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# INTEGRATING MALARIA ELIMINATION EFFORTS WITH OTHER DISEASE PROGRAMMES IN ASIA PACIFIC

APMEN CASE STUDY



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## ABBREVIATIONS

APLMA	Asia Pacific Leaders Malaria Alliance
APMEN	Asia Pacific Malaria Elimination Network
ARI	Acute Respiratory Infections
CHW	Community Health Workers
DOH	Department of Health
iCCM	Integrated Community Case Management
ICMV	Integrated Community Malaria Volunteer
IMCI	Integrated Management of Childhood Illness
ITN	Insecticide-Treated Nets
IVM	Integrated Vector Management
GLIDE	Global Institute for Disease Elimination
LF	Lymphatic Filariasis
LLIN	Long-Lasting Insecticidal Nets
MCH	Maternal and Child Health
NCD	Non-Communicable Diseases
NGO	Non-Governmental Organisation
NMP	National Malaria Programs
NTD	Neglected Tropical Diseases
PHC	Primary Health Care
PIDSR	Philippine Integrated Disease Surveillance and Response
PNG	Papua New Guinea
RMNCAH	Reproductive, Maternal, Newborn, Child, and Adolescent Health
SDG	Sustainable Development Goals
SRHR	Sexual and Reproductive Health and Rights
TB	Tuberculosis
UHC	Universal Health Coverage
UNICEF	United Nation's Children Fund
VBD	Vector-Borne Diseases
WHO	World Health Organization

## ABOUT APLMA-APMEN



Asia Pacific Leaders Malaria Alliance (APLMA) is an alliance of heads of government committed to achieving a region free from malaria by 2030. APLMA is a distinctive platform facilitating collective regional leadership for malaria elimination and health security.

Asia Pacific Malaria Elimination Network (APMEN) is a network of 22 countries and 54 partner institutions. APMEN facilitates regional and multi-sectoral collaboration around evidence-based practices and fosters innovation. Jointly, APMEN and APLMA act as an 'evidence-to policy' vehicle that links directly to leadership levels across the region.

# Introduction



Photo by John Rae

National malaria programmes (NMPs) and partner institutions implement diverse strategies to combat malaria in an effort to reduce case burden and accelerate progress towards elimination. One strategic approach is integrating malaria control efforts with other public health programmes. This integration offers numerous benefits including efficient resource utilisation, strengthened health systems, improved surveillance and data management, better health outcomes, and sustainable programmes for the long term.

This case study showcases successful integrated malaria programmes from countries in Asia Pacific. These are inspiring examples of integrated efforts in the fight against malaria providing a pathway towards Universal Health Coverage (UHC) and malaria elimination.

## BACKGROUND

Malaria, a preventable and treatable vector-borne disease (VBD), is caused in humans by five *Plasmodium* species of parasite: *P. falciparum*, *P. vivax*, *P. ovale*, *P. malariae*, and *P. knowlesi*. In 2021, out of a presumed and confirmed 182 million malaria cases worldwide, 1.9 million (1%) were reported in the Asia Pacific region.<sup>i</sup>

To tackle this threat, the Asia Pacific Leaders Malaria Alliance (APLMA) and the Asia Pacific Malaria Elimination Network (APMEN) collaborate closely with NMPs towards eliminating malaria by 2030. APLMA works by supporting international and domestic resource mobilisation for malaria, helping shape policies for malaria elimination, and ensuring high-level advocacy for malaria at national and subnational levels. APMEN identifies programmatic needs, builds capacity, and supports national malaria programmes by sharing best practices, latest research, and evidence for decision making.<sup>ii</sup>

The specific health programmes and disease initiatives integrated with malaria control and elimination efforts can vary based on local epidemiological contexts and available resources. Many countries have already integrated malaria with other VBDs, neglected tropical diseases (NTD), and/or integrated community case management (iCCM). Some countries also jointly manage malaria efforts with HIV/AIDS, Tuberculosis (TB) and/or other non-communicable diseases (NCDs).

Non-governmental organisations (NGOs) and international organisations also see the value in integrating malaria with other health objectives. For instance, the U.S. President's Malaria Initiative (PMI) emphasises the integration of malaria interventions with maternal and child health (MCH), HIV/AIDS, TB, NTDs and global health security activities.<sup>iii</sup> The RBM Partnership to End Malaria also promotes iCCM and integrated service delivery through community health workers (CHW) while emphasising the importance of keeping malaria as an integral part of broader UHC and global health security goals.<sup>iv</sup> Additionally, the Global Fund to Fight AIDS, TB, and Malaria is driving the transition from isolated interventions to delivering more integrated, people-centred quality services by: supporting the integration of HIV, TB and malaria services; promoting partnerships with other health programmes; and aligning with initiatives like sexual and reproductive health and rights (SRHR) as well as reproductive, maternal, newborn, child, and adolescent health (RMNCAH) services. These integrations complement the goal of achieving primary health care (PHC) for all.<sup>v</sup>

## DISEASES INTEGRATED WITH MALARIA

The integration of malaria programmes with other healthcare programmes has been widely adopted in numerous countries and has yielded positive results. The choice of diseases to integrate with malaria efforts depends on various factors, including the epidemiological context, disease prevalence, available resources, and public health priorities.

**Vector-borne diseases:** Most countries have multiple VBDs which must be eliminated such as malaria, dengue, Zika, and chikungunya. As such, NMPs are often just one unit within a broader VBD control programme under health ministries in most countries. This organisation allows for better integration between NMPs and other VBD programmes. Integrated vector control measures effectively target diseases transmitted by common vectors, such as mosquitoes. For example, Integrated vector management (IVM) as an approach has been successfully implemented in India and other parts of the region.<sup>vi</sup>

**Maternal and child health:** In malaria-endemic areas, integrated programmes have been established to provide pregnant women with insecticide-treated nets (ITNs) and malaria screening as part of antenatal care practices. This approach safeguards both the mother and the unborn child from malaria, reducing incidence of maternal anaemia and low birth weight. Moreover, to reduce the risk of malaria in pregnancy, some programmes in Africa include intermittent preventive treatment during pregnancy in routine maternal healthcare services.<sup>vii</sup>

**Neglected tropical diseases:** Various NTDs – such as lymphatic filariasis (LF), helminthiasis, and schistosomiasis – often share the same geographical distribution with malaria in a country. Integrating control efforts involves conducting mass drug administration campaigns for NTDs alongside the distribution of long-lasting insecticidal nets (LLIN) and vector control. This strategy optimizes resource allocation and reduces the prevalence of multiple diseases.

**Nutrition:** Malnutrition weakens the immune system, increasing susceptibility to infectious diseases like malaria. Notably, deficiencies in iron, vitamin B12, and protein can exacerbate anaemia – a condition further worsened by malaria. Integrating malaria and nutrition programmes can help reduce impact of malaria on malnourished populations.

**Vaccine-preventable diseases:** Coordinating malaria control with vaccination programmes enhances overall disease prevention. This is especially relevant for diseases which often affect the same populations such as malaria, measles and polio.

**Non-communicable diseases:** Although NCDs are typically non-infectious, they can coexist with infectious diseases like malaria. Integrating healthcare services to address conditions such as hypertension and diabetes in malaria-endemic regions can offer holistic care to individuals.

**HIV/AIDS and TB:** In areas where both malaria and HIV/AIDS are prevalent, integrating services like LLIN distribution and antiretroviral therapy can improve patient outcomes. Similarly, TB and malaria often affect the same populations. Integrated approaches can enhance TB case detection, facilitate earlier treatment initiation, and yield better outcomes for individuals co-infected with TB and malaria. People living with HIV/AIDS and/or TB are more susceptible to malaria, and coordinated efforts can reduce morbidity and mortality.

# Examples of successfully integrated malaria programmes and approaches



Photo by Kenilrafaliya

Across the Asia Pacific region, NMPs and partner institutions have undertaken a diverse range of integrated programmes that unite malaria efforts with those targeting other diseases. These integrated malaria initiatives represent a comprehensive strategy for addressing malaria while concurrently combatting other health challenges. Through this multifaceted approach, these programmes enhance health outcomes and pave the way for the elimination of malaria and other diseases.

## BANGLADESH

With an 82% decline in confirmed malaria cases from 39,719 in 2015 to 7,294 in 2021, Bangladesh has made remarkable progress in reducing malaria caseload.<sup>viii</sup> In order to eliminate malaria and achieve the other Sustainable Development Goal (SDG) targets for good health and well-being by 2030, Bangladesh effectively manages malaria together with other communicable diseases. Bangladesh focuses on integrating health services within its PHC system, operating at the district, Upazila, and community levels. The malaria programme aligns with the PHC initiatives of the Communicable Disease Control Program, delivering integrated activities through multipurpose health workers.<sup>ix</sup>

Since the mid-1990s, World Health Organization (WHO) and United Nations Children's Fund (UNICEF) have implemented the Integrated Management of Childhood Illness (IMCI) strategy in over 100 countries for diarrhoea, pneumonia, malaria, measles, and malnutrition among children under five years of age.<sup>x</sup> Bangladesh initiated a pilot programme for community based IMCI in 2003, followed by a phased rollout in 15 high under-five mortality sub-districts in 2005.

This programme prioritised the early detection and management of common childhood illnesses, such as acute respiratory infections (ARI), diarrhoea, malnutrition, malaria, and other health concerns.<sup>xi</sup> IMCI has significantly contributed to enhancing child health, maintaining the quality of care and utilisation of services at government operated PHC facilities.<sup>xii</sup>

CHWs are recognised globally as a vital pillar of PHC systems. These dedicated frontline workers play an essential role within their communities by delivering healthcare services and collaborating with public health facilities which enhances access to healthcare services for vulnerable, underserved and remote populations. Over 185,000 CHWs are active in Bangladesh, with 70,000 under government employment and the remainder affiliated with NGOs such as BRAC. These CHWs deliver promotive, preventive, rehabilitative, palliative, and limited curative care as well as referral services related to RMNCAH, nutrition, communicable, and noncommunicable diseases.<sup>xiii</sup>

BRAC's frontline CHWs, known as "shasthya shebikas," are part-time female volunteers covering malaria case management and other health areas. Government-affiliated health assistants and community healthcare providers also extend their roles to detect and treat communicable diseases including ARI, diarrhoea, TB, and malaria.<sup>xiv</sup> Bangladesh's robust community-based healthcare system not only enhances access to essential services but also improves health outcomes for its population. These dedicated CHWs are involved in the integrated management of various health issues – including malaria – at the grassroots level.



Photo by The Global Fund

## MYANMAR

Since 2010, Myanmar has experienced a substantial reduction in malaria incidence in great part to extensive disease control efforts by the National Malaria Control Programme. Yet, as a result of this positive progress and significant decline in positive cases detected and treated, motivation and engagement levels of malaria volunteers also declined. Recognising the value of these well-trained and highly effective frontline health workers, the Ministry of Health and Sports developed a new strategy in 2017 to integrate malaria with five additional diseases: TB, sexually transmitted infections/ AIDS, dengue haemorrhagic fever, LF, and leprosy.<sup>xv</sup> In acknowledgment of the expanding roles of malaria volunteers, the titles of village malaria volunteers and migrant/worksite malaria volunteers were revised to “integrated community malaria volunteers” (ICMV). ICMVs undergo comprehensive training – lasting 5 to 6 days – which encompasses not only malaria case management but also detection, referral, in-home care, and reporting for malaria as well as the other five listed diseases.<sup>xvi</sup> ICMVs have demonstrated capacity for effective and high-quality implementation, with village-based ICMVs from various ethnic communities consistently delivering accurate treatments.<sup>xvii</sup> As ICMVs have effectively delivered malaria services within the community, stakeholders are hopeful that the upgraded ICMV model has the potential to advance Myanmar’s efforts towards malaria elimination and the ultimate UHC goal.<sup>xviii</sup>

The iCCM approach, jointly developed by WHO and UNICEF, empowers CHWs to diagnose and treat childhood illnesses including malaria, pneumonia and diarrhoea. This strategy enhances access to high-quality healthcare for children 2 to 59 months of age residing in remote and hard-to-reach areas.<sup>xix</sup> This programmatic experience underscores the effectiveness of iCCM in expanding the coverage of high-quality treatment services for these childhood diseases. This is particularly significant in malaria-endemic countries, where iCCM has demonstrated its ability to enhance correct treatment coverage of malaria control programmes and strengthen health systems.<sup>xx</sup> Experiences from the Sagaing region in Myanmar provide tangible evidence that iCCM-trained malaria volunteers can proficiently deliver a range of treatments and services to children under the age of five. These services included administering rapid diagnostic tests (RDTs) and artemisinin combination therapy for malaria, providing respiratory timers and amoxicillin treatment for uncomplicated pneumonia, providing oral rehydration solutions and zinc treatment for diarrhoea, and administering assessments, referrals, and antibiotic prescriptions for malnutrition.<sup>xxi</sup> The iCCM represents a comprehensive and effective approach for improving healthcare access for children in remote areas and contributes significantly to healthcare system strengthening.



Photo from APLMA library

## PAPUA NEW GUINEA

A cross-disease elimination project, implemented by APLMA-APMEN with support from Global Institute for Disease Elimination (GLIDE), is currently conducting a situational analysis in Milne Bay Province. The project aims to inform programme decision-making regarding integrated approaches for malaria and LF in Papua New Guinea (PNG). Ultimately, this initiative intends to develop an integrated provincial-level response to combat both diseases effectively and promote more coordinated programmatic and community engagement efforts.<sup>xxii</sup>

Malaria and LF are both mosquito-borne diseases, co-endemic in PNG, overlap in geographical distribution, and share similar transmission biology. In 2021, PNG reported 755,598 confirmed malaria cases – the highest malaria burden among all APMEN member states. In comparison, LF is prevalent in 14 out of 21 provinces, with prevalence rates ranging from 0% to 70%.<sup>xxiii</sup>

Available data indicates that efforts to control malaria, such as the use of ITNs and indoor residual spraying, have concurrently led to a reduction in filarial infection rates. Given the transmission and geographic overlap of the two diseases, mass drug administration campaigns of LF can be coupled with the distribution of ITNs, and joint surveillance

mechanisms can be explored. The integration of these disease control initiatives has potential to improve resource utilisation and enhanced control efforts for both diseases.<sup>xxiv</sup>

In PNG, childhood diseases – including pneumonia, diarrhoea, malaria, measles, tuberculosis, and malnutrition – collectively represent the primary cause of illness and mortality among children. Recognising the urgency of addressing this critical issue, the Department of Health (DOH), Ministry of Health in PNG developed the “Integrated Management of Childhood Illness Policy 2014”. This IMCI policy aimed to comprehensively address the management of childhood illnesses and promote the well-being of children in PNG. The IMCI clinical guidelines were also updated with HIV/AIDS management, breastfeeding assessment, WHO growth standards, malaria diagnosis and treatment procedures.<sup>xxv</sup> The IMCI programme has demonstrated a notable impact on the management of childhood illnesses, which has provided strong support for the DOH’s decision to adopt and implement IMCI throughout the country.<sup>xxvi</sup>





Photo by Asia Development Bank

## THE PHILIPPINES

As of 2019, 60 out of 81 endemic provinces have been declared malaria-free, while 43 out of 46 endemic provinces have been declared filariasis-free in the Republic of the Philippines. In January 2021, the DOH issued guidelines for the establishment of Integrated Elimination Hubs for Malaria and LF to sustain disease-free zones in provinces and cities. These hubs serve as central reference centres, overseeing and maintaining malaria-free and filarial-free statuses across different regions.<sup>xxvii</sup>

In the Philippines, infectious diseases fall under the service delivery pillar of “FOURmula One Plus for Health” focused on boosting UHC. Under this pillar, Integrated Elimination Hubs cover five diseases, including both malaria and LF which are co-endemic in most provinces and share a common vector *Anopheles flavirostris*. Numerous strategies and activities, such as IVM and border operations, are conducted for both Malaria and LF through these hubs.

The Philippine Integrated Disease Surveillance and Response (PIDSRS) system was established to streamline multiple disease surveillance systems into one unified national disease surveillance system with the aim to improve efficiency and effectiveness in providing timely, accurate and relevant information for decision-making. Prior to the establishment of PIDSRS, there were four major disease surveillance systems – each with their own data collection and reporting flows, hardware and software requirements, and procedures for processing and analysing at different levels. This had resulted in inefficiencies, redundancies, and duplication of efforts. Hence, the updated, institutionalised, and functional PIDSRS system provides a more rational basis for decision-making and implementation of public health interventions that effectively respond to priority diseases and events.<sup>xxviii</sup>

# Benefits of disease integration



Photo by Jonas Gratzler

The effective integration of malaria control with other health programmes requires strong coordination among government agencies, NGOs and international partners. Additionally, clear policies, regular monitoring and evaluation, strengthened community engagement and resilient health systems play crucial roles in the success of these integrated efforts. Adapting integrated strategies to the specific needs and challenges of each country is essential for achieving sustainable and positive outcomes.

**Resource efficiency:** Combining resources and efforts for multiple diseases can lead to cost savings and more efficient use of healthcare resources. Diseases which affect the same populations often have similar infrastructure and resource requirements. Thus, integrating programmes can reduce duplication of resources.

**Strengthened health systems:** Integrating malaria programmes with other health programmes can help strengthen overall health systems. Expanding laboratory and diagnosis services, training healthcare workers and improving infrastructure can enhance the capacity of healthcare systems to manage multiple diseases efficiently.

**Increased access to healthcare:** Integrating services for multiple diseases can increase access to healthcare for communities in underserved areas. People can access multiple services at once, leading to earlier diagnosis and treatment for a range of common illnesses.

**Improved health outcomes:** Many VBDs as well as other diseases share common risk factors or transmission pathways. By addressing these shared risk factors with joint approaches, integrated programmes can lead to improved health outcomes for multiple diseases.

**Cross-sectoral partnerships:** Many aspects of health – including child survival interventions and childhood illnesses – are interrelated. Integrated programmes can facilitate collaboration with other sectors to address underlying determinants of diseases. Partnerships between governments, NGOs, donors, and community-based organisations are crucial for successful integration.

**Improved surveillance and data management:** Integrated data management can lead to a more comprehensive understanding of disease dynamics and trends as well as early detection of outbreaks which enable quick, effective responses and more informed decision-making.

**Sustainable impact:** Integrated health programmes are more sustainable in the long term because they build on existing infrastructure and community engagement. This is adaptable to evolving health challenges and can lead to continued success in disease control and elimination.

Integrated programming maximizes the use of resources, improves healthcare access, and ultimately leads to better health outcomes for communities. Integrating malaria programmes with other disease programmes can lead to more efficient and effective healthcare delivery, improved health outcomes, and a stronger and sustained healthcare systems allowing countries to achieve the SDG targets and support a holistic approach to UHC in the Asia Pacific region.

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