Sustaining progress towards malaria elimination by 2025: Lessons from Bhutan & Timor-Leste

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Summary

In Asia Pacific, several nations that were part of the World Health Organization’s initiative to eliminate malaria by 2020 or the E2020 Initiative reported being off-track. The COVID-19 pandemic further strained health systems and has the potential to stall the efforts and reverse earlier progress made towards the fight against malaria. These nations have since recommitted to eliminating malaria by 2025, in a renewed E2025 Initiative. This viewpoint presents efforts of the national malaria programs in Bhutan and Timor-Leste as they prepare for this new commitment. It includes insights on the approaches adapted by both countries that have helped them keep the spotlight on malaria whilst preventing large COVID-19 outbreaks. This viewpoint proposes key strategies that near-elimination countries can consider to sustain malaria interventions and realize their elimination goal. Of note, it calls for national strategic plans to consider a whole-of-government approach to ensure progress - which includes sustaining political commitment, systematically collaborating across borders, empowering communities and strengthening health systems particularly through surveillance and data management - that will benefit all existing and future infectious threats and pave the way for integrated response mechanisms across diseases.

Introduction

At the ninth East Asia Summit (EAS) in 2014, heads of government committed themselves to the goal of malaria elimination in Asia Pacific by 2030. In 2015, eliminating malaria by 2030 was also officially adopted as a global Sustainable Development Goal. To guide countries in their efforts, the World Health Organisation (WHO) laid out a comprehensive framework – the Global Technical Strategy (GTS) for malaria 2016–2030 and set an ambitious global target to reduce global malaria incidence and mortality by at least 90%. To track progress, the strategy included intermediate milestones, one of which was to eliminate malaria in at least 10 countries by 2020. This led to the launch of a special initiative called the “E-2020” where WHO identified and supported 21 countries with potential to eliminate malaria by 2020, including 6 countries from Asia Pacific region – Bhutan, Nepal, Timor-Leste, China, Malaysia and Republic of Korea.

Accelerated by strong political commitment, sustained funding and partner support, the Asia Pacific region has made tremendous progress, with cases halved since 2010 and deaths reducing by almost 90%. Since the start of the E2020 initiative in 2017, all the six member countries showed significant progress in reducing their malaria burden and moving towards elimination goal of 2020. However, out of the 6 countries from the region, only China and Malaysia were able to achieve E-2020 target. While the number of indigenous cases continued to decline for Nepal and North Korea, Timor-Leste and Bhutan’s malaria elimination efforts were hampered by the SARS-CoV-2 (COVID-19) pandemic in 2020 (Figure 1). The pandemic response presented additional challenges to both countries, forcing them to review the elimination goal 2025 and sign onto the new E-2025 initiative.
paper, we reflect on the experiences of Bhutan and Timor-Leste by highlighting the setbacks experienced by both countries and reviewing the policies adopted to bounce back on track to reach zero malaria by 2025.

Setback on E2020—the experience of Bhutan and Timor-Leste

Bhutan and Timor-Leste have been successful in controlling local malaria transmission, resulting in just few pockets of active foci remaining in both countries. The number of indigenous cases declined significantly until 2019, with Bhutan reporting only two cases and Timor-Leste with zero indigenous case. In 2020 however, the number of cases increased again, halting the progress towards elimination. This temporary setback was due in part to:

- **New outbreaks of local malaria transmission**: Timor-Leste had been reporting zero indigenous cases since 2018. However, in 2020, restrictions on movement and a state of emergency were announced to limit the spread of COVID-19 which delayed the malaria response, particularly in the bordering areas of the Oecusse Municipality, which is enclaved in West Timor, Indonesia. Three indigenous cases were then reported in that area. Similarly in Bhutan, in 2020 after COVID-19 emerged, the country reported an outbreak of 22 indigenous malaria cases in the bordering district of Sarpang. This was partly attributed to the delays in delivery of malaria prevention interventions due to the pandemic. In 2019, Bhutan reported only two indigenous cases.

- **Greater risk of imported cases from high burden neighbour countries**: The Sarpang district of Bhutan is on the border with India. Similarly, Timor-Leste shares border with East Nusa Tenggara province of Indonesia, which has been a constant source of imported cases in the country. Any setback in malaria surveillance at border areas due to competing priorities (such as the COVID-19 pandemic response) put Bhutan and Timor-Leste at greater risk of re-introduction of malaria through the importation of cases from its high-burden neighbours India and Indonesia.

- **Shifting priorities due to COVID-19**: The malaria programs of both Bhutan and Timor-Leste have had to shift focus due to redeployment of resources to the COVID-19 response. Spikes in cases were reportedly due to delays in the delivery of routine malaria prevention and other key interventions including vector control surveillance and interventions. In such resource-constrained settings, dedicated malaria health workers were reassigned to support the pandemic response, which further delayed the cases diagnosis and management, particularly in high-risk areas. In Bhutan, malaria screening in health facilities dropped by more than 75% in 2020. Both countries experienced delays in case investigation and management also due to

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**Figure 1.** Number of reported indigenous malaria cases in E-2020 countries in Asia Pacific, 2016–2020. Source: WHO world malaria report-2016 to 2020 [https://www.who.int/health-topics/malaria](https://www.who.int/health-topics/malaria).
restricted movement and disruption to the supply of malaria commodities.

How can the E-2025 countries remain on track?
COVID-19 and the strain it imposes on health systems have the potential to reverse progress made to date and bounce near elimination countries off-track. To continue the promising strides towards the E2025 elimination goal, health systems in near elimination countries need to continuously adapt to sustain malaria interventions while keeping the limelight on COVID-19. We consider five key elements with examples from Bhutan and Timor-Leste for near-elimination countries to remain on track:

1. Sustaining political commitment across government agencies for a whole-of-government approach to elimination. The E-2025 initiative is a sign of a re-commitment to stay the course to elimination and provides an opportunity for Bhutan and Timor-Leste to maximise the progress made to date. Bhutan has revised its National Strategic Plan (NSP) to eliminate malaria by 2022 and be certified malaria-free by 2025. Sustaining political commitment across ministries is also critical. The National Committee for Disease Elimination (NCDE), established in 2019, involves government representatives and experts and provides oversight and policy guidance to all programs targeting elimination, including malaria.13 Timor-Leste has set up a similar cross-ministerial taskforce this year. More recently, however, Timor-Leste has committed domestic funding to the extent of 40% for the prevention of the re-establishment of malaria from 2022 onwards to ensure the sustainability of their malaria response.13 This is proof of sustained commitment and a clear step towards ensuring programmatic and financial sustainability of the malaria response once external funding is withdrawn.

2. Fostering cross-border collaboration to prevent the re-introduction of malaria means strengthening harmonised actions is critical. Imported malaria cases continue to be a challenge in both Bhutan and Timor-Leste. Bhutan, as part of its revised NSP, is committed to reinforcing cross-sectoral and cross-border collaboration to support malaria-endemic border districts.14 In 2019, a meeting facilitated by the Global Fund to Fight HIV/AIDS Tuberculosis and Malaria (GF), APLMA and the WHO, was held to develop a joint action plan for malaria elimination across Bhutan and India’s borders. A forum using a social app was created through which informal networks of malaria workers can exchange case information across borders, though the formalization of an information sharing system with determined focal points has been delayed by the COVID-19 pandemic. Timor-Leste in turn, has been working closely with Indonesia since 2017. Cross-border collaborative meetings between the two countries were held in 2017 and 2019, involving key provincial and district level officials.15 A Memorandum of Understanding (MoU) for cross-border collaboration on priority diseases (2019-2020) was signed, including a joint action plan and data-sharing mechanism. While implementation was delayed due to COVID-19 and the MoU expired in 2020, progressively, Timor-Leste hopes to move towards a web-based data sharing system. Cross-border collaboration with high burden countries like India and Indonesia is and will continue to be imperative to achieve sustainable elimination and improve collaboration against the spread of other deadly infectious diseases such as COVID-19. This calls for cross-border joint actions plans that are tailored to need of malaria programs on both sides of the border. While national agreements in the form of MOUs may ensure improved data sharing and coordination, it is suggested to establish coordination mechanisms that reduces administrative procedures and encourages informal data sharing to ensure efficient implementation at the sub-national level.16

3. Empowering communities to be part of prevention and control efforts is key to guaranteeing Universal Coverage and ensuring access to health services for all vulnerable populations. In Timor-Leste, Community Health Volunteers (CHVs) play an important role in detecting remaining malaria cases, particularly in border areas. In 2020, eight out of 14 malaria cases (57%) were diagnosed by CHVs. During COVID-19, the malaria officers along with CHVs were mobilised to sustain malaria services like distributing bed-nets, diagnosis and treatment and managing breeding sources in high-risk villages. Bhutan’s strong network of Village Health Workers (VHWs) are key members of the Community Action Group (CAG) established by the Vector Borne Disease Control Program (VDCP) to improve service outreach for indigenous people living in remote areas, the military, and border communities including forest-goers.14 The revised NSP focuses heavily on community mobilization and engagement for malaria elimination, with the aim of strengthening the CAG, particularly in high-risk districts in southern Bhutan. Both CAG and VHWs were revitalised for service delivery during COVID-19.17

4. Integrating response mechanisms is critical to preventing the re-introduction of malaria beyond elimination while dealing with other infectious diseases like COVID-19. In Timor-Leste, for example, the National Malaria Programme coordinates and
works closely with the national team for COVID-19 crisis management by screening people in quarantine centres and at the community levels along the bordering areas. Bhutan also conducts integrated medical screening of malaria, HIV and TB at border towns when processing medical certificates for work permits of inbound foreign workers entering Bhutan. Following the emergence of COVID-19, these activities also incorporated COVID-19 screening. To promote sustainability beyond malaria elimination, both Bhutan and Timor-Leste are implementing mechanisms to integrate malaria interventions with other vector-borne diseases such as dengue. Bhutan’s revised NSP suggests embedding malaria interventions within the well-established Bhutan’s primary health system.14 The Ministry of Health in Timor-Leste, on the other hand, plans to widen the responsibility of malaria officers to include other vector-borne disease (VBD) control interventions.18 Trained workforce and selected staff from the current national malaria programme would then join a Vector Control and Entomology (VCE) Unit in the Ministry of Health, under the Communicable Disease Control directorate of the Department of Disease Control.

5. Continued emphasis on innovation in delivery to prevent, find, test and treat every malaria case is important to ensure that no fever remains undiagnosed. Bhutan set up a dedicated team within the overall COVID-19 health response framework, led by the Health Secretary, to ensure that all essential health services are uninterrupted during the pandemic, using hotlines and zoning of areas announced to the wider public through national TV and the Ministry of Health’s social media page. The initiative resulted in the procurement of mobile clinics (in mobile vans) used to deliver essential healthcare services in strategic and hard to reach areas and is set to continue beyond the current pandemic phase. Bhutan is also innovating further to tackle the last mile challenge of eliminating malaria by conducting operational research on new tools and approaches, including to support surveillance activities in border areas and therefore accelerate progress towards elimination.19 While seven E-2025 member countries in Asia Pacific have eliminated malaria, seven countries in Asia Pacific have eliminated malaria, existing tools, piloting innovative operational approaches can be useful in further accelerating progress, potentially reinforcing case identification activities and improving the management of outbreaks. Better surveillance will also require optimal health management information system. To that end, Bhutan is planning to roll out District Health Information Software 2 (DHIS2) across all its 20 districts this year.13 Timor-Leste worked to integrate drug efficacy surveillance activities from 2018 and 2020. Going forward, integrated drug efficacy surveillance (iDES) will be combined with case-based surveillance.16 Timor-Leste is also strengthening its case detection by successfully integrating malaria services in private sector clinics. The private clinics and hospitals are provided with RDTs and training on diagnosis and treatment as per the national guidelines. All private health actors report data to the National Malaria Programme.

Conclusion

The COVID-19 pandemic has had an undeniable impact on near-elimination countries. To stay the course, building on the E-2025 recommitment to elimination, revised national strategic plans need to consider the importance of sustainability and a continued whole-of-government approach to ensure progress, even during a pandemic. This means strengthening health systems through surveillance and data management, empowering communities, and systematically collaborating across borders to share data while fostering resilience to counter other infectious threats. By doing so, we can build a more resilient and economically stable, growing region. Achieving the malaria-free status by 2025 can be realized through robust cooperation and a shared understanding across sectors and borders.

Author contributions

SD, ML, and SS wrote the original article. All other authors contributed to writing the draft (country specific data/information), reviewing and editing the manuscript. SD and SS have accessed and verified all the data and the decision for submission of manuscript is done by all the authors.

Declaration of interests

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