Investing in Malaria Elimination in the Asia Pacific Region

Malaria elimination in the Asia Pacific region is an achievable goal with benefits outweighing the costs, paving the way for global malaria eradication.

Overview

• Leaders from Asia Pacific have endorsed the goal of making the region malaria-free by 2030. Notable progress made against the disease in the last 15 years suggests that this ambitious goal is within reach.

• The total estimated cost of malaria elimination and prevention of reintroduction across the 22 malaria-eliminating countries in the Asia Pacific region is USD 29.02 billion from 2017-2030 (range USD 23.64-36.23 billion).

• Malaria elimination by 2030 can save about 400,000 lives and prevent over 123 million malaria cases.

• Malaria elimination in the Asia Pacific region offers a 6:1 return on investment, generating economic savings of USD 90 billion. Eliminating malaria is a “best buy” in public health whose returns are comparable to other public health investments, such as childhood immunization.

• Financing projections between 2017-2020 suggest that only 20% of the cost of elimination will be met by current levels of donor and government financing.

• The region continues to rely on donor funding, particularly the Global Fund, to meet its needs.

Sustained political and financial commitment will be critical to prevent the risk of resurgence and for the region to reach its goal of malaria freedom by 2030.

Eliminating malaria in the Asia Pacific by 2030 can lead to:

• About 400,000 lives saved
• Over 123 million cases averted
• 6:1 return on investment
• Over USD 90 billion in economic benefits

The 22 malaria-eliminating countries* in the Asia Pacific region have made significant progress against malaria, in the majority of countries reporting decreases of malaria incidence of more than 75% since 2000. Cases and deaths declined by more than 50% between 2010 and 2015 in the majority of the countries in the region, surpassing the WHO milestone of a 40% reduction by 2015 (Figure 1). In 2016, Sri Lanka was certified malaria-free by the World Health Organization (WHO) and has reoriented its efforts towards prevention of reintroduction (POR) and Bhutan, China, and Timor-Leste reported less than 200 cases. Multiple factors have contributed to

* The Asia Pacific region in this report encompasses the 22 malaria-endemic countries in 2014 as defined by APLMA, namely Afghanistan, Bangladesh, Bhutan, Cambodia, Democratic People's Republic of Korea (DPRK), India, Indonesia, Lao People's Democratic Republic (Lao PDR), Malaysia, Myanmar, Nepal, Pakistan, Papua New Guinea (PNG), People's Republic of China (China), Philippines, Republic of Korea (ROK), Solomon Islands, Sri Lanka, Thailand, Timor-Leste, Vanuatu, and Vietnam. Sri Lanka was declared malaria-free by the WHO in 2016 but still implements POR activities.
these gains including the unwavering political and financial commitment of governments, donors, and partners. In addition, regional cooperation through organizations such as the Asia Pacific Malaria Elimination Network (APMEN) and pooling of resources have also been instrumental to this success.

Achieving regional malaria elimination will require intensifying efforts and maintaining adequate financial resources. Funding for malaria in the Asia Pacific grew 5.5-fold between 2000 and 2010 due, in particular, to donors like the Global Fund to Fight AIDS, Tuberculosis and Malaria (Global Fund). In 2016, estimated financing for malaria was USD 267.6 million, which is USD 392.7 million short of the USD 800 million need expressed by countries in their national strategic plans. Historical studies have associated financial constraints and weakened political commitment to malaria with costly and deadly resurgences.

New and Old Challenges Threaten Progress

The region, however, continues to face a high burden of disease with over six million cases reported in 2015. About 1.7 billion people continue to live in areas at risk of transmission (Figure 2). Gains made against the disease are fragile and susceptible to declining donor support, budget deficits, and persistent health system challenges. In addition, antimalarial drug resistance has been detected in all five countries of the Greater Mekong Subregion** (GMS) with treatment failure rates of up to 25% reported in Cambodia. The spread of drug-resistant malaria to Africa and large economies in Asia like India would be devastating—regional health security, economic growth, and millions of lives would be at risk and decades of effort and investment would be compromised.

Building on the Momentum

To build on Asia Pacific’s successes and stem the tide of drug resistance, leaders in the region committed to a goal of malaria elimination by 2030 by endorsing the Asia Pacific Leaders Malaria Alliance (APLMA) Malaria Elimination Roadmap during the East Asia Summit. This goal is aligned with the malaria elimination strategy endorsed by the WHO for the GMS in 2014.

Developing a Regional Investment Case

To support APLMA and country-level resource mobilization and advocacy efforts, the Malaria Elimination Initiative (MEI) at the University of California, San Francisco Global Health Group, with support from the Asian Development Bank and the Bill & Melinda Gates Foundation, developed an investment case for malaria elimination. The investment case estimates the cost of elimination and POR of *Plasmodium vivax* and *P. falciparum* across 22 malaria-eliminating countries through 2030, as well as the economic returns of elimination, and explores feasible and sustainable financing options for the Asia Pacific region. There are considerable uncertainties associated with the estimates. The

** The GMS traditionally refers to the Mekong River basin in Southeast Asia, which includes six countries—Cambodia, China (Yunnan Province), Lao PDR, Myanmar, Thailand, and Vietnam. In this document, however, the term GMS refers to the five countries in the Regional Artemisinin-resistance Initiative, which excludes China.
Eliminating Malaria

Projected Elimination Scenarios

Using a dynamic malaria transmission model, the minimum intervention scenarios required to eliminate malaria in Asia Pacific by 2030 were determined (Figure 3). The model predicts that by using a variety of aggressive interventions, all 22 countries can interrupt local malaria transmission on or before their national or regional elimination target dates and two years before the regional elimination goal (Figure 4).

China and ROK are the only countries predicted to achieve elimination without scaling up current interventions. The model predicted that elimination is possible in Cambodia, DPRK, India, Lao PDR, Myanmar, Solomon Islands, and Thailand by 2030 using new tools and technological innovation. Elimination is predicted to be possible by 2030 only through the addition of MDA in Afghanistan, Cambodia, Indonesia, Lao, Myanmar, Pakistan, PNG, Solomon Islands, and Vanuatu. In all other countries, elimination is possible with the scale up of existing interventions, suggesting that a “more of the same” approach is appropriate. Sri Lanka achieved elimination and obtained WHO certification in 2016.

Figure 3. Minimum elimination scenarios for the Asia Pacific region
Eliminating Malaria: What Are the Costs?

In total, malaria elimination and POR in Asia Pacific is estimated to cost a total of USD 29.02 billion between 2017-2030 (range: USD 23.64-36.23 billion). The median cost of the minimum elimination scenarios in 2017 is over USD 840 million (Figure 5). Annual costs peak in 2020 at roughly USD 4.29 billion, then decrease to less than USD 450 million by 2030 when all 22 countries are in the POR phase. As expected, costs for elimination are highest in South Asia where the burden is highest.

Better targeting of interventions in low-risk areas could reduce the cost by at least 25% to just over USD 22.49 billion.

Figure 5. Modeled costs of malaria elimination in the Asia Pacific region, 2016–2030
Eliminating Malaria: What are the Benefits?

Malaria elimination can avert about 400,000 malaria-related deaths and 123.14 million clinical malaria infections in Asia Pacific over 14 years, generating economic benefits of USD 90 billion. Malaria elimination and POR yield economic returns of over six times the required investment.

These estimated benefits are considered to be conservative, as malaria elimination leads to other benefits that were not included in the economic evaluation. Eliminating malaria also eliminates the spread of drug resistance, contributing to human health security. As a byproduct of national elimination, other positive externalities such as increased tourism, a strengthened health system, and improved regional health security could result. In addition, elimination may bring significant benefits to other regional public goods including opportunities to create stronger cross-border disease coordination. These externalities are challenging to quantify and have not been included in this analysis but are worthy of consideration.

Estimating Current and Future Funding Gaps

A median resource envelope of USD 3 billion is needed annually to achieve and sustain malaria elimination between 2018 and 2020. With a total estimated USD 1.4 billion in available financing, the financial gap for the Asia Pacific region is about 80% of the total need.

Securing Adequate Resources

To meet the financial requirements of malaria elimination, countries in Asia Pacific will need to address longer-term sustainability and concurrently mobilize additional domestic and donor resources to maximize the impact of current financing.

The Asia Pacific region’s unprecedented economic growth has fueled the potential to scale up domestic resources for health and development. However, countries will need to harness economic growth and increase government revenue if additional domestic financing for health is to be allocated. Several opportunities exist for revenue generation. The region has experienced an average gross domestic product (GDP) growth rate of 6.5% in the past five years. In 2015, the region generated two-fifths of the global GDP (in 2011 purchasing power parity). Real GDP growth in China, India, and member states of the Association of Southeast Asian Nations (ASEAN) is projected to be about 6.2% for 2016–2020. The economies of the ten ASEAN member states collectively form the world’s seventh largest economy.

The region is expected to continue to undergo rapid economic growth and industrialization, led by China and India – the two fastest growing economies in the world. Bangladesh, Indonesia, Pakistan, the Philippines, ROK, and Vietnam are six of 11 countries globally that have been identified as the “Next 11” because of their high potential to become among the world’s largest economies in the 21st century.

Domestically, resources can be mobilized through expanding the revenue base for malaria. Experts have recommended that countries aim to increase their tax gap to above 15%. The tax gap, or the percentage of non-grant revenue collected as a proportion of GDP, indicates government ability to strengthened and expand health access. In addition, “Sin taxes,” or taxes on harmful products such as alcohol and tobacco, are a way to potentially increase supplementary revenue for health and have been successfully implemented in other Asian countries such as Thailand and the Philippines. Other types of taxes include levies on sugar-sweetened beverages, foreign currency transactions, and transactions in international finance markets. The large revenue base and the long-term nature of taxes make such instruments reliable and sustainable sources of funding. Resources can also be mobilized by capitalizing on efficiencies in the current domestic funding landscape. For example, the malaria programs can work with other ministries such as agriculture, or with other mosquito-borne diseases such as dengue fever, to integrate approaches and interventions. Although increasing government revenue can provide the fiscal space to commit to development targets, governments must still prioritize health and malaria elimination in their allocations.

Many malaria-eliminating countries are moving along the development spectrum and are classified by the World Bank as middle-income countries. As their economies continue to grow, they may not remain eligible for Global Fund and other donor financing. By 2020, four countries in Asia that currently have lower-middle-income country status (i.e., Bhutan, Indonesia, the Philippines, Sri Lanka) are likely to become upper-middle-income economies. This means that while that there is potential for domestic financing, these countries will likely graduate from aid eligibility, limiting their funding envelopes for malaria.

The diversification of Asia Pacific countries’ economies, combined with socioeconomic changes, present a unique opportunity to engage the private sector in malaria elimination. It is likely that as the contribution of the private sector to the economy increases, they will also become increasingly involved in social development efforts across Asia. Innovative approaches leveraging the expertise and resources of the private sector, in partnership with the public sector, are some approaches available to confront the challenges of a shifting malaria financing landscape and the threat of drug resistance.
Innovative private sector investment models are needed to better align their incentive structures with those of traditional corporate social responsibility models. Example of government incentives include tax relief or tax credit schemes, policies that promote expansion or diversification of programs, awards in recognition of companies that contribute to malaria elimination efforts, or instituting requirements such as health impact assessments from infrastructure and other similar projects.

Regional multilateral platforms and associations will be crucial in any effort against malaria. The ASEAN also has a wider network in the form of the 18-member East Asia Summit. Involving ASEAN, its associated entities, and other platforms will help create and maintain regional momentum and commitment from political leadership. International and regional funds pooling resources from other sources including governments, aid agencies, development institutions, corporations, foundations, and individuals may efficiently finance certain causes or objectives. The pooling of resources reflects a shared commitment to fight specific problems at the local, regional, or global levels. This is particularly relevant for the Asia Pacific region where cross-border collaboration will be integral for the region to eliminate by 2030 given the growing trend in insecticide and drug resistance. As an example, the Regional Artemisinin Initiative 2 Elimination grant, a regional funding mechanism for the GMS, may be expanded to include pooling from other sources of financing, Multilateral development banks and other non-traditional financiers are expanding their health portfolio to include lending for health security and universal health coverage. With the expanding economies, countries may be more inclined to take loans for health. These new mechanisms, coupled with blended financing options that may include interest and/or principal buy-downs from traditional donors, are potential sources for additional resources.

Global progress against malaria has been dramatic over the past decade. These gains have been driven by substantial political and financial commitments that must be sustained to avoid a resurgence of malaria. Declining financing for malaria is an imminent threat to malaria elimination, the spread of drug resistance, and regional health security in the Asia Pacific region. This investment case provides compelling evidence for the benefits of continued prioritization of funding for malaria, and can be used to develop an advocacy strategy for increased domestic and external funding for the region to reach its goal to be malaria-free by 2030.

The Malaria Elimination Initiative (MEI) at the University of California, San Francisco (UCSF) Global Health Group believes a malaria-free world is possible within a generation. As a forward-thinking partner to malaria-eliminating countries and regions, the MEI generates evidence, develops new tools and approaches, documents and disseminates elimination experiences, and builds consensus to shrink the malaria map. With support from the MEI's highly-skilled team, countries around the world are actively working to eliminate malaria—a goal that nearly 30 countries will achieve by 2020.

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