

Operational research priorities to support the elimination of neglected tropical diseases in the South-East Asia Region

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Acronyms and abbreviations

CDS	Department of Communicable Diseases
DHF	dengue haemorrhagic fever
HSS	health system strengthening
IHIP	Integrated Health Information Platform
IRS	indoor residual spray
ITM	Institute of Tropical Medicine
IU	implementation unit
LF	lymphatic filariasis
MDA	mass drug administration
MMDP	morbidity management and disability prevention
NTD	neglected tropical disease
PCR	polymerase chain reaction
PKDL	post kala-azar dermal leishmaniasis
POC	point-of-care
RDT	rapid diagnostic test
SDG	Sustainable Development Goal
SE	South-East
TAS	transmission assessment survey
UHC	universal health coverage
VL	visceral leishmaniasis
WASH	water, sanitation and hygiene

Executive summary

Neglected tropical diseases (NTDs) continue to disproportionately debilitate the health and well-being of the poor and marginalized in the South-East (SE) Asia Region. Eliminating NTDs on the verge of elimination, namely leprosy, lymphatic filariasis (LF), schistosomiasis, trachoma, visceral leishmaniasis (VL) and yaws has been a flagship priority of WHO Regional Office for SE Asia since 2014. This has significantly contributed to progressing towards the Sustainable Development Goal (SDG) target of ending the epidemics of NTDs by 2030. However, there are remaining challenges and gaps that have stalled the control and elimination efforts.

“Ending the neglect to attain the Sustainable Development Goals: a road map for neglected tropical diseases 2021–2030” underscores an urgent need for innovation, research and knowledge sharing to achieve the 2030 elimination and control targets. Timely and coordinated operational research in dengue, leprosy, LF, schistosomiasis and VL has a strong potential to fill the knowledge gaps and accelerate the control and elimination efforts.

Consultation with the large group of disease experts convened between October 2021 and July 2022 highlighted various programmatic and knowledge gaps that are posing a challenge to the effective implementation of interventions and strategies. As many as 164 areas of operational research were identified (dengue – 38, leprosy – 20, LF – 30, schistosomiasis – 14, VL – 55 and overarching areas – 7) in the domains of diagnostics, treatment, vaccines, vector control, health systems and surveillance. The expert group consultation also yielded the top five areas of operational research that can guide the research agenda prioritization in WHO SE Asia Region. In this last mile of elimination, it is pertinent to fill the knowledge gaps and provide promising and rigorously researched solutions that will help to overcome the challenges that are stalling elimination and control efforts in the Region.

1. Introduction

Neglected tropical diseases (NTDs) impose devastating human, social and economic burdens on over a billion people worldwide. In the South-East (SE) Asia Region, at least one of 12 NTDs are endemic in all 11 Member States. The NTD burden is the highest in terms of the number of people requiring interventions for at least one NTD. NTDs disproportionately affect the poor, vulnerable and marginalized populations.

Eliminating NTDs on the verge of elimination, namely leprosy, lymphatic filariasis (LF), schistosomiasis, trachoma, visceral leishmaniasis (VL) and yaws has been a flagship priority of WHO SE Asia Region since 2014. This has significantly contributed to progressing towards the Sustainable Development Goal (SDG) target of ending the epidemics of NTDs by 2030.

Since 2016, six countries of the Region have eliminated at least one NTD, including lymphatic filariasis, trachoma and yaws, and a few more countries are in the pipeline for doing so in the coming years.

In the past seven years, new cases of kala-azar in the Region have reduced by 95%. By the end of 2021, 99% of implementation units (IUs) in the Indian subcontinent had achieved the elimination target.

Bhutan, Democratic People's Republic of Korea and Maldives continue to report fewer than 25 new leprosy cases per 1 million population annually. However, we still need to progress further to reach the elimination target in all endemic countries. At the same time, efforts to control dengue as a major public health problem will also be accelerated in this decade.

Burden in SE Asia Region: status of selected NTDs

Dengue: Over the previous decade, dengue cases have tripled from 0.19 million to 0.68 million. Dengue is endemic in all Member States, except for the Democratic People's Republic of Korea. All four serotypes are currently hyperendemic in these countries and the Region accounts for more than half of the global dengue burden.

Leprosy: In 2020, a total of 84 814 new leprosy cases were reported in the Region, with 90% of these cases reported from India and Indonesia alone. Bangladesh, India, Indonesia, Myanmar, Nepal and Sri Lanka are among the 23 global priority countries for leprosy elimination.

Lymphatic filariasis (LF): As many as 262 million people were treated with either two- or three-drug therapy in India, Indonesia and Nepal in 2021. Maldives, Sri Lanka and Thailand have been validated for the elimination of LF as a public health problem and are now in the post-validation surveillance phase. Bangladesh is finalizing the dossier for validation of elimination as a public health problem. Timor-Leste has passed the first transmission assessment survey (TAS) nationwide and is due for the final TAS in 2023.

Schistosomiasis: Indonesia is the only country in the Region with schistosomiasis endemicity; however, community prevalence has been <1% due to successful rounds of mass drug administration. Indonesia is targeting elimination by 2025. Myanmar will soon validate the suspected endemicity status.

Visceral leishmaniasis (VL): New cases of kala-azar in the Region have reduced by 96.2% between 2007 and 2021. By the end of 2021, the elimination target for kala-azar was achieved in all endemic *upazilas* of Bangladesh, 99% of all endemic blocks in India and 87% of endemic districts in Nepal. Bangladesh has sustained the target of less than one kala-azar case per 10 000 population in all

“Ending the neglect to attain the sustainable development goals: a road map for neglected tropical diseases 2021–2030” has identified critical gaps and actions that are impeding the achievement of elimination targets set for 2030. This includes a lack of effective, standardized and affordable diagnostics and interventions, poor targeting of interventions, low treatment coverage among marginalized groups, non-standardized disease surveillance with low sensitivity and specificity, lack of health system capacity and infrastructure, poor quality data, limited knowledge and understanding of disease epidemiology, emerging endemic areas and new foci and lack of funding and political support resulting from donor fatigue and political and programme complacency.

The NTD roadmap underscores an urgent need for innovation, research, knowledge sharing and increased domestic funding, including external resource mobilization to successfully achieve the 2030 targets. In this last mile of elimination, it is pertinent to fill the knowledge gaps and provide promising and rigorously researched solutions that will help to overcome the challenges that are stalling elimination and control efforts in the Region. To this end, WHO Regional Office for SE Asia convened an NTD operational research areas prioritization exercise from October 2021 to July 2022.

2. NTD operational research areas prioritization process

WHO Regional Office for SE Asia constituted an ad hoc group of NTD and research experts to identify areas of operational research for five NTDs (dengue, leprosy, LF, schistosomiasis and VL) that have a strong potential to accelerate control and elimination efforts in the Region. This ad hoc group represented government, non-government, donors/partners and research institutes of Bangladesh, Bhutan, India, Indonesia, Nepal, Sri Lanka, Thailand and Timor-Leste.

A preliminary review of the literature and interviews with key NTD experts by the Institute of Tropical Medicine (ITM), Antwerp, Belgium yielded 166 areas of critical research (dengue – 32, leprosy – 17, LF – 41, schistosomiasis – 21 and VL – 55) under the thematic areas of diagnostics, treatment, vaccines, vector control, public health/health systems, surveillance and integrated interventions. The review also highlighted various programmatic and knowledge gaps that have been stalling the progress towards NTD control and elimination in the Region.

After the preliminary listing of operational research areas, a review of five available

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