Meeting of National Programme Managers for lymphatic filariasis, soil-transmitted helminthiasis and schistosomiasis and the Regional Programme Review Group of the WHO South-East Asia Region

28 June–1 July 2022
New Delhi, India
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<th>Description</th>
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<tr>
<td>ASHA</td>
<td>Accredited Social Health Activist</td>
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<tr>
<td>BRT</td>
<td>Brugia rapid test</td>
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<tr>
<td>CES</td>
<td>coverage evaluation survey</td>
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<tr>
<td>CL-SWASH</td>
<td>community-led WASH interventions to help eliminate schistosomiasis</td>
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<tr>
<td>COR-NTD</td>
<td>Coalition for Operational Research on Neglected Tropical Diseases</td>
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<td>DBS</td>
<td>dried blood spot</td>
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<tr>
<td>DEC</td>
<td>diethylcarbamazine</td>
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<tr>
<td>DOT</td>
<td>directly observed treatment</td>
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<tr>
<td>ELISA</td>
<td>enzyme-linked immunosorbent assay</td>
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<tr>
<td>EPIRF</td>
<td>epidemiological data reporting form</td>
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<tr>
<td>EU</td>
<td>evaluation unit(s)</td>
</tr>
<tr>
<td>FTS</td>
<td>filarial test strip(s)</td>
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<tr>
<td>HPV</td>
<td>human papillomavirus</td>
</tr>
<tr>
<td>HSS</td>
<td>health systems strengthening</td>
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<tr>
<td>IDA</td>
<td>ivermectin, diethylcarbamazine and albendazole</td>
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<tr>
<td>IEC</td>
<td>information, education and communication</td>
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<tr>
<td>IIS</td>
<td>IDA Impact Survey</td>
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<tr>
<td>IU</td>
<td>implementing unit(s)</td>
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<tr>
<td>KAP</td>
<td>knowledge, attitudes and practices</td>
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<td>KK</td>
<td>Kato-Katz</td>
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<tr>
<td>LF</td>
<td>lymphatic filariasis</td>
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<tr>
<td>M&amp;E</td>
<td>monitoring and evaluation</td>
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<td>MDA</td>
<td>mass drug administration</td>
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<td>MMDP</td>
<td>morbidity management and disability prevention</td>
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<td>NGO</td>
<td>nongovernmental organization(s)</td>
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<td>NT</td>
<td>never-treated</td>
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<td>NTD</td>
<td>neglected tropical disease(s)</td>
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<td>PC</td>
<td>preventative chemotherapy</td>
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<td>PCR</td>
<td>polymerase chain reaction</td>
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<td>PHC</td>
<td>primary health centre(s)</td>
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<tr>
<td>Acronym</td>
<td>Description</td>
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<tr>
<td>PIP</td>
<td>Programme Implementation Plan</td>
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<tr>
<td>PoC</td>
<td>point-of-care</td>
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<td>PVS</td>
<td>post-validation surveillance</td>
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<td>PZQ</td>
<td>praziquantel</td>
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<td>RPRG</td>
<td>Regional Programme Review Group</td>
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<td>SAC</td>
<td>School-aged children</td>
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<td>SAE</td>
<td>severe adverse event(s)</td>
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<td>SCH</td>
<td>schistosomiasis</td>
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<td>SCM</td>
<td>supply chain management</td>
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<tr>
<td>SDG</td>
<td>Sustainable Development Goal</td>
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<td>SE</td>
<td>South-East</td>
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<td>SEA-ELISA</td>
<td>soluble egg antigen enzyme-linked immunosorbent assay</td>
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<td>SOP</td>
<td>standard operating procedure(s)</td>
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<tr>
<td>STH</td>
<td>soil-transmitted helminthiasis</td>
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<tr>
<td>TAS</td>
<td>transmission assessment survey</td>
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<tr>
<td>UT</td>
<td>union territory/territories</td>
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<tr>
<td>VL</td>
<td>visceral leishmaniasis</td>
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<td>WASH</td>
<td>water, sanitation and hygiene</td>
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<tr>
<td>WHA</td>
<td>World Health Assembly</td>
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<td>WHO</td>
<td>World Health Organization</td>
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<tr>
<td>WHO CC</td>
<td>World Health Organization Collaborating Centre</td>
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<td>WRA</td>
<td>women of reproductive age</td>
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1 Introduction

1.1 Meeting organization

A face-to-face and back-to-back meeting of national programme managers and the Regional Programme Review Group (RPRG) for lymphatic filariasis (LF), soil-transmitted helminthiasis (STH) and schistosomiasis (SCH) was convened by World Health Organization (WHO) Regional Office for South-East (SE) Asia from 28 June to 1 July 2022 in New Delhi, India. The meeting was attended by 72 participants, including 18 LF/STH/SCH focal points from nine countries and 12 members of the RPRG.

1.2 Meeting objectives

The objectives of the meeting were:

- to review the progress in implementation of the recommendations of the latest RPRG meeting, programmatic progress in elimination of LF and SCH and control of STH in endemic countries of the Region, identify gaps and recommend priority actions to address the remaining operational and technical challenges;
- to review the annual reports and drug applications submitted by endemic countries for donation by WHO of albendazole, mebendazole and diethylcarbamazine (DEC) and recommend the quantities of the drugs to be donated;
- to foster experience-sharing and discussion among national programme managers and implementing partners to identify innovative practices, solutions and remaining research gaps across countries to enhance various programmatic components for accelerating elimination and control of neglected tropical diseases (NTD) in the Region.

2. Proceedings

2.1 Opening session

The meeting commenced with the reading out of the opening remarks of Dr Poonam Khetrapal Singh, Regional Director, WHO Regional Office for SE Asia by Dr Suman Rijal, Director, Department of Communicable Diseases, WHO Regional Office for SE Asia, as the Regional Director was unavailable owing to a prior commitment.

The Regional Director acknowledged the significant progress and achievements made in elimination and control of NTD in the Region ever since 2014, when eliminating NTD became a flagship priority of the Region. India was declared yaws free. Maldives, Thailand and Sri Lanka have eliminated LF as a public health problem. Nepal and Myanmar have eliminated trachoma as a public health problem. For kala-azar, all endemic districts of Bangladesh have achieved the elimination target and India and
Nepal are on the cusp of achieving the target for elimination. India, Indonesia and Nepal have rolled out mass drug administration (MDA) triple drug therapy – ivermectin, diethylcarbamazine and albendazole (IDA) to eliminate LF. Myanmar too is preparing to introduce IDA. In the Region, substantial progress has been made in institutionalizing regular deworming. Until we were hit by the COVID-19 pandemic, many countries such as Bangladesh, Bhutan, Democratic People’s Republic of Korea, Myanmar and Timor-Leste sustained over 80% national coverage annually. A few countries such as Bhutan and Bangladesh have started assessment of impacts of deworming on STH prevalence to revise the treatment strategy to combat STH. With a long year of annual MDA, the prevalence of SCH in Indonesia has reduced significantly, and the Regional Director commended the Government of Indonesia for having revised its strategic plan in its ambitious move towards interruption of transmission.

The Regional Director also highlighted the remaining challenges. Many of the remaining endemic areas have struggled with persistent transmission of LF and repeated LF survey failure despite a long history of annual MDA. This situation might be due to poor MDA compliance, quality of tests or even of medicines. While WHO is finalizing the new manual to strengthen monitoring and evaluation (M&E) of MDA, she encouraged national programmes, with support of experts and partners, to investigate potential causes of this persistent transmission and conduct high quality MDA and LF surveys. She also urged countries that had eliminated LF to maintain post-validation surveillance and strengthen morbidity management and disability prevention (MMDP). MMDP services should be integrated with leprosy disability prevention services and into primary health care in general. The COVID-19 pandemic has halted school deworming in most of countries in the Region. She requested Member States to maintain continued diligence in resuming regular deworming and strengthening collaboration with the water, sanitation and hygiene (WASH) sector for comprehensive STH control as well as for elimination of SCH.

She also expressed her sincere appreciation for the ongoing support of RPRG members and partners and donors such as GSK, Eisai, Johnson and Johnson, Merck, Mectizan Donation Program, BMGF, USAID and KOICA. She wished all attendees an engaging and informative meeting and a comfortable stay in New Delhi.

Subsequently, Dr Suman Rijal, Director, Department of Communicable Diseases, WHO Regional Office for SE Asia warmly welcomed distinguished officials from the Ministries of Health, members of RPRG, temporary advisors, representatives from donor and technical partner agencies and all other participants. He emphasized that while WHO South-East (SE) Asia Region has achieved unprecedented progress towards elimination of NTD, achieving targets in the remaining countries and sustaining elimination status needed to address several significant challenges. The ongoing situation and challenges should be carefully investigated and Member States, WHO and partners should be provided with actionable guidance to accelerate the last-mile progress by RPRG members and other experts. He looked forward to fruitful discussions for the next four days and wished all a very pleasant stay in New Delhi, India.
2.2 Global and regional updates on preventive chemotherapy diseases

Dr Jonathan King, Scientist and Team Lead, NTD/WHO headquarters presented global updates on preventive chemotherapy (PC) diseases, tools, strategies and new recommendations of advisory groups. Dr King highlighted that NTD affect 1.7 billion people globally and are a threat to public health. He discussed the roadmap for NTD, which outlines 10 cross-cutting indicators and tracks sustainability by monitoring integrated approaches, multisectoral coordination, universal health coverage and country ownership. Dr King reported that over one billion individuals received PC treatment annually from 2016 to 2019 and 787 million in 2020. He discussed the progress made in treating specific NTD, including LF, STH and SCH. He also mentioned the new tools and guidance from WHO for safely administering medicines, microplanning, supply chain management (SCM), mental health and new SCH guidelines. Dr King also presented the recommendations of the WHO Strategic and Technical Advisory Group for NTD and the NTD Drug Technical Advisory Group, including ongoing evaluation of the new version of Brugia Rapid Test, development of a standardized protocol to evaluate new LF antigen tests and rebranding of filariasis test strips (FTS).

Following global updates, Dr Aya Yajima presented the regional updates on elimination of LF and SCH and control of STH. For LF, Bangladesh is preparing to submit a dossier to become the fourth country in the Region to eliminate the disease. Timor-Leste is in a post-MDA surveillance mode, with a plan for a final transmission assessment survey (TAS) in 2023. Four countries – India, Indonesia, Myanmar and Nepal are rolling out or preparing for IDA, while persistent transmission of LF remains a challenge in some areas. For STH, coverage among school-aged children has decreased since 2017, one of the reasons for which is likely to be due to the COVID-19 pandemic. Indonesia is the only known endemic country for SCH and there is a need to enhance surveillance in the Region. She also reported the progress made on the 2021 RPRG recommendations and outlined regional priorities for 2022–2023 (Fig. 1). Overall, progress has been made in the fight against NTD in the SE Asia region, but challenges persist and more work is needed to eliminate these diseases.

Fig. 1. Regional NTD priorities for 2022–2023

<table>
<thead>
<tr>
<th>Regional NTD priorities in a nutshell (2022-2023)</th>
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<tbody>
<tr>
<td><strong>Preventive chemotherapy</strong></td>
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<tr>
<td>* Scale up LF IDA</td>
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<td>* Enhance MDA coverage by understanding factors for persistent transmission</td>
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<td>* Facilitate MDA for yaws and SOMEP for leprosy</td>
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<td>* Facilitate integrated community-based surveys for NTDs and beyond and cross-border collaboration</td>
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<tr>
<td><strong>Vector control</strong></td>
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<tr>
<td>* Strengthen capacity of field entomologists through integrated training for VEBSs</td>
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<tr>
<td>* Launch a new Regional Strategy on VL elimination</td>
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<td><strong>Case management &amp; rehabilitation</strong></td>
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<tr>
<td>* Disseminate leprosy and LF e-learning modules</td>
</tr>
<tr>
<td>* Promote integration across diseases (e.g., LF + lympho) and into PHC systems</td>
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<tr>
<td><strong>Veterinary public health</strong></td>
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<tr>
<td>* Launch and implement Regional Action Plan for snakelike envenoming</td>
</tr>
<tr>
<td>* Establish RTAG Rules</td>
</tr>
<tr>
<td>* Disseminate Tripartite tools for NTDs and support disease mapping</td>
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<tr>
<td><strong>Surveillance, HIS and laboratory</strong></td>
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<tr>
<td>* Facilitated implementation research to operationalize integrated syndromic approach for VL/PJDL, other skin NTDs</td>
</tr>
<tr>
<td>* Establish pre/post-elimination surveillance strategy for VL, yaws and schistosomiasis</td>
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<tr>
<td><strong>WASH</strong></td>
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<tr>
<td>* Develop tools to facilitate WASH-NTD collaboration (e.g., integrated posters targeting WASH sections)</td>
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<tr>
<td>* Operationalize regular WHO reporting beyond PC diseases and develop Regional database and dashboard</td>
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2.3  Disease-specific session – lymphatic filariasis

2.3.1 Addressing persistent transmission and survey failure

India, Indonesia and Nepal shared the challenges being faced by them due to persistent LF transmission and survey failure, along with underlying factors and potential solutions for them.

India

India had 328 endemic districts by the end of 2021 and 75% of them were from Bihar, Jharkhand, Uttar Pradesh, Odisha and Chhattisgarh states. Transmission assessment surveys showed that the failed districts were from Uttar Pradesh (17), Chhattisgarh (14), Maharashtra (9), Bihar (8), Jharkhand (7) and seven other states and union territories (UT). These repeated failures have hindered progress toward eliminating LF as a public health problem in India. Several key factors associated with these failures include: lower actual consumption of drugs against higher reported coverage; no universal directly observed treatment (DOT); limited community compliance due to fear of side-effects and intake of multiple tablets; poor implementation of urban MDA; weak routine surveillance and M&E; and resurgence of microfilaria, probably due to migratory populations.

Potential solutions were discussed, including strategy and policy changes such as introducing IDA, scaling up to 21 districts in 2021 and adopting block-level IDA impact assessment strategies. Implementation changes, such as emphasizing DOT, engaging community influencers and developing an information, education and communication (IEC) tool kit were suggested. Other ideas included high-level periodic reviews, taking corrective actions as per the findings and evidence, innovations such as using concurrent monitoring software CS Pro in Uttar Pradesh, engaging corporate social responsibility (CSR) to increase MDA branding and visibility and color-coded kits for drug administration in Bihar state. Key challenges are: enhancing compliance and coverage of MDA, community acceptance, meeting the country’s needs of FTS and Brugia rapid tests (BRT) given the large requirement following the shift from district to block strategy and re-establishment of transmission in areas which had cleared TAS 3.

Indonesia

Indonesia presented three settings of repeated LF survey failure. Belitung district where *B. malayi* is endemic had passed TAS 3 in 2016, but night blood surveys conducted in 2017 found 2.49–3.58% microfilaria (Mf) prevalence in two villages. Among 39 positive people identified in these villages, 10 persons claimed that they have never participated in any MDA in the past. In Pangkajene of Kepulauan where *B. malayi* is endemic, despite high reported coverage since 2012, pre-TAS failed in 2017 and 2020 with Mf prevalence of 4.4% in 2017 and 2.2% in 2020. IDA was introduced in 2022. In Pekalongan city where *W. bancrofti* is endemic too, pre-TAS failed both in 2016 and 2019 despite high reported MDA coverage; hence, IDA was re-introduced. Potential causes of such repeated TAS failures in Indonesia include the potential low true MDA compliance (i.e. for religious reasons) and zoonotic transmission of *B. malayi*. Some localities also encountered a challenge due to late arrival of medicines, which delayed MDA implementation. There was also concern on the high number of people classified as ineligible for ingestion of ivermectin.
Nepal

Nepal shared the situation of repeated LF survey failure. In Nepal, among 64 endemic districts, MDA has been stopped in 48 districts and is ongoing in 10 districts, including eight districts that continue to fail pre-TAS after at least 10 rounds of MDA. There are also five districts that had failed TAS 3 (Sindhuli, Rautahat, Mahottari, Dhanusha and Sarlahi). Also, one new district, Rasuwa, was added to the endemic district list after confirmatory mapping in 2020. Eight more districts are due for confirmatory mapping in 2022/2023. Although Nepal has maintained its epidemiological coverage well above 65% since 2003 at the national level, sub-national coverage has often been suboptimal, and as a result, pre-TAS results of some districts had shown high antigenaemia prevalence. For instance, Banke reported a prevalence of 18.54% in 2015, 22.37% in 2017 and 16.57% in 2019. Low MDA coverage among the urban population and certain population groups, MDA fatigue among both health workers and communities in recent years, cross-border migration and movement of people from endemic states of India were suggested as potential factors. Indeed, most of the positive cases in the five districts (two evaluation units [EU]) that failed TAS 3 came from two schools situated near the border with India. Nepal is introducing IDA in all remaining districts with intensified efforts, reinforcing coverage evaluation survey to validate the reported coverage and identify the reasons for low coverage and non-compliance. WHO was requested to facilitate cross-border collaboration with neighboring countries, especially with India.

2.3.2 Ensuring high quality lymphatic filariasis surveys

Dr Katherine Gass, Director of Research NTD-SC The Task Force Global Health Atlanta, US updated the participants about IDA Impact Survey (IIS). IIS would be conducted when IDA is used to accelerate the number of MDA rounds, resulting in less than four rounds of effective coverage (Fig. 2). When IDA is delivered in response to a survey above threshold and it is uncertain whether two rounds of additional IDA will be sufficient to impact the antigen/antibody prevalence, then IIS would be conducted in place of TAS. Details of design, targeted population, diagnostics, threshold, sample size and critical values of IIS were discussed. Importantly, IIS will require a larger sample size than TAS because the threshold stopping MDA is based on microfilaraemia prevalence, which is lower than the threshold based on antigenaemia prevalence in TAS. The IIS will use probability proportionate to estimated size (PPES), which is a different methodology from TAS, but the same one used in coverage evaluation survey (CES) and confirmatory mapping. It will require a list of all communities in the EU and estimated population. Dr Gass explained the methodology for sampling households and individuals, how to avoid bias, and when an EU is considered eligible for IIS. Interpretation of results from an IIS were also explained in detail. Currently, a geostatistical IIS tool is also being developed.
Fig. 2. **Algorithm to determine eligibility for IDA impact surveys**

Dr Kim Won shared the tools for ensuring high quality LF surveys. Microplanning for MDA with DOT is of prime importance, following up by supervisor’s coverage tool (SCT) for immediate mopping up and CES to confirm coverage. Programme surveys are time sensitive and results are used to make decisions. Hence, surveys should be carefully planned and survey teams should be trained on methodology and the use of recommended diagnostic tools using the proper technique. EU should be wisely formed by combination or division of the implementing unit (IU), or be the same as the IU. IU in the EU should be contiguous, and one EU should not exceed 500 000 population keeping in mind that smaller-sized EU will better reflect true mean incident infection. Utilization of proper design tools can also be enhanced to ensure high-quality outcomes. Availability of bench aid, standard operating procedures (SOP) for proper techniques and quality control of FTS are also of paramount importance to get high quality results.

### 2.3.3 post-validation surveillance

Maldives, Sri Lanka and Thailand shared their experiences of implementing post-validation surveillance in their respective countries, since WHO validation for elimination of LF as a public health problem has been achieved.

**Maldives**

In Maldives, post-validation surveillance has been conducted in 19 atolls so far, while one atoll planned to be covered was held up due to COVID-19 restrictions and difficulty in procuring test kits. Integrated vector surveillance has also been carried out in some atolls and LF vectors were found, mostly in the southern parts. LF surveillance has also been integrated into routine communicable diseases surveillance. For MMDP, regional hospitals are ready to perform hydrocele surgeries and all health facilities are ready for lymphoedema management. Training for MMDP has been provided wherever necessary.
As migrants are now an important potential source of infection in this post-validation surveillance phase, screening of migrants has been resumed. Treatment was provided free of charge to all positive persons including migrants.

M&E of public health interventions including commitment and support for conducting post-validation surveillance (PVS) face intrinsic challenges to reach doable solutions. Limited human resource capacity and procurement of small amounts of LF test kits and drugs have also been major challenges for PVS. Maldives has requested WHO support in pooled procurement of drugs and immunochromatographic test (ICT) kits with countries requiring small amounts.

**Sri Lanka**

Sri Lanka has achieved validation of elimination of LF as a public health problem in 2016. Both species, i.e. *W. bancrofti* and *B. malayi* are present in Sri Lanka. In Sri Lanka, there are five main components of PVS being implemented at present, including night blood surveys, surveillance and entomological surveillance in both formerly endemic and non-endemic districts conducted annually.

Night blood film screening is conducted in endemic districts annually, targeting 370,000 to 600,000 people, though the number of people screened reduced to 212,000 and 112,000 people in 2020 and 2021, respectively due to the impact of COVID-19. Overall Mf positivity rate is being sustained below 1%. In terms of entomological surveillance, indoor hand collection and outside traps are being used. For indoor hand collection, the infected rate and infective rate are monitored. While infected rate is going down, infective rate is increasing yearly. From the traps, xenomonitoring is conducted using polymerase chain reaction (PCR). Pools positive rate is being monitored.

Migrants are also screened for antigen annually, on average 10,000 to 14,000 each year. The Mf positivity rate has also been below 1% but has been increasing slightly in the last three years, from 0.17 to 0.3%.

In non-endemic districts, xenomonitoring and night blood surveys are conducted in different districts annually. In 2017, 2018 and 2019, positive pools were detected. Night blood filming has found only one Mf positive in 2018. Additionally, special survey has been conducted in Galle, including pre-MDA xenomonitoring and special night blood film surveys in selected sites, where detection of positive pool samples led to identification of a cluster of Mf positive patients.

SOP for PVS were prepared and web-based surveillance system for the parasitological component was completed. High-risk areas in each district were identified by analyses of existing data and evidence. WHO has supported the epidemiological assessment conducted by international and local consultants. Training for health workers and general practitioners were conducted on MMDP in non-endemic districts as well. A supervisory tool for MMDP clinics was developed. One of the challenges is to certify the quality of laboratory and microscopists for LF as quality assurance of malaria microscopy. The role of vector control as integrated vector management should be strengthened, especially in PVS.
**Thailand**

LF has been eliminated as a public health problem from Thailand since 2017. Current prevalence rate for 2022 is 0.08 per 100,000. There were 83 LF morbidity patients across the country as of June 2022.

In terms of PVS activities, sentinel sites have been established in 357 villages in 100 provinces with a population of 130,000, covering both *W. bancrofti* and *B. malayi* areas. PVS activities are composed of blood surveys in humans, vector surveillance and blood surveys in cats as per the national strategic plan “Lymphatic Filariasis Post-validation in Thailand, 2018–2027”. The main objective of this plan is to maintain the infection rate <1% and key strategies are focusing on human, vector and reservoir components. Additionally, for registered migrants, MDA drug is given. However, there is a challenge in reaching non-registered migrants. Blood survey in reservoirs (in cats) have been conducted in 10% of previous *B. malayi* endemic IUs. In Narathiwat, nine cats were found positive among 29 tested.

For MMDP, training on home-based care to affected persons by health staff and providing a kit including soap, antifungal cream, betadine and bandages to patients through health facilities is continuing in all districts with known patients in seven provinces.

The successful factors for the LF elimination programme of Thailand are programmatic operational effectiveness, availability of user-friendly diagnostic tools with high accuracy and a good public health system being in place. However, challenges are still ongoing such as screening and monitoring of unregistered migrant workers, limited new tools for reduction of vector breeding sites and delay and difficulties in implementation during the COVID-19 pandemic. Technical support as well as budgetary support from WHO and the government, partnership, community participation and social mobilization are prime accelerators to eliminate LF as well as in PVS.

Dr Jonathan King briefly explained about the latest WHO guidance on PVS in the new WHO M&E manual. There have been two publications, namely “Monitoring and epidemiological assessment of mass drug administration in the global programme to eliminate lymphatic filariasis: a manual for national elimination programmes” (2011) and “Validation of elimination of LF as a public health problem” (2017) with a few points touching on PVS. The M&E manual is being revised based on new evidence and includes an expanded PVS section. The primary and minimum aim of PVS is to ensure that recrudescence has not occurred and infection in EUs are still below target thresholds. The secondary and advanced aim is to verify elimination of transmission, criteria of which are yet to be defined. The primary clinical aim is to detect and provide care for persons affected with lymphedema and hydrocele. PVS should be prioritized in areas previously under MDA and considered to be at greatest risk of recurrence, and should be integrated with other opportunities and health services to improve sustainability. Also, reporting of persons affected (patients) should be sustained in existing health information systems to ensure care is provided. PVS should be coupled with response.
Informal consultation sessions were convened on 27 and 28 April 2022 to finalize the second edition of “Monitoring and epidemiological assessment of mass drug administration in the global programme to eliminate lymphatic filariasis: a manual for national elimination programmes”. The proposed changes were to implement a combination of at least two of the following four platforms:

- Health facility screening
- Existing standardized surveys
- Molecular xenomonitoring
- Targeted surveys to high-risk areas or high-risk groups.

The surveillance data should be reported to WHO annually through epidemiological data reporting form (EPIRF). These four platforms were discussed in detail. PVS should be implemented at least 10 years after validation. Finally, Dr King informed about the current evidence gaps for PVS, as below:

- diagnostics – target product profile published – biomarkers, development and evaluation
- validate where PVS takes place
- validate survey methodologies – sampling methodologies and tools
- integrated vector surveillance
- how PVS will lead to verification of elimination of transmission – what is the framework and criteria required
- sustainable models
- global coordinated effort to support countries to pilot approaches and start sharing experiences.

2.3.4 Morbidity management and disability prevention

Dr Jonathan King updated all on WHO guidance and new tools on MMDP. As per World Health Assembly (WHA) 50.29, one of the two pillars for elimination of LF as a public health problem is to reduce suffering and improve the quality of life. The goal of MMDP is to have 100% geographical coverage with delivery of the essential package of care through the health system at the appropriate level, integrated with other quality health services and initiatives as appropriate. These services should be provided under the framework of universal health coverage, with the aim of leaving no one behind. Dr King explained the detailed steps in providing an essential package of care.

There are three MMDP indicators required for the validation of a dossier:

- disease burden: estimates of the numbers of lymphedema and hydrocele patients per IU;
Meeting of National Programme Managers for lymphatic filariasis, soil-transmitted helminthiasis and schistosomiasis and the Regional Programme Review Group of the WHO South-East Asia Region

- availability of MMDP services: number of facilities providing services for IU with known patients; and
- readiness and quality of MMDP: preferred assessment of at least 10% of designated facilities.

Collecting and reporting of MMDP data is the critical first step towards alleviating suffering due to LF so that areas where services are needed and burden of disease should be identified and investments for MMDP justified. Finally, availability of documents and provision of care are required for the validation of a dossier.

In the SE Asia Region, all nine LF endemic countries reported patients and availability of minimum package by IU. EPIRF is an important tool to report both MMDP and PVS data annually. Available resources for MMDP were explained. WHO also plans to update its guidelines on lymphoedema management in 2023.

Following Dr King’s presentation, India, Indonesia and Thailand shared their experiences in MMDP activities in their respective countries.

**India**

In India, according to the 2021 annual report, 527,198 lymphoedema cases and 144,645 hydrocele cases were reported, while 38,382 hydrocelectomies were conducted and 165,446 MMDP kits distributed. However, service delivery is still in its early phase. Service delivery has been fully integrated with the primary health-care system under the National Health Mission (NHM). Cumulatively, 167,661 hydrocelectomies have been performed since the programme inception. Under the NHM Programme Implementation Plan (PIP), resources have been allocated for provision of MMDP kits (INR 500 per patient), hydrocele surgery (INR 750 per patient) and training (INR 50,000 per district) have been provided as per PIP 2022–2024. Emphasis is being laid to utilize the Ayushman Bharat (PM-JAY) Scheme (insurance scheme) for provision of hydrocele surgeries, with INR 5,000 for unilateral and double of it for bilateral surgery.

Government T.D. Medical College Hospital, Alappuzha, Kerala, India is the WHO Collaborating Centre (WHO CC) for LF MMDP. In collaboration with this WHO CC, the Government of India organized two national training of trainers (ToT) on MMDP for state/district officials of endemic states in 2022. Subsequently, WHO together with the WHO CC facilitated state-level ToT in the states of Chhattisgarh, Bihar, Uttar Pradesh, Maharashtra and Madhya Pradesh. India targets to establish MMDP clinics at each IU and integrate MMDP services with other disability programmes and leprosy.

**Indonesia**

Indonesia has successfully implemented an integrated MMDP service for LF and leprosy by promoting self-care groups. These groups can be transformed into self-help groups to address the problems of stigma, discrimination and socioeconomic issues. The integration of both diseases has increased efficiency and effectiveness, saving time and resources spent on both diseases and using similar solutions or approaches. The implementation process involves criteria and implementation principles, planning steps
and M&E. A mapping of leprosy and LF cases is done during the preparation phase, and the programme is launched by the head of the community, village, sub-district or district. Regular M&E is exercised to correct minor errors and consolidate lessons learned and evidence for the next planning cycle.

The project has been successful in selecting 65 persons affected by leprosy and/or LF from four districts of four provinces, recording significant progress in education and employment opportunities. However, there are challenges, including replication issues in other areas, limited access to advanced medical rehabilitation services and self-stigma. Ownership and sustainability of the self-care group should be with community leaders and local authorities, with support from local nongovernmental organizations (NGO) and primary health centres (PHC). Realistic targets should be developed. Decisions should be made by the members under the leadership of the selected leader and not by health centre workers. Involvement of broader stakeholders in all stages of the project cycle is essential for more support from different perspectives.

**Thailand**

Thailand shared its experience with using the health facility direct inspection protocol to assess the availability and readiness of MMDP services for LF. The country's major activities for LF MMDP care are home-based care, training and providing MMDP kits. A survey was conducted in 2021 using 14 indicators as per Direct Inspection Survey Version 1.1, and staff from the Division of Vector-borne Diseases and WHO Thailand participated as interviewers at respective health facilities (N=39). The survey found that availability and readiness of trained staff, guidelines and recorded reporting systems ranged from 66.67% to 100%, and measures for protection from COVID-19 were 100%. Health facilities had antiseptics, analgesics/anti-inflammatories and antifungals available, while oral antibiotics and supply for lymphoedema and acute attack management were available most of the time, except for 3% for antibiotics and 8% for supplies that were never available. The main challenges faced were the movement of staff and reduction of budgetary support, which will be solved through online training, outsourcing funding and by collaboration.

### 2.4 Cross-cutting session – ensuring high-quality MDA

#### 2.4.1 Improving MDA engagement – findings from operational research

Programme for Appropriate Technology in Health (PATH) India presented findings from operational research on improving MDA engagement in Chitrakoot and Varanasi districts of Uttar Pradesh. The study found that only 60% of households were visited by drug administrators and that the total drug consumption was only 42.7%. The main reasons for non-consumption of MDA drugs were fear of side effects/adverse drug reactions, not being at home during drug distribution and not feeling the need for the drugs because of good health. Additionally, some people lacked trust in accredited social health activists (ASHA), while some drug administrators reported being overworked and unpaid.
To improve MDA, the study recommended that household visits should be increased and targeted training should be conducted for drug administrators and supervisors. Microplans should include every household, high-risk areas and migratory populations; and local health volunteers should be included as drug administrators for effective community participation and acceptance. Multiple revisits should be conducted to missed households in the evenings and awareness sessions should be held throughout the year using locally adapted behaviour change communication strategies. Booths in schools and sub-depots in villages and government offices would enhance awareness of MDA. Strong political and administrative will, community leader involvement and partnerships between government departments are essential for the successful implementation of MDA. Periodic programme reviews and learnings from other successful programmes would guide further improvements and better implementation of MDA.

Overall, the study showed that improving MDA engagement requires a multifaceted approach, including targeted training, effective communication strategies and community participation.

2.4.2 Never-treated individuals: an update on operational research and programmatic opportunities

Dr Alison Krentel and Dr Katie Gass discussed the challenges of eliminating LF in countries where persistent low coverage and consumption rates hinder effective epidemiological coverage. To better understand the potential risk of never-treated (NT) individuals, self-reported surveys are being conducted to determine the percentage of people who have never been treated during MDA rounds. Studies have shown that the highest numbers of NT individuals reside in urban areas, and if there is one NT member in a household, other members are likely NT as well. Lower levels of knowledge, perception and acceptability are associated with self-reported NT, which is a potential risk to the elimination of LF. To address NT, the authors suggest an “engage and treat” strategy, qualitative research to understand why people miss treatment, a purposeful approach to reach new people during MDA, tailored social mobilization approaches and integration of MDA messaging into other public health programmes. Incorporating a measure of NT into routine programmatic data collection tools such as supervisor's coverage tool, data quality assessment, coverage evaluation survey and pre-TAS survey can help to further understand the reasons behind NT and develop effective interventions. The authors stressed the importance of considering contextual factors such as geography, culture and population density to better understand why NT occurs and how to address it.

2.4.3 Role of microplanning to improve compliance – the new WHO manual

Dr Caitlin Worrell presented the key components of the new WHO microplanning manual to guide implementation of preventive chemotherapy to control and eliminate NTD. It highlights the importance of a bottom-up approach to achieve 100% coverage of eligible populations in all IU for the control of neglected tropical diseases. The microplanning process should be supported at the IU level, with plans compiled and validated by the IU. The process can be divided into three phases: analysis, planning and implementation. In the analysis phase, the operational map, population estimates and drug distribution channels are determined. Resources are then calculated for the planning phase, which should be clear and doable within the local context. During the
implementation phase, coverage is monitored as per WHO guidelines and immediate corrective actions are taken based on data and evidence. Proper microplanning can improve the uptake of PC medicines. The WHO manual on microplanning is available for reference.

Country posters and presentations on world café questions and discussions followed.

### 2.5 Disease-specific session – soil-transmitted helminthiases

#### 2.5.1 Updates on WHO guidance and tools on STH impact assessment

Dr Antonio Montresor presented the updates on WHO guidance and tools for STH impact assessment. The severity of infection in an area, district or country can be categorized as non-endemic, infection of light intensity, moderate intensity or severe intensity. A non-endemic area can initially be categorized as lightly infected and then progress to moderate and severe intensities. By intervention with appropriate preventive chemotherapy, this natural process can be reversed and the morbidity due to STH infection could be eliminated. Decision tree with cut-off prevalence, frequency of interventions and timing of evaluation were explained. Reduction of the frequency of drug administration would reduce cost, logistic complications and risk of drug resistance, facilitate better coverage in the areas in need and allow coverage of the other groups at risk. The methodology for organizing an impact survey and several approaches for conducting it were explained. Bangladesh was an example of an innovative tool to evaluate the impact of its long-term intervention. In 2004, national prevalence was 80% (60–90% in different regions). It led to severe negative impact on child nutrition status, physical development and school attendance. In recent years, data were collected for geostatistical analysis from 11,022 participants among 17,874 enrollees from 10 selected districts. Among them, the analysis used data from 10,824 persons. This analysis pointed out the areas in which it would be necessary to reduce the frequency of PC and also areas where the intervention was not sufficient and should be improved, e.g. treating preschoolers, improving coverage, etc. In addition, this approach also allowed identification of areas where the data were not sufficient to generate meaningful information. In conclusion, STH prevalence of moderate/heavy intensity has been dramatically reduced in Bangladesh. Consequently, morbidity caused by STH has also been reduced.

#### 2.5.2 Policy paper for the treatment of women of reproductive age

Dr Denise Mupfasoni presented the WHO policy paper for the treatment of women of reproductive age (WRA). WHO NTD roadmap included the STH targets to “achieve and maintain elimination of STH morbidity in preschool and school-aged children” and “establish an efficient STH control programme in adolescent, pregnant and lactating women”. It was observed that PC in preschool and school-aged children was being progressed well except in 2020, probably due to the COVID-19 pandemic. Demographic and Health Survey (DHS) from 2011 to 2015 reported that the percentage of pregnant
women estimated to be dewormed was 23% (19–28%).\textsuperscript{1} Walia et al. pointed out that routine deworming during antenatal care decreased the risk of neonatal mortality and low birth weight. Likewise, deworming with praziquantel during human papillomavirus (HPV) vaccination can dramatically reduce female genital SCH\textsuperscript{2}.

WHO recommends using existing infrastructure and mechanisms to reach girls and WRA for deworming. In areas where deworming with albendazole or mebendazole and/or praziquantel are provided to children, these medicines can also be administered to adolescent girls whether enrolled in school or not, e.g. alongside HPV vaccination or iron and folic acid supplementation campaigns; pregnant women (after the first trimester) attending antenatal services; lactating women attending postnatal clinics; and women accompanying their child to vaccination services. Johnson and Johnson, a major donor for mebendazole, has set the priority for children (preschool and school age) but if there is any balance remaining, this can be used for WRA.

2.5.3 STH impact assessment and reduction of treatment frequency – country experiences and challenges

Bangladesh

Bangladesh shared its experience in employing geospatial risk mapping with the support of partner agencies. In 2005, the Government of Bangladesh initiated a programme to provide chemotherapy for school-aged children (SAC) in both public and private primary and secondary educational institutions as well as out-of-school children under the STH programme. This programme was later incorporated into “Little Doctor” activities in schools and scaled up nationwide. A study conducted between August 2017 and January 2020 revealed that the prevalence of any STH was as high as 40.4%, with the highest prevalence found in the northeastern low-lying areas and southern coastal areas. The most common STH species found was 	extit{Ascaris} (10.5%), followed by 	extit{Trichuris} (4.4%) and hookworm (<1%).

Based on these findings, a geospatial predictive model was developed to predict the prevalence of STH throughout the country. However, the patchy and varied distribution of STH prevalence suggests that other factors, such as climate change (annual flooding), availability and practice of WASH and human movement and migration need to be considered before reducing the frequency of MDA. In addition to these factors, there is a need to revisit issues and concerns related to worm biology, soil reservoir, food habits and lifestyle standards across small territories in the country.

The first-ever Bangladesh STH Summit was held in Dhaka in June 2022. The summit strengthened commitment for future multisectoral collaboration and reinforced the national programme and partners’ commitment to eliminate STH as a public health problem. The summit concluded with a declaration to collaborate with global health partners to eliminate STH based on available data, considering the interplay of the

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population, organization, environment and technology complex (POET complex) of human health ecology.

Moving forward, Bangladesh aims to keep the current STH programme ongoing among SAC and may include pre-SAC in the programme. There is a need to enhance deworming among targeted adults to achieve comprehensive targets for STH elimination. To accurately estimate prevalence and assess the availability and practice of WASH, a national survey is required. This survey should also gather statistics on the eggs, infective forms and larvae of the STH reservoir, i.e. the soil for ground proving of the geospatial predictive model.

**Bhutan**

Bhutan shared its experience in evidence-based revision of treatment frequency for STH. Bhutan's health-care system owes much of its success to the visionary leadership of its monarchs, who have embraced a primary health-care approach that integrates traditional and modern health systems. The country's development path is guided by the philosophy of Gross National Happiness (GNH) and enshrined in the Constitution. In 1985, Bhutan began PC for STH, which was followed by surveys in 1989 that revealed STH prevalence of 20–70%, with ascariasis being the most common parasitic infection at 25.7% and hookworm at 4.3% among school children. Subsequent surveys in Western Bhutan, conducted in 2003 and 2017, showed a significant decrease in prevalence rate due to successful PC interventions.

Best practices include sustained high coverage (>90%) in all 20 districts, integration with WASH in schools (WinS), sufficient water availability for WASH, trained school health coordinators, STH PC integrated with Vitamin A supplements, coverage of preschool children in routine immunization and early childhood care and development programmes. Bhutan has strictly followed RPRG recommendations to consider scaling down deworming frequency to once per year after thorough and comprehensive discussions at the high-level technical committee of the Ministry of Health and the Ministry of Education. However, challenges remain, such as limited surveillance and research capacities, reaching the unreached children in monastic institutions and competition with other priorities. Bhutan aims to conduct prevalence surveys to assess the impact of the programme in the coming years.

It is recommended to integrate NTD programmes holistically and develop robust supervision and M&E for priority NTD. Evidence-based revision of treatment frequency and recommendations as per WHO guidelines will be exercised after consultation with Technical Advisory Group. Addressing challenges and improving the STH programme's effectiveness will help Bhutan achieve its goal of eliminating STH as a public health problem.

**Sri Lanka**

Sri Lanka shared its challenges in addressing persistent STH transmission in high-risk areas and targeted strategies. This text discusses the prevalence of STH in Sri Lanka and the targeted strategies that have been implemented to combat it. The first national survey conducted in 2003, revealed an STH prevalence of 6.9%, with the highest
prevalence in the eastern region at 12.3%. A second survey in 2009, conducted in three provinces, showed a much higher prevalence of 29%, with roundworm being the most prevalent. Based on these results, a national strategy was developed, which involved biannual deworming for three high-risk provinces and annual deworming for six moderate-risk provinces.

The anti-filaria campaign, carried out from 2002 to 2006, aimed to impact STH prevalence as well. However, surveys in 2002 and 2006 showed that a single dose of albendazole per year was not enough to significantly reduce worm prevalence, especially for whipworm. A 2012 survey in the western province revealed prevalence rates of 0.8% inland and 2.8% on the coast.

A third island-wide survey was conducted in 2017, four years after the implementation of the national strategy, which included 5- to 7-year-old children from all nine provinces. The overall prevalence had significantly reduced to 0.97%, with plantation areas and urban slums still showing higher prevalence rates. Based on this evidence, the national strategy was revised to stratify risk into three categories – high, moderate and low, with the district as the intervention unit.

Instead of conducting a third nation-wide survey, a sentinel surveillance system is being established in two high-risk and three moderate-risk districts in 2022. This system will collect data through field-based, school-based and hospital-based surveillance systems with a targeted population of children between 5 to 8 years. Sri Lanka seeks input and advice from RPRG about this new surveillance system.

2.6 Cross-cutting session – pharmacovigilance associated with NTD interventions

2.6.1 Safety in administering medicines for NTD

Dr Denise Mupfasoni presented WHO’s new manual on safety of NTD interventions. WHO has identified patient safety as a top priority in its efforts to improve global health. The 2019 WHA 72.6 resolution emphasized the need to promote a safety culture, provide technical support and normative guidance and develop education and training programmes for patient safety. This is particularly important in NTD programmes, where the maximization of health benefits and minimization of harm is a primary responsibility.

To support these efforts, WHO has provided practical tools such as manuals, training modules and job aids to a wide range of audiences, including programme managers, health workers, drug distributors and implementing partners. Recently, WHO published a safety manual comprising six modules: introduction; safe drug management; choking prevention; pharmacovigilance; recognizing, managing and reporting serious adverse events (SAE); and communication and rumour control. The manual emphasizes the importance of safe drug management, which begins at the point of manufacture and extends through shipping, storage, formulation and administration. Choking prevention is particularly crucial, especially in young children. Effective
pharmacovigilance requires cross-sector collaboration to ensure that adverse events are identified, reported and investigated promptly.

Module 5 provides detailed information on SAE, including definitions, planning, preparation, response, investigation and reporting. WHO also offers an online course on Safety in Administering Medicines for Neglected Tropical Diseases to support training efforts. By providing technical guidance and education, WHO is working to promote a culture of safety and minimize harm in NTD programmes.

2.6.2 Training workshops to strengthen collaboration between NTD and pharmacovigilance programme – experience in the Pacific

Dr Aya Yajima and Dr David Addiss shared WHO Regional Office for the Western Pacific’s experience in supporting training workshops to strengthen collaboration between NTD and the pharmacovigilance programme in countries. In the Western Pacific Region, progress has been made in the elimination of several NTD. Ten out of 22 endemic countries have achieved elimination of LF, while three out of 11 have achieved elimination of trachoma and three out of four have achieved the WHO criteria for elimination of SCH. However, there have been reports of suspected SAE associated with MDA in a few cases in the last few years, despite the rollout of integrated drug administration in six countries since 2018.

To address this issue, NTD safety training sessions were held in Vanuatu, Solomon Islands and Papua New Guinea, with the participation of national and sub-national NTD programme staff, health promotion team staff, pharmacovigilance committee members at the national level, experts from implementing partners, WHO staff from both the NTD and pharmacovigilance units, communication experts and local journalists. The key feature of the training was the collaboration between NTD and pharmacovigilance programmes, focusing on their respective roles and potential areas of collaboration.

Role-playing scenarios were also conducted, including one on communication where participants were provided with "ABCD" tips to use when faced with a hostile interviewer. "A" stands for "assure," which means responding to negative questions with positive answers and contextualizing the response. "B" stands for "bridge," which involves moving on to something linked but positive after answering a difficult question. "C" stands for "correct," which means immediately correcting misinformation with facts without sounding defensive. Finally, "D" stands for "deliberate," which encourages taking time to think about responses and not rushing to answer.

By providing NTD safety training and encouraging collaboration between programmes, WHO aims to promote a culture of safety and minimize harm in NTD programmes.
2.7 Cross-cutting session – supply chain management

2.7.1 Overall supply chain issues and challenges on NTD in WHO South-East Asia Region

This session discussed the challenges faced in the supply chain management (SCM) of drugs donated for five NTD in eight countries of the South-East Asia Region. Some of the challenges identified include a lack of visibility on shipment schedules, delays in the green light process, limited courier options and COVID-19-related disruptions. Additionally, the absence of a mechanism and financial resources for redistributing medicines and test kits to other provinces/districts has led to stockouts in some areas while others have an oversupply. The lack of a uniform logistics management system for real-time reporting has also been identified as a challenge. Proposed solutions include good communication between agencies, country policy dialogues, annual refresher training on NTD SCM and the development of a real-time tracking and SCM system for in-country logistics.

To address these challenges, it is essential to establish effective communication between agencies involved in the SCM process. There is a need for country policy dialogues to clarify roles and responsibilities in terms of offloading and transport to the central medical store. Refresher training on NTD SCM should be conducted annually, and green light from WHO country offices/national programmes should be obligatory for initiating each shipment/batch, especially for large quantities of medicines. It is also necessary to develop a real-time tracking and SCM system for in-country logistics to ensure uniformity in logistics management and real-time reporting. The OpenWHO course on NTD SCM provides insights into the various aspects of SCM for NTD health products. By implementing the proposed solutions, it is possible to overcome the challenges and improve the SCM of NTD health products.

2.8 Cross-cutting session – integration

2.8.1 Integrated surveillance

Dr Kim Won presented the potential role of multiplex technology in integrated serosurveys. This technology uses lateral flow, molecular/serological assays and multiplex cinema to detect antigens of multiple disease-causing microorganisms in a single examination, customized based on local endemicities. Luminex's xMAP system is used, which is based on microspheres with unique fluorescent properties. Antigens of choice can be coupled to each bead set for customization. The assay procedure is described. It was used in Guyana to remap LF endemicity in different regions that are geographically large, remote, sparsely populated and difficult to access. Multiplex bead assay was used to test dried blood spots and a snapshot of antibody responses to various diseases was created. Careful interpretation of the data is necessary, and different cutoff values can determine sero-protection levels and prioritize areas for post-validation surveillance.
The integrated serosurveys using multiplex assays can facilitate collection of a single sample to generate multi-programme data and foster partnership among different public health programmes, addressing cross-cutting issues. However, every stakeholder must clearly define the programme decision to be made, determine the platform for collecting samples and understand the performance characteristics of the diagnostic tool. All these decisions, platforms and performance characteristics should be considered together. Opportunities to develop point-of-care (PoC) and field-friendly multiplex diagnostics should be explored and factors that initiate integration and coordination activities should be identified. Overall, multiplex technology has the potential to be cost-effective and improve coordination and integration among different public health programmes.

2.8.2 Integrated NTD surveys and MDA – country experience

Timor-Leste (integrated nationwide survey for LF, STH, taeniasis, yaws, scabies and WASH)

Timor-Leste presented its experience in conducting integrated NTD survey of LF, STH, taeniasis, yaws, scabies and WASH nationwide. The first transmission assessment survey (TAS-1) to assess the impacts of MDA and determine if the area has met the epidemiological criteria to stop MDA was conducted in 2021 targeting all the districts divided into 7 EU. A total of 234 primary schools were visited and 11,292 students of grades 1 and 2 were tested with FTS and Brugia Rapid tests. Only five of the FTS tests and one Brugia Rapid test showed positive. As per WHO guidelines, all 7 EU passed the criteria and stopped MDA nationwide.

Given the fact that Timor-Leste is endemic for yaws and STH and TAS was a unique platform to reach a large number of children for testing, Timor-Leste combined skin screening and stool examination for STH and taeniasis with TAS. TAS also combined the assessment of stunting, WASH coverage and WASH behaviour. All the 12,601 school children who participated in TAS were also screened for yaws and scabies. For STH, 11,761 students submitted stool samples nationwide. As a result, 211 suspected yaws cases were identified but all tested negative with confirmatory tests with Combo card, and 64 scabies cases were identified (0.51%). For STH, 1542 cases (17.9%) were positive for Ascaris lumbricoides, Trichuris or hookworm and moderate- and high-intensity infection was 5.6% as a whole. Coinfection among STH species or with other helminthiasis, such as Hymenolepis nana and Enterobius vermicularis was found in 2% of the examined population. Three taeniasis cases were also detected in the microscopic stool examination. Given the limited resources for conducting epidemiological surveys for each endemic NTD in such resource-limited countries, integrated NTD survey/surveillance is increasingly being recognized as a valuable opportunity. Timor-Leste successfully demonstrated the feasibility of integrating multiple NTD surveys such as stool examination and skin screening with LF TAS, which will serve as an excellent model for other countries.

Timor-Leste is now further leading the establishment of the integrated primary care programme as a national flagship programme, where various essential public health services including dengue testing and management of moderate cases, detection of
yaws and leprosy cases, diagnosis and management of LF cases are all provided through PHC, municipal hospitals and referral hospitals.

**Experience in the Pacific – Vanuatu (integrated NTD surveys and MDA)**

Dr Aya Yajima presented the experience of Vanuatu in implementing integrated NTD surveys and MDA in Vanuatu. With a population of around 300,000, Vanuatu is one of the first countries to achieve LF elimination in the world, with an effective MDA programme between 2000 and 2004. However, the country faces challenges in tackling other NTD such as yaws and scabies due to limited human resources, weak primary health-care capacity and high operational costs, among other factors. To address these challenges, Vanuatu started an integrated community outreach campaign for NTD and noncommunicable diseases (NCD) in 2019, which included skin screening for yaws and scabies, measurement of body mass index (BMI), blood pressure and blood sugar levels, health education, drug distribution and referrals to nearby health facilities as needed.

In 2021, Vanuatu integrated surveys for multiple communicable diseases with MDA, including surveys for yaws, clinical examination for scabies and leprosy, stool examination for soil STH and dried blood spot (DBS) collection for various diseases. Two entrances were set up, one for non-selected households to meet the MDA team and another for 100 members from selected households of each village to meet the survey team. All community members passed through three tables for registration, skin screening and MDA administration, and the survey team additionally performed stool sample collection and dual path platform testing, skin swab and DBS collection at the skin examination table. The teams referred people with yaws or severe skin disease to the nearest health clinic, while those with suspected leprosy were referred to the TB/leprosy office.

The integrated campaign received a positive feedback from the public and increased both coverage and access to health services in a cost-effective and time-efficient manner. However, challenges such as enhancing coordination, cooperation between programmes, securing more donor support for co-funding, as well as operational challenges need to be addressed to improve the integration process in the future.

**2.8.3 WASH and NTD**

Dr Rasheed Hussain presented the global tools and opportunities for WASH–NTD collaboration. Long-term reduction and control of diseases including NTD required lasting, sustainable and appropriate WASH interventions because it is the poorest of the world who often suffer from lack of access to the most basic water and sanitation services. WHO promoted WASH as one of the five key public health strategies to control, eliminate or eradicate NTD. NTD and WASH shared commons goals such as health, prosperity, equity and sustainability. Not just that, WASH is double-linked with NTD in their spectrum of prevention, treatment and care.

To gain success and sustain it, collaboration is required between international, regional and national level down to local authorities and across all line ministries
(interministerial collaboration) such as environment, water and sanitation, agriculture and aquaculture, energy, housing, education, finance, legislature, etc. Developmental partners, private sector, NGO and other civil society organizations would support to sustain collaborations of previous ones. Detailed WASH behaviours to prevent NTD were explained.

The NTD roadmap included a cross-cutting target on WASH to achieve 100% access to at least basic WASH in areas endemic for NTD by 2030 in line with Sustainable Development Goal (SDG) 6.1 and 6.2. WASH–NTD strategy was updated and a toolkit for WASH and health working together can be downloaded through the link OMS WASH – Un site utilisant WordPress (who.int).

Dr Aya Yajima shared Cambodia and Lao People’s Democratic Republic’s experiences of WHO Western Pacific Region in establishing a community-led initiative to improve WASH for elimination of SCH. The initiative involved multisectoral stakeholder meetings to discuss and agree on the best community participatory approaches to WASH–NTD. The focus was on strengthening health literacy at the community level, institutionalizing multisectoral cooperation and replicating activities in all endemic communities.

To implement the initiative, the National community-led multisectoral initiative to accelerate elimination of schistosomiasis (CL-SWASH) Task Force was launched, representing governmental authorities responsible for NTD, WASH, animal health, education and nutrition. Provincial, district and community-level facilitators were trained, who then trained elected community volunteers as community-led SWASH committees. These committees consisted of seven to eight members and were responsible for conducting a participative health assessment, building the CL-SWASH team, assessing water and sanitary systems and hygiene practices, mapping the village setting with the assessment results, identifying hazards and prioritizing risks, establishing control measures, finalizing the CL-SWASH plan, monitoring progress and revising the CL-SWASH plan. Over four years (2017–2020), a total of 22 villages in Cambodia and 20 villages in Lao People’s Democratic Republic were formed.

Strong coordination and collaborations were established among NTD, WASH and education teams from central, provincial and district levels for a common goal. Strong support from central, provincial and district governments increased the leadership and motivation of most village authorities and CL-SWASH village teams for good implementation progress and expansion. The government committed to allocate domestic funds for eight villages from the 2020 budget and there was a progressive increase in sanitation coverage with this support.

Sustained commitment from multiple ministries/divisions is needed to continue working together for the common goal. Good facilitators who facilitate a dialogue, rather than instructing top-down, are needed, along with continuous hands-on follow-up and monitoring to facilitate sustained cooperation. Additionally, NTD should be used as a tracer of equity in progress towards universal WASH in SDG. WASH partners should be invited to target NTD-endemic areas, and "dignity and social influence" should be added
to health prevention motivation to encourage families to improve their WASH and environmental health situation.

2.8.4 Breakout group discussion on integration for sustainability

Breakout group discussions and presentations on “How can we expand the integrated approach for sustainability?” followed.

Group 1 discussed integration of case management and rehabilitation. The areas of integration included integrated skin NTD training, integrated community-based awareness and active case detection for visceral leishmaniasis (VL), leprosy, yaws and LF, self-help groups for LF and leprosy, training on vaccine administration for rabies and other vaccine preventable diseases and a single platform for assistive device management. The practical steps to operationalize such integration would require joint planning, a national policy emanating from the highest level, multisectoral collaboration, mapping of distribution of diseases and service providers, integrated guidelines and assigning of clear roles and responsibilities across the relevant stakeholders.

Group 2 discussed integrated surveys and MDA. Potential disease combinations for integration included: (i) skin NTD such as leprosy, post kala-azar dermal leishmaniasis (PKDL), cutaneous leishmaniasis (CL) and yaws, and integration of their diagnosis, screening and active case detection at the primary health-care level; (ii) SCH, STH and LF can also be integrated for field survey using multiplex or stool examination of SCH and STH; (iii) all vector-borne diseases can be integrated for vector surveillance using dissection, microscopy and molecular diagnosis; and (iv) TB, HIV and NTD can be taken for integrated serosurveys. The practical steps needed to operationalize such integration will include advocacy from the highest level, sensitization among different programmes, mapping of disease distributions and integration or reallocation of resources for integrated activities, identification of stakeholders who will facilitate such integration, cascaded capacity-building and equipment supplies. Strategic plans and policies and common/integrated data-reporting platforms would be required to enable institutionalization of such an integrated approach as part of the health system and PHC routine functions. Creating an attractive branding and developing a common M&E framework would also be needed.

Group 3 discussed WASH and NTD. The diseases that would benefit from WASH interventions include LF, STH, SCH, scabies, yaws, trachoma, dengue, chikungunya, leprosy, kala-azar and rabies. The necessary steps to institutionalize joint action between NTD and WASH programmes would include: a multisectoral framework with common goals and targets, strong advocacy for synergistic action by all relevant ministries for cohesive actions, facility-level data to enable target areas for joint actions and M&E, identification of innovative models to allow integration such as Little Doctors in Bangladesh and water safely planning, steering committee for coordination, joint monitoring visits by all relevant ministries and joint community mobilization.
2.9 Disease-specific session – schistosomiasis

2.9.1 Progress and challenges in schistosomiasis elimination in Indonesia

Indonesia presented their current situation of SCH elimination programme. *Schistosoma japonicum* is the agent for SCH in Indonesia. Human and other mammals (buffalo, cow, etc.) are the hosts and the intermediate host is the snail, *Oncomelania hupensis lindoensis*. SCH is locally distributed in only 28 villages of Central Sulawesi province. The Health Minister introduced “Decree No. 19 Year 2018” on SCH eradication programme and formulated the National Roadmap on SCH Eradication Programme 2018–2025 with the aim of eliminating SCH by 2024. Decadal progress in annual MDA with praziquantel targeting both school-aged children and adult population reduced the prevalence in the human population to less than 1% since 2016 measured by Kato-Katz (KK) stool examination. Snail habitats too have been significantly reduced. Twelve out of 28 endemic villages has sustained and reported zero cases for three consecutive years. With this progress, Indonesia has shifted from MDA to selective treatment strategy under the new national roadmap. However, community participation in stool examination is suboptimal and the prevalence in animals and snail infection rates also remains high. Indonesia requested for RPRG’s recommendations on treatment strategy and improvement in diagnostic approach.

2.9.2 Novel strategies for breaking schistosomiasis transmission: case from Africa

Dr Stefanie Knopp shared the research experience in the efforts to eliminate *Schistosoma haematobium* in Zanzibar focusing on Zanzibar islands (Unguja and Pemba). The criteria for elimination as a public health problem was achieved in 2017 (*S. haematobium* heavy infection intensity <1%; *S. haematobium* infection prevalence <5%; and egg-positives: 48% have counts ≤ 5 eggs per 10 ml urine). On the contrary, heterogeneity of transmission and low accuracy of standard diagnostic tests were the main challenges in further accelerating interruption of transmission. The ZEST project, funded by SCORE/BMGF, played a critical role in achieving this public health milestone.

The SchistoBreak project (2020–2024), funded by Swiss National Science Foundation and currently underway in North Pemba Island, Tanzania, aims to address the three questions: (i) how to stop transmission in hot spots; (ii) how to prevent recrudescence of transmission; and (iii) what diagnostic approaches do we need to assess impact of interventions, test-and-treat, and surveillance and validation of elimination. The study area includes 20 study shehias (smallest division of administrative regions) including schools, communities, water bodies and health facilities. IU characteristic surveys were conducted at schools and water bodies during February–April 2020. Baseline survey in communities was conducted during Nov 2020–Feb 2021 in 20 communities with 70 randomized buildings per community. Knowledge, attitudes and practices (KAP) questionnaire (one adult/household) and urine analysis (all household members >3 years/house) were done.
Likewise, baseline survey was conducted in 16 public primary schools during March 2021 with urine analysis (175 children/school) and KAP questionnaire (75 children/school). Based on the data, *S. haematobium* hot spots and low-risk areas and *B. globosus* occurrence maps were developed. The risk factors for *S. haematobium* infection were also identified.

During May to October 2021, broad multidisciplinary interventions in hot spot areas were: (i) MDA with praziquantel; (ii) snail control with niclosamide; and (iii) behaviour change interventions. Furthermore, targeted interventions in low-risk areas such as surveillance, testing to identify infected people/snails and response and treating to cure infected people/water bodies were conducted. Barcoded samples and PoC test Hemastix (a colourimetric test strip) were collected. High-throughput PoC test peak-PCR was also used in schools. In addition, reactive surveillance-response activities in households and water bodies with focal snail control were done. Finally, passive surveillance-response was carried out in health facilities such as meeting and training of 21 primary health-care unit teams, testing patients that show SCH symptoms and providing treatment of hematuria positive individuals.

Performance of surveillance-response approaches and patterns of snail (re)occurrence (after mollusciciding) will be assessed. Impact of behavioural interventions on people’s knowledge and awareness and new PoC diagnostic tests for *S. haematobium* detection will be evaluated and finally, evidence to support or re-shape WHO guideline will be contributed at the end of the project.

### 2.9.3 Potential new tools for schistosomiasis elimination surveillance

#### Validation of PoC-CCA rapid urine test for detection of *S. japonicum* in Indonesia

Dr Dona Arlinda presented the outcomes of the study to validate PoC-CCA rapid urine test for detection of *S. japonicum* in Indonesia. Background, rationale and detailed procedure of the study to estimate the accuracy of the SCH PoC circulating cathodic antigen (PoC CCA) urine test for *S. japonicum* infection with reference standards and KK stool microscopies in Indonesia were explained. Major points from the study were: (i) even after two rounds of MDA, SCH infections were still detected by the KK stool microscopies; (ii) the PoC-CCA yielded a high number of false positives (low specificity), consistent with recent studies; (iii) reliability of PoC CCA is probably questionable and needs further investigation; and (iv) improved accuracy of the PoC CCA if trace was negative, although overall performance remained low. Moreover, praziquantel (PZQ) was found to be still effective as the drug of choice for *S. japonicum* infections in Indonesia; KK is still the most widely used diagnostic method; regular refresher training is necessary for labs to improve performance in reading KK slides; STH were detected along with SCH; and elimination effort is better integrated with STH programme.

#### Performance and feasibility of ELISA in *S. japonicum* surveillance in the Philippines

Dr Joma Angeles presented performance and feasibility of enzyme-linked immunosorbent assay (ELISA) in *S. japonicum* surveillance in the Philippines. In Philippines, SCH is endemic in 28 provinces in 12 regions. Out of 1609 villages, 30%
are classified as having high prevalence (>5%); 26% with moderate prevalence (≥1% to <5%), and 33% with low prevalence (<1%). KK microscopy is used as the main diagnostic tool in endemic areas; however, it revealed major drawbacks such as low sensitivity.

As new innovative tools, recombinant antigen ELISA field evaluation and soluble egg antigen-ELISA were validated with support of WHO Office of the Western Pacific Region. In conclusion, recombinant antigen ELISA SjTPx-1 and Sj7TR were proven to be more useful than KK with higher sensitivity (93.46%, 90.65%) and specificity (91.94%, 95.16%), respectively for detection of S. japonicum infection. For detection of Schistosoma mekongi infection, however, there is a need to further refine performance of ELISA. Using S. japonicum recombinant antigen and soluble egg antigen enzyme-linked immunosorbent assay (SEA-ELISA) at lower SEA concentration was found to be more highly sensitive (96.4%) and specific (93.5%). Having a very focal endemicity of Schistosoma japonicum, the recombinant antigen ELISA would be very useful in Indonesia and collaboration on capacity-building and training for the serodiagnosis of SCH for both humans and animal reservoir hosts was recommended.

**Geospatial mapping of snail foci in pre-elimination settings in Indonesia**

NIHRD Indonesia presented geospatial mapping of snail foci in pre-elimination settings in Indonesia. There are three SCH endemic areas in Indonesia, namely: (i) Napu Highland (ii) Bada Highland (both are situated in Poso District), and (iii) Lindu Highland (Sigi District). All of them are located in Central Sulawesi Province. Geographical locations of Oncomelania hupensis lindoensis habitat has been conducted in all endemic areas in 2004, 2008, 2017 and 2021. There were 218 O. hupensis lindoensis habitats based on mapping activity in 2021. Survey in 2017 had found 273 habitats (20% reduction by 2021). The majority of habitats that were found in 2021 included waterways, water seepages, uncultivated lands and pools. Snail habitats were distributed in plantations, uncultivated rice fields, buffer zone of Lore Lindu National Park and residential areas. Reduction of the number of snail habitats were observed due to establishment of irrigation channels, source reduction, molluscicides, land drying, hoarding and community engagement activities in the SCH programme. Several community engagement activities were done such as development of Bada Model, Gerakan Masyarakat Berantas Schistosomiasis (Gema Beraksi), and Gadar Basis.

Province and district plans for SCH elimination programme should be developed by respective bureaus. Molluscicide activities in all snail habitats should be continued by the health department. Irrigation channels in snail habitats should be constructed by Public Works Department. Abandoned rice fields and rat control should be reactivated. Snail habitat areas in the national park should be temporarily closed. Community participation should be increased.

**2.9.4 Endemicity confirmation of schistosomiasis in Myanmar – updates**

Dr Badri Thapa presented the background history of the SCH expert mission and further studies were reported in Rakhine and Shan states in 2018. WHO mission was conducted in 2018, which recommended incrimination of snails to identify vector species
and detection of schistosoma eggs either in the stool or urine. Accordingly, a series of snail samples were collected and sent to London Museum in the United Kingdom (WHO CC) but none of them was a known snail vector of human schistosoma species. In 2020, 30 KK stool samples were sent to Swiss Tropical and Public Health Institute for analysis. However, none of the images of stool samples were compatible with schistosoma eggs, and PCR of DNA isolated were all negative.

### 2.10 Cross-cutting session – operational research priorities and the way forward

**2.10.1 Outcomes of the operational research prioritization meeting on selected NTD in SE Asia Region (LF and schistosomiasis)**

Dr Zaw Lin presented the detailed process and method for operational research prioritization of selected NTD, namely dengue, LF, leprosy, SCH and VL. Virtual meetings and virtual surveys were carried out during 2021–2022. 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, SCH – 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. The top five operational research priorities for LF and SCH were as follows:

**LF**

1. Identification of high transmission areas, persistent hotspots and missed populations; increase understanding of determinants, improve identification and develop a strategy to mitigate the problem.

2. Evaluate the impact of NT and unreached areas on achieving elimination targets and evaluate practical, cost-efficient strategies to reduce it.

3. Evaluate current methodologies to estimate the burden of chronic disease manifestations and ability to identify Stage 1–3 lymphedema and hydrocele.

4. Explore opportunities and health system (six health system strengthening [HSS] blocks) barriers to management of chronic LF patients in the essential package of care under universal health care (UHC), including assessment of how best to integrate MMDP services into the first-line routine health care in different settings.

5. Evaluate ongoing urban MDA campaign strategies including microplanning, training, social mobilization and supervision to improve coverage and compliance.

**Schistosomiasis**

1. Study to identify effective, safe, cost-effective and sustainable snail control technology considering the environment and socioeconomic value.
(2) Study how to improve integration of multidisciplinary and multisectoral approaches through community empowerment, (e.g. WASH, snail vector, education, animal) for elimination.

(3) Develop criteria/protocols as to whether or not elimination has been achieved for stopping MDA.

(4) Assess if and to what extent SCH elimination can be integrated into primary health care.

(5) Develop more sensitive diagnostic tools adapted to S. japonicum/low-transmission setting (Indonesia).

2.10.2 Updates on coalition for operational research on neglected tropical diseases relevant to WHO SE Asia Region

Dr Pat Lammie presented the updates on coalition for operational research on neglected tropical diseases (COR-NTD) relevant to the SE Asia Region. COR-NTD is a multi-donor funded consortium designed to support operational research to improve the effectiveness of NTD programmes. The research is aligned with needs and priorities identified by countries and WHO, and the NTD-Support Centre at the Task Force for Global Health has served as the secretariat for COR-NTD. An operational research model was thoroughly explained. These research results would improve programme decision-making, programme performance and participation in NTD interventions. COR-NTD has supported more than 250 projects since 2013 up to 2021. The COVID-19 pandemic has delayed the implementation of the projects and a major donor was left out from the arena during the same time. Beyond direct support for OR, diagnostics, M&E and the community of practice for social and behavioural scientists working on NTD were supported technically, administratively and financially. COR-NTD has worked in the SE Asia Region focusing on LF and leprosy in Bangladesh, India, Nepal, Myanmar and Sri Lanka since 2019 (Fig. 3).

**Fig. 3. The list of operational research studies being supported by COR-NTD between 2019 and 2023**

<table>
<thead>
<tr>
<th>NTD-ID</th>
<th>Country</th>
<th>Study Purpose</th>
<th>Disease Focus</th>
</tr>
</thead>
<tbody>
<tr>
<td>NTDSC 056.1U</td>
<td>India</td>
<td>Doxycycline for Clinical Management of Filarial Lymphedema</td>
<td>LF</td>
</tr>
<tr>
<td>NTDSC 056.2U</td>
<td>Sri Lanka</td>
<td>Doxycycline for Clinical Management of Filarial Lymphedema</td>
<td>LF</td>
</tr>
<tr>
<td>NTDSC 176G</td>
<td>India</td>
<td>Operational research to develop an M&amp;E study to guide a triple drug stopping decision for lymphatic filariasis in India</td>
<td>LF</td>
</tr>
<tr>
<td>NTDSC 177U</td>
<td>Nepal</td>
<td>Improving Mass Drug Administration After Pre-Transmission Assessment Survey (Pre-TAS) Failure: A Mixed Methods Study in Nepal</td>
<td>LF</td>
</tr>
<tr>
<td>NTDSC 181U</td>
<td>Nepal</td>
<td>TASI positive case follow-up</td>
<td>LF</td>
</tr>
<tr>
<td>NTDSC 187U</td>
<td>Bangladesh</td>
<td>Developing a surveillance framework for the post-elimination phase of the lymphatic filariasis programme in Bangladesh</td>
<td>LF</td>
</tr>
<tr>
<td>NTDSC 188D</td>
<td>India</td>
<td>Improving outcome of future transmission assessment surveys and community compliance for MDA in 14 LF endemic districts of Uttar Pradesh.</td>
<td>LF</td>
</tr>
<tr>
<td>NTDSC 197D</td>
<td>India</td>
<td>The influence of stigma on social participation and mental well-being amongst men and women affected/disabled by lymphatic filariasis and leprosy in the districts of Jaipur and Patna in India.</td>
<td>LF, leprosy</td>
</tr>
<tr>
<td>NTDSC 199D</td>
<td>India</td>
<td>Developing an appropriate model of care for lymphatic filariasis and leprosy patients who need MMSP services in Bihar State, India.</td>
<td>LF, leprosy</td>
</tr>
<tr>
<td>NTDSC 218.1D</td>
<td>Nepal, Myanmar</td>
<td>Geospatial methods of clustering leprosy case data for effective rollout or implementation of both PEP and new case detection initiatives.</td>
<td>Leprosy</td>
</tr>
</tbody>
</table>
New research opportunities in post-validation surveillance, integrated surveillance, validation of new diagnostic tools and LF MMDP were discussed. Opportunities for regional COR-NTD would be explored.

2.11 Forum for NTD partnership

2.11.1 Global NTD advocacy – updates and tips for domestic advocacy

Dr Thoko Elphick-Pooley presented the updates on the Kigali Declaration and the work of the Uniting to Combat NTD in global NTD advocacy. We have eight years to reach the SDG 3 targets of: (i) reducing by 90% the numbers of people requiring an intervention against NTD; (ii) eradication of two diseases; and (iii) one hundred countries eliminating at least one NTD by 2030. It is this target of eliminating at least one NTD in 100 countries that has inspired the 100% Committed movement. The 100% Committed movement existed to connect and amplify our voices, especially those of affected people. Together, we called on our leaders to show they are 100% committed to ending NTD by signing and endorsing the Kigali Declaration on NTD. The detailed endorsement process of the Kigali Declaration and role of national governments were explained. The Kigali Declaration on NTD builds on the London Declaration on NTD and previous successes by putting country ownership of NTD programmes, integration and cross-sectoral collaboration front and centre to ensure that these programmes are sustainable in the long term. The Kigali Declaration commitment tracker would shortly be live on the Uniting to Combat NTD’s website and partners would be able to view commitment totals, breakdown of commitments by stakeholder type, themes, geography and more. The Kigali Summit on Malaria and NTD was convened and hosted by His Excellency Paul Kagame, President of the Republic of Rwanda on 23 June 2022. The summit was attended by heads of state and government, honourable ministers, leaders from the private sector, philanthropy, academia and research, members of civil society and affected communities and youth delegates. The Kigali Summit represented a vital moment in the fight against malaria and NTD. Against the backdrop of disruptions of essential services and supply chains during the COVID-19 pandemic and plateauing of funding, rapidly increasing population and widespread biological challenges such as insecticide and drug resistance, the work to eliminate these diseases has stalled and even reversed in some countries. The world leaders gathered at the Kigali Summit on Malaria and NTD resolved to meet the current challenges including the COVID-19 pandemic head on, by making firm commitments towards ending these devastating diseases by the end of the decade.

3. Recommendations

WHO SE Asia Region accounts for over 60% of the global burden of LF, with about 56% of the target population requiring PC for STH globally and a small population at the risk SCH transmission.

Out of the nine LF-endemic countries in the Region, five had stopped MDA and three of the remaining four countries continued it in 2021. Of the 1072 IU, MDA was
stopped in 725 units (68%) as of 2021 and in the remaining 347 IUs, 262 million instances of treatment, or drug packages, were provided and administered in 2021, with a coverage of 52.2%. Bangladesh is preparing the LF elimination validation dossier and Timor-Leste met the criteria to stop LF MDA nationally.

Of about 591 million pre-SAC and SAC requiring PC for STH, about 308 million (52.2%) children in eight countries were treated in 2021 and five countries sustained effective coverage. SCH is prevalent in 28 villages in Indonesia, with about 29,000 people at risk of infection. The programme has achieved a very low prevalence of infection in the human population and hereafter, an enhanced surveillance is required.

The RPRG appreciated the progress made by the activities towards elimination of LF and SCH and control of STH despite the limitations due to COVID-19. The challenges to effective implementation of LF elimination programmes include persistent transmission and survey failures despite several rounds of MDA, a gap in the supply of quality-assured drugs and diagnostic tests and a lack of systematically implemented post-validation surveillance.

The Group appreciated the fact that the deliberations during the current review primarily focused on the major technical and operational issues in the Region to identify appropriate measures to mitigate the challenges.

### 3.1 Recommendations to WHO Secretariat

- With the support of partners, support Member States in addressing the emerging challenges in the Region, such as increasing the frequency of pre-TAS and TAS failures, never-treated populations, achieving effective coverage in urban areas, diagnostics and medicine supply chain constraints, new endemic districts, cross-border transmission and integrating MMDP in primary health care.
- Continue and strengthen advocacy for comprehensive national LF MMDP programmes across the Region and promote successful models of integration with PHC, best practices and knowledge-sharing to expedite burden estimates and 100% geographical coverage of MMDP activities.
- Consider formulating a global policy on integration of NTD interventions with other public health programmes and PHC and work with Member States to facilitate integration of NTD activities (e.g. surveys/surveillance, MDA and WASH) with other public health programmes or PHC/health system functions.
- Continue dialogue between WHO and the Global Fund (GF) to enable integration of NTD activities with GF-funded activities for malaria, TB and HIV, and issue a policy paper to encourage such integration.
- Facilitate data-sharing and joint planning for synchronizing MDA against LF in districts across the border in India and Nepal.
- Develop an indicator for monitoring quality of LF PVS.
WHO Working Group on Monitoring, Evaluation and Research should evaluate current research on geospatial statistics for informing NTD surveys and provide systematic guidance for programmatic use across the NTDs. The current research with LF and STH can be reviewed as first examples.

Extend support to Member States in strengthening collaboration between NTD and pharmacovigilance programmes to enhance safety in administering NTD medicines through dissemination of the new guidance and regional and national training workshops.

Facilitate domestic procurement of rapid test kits and drugs by Member States to meet their full demand.

Support Member States in preparing national plans for PVS, given the appreciable progress made in achieving elimination in the Region and the WHO initiative of developing PVS guidelines.

Share the new STH impact assessment survey guidelines and once available, support capacity-building so that Member States can follow a similar protocol and decide on the treatment frequencies and demonstrate achievement of elimination of STH.

Support Member States to improve supply chain management, using NTDeliver for real-time tracking of medicines. The system should also include wastage management, including disaster-related loss of medicines.

### 3.2 Member States

**3.2.1 Recommendations applicable to more than one country**

- Countries are encouraged to collect geographical coordinates of surveyed sites so that a geospatial analysis can be conducted on the distribution of risk and prioritization of areas for targeted intervention and future surveys (all countries).

- Member States are encouraged to improve capacity to implement high-quality NTD surveys (all countries).

- Member States are encouraged to prepare microplans preferably at the level of supervisory area. In the countries already applying microplanning, microplans and the process should be improved according to the new WHO guidance (all countries).

- Countries in which STH infections are endemic are encouraged to explore opportunities to integrate deworming for adolescent girls and women of reproductive age (WRA) into existing platforms, such as schools and antenatal clinics, informal training centres, adolescent-friendly clinics and services and educational institutions, where the importance of deworming can be incorporated as part of health education (all countries).
- Develop and implement LF PVC and robust response measures in countries validated for elimination of LF as a public health problem, using the guidance and new tools available, such as geospatial modelling (LF post-validation countries).

- In countries that are not yet validated, PVS activities should be piloted in post-TAS 3 EU while waiting for all other EU to pass TAS 3 and explore opportunities to integrate PVS in other existing surveillance platforms for sustainability (all LF-endemic countries).

- The essential care package for MMDP is effective for reducing physical, mental, financial and psychosocial sufferings and improve the quality of life of persons affected with lymphedema and hydrocele. To be effective, MMDP must be integrated with the PHC system of the country. Countries are to sustain and scale up MMDP activities by systematic integration with the PHC system and other morbidity management programmes, advocacy, engagement with partners, training of health-care providers and mobilizing resources (all LF-endemic countries).

- Countries are encouraged to report data from PVS and MMDP activities to WHO annually even after validation of elimination of LF as public health problem (Maldives, Sri Lanka and Thailand).

- The group observed with concern the increasing proportion of failures in pre-TAS and TAS in the countries with current MDA. National programmes should dive deep into the data available on infection, including clustering of positive results and past implementation of MDA with the support of WHO. Use the checklists for improving TAS outcomes as guides and follow best practices for quality survey implementation. Involve the provincial and district programme managers concerned, local health staff and the community to identify causes and take corrective steps on a priority basis. Consider qualitative data collection to better understand how to strengthen MDA delivery (India, Nepal and Indonesia).

- It is evident that NT population is critical for improving the impact of LF MDA. Countries are encouraged to include this indicator in any of the coverage assessment tools or epidemiological surveys (supervisors’ coverage, CES, data quality assurance [DQA], pre-TAS etc.). Using the NT data, appropriate action, such as “engage and treat” or “test and treat”, can be initiated. Social mobilization can be revitalized using newer tools and approaches (India, Nepal, Indonesia, Myanmar).

- Ensure that all positive individuals, identified in any LF survey, are treated with at least a single dose, preferably IDA or DEC and albendazole (DA) (where ivermectin is not available]. Survey teams should have medicine with them to do so immediately. Active follow-up and extended treatment of residents around the positive individuals should be considered in the EU that have passed TAS, if resources permit (Bangladesh, India, Nepal, Indonesia, Myanmar, Timor-Leste).
➤ Continue to innovate and improve the quality and impact of LF MDA and surveys through scaling up of IDA and microplanning, focusing on NT populations/groups, and SOP, training and quality assurance mechanisms pertaining to serological, parasitological and entomological surveys (India, Indonesia, Nepal and Myanmar).

➤ Due to some quality-related issues of the new format of the BRT, transmission assessment surveys in Brugia-endemic districts in Indonesia have been postponed. WHO coordinated a multicentric evaluation of the new format of BRT and shared the results with Diagnostic Technical Advisory Group (DTAG) LF subgroup for recommendations. Accordingly, the recommendations provided below for the countries using BRT for impact assessment in Brugia-endemic areas (Indonesia, India), based on the results of multicentric evaluation, can be followed in evaluating the impact of MDA.

- For districts that are qualified for TAS 1, it is recommended that MDA is continued or mini-TAS conducted by testing adults (20 years) with night blood smears for microfilaria detection from 30 clusters (where the primary sampling areas are more than 40), or otherwise from all clusters. In these districts, the result of the mini-TAS is accepted to determine whether MDA can stop.

- For districts that are due for TAS 2, the TAS 2 surveys can be skipped until new kits are available and if conducted at least four years after MDA has stopped, this represents TAS 3.

- For districts where TAS 3 is needed, the TAS 3 surveys should be delayed until improved Brugia rapid kits are available.

- In areas with both W. bancrofti and Brugia spp. infections, TAS may be conducted among children for W. bancrofti, using FTS. If a school-based TAS is conducted, adults in the communities where the schools are located can be sampled for Brugia following mini-TAS. Alternatively, mini-TAS among adults is accepted for both species, given that night blood smears will detect microfilaria of both species.

- Collection of DBS is encouraged in all surveys, stored frozen for potential future testing.

3.2.2 Country-specific recommendations
(also refer to recommendations under 3.2.1)

**Bangladesh**

The country completed LF TAS 3 in the last EU of the Rangpur district in 2021. All 64 provinces conducted deworming twice in 2021 for SAC, achieving 71.3% coverage (28 million SAC treated). The group commended the fact that the country conducted STH surveys using geostatistical model with WASH, climate change (annual flooding) and population movement, and the results were reviewed during the recent STH summit in June 2022. Deworming of pre-SAC, which is under the National Nutrition Services, has not been implemented since 2014.
Update the LF dossier with the results of recently completed TAS 3 in the Rangpur district and other activities, and submit the same to WHO.

Develop post-validation surveillance plan with a particular focus on EU that identified antigen-positive children, including the Rangpur district, and include the plan in the dossier. Initiate PVS activities as outlined in the plan soonest.

For STH, in the current year (2022), it is recommended that the current frequency of deworming of SAC be continued, given the disruptions of deworming in 2020 due to the COVID-19 pandemic. In 2023, annual deworming is recommended in the areas identified in the survey, where the STH prevalence is estimated to be lower than 20%. The prevalence and intensity of infection should be monitored in these areas after 2–3 years.

The group noted that the country achieved over 90% coverage of SAC and 55% coverage of the out-of-school children through the STH programme. It is recommended that the country re-introduce deworming for pre-SAC with chewable/dissolvable anthelminthic drugs in conjunction with the Vitamin A supplementation programme.

**Bhutan**

- RPRG noted that the programme will reduce the frequency of deworming from twice a year to once a year from 2023 onward, based on the STH prevalence and intensity data.
- Conduct STH impact assessment survey in 2024/2025 to monitor the prevalence of STH after reducing the treatment frequency.

**Maldives**

- Continue the planned PVS and MMDP activities in all 20 atolls, including treatment of migrant workers from endemic countries. Report the results of post-validation survey and any updated MMDP data to WHO, using the EPIRF by 15 September 2022.
- Continue implementation of annual deworming of children under five years of age and establish and strengthen the surveillance for STH transmission through the use of WHO-recommended STH impact assessment survey tools (e.g. sentinel site surveillance) to monitor the prevalence of STH. The results of lab-based surveillance for STH can be submitted to WHO to assess the readiness for integration with health facilities.
India

With the addition of newly identified endemic areas, the number of endemic districts for LF are 328, out of which, MDA has been stopped in 133 districts after passing TAS 1, and pre-TAS/TAS surveys are in progress in 62 districts. In 2021, 133 districts conducted MDA, achieving 51.3% treatment coverage (250 million people treated), of which 21 districts implemented IDA with 78.1% coverage (48.7 million people treated). In 2021, 17 EUs failed TAS.

The country has revised the LF national guidelines and prepared plans for block(sub-district)-level MDA implementation and impact assessments. RPRG commends the programme developing revised national guidelines for LF programme implementation and evaluation and downsizing the implementation/evaluation units for stronger evidence-based decision-making. RPRG noted that the programme had proposed to scale up IDA-MDA towards accelerating LF elimination. The group also noted the challenges associated with the quantity of FTS needed to conduct TAS.

The group noted that IDA was introduced in the Arwal district of the state of Bihar in India and following two effective rounds of MDA, pre-TAS was conducted and qualified for TAS. TAS 1 was conducted (n=1611) and 158 children were positive for CFA. Night blood samples from these positive children showed eight Mf-positive cases (0.5%).

The programme presented another situation for advice from RPRG. The Nagpur district in the state of Maharashtra conducted two rounds of IDA from 2019 to 2020, with reported coverage of 78.7% and 73.2% in the first and second round of IDA-MDA respectively. The district conducted TAS 1 in four EUs in this district in 2021. Two EUs (Umred and Medical), which are urban units, failed and the other two EUs passed. Following TAS 1, one more round of IDA-MDA has already been conducted in 2022.

Two rounds of deworming for STH control were conducted in 2020 with a coverage of about 66–89%. However, STH treatment data in 2021 has not been submitted to WHO yet.

- Noting the continued challenges to attaining effective treatment coverage in urban settings, the programme is encouraged to develop innovative strategies to improve programme performance in urban areas.
- Review the situation in pre-TAS and TAS-failed districts with support of WHO and implement corrective measures. A targeted approach can be followed in situations where the infections were clustered in TAS by delineating new EU for resurveying or implementing IDA, where appropriate.
- Ensure proficiency of survey teams, both for TAS and for the new IDA IIS.
- Arwal district of Bihar and Nagpur district of Maharashtra should implement another IDA-MDA round and follow the IIS protocol.
Meeting of National Programme Managers for lymphatic filariasis, soil-transmitted helminthiasis and schistosomiasis and the Regional Programme Review Group of the WHO South-East Asia Region

- In scaling up IDA-MDA, use the experience from the districts that completed 2–3 rounds of MDA to achieve effective coverage.
- Until the global supply of LF diagnostic tests can be scaled up to meet India’s demand, the programme should consider conducting the mini-TAS in EU that have passed pre-TAS and have TAS 1 pending in DA districts, decreasing overall FTS requirements and allowing more surveys to be completed. In these EU, the result of the mini-TAS is accepted to determine whether MDA can stop.
- Continue to augment the disease burden data from states and strengthen the MMDP programme to achieve 100% geographical coverage. Successful models may be studied and adopted towards a comprehensive MMDP programme.
- Expedite remapping all the uncertain districts, using the confirmation mapping protocol, and include the newly identified endemic districts under IDA-based intervention as an accelerated approach.
- Continue the implementation of deworming programs in endemic states, as planned.
- Conduct impact surveys in seven states, as planned for 2022.

**Indonesia**

Out of the 236 endemic districts, MDA was stopped in 112 districts. In 2021, 31 districts implemented MDA, achieving 70.9% coverage (6.5 million people treated), of which four districts implemented IDA with 71.6% coverage (0.7 million people treated). WHO will support coverage evaluation in IDA districts in 2022. In 2021, one IU failed TAS 3 and five IU failed pre-TAS.

In 2021, deworming was conducted in all 381 districts, achieving 55.3% coverage (11.2 million pre-SAC and 29.2 million SAC). In 2021, selective treatment was conducted for SCH in one district, treating 159 individuals. An annual prevalence survey was conducted in 28 endemic villages, with an overall prevalence of 0.22% (0–1.72%).

- Analyse the data from such districts that reported failure in pre-TAS and TAS (one TAS 3 and two pre-TAS), review such districts involving the staff responsible for MDA implementation, and identify the reasons for such failure with support of WHO. Use the WHO guidance to improve TAS outcomes and take corrective steps to improve compliance.
- Implement IDA-MDA in areas that failed pre-TAS and TAS, with proper supervision and monitoring of implementation.
- For districts that received one IDA round after one DA round following a previous pre-TAS or TAS failure, a pre-TAS can proceed, if effective coverage was achieved in both rounds.
- Continue implementation of deworming programme through integration with family health and school health departments.
The SCH elimination programme needs to consider introduction of ELISA in addition to using the KK test in routine surveillance of S. japonicum. With support of WHO, consider cross-programme learning in this aspect with the Philippines.

The programme is encouraged to work with WHO and partners to develop a schistosomiasis elimination surveillance strategy, considering the use of geospatial mapping and ELISA, and adopting systematic and rapid surveillance. Intensification of the intersectoral approach (e.g. CLS-WASH model, environmental modification and veterinary interventions) is also encouraged to achieve elimination by 2025, as per the country roadmap.

**Myanmar**

MDA has stopped in 28 out of 45 endemic districts. IDA-MDA is proposed in two districts and the remaining districts are under pre-TAS/TAS. However, it is noted that MMDP activities are not yet in full scale-up. The country has reported over 75% coverage of SAC for STH-MDA and the results of planned STH impact survey can be used to revise the treatment frequency.

The group noted that the endemicity mapping study, initiated in 2021 in one of the districts with suspected SCH cases, has not progressed due to local problems and recommended completion of the study once normality returns.

This extensive study will be expected to provide results for confirmation of endemicity of SCH in the country. WHO Regional Office may provide necessary support, including capacity-building for the diagnostics and snail survey.

Enumerate the number of people with lymphoedema and hydrocele in all IU and report these data to WHO.

**Nepal**

LF is endemic in 64 districts. In 2021, 12 districts implemented LF MDA, achieving 75.6% coverage (5.3 million people treated). The first round of IDA was implemented in 2022 in five districts with persistent transmission despite implementation of several rounds of MDA with two drugs (DEC and Albendazole). Starting IDA in additional 10 IU in 2023 was proposed. RPRG noted failures of TAS 3 and pre-TAS surveys in 2021 in 15 districts. Survey failures, including failure of TAS 3 in five districts, are a concern.

There is currently no standard mechanism to follow up on and treat positives identified during LF surveys. Confirmatory LF mapping in the remaining eight districts is planned for late 2022 and 2023. LF morbidity mapping is completed in 37 districts and continuing in the remaining 27 districts. Deworming was conducted in all 77 districts, achieving 46.9% coverage (1.9 million pre-SAC and 1.8 million SAC) in 2021. The STH impact assessment survey is planned for 2022 and 2023.

Analyse the reasons for such TAS failures, implement corrective steps and improve survey outcome with support of WHO and implementing partners.
Proceed with the mini-TAS in Sindhuli, as recommended in prior RPRG.

Implement IDA in the remaining districts. In view of suboptimal impact, the programme is to prepare the community adequately to improve coverage. The programme should have plans to improve compliance, which is critical for the success of MDA, particularly with IDA, which requires fewer rounds of MDA, compared with two drugs, only when effective coverage is achieved.

Complete remapping in districts with uncertain endemicity and implement IDA-MDA in all newly identified endemic districts to accelerate elimination of LF.

Strengthen the deworming programme for SAC and WRA with improved coverage to achieve effective coverage. Plan for the STH impact assessment survey and expedite its implementation.

**Sri Lanka**

The group appreciated the fact that the country continues to carry out extensive and intensive epidemiological and entomological surveys as part of PVS. The progress on surveillance for prevalence of LF infection in non-endemic districts was noted. However, detection of active foci of Brugia infection in certain areas demands more investigation of the risk factors and the possible role of zoonotic transmission.

- Carry out in-depth analysis of the PVS data, implement response measures to prevent resurgence and ensure below-threshold-level infection across the communities.
- Prepare and implement plans to eliminate LF transmission, supported by PVS and response measures.
- Consider implementing targeted IDA in any hotspot communities with >1% Mf identified during PVS activities.
- Plan activities for home-based management of lymphoedema cases, apart from continuing the efforts to reach hydrocelectomy targets, given the fact that MMDP activities are limited to only filaria clinic-based services.
- Expedite implementation of the plan for STH surveillance activities in high- and medium-risk areas.

**Thailand**

The group noted that the programme was progressing well with the National Strategic Plan (2018–2027) for PVS with improved financing. The group commended the programme for continued efforts towards MMDP and the implementation of the direct inspection protocol to assess the quality of care for persons with lymphoedema.

- Continue the current post-validation surveillance activities, including migrant treatment programme for LF, prioritizing zoonotic B. malayi areas and investigating reports of LF infection in non-endemic IU.
➢ Share the results of the survey regarding suspected Schistosoma mekongi transmission along the border between Thailand and Lao People’s Democratic Republic, once completed.

➢ Continue implementation of the national helminthiasis programme with the goal of elimination of STH transmission. The results of the national survey and the remote area survey can be used to develop appropriate preventive chemotherapy strategies for STH.

**Timor-Leste**

LF-TAS 1 was conducted, and all EUs successfully passed in 2021. No deworming was implemented in 2021. The group noted that the frequency of deworming for STH had been revised, based on the STH prevalence and intensity data, and could be implemented from 2023. The group also commended the country on successful demonstration of integrated surveillance, using LF-TAS as a platform in the co-endemic EU for LF, STH, yaws and scabies.

➢ Plan TAS 3 in 2023, with the timing being four years after the last round of MDA.

➢ Initiate preparation of a draft dossier documenting the national LF programme achievements to date with support of WHO and partners and submit to WHO for informal review and comments by Q2 2023.

➢ Conduct a readiness and quality assessment of MMDP using the Direct Inspection Protocol with support of WHO and partners.

➢ Continue the successful demonstration of integrated surveillance of multiple diseases in further assessments too.

➢ Implement the integrated impact assessment of STH with LF TAS 2 to monitor impacts.
# Annex 1

## Agenda

### Day 1: Tuesday 28 June 2022

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<td>Dr Poonam Khetrapal Singh, Regional Director</td>
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<td>Dr Suman Rijal, Director, SEARO/CDS</td>
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<td>Dr Aya Yajima, Regional Adviser, CDS/NTD</td>
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<td>Administrative announcements</td>
<td>Ms Tanushri Mitra, Executive Assistant, CDS/NTD</td>
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<td>Global updates on PC diseases – new tools, strategies and recommendations of advisory groups</td>
<td>Dr Jonathan King, HQ/NTD</td>
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<td>Regional updates on PC diseases</td>
<td>Dr Aya Yajima</td>
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### Agenda 2: Disease-specific session – lymphatic filariasis (LF)

**Persistent transmission and survey failure – why and how are you addressing?**

- India | NCVBDC India
- Indonesia | MoH Indonesia
- Nepal | EDCD Nepal

Discussion – key factors for survey failure, good practice and challenges

### Agenda 3: Cross-cutting session – Ensuring high-quality MDA

**Improving MDA engagement – findings from operational research**

Dr Padmalochan Biswal, PATH India

**‘Never Treated’: an update on operational research and programmatic activities**

Dr Katie Gass and Dr Alison Krentel, Univ. of Ottawa

**Role of microplanning to improve compliance – the new WHO manual**

Dr Caitlin M. Worrell, USCDC (virtual)

Q&A from country posters | Dr Zaw Lin
Meeting of National Programme Managers for lymphatic filariasis, soil-transmitted helminthiasis and schistosomiasis and the Regional Programme Review Group of the WHO South-East Asia Region

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**Day 2: Wednesday 29 June 2022**

**Agenda 4: Disease-specific session – LF (continued)**

**Post-validation surveillance** – Country experiences and lessons learnt

- Maldives
  - MoH Maldives
- Sri Lanka
  - MoH Sri Lanka
- Thailand
  - MoPH Thailand

**WHO guidance on PVS in the new WHO M&E manual**

- Dr Jonathan King

**Discussion – key challenges in sustaining PVS or vigilance in areas that passed TAS3**

**Morbidity management and disability prevention (MMDP)**

- Updates on WHO guidance and tools on MMDP
  - Dr Jonathan King

**Q&A**

**Country experiences and lessons learnt**

- India (collaboration with WHO CC)
  - NCVBDC India
- Indonesia (integration with leprosy)
  - NLR Indonesia
- Thailand (health facility direct inspection protocol)
  - MoPH Thailand

**Discussion – Key factors to sustain MMDP services**

**Agenda 5: Disease-specific session – soil-transmitted helminthiases (STH)**

- Updates on WHO guidance and tools on STH impact assessment
  - Dr Antonio Montresor, HQ/NTD (virtual)
- Policy paper for the treatment of Women of Reproductive Age (WRA)
  - Dr Denise Mupfasoni, HQ/NTD (virtual)

**STH impact assessment and reduction of treatment frequency** – Country experiences and challenges

- Bangladesh (STH Summit and geospatial risk mapping)
  - MoH Bangladesh
- Bhutan (evidence-based revision of treatment frequency)
  - MoH Bhutan
- Sri Lanka (persistent STH transmission in high-risk areas and targeted strategies)
  - MoH Sri Lanka

**Discussion – challenges and action points to initiate regular STH impact assessment and revisit treatment frequency**
### Agenda 6: Cross-cutting session – pharmacovigilance associated with NTD interventions

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<td>WHO manual on safety of NTD interventions</td>
<td>Dr Denise Mupfasoni (virtual)</td>
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<td>Training workshops to strengthen collaboration between NTD and pharmacovigilance programme – experience in the Pacific and Pan American Health Organization (PAHO)</td>
<td>Dr Aya Yajima and Dr David Addiss (virtual)</td>
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<td>Discussion – Challenges and action points to strengthen NTD-PV collaboration</td>
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### Day 3: Thursday 30 June 2022

### Agenda 7: Cross-cutting session – supply chain management (SCM)

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<tr>
<td>Overall supply chain issues and challenges on NTDs in SE Asia Region</td>
<td>Dr Zaw Lin</td>
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<td>NTD Supply Chain Forum – tools for capacity building</td>
<td>Ms Cassandra Holloway</td>
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<tr>
<td>Discussion – challenges and action points to strengthen SCM</td>
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### Agenda 8: Cross-cutting session – integration

**Integrated surveillance**

- Potential role of multiplex in integrated serosurveys
  - Dr Kim Won

**Integrated NTD surveys and MDA – country experience**

- Timor-Leste (integrated nationwide survey for LF, STH, taeniasis, yaws, scabies and WASH)
  - MoH Timor-Leste
- Experience in the Pacific (integrated MDA for yaws, scabies, STH, skin NTD/NCD screening and serosurveys)
  - Dr Aya Yajima

**WASH and NTDs**

- WASH and NTDs: Global tools and opportunities for collaboration
  - Dr Rasheed Hussain
- Community-led WASH-NTD initiative: an example from Mekong Basin countries
  - Dr Aya Yajima
- Discussion – How can we expand integrated approach for sustainability?
- Group 1: Case management and rehabilitation
- Group 2: Integrated surveys/MDA
- Group 3: WASH and NTDs
- Plenary: presentation and discussion

### Agenda 9: Disease-specific session – schistosomiasis (only relevant countries/experts/partners)

- Progress and challenges in schistosomiasis elimination in
  - MoH Indonesia
### Novel strategies for breaking schistosomiasis transmission: case from Africa

**Dr Stefanie Knopp, STPH (virtual)**

### Discussion – Progress and challenges in schistosomiasis elimination, Indonesia

### Potential new tools for schistosomiasis elimination surveillance

- **Validation of POC-CCA rapid urine test for detection of *S. japonicum* in Indonesia**
  **NIHRD/MoH Indonesia (virtual)**
- **Performance and feasibility of ELISA in *S. japonicum* surveillance in the Philippines**
  **Dr Joma Angeles, UP Manila (virtual)**
- **Geospatial mapping of snail foci in pre-elimination settings in Indonesia**
  **MoH Indonesia**

### Discussion – Action points to strengthen schistosomiasis elimination surveillance in Indonesia

### Endemicity confirmation of schistosomiasis in Myanmar – Updates

**WCO Myanmar**

## Day 4: Friday 1 July 2022

### RPRG closed session

#### Agenda 10: Cross-cutting session – operational research priority and the way forward

**Outcomes of the operational research prioritization meeting on selected NTDs in SE Asia Region (LF and schistosomiasis)**

**Dr Zaw Lin**

**Updates on COR-NTD relevant to SEAR**

**Dr Pat Lammie**

#### Agenda 11: Forum for NTD partnership

**Global NTD advocacy – updates and tips for domestic advocacy**

**Dr Thoko Elphick-Pooley, Uniting to Combat NTDs**

**Mobilizing domestic resources for NTD programme – experience from India**

**NCVBDC and BMGF**

#### Agenda 12: Closing session

**Conclusions and recommendations**

**Rapporteur**

**Closing remarks**

**Dr Suman Rijal**
Annex 2

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28 June–1 July 2022
New Delhi, India