ASIA DENGUE
Policy Working Group

UNLOCKING PROGRESS:
Dengue Policies and Opportunities in Asia

MAY 2025

ADVA Asia Dengue Voice & Action Group

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About Us

Introduction to the Asia Dengue Policy Working Group

The Asia Dengue Policy Working Group (ADPWG), launched in April 2024, is the first Working Group under the Asia Dengue Voice and Action (ADVA) Dengue Task Force. The Policy Working Group strives to unite diverse stakeholders, provide a platform to foster dialogue, build consensus, identify strategies to improve dengue outcomes, and achieve the World Health Organization's (WHO) goal of Zero Dengue Deaths by 2030.

Objectives of the group

The ADPWG aims to increase the priority of dengue surveillance, prevention, treatment, case management, and control at the regional, national, and sub-national levels.

- **Supporting the WHO's goal** of achieving **Zero Dengue Deaths by 2030** through strategic initiatives and collaborative efforts.
- **Elevating dengue as a priority at the regional, national, and sub-national levels** by advocating for increased awareness, resources, and action towards controlling dengue.
- **Securing resources to generate evidence** that supports policy development and intervention implementation.
- **Unifying diverse stakeholders and experts**, leveraging their collective expertise to design and implement effective strategies.
- **Establishing an official platform** to cultivate policy discussions and initiatives dedicated to designing and implementing effective strategies for dengue surveillance, prevention, treatment, case management, and control.

Priorities of the Group

The ADPWG has nine thematic priorities spanning the dengue-specific and health system landscape.

Dengue-Specific:

- Strengthen vector control
- Enhance entomological surveillance
- Improve patient surveillance
- Advocate for the adoption of vaccines
- Strengthen diagnostics and dengue case management
- Improve dengue patient care management

Health System

- Focus on new and impactful community
- Improve funding and resource allocation
- Enact policy changes in endemic and non-endemic countries that are at risk of dengue impact

Abbreviations

ADPWG	Asia Dengue Policy Working Group
ADVA	Asia Dengue Voice and Action
ADB	Asian Development Bank
ACCSAP	ASEAN Climate Change Strategic Action Plan
AI	Artificial intelligence
ASEAN	Association of Southeast Asian Nations
BI	Breteau Index
CDC	Centers for Disease Control and Prevention
CFR	Case Fatality Rate
CI	Container Index
CMC	Colombo Municipal Council
COMBI	Communication for Behavioural Impact
CVPA	Control of Vectors and Pesticides Act
DPAM	Dengue Prevention Advocacy Malaysia
GP	General practitioner
HI	House Index
HIC	High-Income Country
IDA	Infectious Diseases Act
IMR	Institute for Medical Research
IVI	International Vaccine Institute
IVM	Integrated Vector Management
LMIC	Lower-Middle-Income Country
MOH	Ministry of Health
MOSTI	Ministry of Science, Technology and Innovation (Malaysia)
MYSA	Malaysia Space Agency
NEA	National Environment Agency (Singapore)
NIP	National Immunisation Programme
NTU	Nanyang Technological University
NCVBDC	National Centre for Vector Borne Diseases Control
PI	Premises Index
RDT	Rapid diagnostic test
ROI	Return on Investment
UCSC	University of Colombo School of Computing
UMIC	Upper-Middle-Income Country
VNVC	Vietnam Vaccine Joint Stock Company
WHO	World Health Organization
WMP	World Mosquito Programme

Foreword

Professor Tikki Pangestu

Dengue poses an increasingly complex and urgent challenge across Asia and elsewhere in the world. Driven by urbanisation, climate change, health system fragility and regional mobility, the disease now demands more than seasonal attention—it requires sustained, coordinated and evidence-informed policy responses.

Despite progress in vector control, diagnostics, and vaccination, efforts to prevent, control and manage dengue across countries remain fragmented. The burden of dengue continues to grow, particularly in vulnerable populations, and national systems often remain reactive rather than preventive. Stronger, evidence-based policies and regional collaboration, backed by strong political will and commitment, are essential to achieving the WHO's goal of Zero Dengue Deaths by 2030.

This white paper from the Asia Dengue Policy Working Group offers a critical overview of the current policy landscape in Asia. By mapping strategies across ten countries it highlights key gaps and provides actionable recommendations to guide policy optimisation at both national and regional levels. Based on trust between countries in the region, it reinforces the importance of shared tools, aligned frameworks, and cross-border data sharing and research collaboration to strengthen health system resilience.

Dengue is a regional challenge that requires a regional response. This paper provides a valuable foundation for policy leaders and stakeholders to collectively align efforts, accelerate innovation, and advance equitable access to dengue prevention and control measures.

Professor Tikki Pangestu
Visiting Professor, Yong Loo Lin School of Medicine, National University of Singapore
Former Director of Research Policy and Cooperation, World Health Organization

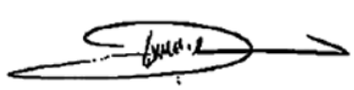
Foreword

Professor Zulkifli Ismail

Dengue continues to exert a significant burden across Malaysia and the broader Asia region. Despite decades of intervention, the disease continues to resurge, fuelled by climate change, urbanisation, and increasing population movement. For frontline healthcare providers and public health practitioners, dengue is not a seasonal concern—it is a year-round threat that strains health systems and disproportionately affects children and communities with limited access to timely care.

As Chairman of Dengue Prevention Advocacy Malaysia (DPAM), I have long advocated for stronger, more cohesive action that bridges policy, science, and community engagement. In recent years, we have seen advances in vector control, diagnostics, vaccines, and community engagement. Yet despite these developments, policy responses often remain fragmented and reactive, limiting our ability to sustainably reduce the burden of dengue. What we need is a region-wide shift from isolated interventions to aligned, preventive, and evidence-informed strategies. This white paper by the Asia Dengue Policy Working Group represents a major step in this direction. By reviewing the current policy landscape across ten countries, the paper highlights opportunities for collaboration, coordination, and innovation. It offers practical, actionable recommendations that can guide more harmonised and effective responses. The emphasis on shared learning, regional cooperation, and aligned frameworks is key to building greater resilience within and across our health system.

Dengue knows no borders. It is only through united action, political commitment, and community engagement that we can tackle this preventable disease. I hope this paper serves as a valuable guide for decision-makers across Asia, and as a foundation for building a more resilient, responsive, and integrated approach to dengue prevention, control, and management.



Professor Zulkifli Ismail
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Chairman of Dengue Prevention Advocacy Malaysia (DPAM), Malaysia

Executive Summary

Dengue remains a pressing health threat across Asia, accounting for approximately 70% of the global dengue burden.[1,2] In 2023 alone, over 6.5 million cases and 7,300 deaths were reported globally, with figures rising to more than 14 million cases and 10,000 deaths in 2024.[1,3] The economic impact of dengue and other *Aedes*-borne viruses was estimated at US$3.1 billion annually, and a maximum of US$20.3 billion in 2013.[4]

The Asia Dengue Policy Working Group (ADPWG) conducted a regional policy mapping exercise across ten Asian countries – Singapore, Malaysia, Indonesia, Thailand, the Philippines, Vietnam, India, Bangladesh, Cambodia, and Sri Lanka – to assess gaps and opportunities in dengue control.

To comprehensively evaluate the dengue policy landscape across selected countries, a structured policy mapping rubric was developed, covering both dengue-specific and broader health system pillars. The analysis, grounded in an extensive review of publicly available literature and national-level dengue policies as well as expert consultations, identified strengths and gaps in current strategies, offering actionable recommendations at both regional and national levels.

Findings reveal significant variation in disease incidence (ranging from 16 to 344 per 100,000 population) and case fatality rates (ranging from 0.03% to 0.59%) in 2024, underscoring inconsistencies in surveillance, diagnosis, vaccination, and clinical care. High-income countries such as Singapore and Malaysia demonstrated more comprehensive policy coverage and budget transparency, while lower-middle-income countries often lacked dengue-specific legislation and faced fragmented implementation. For example, Indonesia and Bangladesh reported the highest fatality rates, highlighting urgent gaps in care and early diagnosis. Vector control efforts, including *Wolbachia*-based programmes, entomological surveillance systems, and community engagement initiatives, varied widely across the region.

To address these disparities and accelerate progress towards the World Health Organization (WHO)'s target of Zero Dengue Deaths by 2030, this white paper outlines key regional and national recommendations:

REGIONAL LEVEL

Countries should:

- Align with the WHO, the Association of Southeast Asian Nations (ASEAN), and other regional frameworks.
- Develop a shared "Dengue Prevention and Control Toolkit" tailored to the country context.
- Establish a regional data-sharing mechanism and convene a biennial Asia Dengue Forum.

NATIONAL LEVEL

Countries are urged to:

- Form multi-sectoral dengue task forces for coordinated response.
- Recognise dengue as a national development priority to mobilise cross-sectoral funding.
- Improve transparency and equity in resource allocation, including the use of innovative financing (e.g. tourism levies, public-private partnerships).

By strengthening both regional coordination and national accountability, Asia can build more resilient and equitable systems to manage dengue and protect vulnerable populations.

1. Introduction

Building upon a policy mapping and landscaping exercise conducted by the Asia Dengue Policy Working Group (ADPWG), this paper seeks to build upon the policy map's insights of the existing healthcare and dengue management landscape across Asia and provide targeted policy recommendations to help address the growing burden of dengue in Asia and accelerate progress toward the World Health Organization (WHO)'s goal of Zero Dengue Deaths by 2030.

In this section, we discuss the scale and dynamics of the dengue burden across the Asian region, including the key drivers of transmission, such as climate change, health system vulnerabilities, and shifting epidemiological patterns. These challenges, combined with gaps in current prevention and control efforts, highlight the urgent need for more comprehensive, resilient, and integrated national and regional strategies across Asia.

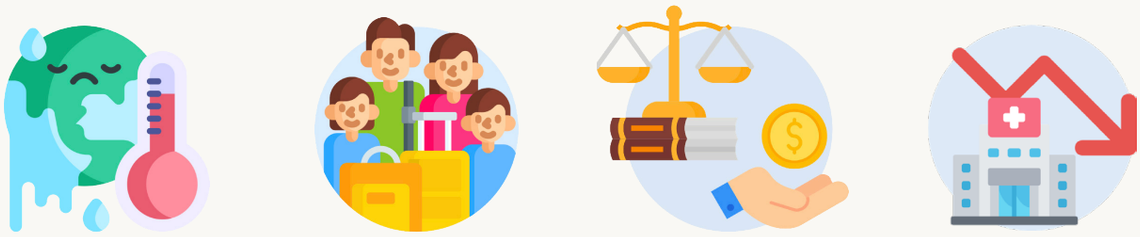
1.1 Burden of Dengue

The global incidence of dengue has increased significantly over the past two decades, presenting a major public health concern.

After a temporary decline in cases from 2020 to 2022, dengue cases surged worldwide in 2023.[5,6] This resurgence was characterised by a notable rise in both the number and scale of outbreaks, extending into regions that were previously unaffected by dengue, including new areas in Europe, the Eastern Mediterranean, and Latin America.[1]

Several key factors were identified contributing to the rising risk of dengue transmission. These include shifts in the distribution of the *Aedes* genera mosquitoes (the primary vector for dengue transmission), the effects of El Niño, climate change leading to higher temperatures and increased rainfall, weakened health systems that have been further worsened by the COVID-19 pandemic, as well as strained hospital capacities (Figure 1).[6,7] Moreover, political and financial instability in countries grappling with humanitarian crises, along with significant population movements due to the easing of international border restrictions, have complicated outbreak response efforts and heightened the risk of disease transmission to new areas.[6,7]

Figure 1: Factors that contributed to the surge of dengue cases in 2023



The Americas (specifically the Southern Cone, Andean, and the Central American Isthmus and Mexico subregions), Southeast Asia, and the Western Pacific regions are the most heavily impacted, with Asia accounting for approximately 70% of the global dengue burden.[1,2]

Figure 2: Dengue cases in 2023[1,3]

>6.5 million
dengue cases report globally

>7,300 dengue-related deaths

Figure 3: Dengue cases in 2024[1,3]

>14 million
dengue cases report to WHO

>10,000 dengue-related deaths

The economic impact of dengue and other *Aedes*-borne viruses was estimated at US$3.1 billion annually, and a maximum of US$20.3 billion in 2013.[4]


India


Indonesia


Myanmar

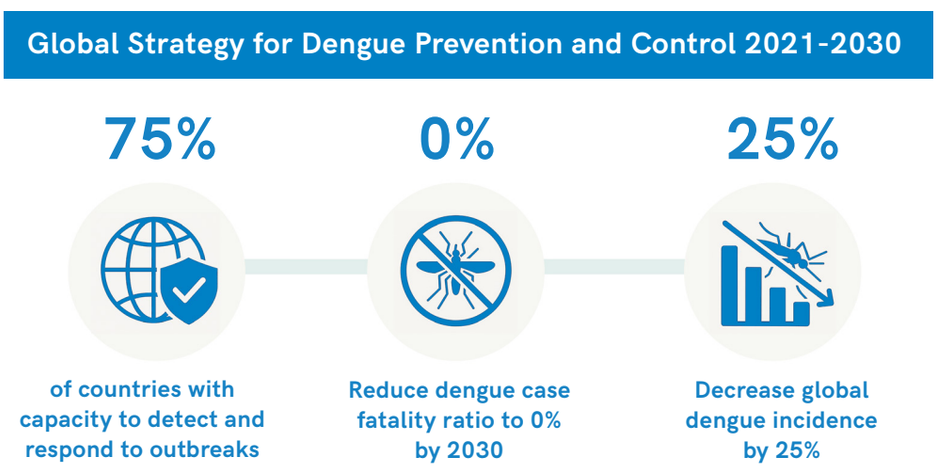

Sri Lanka


Thailand

Ranked among the world's 30 most highly endemic countries[6]

The WHO has set a target for the 2021-2030 Global Strategy for Dengue Prevention and Control to build capacity in countries to detect, prevent, and respond to dengue outbreaks (Figure 4).

Figure 4: WHO's Global Strategy for Dengue Prevention and Control 2021-2030[8]



Achieving these goals requires recognising dengue as a collective threat, with global collaborative efforts essential to strengthening preparedness, prevention, and control.

1.2 Unmet Needs in Dengue Management

Numerous measures have been implemented in the region to address the burden of dengue. However, there remain opportunities to strengthen and optimise strategies related to prevention, surveillance, diagnosis, treatment, and management to further reduce the burden of dengue and associated mortality (**Figure 5**).

Prevention efforts, such as vaccination, continue to face challenges due to safety concerns and vaccine hesitancy. This highlights the importance of comprehensive advocacy and communication strategies to build public confidence.[7] Simultaneously, progress in diagnostic technologies and the development of novel therapeutic approaches are essential to facilitate the timely identification and treatment of severe cases, especially amidst the challenges posed by co-infections with COVID-19.[9]

Gaps in surveillance systems and vector control methods across many dengue-affected countries may have contributed to delayed detection and response, as well as missed early symptom recognition, exacerbating the severity of dengue outcomes.[6] Existing vector control methods are constrained primarily by limited effectiveness, itself driven by inconsistent implementation and other factors, such as rising resistance to chemical insecticides. These issues underscore the need for improved approaches, strengthened public health infrastructure, and greater community engagement.[7]

Figure 5: Unmet needs in existing strategies

Effectively addressing the dengue burden in Asia requires a comprehensive and coordinated approach by policymakers and key stakeholders.

This includes strengthening prevention and surveillance measures, fostering innovation in diagnostics and treatment, enhancing healthcare infrastructure, and implementing sustainable vector control strategies. Recognising this urgent need, the Asia Dengue Policy Working Group conducted a healthcare landscaping and dengue policy mapping exercise to assess the current dengue response landscape in key endemic countries. This initiative aimed to identify policy gaps, evaluate existing response frameworks, and highlight opportunities for more coordinated and effective national and regional strategies to combat the transmission of dengue.

1.3 Healthcare Landscaping and Dengue Policy Mapping

Objectives

The objective of the healthcare landscaping and dengue policy mapping exercise was to conduct a comprehensive analysis of healthcare trends and policy frameworks related to dengue transmission across target countries in Asia. The assessment aimed to provide a deeper understanding of the evolving disease landscape, policy responses, and healthcare system preparedness.

By examining these factors, the Asia Dengue Policy Working Group sought to identify critical gaps and unmet needs within its nine thematic priorities, ultimately informing evidence-based policy recommendations and strategic interventions for more effective dengue prevention, control, and management.

Countries for Assessment

A total of ten countries in Asia were selected for analysis, prioritised based on several key factors, including the degree of dengue virus endemicity, the extent of population coverage under national dengue initiatives, and the structure of the political and healthcare governance system (centralised versus decentralised).

To enhance the representativeness of the study, countries were grouped according to the World Bank's country income classification system, ensuring a balanced analysis across high-income countries (HIC), upper-middle-income countries (UMIC), and lower-middle-income countries (LMIC).

The final selection of countries for assessment comprised of:

Singapore | Malaysia | Indonesia | Vietnam | Thailand | The Philippines | Bangladesh | Sri Lanka | Cambodia | India

Within India, Karnataka state was specifically included in the analysis due to its high dengue burden and the state's distinct policy approach to dengue control. Karnataka's inclusion provided valuable insights into the impact of state-level governance on dengue prevention and management within a decentralised health system.

The strategic selection of countries ensured that the assessment captured a diverse range of dengue policy landscapes, reflecting varying levels of disease burden, healthcare capacity, and policy implementation effectiveness. Furthermore, grouping countries according to the World Bank's income classification framework provided an opportunity to compare and contrast dengue control efforts across different economic contexts, helping to identify best practices, common challenges, and scalable policy solutions adaptable to varying resource settings.

Methodology

To systematically assess the dengue policy landscape across the selected countries, a policy mapping rubric was developed. The rubric was designed to evaluate key components of dengue control and management, including community awareness and education, vector control, entomological surveillance, case reporting mechanisms, vaccination policies, diagnostic capabilities, patient care management, and resource allocation (**Figure 6**).

Figure 6: Dengue-specific and health system pillars of interest

Dengue-Specific:

Strengthen Vector Control

Encourage nationwide vector control intervention implementation while advocating for community-based and sustainable vector control measures through education campaigns and ensuring access to essential tools.

Enhance Entomological Surveillance

Promote advanced and robust entomological surveillance and data analytics systems to detect, monitor, and respond to dengue outbreaks effectively.

Improve Patient Surveillance

Advocate for active/passive case detection strategies for prompt case/symptom reporting and the adoption of a national registry for streamlined case management and evidence-based decision-making.

Advocate for the Adoption of Vaccines

Advocate for enhanced regional healthcare capacity in vaccines, improved financial support for and physical access to vaccines, highlighting research efforts and advocacy initiatives for novel vaccines and the inclusion of dengue vaccines in National Immunisation Programs (NIPs).

Strengthen Diagnostics and Dengue Case Management

Advocate for enhanced regional healthcare capacity in diagnostics, the advancement and improved access of Rapid Diagnostic Tools (RDTs) while also advocating for the strengthening of early diagnosis capacity.

Improve Dengue Patient Care Management

Promote improved access to affordable and effective treatment methods, advancing research for innovative treatments, and promoting the improvement and development of comprehensive clinical care protocols covering the entire patient journey.

Health System

Focus on New and Impactful Community Engagement

Leverage local networks for community education, engagement, and awareness initiatives, support the implementation and monitoring of programs at a community-level, empower communities for prevention, and amplify the patient voice to communicate the importance of early detection.

Improve Funding and Resource Allocation

Promote sufficient funding for regional/national dengue prevention initiatives and push for advancements in health economics to inform budgeting, highlight dengue's economic burden, and support decision-making.

Enact Policy Changes in Endemic and Non-Endemic Countries that are at Risk of Dengue Impact

Foster robust regional collaborations, identify and analyse global policy trends concerning critical dengue priority areas, and advocate for the development, prioritisation, and rigorous implementation of national dengue action plans.

The study involved an in-depth review of publicly available literature and national-level dengue policies, including dengue-related legislation, government acts, strategic plans, and programmes. The research provided valuable insights into the healthcare and dengue control landscape, highlighting existing policy frameworks and their effectiveness in managing the disease.

To ensure the accuracy and relevance of findings, the research was further validated through expert consultations. Specialists in dengue management and health policy were engaged to review and refine the analysis, offering their insights on policy implementation challenges, emerging trends, and priority areas for action. This multi-faceted approach enabled a robust evaluation and understanding of dengue policies and strategies adopted nationally, helping to highlight key challenges and opportunities for strengthening dengue management and control efforts across the region.

Overarching regional and national or country-specific recommendations to optimise existing strategies within each health and dengue-related pillar are outlined in this white paper. Regional recommendations provide a scalable roadmap for regional coordination and impact, while national and country-specific recommendations offer specific, actionable recommendations for each country.

2. Dengue Landscape and Dengue Policy Optimisation Across Countries

Understanding the current landscape of dengue control and management efforts is essential to identifying policy gaps and opportunities for improvement. This section provides an overview of the dengue situation across selected countries, along with an assessment of existing legislation and policies to address evolving challenges in dengue prevention and response.

2.1 Dengue Incidence and Severity Across Countries

Dengue remains a persistent threat in Asia with varying levels of dengue endemicity across countries of interest.

Notable variations in disease incidence, public awareness, and case fatality rates across countries of interest.

Dengue Incidence Rates

The incidence rate is a key metric for understanding the spread and impact of dengue. It reflects the number of new dengue cases occurring within a specific population over a defined period.[10] A high incidence rate signals the need for strengthened prevention and control measures to curb disease transmission.

In 2024

Some of the highest incidence rates reported in

Malaysia

344.3

per 100,0000 population

The Philippines

294.2

per 100,0000 population

(Figure 7 and Figure 8)[11,12]

From 2023 to 2024…

The dengue incidence rate was substantially lower in

Sri Lanka

390.9 to 215.9

per 100,0000 population

(Figure 7)

India

20.1 to 16.0

per 100,0000 population

India reported lowest incidence rate which may reflect either successful prevention strategies, underreporting, or regional variation in transmission.[13]

Figure 7: Dengue incidence rates across countries of interest from 2022 to 2024

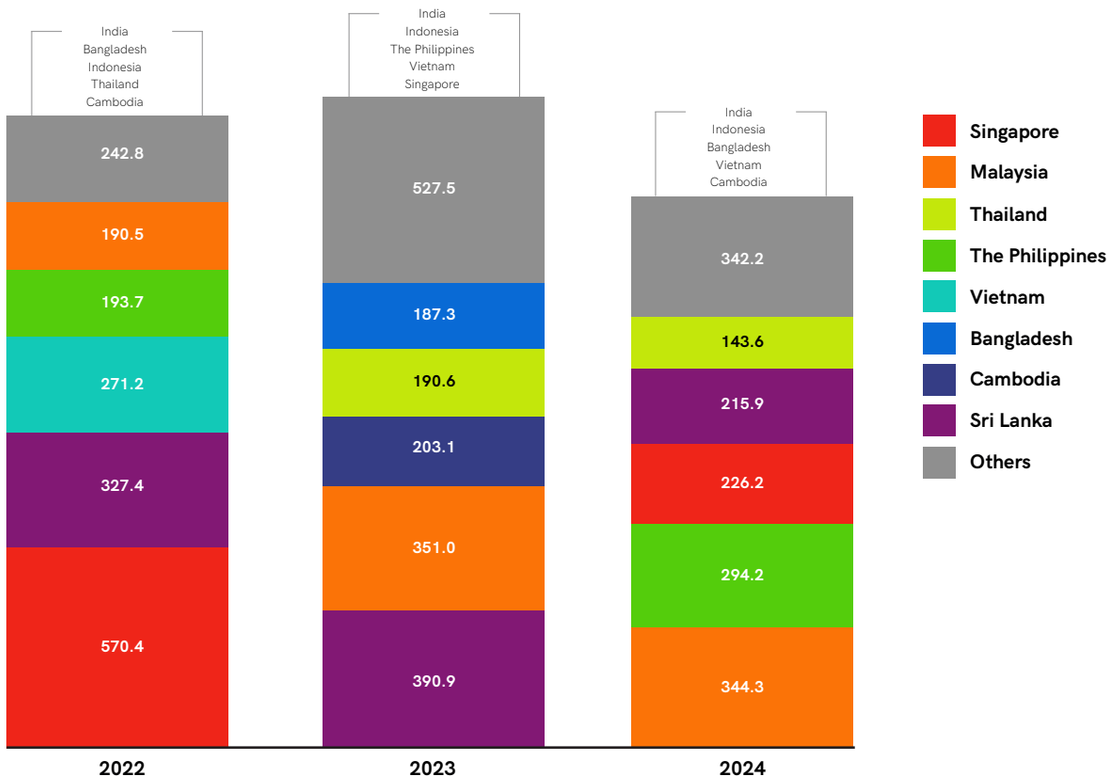


Figure 8: Dengue incidence rate across countries of interest in 2024

Countries	Population in 2024	Dengue Cases	Incidence Rates (per 100,000 population
Malaysia	34,100,000	122,423	344.29
The Philippines	115,843,670	340,860	294.24
Singapore	6,040,000	13,655	226.19
Sri Lanka	23,103,600	49,877	215.88
Thailand	71,668,011	102,927	143.62
Cambodia	17,638,801	18,987	107.64
Vietnam	100,987,686	108,433	107.37
Bangladesh	173,562,364	101,214	58.32
Indonesia	283,487,931	149,866	52.87
India	1,455,485,292	233,400	16.04

Case Fatality Rates

The case fatality rate (CFR) is a key metric used in understanding the severity and impact of a disease and represents the proportion of deaths among confirmed cases of dengue.[14] The CFR can be influenced by several factors, including the specific dengue virus serotype, the proportion of secondary infections, the age group affected, and the notification rate. In general, a higher CFRs indicate more severe disease outcomes and highlight the need for improved disease management.

Top 3 countries with the highest CFRs since 2022 (Figure 9)

Indonesia

Bangladesh

The Philippines

- Between 2022 and 2023, the CFR surged substantially in Bangladesh and Cambodia (**Figure 9**).[6]
- In 2024, Indonesia and Bangladesh experienced the highest CFRs at **0.59%** and **0.57%**, respectively (**Figure 9** and **Figure 10**).[15,16] These figures suggest potential gaps in early diagnosis, access to care, or overall healthcare system responsiveness during outbreaks.
- From January to April 2024, Bangladesh reported more cases than in the same period in 2023, with a case fatality rate of **1.09%.**[17]
- In contrast, Vietnam and Sri Lanka record notably low CFRs (**0.03%** and **0.05%**, respectively), suggesting effective case management and timely healthcare access despite moderate to high incidence rates (**16.0** and **215.9** per 100,000, respectively).[11,18]

Figure 9: Dengue-related case fatality rates across countries of interest in 2022 to 2024

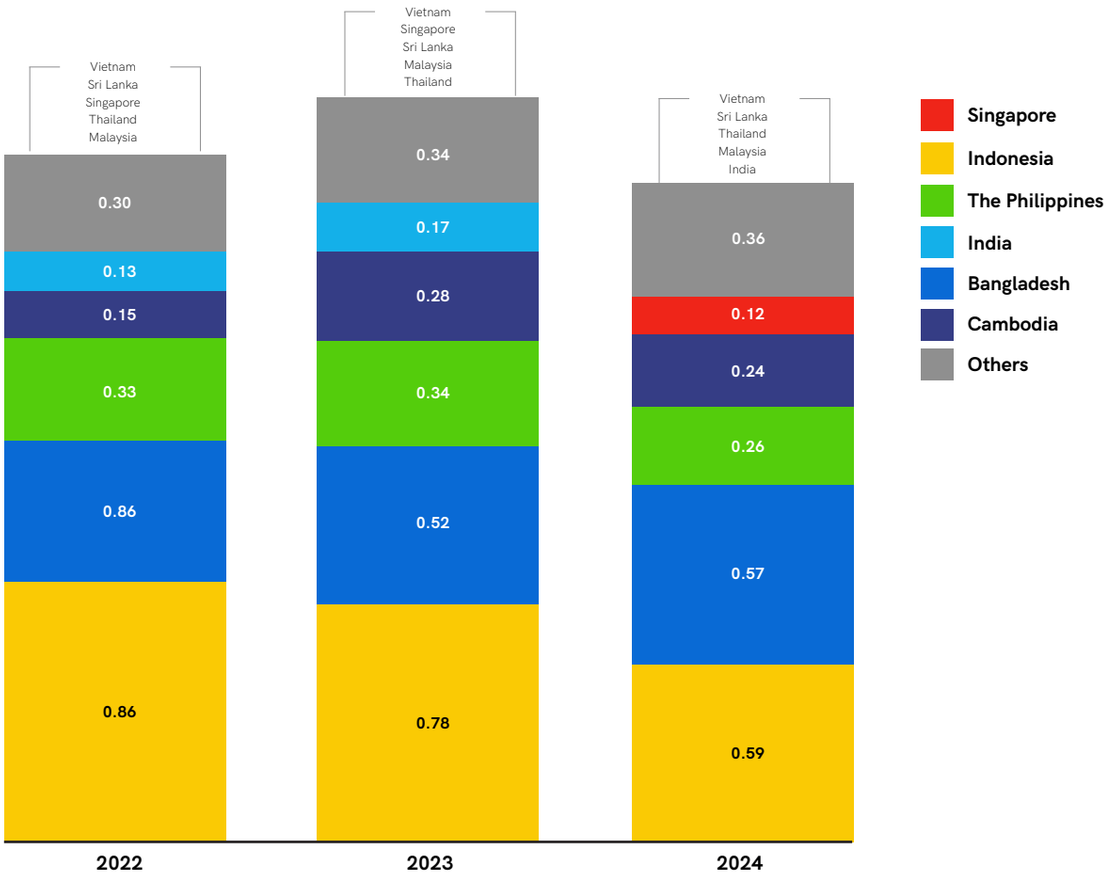


Figure 10: Dengue-related case fatality rates across countries of interest in 2024

Countries	Dengue Cases	Dengue Deaths	Case Fatality Rates (%)
Indonesia	149,866	884	0.59
Bangladesh	101,214	575	0.57
The Philippines	340,860	886	0.26
Cambodia	18,987	46	0.24
Singapore	13,655	17	0.12
India	233,400	236	0.10
Malaysia	122,423	117	0.10
Thailand	102,927	84	0.08
Sri Lanka	49,877	24	0.05
Vietnam	108,433	28	0.03

2.2 Dengue Policy Optimisation Across the Region

The level of comprehensiveness for dengue legislation, programmes, resource allocation, and stakeholder involvement differs by country.

Table 1: Dengue policy optimisation in countries of interest

	Singapore	Malaysia	Indonesia	Thailand	Philippines	Vietnam	India	Bangladesh	Cambodia	Sri Lanka
National Legislation / Acts	◔	◔	◔	◔	◔	◔	◔	◔	◔	◔
National Dengue Plan / Programme	◕	◕	◕	◕	◕	◕	◕	◔	◕	◕
Resource Allocation for Dengue Control / Management	◔	◕	◔	◕	◔	◔	◔	◔	◔	◕
Involvement of Stakeholders	◕	◕	◔	◕	◔	◕	◕	◔	◕	◕

◔ ◑ ◕ ● Basic → Optimised

Note: Refer to Appendix 1 for the criteria for the degree of optimisation per country

Singapore and Malaysia have comprehensive national legislation covering dengue.

Singapore

- Singapore stands out with its centralised and highly structured approach, supported by specific national legislation such as the Infectious Diseases Act (IDA) and the Control of Vectors and Pesticides Act (CVPA).
- Its robust national dengue programme spans across all pillars, backed by transparent budget allocations and a dedicated dengue task force coordinating cross-sectoral efforts.

Malaysia

- Malaysia has national disease acts, such as the Prevention and Control of Infectious Diseases Act 1988 (Act 342), which covers dengue as well as a robust national dengue programme.
- Dengue response is decentralised, allowing for more tailored and responsive interventions at the regional or state-level. Strategies across states are coordinated, involving regular intersectoral task force meetings at various administrative levels.

Indonesia and Thailand also maintain relatively comprehensive programmes, yet their approaches are more fragmented in terms of coordination across sectors and administrative levels, with the absence of a dedicated dengue task force in. Thus, potentially limiting the overall effectiveness of their dengue outbreak response.

Indonesia

- Indonesia benefits from clear national guidelines and both central and regional government participation in funding and implementation.

Thailand

- Thailand's efforts are guided by a broader national programme for *Aedes*-borne viruses.
- Initiatives and programmes are largely funded by the Thai government with coordinated budget allocations across ministries.

Among lower-middle-income countries, the policy landscape is more varied.

The Philippines

- Robust programme frameworks and relevant legislation are in place; however, vaccination remains excluded from its national strategy.
- Dengue control is largely decentralised to local government units, potentially affecting consistency in implementation.

Vietnam

- Operates with local-level execution of dengue programmes and places a strong emphasis on outbreak response. However, limited investment in longer-term infrastructure, including diagnostic tools and vector control measures, hinder further strategic planning.

India

- While national and state-level acts provide a legal framework and funding is available for state-level dengue activities, coordination is largely decentralised. Each state holds implementation authority, which can result in varied levels of effectiveness across regions.
- The national strategy covers key pillars such as vector control, surveillance, and patient management, but notably excludes vaccination from its priorities.
- India has a dedicated dengue war room and district task force for close monitoring of the dengue situation in India.

The differences are more pronounced in Bangladesh, Cambodia, and Sri Lanka. Bangladesh and Cambodia lack any formal dengue-specific legislation.

Cambodia

- Cambodia has a national dengue plan which covers all pillars, except vaccination.

Bangladesh

- Bangladesh is reportedly developing a national strategy, but implementation has not been confirmed. Coordination remains siloed across urban authorities, particularly city corporations.

Sri Lanka

- Sri Lanka demonstrates a higher level of programme optimisation compared to other lower-middle-income countries, despite also lacking formal national dengue legislation.

- It has a robust national dengue strategy covering all pillars and coordinated centrally by the country's Ministry of Health through a dedicated Dengue Control Unit.

3. Deep Dive into Current Policies by Pillar

This section provides an overview and assessment of dengue-related initiatives and programmes implemented across the identified pillars of interest within the selected countries. It highlights current strategies and notable efforts undertaken to address the dengue burden in the region.

Note: *For a more detailed assessment of dengue-related initiatives and programmes by country and by pillar of interest, please refer to the Healthcare Landscaping and Dengue Policy Mapping Report available on the* ***Asia Dengue Policy Working Group's website****.*

3.1 Community Awareness and Education

Public Education Programmes

- Most countries implement public education programs to enhance dengue prevention efforts through widespread dissemination of dengue information to the public.
- In several countries, including Singapore, Thailand, the Philippines, Cambodia, and Sri Lanka, dengue education has been formally integrated into school curricula. This approach ensures that children and adolescents gain early awareness of prevention practices and community responsibilities.
- On the other hand, Bangladesh has yet to establish a structured, nationwide community awareness program.

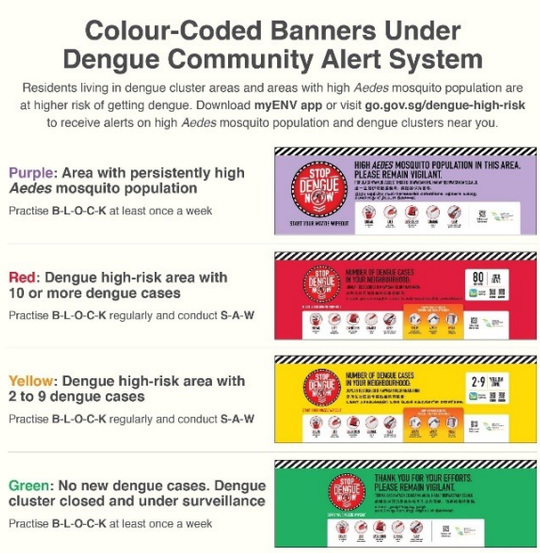
Educational programs targeted at healthcare providers

- Most countries have established educational plans and programmes aimed at strengthening the skills and capacity of healthcare workers in dengue case management.
- In contrast, countries such as Malaysia and India have yet to implement structured educational programs targeted specifically at healthcare providers.

Case study 1: Employment of a 'Dengue Community Alert System' in Singapore

- Launched in 2020 by Singapore's National Environment Agency (NEA), the 'Dengue Community Alert System' aims to raise public awareness and encourage proactive dengue prevention.
- The system uses color-coded banners, in high-visibility locations, to keep residents informed about the local dengue risk.
- The four colours—green (low alert), yellow (moderate), red (high), and purple (persistently high *Aedes* mosquito population)—follow a traffic light system for easy interpretation.
- The banners provide clear visual cues and encourage residents to follow the 'BLOCK' dengue prevention steps, which are also displayed.[19]

Figure 11: Dengue Community Alert System in Singapore[19]



3.2 Vector Control

Environmental Management Initiatives

- All countries implement larval source reduction or environmentally sustainable strategies to reduce mosquito larval habitats.
- Implementation is localised in Vietnam, India and Bangladesh, where vector control initiatives are conducted at the state- or city-level.

Vector control education and community engagement

- Community education and engagement for vector control are central features across the region.
- Singapore, Malaysia, Indonesia, Thailand, Vietnam, the Philippines, India, and Sri Lanka conduct targeted outreach in schools, workplaces, and residential areas and disseminate information on vector control methods through media.
- In Cambodia, biannual applications of larvicide occur in a limited number of urban communities, in tandem with more general public education programmes promoting environmental and mechanical dengue controls, while educational programmes focused on sustainable vector control methods are in development in Thailand. However, it is worth noting that Cambodia uses temefos despite known resistance.
- In Bangladesh, dengue and vector control awareness remain low, suggesting the need for enhanced communication strategies.

Adoption of vector control methods

- All countries employ a combination of vector control methods, including personal protection methods and community-based interventions, which involve source reduction initiatives, chemical or biological control methods, and/or genetically-modified mosquitoes.

- Insecticides and their application consume a significant portion of national budgets. However, in many countries, there is limited monitoring of insecticide resistance – which is essential for selecting appropriate products – as well as inadequate quality assurance of application methods, particularly for the costly yet widely used space spraying during epidemics. Additionally, evaluations of cost-effectiveness are often lacking.

- *Wolbachia*-infected mosquito release programmes are piloted or implemented in Singapore, Malaysia, Indonesia, Thailand, Vietnam, and Sri Lanka.

- Alongside the releases of *Wolbachia*-infected mosquitoes, the Indonesian government has implemented several complementary initiatives, including the One House One Mosquito Movement and the long-standing 3M campaign – *Menguras* (draining), *Menutup* (covering), and *Mendaur Ulang* (recycling) – to eliminate potential mosquito breeding grounds and reduce dengue transmission.[20]

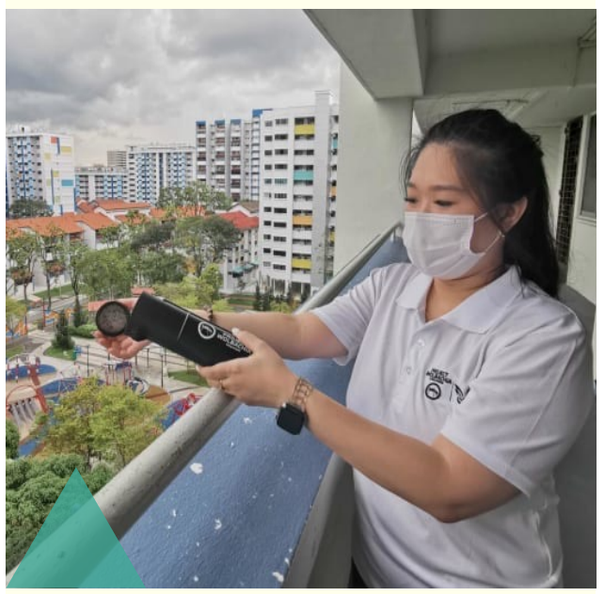
Case study 2.1: *Wolbachia* programme in Singapore

- *Project Wolbachia* was launched in Singapore in 2016. The programme has resulted in the reduction of the *Aedes aegypti* mosquito population in Singapore by 80-90% in dengue-endemic areas.[21]

- The NEA announced in November 2024 that the programme will be expanded to cover 50% of all households by 2026.

- Singapore only releases male *Wolbachia*-infected mosquitoes, adopting a population suppression approach to vector control.[22]

Figure 12: NEA field officer releasing a male *Wolbachia-Aedes* mosquito in Singapore[21]



Case study 2.2: *Wolbachia* programme in Malaysia

- *Wolbachia Malaysia* was launched by the Entomology Unit of the Institute for Medical Research (IMR) as a replacement method in 2019.[22,23]
- The pilot involved releasing *Wolbachia*-infected mosquitoes at 11 research sites in Klang Valley, resulting in an estimated 40% decrease in dengue cases.[22,24]
- As of June 2022, *Wolbachia*-infected mosquitoes have been released in 25 high burden areas across Malaysia.
- The government plans to expand the *Wolbachia* project across 2025.

Figure 13: A staff member of the Malaysian Institute of Medical Research releases the *Wolbachia* mosquitoes[22]

Case study 2.3: *Wolbachia* programme in Indonesia

- In October 2024, Indonesia piloted *Wolbachia* release programmes in five cities – Semarang, Bontang, Kupung, and West Jakarta – as part of a partnership between the Indonesian Ministry of Health (MOH), provincial and city governments, district health offices, Gadjah Mada University (UGM) in Yogyakarta, and Udayana University in Denpasar, Bali.[20]
- The Indonesian MOH is planning to expand the programme to districts and cities with high dengue burden.[20] To meet demands for scaling-up, the MOH, in collaboration with the World Mosquito Programme (WMP) and Bio Farma, is looking into building a mass mosquito facility that will produce 40 million *Wolbachia* mosquito eggs every week.[20]

Figure 14: Researchers at the WMP Yogyakarta

3.3 Entomological surveillance

Entomological surveillance systems

- The implementation of entomological surveillance systems varies across countries. Singapore, Malaysia, and Sri Lanka have established robust systems, with key stakeholders overseeing the surveillance efforts and real-time tracking of dengue outbreaks.

- Countries including Bangladesh, Cambodia, India, and Indonesia, face challenges in implementing or maintaining effective entomological surveillance systems. These countries experience issues such as inconsistent monitoring and funding limitations, which result in suboptimal surveillance practices.

Surveillance indicators and outbreak prevention / forecasting

- Most countries utilise at least two standard entomological surveillance indicators (Container Index [CI], Premises Index [PI], Breteau Index [BI], and House Index [HI]). Singapore and Indonesia have enhanced their systems by incorporating additional indicators, adopting mosquito traps such as Gravitraps that may better predict outbreaks compared to the more traditional larval indices.

- Few countries, including Cambodia, Indonesia, Sri Lanka, and Singapore, integrate entomological surveillance data into outbreak prevention and forecasting systems to enhance early detection and timely response.

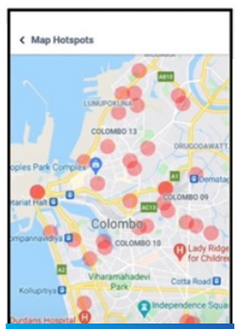
- Recent regional advances in artificial intelligence (AI)-assisted outbreak prediction models, incorporating entomology, serology, epidemiology, climate and population data, may help national programs target prevention and improve the cost-effectiveness of outbreak response.[25]

Case study 3:
Sri Lanka's Mo-Buzz, a mobile participatory dengue surveillance system

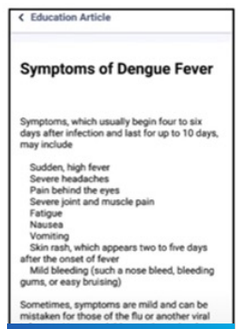
- Mo-Buzz system is a mobile-based participatory dengue surveillance system launched in Sri Lanka to enhance community involvement in dengue monitoring and reporting.
- Established in 2015, the system was a collaborative effort between the Colombo Municipal Council (CMC), Sri Lanka Telecom Mobitel, Nanyang Technological University (NTU) Singapore, and the University of Colombo School of Computing (UCSC).[27]
  - **The public version of Mo-Buzz integrates three core features:**
    - Dynamic mapping to identify potential outbreak areas using real-time and historical data.
    - Civic engagement to allow users to report breeding sites and suspected cases, which helps authorities target interventions.
    - Health communication to deliver educational content and location-based alerts.
- Current efforts focus on raising awareness and increasing app adoption, with future plans to expand Mo-Buzz to other health issues in Sri Lanka.[26]

Figure 15: Screenshots of Mo-Buzz app – Dengue reporting form, hotspot mapping, health education materials (left to right)[26]

Mosquito breeding site and dengue reporting form



Dengue hotspot map



Educational materials

Case study 4:
Gravitrap in Singapore

- The Gravitrap, developed by Singapore's NEA Environmental Health Institute, is a cylindrical trap using hay infusion to attract egg-laying female *Aedes aegypti* mosquitoes.[29]
- First trialled in 2010, the traps proved effective in capturing dengue-infected mosquitoes and supporting source reduction.[29]
- Since 2017, NEA has deployed over 64,000 Gravitraps across all residential blocks, with fortnightly maintenance and species-level mosquito identification.[30]
- Collected data—on mosquito count, species, trap location, and functionality—supports spatio-temporal analysis to guide targeted vector control.[30]
- Findings show mosquitoes are most abundant on lower floors of high-rise flats, prompting resource prioritisation in these areas.[28]

Figure 16: Gravitrap with mosquitoes trapped on the sticky lining[24]

3.4 Case reporting

Case reporting surveillance systems and frequency of reporting

- All countries have dedicated surveillance systems in place for dengue case reporting, though they vary in case definitions, capacity, and integration. For instance, in Indonesia, only dengue haemorrhagic fever is recorded, excluding dengue fever.

- Singapore, Malaysia, and Bangladesh operate advanced, digitised systems with frequent reporting. Vietnam, while not digitised, mandates reporting within 24 hours, showing strong responsiveness. In contrast, Thailand, Indonesia, the Philippines, and India operate national disease surveillance programmes that provide less frequent weekly reporting. Sri Lanka reports weekly case counts through the Epidemiology Unit of its Ministry of Health (MOH). While these systems are reasonably effective in routine monitoring, they tend to face challenges such as delays in data reporting due to reliance on manual data collection and reporting processes.

- Cambodia has the least frequent reporting, relying on monthly case reports submitted by health facilities under the National Dengue Control Programme.

- Most countries track suspected and confirmed cases, and dengue-related deaths; Vietnam and Bangladesh also conduct sporadic serological surveys.

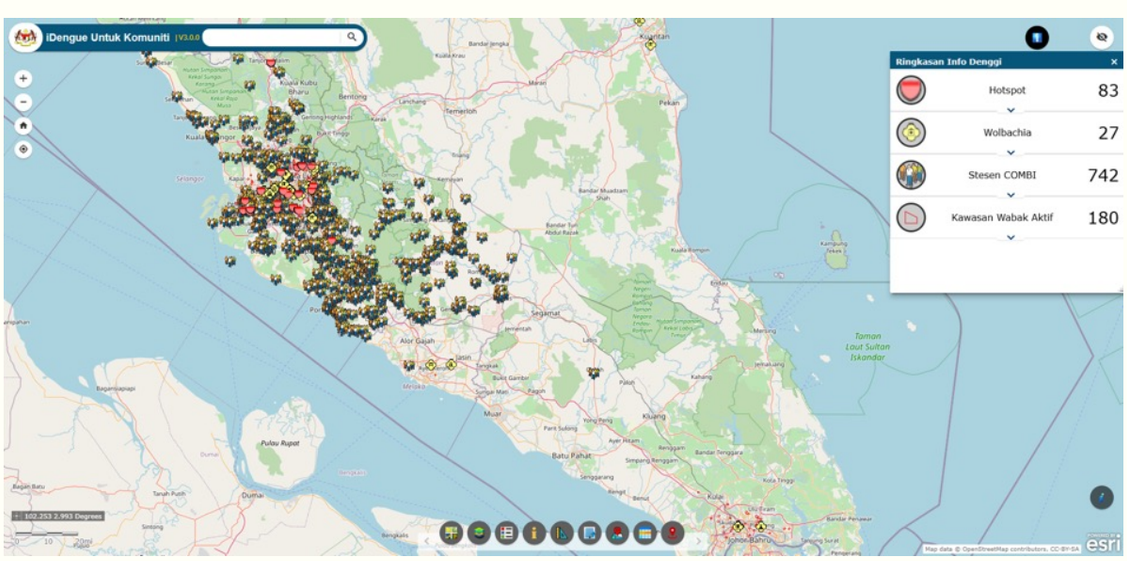
Application of case report surveillance data for outbreak prevention and forecasting

- All countries use dengue case surveillance data to guide outbreak response and control measures. Singapore, Indonesia, Thailand, the Philippines, Vietnam, Cambodia, and Sri Lanka leverage the data for forecasting and early warning systems, enabling more proactive and timely public health interventions.

Case study 5: Malaysia's iDengue portal

- Malaysia's digitised public dengue case surveillance system iDengue, enables real-time updates and visual tracking of cases, promoting transparency and public awareness.
- Launched in 2013 during ASEAN Dengue Day, the portal is a joint initiative between the Ministry of Health, the Malaysia Space Agency (MYSA), and the Ministry of Science, Technology and Innovation (MOSTI).[31]
- iDengue provides efficient daily updates and epidemic reporting compared to the weekly reports via print (e.g., newspapers) and broadcast media (e.g., TV and radio).
- The portal aims to raise public and community awareness and encourage proactive dengue prevention efforts.
- **The following information can be found in the system:**
  - Dengue cases status by states
  - Total for current cases by states and district
  - List of areas in epidemic cluster
  - List of hotspots
  - Dengue cluster map and other related information
  - Latest activity and information for public by MOH
  - Communication for Behavioural Impact (COMBI) related information
    - **Note:** COMBI is a behavioural-focused social mobilisation and communication programme for communicable diseases prevention and control.[31,32]

Figure 17: iDengue portal dashboard[31]



3.5 Dengue vaccination

Availability of dengue vaccines across countries

- Dengue vaccines are only approved for use in Singapore, Malaysia, Indonesia, Thailand, and Vietnam, but remain unavailable in other countries. Second generation dengue vaccines have not been approved in Singapore.

- Public awareness of dengue vaccines is relatively higher in Singapore, Malaysia, Thailand, and Vietnam, although no Asian country has yet included a dengue vaccine in their national immunisation programmes.

- **Some countries have launched localised dengue vaccination campaigns as part of their efforts to combat dengue fever:**

Indonesia[33]

- Both the Qdenga® (TAK-003) and Dengvaxia® (CYD-TDV) are approved in Indonesia.
- The East Kalimantan Provincial Health Office launched a dengue vaccine pilot program in elementary schools in Balikpapan and as of October 2024, 90% of the target population in Balikpapan was vaccinated. The initiative has since expanded to Samarinda City, focusing on elementary school children in the North Samarinda District.

Thailand[34]

- Both the Qdenga® (TAK-003) and Dengvaxia® (CYD-TDV) are approved in Thailand.
- Thailand's Public Health Ministry has launched a clinical trial for a dengue vaccine in Nakhon Phanom province in April 2025. Approved by the National Communicable Disease Committee, the trial will evaluate the vaccine's efficacy in 35,000 participants aged 7 to 10 years, regardless of their previous dengue infection status.
- The trial is expected to conclude in three years, after which the vaccine can be incorporated into the country's universal healthcare scheme. It is noted that the inclusion of the vaccine in the scheme is a multi-step process, requiring the approval of the subcommittee on immunisation (to review the trial results and assess its cost-effectiveness) before making a final decision.

Vietnam[35]

- The Qdenga® (TAK-003) dengue vaccine has been approved and licensed by the Ministry of Health for circulation in Vietnam since May 2024. Vaccine adoption is underway by private companies through the Vietnam Vaccine Joint Stock Company (VNVC).
- A nationwide vaccination campaign was launched in September 2024, using the Qdenga vaccine at 200 modern inoculation centers, targeting both children aged 4 years and older and adults.

3.6 Dengue diagnostics and patient care management

Guidelines adopted across countries

- All countries have adopted either WHO or national clinical practice guidelines for diagnostics and patient care management.
  - Singapore, Indonesia, and Vietnam follow WHO clinical practice guidelines.
  - Malaysia, Thailand, India, the Philippines, Bangladesh, Cambodia, and Sri Lanka have tailored national guidelines that align with international standards. While Singapore follows WHO clinical practice guidelines, national clinical practice guidelines are also being developed.
  - Indonesia, along with adopting WHO guidelines, has also developed national guidelines for the prevention and control of dengue fever.
  - In India, the National Centre for Vector Borne Diseases Control (NCVBDC)'s 2023 national guidelines on dengue and management are being followed in the treatment and management of dengue cases.

Access to diagnostics and patient care services

- Most of the countries are equipped with certain levels of diagnostics and patient care infrastructure , however implementation varies across countries. In the Philippines, Indonesia, Malaysia, and Singapore, diagnostics are available at a community level at Barangays (small territorial and administrative districts in the Philippines), Puskesmas (government-mandated community health clinics in Indonesia), Klinik Kesihatan (health clinics in Malaysia), and at general practitioner (GP) clinics in Singapore.
- Meanwhile, in Bangladesh, Cambodia, India, Sri Lanka, Thailand, and India, diagnostic and patient care access are heavily centralised. Thus, access at the community level is difficult.
- In terms of financial access, several countries – including Malaysia, Thailand, Sri Lanka, and India – offer free or fully subsidised diagnostic services through the public sector. However, clinicians have noted that prices of rapid diagnostic tests (RDTs), as well as the sensitivity of these tests, could still be improved.
  - Singapore, Indonesia, the Philippines, Vietnam, Bangladesh, and Cambodia offer partial government subsidies.
  - Common tests, such as RDTs, are typically offered free-of-charge at public healthcare institutions in most countries assessed (Malaysia, Indonesia, the Philippines, Vietnam, India, Bangladesh, and Sri Lanka).
  - In India, costs of dengue tests are capped at private hospitals and private diagnostic laboratories, with the government imposing penalties against non-compliant centres.

4. Recommendations to Achieve Zero Dengue Deaths by 2030

4.1 Regional Recommendations

To strengthen dengue prevention and control efforts across Asia, countries should align national strategies with relevant regional frameworks, leveraging shared best practices, resources, and collaborative mechanisms. However, achieving effective and sustainable impact requires coordinated action across a broad network of stakeholders. Each group plays a distinct and complementary role in shaping, implementing, and sustaining policy responses to dengue.

National Policy Makers

Set national policies, allocate budgets, coordinate cross-sectoral strategies and domestic investments, and engage with global donors.

Industry

Provide tools and innovations, form public-private partnerships, support implementation, and inform policy decisions.

Healthcare Professionals

Provide front-line support by raising awareness of dengue severity and symptoms, promoting early care-seeking, and offering clinical insights to inform evidence-based policymaking.

Local Policy Makers

Implement national policies locally, allocate resources, engage communities, and monitor outbreaks.

Researchers

Generate evidence, conduct evaluations, build 'data for decision-making' capacity, support policy design, and translate research into actionable recommendations.

Multilateral Organisations

Facilitate regional collaboration, facilitate partner investments, fund programmes, and support capacity building.

The following recommendations provide a scalable roadmap for regional coordination and impact.

1

Leverage Existing Regional Strategies to Shape National Efforts

Countries should review and integrate relevant elements of existing global and regional frameworks – such as the WHO's Global Strategic Preparedness, Readiness and Response Plan for dengue and other *Aedes*-borne arboviruses, WHO's Global vector control response 2017-2030, the ASEAN Health Cluster 2 Work Programme, or the ASEAN Climate Change Strategic Action Plan (ACCSAP) 2025-2030) – into their national dengue strategies.[36-39]

Existing platforms, such as UNITEDengue (United In Tackling Epidemic Dengue), can also be leveraged to facilitate cross-border sharing of dengue information and knowledge.[40] Such efforts can help reduce disparities in dengue response capacity, support adoption of shared protocols, and elevate the visibility of national efforts within broader health and development agendas.

Call to Action	Stakeholders involved
▸ Conduct national policy reviews to identify alignment opportunities with existing global and regional strategies.	National Policy Makers
▸ Appoint national and key local policy makers from high endemic cities to participate in regional coordination efforts and technical exchanges with dengue research institutions.	National/Local Policy Makers Researchers
▸ Develop national implementation plans that reference shared regional targets, such as Zero Dengue Deaths by 2030.	National Policy Makers

2 Develop a Dengue Prevention and Control Toolkit: Menu of Regional Evidence-Based Interventions

Countries should agree on common principles and practices across core dengue pillars—such as surveillance, vector control, diagnosis, vaccination, and case management. A shared menu of evidence-based interventions can enable consistency while promoting flexibility for countries to scale or adapt based on their capacities, while ensuring it is tailored to the local epidemiological context and healthcare infrastructure.

Call to Action	Stakeholders involved
▸ Co-develop an Asian-endorsed "Dengue Prevention and Control Toolkit" that outlines recommended practices and interventions by pillar based on the country's economic and health system archetype.	Multi-lateral Organisation National / Local Policy Makers Researchers Healthcare Professionals
▸ Organise technical exchanges or country-to-country learning visits to observe successful programmes (e.g., Singapore's predictive modelling or Malaysia's vaccine rollout).	
▸ Establish a regional best-practice repository and an online 'Community of Practice' accessible to national programme managers, researchers, and civil society organisations.	

3 Establish a Regional Data-Sharing and Research Collaboration Mechanism

A dedicated regional mechanism for sharing surveillance data, policy insights, and research findings will strengthen real-time response and evidence-based planning. Joint initiatives across countries can also support the development and validation of new diagnostics, interventions, and tools suited to regional needs.

Call to Action	Stakeholders involved
▸ Launch a regional dengue dashboard to aggregate anonymised data on incidence, intervention coverage, and programme performance.	Multi-lateral Organisation National / Local Policy Makers Researchers
▸ Establish a biennial Asia Dengue Forum, a platform for researchers and policymakers to share insights and set research priorities.	
▸ Promote multi-country operational research grants funded by ASEAN, Asian Development Bank (ADB), or WHO, with shared protocols and ethics frameworks.	
▸ Monitor and communicate the economic and health impact of investments to demonstrate the value of prevention and attract sustained support from both public and private sectors.	

4.2 Overarching national recommendations

1 Establish a National Dengue Taskforce to Drive Multi-Sectoral Coordination

A dedicated and cross-sectoral task force can strengthen coordination across sectors such as health, environment, education, tourism, urban planning and local governance. A taskforce under an existing disease control body can improve response efficiency and planning continuity.

Call to Action	Stakeholders involved
▸ Appoint a focal point within the Ministry of Health or communicable disease unit to coordinate dengue control activities.	**National Policy Makers**
▸ Map key ministries and agencies, and assign dengue-related responsibilities through existing inter-agency platforms.	
▸ Hold quarterly coordination meetings to assess outbreaks, share updates, and adapt local action plans.	
▸ Leverage the taskforce to align dengue efforts with climate resilience, urban sanitation, and primary care outreach programmes.	**All stakeholders** National / Local Policymakers Healthcare Professionals Multilateral Organisations Researchers Industry

2 Position Dengue Prevention as a National Economic and Development Priority

Beyond public health, dengue has a tangible impact on national economies through healthcare costs, lost productivity, and disruptions to tourism and trade. Framing dengue as a cross-sectoral challenge increases political attention and helps mobilise wider support.

Call to Action	Stakeholders involved
▸ Collaborate with ministries of labour, education, tourism, and local industry to demonstrate the broader impacts of dengue and opportunities for joint interventions.	National Policy Makers *(Cross-sectoral)*
▸ Include dengue burden estimates in medium-term national development plans across multiple sectors, including urban development, education, and disaster preparedness.	
▸ Promote intersectoral dialogue on the return on investment (ROI) of prevention strategies such as vaccination and vector control.	

3 Ensure Transparent and Equitable Allocation of Resources

Resources should be allocated based on epidemiological data, population vulnerability, and local capacity. Utilisation of funds should be transparent as it can build trust and strengthen investment from donors. Diversifying the source of funds and ensuring sustainability of these funds can be explored through innovative financing mechanisms.

Call to Action	Stakeholders involved
▸ Conduct a national dengue burden assessment to inform equitable budget allocation and prioritise high-incidence or underserved regions.	National Policy Makers
▸ Develop and publish an annual budget report detailing dengue-related spending by region and intervention area.	
▸ Use available surveillance data to adjust funding allocation dynamically, responding to changing outbreak patterns and population needs.	National Policy Makers Researchers
▸ Identify and pursue funding opportunities from international donors, climate resilience initiatives, and health security programmes.	National Policy Makers
▸ Develop public-private partnership models of innovative financing mechanisms such as tourism health levies, urban development funds, and corporate co-investment schemes.	National Policy Makers Researchers Industry Healthcare Professionals

4.3 Country Recommendations

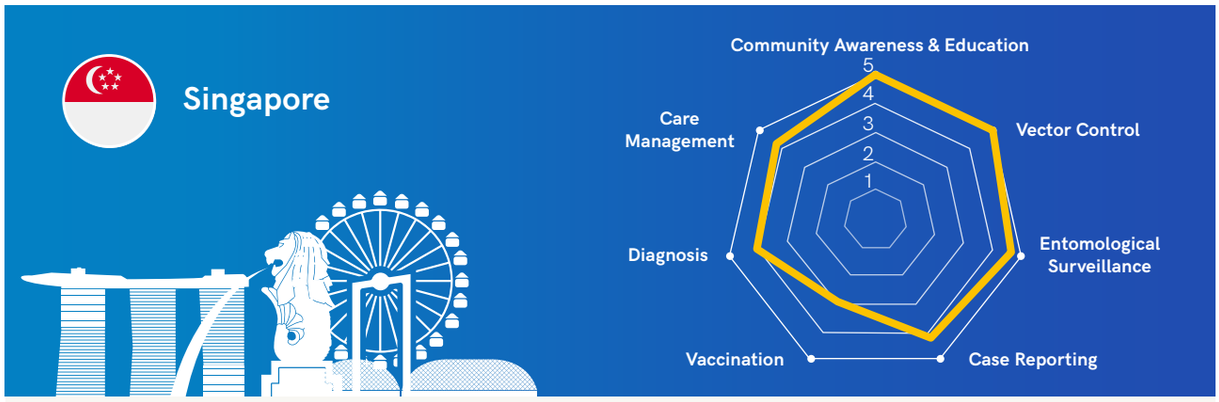
Country-specific recommendations were developed based on insights from consultations with experts and identified gaps using the standardised policy assessment rubric. These gaps reflect missing policies (e.g. absence of vaccination guidelines) and partially implemented programmes (e.g. surveillance systems not integrated across sectors), as well as broader opportunities to improve coordination, financing, and equity.

In this section, we present graphs with scores for each country across the six pillars, rated on a scale of 0 to 5. A score of 5 indicates robust implementation with supporting policies and programmes in place, while a score of 0 indicates a lack of any plan or programme for the pillar. While a score of 5 denotes robustness in implementation, there are still opportunities for improvement, including further strengthening of initiatives or increased allocation of resources.

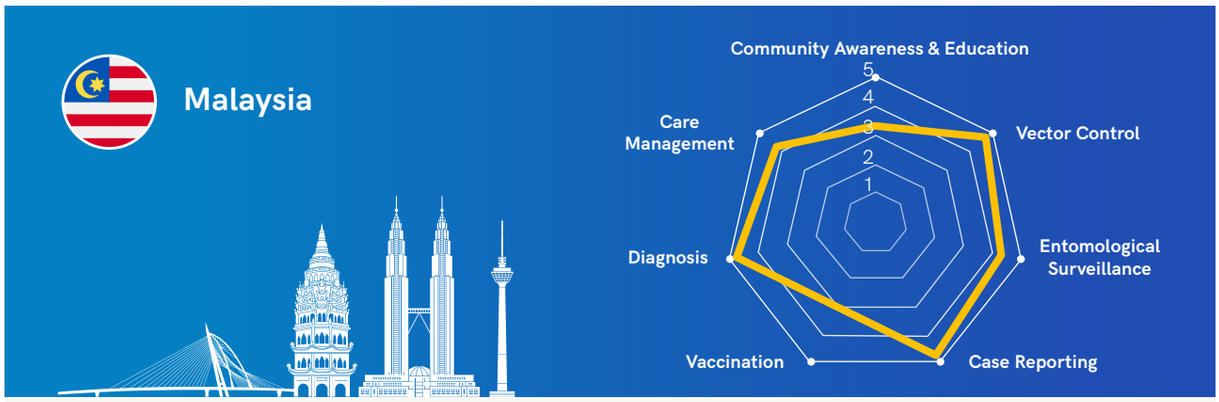
It is also important to note that there were instances where there were information gaps due to factors such as restricted access (e.g. paywalls) or language barriers. Scores provided in this section are only based on publicly available information and insights from consultations with experts. Countries were not penalised for the lack of publicly available information.

For each country, we highlight key recommendations that are tailored to each country's existing infrastructure, capacity, and implementation context, ensuring that proposed actions are both realistic and actionable. The full set of recommendations for each dengue pillar across all countries can be found in the **Appendix**.

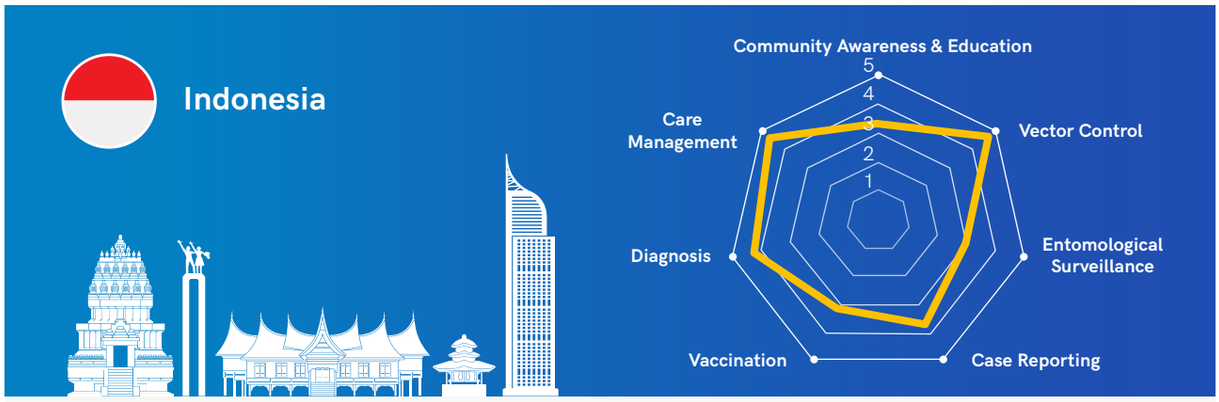
Note: *For a more detailed recommendations for each country by pillar of interest, please refer to the Healthcare Landscaping and Dengue Policy Mapping Report available on the* ***Asia Dengue Policy Working Group's website.***



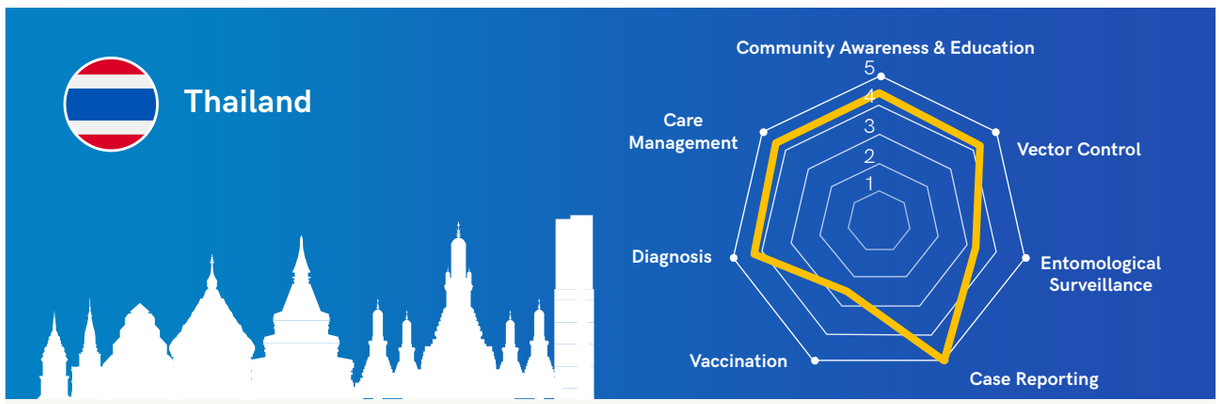
- To ensure the sustainability and enhance existing national strategies, a multisectoral approach is required to advance public confidence in dengue vaccines, including the integration of targeted public health programs to improve awareness and trust.
- Continue sharing best practices and learnings with other countries and continue creating a platform for regional collaboration.
- To further support long-term planning, consider increasing the transparency of budget allocation for dengue such as providing a breakdown of costs for vector control programmes to assess the overall impact of prevention efforts.



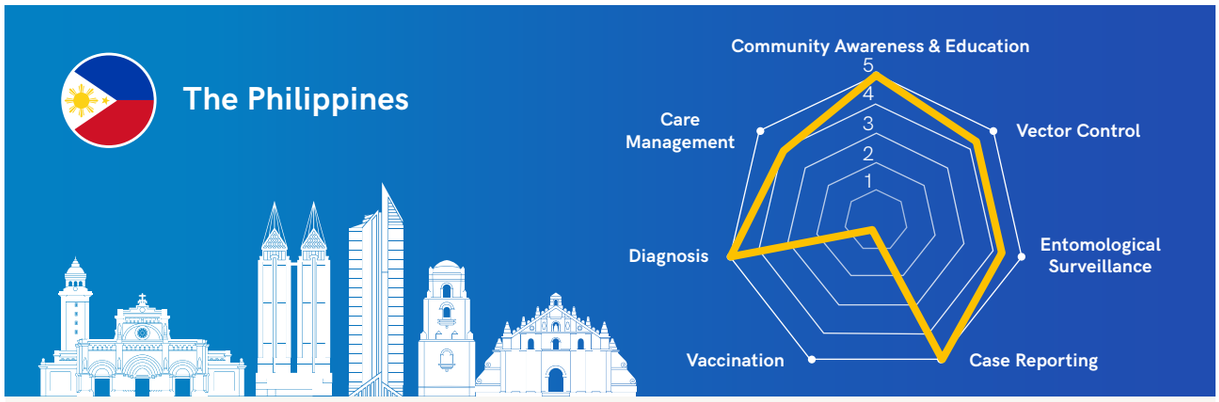
- Prioritise equitable access to high-quality dengue diagnostics across all states. Particular attention should be given to enhancing the local manufacturing of reliable diagnostic tools to enhance sustainability and self-reliance.
- Focus efforts on advancing the development of dengue-specific therapeutics, ensuring sustained investment in research and innovation.



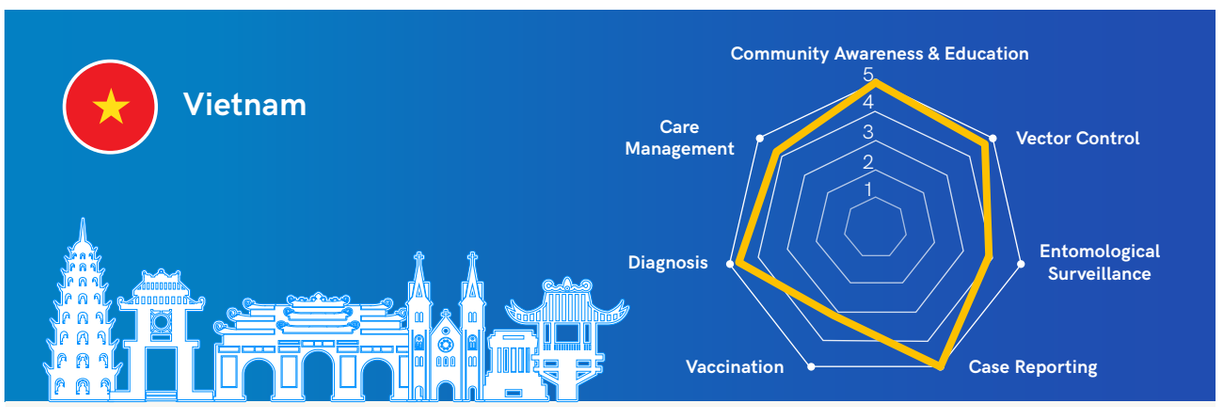
- Ensure consistent implementation and monitoring of vector control initiatives across regions, supported by investment in building local capacity to deliver effective, low-cost vector control interventions.
- To decrease mortality rates, ensure equitable access to quality care in high-burden areas.
- Enhance entomological and dengue case surveillance through improved data collection, reporting, and evaluation mechanisms, ensuring the long-term effectiveness and sustainability of national dengue strategies.



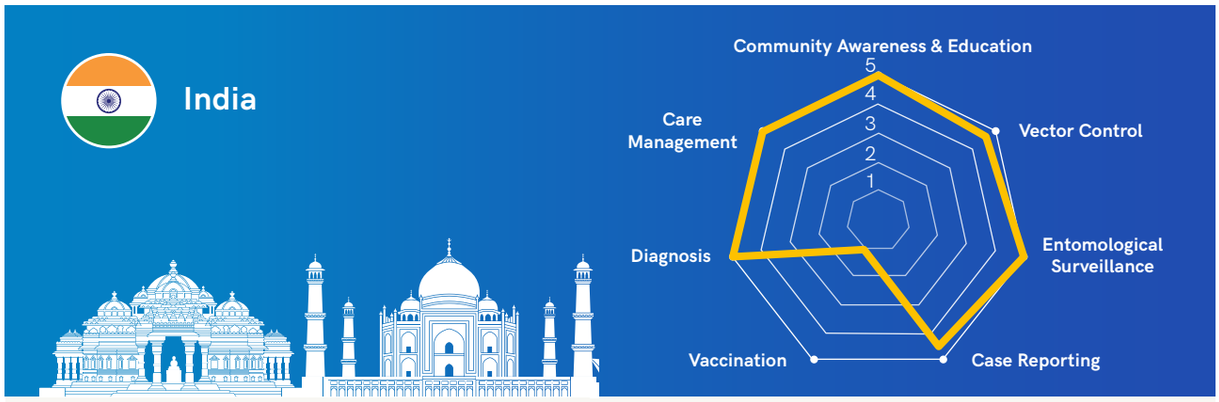
- Advocate for greater political will and long-term investment in dengue control, recognising that prevention efforts are essential to reducing the overall disease burden. The recent availability of vaccines presents an opportunity, and therefore should be considered where feasible and cost-effective.
- Ensure that health systems are well-equipped to manage patients effectively while longer-term prevention strategies, such as vaccines, are being developed or scaled.



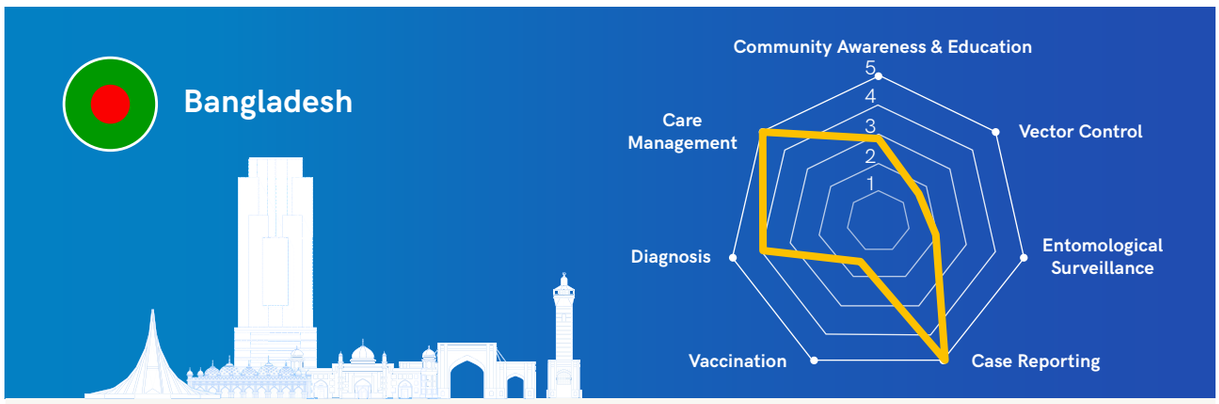
- Address both prevention through vaccination and improved care delivery. Public health strategies should continue focusing on reducing misinformation and addressing vaccine hesitancy by implementing targeted communication campaigns and leveraging international collaborations and global evidence to build public and policy confidence in dengue vaccination.
- Improve access to quality care, including the expansion of access to treatment facilities, particularly in underserved and rural areas, and ensuring consistent quality of care by monitoring adherence to clinical guidelines across healthcare settings.



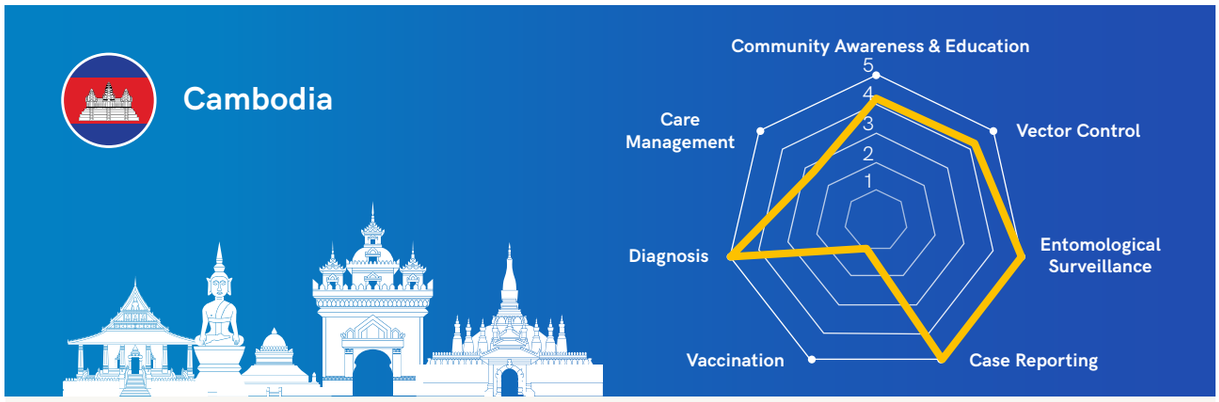
- To strengthen early outbreak response by strengthening its surveillance infrastructure to enable timely detection and reduce delays in outbreak response.
- Explore complementary strategies (e.g. improved diagnostics, *Wolbachia*, or vaccines) as longer-term options, while focusing on surveillance as the most immediate and cost-effective intervention.



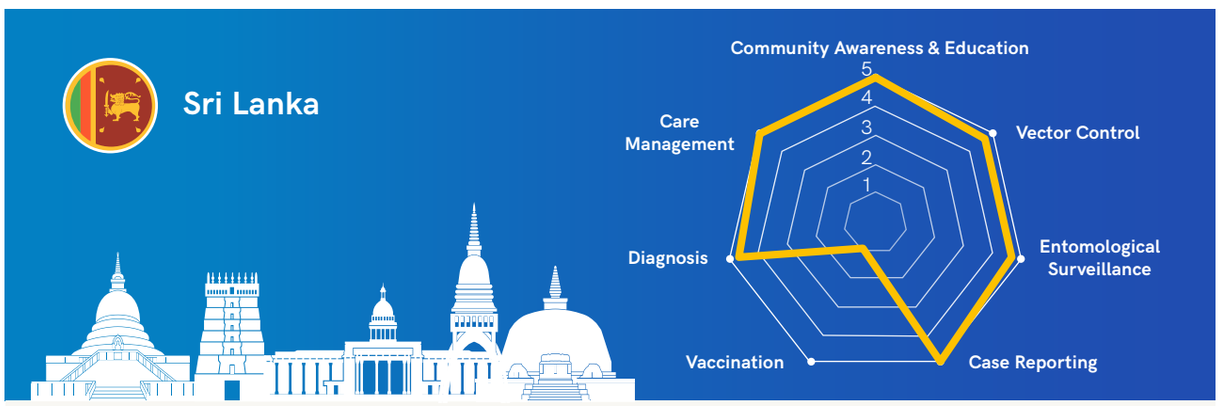
- To lay groundwork for future vaccine introduction by raising public awareness on dengue vaccines by providing clear, evidence-based information on benefits and safety to build trust and prepare for future introduction.
- Monitor global and local vaccine data and develop a phased rollout strategy aligned with national immunisation policies.
- Strengthen dengue health education by promoting symptom recognition and timely care-seeking, using consistent messaging and expanding outreach beyond digital platforms to reach rural and underserved populations.



- Strengthen coordination between national and local government authorities through regular intergovernmental meetings to streamline resource allocation and ensure consistent dengue control efforts across regions.
- Establish a nationwide vector surveillance system, including sentinel sites and routine data analysis, to guide targeted interventions and evaluate programme effectiveness.
- Monitor global and local vaccine data and develop a phased rollout strategy aligned with national immunisation policies.



- Establish robust monitoring systems to assess the effectiveness of dengue programmes and support data-driven improvements across all pillars.
- Improve transparency and coordination in resource allocation to enhance sustainability and equitable implementation of dengue control efforts.
- Accelerate dengue vaccine readiness by engaging with global partners (e.g. WHO, IVI) and expand financial support mechanisms for diagnostics and patient care to improve access and reduce out-of-pocket costs.



- Intensify community education to improve early symptom recognition, promote timely care-seeking, and increase individual responsibility for dengue prevention.
- Integrate vector control into urban planning by establishing collaboration between urban development, environmental, and health authorities to ensure dengue prevention is embedded in infrastructure and construction practices.

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Asia Dengue Voice and Action (ADVA) is a scientific working group that is committed to decreasing the burden of dengue across Asia and achieving the WHO goal of Zero Dengue Deaths by 2030. Through its flagship annual Asia Dengue Summit event and other advocacy activities, ADVA convenes the wider community to drive action for dengue control.

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As ADVA's strategy and operations partner, it leads the strategic direction and vision, and undertakes critical activities and administration related to the Asia Dengue Policy Working Group.

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The information presented in this white paper reflects the most accurate and up-to-date data available as of May 2025. While every effort has been made to ensure the accuracy and reliability of the content, policies and practices related to dengue control and management may evolve over time. Readers are encouraged to consult official sources or relevant national authorities for the latest developments. The Asia Dengue Policy Working Group does not accept any liability for errors, omissions, or changes that may have occurred after the publication date.

Please reach out to the Asia Dengue Policy Working Group for references to the data presented in the figures and tables.

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Appendix Section

Appendix 1

Criteria for the degree of optimisation per country

Criteria				
National Legislation / Acts	No existence of a notional legislation / act coverinbg dengue	Wider disease legislation / act exists which covers dengue, but it is not fully comprehensive	Wider disease legislation / act exists which covers dengue compregensively	Existence of a national dengue legislation / act
National Dengue Plan / Programme	No existence of a national dengue plan / programme	Existence of a dengue programme, with some coverage of dengue pillars	Dengue programme is robust and encompasses most pillars of interests with clear objectives and strategies	Dengue programme is robust and encompasses all pillars of interests with clear objectives and strategies
Resource Allocation for Dengue Control / Management	No budget allocated / lack of publicly available budget data for dengue control activities	some budget is allocated across the country for dengue control activities	Clear allocation of budget across the country is published for some dengue control activities	Clear allocation of budget across the country is published for dengue control activities
Involvement of Stakeholders	No coordination of dengue control and management in the country	Decentralised coordination of dengue control and management, with siloed efforts across the country	Dencentralised coordination of dengue control and managemement, with some level of alignment across the country	Centralised coordination of dengue control and management in the country

Appendix 2

Country recommendations to achieve Zero Dengue Deaths by 2030

Recommendations	Singapore	Malaysia	Indonesia	Thailand	The Philippines	Vietnam	India	Bangladesh	Cambodia	Sri Lanka
Transparency in budget and resource allocations across all pillars	✓	✓	✓	✓	✓	✓	✓	✓	✓	-
Community Awareness and Education										
Adopt public education programmes and support resources	✓	-	-	-	-	-	-	✓	-	-
Increase / Ensure public education programmes are conducted frequently (especially during monsoon season)	-	✓	✓	✓	✓	✓	-	-	✓	-
Introduce targeted educational programmes for HCPs	-	✓	✓	-	✓	✓	✓	✓	-	-
Establish mechanisms to monitor and evaluate community education and awareness programmes	-	-	✓	-	✓	-	-	✓	✓	-
Vector Control										
Adopt vector control initiatives	-	-	-	-	-	-	-	-	-	-
Scale up vector control initiatives	-	✓	✓	✓	✓	✓	✓	✓	-	✓
Adopt Wolbachiarelease programmes	-	-	-	✓	✓	-	✓	✓	✓	-
Establish mechanisms to monitor and evaluate vector control strategies	-	-	-	-	✓	✓	-	✓	✓	-
Entomological Surveillance										
Adopt entomological surveillance systems	-	-	-	-	-	-	-	-	-	-
Adoption of the following indicators for entomological surveillance - Container index (CI), Pupae Index (PI), Breteau Index (BI), House Index (HI)	-	-	-	-	✓	-	-	-	✓	-
Increased / Ensure frequent and timely collection of entomological surveillance data	-	-	✓	✓	-	-	✓	✓	-	-
Utilise entomological surveillance data for outbreak prevention / forecasting	-	-	✓	✓	-	✓	✓	✓	✓	-
Case Reporting										
Establish a centralised case reporting systems	-	-	-	-	-	-	-	-	-	-
Ensure centralised case reporting system is frequently updated	-	-	-	-	✓	✓	✓	-	-	✓
Set up a team to ensure compliance to case reporting	-	✓	-	-	✓	✓	-	✓	-	-
Increased / Ensure frequent and timely collection of case surveillance data	-	-	-	-	-	-	-	-	-	-
Utilise case surveillance data for outbreak prevention / forecasting	-	-	✓	-	-	-	-	✓	-	-

Legend

- \- Implemented by country
- ✓ Recommended for country adoption

The recommendations are based on publicly available information and insights from consultations with experts.

Country recommendations to achieve Zero Dengue Deaths by 2030 *(Continued)*

Recommendations	Singapore	Malaysia	Indonesia	Thailand	The Philippines	Vietnam	India	Bangladesh	Cambodia	Sri Lanka
Dengue vaccination										
Increase the public's knowledge and/or awareness of dengue and dengue vaccination	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Increase the public's willingness to be vaccinated	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Increase / Ensure physical access to vaccines (in the public sector)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Increase / Ensure financial access to vaccines (in the public sector)	✓	✓	✓	✓	*NA*	✓	*NA*	*NA*	*NA*	*NA*
Establish dengue vaccination guidelines	-	-	-	✓	✓	-	✓	✓	✓	✓
Obtain National Immuization Technical Advisory Group (NITAG) recommendations	-	✓	✓	-	-	✓	-	-	-	-
Set up a team to ensure compliance to guidelines in all healthcare institutions	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Increase uptake of dengue vaccines	✓	✓	✓	✓	*NA*	✓	*NA*	*NA*	*NA*	*NA*
Include dengue vaccination in National Immunisation Programme (NIP)	✓	✓	✓	✓	*NA*	✓	*NA*	*NA*	*NA*	*NA*
Dengue Diagnosis										
Establish guidelines for dengue diagnosis	-	-	-	-	-	-	-	-	-	-
Set up a team to ensure compliance to guidelines in all healthcare institutions	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Increase / Ensure physical access to diagnostic tests (in the public sector)	-	✓	-	-	✓	✓	-	✓	-	-
Increase / Ensure financial access to diagnostic tests (in the public sector)	-	-	✓	✓	✓	-	-	✓	✓	-
Educate the public on diagnostic tests covered by government subsidies	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Dengue Patient Care Management										
Establish guidelines for dengue patient care management	-	-	-	-	-	-	-	-	-	-
Set up a team to ensure compliance to guidelines in all healthcare institutions	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Increase / Ensure physical access to treatment / symptom management services (in the public sector)	-	✓	-	-	✓	✓	-	✓	-	-
Increase / Ensure financial access to treatment / symptom management services (in the public sector)	✓	✓	✓	✓	✓	✓	✓	✓	✓	-
Educate the public on treatment / symptom management services covered by government subsidies	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Legend

- \- Implemented by country
- ✓ Recommended for country adoption

The recommendations are based on publicly available information and insights from consultations with experts.

ASIA DENGUE
Policy Working Group

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