

Meeting Report

16TH MEETING OF THE WESTERN PACIFIC REGIONAL PROGRAMME REVIEW GROUP ON NEGLECTED TROPICAL DISEASES



20–21 July 2016
Manila, Philippines



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WORLD HEALTH ORGANIZATION
REGIONAL OFFICE FOR THE WESTERN PACIFIC

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REPORT

THE 16TH MEETING OF THE WESTERN PACIFIC REGIONAL PROGRAMME
REVIEW GROUP ON NEGLECTED TROPICAL DISEASES

Convened by:

WORLD HEALTH ORGANIZATION
REGIONAL OFFICE FOR THE WESTERN PACIFIC

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NOTE

The views expressed in this report are those of the participants of the 16th 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 16th meeting of the Western Pacific Regional Programme Review Group on Neglected Tropical Diseases in Manila, the Philippines from 20 to 21 July 2016.

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Keywords:

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

ACRONYMS

Ag	antigenaemia
CL-SWASH	community-led initiative to eliminate schistosomiasis and reduce soil-transmitted helminthiases
CST	coverage supervision tool
DEC	diethylcarbamazine citrate
ELISA	enzyme-linked immunosorbent assay
FBT	foodborne trematodiasis
ICT	immunochromatographic card test
IEC	information, education and communication
LF	lymphatic filariasis
MDA	mass drug administration
MDG	millennium development goal
Mf	microfilaraemia
MMDP	morbidity management and disability prevention
NTDs	neglected tropical diseases
PacELF	Pacific Programme to Eliminate Lymphatic Filariasis
RDRG	Regional Dossier Review Group
RPRG	Regional Programme Review Group
SDGs	Sustainable Development Goals
STAG	Strategic and Technical Advisory Group
STH	soil-transmitted helminthiases
TAS	transmission assessment survey
WASH	water, sanitation and hygiene
WHA	World Health Assembly
WHO	World Health Organization

SUMMARY

The 16th meeting of the Western Pacific Regional Programme Review Group (RPRG) on Neglected Tropical Diseases (NTDs) was held from 20 to 21 July 2016 in Manila, the Philippines. In addition to 13 RPRG members, five national NTD programme managers and representatives of 11 stakeholder organizations participated in the meeting.

Dr Sergey Diorditsa, Acting Director of the Division of Communicable Disease Control, delivered the opening remarks on behalf of Dr Shin Young-Soo, WHO Regional Director for the Western Pacific. He acknowledged significant progress in the elimination and control of NTDs, notably for lymphatic filariasis (LF) and trachoma. He reminded that there are 14 NTDs endemic in the Region and emphasized the importance of focusing our efforts to accelerate the control and elimination of all NTDs to rid the Region of these diseases of poverty and to ensure that no people are left behind.

Key highlights of actions taken following the 15th Regional Programme Review Group (RPRG) meeting included the recent validation by WHO of elimination of LF as a public health problem in four countries – Cambodia, Cook Islands, Niue and Vanuatu; submission of dossiers for Regional Dossier Review Group (RDRG) review for validation of LF elimination as a public health problem by two additional countries (the Republic of Marshall Islands and Tonga); continuation of the joint multisectoral collaboration between NTD, water, sanitation and hygiene (WASH) and veterinary public health programmes in Cambodia and the Lao People's Democratic Republic to reduce the prevalence of Asian schistosomiasis; and ongoing development of the dossiers for validation of elimination of blinding trachoma as a public health problem in four countries (China, Cambodia, the Lao People's Democratic Republic and Viet Nam).

The RPRG acknowledged the outcome of the RDRG review of the two draft dossiers for validation of elimination of LF as a public health problem submitted by the Republic of Marshall Islands and Tonga and accepted them with minor amendments as meeting the requirements for validation of elimination as a public health problem.

Noting the significant progress in control of schistosomiasis in the Western Pacific Region and the significant differences of epidemiology between Asian schistosomiasis and African schistosomiasis, the RPRG recommended that WHO organize an expert consultation to discuss Asian schistosomiasis and determine regional and species-specific targets and strategies.

Concerned by slow progress, the RPRG also recommended that WHO convenes an expert meeting on foodborne trematodiasis after a review of burden data, treatment efficacies, and other intervention options and diagnostics, to determine best strategies for monitoring, mapping and improving access to treatment with a view to accelerating progress towards elimination.

The RPRG welcomed the new process endorsed by the Strategic and Technical Advisory Group (STAG) for NTDs in 2016 for including a new disease as an additional NTD and encouraged countries, research institutions and academia to jointly produce a dossier for review by the next STAG on any potential additional diseases of public health significance to be included in the list of NTDs.

The context of NTD programmes under the Sustainable Development Goals (SDGs) focuses on building resilient health services and strengthening health systems. This should be viewed as an opportunity and efforts should be made to mainstream NTD in SDGs through achieving universal health coverage of NTD treatment and interventions and also by using NTDs as a tracer for equitable access to other services, such as water, sanitation and hygiene (WASH).

It was noted that more time and effort are needed to achieve all the targets set in the current *Regional action plan for neglected tropical diseases in the Western Pacific Region (2012–2016)*. To continue towards achievement of all goals set in the *Accelerating work to overcome the global impact of neglected tropical diseases – A roadmap for implementation*, and acknowledging a lack of clarity and tools for post-validation surveillance, as well as the process and criteria for verifying interruption of transmission of schistosomiasis and effective intervention options for foodborne trematodiasis and some other NTDs, RPRG supported the conclusion of the programme managers meeting that the timeline of the current Regional Action Plan be extended to 2018.

1. INTRODUCTION

1.1 Meeting organization

The 16th meeting of the Western Pacific Regional Programme Review Group (RPRG) on Neglected Tropical Diseases (NTD) was held from 20 to 21 July 2016 in Manila, Philippines. In addition to 13 RPRG members, five national NTD programme managers and representatives of 11 stakeholder organizations participated in the meeting.

1.2 Meeting objectives

The objectives of the meeting were to:

- (1) discuss challenges national NTD programmes face in achieving elimination and control targets and recommend concrete actions for countries, the Secretariat and partners to address these issues; and
- (2) discuss the progress of the *Regional Action Plan on Neglected Tropical Diseases 2012–2016* and the way forward.

2. PROCEEDINGS

2.1 Opening session

Dr Sergey Diorditsa, Acting Director of the Division of Communicable Disease Control, delivered the opening remarks on behalf of Dr Shin Young-Soo, WHO Regional Director for the Western Pacific.

The Regional Director acknowledged significant progress towards the goals of the *Regional Action Plan for Neglected Tropical Diseases in the Western Pacific (2012–2016)*, notably the recent validation by WHO of elimination of lymphatic filariasis as a public health problem in four countries – Cambodia, Cook Islands, Niue and Vanuatu. He highlighted the need not only to accelerate our efforts to ensure all filariasis endemic countries reach the elimination targets but also to strengthen and sustain surveillance capacities in general health services and health care service provision for people affected by residual morbidity due to NTDs, even beyond elimination. He also emphasized that there are a total of 14 NTDs that are endemic in the Region and emphasized the importance of focusing our efforts to accelerate the control and elimination of all NTDs, to rid the Region of these diseases of poverty and to ensure that no people are left behind. In closing, he conveyed his appreciation to the members of the RPRG for their continuous voluntary efforts and sharing of expertise to guide the Region in the fight against NTDs.

2.2 Leaving no one behind: global updates on elimination and control of NTDs and SDGs

Dr Dirk Engels presented the changing context of NTD programmes with transition from the Millennium Development Goals (MDGs) to the Sustainable Development Goals (SDGs), focusing on building resilient health services and health system strengthening. This should be considered as an opportunity, particularly for innovative and intensified disease management for a number of NTDs that require a good health system and access to care as well as intensified research to develop better public health tools. An integrated approach outside preventive chemotherapy has been explored, for example, for skin-related diseases such as leprosy, yaws, Buruli ulcer, mycetoma and cutaneous leishmaniasis that are often co-endemic and involve similar medical professional groups. Recognized

as diseases of poverty and inequity, Dr Engels emphasized the rationale for mainstreaming NTDs in SDGs as a tracer indicator for equitable access to water, sanitation and hygiene (WASH), health service and nutritional impacts.

2.3 Challenges in accelerating control, achieving and sustaining elimination of NTDs in the Western Pacific Region

Significant progress has been made for diseases targeted for elimination through preventive chemotherapy. Four countries have been validated for elimination of lymphatic filariasis (LF) as a public health problem in May 2016, and eight more countries under post-mass drug administration (MDA) surveillance. Four countries (China, Cambodia, the Lao People's Democratic Republic and Viet Nam) reportedly achieved elimination of blinding trachoma as a public health problem and are developing the dossier of validation of such status. However, challenges remain for reducing and eventually interrupting transmission of diseases that require interventions other than preventive chemotherapy, such as schistosomiasis, foodborne trematodiasis, soil-transmitted helminthiasis, echinococcosis, taeniasis and cysticercosis. The details of specific challenges were discussed in later sessions.

Concern was raised on lack of sensitive rapid diagnostic test for several NTDs. Over-diagnosis using some sero-diagnostic kits has been found for neurocysticercosis, particularly in the Western Pacific Region where various tissue invading helminths can cause cross reactivity. WHO headquarters is currently developing an inventory of diagnostic needs and landscape analysis for each disease. Referring to this, the RPRG discussed the importance of a critical review of diagnostics in use in each WPR country.

2.4 New recommendations and tools in pipelines for improving efficiency and impacts of NTD interventions from NTD-STAG

The RPRG noted various recommendations endorsed by the STAG and its working groups in May 2016. This included the checklist for improving transmission assessment survey (TAS) outcomes, the WHO document on process of validation of elimination of trachoma as a public health problem, the existing dossier template for validation of elimination of LF as a public health problem, including the following clinical indicators: (i) number of patients with visual morbidity; (ii) number of facilities providing care for such patients; and (iii) the assessment of quality of care being provided in a selected sample of such facilities, and ongoing development of the morbidity management and disability prevention (MMDP) toolkit, including the tools for burden assessment and health facility inspection currently being piloted in selected countries.

Dr Gautam Biswas introduced the tools recently approved by the NTD Strategic and Technical Advisory Group (STAG) to assess and improve treatment coverage. The data quality assessment (DQA) is a tool to verify the strength and weakness of the data reporting system at all levels in the country. The coverage supervision tool (CST) is to be used as part of regular package of MDA supervision, modified from the Expanded Programme on Immunization (EPI) survey methodology, where 20 people in 20 villages are sampled and estimates are made as to whether the area has hit the 65% coverage target so that corrective measures can be taken right away.

The RPRG noted the STAG's recommendation that countries should report on treatment to the national level within three months of MDA and submit drug requests nine months prior to MDA, without waiting for the current August 15 deadline each year.

2.5 Technical discussion – elimination of LF as a public health problem

2.5.1 Overview of LF elimination status in the Western Pacific Region

Dr Aya Yajima summarized the regional progress of LF elimination. In 2016, four countries (Cambodia, Cook Islands, Niue and Vanuatu) were validated by WHO as having eliminated LF as a public health problem for the first time globally, after China and the Republic of Korea received WHO acknowledgement of such status in 2006 and 2007, respectively. Seven more countries are under post-MDA surveillance, of which two countries (the Republic of Marshall Islands and Tonga) have submitted the validation dossier for review. Ten countries are implementing MDA, the majority of which are due for pre-TAS surveys in 2016–2017 to assess eligibility of their implementation units for transmission assessment surveys and to determine if MDA can be terminated. The remaining challenges include scaling up assessment of LF morbidity burden and improving the reporting of data to WHO on morbidity management and disability prevention activities for patients from countries building evidence for sustainable post-validation surveillance, and sustaining political and financial commitment to scale up MDA in Papua New Guinea.

The current situation in Malaysia was highlighted where seven out of 116 originally endemic implementation units failed pre-TAS surveys and four implementation units failed TAS 2, even after nine rounds of MDA. All these implementation units are endemic with *Brugia Malayi* and located in Borneo islands in East Malaysia bordering Indonesia.

Recommendation: Noting several incidences of TAS failures also in *Brugia*-endemic areas in Indonesia, the RPRG urged the Secretariat to hold an expert consultation to review data and identify possible programme issues of coverage, diagnostic testing and possible zoonotic transmission. The objective of this meeting will be to identify challenges and develop a response plan to help programmes overcome such challenges including through the use of operational research as needed.

2.5.2 RDRG's review reports on dossiers to validate elimination of LF as a public health problem

1. Tonga

The dossier from Tonga was reviewed by the RDRG composed of Dr Eric Ottesen, Dr Patricia Graves and Dr Patrick Lammie.

Tonga is endemic with *Wuchereria bancrofti* mainly transmitted by *Aedes* mosquitoes. The historical data available on microfilaraemia (Mf) prevalence in Tonga dates back to 1896 (20–47% Mf prevalence). In 1977, MDA with diethylcarbamazine citrate (DEC) was conducted nationwide, reducing the prevalence below 1% by 1979. The baseline survey was conducted in 2000 using the immunochromatographic card test (ICT), which showed 2.7% antigenaemia (Ag) prevalence among 4002 individuals tested in five islands. MDA with DEC and albendazole was implemented annually between 2001 and 2005, with an additional round in Niuas in 2006 where the baseline prevalence was significantly high (Ag 37.7%). C-survey conducted in 2006 testing 2927 individuals across all ages with ICT showed 0–4% Ag prevalence per site. Ten individuals were found Ag positive, of which two were Mf positive. MDA was continued in the implementation unit where two Mf positive cases were found. TAS 1 (D-survey) was conducted in 2007, testing 3283 children and finding no Ag positives, thus MDA was terminated. TAS 2 in 2008 testing 2452 children again found no Ag positive, and TAS 3 in 2015 testing 2806 children found one Ag positive case. In Tonga, LF is a notifiable disease. Continued post-validation surveillance in the two major hospitals by screening a fixed proportion of pregnant women and other in-patients with Filaria Test Strips (FTS) is planned.

The dossier states that the country has observed a significant decrease of lymphoedema and hydrocele cases in the past decades, but the estimated number of lymphoedema and hydrocele patients was not available. General surgical care is available at the two national hospitals and specialized clinical services at 17 health centres, but the actual services being provided to LF patients are not described.

Risk of reintroduction of LF is considered minimal due to geographic isolation, a limited number of tourists coming from other endemic areas, and the intensive *Aedes* vector control for dengue, Zika fever and chikungunya that is underway.

Recommendation: the RPRG acknowledged Tonga's significant efforts in eliminating LF as a public health problem. The RDRG concluded that Tonga is considered to have achieved elimination of LF as a public health problem, and recommended resubmission of the dossier with the following minor amendments: (i) to clarify the latest number of individuals with lymphoedema and hydrocele, the points of access for management of such patients and the plan for capacity strengthening; (ii) to harmonize the data in the excel data summary and in the narrative part of the dossier and add some missing historical records referring to the Pacific Programme to Eliminate Lymphatic Filariasis (PacELF) data book; and (iii) to elaborate the plan for continued surveillance, particularly in Niuas, where one out of the 20 children tested was found positive in 2015. Noting the result of one Ag positive over the 20 children tested in Niuas in TAS 3, it was suggested to target post-validation surveillance in this area.

2. The Republic of Marshall Islands

The dossier from the Republic of Marshall Islands was reviewed by the RDRG composed of Dr Patricia Graves, Dr Eric Ottesen and Dr Patrick Lammie.

The Republic of Marshall Islands is endemic with *Wuchereria bancrofti* mainly transmitted by *Culex quinquefasciatus*. Mapping was conducted in 2001 using ICT and found 0.1% Ag prevalence out of 2004 individuals tested. Two positives were found in Mejit. Baseline survey was conducted in 2002 using ICT, which resulted in 44.2% Ag prevalence in Mejit among 294 people tested and 29.0% Ag prevalence in Ailuk among 244 people tested. MDA was initiated on these two atolls in 2002 and continued annually up to 2006. The coverage data is not available for 2004–2006. A surveys was conducted in Woige (n=217) and Ebon (n=318) in 2003, both finding zero cases. In 2004, another survey was conducted in three other atolls (n=804) and found zero cases. A mid-term B survey was conducted in 2005, resulting in 18.8% (n=112 out of 416 total population) and 47% (n=204 out of 513 total population) Ag prevalence in Mejit and Ailuk, respectively. This was followed by another round of MDA campaign in 2006. A C-survey to stop MDA was conducted between 2007 and 2008, which found one Ag positive case out of 291 persons tested in Mejit and zero positive out of 242 persons tested in Ailuk. TAS 2 was conducted in two parts. The part 1 in 2013 tested 708 out of 807 high school children from all islands and found zero Ag positive. Part 2 was conducted in 2014 testing 271 people in Mejit and 294 people in Ailuk, finding zero Ag positive again. TAS 3 was conducted in 2016, testing 251 people in Mejit and 250 people in Ailuk, finding zero Ag positive.

Three hydrocele cases have been reported, two of which received surgery and one was referred to the Philippines. Only two lymphoedema cases are recorded. There was no explicit indication of a post-validation surveillance plan. However, the risk of re-introduction of LF is considered low because most of visitors to the country are from North America and Pacific countries where LF is under post MDA surveillance or with ongoing MDA.

A possibility of a high number of false positives due to poor reading of antigen test results in the early days (2005) was discussed as a potential reason for the steep decline of Ag prevalence between 2005 and 2007.

Recommendation: the RPRG acknowledged the Republic of Marshall Islands' significant efforts in eliminating LF as a public health problem. Following analysis of the data collected in more recent years with better quality antigen tests, the RDRG concluded that Marshall Islands can be considered to have achieved elimination of LF as a public health problem, and recommended resubmission of the dossier after editorial revision to address inconsistencies of data and information in the document and inclusion of a post-validation surveillance plan.

2.5.3 Success and failure in TAS 2015

French Polynesia conducted TAS 1 in Winward Urban after 13 rounds of MDA and found zero positive out of 1188 school children. Pre-TAS surveys were also conducted in Winward rural, Winward Tahiti iti, Australes and Tuamotu-Gambier after 13 rounds of MDA, all resulting in less than 0.01% Ag prevalence. All these implementation units will proceed to TAS between 2016 and 2017.

Fiji conducted TAS 1 in Northern Division with four implementation units after 10 rounds of MDA since 2004 resulting in zero positives (n=1624). This was integrated with soil-transmitted helminthiases (STH) assessment, finding a prevalence of 5.0% for ascaria, 12.3% for hookworm and 1.5% for trichuris. Concern was raised if the small sample size was adequate in the context that the *Aedes* mosquito is the major vector in the area.

The Philippines conducted TAS 1 in five provinces, of which four found zero positive cases whereas one province (Sarangani) found 12 positive cases out of 3113 children tested (critical cut-off was 18). Sarangani implemented one more round of MDA after TAS 1 with 87.5% treatment coverage, following which all five provinces ceased MDA. Davao Orientale conducted a repeat TAS 1 after failure in 2013–2014 with 25 positives out 3535 children tested and continued two more rounds of MDA. TAS 1 passed with six positives out of 3076 children tested (critical cut-off was 18). One more round of MDA was continued in 2015 with 84.9% coverage before MDA was terminated. TAS 2 was implemented in four provinces, of which three passed, but one province (Mindoro Orientale) failed with 28 positive cases out of 3325 children tested (critical cut-off was 18). TAS 1 in this province passed with 12 positives in 2013. Some of the positive cases belonged to ethnic and mobile population.

Papua New Guinea conducted sentinel and spot-check site surveys prior to MDA planning in four provinces (East Sepik, East New Britain, West New Britain and Sunduan). The results of Ag prevalence ranged from 4–77% but the number tested also ranged from 26 to 185 individuals per site. In some sites the tests were possibly read after 30 minutes to one hour, which potentially caused false positives. Nonetheless, it was considered to indicate high endemicity of LF and thus an urgent start of MDA is warranted.

Recommendation: based on the results of the Pre-TAS, French Polynesia is encouraged to proceed with TAS 1 in Winward Tahiti rural area, Tuamotu Gambier and Australes and integrate assessment of soil-transmitted helminthiases. Fiji is requested to provide details on sample size calculation for TAS 1 in Northern Division to ensure the appropriate number of samples have been collected before deciding on results of TAS 1. The RPRG recommended the Philippines consider segmenting Mindoro Orientale into smaller evaluation units and conduct mini-TAS to determine the areas where MDA should be continued and to investigate participation of the ethnic group in the past MDA rounds and assess whether their migration patterns could contribute a risk to other implementation units. The TAS checklist should be used for investigation and response to failed TAS. The programme should also continue the establishment of post-MDA surveillance.

2.5.4 Standard process for confirming transmission of suspected LF cases

Recently suspected LF cases with lymphoedema were found in areas classified as non-endemic for LF in the Lao People's Democratic Republic and Viet Nam. The case in the Lao People's Democratic Republic was confirmed as non-filarial lymphoedema after clinical examinations and laboratory diagnosis. However, the case in Viet Nam suggested a need for confirmation of the absence of LF transmission in the area. The protocol for "mini-TAS" for LF confirmation mapping was presented by Dr Patrick Lammie as a potential tool for such a situation. The protocol is designed as school-based for logistical ease, to test children aged 9–14 years as antigenaemia in children is considered as a measure of recent transmission and testing older children would give a longer period of potential exposure to infection, thus improve the sensitivity of the survey. The survey will employ probability sampling, which is less prone to bias than convenience sampling. The survey sample builder is

available online. The protocol has been piloted in several countries, resulting in effectively reducing the number of people requiring MDA.

Recommendation: the RPRG acknowledged the progress on development of the mini-TAS protocol, which is statistically robust and more feasible for making the decision to start MDA than TAS designed for making the decision to stop MDA, and recommended the mini-TAS to be systematically used in confirming transmission of LF in areas with uncertainty.

2.5.5 Ensuring MMDP after validation – lesson learnt from health facility inspection

Dr Nguyen Kim Thu shared Viet Nam's experience in piloting the direct health facility inspection tool, which is a part of the WHO LF MMDP Toolkit, to examine the quality of MMDP services in 10% of commune health stations with known lymphoedema patients. This involved visiting selected health stations to inspect availability of training materials, a patient tracking book, information, education and communication (IEC) materials, supplies of necessary medicines and commodities and water infrastructure and interviewing health staff and patients about their knowledge of LF-related morbidity management. The survey was particularly useful in assessing the knowledge gap among health staff and patients and determining the areas in need for MMDP trainings and IEC materials. It also allowed identification of suspected patients beyond endemic districts. In Viet Nam, two lymphoedema patients under age 20 were identified through communication with patients and health staff in districts classified as non-endemic. The two individuals were tested and found Mf negative.

Recommendation: recognizing that negative testing of the two individual patients does not exclude the possible presence of ongoing transmission, the RPRG recommended that Viet Nam utilizes the new mini-TAS protocol to survey areas where clusters of suspected cases were identified to re-assess LF endemicity and finalize the dossier on elimination of LF as a public health problem.

2.5.6 Post-validation surveillance – how to maintain diagnostic capacity and resources after validation?

Dr Leda Hernandez shared the Philippines' experience in devising various tools to sustain capacity of the health system to maintain diagnostic capacity and resources after LF MDA is terminated. This included the inclusion of NTD modules and information in the government-led training programmes for local leaders and governors, NTD indicators in the Local Government Unit Scorecards for monitoring progress, the establishment of interregional Department of Health Collaborating Centers for malaria and other vectorborne diseases with laboratory facilities, development of training modules on integrated microscopy for medical technologists and follow-up to monitor their skill retention, and development of partners advocacy kits reiterating the impacts of investment for local government unit chiefs.

The RPRG discussed the need to translate this experience to other countries. The e-learning module on stigma and discrimination against leprosy is available in the Philippines, and development of similar modules on NTDs and integrated diagnostics for wider use was suggested as a possible option for future consideration.

2.6 Technical discussion – elimination of schistosomiasis as a public health problem

2.6.1 Overview of schistosomiasis elimination status in the Western Pacific Region

Dr Aya Yajima summarized the regional progress of schistosomiasis elimination. All four endemic countries (China, Cambodia, the Lao People's Democratic Republic and the Philippines) have a long history of schistosomiasis control programmes, and with over a decade of annual MDA, the prevalence of infection is now reduced to below 1% in all sentinel sites in Cambodia and the Lao People's Democratic Republic and in many areas of China and the Philippines, based on 2016 data. With the realization that interruption of the transmission of schistosomiasis requires improved

sanitation in all endemic villages, multisectoral cooperation between the NTD programme and the team responsible for water, sanitation and hygiene has been initiated in Cambodia and the Lao People's Democratic Republic. The remaining challenges include lack of sensitive rapid diagnostic tool for both *Schistosoma mekongi* and *Schistosoma japonicum*, uncertainty on contribution of animal reservoirs to transmission of *Schistosoma mekongi*, a lack of clarity on the protocol for survey and treatment of animal schistosomiasis, and a lack of criteria to assess elimination as a public health problem and interruption of transmission.

2.6.2 Multisectoral approach, elimination criteria and lessons learnt in China

The historical efforts to control and eliminate schistosomiasis in China were presented by Professor Zhou Xiao Nong. Since the 1950s, the main strategy of the national programme gradually shifted with the advance of technology and evidence from snail control (1950–1985) to morbidity control by mass chemotherapy (1986–2003) and finally to integrated infectious source control (2004 to present) targeting treatment of animal reservoirs, improvement of water supply and sanitation, and intensifying health communication and community participation. As a result, the number of cases decreased from 843 000 in 2004 to 115 000 in 2014, the infection rate of animals dropped from 4.5% in 2004 to 0.25% in 2015, and the majority of 454 endemic counties achieved the criteria for elimination as a public health problem as defined by the Government of China, i.e. prevalence of infection below 1% at the village level. Success factors, which included the reduction of prevalence in animal reservoirs, were discussed, such as the semi-annual treatment of animals in high risk areas, a reduction in the use of water buffalos in agriculture by replacement with tractors, and fencing off cattle from waterbodies, using local government subsidies.

China established the criteria for schistosomiasis elimination as a public health problem as prevalence of infection below 1% and interruption of transmission as: (i) zero incidence of infection in humans for five successive years; (ii) zero incidence of infection in domestic animals for five consecutive years; (iii) absence of infected *Oncomelania* snails for five consecutive years; and (iv) presence of an effective and sensitive surveillance system. Certification of elimination is awarded when zero incidence of infection both in human and domestic animals is maintained a further five years after achievement of interruption of transmission.

2.6.3 Evaluation of the current status of Cambodia and the Lao People's Democratic Republic and proposed M&E protocol

Dr Hiroshi Ohmae presented the outcomes of the evaluation of the current status of schistosomiasis elimination in Cambodia and the Lao People's Democratic Republic. *Schistosoma mekongi* is endemic in Khong and Muonlapamok districts of Champasak province in the Lao People's Democratic Republic and Stung Treng and Kratie provinces of Cambodia along the Mekong River. Transmission occurs near rocks with snail colonies during the dry season when water levels are reduced and intermediate snails hatch. MDA in Cambodia is conducted towards the end of the dry season (April to May) to prevent transmission during that year, whereas MDA in the Lao People's Democratic Republic is conducted towards the end of the rainy season (October) to prevent transmission the following year. Currently, WHO defines elimination of schistosomiasis as a public health problem as less than 1% of heavy intensity infection in all sentinel sites. Conclusions below are based on evaluation of prevalence data using Kato-Katz stool examination, formalin-detergent method and serological surveys in sentinel and spot-check sites.

- Cambodia has achieved elimination of schistosomiasis as a public health problem in accordance with the current WHO definition, based on various diagnostic methods. However, only four villages have been designated as sentinel sites and spot-check site survey shows that there are still some moderate-risk villages surrounded by low-risk villages.
- For the first time, the Lao People's Democratic Republic did not find heavy intensity infection in any sentinel sites in 2015, but the sample size was relatively small (around 100 people per site). In 2014, one person each from three sentinel villages was found to be

positive, all with low intensity infection. Additional surveys are to be conducted in October 2016 in seven sentinel sites and a few more spot-check sites with increased sample size, both by stool examination with duplicate reading and enzyme-linked immunosorbent assay (ELISA).

- Monitoring of light-intensity infection in low-transmission areas requires improvement of stool examination by at least a two slide reading of Kato Katz smear, a sedimentation technique, or improvement of serological tests to prevent cross reaction with other fluke, such as opisthorchis. ELISA using egg antigens improves sensitivity and specificity but availability of egg antigens is limited because the lifecycle of *S. mekongi* is difficult to sustain in laboratory conditions.
- Based on the Lao People's Democratic Republic's experience in rapid recrudescence of transmission after stopping MDA, more evidence is required to determine when and how to scale down MDA.

2.6.4 CL-SWASH initiative in Cambodia and the Lao People's Democratic Republic – progress and next steps

Dr Muth Sinuon and Dr Aya Yajima (on behalf of Dr Rattanaxy Phetsouvanh) presented the progress of the community-led initiative to eliminate schistosomiasis and reduce soil-transmitted helminthiasis (CL-SWASH) in the Lao People's Democratic Republic and Cambodia. The CL-SWASH was jointly initiated in 2015 by the team responsible for NTD, water, sanitation and hygiene (WASH) and nutrition at the WHO Regional Office for the Western Pacific, WHO Country Office and the relevant ministries in the Lao People's Democratic Republic. To ensure sustainability, it will focus on building the knowledge and skills of communities in endemic villages so that they understand, prevent and manage risk factors by themselves and build on the ongoing efforts of the Ministry of Health to expand the establishment of a Water Safety Plan at all communities nationwide using a community-led approach. Since February 2015, the CL-SWASH has been pilot implemented in one of the endemic villages in the Lao People's Democratic Republic and several stakeholders meetings have been held at the national, provincial and village level in 2015 to improve the approach and develop the joint work plan for its expansion. The multisectoral CL-SWASH technical working group has been established at the national level in March 2016, followed by similar working groups at the provincial and district level. The Cambodia Government staff responsible for NTD, rural development and education joined the mission to CL-SWASH pilot sites in November 2015 and developed the plan to initiate the CL-SWASH initiative in Cambodia. The multisectoral visit to schistosomiasis endemic villages in Cambodia was organized in January 2016, and a provincial stakeholders meeting was conducted both in Kratie and Stung Treng provinces in May 2016 to discuss development of the joint work plan.

2.6.5 Challenges in sustaining high MDA coverage and tackling animal reservoirs

Dr Winston Palasi analysed the Philippines' challenges in sustaining high MDA coverage for schistosomiasis in several provinces as follows: (i) lack of ownership of schistosomiasis control programmes by some local government units; (ii) delayed delivery of medicines from the national to the peripheral level; (iii) fear of adverse side effects; (iv) many other competing activities; and (v) poor intra- and inter-agency coordination. In response, the Philippines Department of Health started the Harmonized Schedule and Combined Mass Drug Administration in January 2016, where all provinces are requested to implement integrated MDA for multiple diseases according to the endemicity status in January and July each year, using both school delivery and community-based channels. The Health Leadership and Governance Programme led by the Department of Health to increase the Local Chief Executives' ownership and understanding of health programmes also include NTD programmes and MDA campaigns as one of its support components. Another challenge in the Philippines regarding schistosomiasis is its high prevalence among animal reservoirs such as water buffalos, dogs and rats. Using real time polymerase chain reaction (PCR), over 64% prevalence among water buffalos has been reported. To address this issue, a Memorandum of Understanding for technical cooperation between the Department of Health and the Department of Agriculture is being

processed to initiate joint schistosomiasis control activities. The joint mission of the Department of Health and the Department of Agriculture delegation to China was conducted to learn the country's integrated approach with the agriculture and water/irrigation sector.

Dr Vincente Belizario expressed concern that there are also many areas considered near elimination in the Philippines based on the absence of new cases in the past five years but schistosomiasis ELISA antibody or antigen positive rates are still high and they have been unable to make a decision to stop MDA in the absence of WHO guidance on the appropriate diagnostic tools and indicators for such a decision.

WHO currently defines the criteria for elimination of schistosomiasis as a public health problem as a reduction of prevalence of heavy-intensity infection below 1% in all sentinel sites, which was developed in 2012 when only Kato Katz stool examination method was available as a diagnostic tool. The RPRG discussed the meaningfulness of this criterion, considering the low sensitivity of Kato Katz method in low-prevalence settings and unstableness of schistosomiasis transmission, which is closely linked to geographical distribution of intermediate snail hosts and the level of sanitation coverage. The RPRG agreed that new diagnostic tests and criteria for ensuring stability of the achievement is needed and that discussion should be initiated in the Western Pacific Region which is considered to be far closer to the elimination stage compared to other endemic regions. Validation of potential new diagnostic tests with Asian schistosomiasis is a priority. The potential presence of animal reservoirs for *S. mekongi* was also a concern. The current evidence indicates low prevalence of *S. mekongi* among animals. Nonetheless, the RPRG recommended that studies to confirm the absence of a significant contribution of animal reservoirs on *S. mekongi* transmission should be given priority to exclude the need for treatment of animals. The RPRG also encouraged scale-up of the CL-SWASH activities as a model of multisectoral cooperation by involving more partners.

2.7 Technical discussion – strengthening control of foodborne trematodiasis (FBT)

2.7.1 Overview of burden, progress and priority actions for FBT in the Western Pacific Region

Dr Aya Yajima reviewed the existing WHO guidance on public health interventions for control of FBT, which is based on the recommendations made by the WHO Expert Consultation on Foodborne Trematode Infections and Taeniasis/Cysticercosis in Vientiane, the Lao People's Democratic Republic, 12–16 October 2009. MDA is recommended in communities where prevalence of clonorchiasis/opisthorchiasis is equal or above 20% or cases of paragonimiasis or human fascioliasis appear to be significantly clustered. In addition, multisectoral interventions are recommended, such as reduction of snail population and human faecal contamination in fish nurseries and aquaculture systems and agricultural or grazing lands, improving food safety measures, treatment of domestic animals, and health education among community members and farmers on safe food practices. FBT is known to be prevalent in Cambodia, China, the Republic of Korea, the Lao People's Democratic Republic, the Philippines and Viet Nam, and in the majority of such countries geographical distribution of endemic areas are known. However, due to lack of resources and donation of quality-assured preventive medicines in many countries, control interventions are not progressing.

2.7.2 Control strategy, progress and lessons learnt in the Republic of Korea

Professor Sung-Tae Hong shared the updates of endemicity and control interventions against FBT and other NTDs in the Republic of Korea. Clonorchiasis remains highly endemic in the southern part of the country due to the common practice of eating raw freshwater fish. The control intervention focusing on case detection and treatment for those diagnosed positive has been implemented by the Korea Centers for Disease Control and Prevention in endemic communities over 10 years but the majority of the population continues eating raw freshwater fish after medication and the availability of praziquantel is limited. Highlighting the reported high association between clonorchiasis and cholangiocarcinoma, a comprehensive multisectoral approach incorporating continuous health promotion and involving community members was suggested as the way forward.

2.7.3 Control strategy, progress and lessons learnt in China

Prof Xhou Xiao Nong presented the updates of endemicity of and control interventions against FBT in China. The prevalence has been significantly increasing in the past two decades in China, predominantly in the south-eastern and north-eastern regions, contrary to the decreasing trend of the other parasitic infections, such as schistosomiasis and soil-transmitted helminthiases. The potential reasons for this trend include a lack of food inspection, a lack of appropriate medical treatment, unhygienic livestock raising practices, traditional habits of eating raw freshwater fish and a lack of multisectoral cooperation, all leading to continuously high exposure both of human and animals to transmission. Learning from the experience, the National Institute of Parasitic Diseases of the China Center for Disease Control and Prevention has been implementing several county-wide pilot projects to complement chemotherapy with health education and also collaborating with the International Development Research Center and other endemic countries in the Region to develop integrated One Health models for sustainable control of FBT infections.

2.8 Technical discussion – institutionalizing STH deworming to improve and sustain coverage

2.8.1 Overview of STH deworming status in the Western Pacific Region

Dr Aya Yajima summarized the regional progress of STH control. Six countries (Cambodia, the Lao People's Democratic Republic, the Philippines, Solomon Islands, Tuvalu, and Viet Nam) have achieved above or close to 75% treatment coverage of school-aged children for STH in 2015, which were all implemented outside the LF elimination programme. In some of these countries, STH deworming has been sustained with above 75% coverage and review of the current prevalence situation and revision of treatment strategy might be considered. Four countries (Federated States of Micronesia, Kiribati, Marshall Islands and Vanuatu) are also scaling up STH deworming, however, this has been challenged by repeated natural disasters and a lack of human resources at the ministry due to competing health priorities such as dengue and Zika fever outbreaks. Transition from the LF elimination programme to STH deworming is required in Fiji and Tonga where LF MDA has been terminated. There are a few Pacific island countries and areas where LF elimination programmes are fast scaling down and the recent epidemiological situation of STH is not known.

2.8.2 What does elimination of LF means for STH control?

Dr David Addiss presented a review of the evolution of WHO's control targets for STH since adoption of the World Health Assembly (WHA) Resolution 54.19 in 2001 where “elimination as a public health problem in areas of low transmission and control in areas of high transmission” was the stated goal and women and children identified as key target groups. However, due to lack of resources and donated medicines at that time, the WHO manual on helminth control in school-age children published in 2002¹ substituted the parasitological target with the 75% treatment coverage target for preschool and school-aged children in need of treatment. As a result, less attention was paid to baseline assessment and monitoring and evaluation of the epidemiological situation. *The Soil-transmitted helminthiases: eliminating soil-transmitted helminthiases as a public health problem in children: progress report 2001-2010 and strategic plan 2011-2020* published in 2012 defined the goal of elimination of STH as a public health problem as “the prevalence of STH of moderate and high intensity infection among school-aged children equal or below 1%” but the objective was set as achieving 75% national coverage and 100% geographical coverage by 2020. A major challenge is that STH control has been often seen as an ancillary benefit of preventive chemotherapy for other diseases, particularly LF, and the recommendation has been to deliver the intervention through available platforms rather than as a stand-alone STH programme. As LF elimination succeeds, its community-based drug delivery platform will likely be dismantled. Unless other platforms are established to treat tens of millions of people currently receiving preventive chemotherapy for STH, recrudescence of

¹ WHO (2002) Helminth control in school age children: a guide for managers of control programmes. 1st edition. World Health Organization, Geneva.

STH will likely occur and the STH-related health benefits provided by the LF programme will be lost. Dr Addiss highlighted the importance of clarifying the goal for STH control, identifying appropriate platforms for delivery of treatment, and establishing adequate monitoring for programme decisions both globally and nationally.

2.8.3 Persistent transmission of hookworm in Mekong countries

Dr Muth Sinuon reported a persistently high prevalence of hookworm infection in Cambodia compared to trichuriasis and ascariasis, despite semi-annual implementation of deworming among preschool-aged children, school-aged children and women of child-bearing age over a decade, with treatment coverage consistently above 75%. A study conducted in 2012 in Preah Vihear province found 57% prevalence of hookworm, over 50% of which harboured *Ancylostoma ceylanicum*, which is known to be zoonotic. Over 90% of dogs investigated also harboured *A. ceylanicum*, indicating community dogs as a potential zoonotic reservoir. The survey conducted in 2014 in nine provinces and the one conducted in 2015 in 10 plantations in north-eastern Cambodia also showed significantly high prevalence of hookworm compared to that of other parasites, but differentiation of hookworm by species was not made due to lack of resources. A similar situation of high hookworm prevalence has also been observed in the Lao People's Democratic Republic.

The RPRG agreed that further studies to confirm the contribution of animal reservoirs to persistent transmission of hookworm would be needed. The appropriateness of the current focus on school-age children was questioned, considering generally higher prevalence of hookworm in adults and its impacts on women of childbearing age. Targeting high-risk age groups was the appropriate strategy for controlling morbidity in the early 2000s when a limited amount of donated medicines was available. The launch of the WHO NTD Roadmap and the London Declaration in 2012 increased availability of donated medicines, which significantly scaled up deworming for preschool-aged children. As the year 2020 approaches, it was discussed that a re-thinking the goal for STH control and target groups is required, particularly for the post-2020 era.

2.8.4 The political and logistic challenge in scaling up STH deworming in the Pacific

Dr Eswara Padmasiri highlighted challenges faced by Pacific island countries and areas where distribution of albendazole for children has been largely led by the LF elimination programmes, now rapidly scaling down. Identifying an alternative channel to distribute albendazole or mebendazole for children, such as nutrition or maternal and child health programmes, is urgently needed in order to sustain epidemiological impacts gained through the LF elimination programme to date. However, this is often hampered by competing health priorities, lack of partners and health system instability. Even if such an alternative channel is in place, sustaining activities and ensuring timely data reporting is challenged by logistical difficulty due to the vast distances to outer islands, frequent natural disasters and weak health infrastructure. There is also a significant lack of human resources capacity to conduct baseline and M&E surveys on STH, thus requiring external support to assess the epidemiological situation.

The RPRG discussed the importance of estimating the resource needs for epidemiological assessment of STH prevalence, including capacity development for monitoring and evaluation in the Region.

2.8.5 Lessons learnt from the nationwide school deworming campaigns in the Philippines

Dr Leda Hernandez shared the Philippines' experience in establishing a strong partnership among the Department of Health, the Department of Education and the Department of Interior and Local Government in the form of implementation and a reporting and referral network to sustain deworming campaigns. Since its establishment in 2015, the treatment coverage for STH has significantly increased to reach over 85% of children enrolled in public schools. Efforts are being made to also engage private schools to further increase the national coverage.

The RPRG commended the Philippines' efforts in establishing policies for institutionalizing interministerial collaboration as a useful example for other countries.

2.9 NTD Research and innovation – updates and priorities in the Western Pacific Region

Dr Rabindra Abeyasinghe summarized the regional priorities on operational research on NTDs, which was highlighted in each disease-specific session, and shared the updates on the WHO Regional Office for the Western Pacific/Special Programme for Research and Training in Tropical Diseases (TDR) small grant scheme in 2015 and 2016. The small grant scheme was initiated as a joint initiative of the WHO Western Pacific Regional Office and the TDR in 2006, discontinued in 2011, and was re-launched in 2015, with the aim of strengthening the research capacity of national programmes and research institutions in the Region in conducting implementation research for the control and elimination of infectious diseases of poverty. In 2015, of 69 proposals submitted, 17 from eight countries were selected (Cambodia, China, Malaysia, Mongolia, Papua New Guinea, the Philippines, Solomon Islands and Viet Nam), of which seven were on NTDs, including dengue and leprosy. In 2016, 52 proposals were submitted from nine countries, of which 33 were on NTDs. Of 25 proposals selected for technical review, 16 were on NTDs, including three on leprosy and two on dengue. Finally eight proposals on NTDs (including 2 on dengue) were selected for funding.

Dr Patrick Lammie shared the updates on operational research supported by the NTD Support Center at the Task Force for Global Health, with funding from the Bill and Melinda Gates Foundation, the U.S. Agency for International Development, GlaxoSmithKline (GSK) and other partners, to address operational and technical challenges identified by the NTD programmes as barriers to the success of NTD elimination and control by linking research communities and national programmes. It has so far supported 106 projects in 55 countries covering various NTDs. Of these 14 projects involve countries of the Western Pacific Region, targeting LF, STH, schistosomiasis, trachoma and yaws.

The RPRG acknowledged the recent global and regional efforts to enhance operational research on NTDs but encouraged further scale-up. The Japan International Cooperation Agency also discussed its Science and Technology Research Partnership for Sustainable Development (SATREPS) project that is a science cooperation scheme to encourage research cooperation between Japanese research institutions and those of recipient countries. Some projects related to NTDs are ongoing in Bangladesh on Kala-Azar and the Lao People's Democratic Republic on schistosomiasis and foodborne trematodiasis.

2.10 Technical discussion – elimination and control of other NTDs

Dr Anthony Solomon shared via Skype the recently developed process intended for use by Member States which wish to request validation of elimination of trachoma as a public health problem following implementation of the Surgery, Antibiotics, Facial cleanliness, and Environmental changes (SAFE) strategy. This includes the criteria for validation, the process for preparation and submission of a dossier, and the composition and role of the dossier review group, and the targeted year of validation in each trachoma-endemic country in the Western Pacific Region. All 11 endemic or suspected countries in the Region are targeted for validation by 2020 and considered to be on track.

Dr Eswara Padmasiri presented the current process for verification of elimination of yaws and the latest situation in the Western Pacific Region, where three countries (Papua New Guinea, Solomon Islands and Vanuatu) are known to be endemic. Twenty countries were previously endemic but current status is unknown. Case reporting is ongoing in all three endemic countries as part of the routine health information system. In Papua New Guinea, a randomized control trial to compare 20 mg and 30 mg dose per kg body weight of azithromycin on yaws is ongoing. Trachoma MDA was completed in 2015 in Solomon Islands and is planned in late 2016 in Vanuatu. Impact assessment of trachoma MDA on yaws in Solomon Islands had demonstrated reduction of yaws. No active yaws cases were found in the community after the intervention, despite that the dose of azithromycin in

trachoma MDA was 20 mg per kg body weight. A similar impact of the planned trachoma MDA on yaws transmission could be expected in Vanuatu as well.

The RPRG emphasized that integrating yaws and trachoma not only in MDA but also in surveys to determine if further rounds of MDA are needed and in post-MDA surveillance is key for sustaining impacts of interventions and that opportunities should be actively explored to collect data on multiple NTDs, particularly in countries that aim for verification of elimination of a disease. Examples include the recent LF transmission assessment surveys in Northern division of Fiji or upcoming trachoma surveys in Solomon Islands that will collect dried blood spots for assessing other diseases too.

Dr Dirk Engels summarized the current rationale for inclusion of 18 diseases in the list of NTDs, which include the existing endpoint commitment, such as eradication and elimination, availability of large-scale drug donations to move programmes forward and anticipation that those donations could be expanded to the NTDs treated with the same medicines, a proof of principle established for large-scale public health intervention and compelling compassionate argument to conduct aggressive advocacy and product development. The process endorsed by STAG in 2016 for including a new disease as an additional NTD was shared. WHO is aware of other tropical diseases or conditions that remain neglected and continues to strongly advocate for other neglected disease/conditions for which there are currently no tools or strategies that can be implemented on a large scale in low resource settings to yield significant success, such as strongyloidiasis, chromoblastomycosis, podocniosis, scabies and other ectoparasites and snakebites.

The public health significance of scabies in French Polynesia and strongyloidiasis in Cambodia was highlighted. Such diseases are not exclusive to one country, thus a suggestion was made for multiple countries with similar burden to jointly develop a dossier to request addition of such diseases to the list of NTDs.

2.11 NTD elimination and control beyond the Regional Action Plan 2012–2016

The outcome of the discussion at the Programme Managers Meeting on NTD elimination and control beyond the Regional Action Plan 2012–2016 was further discussed by the RPRG. While significant progress has been made in the Western Pacific Region towards elimination and control of NTDs, the RPRG agreed that there are still remaining gaps to overcome to reach the goals and targets set in the current Regional Action Plan on NTDs 2012–2016 and that there is a need to continue towards achievement of all goals set in the Global NTD Roadmap. Also noting a lack of clarity and tools for post-validation surveillance and the process and criteria to verify interruption of transmission of schistosomiasis and effective intervention options for foodborne trematodiasis and some other NTDs, the RPRG supported the conclusion of the Programme Managers Meeting that the timeline of the current Regional Action Plan be extended till 2018, anticipating that by then, we should be able to accumulate more evidence on how to sustain gains on LF MDA and develop better tools and direction for elimination of schistosomiasis and control of foodborne trematodes.

3. CONCLUSIONS AND RECOMMENDATIONS

3.1 Conclusions

- (1) The RPRG acknowledged the significant progress made in the Western Pacific Region in elimination and control of NTDs. In particular, four countries – Cambodia, Cook Islands, Niue and Vanuatu – were congratulated for their recent validation by WHO of elimination of lymphatic filariasis as a public health problem. Two countries – Marshall Islands and Tonga – also submitted dossiers for validation of elimination of LF as a public health problem. The

dossiers were reviewed and accepted with minor edits, and both countries were recommended by the RPRG as suitable for validation. Noting that many countries in the Region are ceasing mass drug administration MDA against LF, the need to transition to deworming against soil-transmitted helminthiasis was highlighted, including determining baseline prevalence.

- (2) The RPRG also noted that three countries – Cambodia, China and the Lao People’s Democratic Republic – have reported achieving the status of elimination of trachoma as a public health problem and are preparing to submit dossiers to WHO for validation of such status.
- (3) The RPRG acknowledged the significant progress being made in the Western Pacific Region to reduce the prevalence of Asian schistosomiasis in all endemic countries and recommended integrated approaches to strengthen multisectoral collaboration between NTD, WASH and veterinary public health programmes in countries to further accelerate interruption of transmission.
- (4) The RPRG noted the need to systematically assess burden and endemicity of foodborne trematodiasis, taeniasis/cysticercosis, yaws and echinococcosis, and for the scaling up MDA and other interventions against those diseases as a major remaining challenge in the Region.
- (5) The context of NTD programmes under SDGs focuses on building resilient health services and strengthening health systems. This should be viewed as an opportunity, and efforts should be made to mainstream NTD in SDGs through achieving universal health coverage of NTD treatment and interventions and also by using NTDs as a tracer for equitable access to other services, such as WASH. Also, where interventions against NTDs remain implemented and reported as a component of communicable disease control in the context of SDGs, an integrated service delivery approach should be adopted wherever possible.
- (6) It was noted that more time and effort are needed to achieve all the targets set in the current Regional Action Plan on NTDs 2012–2016. To continue towards achievement of all goals set in the Global NTD Roadmap, and acknowledging a lack of clarity and tools for post-validation surveillance, as well as the process and criteria for verifying interruption of transmission of schistosomiasis and effective intervention options for foodborne trematodiasis and some other NTDs, RPRG supported the conclusion of the programme managers meeting that the timeline of the current Regional Action Plan be extended to 2018.

3.2 Recommendations

3.2.1 Recommendations for Member States

Data and reporting

- (1) Countries should report to WHO on preventive chemotherapy interventions, including drug inventory, within three months after implementation of MDA programmes.
- (2) Countries should submit drug requests to WHO at least nine months before implementation of preventive chemotherapy programmes.
- (3) Countries are encouraged to implement coverage evaluation and the coverage supervision tool as part of regular packages of supervision and monitoring of preventive chemotherapy programmes (MDA) in at least 10% of implementation units.
- (4) Countries are encouraged to conduct a data audit on drug inventory.

Lymphatic filariasis

- (1) For countries implementing TAS, RPRG recommends the use of WHO checklists for improving TAS outcomes.
- (2) The RPRG strongly recommends that all countries start collecting and updating data on morbidity burden related to LF and the availability of health facilities providing a minimum package of care for such patients in all implementation units with known patients.
- (3) A general lack of documentation relating to the historical records of efforts to eliminate LF in many Pacific island countries and areas was highlighted. The RPRG encouraged countries to collate and preserve all data regarding LF control activities as this data can improve the content of LF dossiers.
- (4) It was noted that countries could benefit from collection and sharing of historical data and documentation on elimination of LF in Pacific island countries and areas being conducted by the Endgame project, led by James Cook University and Nagasaki University in collaboration with WHO.

Schistosomiasis

- (1) The role of animal reservoirs in Asian schistosomiasis transmission needs to be determined through operational research in *S. mekongi* and *S. japonicum* areas, including determining the most effective control strategy.
- (2) The progress being made to strengthen multisectoral collaboration between NTD, WASH and veterinary public health programmes in countries should be further promoted in schistosomiasis endemic areas.

Foodborne trematodiasis

- (1) Systematic review of the current epidemiological situation, morbidity burden, available intervention options and their efficacy, available diagnostics and new diagnostics in development should be conducted.

Soil-transmitted helminthiasis

- (1) The RPRG recommends that more evidence be collected on the burden of soil-transmitted helminthiasis by species in the Region in order to make decisions about mass deworming.
- (2) Noting that many countries in the Region are ceasing MDA against lymphatic filariasis, the need to transition to deworming activities against soil-transmitted helminthiasis was highlighted. Also recommended was assessing baseline prevalence of soil-transmitted helminthiasis infections in countries completing LF MDA campaigns.

Trachoma and yaws

- (1) The RPRG supports integration of yaws assessment into trachoma surveys and MDA for trachoma elimination planned in Solomon Islands and Vanuatu.

New diseases for potential inclusion in the list of NTDs

- (1) The RPRG recommends that countries, research institutions and academia jointly produce a dossier for review by the next STAG on any potential additional diseases to be included in the list of NTDs.

3.2.2 Recommendations for WHO

- (1) The RPRG appreciates the efforts of WHO headquarters to make an inventory of diagnostic needs and landscape analysis for each NTD. WHO should continue to collaborate with WHO Collaborating Centres to explore joint development of standardized training modules and capacity building on NTD diagnosis.
- (2) Noting the importance of scaling up LF morbidity management and disability prevention activities in countries, the RPRG recommends that WHO finalizes the WHO LF Morbidity Management and Disability Prevention Toolkit and make them available to all countries.
- (3) Noting the significant differences of epidemiology between Asian schistosomiasis and African schistosomiasis, and the progress achieved in the Region, the RPRG recommended that WHO organize an expert consultation to discuss Asian schistosomiasis and determine regional and species-specific targets and strategies.
- (4) WHO should convene an expert meeting on foodborne trematodiasis after a review of burden data, treatment efficacies, other intervention options and diagnostics, to determine best strategies for monitoring, mapping, treating and accelerating control.
- (5) The RPRG recommends that WHO analyse the needs and gaps for collecting soil-transmitted helminthiasis data in the Region, including capacity-building needs.

AGENDA

Day 1: Wednesday, 20 July 2016		
08:30 – 09:00	Registration	
<i>Opening Session</i>		
09:00 – 09:30	Welcome address	Dr Shin Young-soo Regional Director
	Welcome remarks on behalf of the RPRG	Professor Zhou Xiao Nong, The Chair, RPRG
	Meeting objectives	Dr Rabindra Abeyasinghe
	Self-introduction of participants and observers	Coordinator, MVP
	Administrative announcements	
09:30 – 10:00	Group photograph at the lawn followed by coffee/tea break	
Session 1: Global and regional updates		
10:00 – 10:30	Leaving no one behind: global updates on elimination and control of NTDs and SDG	Dr Dirk Engels, Director, HQ/NTD
10:30 – 11:00	Challenges in accelerating and sustaining elimination and control of NTDs in the Western Pacific Region	Dr Aya Yajima, NTD Focal Point, MVP
11:00 – 11:30	New recommendations and tools in pipelines for improving efficiency and impacts of NTD interventions from NTD-STAG	Dr Gautam Biswas, Coordinator, HQ/NTD Dr Jonathan King, LF focal point, HQ/NTD
	- Donation of filarial test strip (FTS)	
	- Checklists for improving TAS outcomes	
	- MMDP Toolkit	
	- DQA, coverage evaluation and coverage supervision tool	
- STH diagnostic video and new global strategy		
11:30 – 12:00	<i>Discussion</i>	
12:00 – 13:00	Lunch break	
Session 2: Technical discussion - elimination of lymphatic filariasis (LF) as a public health problem		
13:00 – 13:10	Overview of LF elimination status in the Western Pacific Region	Dr Aya Yajima
13:10 – 14:00	RDRG's review reports on dossiers to validate elimination of LF as a public health problem	Reviewer (Eric Ottesen, Patricia Graves)
	<i>Discussion on recommendations (30 min)</i>	
14:00 – 14:20	Success and failure in TAS, 2015	Dr Jonathan King
	<i>Discussion on recommendations (10 min)</i>	
14:20 – 14:45	Standard process for confirming transmission of LF when a suspected case has been identified in non-endemic areas	Dr Patrick Lammie, US CDC
	<i>Discussion on recommendations (15 min)</i>	
14:45 – 15:00	Coffee / tea break	
15:00 – 15:30	Ensuring MMDP after validation - lessons learnt from health facility inspection	Viet Nam
	<i>Discussion on recommendations (20 min)</i>	
15:30 – 16:00	Post-validation surveillance - how to maintain diagnostic capacity and resources after validation?	Dr Leda Fernandez, DoH Philippines
Session 3: Technical discussion - elimination of schistosomiasis as a public health problem		
16:00 – 16:10	Overview of schistosomiasis elimination status in the Western Pacific Region	Dr Aya Yajima
16:10 – 16:30	Multi-sectoral approach, elimination criteria and lessons learnt in China	Prof Zhou Xiao Nong, NIPD, China
16:30 – 17:30	External evaluation of the current status in Cambodia and Lao PDR and proposed M&E protocol	Prof Hiroshi Ohmae, NIID, Japan
	CL-SWASH initiative in Cambodia and Lao PDR - progress and next steps	Dr Rathanaxay Phetsouvanh, MoH, Lao PDR Dr Muth Sinuon, MoH, Cambodia
	<i>Discussion on recommendations (20 min)</i>	Moderator: Chair
17:30 – 19:30	Reception dinner	

Day 2: Thursday, 21 July 2016		
Session 3: Technical discussion - elimination of schistosomiasis as a public health problem (continued)		
08:30 – 09:00	Challenges in sustaining high MDA coverage and tackling animal reservoirs (buffalos)	Dr Leda Fernandez, DoH, Philippines
	<i>Discussion on recommendations (15 min)</i>	
Session 4: Technical discussion – Strengthening control of foodborne trematodiasis (FBT)		
09:00 – 09:10	Overview of burden, progress and priority actions for FBT in the Western Pacific Region	Dr Aya Yajima
09:10 – 10:00	Control strategy, progress and lessons learnt in the Republic of Korea	Prof Sung Tae Hong, SNU, Korea
	Control strategy, progress and lessons learnt in China	Prof Zhou Xiao Nong
	Discussion on recommendations (30 min)	Moderator: Chair
10:00 – 10:15	Coffee/tea break	
Session 5: Technical discussion - Institutionalizing STH deworming to improve and sustain coverage		
10:15 – 10:25	Overview of STH deworming status in the Western Pacific Region	Dr Aya Yajima
10:25 – 10:45	What does elimination of LF means for STH control?	Dr David Addiss, Task Force for Global Health
10:45 – 11:05	Persistent transmission of hookworm in Mekong countries	Dr Muth Sinuon
	<i>Discussion on recommendations (15 min)</i>	Moderator: Chair
11:05 – 12:00	Political and logistic challenge in scaling up STH deworming in the Pacific	Dr Padmasiri Eswara, NTD Focal Point, DPS
	Lessons learnt from the nationwide school deworming campaigns in Philippines	Dr Leda Fernandez
	<i>Discussion on recommendations (35 min)</i>	Moderator: Chair
Session 6: NTD Research and innovation – updates and priorities in the Western Pacific Region		
12:00 – 12:30	Regional priority of operational research on NTDs and	Dr Rabi Abeyasinghe
	Updates from WPRO/TDR small grant scheme 2015 and 2016	Dr Rabi Abeyasinghe
	Updates from COR-NTD of relevant to the Western Pacific Region	Dr Patrick Lammie
	Other updates and discussion	Moderator: Chair
12:30 – 13:30	Lunch break	
Session 7: Technical discussion – elimination and control of other NTDs		
13:30 – 14:15	Elimination of trachoma – validation process, criteria and progress in the Western Pacific Region	Dr Anthony Solomon, Trachoma focal point, HQ/NTD (Skype)
	Elimination of yaws – validation process, criteria and progress in the Western Pacific Region	Dr Padmasiri Eswara
	Discussion (20 min)	Moderator: Chair
14:15 – 14:45	Potential additional diseases to the list of NTDs	Dr Dirk Engels
	Discussion (20 min)	Moderator: Chair
Session 8: NTD elimination and control beyond Regional Action Plan 2012-2016		
14:45 – 15:15	Extending the Regional Action Plan towards 2020 – outcomes of the Programme Managers Meeting	Dr Rabi Abeyasinghe
15:15 – 15:30	Next steps	Dr Aya Yajima
15:30 – 16:00	Coffee/tea break	
16:00 – 16:20	Business case for accelerating elimination and control of NTDs	Dr Rabi Abeyasinghe
16:20 – 16:30	Final remarks on behalf of the RPRG	Professor Zhou Xiao Nong
16:30 – 16:50	Conclusions and recommendations	Dr Rabi Abeyasinghe
16:50 – 17:00	Closing	Dr Mark Jacobs, Director, Division of Communicable Diseases

**LIST OF PARTICIPANTS, TEMPORARY ADVISERS, OBSERVERS AND
SECRETARIAT**

Participants

Dr Jean-Marc Segalin, Programme Manager, Bureau Des Programmes De Pathologies, Infectieuses
Direction De La Sante, 98713 Papeete, French Polynesia, Tel. No.: 00 689 488 215,
Fax No.: 00 689 488 224, Email: jean-marc.segalin@sante.gov.pf / jmsegalin@yahoo.fr

Dr Muhamad Ismail, Senior Chief Assistant Director, TB/Leprosy Sector, Disease Control Division
Level 4, Block E 10, Complex E, Federal Government Administrative Centre, 62590 Putrajaya
Malaysia, Tel. No.: 60 03 888 34507, Email: Muhamad.ismail@moh.gov.my

Dr Tom Jack, Medical Chief of Staff, Majuro Hospital, Majuro Atoll 96960, Marshall Islands
Tel. No.: 692 625 33 55, Email: tjack0964@gmail.com

Dr Leda Hernandez, Division Chief, Infectious Disease Office, Department of Health
Building 14, 3rd Floor, San Lazaro Compound, Sta. Cruz, Manila, Philippines
Tel. No.: 632 651 7800 local 2354, Email: dr_leda@edsamail.com.ph

Mr Oliver Sokana, National Public Eyecare Coordinator, National Eyecare Division
Ministry of Health, PO Box 349, Honiara, Solomon Islands, Tel. No.: 677 20085
Email: Osokan@moh.gov.sb

Dr Nguyen Kim Thu, Medical Doctor, National Hospital of Tropical Diseases, 78 Giai Phong Road,
Ha Noi, Viet Nam, Tel. No.: 84 4 35 76 34 91, Email: Kthu174@yahoo.com

Temporary Advisers

Professor Zhou Xiao-Nong, Director, National Institute of Parasitic Diseases, 207 Ruiking Er Road
Shanghai 200015, China, Tel. No.: 86 21 64738058, Email: zhouxn1@chinacdc.cn

Dr Sibauk Vivaldo Bieb, Executive Manager – Public Health, National Department of Health,
Level 3, Aopi Centre, Waigani Drive, P.O. Box 807, Waigani, Papua New Guinea
Tel. No.: 675 3013707/3754/3703, Email: svbieb@gmail.com

Dr Patricia Graves, Associate Professor and Senior Principal Research Fellow, James Cook
University, Division of Tropical Health and Medicine, P.O. Box 6811, Cairns, Queensland_4870
Australia, Tel. No.: 61 07 4232 1088, Email: Patricia.graves@jcu.edu.ph

Professor Sung-Tae Hong, Professor, Department of Parasitology, and Tropical Medicine
Seoul National University, 103 Daebak-ro, Seoul, Republic of Korea, Email: hst@snu.ac.kr

Dr Patrick Lammie, Distinguished Consultant, Centers for Disease Control and Prevention
Division of Parasitic Diseases, 1600 Clifton Road, Atlanta, Georgia, United States of America
Tel. No.: 404 718 41 35, Email: Pj11@cdc.gov

Dr Wayne David Melrose, Adjunct Associate Professor, James Cook University, Townsville, Queensland, Australia 4811, Email: nmelrose5@bigpond.com

Dr Sinuon Muth, National Center for Parasitology, Entomology and Malaria Control, Ministry of Health, 477 Betong St, Village Trapensvay, Sangkat, Phnom Penh, Cambodia
Email: sinuonm@cnm.gov.kh

Dr Hiroshi Omae, Visiting Senior Researcher, Department of Parasitology, National Institute of Infectious Diseases, 1-23-1 Toyama, Shinjuku-ku, Tokyo 162-8640, Japan
Tel. No.: 813 4582-294, 813 5285 1111 (Ext 2740), Email: h-ohmae@niid.go.jp
Dr Eric Ottesen, Director, NTD Support Center, The Task Force for Global Health, 352 Swanton Way Decatur, Georgia 30030, United States of America, Tel. No.: 1 404 687 5604
Email: eottesen@taskforce.org

Professor Dato Dr C. P. Ramachandran, Professor Emeritus Universiti Sains Malaysia, Council Member, Academy of Sciences Malaysia, Belvedere Condominium, 1/63, Jalan Tunku Bukit Tunku, 50480-Kuala Lumpur, Malaysia, Tel. No.: 00 603 26987275
Email: ramacp@hotmail.com

Professor Hugh Taylor, Melbourne School of Population, and Global Health, The University of Melbourne, Level 5, Bouverie Street, Carlton, Victoria 3053, Australia
Tel. No.: 61 3 93 48 18 27, Email: h.taylor@unimelb.edu.au

Professor Juerg Utzinger, Director, Swiss Tropical and Public Health Institute, Socinstrasse 57 P.O. Box CH-4002, Basel, Switzerland, Tel. No.: 41 61 284 81 29, Email: Juerg.utzinger@unibas.ch

Professor Tai Soon Yong, Director, Department of Environmental Medical Biology, Institute of Tropical Medicine, Yonsei University College of Medicine, Seoul 120-752, Republic of Korea
Tel. No.: 82-2-1117-1841, Fax No.: 82-2-363-8676, Email: Tsyong212@yuhs.ac

Observers

Dr Julie Jacobson, Senior Program Officer, Bill and Melinda Gates Foundation, PO Box 23350 Seattle, WA 98102, United States of America, Fax No.: 206 709 32 80,
Email: Julie.jacobson@gatesfoundation

Dr David Addiss, Director, Children Without Worms, Task Force for Global Health Decatur, Georgia 30030, United States of America, Fax No.: 1 404 3711138
Email: daddiss@taskforce.org

Dr Winston Palasi, NTD Coordinator, Department of Health, San Lazaro Compound Sta Cruz, Manila, Philippines, Email: winstonpalasi@gmail.com

Dr Bella Monse, Adviser, Research and International Relations, Deutsche Gesellschaft fur International, (GIZ) GmbH, Buro Manila/Office Manila, 1227 Makati City, Philippines
Email: Bella.monse@giz.de

Mr Mark Bradley, Director, Global De-worming, Global Health Programs, GlaxoSmithKline Middlesex, TW8 9GS, United Kingdom, Email: mark.h.bradley@gsk.com

Dr Kaname Kanai, Executive Technical Advisor to the Director-General, Human Development Department, Japan International Cooperation Agency, Tokyo 102-8012, Japan

Email: Kanai.kaname@jica.go.jp
Ms Yoko Masaki, Health Team 3, Human Development Department, Japan International Cooperation Agency, Tokyo 102-8012, Japan, Tel. No.: 81 03-5226- 9163, Email: Masaki.Yoko@jica.go.jp

Dr William Lin, Director, Neglected Tropical Diseases, Johnson & Johnson Global Public Health Titusville, New Jersey, United States of America, Tel. No.: 1 732 524 3300,
Email: WLin@its.jnj.com

Dr Kazuyo Ichimori, Professor, Nagasaki Center for Elimination of Lymphatic Filariasis and Neglected Tropical Diseases, Nagasaki University, Nagasaki City, Japan
Email: ichimorikazuyo@gmail.com

Ms Molly Brady, NTD Advisor, Research Triangle International, 701 13th Street, NW, Suite 750 Washington, DC 20005, United States of America, Tel. No.: +1 202 728 2080
Email: mbrady@rti.org

Dr Vicente Belizario, Professor, Department of Parasitology, College of Public Health University of the Philippines, Manila, Philippines, Email: vbelizar@yahoo.com

Dr Kimberly Won, Health Scientist, Center for Global Health, Division of Parasitic Diseases and Malaria, Centers for Disease Control and Prevention, Atlanta, United States of America
Fax No.: 1 404 718 4193, Email: kwon@cdc.gov

Secretariat

Dr Dirk Engels, Director, HQ/HTM/Neglected Tropical Diseases, Avenue Appia 20 1211 Geneva 27, Switzerland, Tel. No.: 41 22 791 3824, Email: engelsd@who.int

Dr Gautam Biswas, Coordinator, HQ/NTD Control of Neglected Tropical Diseases Avenue Appia 20, 1211 Geneva 27, Switzerland, Tel. No.: 41 22 791 3850
Email: biswasg@who.int

Dr Jonathan King, Scientist, Lymphatic Filariasis Elimination, Preventive Chemotherapy and Transmission Control, Department of Control of Neglected Tropical Diseases Avenue Appia 20, 1211 Geneva 27, Switzerland, Tel. No.: 41 22 79 11423
Email: kingj@who.int

Dr Erwin Aime Willy Cooreman, Team Leader, Global Leprosy Programme, Indraprastha Estate, Mahatma Gandhi Marg, New Delhi, India, Tel. No.: 91 11 23370804
Email: cooremane@who.int

Dr Rabindra Abeyasinghe, Coordinator, Malaria, Other Vectorborne and Parasitic Diseases Manila, Philippines, Tel. No.: 632 5289725, Email: abeyasingher@who.int

Dr Nobuyuki Nishikiori, Coordinator, Stop TB and Leprosy, Manila, Philippines
Tel. No.: 632 5288001, Email: nishikiorin@who.int

Dr Aya Yajima, Technical Officer (Neglected Tropical Diseases), Malaria, Other Vectorborne and Parasitic Diseases, Manila, Philippines, Tel. No: 632 5288001, Email: yajimaa@who.int

Dr Indrajit Hazarika, Technical Officer (Health Workforce Policy), Integrated Service Delivery, Manila, Philippines, Tel. No.: 632 5288001, Email: hazarikai@who.int

Dr Mohd Nasir Hassan, Team Leader, Health and Environment, Manila, Philippines

Tel. No.: 632 5289886, Email: hassanm@who.int
Ms Taeko Moriyasu, Intern, Malaria, Other Vectorborne and Parasitic Diseases
Manila, Philippines, Tel. No.: 632 5288001, Email: tmoriyasu@who.int

Dr Dinithi Seneviratne, Intern, Malaria, Other Vectorborne and Parasitic Diseases
Manila, Philippines, Tel. No.: 632 5288001, Email: seneviratned@who.int

Dr Padmasiri Eswara Aratchige, Technical Officer (Neglected Tropical Diseases)
Level 4 Provident Plaza One, Downtown Boulevard, 33 Ellery Street, Suva, Fiji
Email: aratchigep@who.int

Dr Phetdavanh Leuangvilay, Technical Officer, 125 Saphanthong Road, Unit 5, Ban Saphangthongtai,
Sisattanak District, Vientiane Capital, Lao PDR, Tel. No.: 856 21 353902
Fax No.: 856 21 353905, Email: leuangvilayp@who.int

Dr James Kiawali Wangi, National Programme Officer, Neglected Tropical Diseases
4th Floor, AOPI Centre, Waigani Drive, Port Moresby, Papua New Guinea, Tel. No.: 675 3257827
Email: wangij@who.int

Dr Zhang Zaixing, Scientist, Malaria, and Other Vectorborne and Parasitic Diseases
Ground Floor, Building 3, Department of Health, San Lazaro Compound, Sta Cruz
Manila, Philippines, Tel. No.: 632 528 9061, Email: zhangz@who.int

Dr Dai Tran Cong, Technical Officer (Malaria), 304 Kim Ma Street, Ha Noi, Viet Nam
Tel. No.: 84 0 4 38 500 100, Email: trancong@who.int

www.wpro.who.int