

Meeting Report

SEVENTEENTH MEETING OF THE REGIONAL PROGRAMME REVIEW GROUP ON NEGLECTED TROPICAL DISEASES IN THE WESTERN PACIFIC



15–16 June 2017
Siem Reap, Cambodia

WORLD HEALTH ORGANIZATION
REGIONAL OFFICE FOR THE WESTERN PACIFIC

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MEETING REPORT

THE 17TH MEETING OF THE WESTERN PACIFIC REGIONAL PROGRAMME
REVIEW GROUP ON NEGLECTED TROPICAL DISEASES

Convened by:

WORLD HEALTH ORGANIZATION
REGIONAL OFFICE FOR THE WESTERN PACIFIC

Siem Reap, Cambodia
15–16 June 2017

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NOTE

The views expressed in this report are those of the participants of the 17th Meeting of the Western Pacific Regional Programme Review Group on Neglected Tropical Diseases and do not necessarily reflect the policies of the conveners.

This report has been prepared by the World Health Organization Regional Office for the Western Pacific for Member States in the Region and for those who participated in the 17th Meeting of the Western Pacific Regional Programme Review Group on Neglected Tropical Diseases in Siem Reap, Cambodia from 15 to 16 June 2017.

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Keywords:

Neglected diseases / Regional health planning / Elephantiasis, Filarial / Schistosomiasis

ABBREVIATIONS

| | |
|----------|---|
| Ag | antigenaemia |
| CL-SWASH | Community-led initiatives to eliminate Schistosomiasis by combining deworming with WASH interventions |
| COR-NTD | Coalition for Operational Research on NTDs |
| DOT | directly observed treatment |
| EU | evaluation unit |
| FBT | food-borne trematodiasis |
| FTS | Filariasis Test Strip |
| GPELF | Global Programme to Eliminate Lymphatic Filariasis |
| IU | implementation unit |
| LF | lymphatic filariasis |
| MDA | mass drug administration |
| mf | microfilaraemia |
| NTD | neglected tropical disease |
| PC | preventive chemotherapy |
| RDRG | Regional Dossier Review Group |
| RPRG | Regional Programme Review Group |
| SDG | sustainable development goal |
| STH | soil-transmitted helminthiasis |
| TAS | transmission assessment survey |
| TF | trachomatous inflammation-follicular |
| TT | trachomatous trichiasis |
| USAID | United States Agency for International Development |
| WASH | water, sanitation and hygiene |
| WHO | World Health Organization |

SUMMARY

The 17th Meeting of the Western Pacific Regional Programme Review Group (RPRG) on Neglected Tropical Diseases (NTDs) was held in Siem Reap, Cambodia from 15 to 16 June 2017. The meeting was attended by 11 RPRG members, 8 national NTD programme managers/focal points and representatives of 13 stakeholder organizations.

The Western Pacific Region has made significant progress in the elimination of several NTDs. The RPRG congratulated a further two countries – Marshall Islands and Tonga – for validation of elimination of lymphatic filariasis (LF) as a public health problem. The dossiers were resubmitted after minor amendments following the recommendations of the Regional Dossier Review Group (RDRG) for LF and were officially validated by WHO. The RPRG also congratulated two countries – Cambodia and the Lao People's Democratic Republic – for their recent validation of elimination of trachoma as a public health problem. The dossiers were submitted, reviewed by the RDRG for trachoma and recommended as suitable for validation.

Despite these encouraging advances, countries continue to face new technical and operational challenges. Achieving LF elimination in countries and areas such as Malaysia, American Samoa, Fiji and French Polynesia will mean tackling persistent transmission in specific geographical foci or population groups. There is an urgent need to establish sustainable post-elimination surveillance for LF and other NTDs. The provision of a minimum package of care for patients with morbidity and disability due to NTDs needs to become an integral part of the general public health services. The elimination of schistosomiasis and control of foodborne and zoonotic NTDs will call for the strategic focus to be widened towards multisectoral interventions, an enhanced surveillance system and effective risk communication.

In response to the persistent transmission of some NTDs, despite a history of preventative chemotherapy intervention, a series of expert consultations was held in the Western Pacific Region following the recommendation of the 16th RPRG Meeting. As a result, the regional focus is widening, moving from preventive chemotherapy to include other interventions such as veterinary public health, water, sanitation and hygiene (WASH), vector control, morbidity management, and surveillance. As a country moves towards the elimination stage for each NTD, it becomes increasingly important to improve the quality of diagnosis and surveillance capacities. The RPRG emphasized the need to standardize NTD diagnosis and establish a Region-wide system for quality assurance of diagnosis. The *Regional Action Plan for Neglected Tropical Diseases in the Western Pacific Region (2012-2016)*, endorsed by the Regional Committee in 2012 (resolution WPR/RC63/R4) as the roadmap for elimination and control of NTDs in the Region, set out regional goals and targets. Acknowledging progress and recognizing continuing and emerging challenges, the NTD Programme Managers Meeting and the 16th RPRG Meeting in July 2016 recommended that the new vision and framework of elimination and control of NTDs be developed.

Accordingly, following consultation with programme managers and stakeholders, the structure and key components of the proposed new regional plan were presented and discussed by the RPRG. The plan, provisionally titled "Regional Framework for Elimination and Control of NTDs in the Western Pacific Region", has been created to accelerate elimination and control of NTDs and contribute to the achievement of the Sustainable Development Goals through the three pillars of universal access to comprehensive NTD intervention packages, community empowerment through effective risk communications, and effective and sustained integrated surveillance and response.

1. INTRODUCTION

1.1 Meeting organization

The 17th Meeting of the Western Pacific Regional Programme Review Group (RPRG) on Neglected Tropical Diseases (NTDs) was held in Siem Reap, Cambodia on 15–16 June 2017. The meeting was attended by 11 RPRG members, 8 national NTD programme managers/focal points and representatives of 13 stakeholder organizations.

1.2 Meeting objectives

The objectives of the meeting were to:

- 1) review progress and discuss the challenges that countries face in achieving elimination and control targets of NTDs; and
- 2) recommend specific actions for Member States, partners and the WHO Secretariat to achieve the 2020 targets set in *Accelerating Work to Overcome the Global Impact of Neglected Tropical Diseases: A Roadmap for Implementation* (WHO Global NTD Roadmap).

2. PROCEEDINGS

2.1 Opening session

Dr Rabindra Abeyasinghe delivered the opening remarks on behalf of Dr Shin Young-soo, WHO Regional Director for the Western Pacific. The Regional Director commended Member States for the significant progress made towards eliminating and controlling NTDs in the Western Pacific Region, particularly five countries validated for having eliminated lymphatic filariasis (LF) as a public health problem and two countries validated for having eliminated trachoma as a public health problem within the past two years. However, he also cautioned that some countries were facing technical and operational challenges, possibly jeopardizing the achievement of regional and global targets. There was an urgent need to establish sustainable post-elimination surveillance for LF and other NTDs earmarked for elimination. The provision of a minimum package of care for patients with morbidity and disability due to NTDs needed to become an integral part of general public health services. The elimination of schistosomiasis and control of foodborne and zoonotic NTDs called for the strategic focus to be widened towards multisectoral interventions, an enhanced surveillance system and effective risk communication. In closing, Dr Shin thanked the participants for sharing their expertise and experience to guide the Region in the fight against NTDs.

2.2 Global updates on NTDs from WHO headquarters

A major milestone was achieved in 2016 when for the first time over 1 billion people worldwide were reached by preventive chemotherapy (PC) for at least one NTD in a single calendar year. Continuing to build on this progress, the NTD Partners Meeting was organized by WHO on 19 April 2017, followed by the NTD Summit on 20–22 April 2017, both in Geneva, Switzerland. The meeting marked the fifth anniversary of the London Declaration and the launch of the fourth WHO NTD Report. It led to various new and renewed pledges from major donors and partners on continuous support for NTDs, including the pledge of EMS, Brazil, to donate the antibiotic azithromycin in its oral form for the global eradication of yaws by 2020.¹

¹ WHO (2017) Brazil's EMS pledges medicine donation to accelerate eradication of yaws [news]. 19 April. Geneva: WHO. <http://www.who.int/yaws/news/Brazil-EMS-pledges-medicine-donation/en/>

WHO advocates accelerating the elimination and control of NTDs in conjunction with the Sustainable Development Goals (SDGs). NTDs are diseases of poverty; the greater part of the affected population comes from the lower-middle-income and low-income groups. Providing universal access to NTD intervention – PC, morbidity management, vector control, veterinary public health, and improved water, sanitation and hygiene (WASH) interventions – in collaboration with all relevant sectors will ensure that those affected by NTDs because of lack of access to health services and basic infrastructure receive the health services they need.

The meeting of the WHO NTD Strategic and Technical Advisory Group (STAG) in March 2017 recognized the progress of PC and emphasized the need for more focus on impact assessments in addition to treatment coverage. The meeting also recommended the addition of new disease conditions – scabies, snakebite envenoming, mycetoma, chromoblastomycosis and other deep mycoses – to the NTD portfolio. With the addition of these diseases, WHO continues to seek donor support. More operational research will be necessary to inform new intervention strategies and guidance in tackling these diseases, in coordination with efforts to eliminate and control all other NTDs.

2.3 Achievements and emerging challenges in elimination and control of NTDs in the Western Pacific Region

Progress in the elimination and control of NTDs continues in the Western Pacific Region. WHO validated six countries for having eliminated LF as a public health problem since the last RPRG meeting: Cambodia, Cook Islands, Marshall Islands, Niue, Tonga and Vanuatu. Cambodia and the Lao People's Democratic Republic have also been validated for having eliminated trachoma as a public health problem, and both countries are strengthening multisectoral interventions for the elimination of schistosomiasis.

Since the last RPRG meeting in July 2016, a number of WHO consultations have been held.

In order to address persistent transmission of *Brugia malayi* in selected areas in Borneo Island, an Expert Consultation to Accelerate Elimination of *B. malayi* Transmission in Indonesia and Malaysia was held on 13–15 December 2016 in Kota Kinabalu, Malaysia.²

In view of the increasing number of countries achieving or approaching the goal of elimination of LF as a public health problem, an informal consultation on post-elimination surveillance of NTDs was held on 13–14 June 2017 to discuss the framework of post-validation surveillance of NTDs with LF as a proof of concept.

An expert consultation was held to discuss the framework and intervention options for accelerating control of foodborne trematode infections (FBT), taeniasis and cysticercosis on 17–19 May 2017 in Seoul, Republic of Korea. Similarly, an expert consultation was held to strategize acceleration of elimination of Asian schistosomiasis on 22–23 May 2017 in Shanghai, China. Following the consultations, Cambodia and the Lao People's Democratic Republic began development on their national strategic plan to eliminate schistosomiasis, and the Lao People's Democratic Republic also initiated work on its multisectoral action plan on comprehensive control of FBT, taeniasis and cysticercosis.

The presence of yaws has been confirmed and steps towards elimination have begun in four countries (Papua New Guinea, Philippines, Solomon Islands and Vanuatu). However, further efforts are needed to systematically implement and sustain interventions. Challenges remain in timely submission of the Joint Reporting Form and the Joint Request for Selected PC Medicines by some countries, and scaling of deworming against soil-transmitted helminthiasis (STH) in several countries, particularly in the Pacific, indicating the need for continuous advocacy and engagement with countries.

² WHO (2017) Meeting report – Consultation to Accelerate Elimination of *Brugia malayi* Transmission in Indonesia and Malaysia. Manila: WHO Regional Office for the Western Pacific. <http://iris.wpro.who.int/bitstream/handle/10665.1/13621/RS-2016-GE-66-MYS-eng.pdf?ua=1>

2.4 Accelerating and sustaining elimination of LF

Six countries, mentioned above, have been validated for having eliminated LF as a public health problem (Figure 1). An additional six countries and areas – American Samoa, Brunei Darussalam, Kiribati, Palau, Viet Nam and Wallis and Futuna – are in the post-mass drug administration (MDA) surveillance phase. Nine others are in the MDA phase, but four countries (Federated States of Micronesia, Lao People’s Democratic Republic, Samoa and Tuvalu) are planning to implement transmission assessment surveys (TAS) and/or pre-TAS in 2017. Fiji, French Polynesia, Malaysia and the Philippines are also undertaking post-MDA surveillance in part of their territory. Papua New Guinea has yet to scale up MDA from New Ireland Province to other endemic provinces. New Caledonia is planning a confirmatory LF survey in 2017.

Figure 1. LF elimination programme status as of June 2017

| MDA <100% geographical coverage | MDA at 100% geographical coverage | Post-MDA surveillance | Validated |
|--|---|--|---|
| <p>PNG</p> <p>New Caledonia</p> | <p>Fiji</p> <p>FSM*</p> <p>French Polynes.</p> <p>Lao PDR*</p> <p>Malaysia*</p> <p>Philippines*</p> <p>Samoa*</p> <p>Tuvalu*</p> <p>* Implementing pre-TAS or TAS in 2017</p> | <p>American Samoa</p> <p>Brunei Darussal.</p> <p>Kiribati</p> <p>New Caledonia</p> <p>Palau</p> <p>Viet Nam</p> <p>Wallis & Futuna</p> | <p>Cambodia</p> <p>Cook Islands</p> <p>Marshall Islands</p> <p>Niue</p> <p>Tonga</p> <p>Vanuatu</p> |

However, American Samoa recently failed TAS 3. Palau found a high LF prevalence among migrants that may threaten its progress. Fiji, French Polynesia, Malaysia and the Philippines encountered failures in pre-TAS, re-TAS 1 or TAS 2. More detailed information on the situation and challenges in specific countries was discussed in the subsequent session.

2.4.1 Persistent transmission of LF in specific geographic foci

Malaysia

Malaysia has progressed from 116 endemic implementation units (IUs) (46 districts in 8 out of 14 states) in 2003 to only 6 endemic IUs in 2016 (2 states and 4 districts, all of which are in East Malaysia) (Figure 2 and 3). All 70 originally endemic IUs in West Malaysia have already stopped MDA. The remaining IUs in East Malaysia have experienced failure in either TAS or pre-TAS. In response to the pre-TAS failures, a study was conducted in IU Tangkarason to determine the factors contributing to persistent transmission of brugian filariasis. The study analysed the LF epidemiology, entomology and animal reservoirs in the area. The Expert Consultation to Accelerate Elimination of *B. malayi* Transmission in Indonesia and Malaysia was held on 13–15 December 2016 in Kota Kinabalu, Malaysia, to discuss the overall situation and study outcomes.

Figure 2. LF endemicity situation in Malaysia 2003

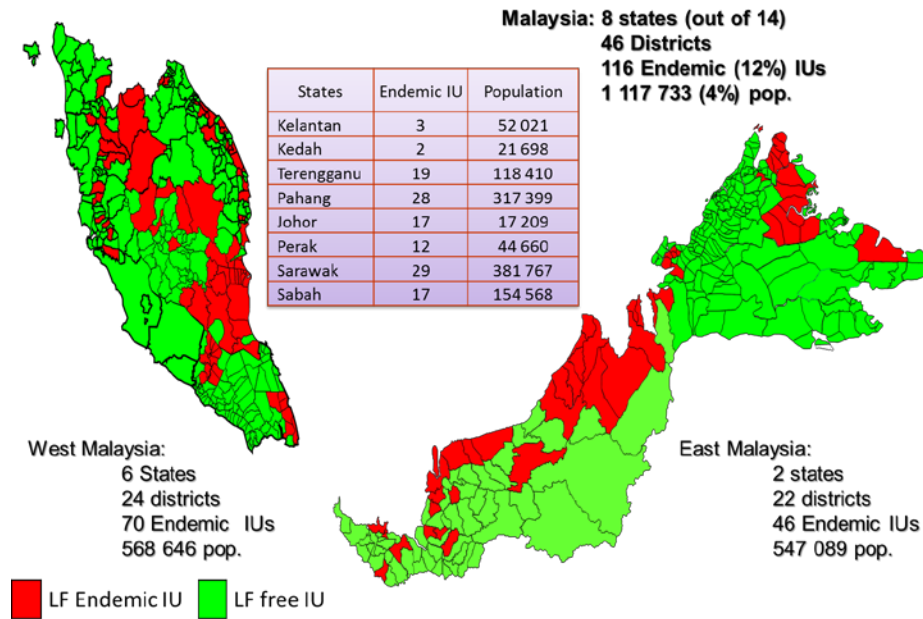
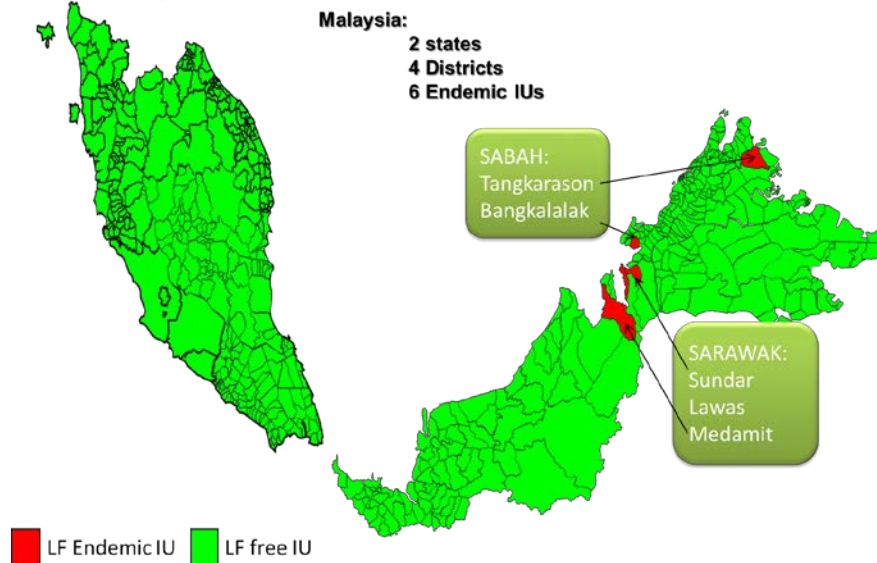


Figure 3. LF endemicity situation in Malaysia 2016



The survey found 125 microfilaraemia (mf) positive individuals, of which 19 were found to have been positives in the previous studies conducted between 2007 and 2013, whereas the remaining individuals were found to be positive for the first time. The investigation revealed that 10 of the 19 positives were under-dosed for diethylcarbamazine citrate (DEC) in previous MDA campaigns, three received only one round of MDA and one never received MDA. All the positives were given diethylcarbamazine citrate (6 mg/kg) and albendazole (400 mg). The post-treatment study showed that all those re-tested were negative by the fifth month post-MDA, confirming the efficacy of the medicines. Animal reservoir studies using molecular confirmation revealed that only 7 out of 45 cats tested and 1 out of 40 dogs tested were positive for *B. malayi*. All adult mosquito samples collected using the human landing catching technique hourly between 18:00 and 23:00, and all larval samples collected from all potential breeding sites were negative to *B. malayi* and *W. bancrofti* using polymerase chain reaction (PCR). The meeting concluded that inadequate dosages and lack of directly

observed treatment (DOT) during MDA campaigns, along with typically prolonged MDA cycles due to lack of human resources and security reasons, are contributing to persistent transmission in Tangkarason.

Recommendation: Recognizing that Malaysia is in preparation for mini-TAS as per the recommendations of the Expert Consultation held in December 2016, the RPRG recommended that Malaysia ensure use of Brugia Rapid™ in all LF surveys. The RPRG encouraged Malaysia to ensure quality diagnostics in regards to sample collection and reading of slides/tests. Considering that only one state has so far reported morbidity data to the central level, the RPRG recommended that Malaysia strengthen efforts to collect and update morbidity data while beginning the preparations to develop the validation dossier.

American Samoa

In American Samoa, MDA was implemented annually between 2000 and 2006. A C-survey conducted in 2007 revealed that LF antigens were still present in young children aged 4–6 years, which resulted in the RPRG's recommendation to continue MDA in 2008. However, it is unclear if MDA was conducted between 2008 and 2010. Despite the uncertainty, TAS 1 passed in 2011 with only two antigenaemia (Ag) positive children out of 937 tested and TAS 2 passed in 2015 with one Ag-positive out of 864 tested children. It should be noted that the requirement for written parental consent prevented systematic sampling of children in TAS 1 and TAS 2.

In 2010, an adult seroprevalence study was conducted as part of research activities. Possible residual foci of antigen-positive adults were identified, particularly of adult males and recent migrants.³

Another study on molecular xenomonitoring conducted in 2011 also suggested low but widespread prevalence of LF on Tutuila and Aunu'u, where 98% of the population resides.⁴ This was further confirmed in the study conducted in 2014 among both adults and children in suspected hot spots.⁵

In 2016, TAS 3 failed against the critical cut-off figure of six when nine Filariasis Test Strip (FTS) positive children were identified out of 1143 children tested. The Ag-positive children came from five schools. They were followed up at home and 58 out of 65 household members were tested, 12 of whom were FTS positive. The community-based survey, also implemented in 2016 in 30 randomly selected villages and two suspected hot-spot villages, also showed widespread recrudescence of LF transmission throughout the country.

Recommendation: Considering the widespread prevalence of infection presented by multiple studies, the RPRG recognized that a new strategy is needed to ensure interruption of transmission in American Samoa. The RPRG recommended that American Samoa seek guidance to determine the most effective way to address the TAS failures. Suggestions by the RPRG included: re-evaluating MDA drug dosages to ensure they are appropriate for the weight of the persons being treated; treating migrants upon entry to the islands to control transmission between American Samoa and Samoa; giving due consideration to the significant movement of people between the two countries; and strict adherence to DOT to improve MDA coverage among migrant populations.

Fiji

The Northern, Western and Central Divisions of Fiji have successfully completed MDA and have progressed to TAS, with the exception of Malolo Island in the Western Division and Taveuni in the Northern Division which showed clustering of Ag-positive children during TAS 2 in 2014. The entire Eastern Division also failed pre-TAS in 2016 and is continuing two more rounds of MDA in 2017 and 2018. Many of these regions are remote and considered to lack ownership over MDA campaigns,

³ Lau CL, Won KY, Becker L, Soares Magalhaes RJ, Fuimaono S, Melrose W, et al. (2014) Seroprevalence and spatial epidemiology of lymphatic filariasis in American Samoa after successful mass drug administration. *PLoS Negl Trop Dis*, 8(11): e3297.

⁴ Schmaedick MA, Koppel AL, Pilotte N, Torres M, Williams SA, Dobson SL, et al. (2014) Molecular xenomonitoring using mosquitoes to map lymphatic filariasis after mass drug administration in American Samoa. *PLoS Negl Trop Dis* 8(8): e3087.

⁵ Lau CL, Sheridan S, Ryan S, Roineau M, Andreosso A, Fuimaono S, et al. (2017) Detecting and confirming residual hotspots of lymphatic filariasis transmission in American Samoa 8 years after stopping mass drug administration. *PLoS Negl Trop Dis*, 11(9): e0005914.

which makes MDA delivery logistically challenging. Vector control is minimally practiced in Fiji, and this may also contribute to persistent transmission. Fiji has made an effort to improve compliance to MDA by ensuring DOT at the recent MDA in Malolo Island in 2017.

Recommendation: Noting the challenges with MDA coverage on remote islands and acknowledging the recent success of DOT implementation in Malolo Island, the RPRG recommended that DOTs be strictly implemented in other remote islands to improve MDA coverage. The RPRG encouraged Fiji to move forward with studies on the safety and effectiveness of triple drug therapy to help guide a potential new strategy of the Global Programme to Eliminate Lymphatic Filariasis (GPELF). Improving vector control and seeking additional programme support from national and international stakeholders are also encouraged in order to fill the gaps in existing intervention plans.

French Polynesia

There are only two groups of islands in French Polynesia that continue MDA for LF: the Leeward Islands and Marquesas Islands. All the remaining IUs are progressing with post-MDA surveillance. Pre-TAS conducted in 2017 showed an Ag prevalence of 1.9% in the Leeward Islands. Nine out of 11 positives were found to live in Huahine Island, historically known to be a hot spot of LF transmission, and 1.8% in the South Marquesas Islands (the Ag prevalence in the North Marquesas Islands was found to be 0.3%), which are both below the TAS eligibility prevalence threshold of 2% Ag prevalence. However, the LF programme will continue MDA in these two IUs as a precautionary measure. There is a lack of prevalence data for STH and French Polynesia plans to implement a study soon.

Recommendation: Responding to the question concerning the possible use of triple drug therapy in French Polynesia, the RPRG emphasized that this strategy will not work in areas with low coverage. Therefore, efforts should be made to assess the level of MDA coverage in those remaining IUs before embarking on a new MDA strategy. The RPRG suggested that French Polynesia treat all islands in the Leeward Islands and only the southern islands of the Marquesas as there is little movement of people observed between these island groups. The RPRG encouraged French Polynesia to enhance MDA implementation by ensuring DOT and use communication tools such as the local media and social networks to achieve high treatment coverage.

2.4.2 Report of the informal consultation on post-elimination surveillance

In the Western Pacific Region, an increasing number of countries and areas are being validated for having eliminated LF as a public health problem, and many areas within the countries that have not yet gained the validation status have also discontinued MDA and are currently undertaking or have completed post-MDA surveillance. However, there are still countries and areas in the Region and neighbouring regions with ongoing transmission, which signifies a risk of reintroducing transmission. Even in countries that have gained the validation status, there might be small foci of infected individuals that could pose a risk of recrudescence of transmission. The 2012 GPELF TAS manual⁶ clearly states that the Member States should continue to undertake post-elimination surveillance and are also responsible for ensuring that surveillance data are made available to WHO. However, there is a lack of clear guidance on how to establish the post-elimination surveillance. In response to the recommendations of the 16th RPRG Meeting, an Informal Consultation on Post-Elimination Surveillance of NTDs was organized on 13–14 June 2017 in Siem Reap, Cambodia, with the financial support of the United States Agency for International Development (USAID).

The meeting participants agreed that the overall purpose of post-elimination surveillance is to ensure that no re-emergence occurs, and ultimately to confirm interruption of transmission. Five participating countries represented very different scenarios: Vanuatu more than 10 years after the last round of

⁶ WHO (2012) Lymphatic filariasis: monitoring and epidemiological assessment of mass drug administration- A manual for national elimination programmes. Geneva: WHO.

MDA; Cambodia and Viet Nam having detected no Ag-positive children in TAS 2 and TAS 3; and Malaysia and the Philippines having many provinces progressing with TAS but experiencing TAS failures and clustering of Ag-positive children even in areas that have passed TAS.

The meeting participants recognized that, owing to the significant variation in situations from one country to another, the post-elimination surveillance strategy needs to be country-specific and based on epidemiological characteristics and the potential risks of LF transmission recrudescence in each country. Post-elimination surveillance should be concentrated in geographical areas where there is a risk of transmission resurging, or specific population groups at risk of introducing transmission. This could include areas with a persistent presence of positives in originally endemic areas, specific high-risk occupation groups and migrants from other endemic countries or the presence of specific vectors. The consultation highlighted possible avenues for surveillance integration, such as malaria surveys, national health surveys, and school-based surveys. The age group to be monitored would influence the diagnostic tools of choice: an antigen test for adults and antibody test for children. There is an urgent need for research on post-elimination surveillance to provide WHO and Member States with enough evidence regarding cost feasibility and the overall value of post-elimination efforts so as to move forward and make evidence based recommendations.

A detailed assessment of TAS data and results to analyse whether Ag-positive children are clustered, and, if they are, following up such clusters in a prioritized and timely manner will reduce concerns about potential recrudescence of transmission in the future.

2.4.3 Fast-tracking LF elimination in specific situations

Brunei Darussalam

LF is a notifiable disease in Brunei Darussalam, where low incidence has been constantly reported until recently. In 2006–2007, the national LF prevalence survey was conducted, which found an overall mf prevalence of 0.2% and less than 1% mf prevalence in each of four districts. However, there were four *mukims* (subdistricts) showing over 1% mf prevalence for three districts (Tutong, Belait and Temburong). In 2011, a WHO Expert Group recommended two rounds of MDA in those four *mukims* and an additional four neighbouring *mukims* not covered by the survey in the three districts. In all, three rounds of MDA were implemented in Brunei Darussalam in 2013–2015. All three districts conducted pre-TAS in 2016, with mf prevalence below 1% in all sites. TAS 1 was conducted in 2016 testing 136 eligible children in schools of endemic areas using *Brugia* Rapid tests and all 136 tested came back negative. Consequently, Brunei Darussalam stopped MDA.

Recommendation: Recognizing that the country had low LF endemicity to begin with and migrant workers are considered to be negligible contributors to LF transmission, the RPRG suggested that Brunei Darussalam submit a dossier documenting efforts to eliminate LF as a public health problem. WHO will consider recommendations from the Regional Dossier Review Group (RDRG) on how best to acknowledge the achievements, based on the country's request for validation or reclassification of endemicity.

Samoa

In 2013, TAS 1 was implemented in three evaluation units (EUs): (i) Savaii, (ii) North West Upolu, and (iii) Apia Urban Area and the rest of Upolu. Savaii passed TAS with Ag prevalence of 0.46% and Apia Urban Area and the rest of Upolu with 0.08%. However, North West Upolu failed TAS 1 with Ag prevalence of 1.49%, and the RPRG recommended implementation of two more rounds of MDA. Accordingly, MDA was conducted in North West Upolu in 2015 and 2017 (the 2016 MDA round was missed due to staff turnover in the Ministry of Health). TAS 2 in Savaii and Apia Urban Area and the rest of Upolu is scheduled for July 2017, and re-TAS 1 in North West Upolu in November to December 2017. Considering the relatively small population and logistical difficulties in the country, Samoa is planning to implement TAS 1 without implementing pre-TAS. Samoa is also concerned that

there may be a continuous need for MDA in this area due to migration between Samoa and American Samoa.

Recommendation: The RPRG encouraged Samoa to proceed with the planned TAS 2 in two EUs. Considering the lack of recent data on STH prevalence, the inclusion of an assessment of STH in the TAS might be considered. Bearing in mind its significantly high mosquito density and historical clustering of antigen-positives, the RPRG also strongly recommended spot-check surveys in communities with known clusters of positive children which in the past had failed TAS, using FTS to assess antigen prevalence among the population and confirm eligibility for repeating TAS 1 in North West Upolu. Acknowledging that MDA fatigue may be a growing problem, the RPRG indicated that triple drug therapy may be considered a viable option for Samoa in the future if results of pre-TAS/TAS warrant continuation of MDA.

2.5 Accelerating control of FBT and zoonotic NTDs and elimination of Asian schistosomiasis

2.5.1 Report of the expert consultation to accelerate control of FBT, taeniasis and cysticercosis

The Expert Consultation to Accelerate Control of FBT, Taeniasis and Cysticercosis was held on 17-19 May 2017 in Seoul, Republic of Korea, to review the current burden and endemicity of those diseases in the Western Pacific Region, as well as country experiences and relevant research activities, and to recommend strategic actions and research priorities in the Western Pacific Region.

The participants of the Consultation acknowledged progress in epidemiological mapping of FBT, taeniasis and cysticercosis in many affected countries of the Region. Countries that have sufficient information to accelerate control interventions and those that urgently need to complete risk mapping were respectively identified.

The Consultation acknowledged that while PC intervention has proven effective in reducing the prevalence of opisthorchiasis, clonorchiasis and taeniasis, several factors contribute to high reinfection rates immediately following PC such as poor sanitation, poor food hygiene, the presence of animal reservoirs in close proximity to communities, and cultural food habits. To this end, the Consultation recommended that new interventions be centred on community empowerment using a One Health approach focusing on effective risk communication, animal and human treatment, agricultural interventions, food safety, and WASH. The Consultation also recommended that relevant Member States quantify projected needs of vaccines and medicines in order to expedite treatment and sustain donor funding. It also emphasized the crucial importance of regular monitoring and evaluation of interventions and associated severe adverse events for control of the diseases. A procedure should be established for systematic reporting of epidemiological and treatment data, both within countries and from countries to WHO, and for the standardization of diagnostic methods.

The RPRG concluded that the prevalence and burden of FBT, taeniasis and cysticercosis was most likely underestimated, and that stronger efforts must accordingly be made to systematically report epidemiological and treatment data, while regularly monitoring severe adverse events. Standardization of quality-assured diagnostics was vital for the systematic monitoring of epidemiology and impacts of interventions. Mathematical modelling and cost-benefit analysis of recommended interventions must be prioritized to accelerate the elimination of FBT, taeniasis and cysticercosis and enable collaboration with policy-makers and donors.

2.5.2 Next steps in countries for accelerating control of FBT, taeniasis and cysticercosis

Cambodia

Opisthorchis viverrini is currently considered to be the most prevalent FBT in Cambodia, but country-wide data on prevalence and risk mapping of FBT and other foodborne and zoonotic are is yet to be

completed in Cambodia. To this end, the national NTD programme currently holds 8000 stool samples in storage collected from all the provinces during the recent strongyloides survey, and it is planning to analyse them for determination of *O. viverrini* prevalence. This will contribute to completing the risk mapping of FBT and will help determine the needs for control efforts.

Lao People's Democratic Republic

O. viverrini is the most prevalent FBT in the Lao People's Democratic Republic, mostly due to the fact that many people eat raw freshwater fish. The complete risk map is available. Paragonimiasis is also endemic but mostly in mountainous regions. Several transmission foci of taeniasis and cysticercosis with significant burden have also been identified through research activities. Using social surveys, the country's authorities have concluded that most FBT infections in the country can be attributed to cultural habits. MDA for control of *O. viverrini* has been implemented, but not in a systematic manner due to the absence of sustainable funding. However, encouraged by the recent success in establishing strong cooperation between the NTD programme and the WASH programme to accelerate elimination of schistosomiasis in the Lao People's Democratic Republic, the Ministry of Health is planning to organize an intersectoral consultation to initiate development of the national action plan to pilot and evaluate a comprehensive multisectoral intervention to accelerate control of FBT, taeniasis and cysticercosis in June 2017.

Philippines

All four major FBTs as well as taeniasis and cysticercosis are known to be present in the Philippines, although the data are limited. Encouraged by the recent studies, the Department of Health is launching a pilot project for integrated diagnosis of tuberculosis and paragonimiasis in the three provinces with reported cases of paragonimiasis and the most resistant forms of tuberculosis in order to rule out misdiagnosis and avoid unnecessary over-treatment of tuberculosis. If successful, it is anticipated that the pilot project will be expanded further. However, mapping of endemicity is vitally necessary to determine which areas may be eligible for expansion of this pilot programme.

Viet Nam

As in the Philippines, all four FBTs are present in Viet Nam as well as taeniasis and cysticercosis, and extensive data to present the risk map are available. Clonorchiasis and opisthorchiasis are the most prevalent due to the widespread consumption of raw freshwater fish, and various operational research actions have been implemented to control infection, including MDA. However, the campaigns have been largely ineffective due to the difficulty in changing people's eating habits and there appears to have been rapid reinfection following treatment. Epidemiological and intervention studies have also been implemented by the aquaculture and veterinary sectors, but due to limited availability of funding, systematic multisectoral control interventions have not been adopted despite the willingness of the relevant sectors to collaborate. However, following the outcomes of the Expert Consultation, the National Institute of Malariology, Parasitology and Entomology plans to re-initiate intersectoral dialogue to develop a pilot project to establish and evaluate a comprehensive integrated control approach for FBT, taeniasis and cysticercosis in 2018.

2.5.3 Report of the expert consultation to accelerate elimination of Asian schistosomiasis

The Expert Consultation to Accelerate Elimination of Asian Schistosomiasis was held on 22–23 May 2017 in Shanghai, China, to review the current endemicity of schistosomiasis and country experiences in control interventions, monitoring and research and to discuss the goal, targets and strategic actions for the elimination of Asian schistosomiasis.

PC has been successful in reducing the prevalence and morbidity due to schistosomiasis in endemic countries in the Western Pacific Region. However, the Consultation noted that poor sanitation and animal reservoirs contribute to rapid resurgence of infection and continuing transmission of Asian

schistosomiasis, and PC alone has not sufficed to interrupt transmission. To this end, the Consultation recommended that community empowerment through a comprehensive One Health approach, composed of health promotion, WASH, PC, treatment and management of domestic animals and livestock (buffaloes and cattle, dogs, sheep, pigs, goats), and focal snail control (for *S. japonicum*), supported by high-level political advocacy, should be the core strategy to accelerate and sustain elimination of Asian schistosomiasis.

The Consultation also agreed on the provisional criteria, goals and indicators for the elimination of transmission (referred to as interruption of transmission) of Asian schistosomiasis in the Western Pacific Region, taking into consideration the zoonotic nature of the disease in Asia. Elimination of transmission (referred to as interruption of transmission) of Asian schistosomiasis should be operationally defined by the following criteria:

- i. reduction to zero of incidence of new indigenous infection in humans;
- ii. reduction to zero of incidence of new indigenous infection in animals; and
- iii. reduction to zero of infected snails.

All countries endemic for schistosomiasis in the Western Pacific Region will aim to achieve the aforementioned criteria by 2025 and be validated for elimination of transmission of schistosomiasis by 2030.

The RPRG acknowledged the significant progress made in control of Asian schistosomiasis. As prevalence has decreased, detection of light infections has become increasingly difficult with current diagnostic methods. Therefore, the RPRG emphasized an urgent need for more sensitive diagnostic tools for schistosomiasis and establishing effective active and passive surveillance systems in all endemic countries as a priority for the Region.

2.6 Next steps towards elimination of Asian schistosomiasis

Cambodia

Transmission of schistosomiasis in Cambodia is restricted to 114 villages in two provinces (56 villages, 2 districts in Kratie province and 58 villages, 5 districts in Stung Treng province) along the Mekong River and its tributaries. The control programme, with MDA as a principle strategy, has been implemented in Cambodia for the past 20 years, and by 2016 had reduced the prevalence of infection in all four sentinel sites to 0% based on the Kato–Katz method. Realizing that improving access to safe water and eliminating open defecation is essential in order to interrupt transmission of schistosomiasis, the national NTD control programme, in close collaboration with the Ministry of Rural Development and the Ministry of Education, Youth and Sport and with technical support of WHO, initiated the community-led initiatives to eliminate schistosomiasis by WASH interventions (CL-SWASH) in several schistosomiasis-endemic villages in Cambodia. Cambodia has also initiated development of the national strategic plan for elimination of schistosomiasis in 2017. However, it is recognized that achieving the elimination of schistosomiasis presupposes the availability of improved diagnostic tools, increased sentinel site surveillance and widespread adoption of CL-SWASH in affected districts.

Lao People's Democratic Republic

The Lao People's Democratic Republic is in a similar situation to Cambodia with regard to schistosomiasis elimination efforts. Transmission of schistosomiasis in the Lao People's Democratic Republic is restricted to 202 villages (152 villages in Khong district and 50 villages in Mounlamamok district) in Champasak province, which shares part of the national border with Stung Treng province in Cambodia, along the Mekong River. MDA was initiated in 1989, which successfully reduced the overall prevalence of infection by 1999. As a consequence, MDA was interrupted but the infection prevalence returned almost immediately to the pre-MDA levels. MDA was restarted in 2007. From

this experience, there is an understanding that MDA alone will not eliminate schistosomiasis and improvement of the WASH situation is essential. Along the same lines as in Cambodia, CL-SWASH was initiated in 10 schistosomiasis-endemic villages in 2016 through strong intersectoral cooperation and is being targeted for expansion to all 202 endemic villages by 2020. The Ministry of Health has begun development of the national action plan for the elimination of schistosomiasis in the Lao People's Democratic Republic and is planning to organize a national multisectoral consultation to finalize the aforementioned plan on 27–28 June 2017 in Vientiane.

Philippines

S. japonicum is currently endemic in 1592 *barangays* (communities) in 203 municipalities and 14 cities in 28 provinces of 12 regions in the Philippines, with an estimated at-risk population of 12 million. The national schistosomiasis control programme was established in 1961. It focused initially on active case finding, environmental sanitation, agro-engineering snail control and health education. In 1991, the Philippines Health Development Project (PHDP), funded by the World Bank, initiated intensive case finding and MDA using praziquantel, but this ended in 1995. MDA targeting high-prevalence areas was resumed in 2007, followed by MDA targeting all endemic areas in 2009. However, MDA has traditionally had a low compliance rate due to lack of ownership, patients' fear of side-effects, MDA fatigue and a lack of interagency coordination.

The RPRG recommended a cost–benefit analysis to evaluate which snail control measures for *S. japonicum* used in Japan and China might be feasible in the Philippines. MDA must be continued, especially in high-risk areas, until compliance is improved and other preventative measures are successfully implemented. In order to strategize the way forward, an external evaluation of the status of schistosomiasis control and development of a new national strategic plan for elimination of schistosomiasis in the Philippines is planned for 2017–2018.

2.7 Accelerating elimination of trachoma and yaws

2.7.1 Updates on validation of elimination of trachoma as a public health problem in Cambodia and the Lao People's Democratic Republic

With technical support from USAID and WHO, both Cambodia and the Lao People's Democratic Republic have submitted dossiers to claim elimination of trachoma as a public health problem. These were reviewed by the RDRG.

Cambodia

Trachoma had been a problem in Cambodia in the past, but its prevalence in the country has decreased markedly over recent years as a result of screening and treatment in endemic districts conducted in the early 2000s, and the ongoing improvement in hygiene. There was sporadic treatment with tetracycline ointment, but MDA was never implemented. Using the Global Trachoma Mapping Project methodologies, the programme conducted baseline prevalence surveys in 2014 and 2015 in 14 out of 24 EUs considered most likely to have trachoma on the basis of historical and health system records. The age-adjusted prevalence of trachomatous inflammation—follicular (TF) in children aged 1–9 years was less than 1% in each of the EUs, and the age-adjusted prevalence of trichiasis ranged from 0% to 0.22% in adults aged 15 years and above. Additional mapping was undertaken in three areas that were considered potential “hot spots” on the basis of data from trachoma rapid assessments performed in 2004, and in none of these areas were cases of TF found. In 2016, further investigations were undertaken in five EUs with higher prevalence estimates for trichiasis; the prevalence of trachomatous trichiasis (TT) in adults aged 15 years and above for all EUs ranged from 0% to 0.17%, which is below the WHO elimination threshold.

Considering the presence of a well-established network of ophthalmologists and basic eye doctors to whom patients can either self-present or be referred from health centres, the RDRG concluded that the

information in the dossier provides sufficient evidence to validate elimination of trachoma as a public health problem in Cambodia.

Lao People's Democratic Republic

Historical information suggests that trachoma was a problem in some provinces in the past. In 2014, 19 EUs covering the entire country were created, and population-based surveys following Global Trachoma Mapping methodologies were carried out in 16 of the 19; the other three were not surveyed because they were urban areas. The age-adjusted TF prevalence was 0.2–1.5% in children aged 1–9 years in all EUs, suggesting that no intervention or further surveys were needed, and that the TF criterion had been met. Further detailed examination of nine communities or villages considered to be hot spots with clusters of children who had TF ranging from 0.42% to 2.46% was conducted, which also clearly confirmed that TF is not a public health problem in children aged 1–9 years. The survey described above also examined adults aged 15 years and above, and TT was found in only three EUs with the age-adjusted trichiasis prevalence ranging from 0% to 0.19%. There is in place a standard referral process for TT patients, whereby they present to the health centres and those requiring further care are referred to eye care wards in provincial hospitals.

The RDRG concluded that the information in the dossier provides sufficient evidence to validate elimination of trachoma as a public health problem in the Lao People's Democratic Republic. Additionally, the RDRG made the following recommendations to the country: (i) since Luang Namtha province had the TT prevalence that was closest to the elimination threshold, the programme may wish to consider undertaking active case finding there, using a sustainable approach that employs existing human resources; and (ii) the programme may wish to assess the success of TT surgery by undertaking post-operative evaluation of surgical outcomes.

The RPRG congratulated Cambodia and the Lao People's Democratic Republic for the significant achievement. It was acknowledged that the support of USAID to the national programmes in developing a well-documented dossier facilitated prompt and systematic review of the dossiers.

2.7.2 Accelerating F, S, and E components and yaws elimination after launch of trachoma MDA

The population-based prevalence survey conducted in Kiribati showed an overall TF prevalence of 21% in children aged 1–9 years and a TT prevalence of 1.5% in adults aged 15 years and above. The first round of MDA is ongoing. Fiji, Solomon Islands and Vanuatu presented baseline TF prevalence of 12.4%, 19% and 15%, respectively. However, baseline surveys also revealed a significantly low prevalence of TT in adults (even with the high prevalence of TF) and blindness due to trachoma has also not been reported. The first round of MDA was implemented in Solomon Islands and Vanuatu between 2014 and 2016, but implementation of the next round of MDA has been suspended. The first round of MDA in Fiji was planned in 2017, subject to conclusion of an agreement between the funder and the Government. Papua New Guinea is still mapping the trachoma burden in the country to determine the prevalence of yaws and trachoma.

Facial cleanliness and environmental improvement are critical components of the trachoma elimination strategy. The target for facial cleanliness is to reduce dirty faces by 20%. Open defecation is still above 10%, and the prevalence of unclean faces over 30% in all trachoma-endemic Pacific island countries. A lack of success with implementing WASH strategies requires a stronger commitment from countries to encourage proper sanitation and hygiene habits throughout all Pacific islands that continue to struggle with eliminating trachoma and yaws. To address this challenge, national action plans on facial cleanliness and environmental improvement have been developed by Fiji, Kiribati, Solomon Islands and Vanuatu in 2017, with the support of the Fred Hollows Foundation.

For elimination of yaws, the evidence from the studies recently completed in Solomon Islands, Papua New Guinea and in Ghana appear to suggest that 20 mg per kilogram body weight dosage of

azithromycin for trachoma elimination is also effective for the elimination of yaws. In Solomon Islands, the number of reported clinical cases of yaws has gone down following trachoma MDA in 2014, and the prevalence of yaws, using the treponema pallidum particle agglutination assay and the non-treponemal rapid plasma reagin test, has declined from 21.7% at baseline to 3.5% at six months post-MDA and 4.3% at 18 months post-MDA. In Vanuatu too, the number of reported cases of yaws has declined following MDA against trachoma in Tafea province in 2014. Now that there is a pledge from the donor to initiate donation of oral azithromycin for global eradication of yaws, both Solomon Islands and Vanuatu are looking to start development of their national plans for elimination of yaws, in coordination with the efforts for elimination of trachoma.

The RPRG emphasized that countries that are endemic for yaws and trachoma are encouraged to integrate interventions in order to accelerate elimination efforts for both diseases. This includes taking advantage of MDA using azithromycin for elimination of trachoma by systematically monitoring its impacts on yaws and implementing specific follow-up interventions and surveillance for yaws where necessary.

2.7.3 Report of yaws re-mapping surveys and next steps in the Philippines

Yaws has been known to be endemic in the Philippines. The prevalence of the disease in 1951 was 9.6%, while the last report in December 1960 recorded a figure of 0.4%. Since the interruption of the global yaws eradication programme, no official records of yaws have been collected in the Philippines. In 1999–2000, community skin surveys were conducted in five towns of Datu Piang municipality, Maguindanao province, especially in Liguasan Marsh areas. The surveys found that 82 out of 698 persons examined (11.7%) had yaws, manifesting mainly with secondary stage lesions, scars and plantar keratodermas. The majority of the cases were children aged 15 years or below. The confirmatory survey is being implemented in 2017 in the same locality, and the preliminary results found 14 cases spread across five out of nine municipalities in all three provinces surveyed (Maguindanao, Sultan Kudarat and North Cotabato), of which four children were confirmed serologically. Clinical and seroprevalence surveys are continuing in the remaining selected municipalities. The next steps will be to treat all cases, develop a protocol for clinical seroprevalence studies, assess and evaluate the results of the study, consult with experts, and translate the results of the study into a control programme.

The RPRG acknowledged the efforts of the Philippines in pushing ahead with yaws mapping. It was suggested that since yaws exists mainly in remote locations, total community treatment might be required to reach cases that are hard to detect. The study should be reviewed in its entirety to determine the next steps.

2.8 Filling the knowledge gap for accelerating elimination and control of NTDs

2.8.1 Priority research agenda and burden assessment needs in the Western Pacific Region

The priority operational research agenda items on NTDs in the Western Pacific Region that have been recently identified in various WHO consultations were re-visited, as below:

Elimination of Asian schistosomiasis

- 1) Refinement and standardization of diagnostics for monitoring impacts in humans
- 2) Standardization and refinement of diagnostics for monitoring impacts in animal reservoirs (sensitivity, quality control)
- 3) Confirmation of the contribution of animal reservoirs to transmission of *S. mekongi* based on randomized sampling
- 4) Further validation and application of the circulating anodic antigen (CAA) assay and point-of-care circulating cathodic antigen (POC-CCA) test for *S. mekongi* and *S. japonicum*
- 5) Mathematical modelling to identify the optimal integrated approach (e.g. PC prevalence threshold, required sanitation coverage for interruption of transmission)

- 6) Identification of snail control measures applicable in the Philippines
- 7) Cost-benefit analysis of different control strategies for elimination
- 8) Impacts of climate change and environmental changes (e.g. dams) on snail distribution and ecology
- 9) Co-morbidity of cerebral schistosomiasis and neurocysticercosis and treatment strategy
- 10) Increase of cerebral schistosomiasis in light infection
- 11) Animal vaccine development

Control of FBT, taeniasis and cysticercosis

- 1) Retrospective study on the association between cholangiocarcinoma and a history of treatment and/or repeated infections with clonorchiasis/opisthorchiasis
- 2) Mathematical modelling to determine the projected availability of improved sanitation coverage and number of years necessary for the implementation of other recommended interventions to interrupt transmission of FBT and taeniasis
- 3) Cost-benefit analysis of comprehensive interventions to make economic arguments for policy makers and donors
- 4) Application of food surveillance for aquatic products and livestock as a way to identify high-risk areas
- 5) Social science study to identify factors/triggers that will motivate primary producers and community members to bring about change.

Elimination of LF

- 1) Pilot implementation of various post-validation surveillance options in countries where levels and types of risk of resurgence, or reintroduction of transmission, differ
- 2) Comparison of use of antigen and antibody response in children and adults in post-validation surveillance
- 3) Follow-up of post-MDA residual antibody response in children and adults to determine the prevalence threshold indicating absence of transmission and the sample size to be tested
- 4) Contribution of antigen- or Mf-positive migrants to the reintroduction of transmission in an originally endemic country/area
- 5) Confirmation of absence of zoonotic transmission of *Brugia malayi*.

In addition to the operational research needs, the following priority burden assessment needs in the Western Pacific Region were also highlighted.

| NTD | Priority burden assessment needs |
|-----------------------------|---|
| FBT | <ul style="list-style-type: none"> • Completing mapping in Cambodia and the Philippines |
| Taeniasis and cysticercosis | <ul style="list-style-type: none"> • Completing mapping in Cambodia, the Lao People's Democratic Republic, Malaysia, Mongolia and the Philippines |
| STH | <ul style="list-style-type: none"> • Countries without recent prevalence data in the Pacific island countries • Evaluation of burden in provinces/areas without recent data after more than five rounds of high-coverage deworming or LF MDA (e.g. Viet Nam) • Establishing sentinel sites |
| Trachoma | <ul style="list-style-type: none"> • Population-based prevalence surveys in Papua New Guinea |
| Yaws | <ul style="list-style-type: none"> • Completing mapping in the Philippines |
| Scabies | <ul style="list-style-type: none"> • Burden assessment in the Western Pacific Region |

2.8.2 Progress updates and opportunities from COR-NTD relevant to Western Pacific Region

There are 125 projects across the world supported by the Coalition for Operational Research on NTDs (COR-NTD) coordinated by the NTD Support Center (see Table 1 for the list of projects in the Western Pacific Region). The NTD Support Center aims to address problems identified by the NTD

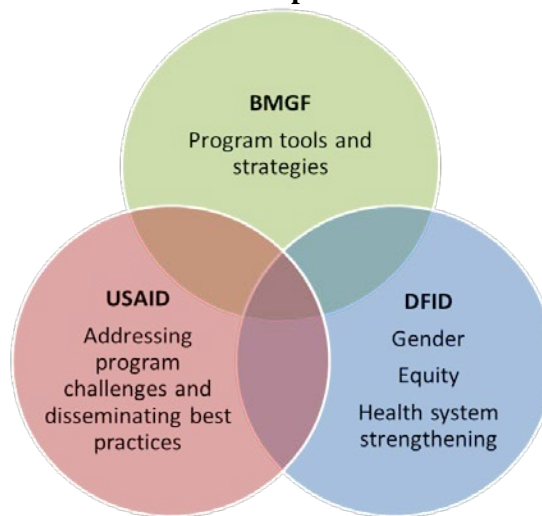
community as barriers to the success of national NTD programmes and to link operational research with national programmes and with WHO. It also acts as a coordinator with major donors, notably the Bill & Melinda Gates Foundation, USAID and the United Kingdom Department for International Development (DFID), as well as GlaxoSmithKline and other pharmaceutical companies that donate medicines. All donors have evolving interests but are enthusiastic about disease elimination in particular. Improving programme effectiveness is a priority for all, but every donor has its own specific focus as indicated in Figure 4. For this reason, coordination in project planning and approval among donors, national programmes and WHO is essential to facilitate efficient investment for the programmes.

Table 1. List of projects supported by COR-NTD in the Western Pacific Region

| Country | Study title | NTDs |
|--|---|--------------------------|
| Philippines | Assessment of antibody responses in sentinel sites | LF |
| French Polynesia | Defining the profile of antibody reactivity following MDA | LF |
| American Samoa | Correlation of xenomonitoring and LF-antibody responses as measures of transmission in American Samoa | LF |
| Viet Nam | Adding antibody testing to mini-TAS | LF |
| Pacific Islands | LF data archive for Pacific island countries | LF |
| American Samoa | TAS strengthening in American Samoa | LF |
| Philippines | TAS strengthening in the Philippines | LF, schistosomiasis |
| Fiji | Triple Drug Therapy—Fiji | LF, scabies |
| Fiji | Inclusion of antibody assessment by multiplex for LF, trachoma and yaws in TAS | LF, trachoma, yaws |
| Lao People's Democratic Republic | Evaluation of PCR and antibody in settings with >10% TF | trachoma |
| Papua New Guinea (and Ghana) | Randomized control trial comparing the efficacy of a single dose of treatment of yaws with 20 mg/kg vs. 30 mg/kg azithromycin | Yaws |
| Cambodia | Assessing school-based MDA recall with community-based coverage surveys | STH |
| Philippines | Coverage Supervision Tool for school- and community-based MDA in Philippines | STH, LF, schistosomiasis |
| Cambodia/ Lao People's Democratic Republic | Schistosomiasis assessments in Mekong River Basin | schistosomiasis |

Source: presented by Dr Patrick Lammie

Figure 4. Coordinating DFID, USAID and Bill & Melinda Gates Foundation (BMGF) investment on NTD operational research



Source: presented by Dr Patrick Lammie

One way to increase donor support is prioritizing critical research and investment areas. Strong mapping and clear identification of new intervention plans are ways to garner such support. Member States may upload research needs into the COR-NTD website (<http://www.ntdsupport.org/cor-ntd>) where donors can look at the needs, specifically for the funding of new diagnostic techniques. The RPRG suggested that a consortium on diagnostics should also be held in order to fully understand the situation surrounding the availability of proper diagnostics.

2.9 Proposed regional framework for elimination and control of NTDs in the Western Pacific Region towards and beyond 2020

The NTD landscape in the Western Pacific Region has seen rapid change in recent years. Significant success has been achieved in reducing the burden as a result of full-scale PC, leading to a growing number of countries eliminating or on track for elimination of LF and trachoma by 2020. Several countries have also been successful in institutionalizing intersectoral collaboration for elimination of Asian schistosomiasis.

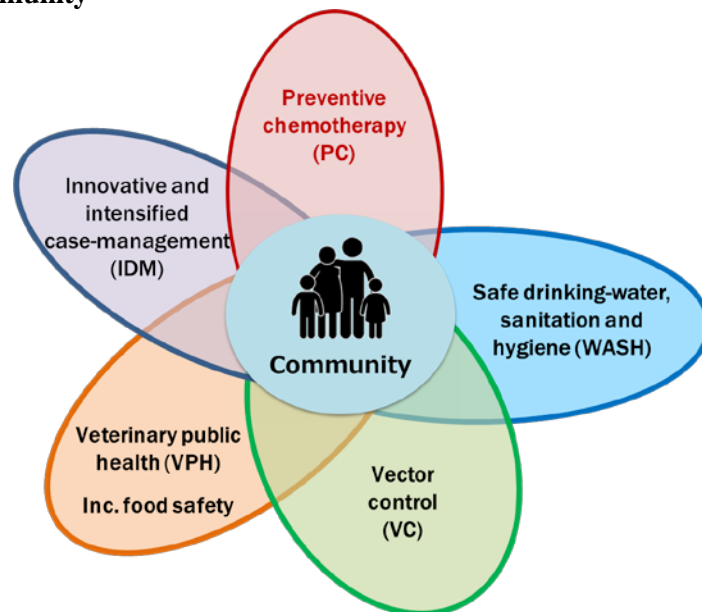
However, new challenges are emerging. There is a growing understanding of the limitations of PC alone for the elimination of a variety of NTDs. Despite a long history of MDA for various NTDs, knowledge and awareness of the impact of NTDs among affected communities remains limited. Even in countries that have achieved elimination of NTDs, there is an urgent need to establish and sustain post-elimination surveillance and continued provision of care for patients with morbidity. As LF elimination progresses, the Region is marked by ever greater diversity in disease endemicity and progress in its control, proving that no “one size fits all” strategy can function in the entire Region. With the addition of new NTDs, a more system-wide approach will be needed, rather than one that focuses solely on PC. Innovative new partnerships should be sought out wherever possible, given that resources for NTDs are dwindling as prevalence starts to decline. And finally, now that ending NTDs is an integral part of the SDGs, alignment of the regional goals and targets with indicators 3.3.3 and 3.3.5 of the SDGs that aim to reduce the number of people requiring intervention against NTDs by 90% and contribute to the achievement of universal health coverage by 2030 will be necessary. The *Regional Action Plan for Neglected Tropical Diseases in the Western Pacific Region (2012-2016)*, endorsed by the Regional Committee in 2012 (resolution WPR/RC63/R4) as the roadmap for elimination and control of NTDs in the Region, set out regional goals and targets. Acknowledging progress while recognizing emerging challenges, the NTD Programme Managers Meeting and the 16th RPRG Meeting in July 2016 called for the presentation of the new vision and framework for elimination and control of NTDs.

Accordingly, the proposed new regional plan, provisionally titled “Regional Framework for Elimination and Control of NTDs in the Western Pacific Region”, was presented as a guiding framework for Member States and all other stakeholders on how to forge a multisectoral programme that addressed all endemic NTDs in each country using comprehensive intervention strategies in an integrated and coordinated manner, with the accent on efficiency and sustainability.

The regional goals and targets will need to be further discussed. Notwithstanding, they will, in principle, be aligned with those in the Global NTD Roadmap and with indicators 3.3.3 and 3.3.5 of the SDGs.

The WHO-recommended five public health strategies (Figure 5) remain the primary pathway towards elimination and control of NTDs in the Western Pacific Region. However, special attention will be paid to expanding the regional focus from the use of PC to a comprehensive multisectoral approach. In addition, recognizing the importance of community engagement in improving and sustaining the results of any NTD interventions, and noting the urgent need to strengthen surveillance and ensure its sustainability, parallel pillars of the framework have been proposed in the form of community empowerment through effective risk communication, and effective and sustained surveillance and response.

Figure 5. WHO-recommended public health strategies for elimination and control of NTDs centred on the community



Source: presented by Dr Aya Yajima

For all these three elements to be implemented effectively, efficiently and sustainably, the four enabling elements are considered essential: (i) high-level political advocacy, (ii) intersectoral collaboration and partnership, (iii) integration, and (iv) innovation and research.

Figure 6 illustrates the key components of the proposed regional plan.

Figure 6. Overall components of the proposed “Regional Framework for Elimination and Control of NTDs in the Western Pacific Region”



The RPRG commended the programme managers in the Western Pacific Region for the significant progress made since the adoption of the *Regional Action Plan for Neglected Tropical Diseases in the Western Pacific Region (2012-2016)* in 2012, including the progress on intersectoral collaboration. The proposed regional plan, building on the model of success but addressing new challenges, was fully supported. Every opportunity should be explored so that coordination and integration go beyond NTDs, allowing the NTD regional plan to contribute to strengthening primary health care. Attention was drawn to the importance of involving social sciences to improve each intervention, building on the demand for interventions (including MDA) and measuring the progress of behaviour changes at the community level.

3. CONCLUSIONS AND RECOMMENDATIONS

3.1 Conclusions

- 1) The RPRG congratulated a further two countries –Marshall Islands and Tonga – for validation of elimination of LF as a public health problem. The dossiers were resubmitted after minor amendments following the recommendations of the RDRG for LF and were officially validated by WHO.
- 2) The RPRG congratulated two countries – Cambodia and the Lao People’s Democratic Republic – for their recent validation of elimination of trachoma as a public health problem. The dossiers were submitted, reviewed by the RDRG for trachoma and recommended as suitable for validation.
- 3) The RPRG noted the significant progress made in initiating MDA for the elimination of trachoma in Kiribati and Vanuatu. However, slow progress was noted in efforts to eliminate trachoma and yaws in other Pacific island countries, particularly Fiji, Papua New Guinea and Solomon Islands.
- 4) The RPRG acknowledged the outcomes of the recent Expert Consultation to Accelerate Elimination of Asian Schistosomiasis, including the strategic guidance and targets for countries to make the transition from the control to the

elimination stage, and recommended tackling the priority research agenda as soon as possible to resolve existing technical challenges.

- 5) The RPRG acknowledged the outcomes of the recent Expert Consultation to Accelerate Control of FBT, Taeniasis and Cysticercosis, including the strategic guidance to expand the control programme to include all endemic areas while addressing the priority operational research agenda to generate more needed evidence.
- 6) As a country moves towards elimination stage for each NTD, improvement of quality of diagnosis becomes increasingly important. The RPRG emphasized the need to standardize NTD diagnosis and establish a system for quality assurance of diagnosis across the Region.
- 7) The RPRG discussed the proposed structure of the regional action framework in the Western Pacific to accelerate elimination and control of NTDs and contribute to achievement of the SDGs through the proposed three pillars of universal access to comprehensive NTD intervention packages, community empowerment through effective risk communication, and effective and sustained integrated surveillance and response.

3.2 Recommendations

3.2.1 Recommendations for Member States

Lymphatic filariasis

- 1) American Samoa should urgently develop a plan of action to implement an enhanced treatment strategy by adhering strictly to directly observed treatment at each targeted village, adopting coverage evaluation tools and using innovative communication and social mobilization strategies to ensure high treatment compliance with weight-appropriate dosage of antifilarials. Strengthening implementation of integrated vector control measures should also be considered in conjunction with MDA activities to augment impact.
- 2) Samoa is encouraged to proceed with the planned TAS 2 in two EUs, namely Apia urban area and the rest of Upolu and Savaii, and integrate assessment for STH.
- 3) Samoa is also strongly recommended to implement spot-check surveys using FTS to assess antigen prevalence among the population and confirm eligibility for repeating TAS 1 in the other EU, North West Upolu, considering its significantly high mosquito density and historical clustering of antigen-positives. Communities with clusters of children who tested positive in the failed TAS should be selected for spot-check surveys.
- 4) Samoa is encouraged to update its burden assessment of lymphoedema and hydrocele in the country and to make an appropriate plan to ensure availability of a minimum package of care for such patients.
- 5) Considering the significant movements of population between American Samoa and Samoa, efforts should be made to coordinate the implementation of treatment strategies and monitoring and evaluation activities to prevent transmission between the two.
- 6) Brunei Darussalam is encouraged to submit the dossier for review by the RDRG. WHO will consider recommendations from the RDRG on how best to acknowledge the achievements, based on national request for validation or reclassification of endemicity.
- 7) Fiji should continue enhanced MDA in remote islands with persistent transmission by strengthening field supervision, strictly adhering to directly observed treatment, administering the appropriately calculated treatment dose by

- body weight and utilizing coverage supervision tools. Strengthening implementation of integrated vector control measures should also be considered.
- 8) French Polynesia should continue with TAS in areas considered eligible based on pre-TAS surveys, and continue enhanced MDA in targeted islands with persistent transmission by strengthening field supervision, strictly adhering to directly observed treatment, administering the appropriately calculated treatment dose by body weight and utilizing coverage supervision tools.
 - 9) Malaysia should ensure use of Brugia Rapid™ in all LF surveys instead of night blood smear, and strict implementation of directly observed MDA in areas with persistent transmission of *Brugia malayi*.
 - 10) Malaysia is encouraged to accelerate assessment of the burden of lymphoedema and hydrocele in all endemic IUs to make an appropriate plan to ensure availability of a minimum package of care for such patients, while starting work on dossier preparation.
 - 11) The RPRG acknowledged the outcomes of the Informal Consultation on Post-Elimination Surveillance of NTDs. Relevant countries are encouraged to determine risk areas or population groups to prioritize post-validation surveillance and identify opportunities in existing regular national and subnational representative surveys and sentinel surveillance activities to integrate post-validation surveillance activities. It is also noted that strengthening of post-MDA surveillance would reduce concerns about the need for expanded post-validation surveillance.
 - 12) The regular use of the TAS checklist and coverage evaluation tools should be reinforced in all endemic countries to improve compliance to MDA and prevent TAS failure.

Schistosomiasis

- 13) Countries endemic for Asian schistosomiasis in the Western Pacific Region are encouraged to adopt the outcomes of the recent Expert Consultation to Accelerate Elimination of Asian Schistosomiasis, as appropriate, and develop or update the national plan to accelerate elimination of schistosomiasis.

Foodborne trematode infections, taeniasis and cysticercosis

- 14) Countries endemic for FBT, taeniasis and cysticercosis in the Western Pacific Region are encouraged to adopt the outcomes of the recent Expert Consultation to Accelerate Control of FBT, Taeniasis and Cysticercosis, as appropriate, and develop or update the national plan of action to complete risk mapping, strengthen intersectoral cooperation and initiate systematic control interventions.

Trachoma and yaws

- 15) Efforts to implement the full intervention strategy for the elimination of trachoma should be accelerated in all endemic Pacific island countries, and particularly Fiji and Papua New Guinea, where MDA has not been initiated.
- 16) Countries endemic for yaws as well as trachoma, namely Solomon Islands, Papua New Guinea and Vanuatu, should take advantage of mass administration of azithromycin for elimination of trachoma by systematically monitoring its impacts on yaws and implementing specific follow-up interventions and surveillance for yaws where necessary.

3.2.2 Recommendations for WHO

WHO is requested to do the following:

- 17) Collaborate with partners and assist Member States in implementing the priority operational research agenda identified in the recent Expert Consultations, Informal Consultation and the RPRG meeting to generate the evidence necessary to facilitate control and elimination of NTDs.
- 18) Establish a consortium to coordinate research and improve quality assurance of NTD laboratory diagnosis through strengthening the laboratory network in the Western Pacific Region.
- 19) Explore opportunities to strengthen implementation of trachoma control activities in Pacific island countries through engagement with Member States and implementing partners of the Global Elimination of Trachoma by the year 2020 (GET2020) agenda.

AGENDA

| Day 1: Thursday, 15 June 2017 | | |
|-------------------------------|--|--|
| 08:30 – 09:00 | Registration | |
| Opening Session | | |
| 09:00 – 09:30 | Welcome address | Professor Zhou Xiao Nong, Director, NIPD, China CDC |
| | | WHO WPRO |
| | Meeting objectives | Dr Rabindra Abeyasinghe |
| | Self-introduction of participants and observers | Coordinator, WPRO/MVP |
| | Administrative announcements | Dr Aya Yajima, NTD focal point, WPRO/MVP |
| Session 1: | <i>Global updates and regional achievements and challenges</i> | |
| 09:30 – 10:00 | Global updates on NTDs from WHO/HQ (10 min) | WHO HQ/NTD |
| | Achievements and emerging challenges in elimination and control of NTDs in the Western Pacific Region (10 min) | Dr Aya Yajima |
| | Discussion | All |
| 10:00 – 10:30 | <i>Group photograph followed by coffee/tea break</i> | |
| Session 2: | <i>Accelerating and sustaining elimination of lymphatic filariasis</i> | |
| 10:30 – 12:00 | Persistent transmission of LF in geographical foci (7 min each + 15 min discussion) | |
| | ○ Malaysia | – Dr Khairiah Ibrahim, Ministry of Health, Malaysia |
| | ○ American Samoa | – Dr Eswara Padmasiri, NTD Focal Point, WPRO/DPS |
| | ○ Fiji | – Ms Niko Nadolo, Ministry of Health and Medical Services, Fiji |
| | ○ French polynesia | – Dr Herve Bossin, Institut Louis Malarde, French Polynesia |
| 12:00 – 12:30 | Report of the informal consultation on post-elimination surveillance of NTDs (10 min) | Dr Patrick Lammie, Task Force for Global Health, USA |
| | Discussion | All |
| 12:30 – 13:30 | Lunch break | |
| 13:30 – 14:15 | Fast-tracking LF elimination in specific situation (7 min each + 15 min discussion) | |
| | ○ Brunei Darussalam | – Dr Wadi Hana bte Haji Sudin, Ministry of Health, Brunei Darussalam |
| | ○ Samoa | – Dr Tile Ah Leong Liu, Ministry of Health, Samoa |

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| Session 3: | <i>Accelerating control of foodborne and zoonotic NTDs and elimination of schistosomiasis</i> | |
| 14:15 – 15:00 | Report of the expert consultation to accelerate control of FBT, taeniasis and cysticercosis (10 min) | Prof Sung-Tae Hong, Seoul National University, Republic of Korea |
| | Next steps in countries (3 min each) <ul style="list-style-type: none"> ○ Cambodia ○ Lao PDR ○ Philippines ○ Viet Nam | <ul style="list-style-type: none"> – Dr Virak Khieu, CNM, Cambodia – Dr Rattanaxy Phetsouvanh, Ministry of Health, Lao PDR – Dr Leda Hendandez, Department of Health, Philippines – Dr Vu Thi Lam Binh, NIMPE, Viet Nam |
| | Discussion | All |
| 15:00 – 15:30 | <i>Coffee/tea break</i> | |
| 15:30 – 17:00 | Report of the expert consultation to accelerate elimination of Asian schistosomiasis (10 min) | Prof Zhou Xiao Nong, NIPD, China |
| | Next steps in countries (3 min each) <ul style="list-style-type: none"> ○ Cambodia ○ Lao PDR ○ Philippines | <ul style="list-style-type: none"> – Dr Virak Khieu – Dr Rattanaxy Phetsouvanh – Dr Leda Hernandez |
| | Discussion | All |
| 18:00 – 20:00 | <i>Cocktail reception</i> | |

Day 2: Friday, 16 June 2017

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| Session 4: | <i>Accelerating elimination of trachoma and yaws</i> | |
| 09:00 – 09:30 | Updates on validation of elimination of trachoma as a public health problems - Cambodia and Lao PDR (15 min) | Prof Hugh Taylor, University of Melbourne School of Population and Global Health, Australia |
| | Discussion | All |
| 09:30 – 10:00 | Accelerating S, F and E components and yaws elimination after launch of trachoma MDA (10 min) | Dr Eswara Padmasiri |
| | Discussion | All |
| 10:00 – 10:30 | Report of yaws re-mapping surveys and next steps in the Philippines (10 min) | Dr Leda Hernandez |
| | Discussion | All |
| 10:30 – 11:00 | <i>Coffee/tea break</i> | |
| Session 5: | <i>Filling knowledge gap for accelerating elimination and control of NTDs</i> | |
| 11:00 – 12:00 | Priority operational research agenda and survey needs in the Western Pacific Region (10 min) | Dr Aya Yajima |
| | Progress updates and opportunities from COR-NTD relevant to Western Pacific Region (10 min) | Dr Patrick Lammie |
| | Discussion on strategy to move regional research forward | All |
| 12:00 – 12:30 | Strengthening surveillance through quality assurance of NTD diagnosis (10 min) | Dr Rabi Abeyaisnghe |
| | Discussion on next steps | All |
| 12:30 – 13:30 | <i>Lunch break</i> | |

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| Session 5: | <i>Proposed regional strategy for elimination and control of NTDs in the Western Pacific Region towards and beyond 2020</i> | |
| 13:30 – 14:00 | Overview of current regional issues, priorities and proposed regional strategy | Dr Rabi Abeyasinghe |
| 14:00 – 15:00 | Discussion <ul style="list-style-type: none"> o Goal, aim and targets o Strategic framework | All |
| 15:00 – 15:30 | <i>Coffee /tea break</i> | |
| 15:30 – 16:00 | Updates and opportunities from donors and partners | Donors and partners |
| 16:00 – 16:20 | Conclusions and recommendations | Dr Rabi Abeyasinghe |
| 16:20 – 16:30 | Closing | Prof Zhou Xiao Nong |

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