

POLICY BRIEF

Interventions To Improve Malaria Elimination At The Republic Of Indonesia – Democratic Republic Of Timor Leste Cross-Border



Participatory Action Research in collaboration between the National Malaria Control Program of the Ministry of Health of the Republic of Indonesia and the Democratic Republic of Timor Leste



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BACKGROUND

Indonesia and Timor Leste share porous international borders, enabling persistent malaria transmission due to ecological factors, high population mobility, and uneven access to healthcare services. Despite considerable progress in reducing the malaria burden in the respective countries over the last decade, the cross-border region presents unique challenges that threaten to undermine broader malaria elimination efforts across both countries.

The World Health Organization emphasizes that addressing cross-border malaria transmission is critical to achieving elimination certification, as the areas around international borders often harbor the last remaining reservoirs of malaria. Accordingly, Indonesia and Timor Leste initiated cross-border activities in 2017, marked by the signing of a Memorandum of Understanding (MoU) for cross-border health collaboration, including malaria control. However, implementation has been hampered by logistical, political, and structural barriers, further compounded by the COVID-19 pandemic. The National Malaria Control Program or NMCP of both countries, began undertaking renewed efforts to strengthen

cross-border collaboration between the two countries by renewing their MoU of Health Collaboration on 14 February 2022 in Dili. To successfully implement this collaboration, it is crucial to employ tailored and strategic interventions that align with the specific contexts of both nations. Utilizing a Participatory Action Research (PAR) approach, the Center for Tropical Medicine, Universitas Gadjah Mada (UGM) together with NMCP pinpointed and implemented three key interventions to bolster cross-border malaria surveillance:

1. Improving community empowerment and awareness in migration surveillance;
2. Establishing a cross-border dashboard and joint data sharing mechanism; and
3. Formalizing a cross-border malaria task force.

This policy brief presents the approaches and lessons learned on designing and implementing these interventions for malaria surveillance in cross-border settings.

METHODS

Operational research and implementation of recommended strategies to mitigate cross-border malaria took place in the border region of Belu District, Nusa Tenggara Timur (NTT), Indonesia and Bobonaro Municipality, Timor Leste. Starting February 2023, multisectoral stakeholder engagement was conducted with Ministries of Health, Ministries of Foreign Affairs, Ministries of Domestic Affairs, provincial and district health offices, and non-governmental organizations from the respective countries. In May 2023, key informant interviews and focus group discussions were held with health officers, immigration and border staff, and community leaders in both countries as part of a situational analysis of malaria surveillance activities at the border region.

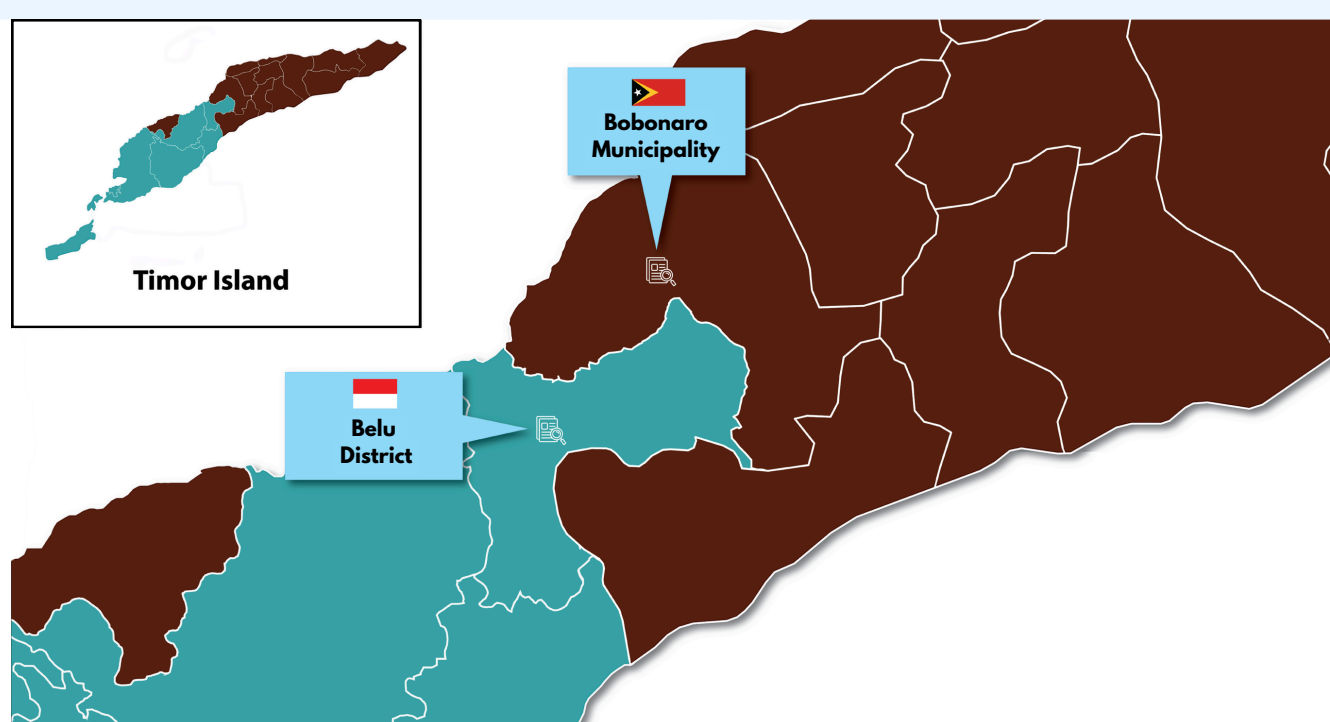


Figure 1. Maps of Belu District and Bobonaro Municipality

RESULTS AND INTERVENTIONS ADOPTED

The situational analysis revealed that while both Indonesia and Timor Leste have implemented regular migration surveillance, including community screening and activities at select border posts, there has been no targeted malaria-related knowledge transfer for travelers in the cross-border areas. Healthcare staff and border officers lack standardized malaria information

tailored explicitly for travelers at the Indonesia-Timor Leste border. Furthermore, there was no data sharing mechanism between borders.

Following a series of consultation meetings and workshops to discuss the results of the situational assessment and appropriate interventions to follow, stakeholders from Indonesia and Timor Leste developed and implemented three key strategies to eliminate malaria from border regions:

1. Improving community empowerment and awareness in migration surveillance

Culturally relevant and accessible education, information, and communication (EIC) materials have proven effective in improving community empowerment and awareness in migration surveillance. To ensure high awareness of malaria risk among the cross-border population, the UGM team worked closely with country representatives to develop EIC materials in Indonesian and Tetun languages. In March 2024, the newly developed materials were disseminated to health cadres, malaria staff, military personnel, and border and immigration officers at 14 border posts and health center sites across Belu District and Bobonaro Municipality.

2. Establishing a cross-border dashboard and joint data sharing mechanism

The newly developed dashboard and cross-notification platform are expected to improve

the speed and accuracy of malaria case reporting across borders, and have been successfully piloted to support collaborative surveillance between Indonesia and Timor Leste. The UGM team facilitated the development of a Malaria Cross-border Dashboard, curated to include the specific data needs of both governments. An accompanying dashboard manual was developed to guide users on utilizing the system. Between March and June 2024, counterparts from Indonesia and Timor Leste participated in dashboard and data-sharing training and provided feedback to refine the dashboard. Alongside a formalized data-sharing mechanism for routine malaria data, a WhatsApp platform was developed to enable rapid case notification. The WhatsApp Group (WAG) mechanism engages key participants from the National Malaria Control Program or NMCP, Health Offices, and International Health Regulation (IHR) focal points, and follows a standardized data-sharing workflow.

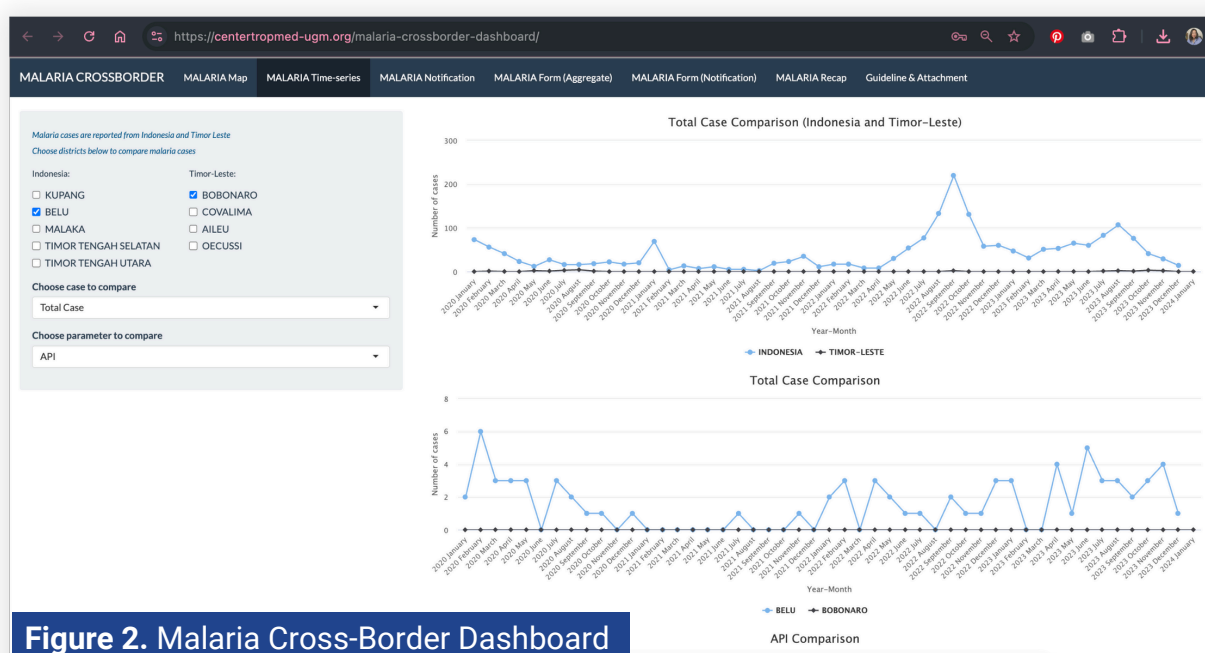
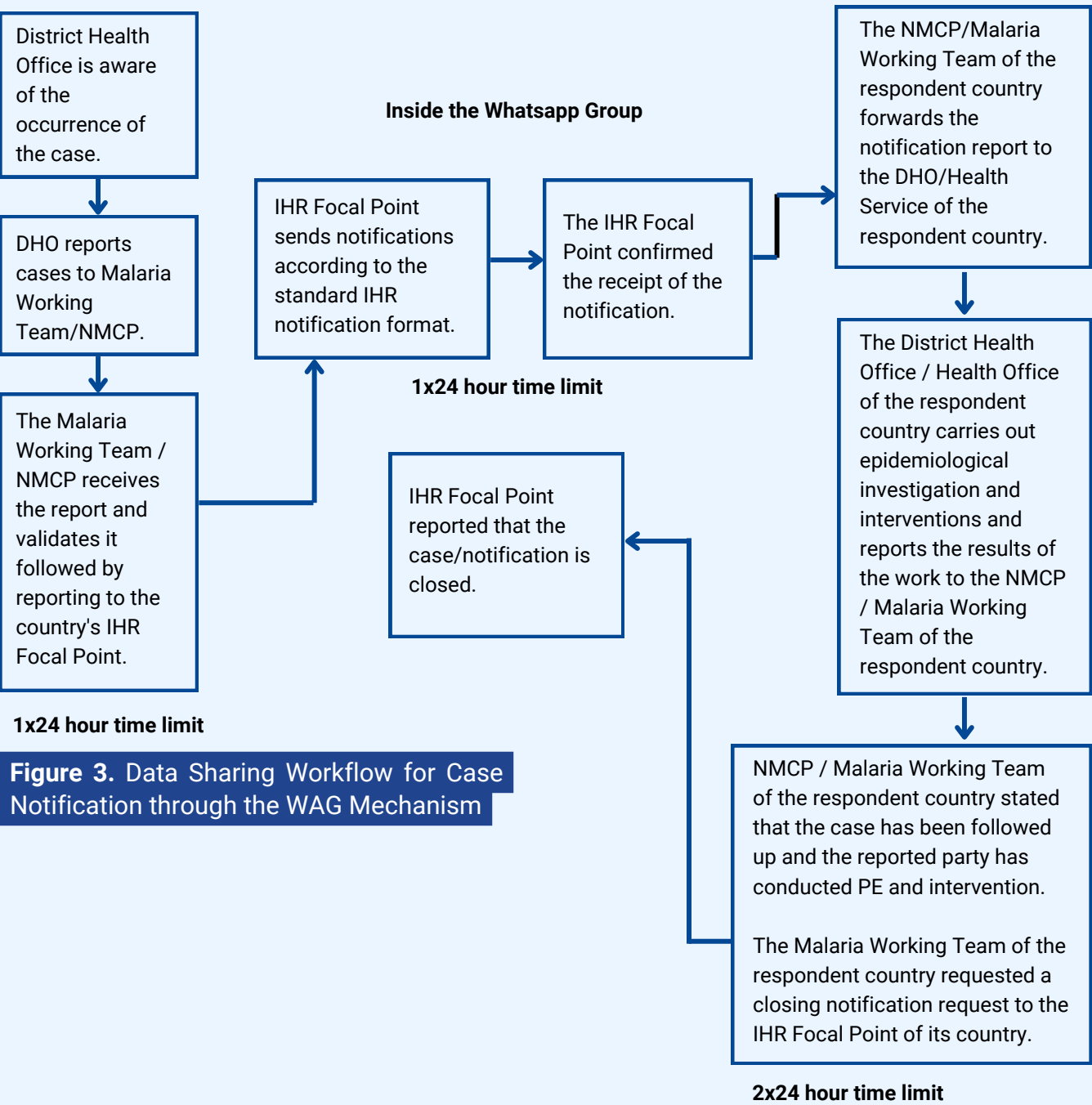


Figure 2. Malaria Cross-Border Dashboard

Alongside a formalized data-sharing mechanism for routine malaria data, a WhatsApp platform was developed to enable rapid case notification. The WhatsApp Group (WAG) mechanism engages key participants from NMCP, Health Offices, and International Health Regulation (IHR) focal points, and follows a standardized data-sharing workflow.

The dashboard has been implemented alongside a formalized data-sharing mechanism for rapid case notification using the WhatsApp platform. The WhatsApp Group (WAG) mechanism involves key participants from the NMCP District Health Offices, and International Health Regulation (IHR) focal points, and has been designed with a standardized data-sharing workflow.



3. Formalizing a Joint Malaria Cross-Border Task Force

Recognizing the need for a streamlined coordination channel between Indonesia and Timor Leste, a comprehensive Terms of Reference (ToR) for a Joint Malaria Cross-Border Task Force was developed. The ToR highlights key goals such as ensuring effective communication between national malaria programs, monitoring the implementation of cross-border activities, and advocating for policy and resource alignment. The first formal task force meeting was held in Dili, Timor Leste on 16 January, 2025.

RECOMMENDATIONS

We recommend expanding mechanisms such as joint data sharing and increasing community awareness as these have provided a foundation for improving malaria surveillance, prevention, and treatment. However, the implementation process has also revealed critical challenges, including communication barriers, personnel turnover. Stronger institutional frameworks are needed to sustain engagement and accountability. To ensure sustainability and address future identified barriers, a task force that aligns cross-border efforts with national malaria elimination strategies is essential. Expanding the use of joint data-

sharing mechanisms and digital reporting platforms to other border areas is a key opportunity to scale impact and promote regional consistency in surveillance efforts. By continuing to strengthen its foundation and leveraging lessons learned, this initiative has the potential to not only achieve malaria elimination in the border regions but also serve as a model for cross-border health collaborations globally. Its success will depend on overcoming barriers such as communication difficulties, resource constraints, and inconsistent stakeholder engagement while leveraging opportunities for innovation, partnership, and community empowerment.

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