Patrick Keating[8]

[1]Médecins Sans Frontières (MSF), Addis Ababa, Ethiopia; [3]Bahir Dar University, Bahir Dar, Ethiopia; [2]Gambella University, Gambella, Ethiopia; [4]Federal Ministry of Health, Addis Ababa, Ethiopia; [5]MSF, Amsterdam, Netherlands; [6]London School of Hygiene &Tropical Medicine, London, UK; [7]MSF, Nairobi, Kenya; [8]MSF, London, UK

* Patrick.keating@london.msf.org

Introduction

In 2024, Médecins Sans Frontières (MSF) introduced the R21 malaria vaccine and intermittent preventive treatment in children (IPTc) as part of its malaria response in Kule refugee camp, Gambella, southwest Ethiopia. The camp hosts approximately 54,374 South Sudanese refugees, including 7,282 children under five. This study explored the acceptability and uptake of the new interventions.

Methods

A mixed-methods study assessed the feasibility and acceptability of a malaria prevention rollout in Kule (August - December 2024). The intervention included the R21 vaccine (for children 5–36 months, three monthly doses) and IPTc, with dihydroartemisinin/piperaquine (for children 3–59 months, three monthly doses). To assess coverage and uptake, a household survey was conducted after the final round. A qualitative study explored the perceptions of feasibility and acceptability among the community, MSF staff and other stakeholders, using seven focus group discussions and 13 key informant interviews with health workers, religious leaders, and women representatives. Qualitative data were thematically analysed.

Ethics

Implementation support and a recommendation letter were obtained from the Ethiopia Ministry of Health, Refugee Return Service, and United Nations High Commissioner for Refugees. The MSF Ethical Research Board ID 2424 and Gambella University granted ethical approval.

Results

1162 children (3–59 months) were surveyed. R21 coverage was 88% (95% CI 85–90), and IPTc coverage was 86% (84–88). Reported reasons for non-receipt of the vaccine or IPTc were caregiver non-attendance due to travel and competing responsibilities. Information gaps and unequal communication access made community leaders key to building public trust and participation. Reported side-effects were fever in 68 children (87%, 95% CI 78–93) for R21 and headache in 110 children (95%, 89–98) for IPTc. Despite concerns, the vaccine was not rejected—even with minor side-effects. High malaria rates in children highlighted the need for prevention. Social proof and health literacy, rooted in everyday practices that complement scientific knowledge, are key to fostering acceptance. Trust, particularly through respected authorities and clear health communication, also plays a crucial role. However, sustained acceptance of vaccines and IPTc is influenced by different factors, including preferences for ways of administration, the level of community education provided for each intervention, and the perception that vaccines are preventative, whereas tablets are not typically viewed that way. Resource and supply constraints can also weaken social acceptability efforts.

Conclusion

Integrating R21 and IPTc into malaria control is feasible but requires a multidimensional approach. Health messages must blend scientific and social knowledge about prevention. Health service providers and community leaders must address both correct and incorrect assumptions to build trust tailored to enhance social models and practices for sustained disease prevention and control. Success also depends on extensive planning and early community engagement to tailor and adapt the implementation strategy.

Conflicts of interest

All authors declare no competing interests.