

MALARIA ELIMINATION AMIDST COVID-19:

A TEST OF RESILIENCE IN ASIA PACIFIC

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FOREWORD



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Two years of navigating the COVID-19 pandemic has brought about far-reaching changes to global health and development efforts against our most pressing challenges.

Our malaria fight is no exception. When the pandemic first took hold in Asia Pacific, we were flooded with concerns: What will happen to surveillance? How will bed net distributions, campaigns, and supply chains for key commodities such as diagnostics and anti-malarials be affected? Will we be able to protect our critical frontline workers, many of whom work in rural and hard-to-reach communities? Global institutions including the World Health Organization, the Global Fund and the Bill and Melinda Gates Foundation have also shared modelled projections based on possible levels of disruptions to malaria services, all pointing to likely reversals in progress.

Two years on, especially as the uncertainty of COVID-19 and its new variants is continuing to affect the global response, it is still too early to know the aggregate impact of the pandemic on our collective elimination trajectory. Nonetheless, some data is available. In partnership with national programmes across Asia Pacific, we set out to learn more, from both a qualitative and quantitative perspective, to help contribute to understanding the impact of COVID-19 in our vast region. In developing this report, we sought counsel and guidance directly from the countries we serve.

As we spoke with the national malaria programmes and on-the-ground partners from around the region, what we found was more hope than despair.

Despite the disruptions the pandemic caused, we saw marks of remarkable resilience across the region. China managed to attain malaria-free status in June this year. Afghanistan, Bhutan, Cambodia, DPRK, the Lao People's Democratic Republic, Malaysia, Nepal, the Republic of Korea, Timor Leste, Vanuatu and Vietnam all reported zero indigenous malaria deaths in 2020. Many of these countries also exceeded the World Health Organization (WHO)'s Global Technical Strategy (GTS) targets of reducing malaria cases and deaths by at least 40% by 2020. Even India, one of the region's highest-burden countries reported a drop of close to 45%, from 338,494 in 2019 to 186,532 in 2020.



Photo by John Rae/Global Fund

At the same time, there remain countries in the region – especially those with already fragile health systems and/or where humanitarian crises have broken out – that demand doubling down on support and attention. The WHO's 2021 World Malaria Report show, for example, that Papua New Guinea experienced a jump in cases by 16% from 646,648 in 2019 to 750,254 cases in 2020. Meanwhile, political upheavals in Myanmar and Afghanistan this year have severely impacted the capacity of programs to even keep up with basic malaria services. All will require a renewed focus and thoughtful, tailored problem-solving informed by their contexts to ensure they can get back on track.

But we should also celebrate the positive. COVID-19 has showed us what is possible in terms of both gathering and using local data—a perennial struggle across global health endeavours. During this pandemic, the sharing of real-time data has now been normalized. This can be harnessed towards boosting surveillance capabilities, tackling last mile issues like cross-border malaria in near elimination countries as well as improving programming in high burden

settings. Moreover, sub-national and national programs have innovated to ensure they stay on track through a variety of means as described in the pages that follow.

We must continually remind ourselves that malaria has been eliminated from forty countries in the world, many with fewer tools and interventions than we have available today. Malaria elimination by 2030 in Asia Pacific is still within reach provided we sustain political commitment to malaria elimination at the highest levels. In addition, we must make sure programs (and the funding that support them) remain agile in adapting and integrating responses to evolving threats while fighting malaria.

It not clear yet if we have turned a corner in this pandemic. What is clear, however, and as reflected in this report, is that we have the tools and resilience to defeat malaria even amidst extraordinary uncertainty. Let us not lose hope but, rather, draw inspiration from the strength evidenced in this report. We must keep the light alive in our collective journey to eliminate malaria from Asia Pacific by 2030.

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ABBREVIATIONS.

AMC	Anti-malaria Campaign, Sri Lanka
API	Annual Parasite Index
APMEN	Asia Pacific Malaria Elimination Network
BCC	Behaviour Change Communication
CAGs	Community Action Groups
CHAI	Clinton Health Access Initiative
CMPE	Centre for Malaria, Parasitology and Entomology, Lao PDR
CNM	National Center for Parasitology, Entomology and Malaria Control, Cambodia
CSOs	Civil Society Organisations
DMC	Directorate of Malaria Control, Pakistan
EAS	East Asia Summit
FATA	Federally Administered Tribal Areas
FTAT	Focal Testing and Treatment
GTS	Global Technical Strategy for Malaria
HBHI	High Burden to High Impact
IEC	Information Education Communication
IRS	Indoor Residual Spraying
LLIHNS	Long-lasting Insecticide-treated Hammock Nets
LLINs	Long-lasting Insecticide Nets
Lao PDR	Lao People's Democratic Republic
MCO	Movement Control Order
MEDP	Malaria Elimination Demonstration Project, India
MMWs	Mobile Malaria Workers
MoH	Ministry of Health, Cambodia
MTAs	Merged Tribal Areas
NFME	National Framework for Malaria Elimination, India
NGOs	Non-governmental Organizations
NTT	Nusa Tenggara Timur, Indonesia
NVBDCP	National Vector Borne Disease Control Programme, India
Pf	Plasmodium falciparum
POR	Prevention of Re-establishment
PPE	Personal Protective Gear
Pv	Plasmodium vivax
TDA	Targeted Drug Administration
UNICEF	United Nations International Children's Emergency Fund
VHWs	Village Health Workers
VMWs	Village Malaria Workers
WHO	World Health Organization

EXECUTIVE SUMMARY.

Over the past decade, countries in Asia Pacific have more than halved the number of annual malaria cases and moved towards eliminating the disease.

However, as the COVID-19 pandemic made its way across the region in early 2020, countries quickly found themselves faced with unprecedented challenges and disruptions to malaria-related services. As priorities suddenly shifted to the evolving emergency, national malaria programmes saw their capacity to deliver on malaria control, surveillance and case management strained, while lockdowns, border closures and the fear of contracting COVID-19 further challenged progress. Health systems—many already fragmented before the pandemic—faced the dual burden of combatting malaria while also managing new COVID-19 infections. Humanitarian crises that erupted during the pandemic—as they did in Myanmar and Afghanistan—further compounded these burdens.

Comparing the experiences from across the region throughout the pandemic so far, however, three core areas of remarkable resilience emerge: strong leadership commitment, timely adaptation of malaria interventions, and the successful integration of COVID-19 and malaria responses.



1. Strong leadership commitment

Some countries swiftly re-prioritised their goals for malaria elimination, demonstrating exemplary commitment at the top levels of government. **Malaysia**, for example, very early issued an Administrative Order with clear guidelines on continuing malaria interventions, demonstrating sustained leadership and commitment that have been key to its success in maintaining its “zero indigenous human malaria” status. Undeterred by the restrictions COVID-19 imposed, **Lao PDR** sustained its commitment to accelerating plans, rolling out new malaria elimination strategies and efforts. In **India**, persistent commitment at both the national and sub-national levels meant key malaria elimination projects across various states overcame initial challenges to continue reducing cases.

2. Timely adaptation of malaria interventions

Movement restrictions and border closures amidst the pandemic called for innovative approaches to ensure the continuity of malaria interventions. By appointing a dedicated COVID-19 and malaria task force, **Cambodia** rolled out video training for village malaria workers (VMWs) on protocols for diagnosing COVID-19 and malaria and put in place stock rotation plans to mitigate disruptions. **Pakistan** swiftly adapted its distribution and training strategies for malaria, adopting a whole-of-society approach to campaigns for distributing long-lasting insecticide nets (LLINs) to and prevent outbreaks in tribal districts with high malaria incidence. In the Pacific, the **Solomon Islands** managed to leverage community networks to ensure that household delivery of LLINs continued.

3. Successful integration of COVID-19 and malaria responses

Several countries were also able to leverage the overlap between COVID-19 and malaria responses to optimize limited resources. In **Sri Lanka**, a country working to prevent reintroduction of malaria after successfully eliminating it, strong cross-ministry coordination saw the successful integration of new COVID-19 quarantine procedures for international arrivals and ongoing surveillance efforts for potential imported malaria cases. In **Bhutan**, Community Action Groups (CAGs)—originally created to work among communities in border and remote areas—were revitalised and trained alongside additional community champions and village health workers (VHWs) to ensure delivery of both COVID-19 and malaria efforts. Likewise, in **Indonesia**, health officials in several high-burden provinces mobilized their sub-national budgets and integrated screening and testing procedures for both COVID-19 and malaria.

While pockets of the region demonstrated remarkable resilience, gaps still remain elsewhere. These gaps are wider in countries such as Afghanistan and Myanmar, where conflict and humanitarian crises still exist. As the region continues to respond to COVID-19 and prepare for future health emergencies, it will be critical that each country’s leadership sustain its commitment to eliminating malaria to adapt its interventions and swiftly integrate its response.

There is no room for complacency: 2.5 billion people in Asia Pacific are still at risk of contracting malaria. We need to maintain momentum against malaria to ensure lives are saved, health workers are supported, and progress is not lost—and that we stay on track to eliminate malaria by 2030.



BACKGROUND

Objectives

At the ninth East Asia Summit (EAS) in 2014, 18 heads of government committed themselves to the goal of achieving a malaria-free Asia Pacific by 2030, and later by 4 additional Heads of State in 2018. Accelerated by these commitments, the region has made substantial progress against malaria, more than halving the number of malaria cases in the region since 2010. However, the COVID-19 pandemic has posed significant challenges to national malaria programmes around the region, calling into question if and how previous gains can be sustained.

This report thus seeks to:

- Generate evidence on the impact of COVID-19 on malaria in Asia Pacific;
- Share resources with countries to tackle COVID-19 while maintaining efforts against malaria;
- Highlight key lessons from malaria applicable to the fight against COVID-19; and
- Offer lessons in strengthening health security and health systems for the post-COVID world.

THE DUAL FIGHT: MALARIA & COVID-19 IN ASIA PACIFIC.

The COVID-19 pandemic has had a devastating impact across the globe. Since the first case was identified at the end of 2019, the world has seen over 263 million cases and more than five million lives lost^[1].

With widespread disruptions to businesses and jobs, the pandemic has also brought with it immense social and economic cost and has disproportionately impacted the poor and vulnerable^[2]. More than two years on, case numbers show little to no signs of abating, especially with new variants of concern—most recently the Omicron variant—still emerging.

The Asia Pacific region's experience with COVID-19 has been uneven. On one hand, the timely development of effective tracing systems, quarantine guidelines and strong public adherence to social-distancing measures helped much of the region contain the pandemic in 2020. This year, however, the region has been hit hard by the more infectious Delta variant, resulting in much larger waves of COVID-19 infection that have challenged the effectiveness of the testing-tracing-isolation strategy^[3]. Limits on the availability and infrastructure for vaccines combined with vaccine hesitancy have resulted in unequal vaccination rates around the region. The persistence of the pandemic is expected to prolong social and economic stress—slowing economic growth and increasing inequality.



Photo by John Rae/Global Fund



Photo by John Rae/Global Fund



Even before the COVID-19 pandemic struck, global gains against malaria had levelled off. Thanks to the hard work of public health agencies in malaria-affected countries, the worst projections of COVID's impact have not come to pass. Now, we need to harness that same energy and commitment to reverse the setbacks caused by the pandemic and step up the pace of progress against this disease.

Dr. Tedros Adhanom Ghebreyesus,
WHO Director-General

The pandemic has also threatened gains made against other infectious diseases, including malaria. Given competing priorities and limited resources, the pandemic quickly strained the capacity of national malaria programmes to implement vector control strategies and perform active surveillance and case management^[4]. This was compounded by movement restrictions and fears of contracting COVID-19 among both health workers and the public. The Global Fund's [snapshot of 502 health facilities](#) across Africa and Asia, published earlier this year, showed that in seven countries¹ across Asia, malaria diagnoses fell by 56% and treatment services by 59% between April and September 2020, compared to the same period in 2019^[5].

While the situation continues to evolve, models of the pandemic's potential impact on eliminating malaria project significant increases in malaria cases and deaths^{[6][7][8]}. A [World Health Organization \(WHO\) study](#) on the impact of health disruption on malaria in sub-Saharan Africa considered several scenarios for minor to major disruptions to malaria services. The worst-case scenario projected a potential increase of 23% in malaria cases and a 102% increase in deaths^[6]. A separate study by Alexandra Hogan and colleagues published on [The Lancet Global Health](#) projected that low-and-middle income countries could see an increase in malaria deaths of as much as 36% over five years, depending on what mitigation and suppression activities are adopted^[7]. Yet another study, published by the Bill and Melinda Gates Foundation as part of its [Goalkeepers initiative results](#), shared a similar finding: under its "worst-case scenario," global cases of malaria would rise by 35.5%. Even in its "better" scenario, global progress was projected to lag substantially^[8].

Fortunately, though COVID-19 has undoubtedly challenged the significant progress made towards malaria elimination in the past decade, the WHO's latest World Malaria Report 2021 tells us that the worst-case scenario has been averted. Demonstrating remarkable resilience even amidst the unprecedented disruptions, several countries in Asia Pacific managed to achieve their national and regional malaria targets. The remaining sections of this report lay out the key themes for resilience that have emerged across the region during the COVID-19 pandemic.

¹Bangladesh, Cambodia, India, Indonesia, Lao PDR, Pakistan and the Philippines

NOTE ON METHODOLOGY

The information used in this report is based on both primary and secondary data sources. Primary sources include semi-structured interviews and consultations with representatives of national malaria programmes and partner organisations, as well as webinars with Asia Pacific Malaria Elimination Network (APMEN) partners. Secondary sources include the examination and review of peer-reviewed research articles, impact reports, reports in reputable media, and government evaluation reports. The data collected as part of this report reveals the gaps and challenges in the surveillance of malaria; the financing, human resources, policies and supply chain for delivering anti-malaria strategies; how these have been adapted

to tackle the pandemic; and the effect of COVID-19 on malaria elimination goals. The case studies included are not intended to be regionally representative.

The data dashboard presented under each country snapshot covers key COVID-19 and malaria data reported as of October 2021 where possible. The monthly confirmed malaria cases were collected either directly from national programmes or accessed using epidemiology reports made available online by the WHO. Annual indigenous cases and malaria deaths for 2020 are shared as reported in the WHO's World Malaria Report 2021. COVID-19 data have been sourced from *Our World in Data*.

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LEADERSHIP COMMITMENT

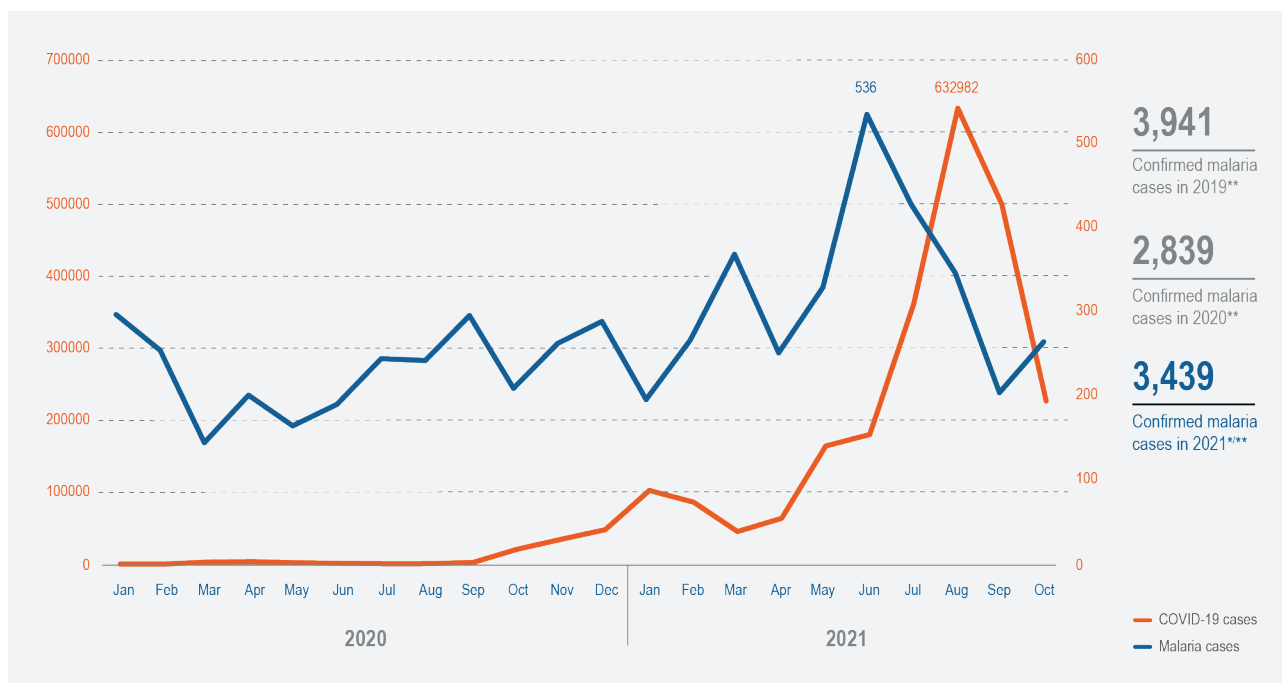
Across the Asia Pacific region, the impact of COVID-19 on the malaria elimination is still being mapped. The different stages of the pandemic in different countries, combined with recurring waves and newer variants, continue to pose challenges. Most countries are still responding and recovering from the pandemic and so little is known about their strategies for preparing for and mitigating malaria future waves of COVID-19 or other health threats.

Despite the overwhelming impact of the pandemic on health systems, some countries swiftly re-prioritised their strategies for malaria elimination. These initiatives involved a commitment by the leadership to sustain malaria elimination activities while battling the novel coronavirus,

despite stretched health systems, and an impending economic crisis. These countries championed the cause at national and/or sub-national levels by releasing clear, malaria-specific executive orders and guidelines. They ensured continued surveillance and case management of vector-borne diseases, implementation of vector-control measures, customization of malaria interventions to dovetail with COVID-19 measures and protocols and carried out robust communication and advocacy campaigns to empower communities.

Below is a snapshot of such efforts in Malaysia, Lao PDR, and India.

MALAYSIA.



Malaysia continued to maintain zero indigenous malaria cases despite a rapid rise in COVID-19 cases during the last quarter of 2020.

0

indigenous cases
since 2018

0

malaria deaths
since 2018

2,471,642
7.64% of the population

COVID-19 cases*

28,912

COVID-19 deaths*

*As of October 2021

**This includes zoonotic malaria cases, which have been the majority of malaria cases in Malaysia; the remaining cases are imported human malaria cases.

Sustained leadership and political commitment, alongside swift innovation and integration, contributed to Malaysia's success in maintaining its "zero indigenous human malaria" status.

Malaysia has come a long way in the prevention and control of malaria since it introduced its Malaria Eradication Program in Sabah and Sarawak in 1961, and in 1967 in peninsular Malaysia. From a malaria case count of close to 10,000 in 2000, it had halved that number within a decade. By 2018, Malaysia marked its first year with no indigenous cases of malaria caused by human malaria parasites. Having maintained this status for three consecutive years, Malaysia is on track to receive its malaria-free certification from the WHO and has already initiated activities for the prevention of malaria's re-introduction.



Implemented MCO

to contain the
COVID-19 virus' spread

Impact of COVID-19 on malaria

On 18 March 2020, within weeks of the country's first COVID-19 cases, the government implemented a Movement Control Order (MCO) to contain the virus' spread. The Order had four phases—conditional, recovery, enhanced and targeted—that impacted the implementation of many public health initiatives, including malaria elimination, to varying extents. The MCO posed restrictions on the movement of malaria health workers as well as on individuals' and communities' access to health services. Unable to enter houses to conduct control activities such as indoor residual spraying (IRS), there was an

immediate interruption of malaria service delivery. Similarly, with restrictions to mass gatherings, bed nets distributions were ceased^[2]. Ensuring there was sufficient resources to protect healthcare workers from COVID-19 infections also proved challenging, especially given personal protective equipment (PPE) shortages in the early phases of the pandemic. The pandemic also took a toll on the mental health of many healthcare workers, which was exacerbated by the evolving epidemiology of COVID-19 and in turn, changes in MCO instructions from the government^[2].



Photo from APLMA-APMEN image library



Despite all the challenges faced during the COVID-19 pandemic, Malaysia managed to sustain zero indigenous human malaria transmission in the country. This achievement could be partly attributed to the strong political commitment and programmatic leadership at the national level in guiding the mid-level managers and implementers at the ground level. In doing so, critical interventions for malaria were not interrupted and the gains that have been achieved could be maintained.

Dr. Jenarun Jelip
Sector Head for Vector
Borne Diseases,
Ministry of Health, Malaysia

Holistic commitment towards malaria elimination

Given the country's impressive "zero malaria" status since 2018, throughout the pandemic the Malaysian National Malaria Control Program remained committed to working with programme managers at the state level, and leveraging guidance from the WHO to ensure that essential steps to prevent and control malaria were continued^[3].

Demonstrating strong national level commitment, the Deputy Director-General of Health (Public Health), Ministry of Health Malaysia, issued administrative order within weeks of the country's first MCO providing clear guidelines on how malaria reporting, as well as vector-control programmes, were to continue. This order was particularly important given the role prompt diagnosis, treatment and surveillance in hard-to-reach regions have played in Malaysia's successful elimination of malaria. In line with the administrative order, the Ministry deployed innovative malaria prevention strategies during while the MCOs were in force, modifying critical malaria prevention and control activities in the field to reflect the location of COVID-19 hotspots and different MCO requirements.

Customizing malaria interventions to the situation at hand: One critical aspect of Malaysia's modified malaria prevention strategy was around vector-control management. As IRS requires health workers to enter homes, and because movement restrictions prevented mass distribution of nets, Malaysia started house-to-house distribution of LLINs. This strategy avoided community gatherings and maintained social distancing while ensuring that malaria prevention campaigns continued. For other key malaria elimination activities, including routine case detection with malaria screening among high-risk groups and case management, the Ministry of Health ensured no interruptions but mandated and regularly updated COVID-19 precautions to protect health workers and citizens. As Dr. Jenarun Jelip, Sector Head for Vector Borne Diseases at Malaysia's Ministry of Health said: "It was important that the ground staff were continuously updated on the COVID-19 situation and implementation of some key malaria interventions were modified to mitigate risk of COVID-19 infection." Equally critical was ensuring the continued supply of key malaria commodities, such as diagnostic equipment and antimalarial medicines.

Communication and advocacy to sustain malaria elimination goals: To keep the spotlight on malaria elimination efforts during the pandemic, Malaysia also launched a communications and advocacy campaign around World Malaria Day 2020, with messages that reinforced the country's commitment to maintaining progress despite the pandemic. At the national level, senior officials were mobilized for media and broadcast efforts, in addition to social media campaigns at the state level.

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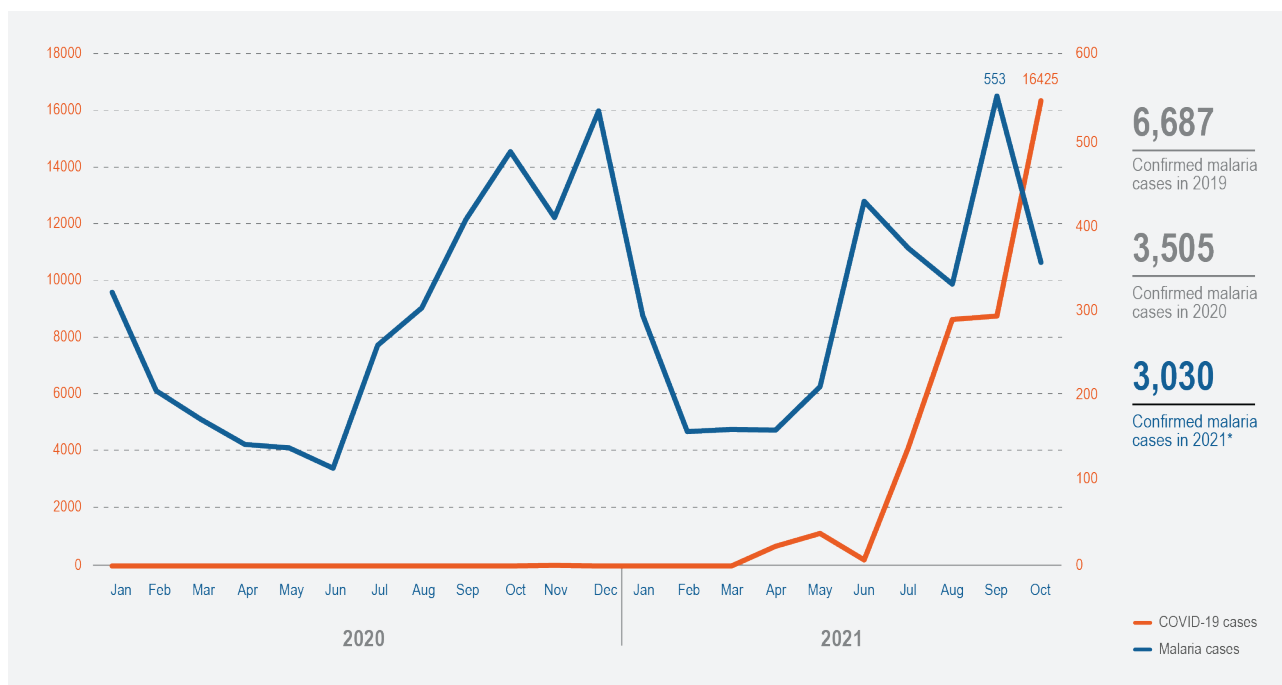
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LAO PDR.



While malaria cases decreased by close to 50% in 2020, in mid-2021 Lao PDR experienced a spike in malaria cases mainly due to early rainfall.

48%
Drop

in indigenous malaria cases in 2020

0

malaria deaths since 2019

40,271
0.55% of the population

COVID-19 cases*

65

COVID-19 deaths*

*As of October 2021

Undeterred by the restrictions COVID-19 imposed, Lao PDR demonstrated sustained commitment to accelerating its malaria-elimination plans, rolling out new strategies and efforts throughout the pandemic.

Lao PDR has made impressive progress towards eliminating malaria in the past decade, slashing annual cases from 6,593 in 2010 to 24,036 in 2019^[1]. Even during the pandemic, the country achieved a 48% year-on-year decline in malaria cases in 2020 (3,504 cases). Ninety-five percent of cases were concentrated in five southern provinces—Savannakhet, Saravane, Sekong, Champasack, and Attapeu^[2]. In addition, the country reported no deaths from malaria in 2019 and 2020^[2]. In 2021, however, Lao PDR suffered an 18% increase in malaria cases in the first 9 months, compared to the same period in 2020^[3]. The increase has been attributed to early rains, which prompted a correspondingly earlier start to planting—traditionally a trigger for increased malaria infections. Lao PDR has committed to eliminating *Pf* by 2023 and to eliminating all other forms of malaria by 2030.



Introduced

remote virtual training
and electronic collection
of data

Impact of COVID-19 on malaria

Lao PDR was spared from the pandemic initially, with only 41 imported cases and no local transmissions reported in 2020. The exceptionally small number of cases meant there were limited disruptions to malaria services, though malaria programmes across the country took precautionary measures against COVID-19. Remote, virtual training and electronic collection of data were introduced, and all in-person training and supervisory visits were postponed. Some travel was permitted to ensure that focused responses continued, albeit with delays, and that the supply

of commodities flowed uninterrupted. Meetings with civil society organisations (CSOs) were held regularly to coordinate deliveries and malaria testing decreased only slightly.

In April, however, Lao PDR experienced a COVID-19 outbreak, with 555 cases reported in 15 provinces. The curve grew steeply and as of 31 October, the country had reported more than 40,000 cases and 65 deaths. Vaccination rates remain low, with only 38% of the total population fully vaccinated as of 28 October^[5].



Photo by Justin Kong



Photo by Justin Kong

Sustained commitment to accelerating malaria efforts amidst the pandemic

Although Lao PDR experienced malaria outbreaks in 2021 due to early rainfall, its malaria programme responded quickly to control them. Thanks to strong commitment by the programme leaders, the country continued to implement intensive malaria interventions and pilot planned acceleration strategies for achieving its target of *Pf* elimination by 2023.

‘Accelerator strategies’ in residual hotspots: Despite intensified intervention, hotspots persist. Since July, the Centre for Malaria, Parasitology and Entomology (CMPE) has been rolling out ‘accelerator strategies’ to eliminate *Pf* in five villages in Boualapha province where malaria numbers have remained largely unaffected by earlier intervention. The strategies include staff training, community engagement and social mobilization, distribution of LLINs and long-lasting insecticide-treated hammock nets (LLIHNS), targeted drug administration (TDA) for those aged seven to 49, intermittent preventive treatment for forest- and field-goers and house-to-house fever screening every two weeks^[6]. Thanks to this programme, the villages recorded only one malaria case between August and October in 2021, representing a 95% reduction compared to the same period of 2020.

SMS reporting pilot: Since January 2021, CMPE has also started a pilot reporting system that uses SMS text messaging in high-burden areas. The new system allows compilation of data weekly instead of monthly, enabling faster identification of outbreaks and faster response.

These 2021 pilots build on the momentum of initiatives rolled out over the past two years. The malaria programme targeted high-risk, forest-going people in 200 of the highest burden villages with biweekly focal testing and treatment (FTAT). This was complemented by disseminating IEC materials in collaboration with the villages’ chiefs and malaria workers. Procurement and supply-chain capabilities were strengthened so that health facilities remained stocked and technical assistance given to high burden provinces for programme implementation.

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INDIA.

India is a federal union of 36 States/Union Territories. Despite challenges, India has made great strides in the past two decades towards eliminating malaria. Since 2001, India achieved a reduction of over 91% in malaria morbidity and mortality as reported by the programme. In 2020, India was the only HBHI (High Burden to High Impact) country that reported a decline in malaria cases as compared to 2019^[1]. Malaria cases are concentrated primarily in five states—Chhattisgarh, Odisha, Jharkhand, Mizoram and Tripura. Odisha State, India's highest malaria burden state, reduced malaria cases by more than 80% between 2017 and 2018 and has emerged as an innovative leader in rapidly saving lives and reducing malaria cases and their toll on rural health systems. Odisha's progress is serving as a success model for other high malaria burden states and regions to follow.

Ending malaria remains a top government priority in India. In 2016, India introduced its first National Framework for Malaria Elimination (2016-2030) to eliminate malaria by 2030. The state governments adapted their malaria elimination strategies and pursued tailored sub-national malaria initiatives such as the Malaria Elimination Demonstration Project in Madhya Pradesh, Durgama Anchalare Malaria Nirakaran (DAMaN) project in Odisha, and Malaria-free Bastar Movement in Chhattisgarh.

Impact of COVID-19 on malaria

Since the onset of the COVID-19 pandemic, the health delivery services related to non-COVID health issues, including vector borne diseases such as malaria, have been affected similar to the trend observed across the world. India's health system struggled to respond to other febrile diseases, including malaria. As the pandemic raged, febrile patients often hid their symptoms to avoid social stigma and mandatory quarantine^[2]. India reported reductions in malaria burden between 2019 and 2020, although the rate of reduction was lower than it had been before the pandemic^[1].

Persistent commitment and targeted rollouts

To sustain efforts towards eliminating vector-borne diseases during the COVID-19 pandemic, the Ministry of Health and Family Welfare in October 2020 released its "Guidelines for the management of co-infection of COVID-19 with other seasonal epidemic-prone diseases"^[3]. The new guidelines recommended that all fever cases diagnosed with COVID-19 also be tested for malaria and dengue, particularly during and after the monsoon.

Several initiatives were also adapted to successfully achieve their goals despite the pandemic as shared below:

Continued LLIN distribution in Mizoram and Tripura: Since 2009, India's National Vector Borne Disease Control Programme (NVBDCP) has been expanding the coverage of LLINs with an aim of covering all sub-centres¹ with an Annual Parasite Index

(API) higher than two. During the first wave of the pandemic in 2020, the high-burden states of Mizoram and Tripura distributed 414,197 LLINs within five weeks and 924,743 LLINs within eight weeks, respectively, to vulnerable populations^[4].

Malaria-free Bastar Movement, Chhattisgarh: The state of Chhattisgarh in early 2020 launched a dedicated malaria elimination movement in Bastar—a district that has one of the highest malaria rates in the state. The Malaria-free Bastar Movement (Malaria Mukta Bastar Abhiyaan), which was conducted in three phases, focused on active surveillance and case management, monitoring vector control activities, source reduction, and Information Education Communication (IEC)/Behaviour Change Communication (BCC).

Malaria Elimination Demonstration Project (MEDP), Madhya Pradesh: A public-private partnership commenced in 2017, and was tasked with eliminating indigenous malaria from the high-endemic tribal district of Mandla, Madhya Pradesh. In March 2020, when the pan-India lockdown was implemented, MEDP staff were granted special emergency worker status and asked to assist with COVID-19 related work while they were perusing malaria related work. In collaboration with the state government and ICMR, the project was able to sustain its gains and achieve a 91% reduction in indigenous malaria cases during 43 months of operations^[5] and an overall 70% reduction in malaria cases between 2017 and 2020 in Mandla district.

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^[1]World Health Organization 2021. World Malaria Report 2021. <https://www.who.int/teams/global-malaria-programme/reports/world-malaria-report-2021>

^[2]Mohan M, Jayanthi SM 2021. Knowledge, Attitude and Practices during Novel Corona Virus Pandemic.

^[3]Ministry of Health and Family Welfare, Government of India 2020. Guidelines for management of co-infection of COVID-19 with other seasonal epidemic prone diseases. Directorate General of Health Services. <https://www.mohfw.gov.in/pdf/GuidelinesformanagementofcoinfectionofCOVID19withotherseasonalepidemicpronediseases.pdf>

^[4]World Health Organisation 2021. With large case reductions, India moves closer to zero malaria by 2030. <https://www.who.int/india/news/feature-stories/detail/with-large-case-reductions-india-moves-closer-to-zero-malaria-by-2030>

^[5]Rajvanshi H, Mishra K, Bharti PK, Sandhibigraha D, Nisar S, Jayswar H, Das A, Pradhan MM, Mohapatra PK, Govil PJ, Kshirsagar N. Learnings from two independent malaria elimination demonstration projects in India. *Transactions of The Royal Society of Tropical Medicine and Hygiene*. 2021 Nov;115(11):1229-33.



ADAPTATION OF MALARIA INTERVENTIONS DURING THE PANDEMIC

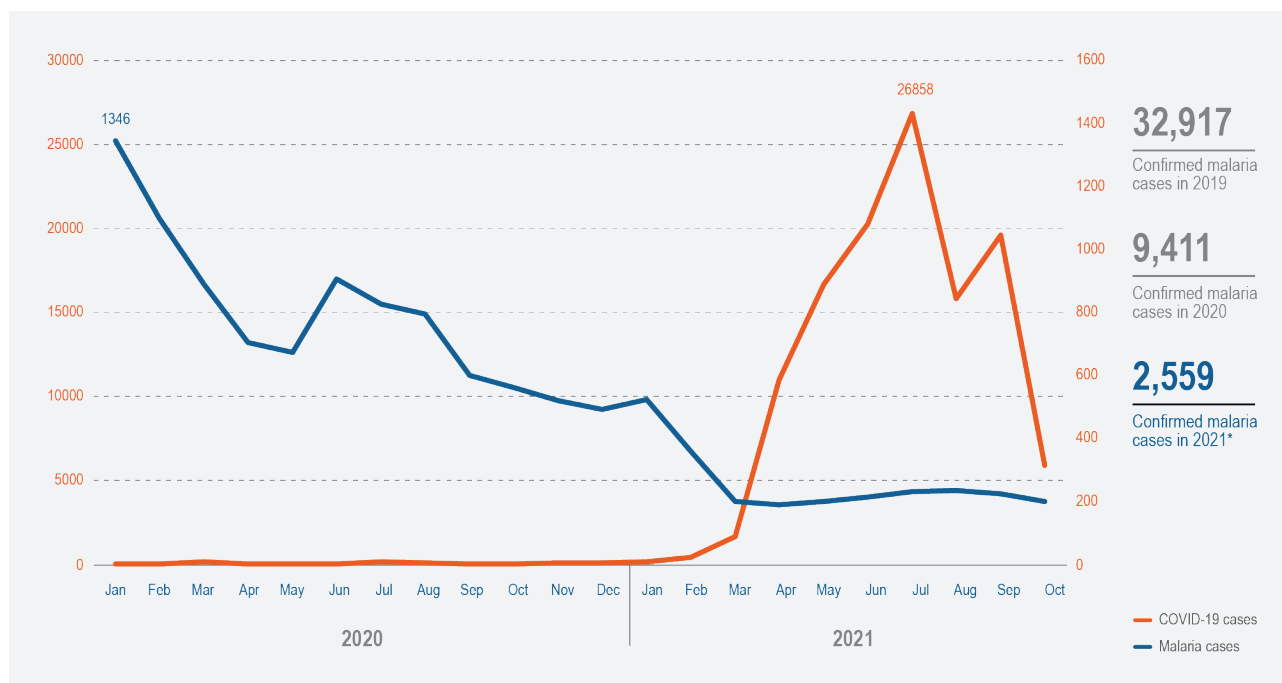
The COVID-19 pandemic halted several malaria control interventions in the region, including large-scale campaigns for distributing LLINs. Challenged by delays in international shipping and restrictions on movement locally, many programmes ran out of stocks, delaying diagnosis and treatment. In addition, fear among health workers and the public of catching Covid-19 required innovative approaches to ensuring that malaria cases were still reported.

Across the Asia Pacific region, several national malaria programmes adapted their strategies to mobilize

community resources and deploy malaria services despite these challenges. The active involvement of village health workers, mobile malaria workers, church groups and community volunteers kept disruptions of key service to high-risk populations to a minimum. Additionally, backup plans for supply chain disruptions, malaria-specific task forces and multi-sectoral approach were also developed across the region.

Below is a snapshot of such efforts in Cambodia, Pakistan, and the Solomon Islands.

CAMBODIA



Malaria cases decreased by over 70% in 2020 and progress was sustained even after COVID-19 cases rose in 2021.

70%
Drop

in indigenous malaria cases in 2020

0

malaria deaths since 2018

118,522
0.71% of the population

COVID-19 cases*

2788

COVID-19 deaths*

*As of October 2021

Video training of village health workers on malaria and COVID-19 diagnosis protocols, appointment of a dedicated task force, and mitigation plans were key to ensuring that malaria programmes maintained control activities.

Cambodia has seen a steep decline in annual malaria cases, from 106,228 in 2010 to 9,411 in 2020, and zero deaths since 2018^[1]. Malaria transmission in Cambodia is now largely concentrated in forested areas covering almost half of the country. Adult males are at highest risk of contracting malaria and constituted 81% of total malaria cases in 2020^[2].



0.60

country's annual parasite index (API) in 2020



76%

decline in Pf and mixed cases

Impact of COVID-19 on malaria

Cambodia kept COVID-19 largely at bay in 2020 but since March has seen a surge in COVID-19 cases and deaths since March 2021. Strict lockdowns and curfews have since been implemented in various provinces, including the closure of educational institutions and entertainment venues, as well as limitations on religious gatherings and celebrations. The Ministry of Health (MoH), along with partners, have also been engaging communities proactively to reduce transmission.

While the pandemic did not initially hamper Cambodia's malaria control efforts, meetings of the elimination task force were eventually affected at the national, provincial and district level. Both the supervision of village malaria workers (VMWs) by national malaria program as well as civil society organisations (CSOs) and stakeholder coordination were also hindered by increased rates of COVID-19 infections. Supervisory visits by national authorities to the provinces were either cancelled, postponed or conducted virtually.



Photo by John Rae/Global Fund

Adapting strategies to sustain momentum

In April 2020, within weeks of the country's first COVID-19 cases, Cambodia's National Center for Parasitology, Entomology and Malaria Control (CNM) developed a guidance document to ensure continuity of malaria services, detailing measures to mitigate risks posed by the pandemic. CNM used savings from the country's Global Fund allocation to buy PPE, masks, sanitisers, mobile phone credit, thermometers, and disinfectants for VMWs and mobile malaria workers (MMWs). Cambodia also used its Global Fund allocation to conduct online training.

As a result, monthly testing rates have remained stable, and the country's API fell from 2.1 in 2019 to 0.60 in 2020^[3]. Cambodia also reported a 76% decline in Pf and mixed cases and a 70% decrease in *Plasmodium vivax* (Pv) cases in January-July 2021 compared with the same period in 2020^[4].

Cambodia also implemented several adaptive strategies to maintain its progress toward eliminating malaria despite the pandemic.

COVID-19 and malaria task force: To ensure the continuity of malaria services, the MoH established a COVID-19 and kept activation of malaria task force to review and compare the locations of malaria cases and COVID-19 clusters, undertake risk assessments, highlight challenges to malaria control there and devise solutions.

Video modules for training of VMWs: Due to the prohibition on large gatherings to control the spread of COVID-19, Cambodia developed video modules for safer training of VMWs during the pandemic. VMWs and MMWs are already equipped to use mobiles/tablets to report from the field to the national surveillance system, so video training was a feasible option. The CNM also developed tools to help VMWs decide who to test for malaria and who to refer to the Health Centre for COVID-19 testing. This cadre of health workers was also crucial in educating communities about the real risks of COVID-19.

Stock management: To reduce the risk of spreading COVID-19, VMWs made individual trips to health centres to replenish supplies rather than travel in groups. CNM also developed a "stock base policy" for VMWs to predict a community's needs and ensure that essential anti-malarial commodities remained available. Back-up measures, including stock rotation, were also put in place to mitigate disruptions in *artesanate mefloquine* production and shipments.

Risk assessment and mitigation plans: In the early days of the pandemic, the VMWs were reluctant to meet with community groups for fear of contracting COVID-19. Community engagement was therefore shifted to individual interactions, and VMWs were advised to use PPEs.

Non-governmental organizations (NGOs) in Cambodia played a vital role as well. Malaria Consortium followed national COVID-19 guidelines, conducted risk assessments, and developed mitigation plans to ensure that VMWs/MMWs and the community were protected. The Clinton Health Access Initiative (CHAI) also supported the CNM during this period by quantifying the demand for personal PPE, developing contingency plans, and maintaining its technical support for malaria services.

References

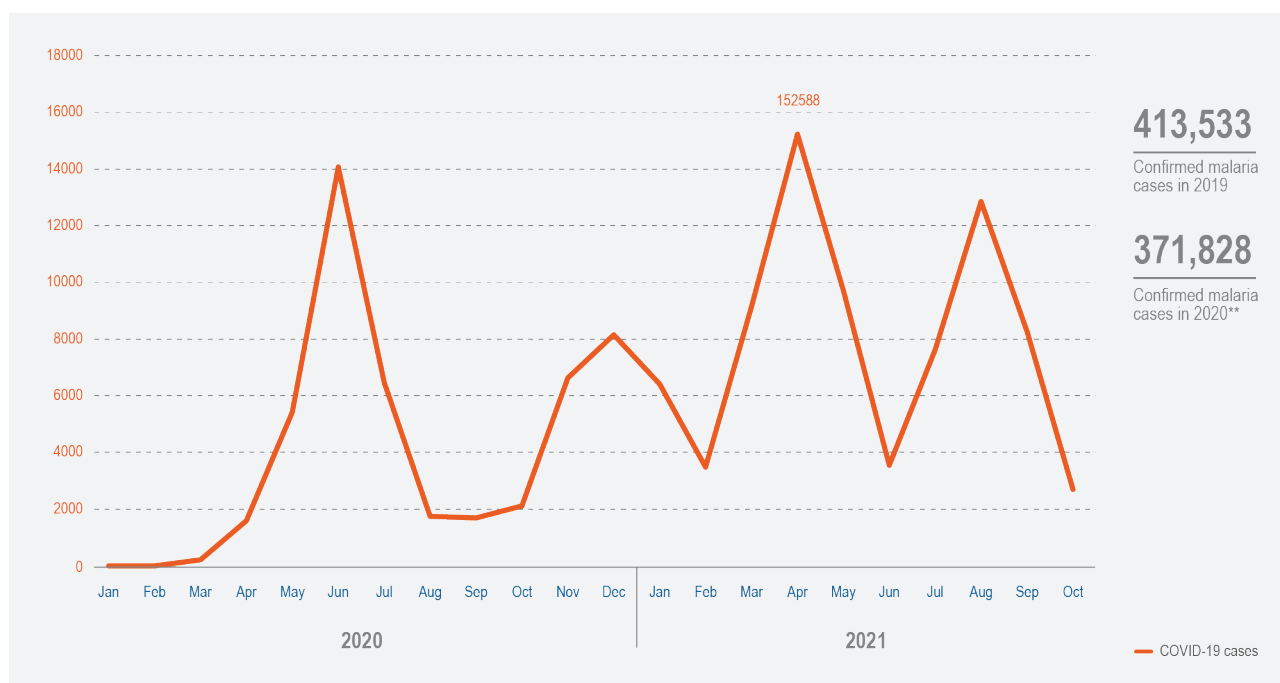
^[1]World Health Organization 2020. World Malaria Report 2020.

^[2]World Health Organization 2021. The 'last mile' of malaria elimination in Cambodia. <https://www.who.int/news-room/feature-stories/detail/the-last-mile-of-malaria-elimination-in-cambodia>

^[3]World Health Organization Mekong Malaria Elimination Programme 2021. Last Mile of Pf Malaria Elimination in Cambodia through focalized aggressive interventions (Presentation).

^[4]World Health Organization Mekong Malaria Elimination Programme 2021. Epidemiology summary June 2021. Vol 18.

PAKISTAN.



Pakistan successfully completed the GTS 2020 milestone as case incidence continued to reduce even amidst the pandemic.

10%
Drop

in indigenous malaria cases in 2020

80

malaria deaths in 2020

1,273,560
0.58% of the population

COVID-19 cases*

28,456

COVID-19 deaths*

*As of October 2021

**Monthly breakdown of malaria cases not available.

By adapting its distribution strategy and adopting a whole-of-society approach with the active involvement of community volunteers, Pakistan was able to implement a successful LLIN distribution campaign and prevent outbreaks in high-burden tribal districts.

With 371,828 cases reported in 2020, Pakistan accounted for 20% of total cases in the Asia Pacific region^[1], making it among the region's few high-burden malaria countries. Access to rapid diagnostic testing has improved over the years, but the real malaria burden remains unknown as most cases are diagnosed and treated clinically rather than with a confirmed lab diagnosis^[2]. The API across different provinces also varies. While Pakistan-administered Kashmir and Punjab are close to eliminating malaria, provinces such as Balochistan and the former Federally Administered Tribal Areas (FATA) have reported high APIs in 2020^[2].

**6,825**

COVID-19 cases
in a day in June 2020

**30%**

decrease in the screening
of malaria patients during
the nationwide lockdown

Impact of COVID-19 on malaria

Unlike many countries in the region, Pakistan was hit with COVID-19 relatively early in the pandemic, with its first wave peaking in June 2020 at more than 6,825 daily cases^[3]. It has since been hit by three subsequent waves of COVID-19 infection, the most recent in August. Measures by the government have succeeded in flattening each successive wave. After an initial nationwide lockdown in April 2020, Pakistan adopted “smart lockdowns”—short-term restrictions at COVID-19 hotspots based on surveillance data.

While these smart lockdowns provided health programmes the flexibility to deliver essential health services outside COVID-19 hotspots, it still resulted in moderate to severe disruptions in malaria diagnosis and case management nationwide. The sporadic lockdowns disrupted face-to-face training and capacity-building programmes, supervisory visits, and LLIN distribution and awareness campaigns. Validation of field data was also delayed early in

the pandemic, but was brought back on track by using social media to share data. In-person training was gradually resumed, observing social distancing norms, with reduced participants and training time.

Data suggest that Pakistan experienced a slight (10%) decline in malaria cases in 2020. However, the Directorate of Malaria Control (DMC) believes this might be the result of a 30% decline in the screening of malaria patients during the nationwide lockdown, which led to the closure of healthcare facilities. Similarities between symptoms of COVID-19 and malaria also prompted many to avoid treatment for fear of being diagnosed with COVID-19 and forced into isolation. To overcome this, the government issued COVID-19 advisories to the public, encouraging people to seek treatment when ill. It also used alternative communication channels, such as WhatsApp, the radio and mosques to raise awareness.



Photo from APLMA-APMEN image library



Amidst the pandemic, DMC has implemented a successful LLIN distributing campaign in the very challenging tribal region of Pakistan by adopting a whole-of-society approach and engaging volunteers from the community, who strictly followed COVID-19 specific protocols

Dr. Muhammad Mukhtar
Director, DMC

Successful LLIN distribution campaign in challenging tribal areas

Building on a 2018 LLIN distribution campaign that distributed a remarkable 2.5 million nets in 11 districts in the provinces of Balochistan, Sindh, Khyber Pakhtunkhwa, and Tribal Districts, authorities launched a similar distribution campaign between June and September 2020 in the Merged Tribal Areas (MTAs) of Khyber Pakhtunkhwa province. Rugged and riven by years of conflict, the MTAs suffer from weak public-health infrastructure and a scarcity of healthcare providers and utilities, making it extremely challenging to deliver and access health services. As a result, the MTAs reported an API of 12.9 in 2019, the highest in Pakistan.

While the pandemic forced a delay in the campaign, Pakistan quickly adapted its distribution and training strategies by adopting a whole-of-society approach and launch the campaign in December 2020^[5]. The DMC, Khyber Pakhtunkhwa and The Indus Hospital in Karachi signed a tripartite contract, clearly defining roles and responsibilities, timeframe, and budget-sharing. For security reasons, the DMC collaborated with security forces to get the necessary permissions and guidance in navigating the region. Similarly, community leaders called maliks were engaged to raise awareness about the campaign. The bulk of the distribution was performed by community volunteers trained to follow COVID-19 protocols and strict guidelines for distributing safely. These included wearing masks, regular hand washing, sanitizing, and social distancing. Since the volunteers were from the local community, they were also aware of social and cultural norms required to trust and acceptance of the nets. Thus armed, the volunteers succeeded in distributing 1.49 million nets to 530,395 households in one week—and not a single volunteer was diagnosed with COVID-19.

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^[1]World Health Organization (2020). World Malaria Report 2020.

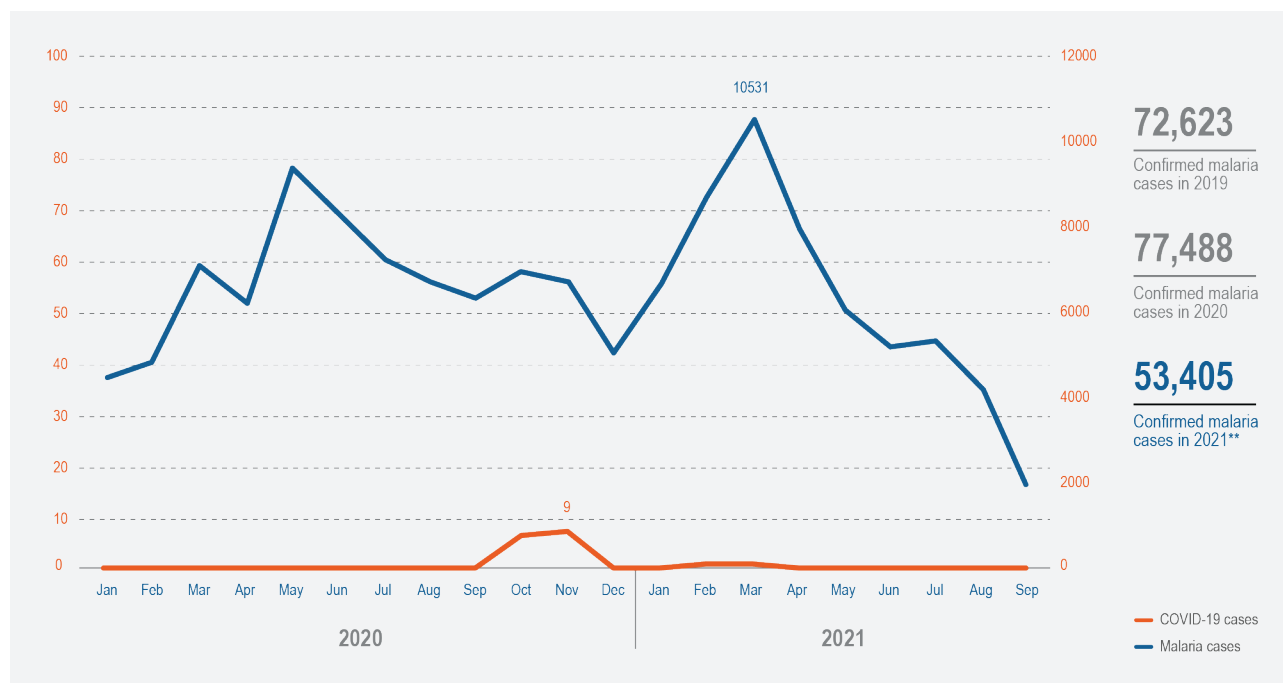
^[2]Directorate of Malaria Control Pakistan 2021. National Strategic Plan for Malaria Elimination in Pakistan 2021-2035.

^[3]Our World in Data 2021. Coronavirus Pakistan. Accessed as on 19 November 2021. <https://www.worldometers.info/coronavirus/country/pakistan/>

^[4]World Health Organization 2021. World Malaria Report 2021. <https://www.who.int/teams/global-malaria-programme/reports/world-malaria-report-2021>

^[5]APLMA 2021. 'How Pakistan Has Kept Up Its Fight Against Malaria Amid the Pandemic'. <https://www.aplma.org/blogs/how-pakistan-has-kept-up-its-fight-against-malaria-amid-the-Covid-19-pandemic>

THE SOLOMON ISLANDS.



Despite a low COVID-19 case burden, the pandemic exacerbated already existing inequities, which led to spikes in malaria cases.

7%
Jump

in indigenous malaria cases in 2020

3

malaria deaths since 2020

20

0.003% of the population

COVID-19 cases*

0

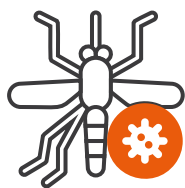
COVID-19 deaths*

*As of October 2021

**As of August 2021

By engaging community groups in micro malaria service delivery plans, the Solomon Islands kept up the distribution of LLINs to households in high-burden, central provinces.

The Solomon Islands has one of the highest malaria rates in Asia Pacific. It made significant progress in reducing malaria in the early 1990s after reorganising its anti-malaria programme and resuming intensive technical and donor support. But by 2006, weak surveillance and inadequate access to services enabled malaria to stage a comeback, and in 2019 the Solomons reported 71,566 cases^[1]. Its anti-malaria programme today faces the challenge of devising a coordinated strategy for provinces that consist of a diversity of health zones that run the gamut of structure and capacity. Only 0.6% of the population lives without the risk of malaria (Rennell-Bellona is malaria-free), while 67% of the population is at high risk and 31.9% at medium/low risk. Despite these difficulties, the API in the provinces of Choiseul and Isabel are low enough to enter pre-elimination^[2]. The Solomon Islands is committed to entering the elimination phase by the end of 2021 and to winning WHO certification as malaria-free by 2034.

**12%**

increase in
malaria cases in 2021
as compared to the first
six months in 2020

Impact of COVID-19 on malaria

Despite a low incidence of COVID-19, the pandemic exacerbated existing inequities in the Solomons, especially in terms of access to health and budgets. That had a deep impact on service delivery and access to routine public health programmes, including malaria^[3]. The pandemic has also disrupted international shipping, leading to delays in delivery of supplies, which has in turn delayed diagnoses and treatment. Malaria outbreaks attributed to these delays have since been reported in the high-burden provinces of Central Solomon (Malaita, Central Islands

Province, Guadalcanal, and Honiara). In the first six months of 2021, 44,322 cases have been reported—a 12% increase over the same period in 2020.

Refocusing efforts (in finance, human resources, and logistics) towards preventing and preparing for COVID-19 halted earlier work towards malaria. Malaria officers in every province were roped into front-line teams to mobilize populations for risk awareness and vaccination rollouts, making the malaria programme a secondary priority.



Photo from the Global Fund



Photo from the Global Fund



There is an urgent need to strengthen the commitment and collaboration for the Solomon Islands' malaria elimination goals, both at the level of national and provincial health leaders.

Dr. Albino Bobogare
Director, Vector Borne Disease
Control Program, Solomon Islands

Intensified community engagement for effective coverage of LLINs

Despite this, the national malaria programme is working closely with provincial teams to intensify key malaria interventions, such as LLINs distribution and indoor house spraying. With close assistance from the national team, micro plans for each province are being developed to obtain the resources and people required for implementation. Provincial teams have identified and enlisted the help of community groups to distribute LLINs to households. Church groups and other social groups have been engaged to help out across all health zones in the country. And, faced with delayed deliveries of LLINs and limited provincial capacity to deliver them, the national malaria programme is focusing its efforts on the high burden provinces of Guadalcanal, Central Islands, Honiara, and Malaita, with the goal of completing mass distribution to all households in all provinces, by the first quarter of 2022.

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^[1]World Health Organization. World Malaria Report 2020.

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^[3]The World Bank 2021. The Advance UHC Multi-Donor Trust Fund Briefs.

<https://www.worldbank.org/en/programs/multi-donor-trust-fund-for-integrating-externally-financed-health-programs/brief/solomon-islands-dual-challenge-responding-to-natural-disasters-and-Covid-19>



US Army Corps
of Engineers

INTEGRATION OF COVID-19 AND MALARIA RESPONSES

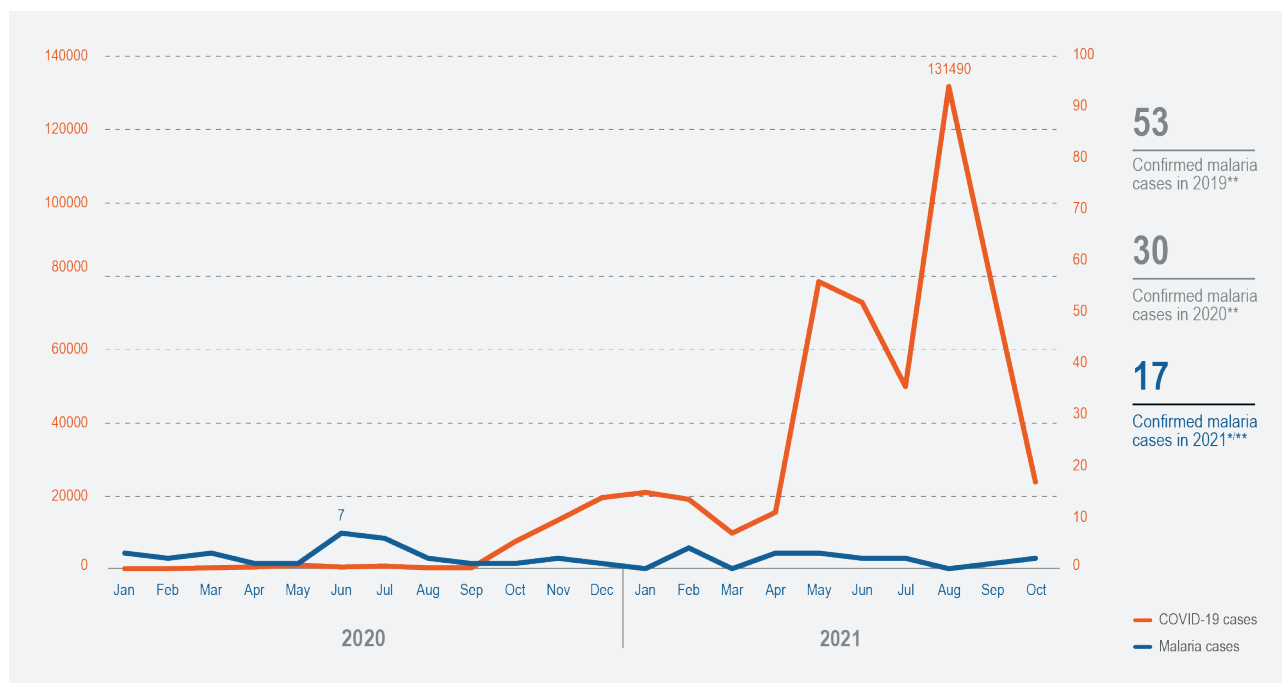
In addition to adapting their malaria delivery programmes to the myriad restrictions created by the pandemic, several countries were able to use the overlap between COVID-19 and malaria responses to optimize the limited resources available.

This involved integrating the surveillance and testing for COVID-19 and malaria—and in some instances, even tuberculosis and HIV—such that control efforts for other diseases did not have to be put on hold as efforts shifted

to COVID-19. Doing so required effective cross-ministry collaboration, leveraging community groups and efficiently mobilizing sub-national budgets.

These approaches offer important lessons and best practices for how the region can integrate overlapping features between existing health programmes and evolving efforts to overcome COVID-19. Below is a snapshot of such efforts in Sri Lanka, Bhutan, and Indonesia.

SRI LANKA.



Despite a rise in COVID-19 cases especially towards the end of 2020, Sri Lanka managed to keep up with its active surveillance and management of imported cases and maintain its malaria-free status.

Certified Malaria Free

in 2014

541,073
2.53% of the population

COVID-19 cases*

13,743

COVID-19 deaths*

*As of October 2021

**All are imported cases

Keeping its focus on preventing the reintroduction of malaria during the pandemic, Sri Lanka promptly launched highly adaptive and coordinated, multi-sectoral measures that integrated its malaria programme with the country's fight against COVID-19.

Sri Lanka eliminated malaria in 2012 and in 2016 was certified by the World Health Organization as a malaria-free country^[1]. While the country has been free of indigenous transmission for nine years since elimination—except for a single case of introduced malaria reported in 2018^[2]—Sri Lanka continues to see dozens of imported malaria cases a year^[3]. The country's Ministry of Health, Nutrition & Indigenous Medicine now has a rigorous Prevention of Re-establishment (POR) programme^[4], especially as the high prevalence of mosquitos in the country means Sri Lanka remains at risk of imported malaria infections re-establishing indigenous malaria transmission^[5].



9 Years

free of indigenous
malaria transmission



25 Million

vaccine doses has
been administered
(1/3 of the population)

**as of September 2021*

Impact of COVID-19 on malaria

There have been over 500,000 confirmed cases of COVID-19 in Sri Lanka, with over 12,000 deaths. By the end of September, roughly 25 million vaccine doses had been administered, covering about a third of the population^[6]. Sri Lanka managed to keep infections low through most of 2000 by combining its health and other relevant authorities under a Presidential Task Force. However, as can be seen in the graph above, after a relatively mild first wave at the end of 2020, the country experienced a much more serious, second wave in mid-2021, and an even more severe third wave at the

end of August. In response, the country implemented a nationwide lockdown, which it extended three times, finally lifting the lockdown on 1 October after a significant reduction in cases^[7].

Contrary to the experience of countries in the region still battling malaria, Sri Lanka experienced an unexpected alignment of COVID-19 quarantine procedures with its malaria POR programme, enabling officials to promptly locate, screen and treat its imported malaria cases promptly^[4], with 17 such cases to date as of end October^[8].



Photo by Kuni Takahashi/Global Fund



The COVID-19 pandemic truly tested the capacities of our health system in many ways. Despite the many challenges faced, we were able to rise to the occasion and carry out our work better than expected to sustain the malaria-free status in the country. After all, we believe that a single missed malaria case may be the beginning of thousand cases.

Dr. Prasad Ranaweera
Acting Director,
Anti Malaria Campaign,
Ministry of Health and Indigenous
Medicine, Sri Lanka

Integrating COVID-19 and malaria prevention of re-establishment programmes

Noting the commonalities between key elements of the POR programme for malaria and the management of COVID-19, Sri Lankan public health officials were able to swiftly leverage their malaria elimination experience in their COVID-19 response. POR strategies that were utilized for the COVID-19 response include POR surveillance, contact tracing and testing of potential imported infections. In early 2020, Sri Lanka closed its international airports to all but returning nationals. Coordinated between the Departments of Airports and Aviation as well as the Ministries of Defence, Foreign Affairs, and Health, returnees were tested for COVID-19 at the airport, then immediately sent to quarantine centres for two weeks followed by two more weeks of supervised home quarantine^[4].

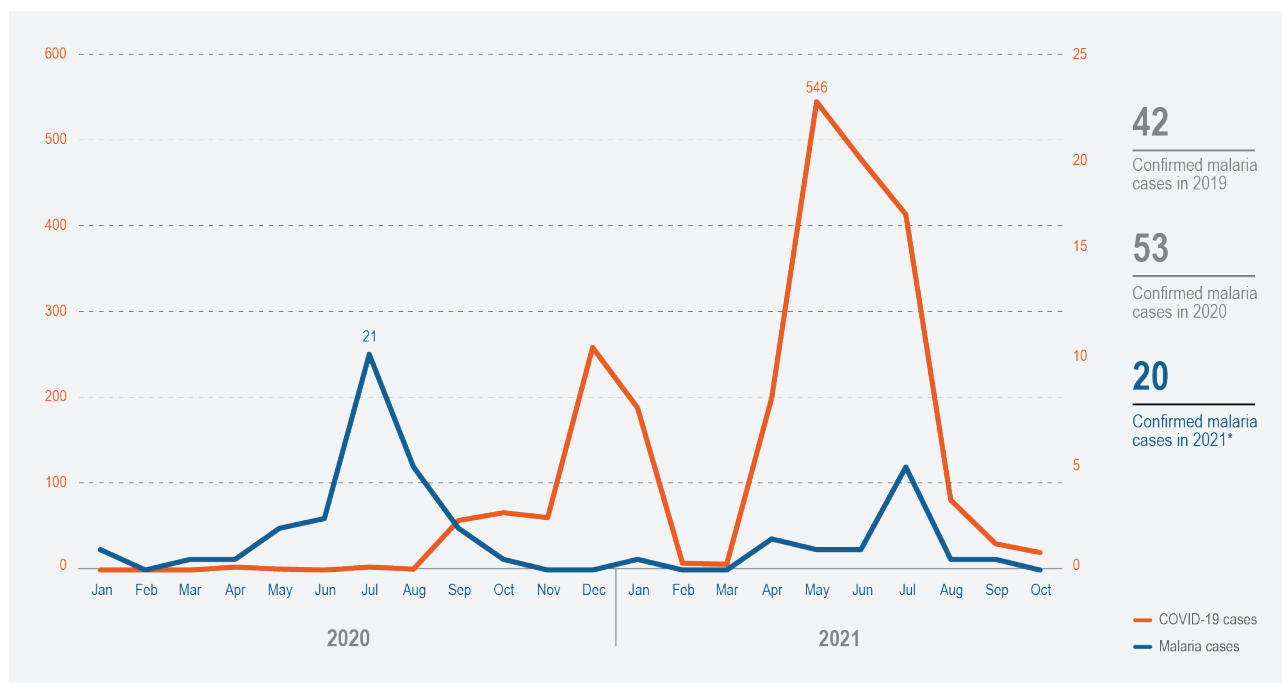
With many Sri Lankans returning from malaria-endemic regions such as Africa, the Middle East and India, the risk was high that they would bring malaria back with them. But guidelines combining malaria surveillance with COVID-19 procedures were put swiftly into place^[9]. As the returnees were flown back in batches, relevant units of the COVID-19 programme were asked to share with the Anti Malaria Campaign (AMC) key details ahead of each arrival, including the countries returnees were arriving from and their assigned quarantine locations. If they arrived from a malaria-endemic country, the AMC and the Regional Malaria Officers would ensure returnees were screened while in quarantine for malaria, regardless of symptoms, by microscopic blood exam when blood is being taken for COVID-19 testing^[10].

Measures were also put in place after the quarantines had ended. Returnees were required to submit to blood testing again three, six and twelve months after their return and advised to report for malaria testing if at any point they developed a fever. Additionally, entomological surveys were conducted around quarantine centres in areas where malaria was once endemic, and, if mosquitoes were found, a pre-emptive vector control programme was promptly implemented^[11]. Entomological surveys have since been conducted in quarantine centres located in 18 of the country's 25 districts.

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BHUTAN



Nearing elimination, Bhutan experienced a slight jump in indigenous malaria cases in border districts in 2020 amidst the pandemic. The situation is gradually improving in 2021.

22

indigenous malaria cases in 2020

0

malaria deaths since 2013

2,429

0.31% of the population

COVID-19 cases*

3

COVID-19 deaths*

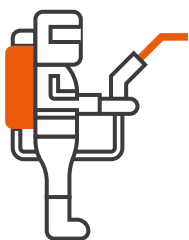
*As of October 2021

Harnessing the power of community to both accelerate malaria services and respond to COVID-19, Bhutan managed to sustain its target of malaria elimination amidst the pandemic.

With the widespread rollout of malaria elimination activities across Bhutan since 2013, the country saw in 2019 a 90% decline in confirmed cases since 2010, with only two indigenous cases of malaria that year^[1], encouraging the country to move from control to elimination.

Despite this impressive progress, and nearing the threshold of the malaria elimination goal, cross border malaria transmission remains one of the major challenges to elimination efforts. Bhutan shares a long and porous international border with India characterised by unrestricted population movement, both through legal and illegal entry points. The increased movement of migrant populations from the southern border with malaria endemic states of Assam (API 0.11) and West Bengal (API 0.27)—presents a constant risk that malaria will re-establish itself^[2]. Most malaria cases are confined to these bordering areas, specifically in the districts of Sarpang, Samtse and Samdrup Jonkhar. Due to high receptivity and vulnerability in these southern districts, the potential for malaria outbreaks and resurgence remains high.

Although a party to the WHO's E2020 initiative, Bhutan saw setbacks in reaching the original goal of malaria elimination by 2020, partly given the surge in malaria cases amidst COVID-19. The country now aims to reach zero indigenous malaria cases in 2022 and attain WHO's malaria-free certification by 2025, in line with its commitment to WHO's renewed E2025 initiative.



90%

decline in confirmed
malaria cases since 2010



65.2%

of the population
has been vaccinated
as of late
September 2021

Impact of COVID-19 on malaria

Since the detection of the first COVID-19 case on 5 March 2020, the Royal Government of Bhutan has taken strong measures to contain its spread. It implemented a number of containment measures, including border closures, national lockdowns, movement restrictions, increased surveillance at the international border and quarantine measures. Frequent testing is done in all high-risk areas along with periodic testing of frontline workers. With the first vaccine dose administered on 26 March 2021, Bhutan carried out one of the fastest COVID-19 vaccination campaigns in the world, vaccinating 90% of its eligible population in a week. As of November 2021, 77% of Bhutan's population has been fully vaccinated with both doses of the COVID-19 vaccine including more than 93 percent of the adult (18 years and above) population^[3].

As the focus of Bhutan's entire health system shifted rapidly to COVID-19 interventions, most routine malaria surveillance and control measures were initially disrupted. Planned mass distributions of LLINs, a core intervention, occurred later than usual due to delays

in receiving the supplies. The pandemic also affected the supply of critical anti-malarial commodities and logistics in malaria-endemic areas. Other malaria control interventions such as first rounds of IRS, health education, follow-up of regular LLINs use, and vector surveillance schedule were also often affected.

Additionally, earlier in the pandemic, there were delays in malaria surveillance and response activities, such as following-up on index cases. Delays in health-seeking due to COVID-19 movement restrictions, coupled with the focus on COVID-19 that resulted in missed early diagnoses of malaria by clinicians, led to delayed treatment of those infected with malaria^[4]. From the period of June to August 2020, there was a sudden surge of locally transmitted malaria. A total of 20 indigenous cases were reported, of which 80% were clustered in Sarpang, a district bordering India^[5]. Nonetheless, as reflected in the dashboard above, interventions were quickly put in place and reductions were sustained even amidst later spikes in COVID-19 cases in the country.



Bhutan's community health workers are core to our last mile malaria elimination efforts and have played a critical role in COVID-19 response. During the pandemic they have been vital in ensuring that malaria service delivery is continued, particularly among the high-risk groups in the bordering areas.

Mr. Tandin Dorji
Director,
Department of Public Health,
Ministry of Health,
Royal Government of Bhutan

Revitalizing Community Action Groups (CAGs) to engage high-risk populations

Bhutan has a well-established primary health care system in line with its pursuit of achieving UHC, within which village health workers play a vital role. These village health workers are key members of Community Action Groups (CAGs), which were established a decade ago by the malaria programme with funding support from the Global Fund. They have an overall objective of carrying out social mobilization activities including community-level awareness and last-mile outreach to communities in border and remote areas.

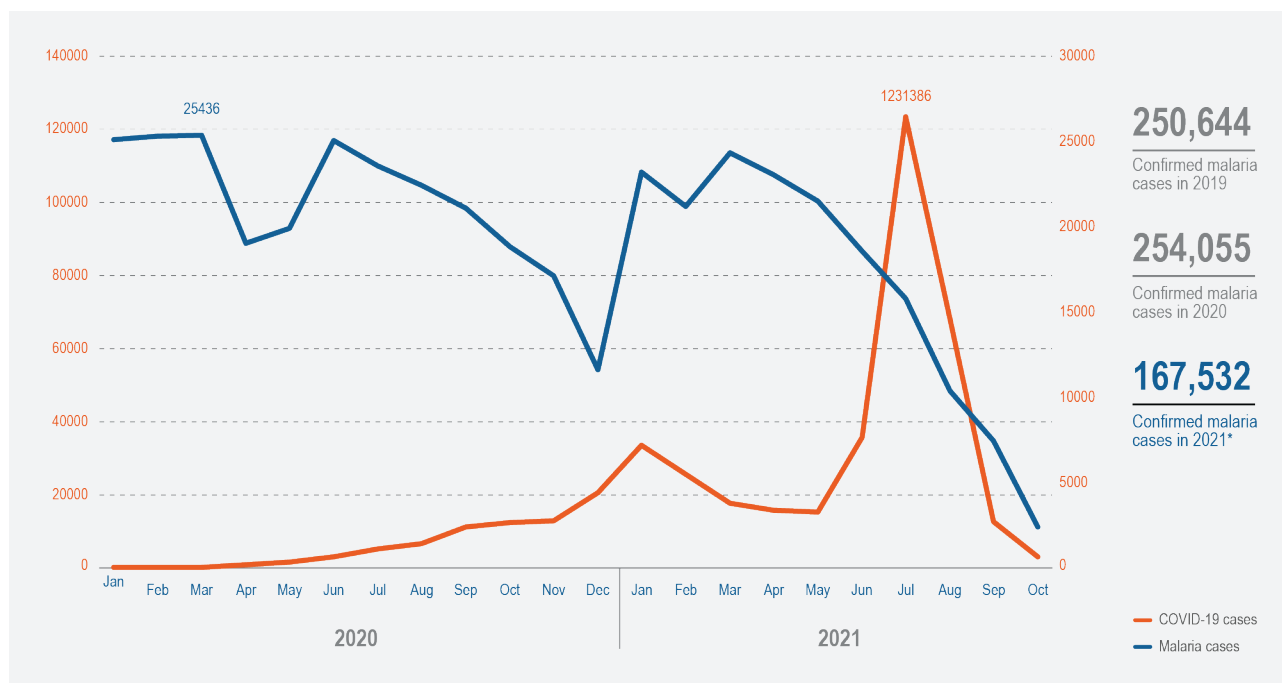
As a resource-limited country with a small pool of health workers, Bhutan successfully identified additional community champions and village health workers, alongside existing CAG members, who were trained to ensure continued service delivery for both COVID-19 and malaria^[6]. CAGs have been engaged to reach out to high-risk populations, particularly in border areas. They carry out activities such as monitoring, reporting and referring suspected cases to health centres, risk communication, and dissemination of preventive messages for both malaria and COVID-19. CAGs have also assisted in mapping at-risk groups such as the elderly and people with disabilities and comorbidities. This has enabled them to carry out testing in 58 identified high-risk groups in five districts: Samdrup Jongkhar, Sarpang, Dagana, Chukha and Samtse^[5].

The flu clinics established for screening of COVID-19 cases during the pandemic in Bhutan have also been used to screen for malaria in high-risk districts. The successful integration of service delivery of malaria and COVID-19, through the CAG, resulted in the timely delivery of interventions. It is expected that the renewed infrastructure and strong referral mechanism, due to the grassroots reach of CAGs, will improve the surveillance for both COVID-19 and malaria, along with TB and HIV/AIDS.

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INDONESIA.



The rise in COVID-19 cases in 2020 was accompanied by a fall in malaria diagnoses. However, Indonesia prioritized its malaria elimination goals and saw gradual restoration of malaria services despite a continued rise in COVID-19 cases.

1.32%
Jump

in indigenous malaria cases in 2020

32

malaria deaths in 2020

4,244,358
1.55% of the population

COVID-19 cases*

143,405

COVID-19 deaths*

*As of October 2021

Building on a prompt national response, Indonesia saw the timely integration of malaria and COVID-19 services at the district level, paving the way for greater coordination between health programmes.

Indonesia has one of highest malaria rates in Asia Pacific. While it reduced the number of confirmed malaria cases by 90% from 2010 to 2014^[1], progress has plateaued since and it saw a 12% increase in indigenous cases in 2019 over 2018^[2]. With an island-based approach now in place that bases elimination strategies on each region's specific endemicity, Indonesia aims to achieve malaria-free status by 2030^[1].

To accelerate malaria elimination efforts at the subnational level, Indonesia in 2012 began conducting malaria elimination assessments at locally. The goal was to reward local successes and encourage districts to keep striving towards elimination. As of mid-2021, 62% of the nation's districts have achieved elimination status, and 84% of Indonesia's population lives in malaria-free areas^[3].

Challenges remain, however, in the remaining high-endemic areas— Papua, Nusa Tenggara Timur (NTT) Sumba Islands, and a few areas in East Kalimantan. Papua alone accounts for 86% of Indonesia's annual malaria cases, most of which occur in remote areas where timely delivery of malaria services remains difficult.

**14.97**

Nabire district,
Papua province
API in 2020

Impact of COVID-19 on malaria

Since its first recorded case of COVID-19 on 2 March 2020, Indonesia has continued to see an upward surge in cases, with its worst wave hitting in mid-July 2021, during which it became the epicentre of the pandemic in Asia. Though most COVID-19 cases were reported in the cities of Java and Bali, the virus has spread to Papua and NTT, widening the impact in areas where health systems are more vulnerable^[4]. Indonesia eventually managed to lower its case numbers by tightening restrictions, including limiting movement and mass assembly, and accelerating vaccinations^[4].

In addition to stressing an already overstretched health system, COVID-19 also diverted political, financial (including designated malaria funding) and human

resources to the pandemic response. Essential services and routine public health programmes, including those for malaria, were initially disrupted. Health facilities and providers across the country were quickly overwhelmed with COVID-19 cases. The mobilisation of malaria workers to deliver COVID-19 services also delayed plans to strengthen the capacity of malaria teams. Fear of infection, combined with restrictions on movement and gathering, also hindered access to malaria services. This resulted in declining tests and treatment, interruptions to mass blood surveys, IRS, bed-net distribution and other prevention measures. A slight increase in malaria cases was also reported in 2020 (254,055) as compared to 2019 (250,644)^[5].



Photo by Justin Kong



The COVID-19 pandemic has given us many lessons learnt. It has made us more creative and innovative in implementing activities to accelerate malaria elimination.

Dr. Didik Budijanto,
Director of Vector-borne
and Zoonotic Disease Prevention
and Control

Prioritization of malaria services from the national to provincial level

Demonstrating strong national commitment even as COVID-19 cases were rising rapidly across the country, the Directorate General of Disease Prevention and Control on 23 August 2020, issued a circular directing all provincial and district health offices to ensure that: malaria control activities continued; health workers applied COVID-19 prevention measures; and that the commitment from local leaders was strengthened.

Indonesia's districts also managed to integrate their efforts against malaria with their evolving COVID-19 programmes.

Integrating COVID-19, malaria, and HIV in Nabire. Nabire, a highly endemic district of Papua, responded in the early stages of the pandemic to declining malaria testing and treatment by successfully integrating case findings for COVID-19, malaria, and HIV. District health officers and the COVID-19 district task force coordinated these activities from a designated venue where blood samples drawn to test COVID-19 were also used to test for malaria and HIV. The integration was conducted using the local COVID-19 budget and lasted from March to August 2020. During that period, the Task Force tested 11,200 patients and treated 74 malaria cases. This initiative contributed to reducing Nabire's API from 18.98 in 2019 to 14.97 in 2020. Since then, COVID-19 testing has been decentralized to community health centres (*Puskesmas*) at each sub-district, with each *Puskesmas* expected to adopt the same integration pioneered by Nabire.

Village-level joint screening of malaria and COVID-19 in Kulon Progo. Another example of successful integration comes from Kulon Progo, a district with malaria elimination status in Daerah Istimewa Yogyakarta province in Java. In response to the pandemic, the District Health Office initiated a joint screening of malaria and COVID-19. Each time a person visits a village from outside the district, a village malaria worker in each village would alert the nearest Community Health Center, which would then make arrangements to track and screen the visitor for COVID-19 and malaria.

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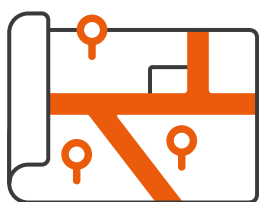
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HUMANITARIAN CRISES AND THE PANDEMIC

Conflict, displacement, and inter-communal tension have a direct impact on public health, increasing morbidity, mortality and disability as health systems and disease-control efforts are compromised^[1]. This year's civil unrest in Myanmar and the ongoing transition to a Taliban-led Afghanistan have created a backdrop of complex governance, challenging the delivery of both COVID-19 and malaria control measures in two countries that were contending with fragmented health systems before the pandemic.

MYANMAR.



Since civil unrest began in February 2021, Myanmar's health system has collapsed, depriving much of the country of health services^[2].

Health staff participating in the country's civil disobedience movement and providing medical care at charity clinics and private hospitals have been arrested, beaten and their medical licenses revoked^[2]. The military has occupied public hospitals, affecting the delivery and accessibility of health services as many people fear getting arrested if they seek care there^[2]. On top of these disruptions to testing and treatment^[3], Myanmar experienced a devastating third wave of COVID-19 in mid-July^[4].

The political situation has also affected Myanmar's efforts to eliminate malaria. Malaria test-treat-track services have been disrupted, with a reported 64% decline in malaria testing between January and June compared with the same period last year^[5]. Most regional, state and township vector-borne disease control offices are no longer functioning. Customs constraints and delayed applications for tax exemptions are slowing the import of malaria commodities and supplies are being held up at military gates and checkpoints, hindering the ability of frontline malaria volunteers to reach people in conflict areas^[6].

Malaria morbidity and mortality in Myanmar remain unknown as citizens flee to forested and other remote areas to escape violence and persecution. Internet censorship and frequent blackouts have posed further challenges to coordination, communication and reporting among national officials, field staff and volunteers. This has also impacted the Myanmar-Thailand border, resulting in a reported jump in malaria cases in Thailand's Mae Hong Son province^[7]. CSOs in Myanmar will need to regain the flexibility to adapt to the evolving situation as they integrate disease services to serve the population at risk of malaria.

AFGHANISTAN.

Reports suggest that the health situation in Afghanistan has been deteriorating since the Taliban took over on 15 August.

The Sehatmandi project¹ provided health and hospital services in 31 of Afghanistan's 34 provinces and was the backbone of the health care system. It is now at risk of closing after its funding dried up in late August⁹. According to the latest WHO update, only 17% of health facilities are fully functional, and two-thirds have run out of essential medicine. This limited capacity, coupled with the elevated risk of transmission due to population displacement, has substantially hindered efforts to contain COVID-19⁸. The WHO has reported a decline in Afghanistan's COVID-19 response and an increase in cases of measles and diarrhoea⁹. The interruption in the Sehatmandi programme has also affected malaria control and treatment⁹. While malaria control equipment remains available, malaria services in the country have stopped. No organisation is now responsible for remunerating malaria workers. International partners such as the Global Fund and the United Nations Development Programme have joined forces to maintain essential services and continue to support Afghanistan's response to HIV, TB, and malaria¹⁰.

These disruptions raise serious questions about the possibility that Afghanistan or Myanmar can achieve the goal of eliminating malaria by 2030. Increased collaboration between international agencies, non-governmental organizations and expert networks is needed to maintain internationally agreed health services, responses, and disease surveillance.

¹Externally funded by the World Bank, the United States Agency for International Development (USAID) and the European Union

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A photograph of a young couple in a traditional wooden building. The man is shirtless and looking down at a baby wrapped in a blue cloth. The woman is wearing a blue turtleneck and looking at the baby. A large orange circle is overlaid on the background. The text 'LESSONS LEARNT' is written in white capital letters over the image.

LESSONS LEARNT

Though varying in scale and timing, COVID-19 has deeply impacted countries across the Asia Pacific region. Fortunately, as highlighted in WHO's World Malaria Report 2021, the region managed to avert what was feared to be a tremendous setback in malaria progress. Several Asia Pacific countries even managed to exceed the Global Technical Strategy for Malaria (GTS) target of reducing malaria cases and deaths by at least 40% by 2020 (compared to a 2015 baseline).^[1] The collation of experiences from the region in this report makes clear that

successfully mitigating the impact of COVID-19 comes down to both **leadership** – maintaining the commitment to malaria elimination at the highest levels – and **management** – ensuring robust public health management capacity down to the operational units at the sub-national level. As national and sub-national governments work to refine malaria elimination strategies under the “new normal” and prepare for future health emergencies, below are a few key lessons gathered from the malaria responses adopted during COVID-19 in Asia Pacific:



Strong leadership at the international, national and sub-national level is key for resilient malaria elimination programme rollouts

Sustained leadership and political commitment, alongside proactive planning with support from partner organizations, helped several malaria programmes maintain control and elimination activities amidst the health emergency. Clear national guidelines supported the streamlining of responses and avoidance of negligence around the diagnosis of malaria due to overlapping symptoms with other diseases. Along with the national malaria programmes, the commitment of partner agencies including implementing partners and the private sector played a catalytic role in exploring and leveraging innovative methods to continue the delivery of malaria services. Donor agencies were also invaluable in supporting both COVID-19 and malaria responses, underpinning the need for effective partnerships and access to adequate funding.



Agility on the ground is vital to adapting malaria elimination strategies ensuring the effective delivery of key malaria services

The ability to mobilize networks of village malaria workers and community volunteers was especially critical in minimizing disruptions to malaria services and in maintaining coverage of interventions among hard-to-reach populations. This cadre of health workers allowed for cost-effective, safe and timely deliveries of malaria control programmes and minimized cross-provincial movement, ensuring in many places that malaria resurgences did not occur despite resources being diverted for COVID-19 responses.



Greater multisectoral coordination and the integration of disease surveillance responses is needed to keep malaria on national radars

The timely integration of disease surveillance has helped effectively manage overlaps and paved the way for addressing the issue of verticality across different health programmes. Health programmes were able to leverage existing expertise and experiences in tackling novel emergencies as seen with community groups playing a dual role in delivering malaria services and accelerating the response to COVID-19. Swift multisectoral coordination in integrating surveillance procedures for the effective use of resources was also key.



Photo from the Global Fund

Nonetheless, while most countries managed to pivot their strategies and make timely adjustments, a few countries in the region have experienced a jump in malaria cases amidst their struggles with competing priorities and inadequate resources. Malaria cases in the Solomon Islands and Papua New Guinea for instance – increased by 7% and 16% % respectively in 2020 compared to 2019^[1]. The humanitarian conflicts in Myanmar and Afghanistan, on the other hand, are contributing to broader public health crises.

Though much remains to be done, the examples of leadership, adaptation and integration seen across the region demonstrate remarkable resilience, and importantly, give hope that the Asia Pacific goal of malaria elimination is still within reach. It is imperative to sustain financing and commitment at the highest levels so that we do not reverse the tremendous progress already made, and that we stay on track for malaria elimination by 2030.

At the same time, the region's experience with battling the dual fight against COVID-19 and malaria offers lessons for the post-COVID global health world. Notably, the pandemic highlighted the link between malaria and health security, especially given the pivotal role that community health systems – that were established to focus on malaria – played in addressing the pandemic^[2]. As global attention on COVID-19 prompts greater investment into pandemic preparedness and response, governments and donor agencies should ensure that malaria response strategies are given due consideration as part of these investments. Strengthening surveillance systems, for instance, as part of pandemic preparedness, should not focus just on the surveillance of new pathogens, but also on the opportunity to integrate the surveillance of decades-old pathogens like malaria that should have long been eliminated. Only then can we look forward to a malaria-free Asia Pacific well-prepared for future health emergencies that will inevitably arise.

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