Meeting Report

Regional Programme Managers' Meeting on Lymphatic Filariasis and other selected Neglected Tropical Diseases

30 May–2 June 2011
Nadi, Fiji

World Health Organization
Western Pacific Region


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REGIONAL PROGRAMME MANAGERS MEETING
ON LYMPHATIC FILARIASES AND OTHER
SELECTED NEGLECTED TROPICAL DISEASES
30 MAY - 2 JUNE 2011
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REPORT ON

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CONTENTS

ABBREVIATIONS

Ab	Antibody
Ag	Antigenaemia
AMS	American Samoa
AUS	Australia
AusAID	Australian Agency for International Development
BRU	Brunei Darussalam
CAM	Cambodia
CE	Cystic Echinococcosis
CHN	China
COK	Cook Islands
CWW	Children Without Worms
DEC	Diethylcarbamazine (citrate)
EG	Executive Group
EPI	Expanded Programme on Immunization
FBT	Food-borne Trematodiasis
FIJ	Fiji
FRP	French Polynesia
GAELF	Global Alliance to Eliminate Lymphatic Filariasis
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
GNNTD	Global Network for Neglected Tropical Diseases
GPELF	Global Programme to Eliminate Lymphatic Filariasis
GSK	GlaxoSmithKline
GUM	Guam
HOK	Hong Kong (China)
ICT	Immunochromatographic Test
IU	Implementation Unit
IVM	Integrated Vector Management
JCU	James Cook University
JICA	Japan International Cooperation Agency
JPN	Japan
KIR	Kiribati
KOR	Korea, Republic of
Lao PDR	Lao People's Democratic Republic

LF	Lymphatic Filariasis
M&E	Monitoring and Evaluation
MAA	Malaysia
MAC	Macao (China)
MDA	Mass Drug Administration
Mf	Microfilaraemia
MIC	Micronesia, Federated States of
MOG	Mongolia
MSI	Marshall Islands
NAU	Nauru
NEC	New Caledonia
NEZ	New Zealand
NIU	Niue
NMI	Northern Mariana Islands
NTD	Neglected Tropical Diseases
PacELF	Pacific Programme to Eliminate Lymphatic Filariasis
PAL	Palau
PHL	Philippines
PNG	Papua New Guinea
PTI	Pitcairn Islands
RPRG	Regional Programme Review Group
SIN	Singapore
SMA	Samoa
SOL	Solomon Islands
STAG-NTD	Strategic and Technical Advisory Group on Neglected Tropical Diseases
STH	Soil-transmitted Helminthiases
TAS	Transmission Assessment Survey
TOK	Tokelau
TON	Tonga
TUV	Tuvalu
VAN	Vanuatu
VTN	Viet Nam
WAF	Wallis and Futuna
WHO	World Health Organization

SUMMARY

The Regional Programme Managers Meeting on Lymphatic Filariasis and Other Selected Neglected Tropical Diseases (NTD), held in Fiji between 30 May and 2 June 2011, had four objectives: to compile data and update the status of national lymphatic filariasis (LF) elimination and other NTD programmes; to provide new tools and guidelines to strengthen LF surveillance and adapt them to the regional context; to review and revise country-specific action plans for LF and other NTD; and to discuss continuing integrated approaches to NTD control or elimination and explore new opportunities for synergies with other disease control programmes.

After welcome messages, the meeting began with global and regional updates on LF, including an introduction of the new global guidance on monitoring and evaluation for LF programmes. Global efforts in vector control include development of programmatic guidance for use of integrated vector management. Regionally, operational research is studying sustainable control of *Aedes* mosquitoes and spatial distribution and modelling of *Aedes* and LF parasites. The forthcoming changes to the role of Regional Programme Review Groups (RPRG) as an integrated mechanism to approve LF and other NTD drug donations also were discussed. The major challenges in the Region for LF are sustaining political commitment, implementing mass drug administration (MDA) and maintaining post-MDA surveillance.

Countries and areas presented updated LF plans based on the new monitoring and evaluation guidance. Five Pacific countries currently in the LF post-MDA surveillance phase discussed their plans for post-MDA surveillance, with Niue and Tonga planning to submit dossiers on the verification of absence of transmission in 2012, Vanuatu in 2013, Cook Islands in 2014 and the Marshall Islands in 2015. The six Mekong countries also presented their plans for post-MDA surveillance or continuing MDA. Finally, in order to fill critical gaps in support for Papua New Guinea, a working group will formulate a proposal asking for backing for pilot LF and soil-transmitted helminthiases (STH) MDA activities in a few districts.

Success stories on STH were presented by Cambodia, Kiribati, Tuvalu, the Lao People's Democratic Republic and the Philippines. Central to these presentations was the idea of up scaling STH MDA for preschool-aged children, school-aged children and/or women of childbearing age through integration with other programmes, such as vitamin A campaigns, school health surveys and the Expanded Programme on Immunization (EPI). In addition, advocating for NTD programmes, through the Healthy Islands Initiative or ministries of health meetings, was thought to be critical to sustain the control of STH and other NTDs.

Presentations highlighting the way forward with other NTD, such as foodborne trematodiases in the Republic of Korea and Viet Nam, schistosomiasis in Cambodia, yaws in Vanuatu and echinococcosis in Mongolia, were followed by a technical discussion on how to address these diseases. At a minimum, countries were encouraged to map the prevalence of disease and intervention coverage, ensure case management is accessible, include health education interventions in schools and communities and include these diseases in integrated NTD plans. Collaboration with other sectors, such as food safety, animal health and the environment, was encouraged in order to move to prevention of these diseases.

The meeting also heard from NTD partners in the Region – including the Task Force for Global Health, the Global Alliance for Eliminating Lymphatic Filariasis, the Global Network for Neglected Tropical Diseases, GlaxoSmithKline, James Cook University, the Japan International Cooperation Agency, Children Without Worms and Fit for School - about their current activities and future plans to support NTD activities globally and in the Region.

A plenary discussion of implementation issues concluded that most critical issues were lack of policies, strategies and guidelines; structuring NTD programmes at the national level; ensuring high MDA coverage; adapting assessment guidance to the unique Pacific situation; ensuring affordable quality diagnostics; ensuring timely quality supplies of drugs; integration; health systems issues such as a lack of ownership of NTD programmes among general health staff; ensuring funding for social mobilization; and ensuring appropriate funding in government budgets and from external partners.

The Western Pacific Regional Office colleagues presented an update on the NTD Regional Action Plan, which will be presented to the Regional Committee Meeting in September 2012, for country comments and concurrence. This regional action plan will be used as the basis for national NTD plans and for resource mobilization. Four groups of countries and areas presented draft national NTD action plans: Mekong countries with intensive NTD programmes; Mekong countries with programmes for one to two NTD; Pacific countries and areas conducting mass deworming; and Pacific countries and areas without integrated NTD programmes.

The participants agreed on seven key conclusions:

(1) Countries and areas in this Region have made remarkable progress, especially in LF, in which the goal of eliminating LF in most countries and areas is in sight.

(2) Progress has been achieved despite huge logistic challenges and with a minimum budget, some dedicated long-term donor support and the extreme dedication and hard work of the people who implement the programmes.

(3) One aspect of LF that has been neglected is morbidity alleviation and disability prevention and needs to be integrated into the primary health care and curative system.

(4) As LF declines, emphasis and enthusiasm has to carry over to other NTD, building on the LF programme structures with the expectation of similar success.

(5) New donors and sufficient new funds are needed to finish the job because in the endgame phase programmes require more funds to collect quality data from well- designed and carried-out surveys.

(6) New WHO guidelines have provided a framework on important monitoring and evaluation (M&E) issues, especially sampling, which now have been adapted to individual country situations so that the way forward is clear.

(7) Every country should have a national NTD task force and focal point.

1. OPENING REMARKS

Dr Shin Young–soo, WHO Regional Director for the Western Pacific, officially opened the meeting via a video message. After thanking the Government of Fiji for hosting, he reminded the participants that he had made a commitment at the 2010 Regional Committee Meeting to eliminate (LF), yaws and leprosy in the Pacific. He mentioned that these are truly diseases of shame as they are easily preventable and easily cured yet still exist and bring unnecessary disability and stigma to many people. There are 22 countries and areas in the Region that are LF-endemic, but three others have been verified as eliminating LF as a public health problem, six are in post-MDA surveillance and 10 will achieve elimination in the next five years. These successes are the result of political commitment, dedicated people and a minor amount of outside resources. While the tools, guidelines, drugs and partnerships all exist to help achieve the goal, he exhorted participants to continue to commit to see the country LF programmes through to elimination.

Dr John Ehrenberg, Director of the Division of Combating Communicable Diseases, Western Pacific Regional Office, expressed gratitude for the opportunity to meet face-to-face with country programme managers and financial and technical partners and leading experts in the field. He encouraged the group to continue to advocate for the unfinished LF agenda because even one case of elephantiasis is one case too many. He also recommended that the investments and success of the LF programmes be used as a basis for phasing in control programmes for other neglected tropical diseases.

Dr Dong Il Anh, Director of Pacific Support/WHO Representative to Fiji, welcomed the group. He explained that the purpose of the meeting should be to increase political commitment, to formulate action plans and to gather stakeholders together. He reminded participants of the WHO commitment to NTD, explaining that when recently given unrestricted funds by a donor, he chose to spend it on NTD projects.

Dr Joe Koroiveuta, Deputy Secretary Public Health of the Fiji Ministry of Health, welcomed the participants to the meeting on behalf of the Ministry of Health of Fiji. He looked forward to the resolutions from this meeting to help Fiji meet the goals of LF elimination and NTD control. The minister will report on the outcomes of this meeting to the Pacific islands ministers meeting in Solomon Islands.

He outlined the new Ministry of Health strategy focused on primary health care, which will be supported by a five-year Australian Agency for International Development (AusAID) grant of US$ 30.6 million with activities in primary health care, maternal and child health, diabetes, public health information systems and M&E. The Ministry of Health is also focusing on climate change, food security, micronutrient deficiencies and re-establishing mobile medical vessels.

2. PROCEEDINGS

2.1 Global and regional updates on lymphatic filariasis

2.1.1 Update on the global programme to eliminate lymphatic filariasis

Dr Kazuyo Ichimori, LF focal point at WHO Headquarters, presented an update on the Global Programme to Eliminate LF (GPELF). LF is endemic in 81 countries, with 1.34 billion at risk and 120 million infected. GPELF started in 2000 with a global target to eliminate LF globally by 2020 through both interruption of transmission and reduction in suffering of those infected.

GPELF is one of the most rapidly up scaled programmes in the history of global health. Since it began, there has been tremendous success in scaling up MDA; some 2.7 billion doses of antifilarial drugs have been administered in 53 countries to 695 million people. Donations of drugs during the period 2000-2009 include 1.4 billion tablets of albendazole and 1.2 million tablets of ivermectin. The estimated health and economic benefits during the period 2000-2007 include 22 million people protected from contracting LF and US$ 24.2 billion in economic costs prevented.

GPELF is now part of an integrated approach to NTD and is included as part of the preventive chemotherapy and transmission control team at Headquarters. Technical support for NTD programmes is provided by the Strategic and Technical Advisory Group on Neglected Tropical Diseases (STAG-NTD), working groups on drug efficacy, access to quality-assured drugs and M&E and an M&E subworking group on disease-specific indicators. The current Headquarters NTD road map includes a goal of elimination of LF in the Pacific (except Papua New Guinea) by 2015.

Key achievements of GPELF during the period 2010-2011 include a new diethylcarbamazine (DEC) donation by Eisai Co., Ltd. and the publication of the GPELF progress report and strategic plan, the GPELF M&E manual and the WHO position statement on integrated vector management (IVM) for LF and malaria. All three antifilarial drugs used in the programme will be donated beginning with the 2013 MDA rounds. An M&E subworking group meeting in March 2011 met to reassess the status of nine countries that were found unlikely to need MDA during mapping. The STAG-NTD approved the group's recommendations that these countries (Burundi, Cape Verde, Costa Rica, Mauritius, Rwanda, Seychelles, Solomon Islands, Suriname and Trinidad and Tobago) should be classified as nonendemic and removed from list of endemic countries.

Even with this success, the GPELF still has many challenges to meet to achieve the goal of elimination by 2020. These include starting MDA in 19 countries, including 10 that are coendemic for loiasis and need a strategy that does not involve MDA, and up scaling MDA, particularly in the five heaviest burden countries (India, Bangladesh, Indonesia, Nigeria and Democratic Republic of the Congo). Furthermore, countries also need guidance on when to stop MDA and a mechanism to verify interruption of transmission. Finally, morbidity management and disability prevention activities have lagged behind MDA, with only 27 countries having these activities.

In order to meet these challenges, GPELF's 2011 activities will focus on finalizing and disseminating guidance on M&E for MDA and verification of interrupting transmission, forecasting drugs and immunochromatographic tests (ICTs), a vector control strategy for countries with LF and loiasis, morbidity management and disability prevention policy and implementation documents, an integrated mechanism for RPRGs and strategies and resource mobilization for the heaviest burden countries.

Discussion: The group discussed the outstanding needs for quality-assured DEC before the donation begins in late 2012. Headquarters is compiling a list of DEC suppliers; however, these

companies will not be quality-assured. It was recommended to include NTD drugs under the WHO/UNICEF prequalification scheme.

2.1.2 Overview of the LF situation in the Western Pacific

Dr Le Anh Tuan, Technical Officer for Neglected Tropical Diseases at the Western Pacific Regional Office, presented an overview of the LF situation in the Western Pacific. Fully 22 of 37 countries and areas are endemic for LF, with six in the Mekong-Plus subregion and 16 in the Pacific. He divided the countries into four categories: completed MDA (8), currently conducting MDA (9), needing further assessment (4) and needing rapid scale up (1) (Table 1).

Table 1. Status of LF programmes in countries and areas in the Western Pacific

Group	**Countries and Areas**	**Post-MDA surveillance and timing of surveys**	**Expected year of LF elimination verified**
Completed MDA	American Samoa, Cambodia, Cook Islands, Marshall Islands, Niue, Tonga, Vanuatu, Viet Nam	NIU, TON: 2011 VAN: 2012 COK, MRI: 2012, 2014 AMS, CAM, VTN: 2013, 2015	NIU, TON: 2012 VAN: 2013 COK, MSI: 2015 AMS, CAM, VTN: 2016
Conducting MDA	FRP: just finished the last MDA BRU, MAA, SMA: 2 rounds needed LAO: 4 more rounds needed PHL: 7 implementation units (IUs) completed post-MDA surveillance. Some 35 IUs are in different rounds of MDA. KIR: last round of MDA in 1 IU and test & treat in 1 IU TUV: test & treat FIJ: at least 1 round needed in 2 IUs and completing test & treat in 1 IU	BRU, FRP, MAA, SMA: 2015, 2017 LAO, PHL: 2017, 2019 KIR, TUV: 2014, 2016 FIJ: 2015, 2017	BRU, FRP, MAA, SMA: 2018 PHL: 2020 KIR, TUV: 2017 FIJ: 2018
Need further assessment	PAL, FSM, NEC, WAF	PAL, FSM, NEC: Baseline assessment in 2011 WAF: Stop MDA in 2011; post-MDA in 2013, 2015	PAL, FSM, NEC: If <1% prevalence: 2012-13 If >1%: 2020 WAF: 2016
Need rapid scale up	PNG		After 2020

He then presented the results of stopping MDA and post-MDA surveys completed in the Region thus far (Tables 2 and 3).

Table 2. Results of stopping MDA surveys

Country	Year	% ICT positives	Remarks
American Samoa	2011	0.2	Two positives
Cambodia	2010	0.1-0.6	All six IUs
Fiji (Northern)	2011	Completed	Awaiting for preliminary report
Marshall Islands	2008	0.2 0	Mejit and Ailuk (60% of pop) 929 persons tested from five atolls
The Federated States of Micronesia (Yap)	2009	0 0.03	Yap proper (random households) outer islands (80% of total population)
Viet Nam	2010	0-0.1	All six IUs

Table 3. Results of post-MDA surveillance surveys

Country	Year	% ICT positives	Remarks
Cook Islands	2011	Ongoing	First survey targeting primary school children
Kiribati (Gilbert Island)	2010/11	0.04	First survey targeting all 6 and 7 year olds, one island remaining
Niue	2009/10	0.3	First survey targeting all residents
The Philippines	2008	0-0.5	First survey target school entrants
Tonga	2007	0	First survey targeting all Year 1 students
Vanuatu	2010	0	Second survey targeting 6- and 7 year olds

In terms of morbidity management and disability prevention, the Pacific Leprosy Foundation initially supported a pilot project in Fiji, including supporting a morbidity officer. The French Embassy in Fiji helped over 370 patients through surgery or training in home-based care. Vanuatu and Kiribati are updating databases of lymphoedema and hydrocele patients. Cambodia and the

Philippines distribute patient kits to lymphoedema patients and train village health workers in lymphoedema management. In the Philippines, hydrocele surgery is carried out by both the Ministry of Health and the private sector.

The major challenges in the Region are to sustain political commitment, implement MDA and maintain post-MDA surveillance. Ensuring high coverage and compliance in MDA continues to be a problem, and there is a need for clear guidance on when and how the test-and-treat strategy should be used. There remain challenges finding financial support for MDA in countries such as Papua New Guinea and Samoa. The logistics and finances for ICTs and DEC are also a bottleneck in implementing quality MDAs. Finally, there is a need to tailor the new MDA M&E guidance to each country.

2.1.3 Overview of the new GPELF M&E manual

Dr Kazuyo Ichimori presented highlights from the new WHO GPELF MDA M&E manual, which has been endorsed and approved by Headquarters. At the request of the STAG-NTD and according to the GPELF Strategic Plan, WHO convened an informal consultation in September 2010 to revise the 2005 GPELF M&E manual to include recommendations from country experiences and operational research results. The manual includes the steps from mapping to assessing MDA to implementing surveillance to the process of verification. The indicators to measure drug coverage now match the 2010 WHO Drug Coverage for Preventive Chemotherapy guidelines, with a recommendation that IUs measure drug coverage through a survey at least once during the programme. The new manual recommends at least one sentinel and one spot-check site per IU, with data collection pre-first MDA, pre-fourth MDA and pre-sixth MDA. Sentinel sites are composed of an area of at least 500 people over 5 years old (so that at least 300 samples can be collected) in an area of known high transmission. Spot-check sites change each time and should be selected based on risk, e.g. low coverage and compliance figures. Assessments should measure microfilaraemia (Mf) and/or antigenaemia (Ag) levels.

2.1.4 Transmission Assessment Surveys and post-MDA surveillance

After five rounds of MDA (each with >= 65% drug coverage in total population) and sentinel and spot-check site microfilaraemia or antigenaemia levels < 1%, countries are urged to implement a Transmission Assessment Survey (TAS) to determine whether MDA can be stopped. The TAS takes place in evaluation units, which are IUs or parts of IUs or combinations of IUs, with an upper population limit of 2 million. The TAS measures antigenaemia levels (by ICT) in Bancroftian areas and antibody levels (by Brugia Rapid tests) in Brugian areas in children 6 to 7 years old. A Survey Sample Builder exists to help countries determine whether surveys should be implemented in schools or communities, using census or cluster or systematic sampling. The M&E manual also includes recommendations for post-MDA surveillance, including a repeat TAS at two or three years and five or six years after MDA has stopped, as well as continuous nationwide surveillance as feasible.

2.1.5 Verification

Finally, the manual includes a process for verification of absence of LF transmission and recommendations for what should be included in a country dossier. The verification process is that the national programme manager prepares the dossier to submit to the RPRG through the Western Pacific Regional Office and the RPRG makes a recommendation to the M&E working group. The RPRG can request expert outside opinion and/or field visits. Then the M&E working group makes recommendations to the STAG-NTD, who makes the final recommendation to WHO to classify as nonendemic or request more information.

2.1.6 M&E subworking group meetings

Two M&E subworking group meetings have been held recently in relation to the new manual. One was to reassess the status of nine endemic countries and one was to determine how to harmonize the new manual with former Pacific Programme to Eliminate Lymphatic Filariasis (PacELF) guidance. The second meeting recommended use of the TAS as a standard, since verification is a global process, but recognized that modifications would need to be made to the TAS methodology for small population sizes.

2.1.7 Specific aspects of the new manual: Stopping MDA and post-MDA surveillance

Dr Eric Ottesen, Director of the Lymphatic Filariasis Support Center at the Task Force for Global Health, presented specific aspects of the new GPELF M&E manual. He reminded the group that the guidance is global so that it needs to be adapted to country situations and that the guidance will continue to evolve with experience gained. The global strategy is to interrupt transmission, not to ensure that there are no microfilaraemic people. The goal is to reduce infection to levels at which transmission cannot be sustained after MDA is stopped, with a definition of 65% coverage of the total population as an effective MDA.

2.1.8 Transmission assessment surveys (TAS)

MDA should be stopped when the prevalence of infection is below the basic reproduction (R_0=1) line so that the disease will die out without further interventions. Stopping above the line means that recurrence will happen in time. In terms of LF elimination, an educated guess has been made to determine the R_0=1 line based on the elimination experience in China of stopping MDA when microfilaraemia <1% is in a community. Post-MDA surveillance is then necessary to determine whether stopping MDA was the correct decision and transmission truly was interrupted.

There are a variety of tools which can be used to detect LF, including measuring exposure through antibodies (Ab), adult worms through antigenaemia (Ag), microfilaraemia (Mf) through blood smears or DNA in mosquitos. The new M&E manual focuses on the parasite: measuring Mf and Ag levels in Bancroftian areas and Mf and Ab levels in Brugian areas. In the TAS, ICTs are used in Bancroftian areas and Brugia Rapid tests in Brugian areas.

The objective of the TAS is to determine if prevalence is under a threshold below which recrudescence will not happen. The threshold is easier to achieve in *Anopheles* or *Culex* areas and is more conservative in *Aedes* areas. The new M&E manual uses a critical threshold target of <2% Ag in *Anopheles* or *Culex* areas and <1% in *Aedes* areas. The new survey methodology samples from 6 and 7 year olds because they should be protected from lymphatic filariasis infection if the MDAs have been successful in interrupting transmission. (This is in contrast to the China programme, which measured success by a target of Mf <1% in the total population over 5 years old and the PacELF C survey, which used a target of Ag <1% in the total population over five years old.)

The TAS should be implemented in evaluation units, which can be IUs, parts of IUs or combination of IUs. Surveys are time consuming and expensive, so it is possible to combine IUs that are similar; however, there is a need to balance the risk of doing this vs. the resource savings. The TAS requires human and financial resources and thus only should be implemented when the programme is confident the evaluation unit will pass. Thus the entry requirements for implementing a TAS are five MDA rounds with >=65% coverage of the total population in each round and post-fifth MDA sentinel and spot-check sites samples <1% Mf (or Ag) in the population over 6 years old.

The TAS is a survey of school entrant-aged children which can be community (six and seven year olds) or school-based (level 1 and level 2), and can use cluster or census or systematic sampling. If an evaluation unit's net primary school enrolment rate is >=75%, the survey should be school-based. If <75% then the survey should be implemented in communities to reduce the bias of only

including children attending school. A Survey Sample Builder Excel tool (available at www.filariasis.us) has been created to randomize the sample and calculate the critical threshold value. The statistics already have been calculated in the Survey Sample Builder so that if the survey finds fewer positives in the sample size than the critical threshold value, the evaluation unit is assumed to be at a prevalence level below the transmission line, so the programme can stop MDA.

In summary, the key steps for implementing a TAS are to define the evaluation unit, identify the sampling strategy through the Survey Sample Builder, calculate the sample size, prepare a list of schools or enumeration areas by geographic proximity, sample six and seven year olds or levels one and two and interpret the results based on the critical value given by the Survey Sample Builder.

2.1.9 Post-MDA surveillance

In the new manual, post-MDA surveillance is defined as implementing a TAS at two- or three-year intervals twice after stopping MDA. Stopping MDA does not mean stopping the LF programme. The programme will have continuing morbidity management and disability prevention activities, continuing surveillance, post-MDA surveillance surveys and further evaluation of impact. In addition, the LF programme might have other continuing interventions such as testing and treating in high-risk populations, vector control and integration with other NTD programmes. Continuing research on antibody diagnostic tools and sampling surveys likely will mean the post-MDA surveillance guidance will be revised in the near future.

Discussion: The group discussed the need to modify the Survey Sample Builder to account for small population sizes, and thus the small pool of 6- and 7 year olds in some Pacific islands. The task force will modify the tool. Age ranges from 5-10 years old or 5-14 years old can be used instead, but this introduces the risk of positives from children exposed before MDA started. Situations in which coverage was good across an IU, but spot-check site results were >1% Mf, should lead programmes to re-examine how to address these high-risk areas, i.e. through a follow-up test-and-treat strategy.

Group members mentioned a concern with previous batches of ICTs having many false positive results. While it seemed the new batches did not have that problem, based on James Cook University's (JCU's) testing, it was recommended that countries should order positive samples from www.filariasiscenter.org to quality control batches in-country before use. In addition, if ICTs were positive in the field, a serum sample should be collected to be sent to JCU for emzyme-linked immunosorbent assay (ELISA) testing for confirmation.

2.1.10 LF morbidity control

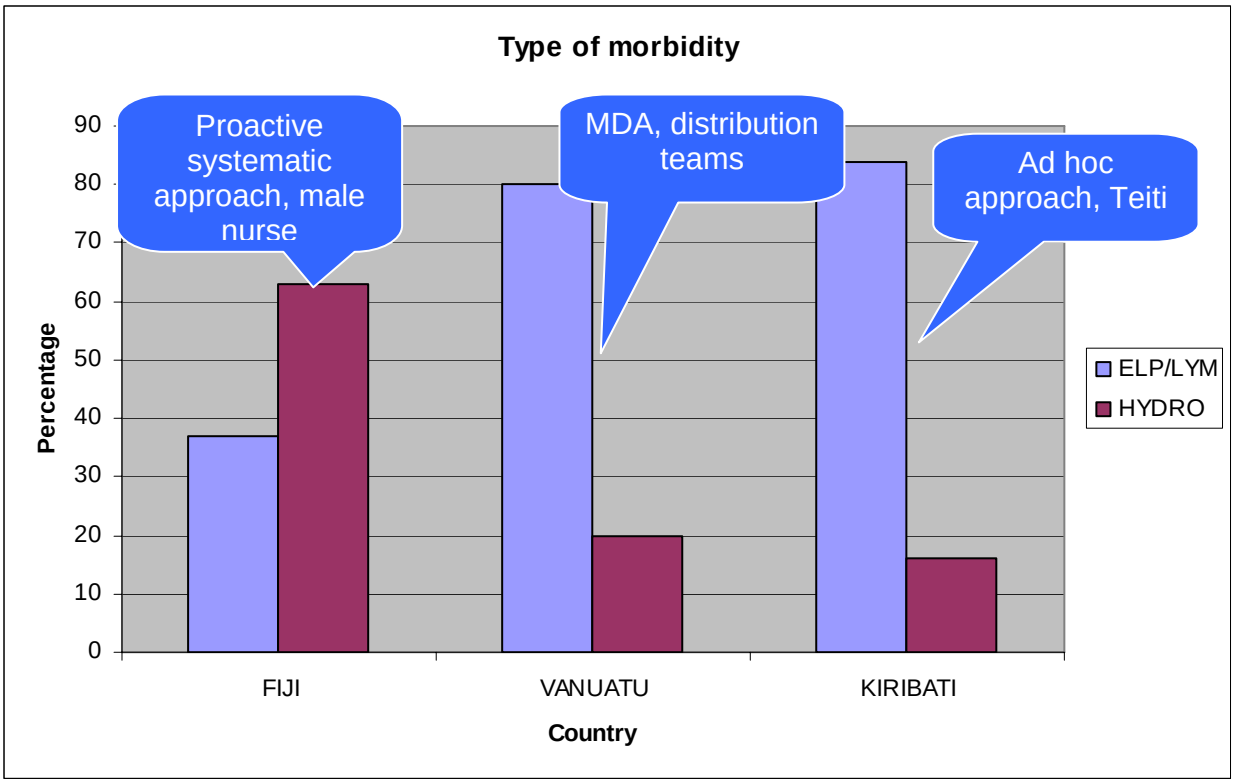
Dr Corinne Capuano, WHO Representative for Brunei Darussalam, Malaysia and Singapore, presented an overview of LF morbidity control from the Pacific perspective: a plea for a systematic, proactive and targeted approach. LF chronic manifestations, such as lymphoedema and hydrocele, were considered diseases of the past in the Pacific in 2007 and 2008 even though countries had scarce data on their prevalence. This lack of information on LF morbidity has impacted the overall credibility of the LF elimination programmes and led to neglect of LF patients, more than half of whom could be cured through hydrocele surgery.

2.1.11 Data estimates

Prevalence estimates for lymphoedema and hydrocele cases throughout the Pacific were arrived at through data collected during house-to-house surveys, MDA censes and TAS. In Vanuatu, data gathering during MDA rounds during the period 2000-2005 found 25 hydrocele and 100 lymphoedema cases. A survey during the period 1991-1995 in Fiji of 18 253 people from all four divisions found 2733 people with either lymphoedema or hydrocele, a morbidity prevalence of about 17%.

A US$ 25 000 grant from the Pacific Leprosy Foundation in 2008 was used to hire a male nurse to implement a LF morbidity control programme, focusing initially on Fiji. The first step was gathering data, which started with a check of medical records, health centre and theatre registers and interviewing nurses and community staff. This method found few cases. As a result, active case-finding, modeled on the leprosy programme, started in Fiji in early 2009. An ad hoc approach was used in Vanuatu and Kiribati, and these cases were included in a Pacific LF morbidity electronic database, with information on age, severity, follow up treatment, etc.

Figure 1. Morbidity estimates in selected Pacific countries, by data collection method



The active case finding in Fiji resulted in 395 morbidity conditions: 63% hydrocele and 37% lymphoedema, consistent with global ratio estimates (Figure 1). Applying this ratio to Vanuatu, 170 hydroceles should have been found (instead of 25), and to Kiribati, 29 hydroceles should have been found (instead of three).

2.1.12 Case management

There are a few examples of case management activities continuing in the Pacific. Individual care and treatment for lymphoedema was piloted in Kiribati in 2007, with on-the-spot training of patients.

In Fiji in 2009 and 2010, an experienced LF hydrocelectomy mobile team visited subdivisional hospitals and performed hydrocelectomy on 71 patients in three divisions. The team consisted of a retired expatriate surgeon and an anaesthetist from the private sector. The theatres and aids were donated by the local health system. Only 3.6% of patients had minor complications post-surgery. Most patients then became advocates in their communities for the surgery and the MDA activities. The programme would like to implement two more phases in 2011 and 2012 to treat the remaining 164 patients and train a local surgeon in the technique.

2.1.13 Lessons learnt

This pilot project uncovered the fact that LF chronic complications are not diseases of the past in the Pacific. These diseases lead to shame, stigma and poverty, so that patients often are unknown and uncared for by the health system. Without active case-finding, which may be helped by the use of a male nurse to find hydrocele patients, these patients will continue to be neglected. More on-the-spot training is needed for lymphoedema management. Mobile surgical teams, operating out of Level II hospitals, seem to be a good solution for increasing access to hydrocelectomy. Anecdotal evidence suggests that treating lymphoedema and hydrocele patients strengthened Ministry of Health credibility and therefore increased MDA coverage. Overall, the intervention was thought to be cost-effective in terms of the dramatic decrease in morbidity and disability and the increase in Ministry of Health credibility.

Discussion: The group discussed integration with other chronic disease programmes, such as leprosy and yaws, in order to coordinate active case-finding as well as community-based treatment of lymphoedema. Vanuatu was encouraged to get together with the Pacific Leprosy Foundation to see if its volunteers also could work on LF case-finding and training of patients. Given the shame and stigma attached to severe lymphoedema and hydrocele, it was recommended that the programme include a message during social mobilization activities that nobody is beyond help. By early 2012, the GPELF should have three documents available to programme managers: a global position statement on morbidity, a national policy document and an IU-level manual.

2.2 Group sessions on LF M&E planning

The breakout sessions were introduced, with the countries divided into four groups: Pacific countries in post-MDA surveillance phase, Pacific countries implementing MDA, Pacific countries needing further baseline assessment and Mekong-Plus countries. The goal of the session was for each country to determine how it can use the new GPELF M&E manual and the current plan for implementation and evaluation. In addition, groups were asked to come up with stage-specific issues with the M&E guidance. Groups were asked to present in five to 10 minutes the overall results of their discussions.

2.2.1 Group 1: Post-MDA surveillance

Group 1 had questions regarding diagnostic tools, sampling methods and levels of data needed for verification. Some countries had concerns with quality ICTs being available and affordable for surveys and continuing surveillance. The group requested that the antibody testing methods quickly should be validated and rolled out for common usage. Some countries had difficulties harmonizing the child transmission survey and the TAS methodologies.

There was a lack of clarity on how to deal with positive antigenaemia results in certain populations, i.e. immigrants. In addition, it was unclear how to interpret positive results from post-MDA surveillance which includes adults, such as those continuing among suspected malaria cases at hospitals in Vanuatu. Finally, there was a need for more guidance on how much data was needed for verification, e.g. how many rounds of post-MDA surveys would be needed for the country dossier.

2.2.2 Group 2: MDA

Group 2 struggled with how to divide the countries into evaluation units, especially given that previous surveys had shown differing levels of antigenaemia baseline and post-fifth MDA in various areas. Three of the countries are implementing the test-and-treat strategy in at least some geographical areas and there was a need for clear guidance on how that strategy should be evaluated. Should a “stopping MDA” TAS be implemented the year after test-and-treat strategy was stopped or is a “post-MDA surveillance” TAS two to three years after stopping test-and-treat activities enough? In Tuvalu and Kiribati, the TAS could be combined with deworming campaigns, testing the 6 and 7

year olds with ICTs at the same time that albendazole and mebendazole was distributed. In Samoa and French Polynesia, there were issues with what to do when evaluation units do not pass surveys such as the TAS. If this means MDA was ineffective, is there a better alternative than implementing two more rounds of MDA?

2.2.3 Group 3: Baseline assessment

Group 3 had issues regarding small population size and how to confirm areas previously classified as nonendemic. In the Federated States of Micronesia, secondary school children come from all the islands to a small number of schools on the main islands. Testing these children would be more feasible than reaching all the 6 and 7 year olds on all the islands. While there would be a risk in finding positive samples in these older children (14-15 years old) which had exposure to LF before MDA, finding fewer than the critical number of positives would be strong evidence that transmission had been interrupted.

2.2.4 Group 4: Mekong-Plus

Countries in the Mekong-Plus group are in different stages of LF elimination. Brunei Darussalam found antibody prevalence >1% in some districts and has to determine if MDA should be implemented in the entire districts or just selected subdistricts. Cambodia and Viet Nam have completed five rounds of MDA and need to plan for post-MDA surveillance. Malaysia will have to conduct two additional rounds of MDA in Sabah and Sarawak to bring the Mf prevalence below 1% while the Lao People's Democratic Republic and the Philippines need to complete at least five rounds of MDA in all the IUs.

2.3 Partner presentations

2.3.1 Task Force for Global Health

Dr Ottesen explained that the Task Force for Global Health was an umbrella organization for individual public health programmes, many of which are involved in NTDs, including the Mectizan Donation Programme, Children Without Worms, International Trachoma Initiative and the Lymphatic Filariasis Support Center. Since 2006, the centre has overseen a US$ 11.7 million grant from the Bill & Melinda Gates Foundation for resolving the critical challenges now facing the GPELF. This grant involves 24 countries and aims to answer the following three questions: When and how to stop MDAs and how to be sure of success; are there supplemental tools to speed up success?; and can we identify innovative financing strategies and define GPELF impact?

The project has defined optimal tools, such as diagnostic tests and mobile phone data collection, for measuring success. It also developed and field-tested sampling techniques and surveillance strategies such as the TAS. It is in the process of defining feasible supplemental strategies such as vector control and changing drug regimens. A study conducted under the grant projected that, for the first eight years of the GPELF, 16.1 million people were protected from being infected, with 32 million disability adjusted life years (DALYs) averted and US$ 24 billion saved.

Projects studying the impact of vector control, increasing dosages in MDA and post-MDA surveillance will continue through 2012. In the Western Pacific Region, Tuvalu, Malaysia and French Polynesia participated in the first study to define appropriate tools. The Philippines and Vanuatu are in the post-MDA surveillance study. A newly developed antibody detection tool will need to be tested soon in various countries, including some in the Region.

2.3.2 Global Alliance for Eliminating Lymphatic Filariasis

Joan Fahy, from the Liverpool School of Tropical Medicine, the Secretariat of the Global Alliance for Eliminating Lymphatic Filariasis (GAELF), explained that GAELF was an alliance of

partners supporting the GPELF, including countries, WHO, academic and research institutions, nongovernmental organizations (NGOs), pharmaceutical companies and international development agencies.

The GAELF's structure includes a representative contact group of 30 people from all partner categories, responsible for communicating with their constituents, electing an executive group (EG) and reviewing the EG workplan. The EG consists of six general members and two country members and four observers (WHO and drug donation companies). The EG adheres to a plan formulated at each biennial GAELF meeting, specifically focusing on resource mobilization, advocacy and communication. The EG needs feedback from countries on its priorities and needs for fundraising. The last GAELF meeting was held in 2010 in the Republic of Korea and the next meeting might be held in 2012 in conjunction with a potential WHO-organized NTD forum. More information can be found at www.filariasis.org.

2.3.3 Global Network for Neglected Tropical Diseases

Amanda Miller, Programme Officer of the Global Network for Neglected Tropical Diseases (GNNTD), explained that it is an advocacy and resource mobilization organization for NTDs (specifically soil-transmitted helminthiasis (STH), LF, schistosomiasis, trachoma and onchocerciasis) funded by the Bill & Melinda Gates Foundation. The GNNTD was given US$ 34 million as a catalytic grant to raise an additional US$ 200 million, with four key objectives:

(1) support WHO to raise profile of NTDs;

(2) create financing mechanisms in Latin America and the Caribbean, Africa and Asia;

(3) resource mobilization; and

(4) advocacy

In Latin America and the Caribbean, GNNTD has created a pooled funding mechanism in partnership with the Pan American Health Organization (PAHO) and the Inter-American Development Bank. In Africa, the GNNTD has created the End Fund, a private philanthropy initiative, with Geneva Global. It is working with the Western Pacific Regional Office to assess the status of NTD control, identify opportunities for scale up and support regional NTD consultants. The GNNTD also is working up country profiles with country commitments, data and gaps. In addition, the network uses social media campaigns, blogs (www.endthenegect.org), Twitter and Facebook to educate the public about NTDs. It is seeking contributors to blog, write articles, submit success stories, etc. It tries to create a climate conducive to giving by educating people about the diseases. Finally, the GNNTD advocates for policies helpful to NTD programmes within the United States of America Government.

2.3.4 GlaxoSmithKline

Andy Wright, Director of Disease Programmes in Global Community Partnerships at GlaxoSmithKline (GSK), summarized the donation of albendazole for LF programmes, which started with the 1998 commitment to donate albendazole until LF is eliminated globally. As of April 2011, 2151 million treatments have been donated to 54 countries. Fully 1% of these were donated to the Pacific and 8% to the Mekong subregion, with the Philippines being the country with the largest donation in this Region. In addition to the drug donation, GSK provides funding to international players to support GPELF.

GSK opened a new factory in India in 2009 dedicated to supplying India's LF programme with a capacity of 300 million tablets per year. Since December 2009, the factory has supplied 470 million tablets. The rest of the world is served by a Cape Town, South Africa, factory with a capacity to

produce 300 million tablets annually. GSK expanded its albendazole donation for LF in 2010 to include albendazole for controlling STH in school-aged children in Africa, up to 400 million treatments a year. To meet this need, GSK is expanding its Cape Town factory so that GSK will have a total global capacity of 1 billion tablets a year starting in 2012.

Overall, GSK donated a total of US$ 347.7 million last year in charitable contributions, including all donated products and cash grants. Projects related to tropical diseases include a pricing promise for lower income countries (25% of the higher income world price for branded medicines). GSK also has made a commitment to reinvest 20% of profit generated in the lowest income countries through partnerships with NGOs to build capacity of community health workers.

GSK recently made a US$ 8 million grant for an Open Lab Foundation to fund scientists to conduct basic research on NTDs at GSK's research and development centre in Spain. It put into the public domain a screening of its compound library for malaria and other parasitic diseases. Finally, GSK has committed to price its malaria vaccine, now in Phase 3 clinical trials in Africa, at manufacturing cost plus 5%.

2.3.5 James Cook University

Dr Wayne Melrose, Director of the WHO Collaborating Centre for Control of LF and STH at James Cook University (JCU), explained the three working groups at JCU interested in NTDs: the WHO Collaborating Centre, the parasite biology group and the vectorborne disease group.

Within the WHO Collaborating Centre, Dr Hayley Joseph heads the LF epidemiology and diagnostic development group. This group is continuing hot-spot detection and spatial analysis in Samoa, including implications for localized vector control. It would like to expand this work to other countries in the Region. It also is continuing work on LF antibody test development and the role of antibody tests in post-MDA surveillance.

It provides reference laboratories, e.g. performing enzyme-linked immunosorbent assays to confirm ICT results and other technical support to country programmes. Associate Professors Sue Gordon and Marion Gray lead the LF disability group, which is assessing methods to detect early/subclinical lymphoedema and rapid assessment methods to measure the sociocultural and socioeconomic impact of LF on patients, caregivers and local communities.

The nonfilarial research group is working on baseline STH surveys in Papua New Guinea; a village-based STH control project in Malaita, Solomon Islands; a brief diagnostic course to upgrade parasitology lab skills; diagnosis and control of strongyloidiasis; and new methods for detecting parasite eggs in feces. JCU would like to expand the collaborating centre to include vectorborne and neglected tropical diseases to bring expertise together and widen the funding base.

The parasite biology group, headed by Professors Alex Loukas and Nick Smith, are studying the developmental biology of hookworms, modulation of the immune system by parasites, how foodborne trematodes cause cancer and interactions between parasites and intestinal cells. It also is working on hookworm and schistosomiasis vaccines.

JCU recently was involved in investigating a potential LF focus in Solomon Islands. A research team carrying out a general health survey in a remote part of Malaita Province discovered two cases of lymphedema. JCU delivered materials to test 300 samples in the neighbouring area for antigenaemia and microfilaraemia. One antigen positive and no microfilaraemia cases were found. Reporting and following up of new lymphoedema cases can constitute a means of post-MDA surveillance.

2.3.6 Japan International Cooperation Agency (JICA)

Kaori Nakaoka, of Health Division 3, Human Development Department, JICA, summarized JICA's support to NTDs in the Region. JICA introduced a health sector cooperation policy in September 2010 to achieve the Millennium Development Goals (MDGs). This policy is based on the principles of addressing the global agenda, reducing poverty, improving governance and achieving human security. It is focused on Millennium Development Goals 4, 5 and 6 aiming to strengthen health systems by building human resources for economic and social development and responding to cross-border infectious diseases. This cooperation policy follows a project during the period 2005-2010 to strengthen the EPI in 13 Pacific countries through technical cooperation in planning, monitoring, vaccine logistics, cold chain and waste management.

JICA has supported PacELF since 2000 in three phases (currently through 2014), supplying ICTs and DEC to 14 countries. In addition, it supplied cold chain equipment to Papua New Guinea during the period 2005-2009. JICA donated over $3 million during the period 2000-2010, including over 345 million DEC tablets and 505 500 ICT cards. It received requests in 2011 for 1295 bottles of DEC and 43 990 ICTs. JICA and the Western Pacific Regional Office are working on a memorandum of understanding to clarify the procedures and roles of each organization.

2.4 Country experiences

2.4.1 MDA and country-tailored intervention strategy in the Pacific – Fiji

Vimal Deo, National Lymphatic Filariasis Coordinator, presented the LF intervention strategy in Fiji. Fiji consists of 322 islands, one third of which are inhabited, with a 2007 population of 837 000. The programme is divided into 20 sub-IUs, grouped into four IUs: the Central Division (which is the most populated), the Eastern Division (which is mostly scattered islands), the Western Division (second most populated) and the Northern Division (which consists of large islands). Baseline mapping data in 2001 found an overall antigenaemia prevalence of 16.6%. MDA was conducted during the period 2002-2006, with drug coverage averaging 65% of the total at-risk population, and variable by IU. A C survey of all ages in 2007 found a 9.5% Ag prevalence overall, with only the Western Division below 1%.

A 2008 consultation meeting recommended divisional specific strategies, depending on antigenaemia levels and MDA coverage.

(1) Central Division (4.1%-22% Ag in 2007): Two more rounds of MDA, followed by a sentinel site survey, were recommended. In 2009, an MDA round with 87% coverage was implemented. In 2010, an MDA round with 75% coverage was implemented.

(2) Northern Division (2.9% Ag in 2007): Two more rounds of MDA, followed by a C survey, were recommended. In 2009, an MDA round with 88% coverage was implemented. In 2011, a C survey sampling 3000 people was completed (preliminary results pending).

(3) Western Division (0.9% Ag in 2007): One more round of MDA and then active post-MDA surveillance was recommended. In 2009, an MDA round with 83% coverage was implemented. A TAS was planned for July 2011.

(4) Eastern Division (3.2%-18% Ag in 2007): A test-and-treat strategy was recommended. In 2009, an MDA round with 87% coverage was implemented. In 2010, an MDA round with 64% coverage was implemented.

A test-and-treat strategy also was piloted in five islands that had high prevalence levels in the 2007 survey in the Eastern and Central divisions. The top-down approach of using a mobile team worked well as community members appreciated learning if they were infected and having prompt

treatment. Ideally, two teams of three people each are needed to undertake this strategy in isolated areas. In Phase One, 615 of 8417 people tested were Ag positive (7.26%), with the positive cases getting treatment every quarter. In Phase Four, 174 of the original positives tested positive (2.1% of 8,417).

The programme would like to implement complementary vector control activities for at least three years, including training teams, working with JCU and WHO for implementation and supervision support. Morbidity training is continuing for public health nurses and teams. The programme still needs external financial and technical support for these activities as well as thorough planning and in-house team support in order to compete for scarce resources within the Ministry of Health.

The programme was helped initially by a dedicated budget from the Ministry of Health. Dividing the MDA activities by division helps manage the training, social mobilization, follow-up and analysis activities. However, the programme has faced challenges of delays in budgets, lack of evaluation of the programme and review after each round of MDA or surveys, lack of feedback to health divisions on their performance post-MDA, improper documentation of survey and results and a recently reduced (by 50%) budget. In addition, lack of budget for social mobilization, the logistics of door-to-door distribution in urban areas and the lack of commitment of health professionals to support MDA have resulted in difficulties achieving and maintaining high coverage.

2.4.2 Stopping MDA – Cambodia

Dr Chea Huch, Vice Director of the National Centre for Parasitology, Entomology and Malaria Control at the Ministry of Health, presented Cambodia's experience with stopping MDA. Cambodia had six endemic IUs – two entire provinces and four individual districts and an at-risk population of ~500 000. MDA was implemented during the period 2005-2009, with coverage levels ranging from 76%-90% of the total population. Sentinel site data collection found very low levels of microfilaraemia before MDA even started and all sites showed 0% Mf by 2009.

In 2010, a stopping-MDA survey, following the GPELF 2005 M&E guidelines, was carried out with a sample size of 5400, 60% from baseline high-endemic areas and 40% from low-endemic areas. Children 6 to 10 years old were sampled using stratified random sampling of schools and tested with ICTs. Antigenaemia positivity levels ranged from 0.1% to 0.6%. Confirmation of ICT positives was not done and the availability of a clear protocol for the survey team would have been helpful to follow up positive cases.

Post-MDA surveillance will be carried out using the TAS methodology between 2012 and 2013 and in 2015 as well as follow-up Mf prevalence surveys in sentinel and spot-check sites. The MDA activities were successful in part because of good collaboration with local authorities, political commitment, integration with other NTD activities and local drug procurement by the Ministry of Health.

2.4.3 Post-MDA Surveillance – Vanuatu

Fasihah Taleo, National Filariasis Coordinator at the Ministry of Health, presented an overview of the LF elimination programme in Vanuatu. Baseline mapping found six endemic provinces, of which three (Penama, Torba and Malampa) had high Ag prevalence. MDA was conducted in all six provinces during the period 2000-2004, averaging over 80% treatment coverage.

A C survey was conducted in 2005 using 25 clusters, sampling from the entire population and finding 0.17% Ag (and 0% Mf in Ag positive cases). A child transmission survey was conducted in 2008 in every village in six provinces, testing all 6 and 7 year olds and finding 0% Ag positives in 4752 samples. Sentinel site data also were collected from all ages and 2.47% of samples were Ag positive; all positives were in adults.

A follow-up survey in 2010 in 6 and 7 year olds children was conducted in four provinces (Torba, Sanma, Penama and Malampa). A total of 3989 children were tested and none was found Ag positive. The survey in Penama Province was conducted as part of operational research funded by the Task Force for Global Health. Two other provinces (Shefa and Tafea), where baseline prevalence was low, were not included in the survey in 2010. There are continuing malaria vector control activities in these provinces.

Continuing post-MDA surveillance in 2011 started at two main hospitals in one province, testing all ages of suspected malaria outpatients with ICTs. Over 300 have been tested, with no positives thus far. The programme is also working to update the results of a 2003 morbidity survey but is encountering difficulties because of logistics problems and lack of time. Vector control activities under the malaria elimination programme aim for 100% net coverage by 2012.

2.5 Research on *Aedes* vector control in the elimination of Lf in the Pacific

Dr Hervé Bossin, Laboratory Head of the Medical Entomology and Parasitology Laboratory in the Institut Louis Malardé, gave an overview of continuing vector control research with application to the LF programme. In French Polynesia, *Aedes* is the vector for LF and dengue. In Fiji and Samoa, *Aedes* is also the primary vector for LF. *Aedes* has a vast population distribution; with a variety of breeding sites (including tires, coconut husks and crab burrows) and can transmit diseases well at low prevalence levels.

In some areas of the three countries, MDA, even with good coverage, has not brought down levels of antigenaemia as expected. Past journal articles (Lardeux F 2000 and Burkot 2002, 2006) have advocated for vector control as a supplemental measure to MDA in areas with *Aedes* vectors. However, conventional vector control measures are limited in efficacy and are difficult to scale up and sustain.

Meetings in 2005 and 2007 worked out a research agenda for sustainable mosquito control in the South Pacific. Products and methods undergo phased testing consisting of laboratory experiments, contained trials in large field cages, confined field trials using natural geographical and ecological boundaries, implementation and post-implementation surveillance. One method on the research agenda is the effectiveness of releasing incompatible male mosquitoes (*A. aegypti*) with altered *Wolbachia*, which protects the mosquito from dengue challenges.

A field trial in two districts of Cairns, Australia, that are affected by recurrent dengue epidemics found that these dengue-free mosquitoes replaced the old ones by 77%-98% within three months. Similar *A. polynesiensis* mosquito research is continuing at Institut Louis Malardé with the support of Oxford University and other partners. This research includes the evaluation of population suppression and population replacement as vector control strategies. Research regarding *A. egypti* should lead to programmatic guidance in three years, but results will take longer for LF vectors.

A second method relies on the development of genetically modified mosquitoes (e.g. conditional flightless females), which should self-limit the population within six to nine months. The population should be suppressed to levels below which viruses (or parasites) would not be transmitted. Typical suppression or replacement trials start with four to six months of releases of 100 000 males per week in a village, measuring the entomological impact as an endpoint. Then pilot-scale intervention trials of one to two years in larger settlements of >100 000 population will look at entomological and epidemiological outcomes.

The LFSCAPE project, for which funding is being requested, will investigate the spatial distribution and modelling of *A. polynesiensis* and *Wuchereria bancrofti* at an island scale, expanding on recently obtained LF and vector spatial clustering field observations. The outcome of this project will allow focusing elimination efforts where most needed. A tool is being developed to treat breeding sites in crab burrows using insecticide-laced crab baits. Seminatural experiments

demonstrated the attractiveness and effectiveness of these baits. Suitable field sites, such as Cook Islands, are now needed to test this strategy at a larger scale. Finally, French Polynesia is working on plans to build a new mosquito research facility, including a research and development and mosquito production facility to develop, validate and facilitate the transfer of vector control technologies in the South Pacific.

2.6 Morbidity management, vector control and RPRG issues

Dr Ichimori then gave more details on three of Headquarters' 2011 activities: morbidity management, vector control and integrated RPRGs.

2.6.1 Morbidity management and disability prevention

The aim of the GPELF in terms of morbidity management and disability prevention is to provide access by 2020 to basic recommended care for every person with lymphoedema or hydrocele in LF-endemic areas. The goal is to alleviate suffering and promote improvements in quality of life of patients. In order to truly eliminate LF as a public health problem, morbidity management and disability prevention activities must be part of national LF programmes.

Currently, only 27 of 81 countries have morbidity activities. In January 2011, a meeting of a core group of experts was convened to formulate a five-year action plan with three key areas: advocacy, data for decision-making and capacity-building. The group advocated an integrated approach with leprosy, diabetes, HIV/AIDS, Buruli ulcer, etc., programmes in order to combine resources for treating chronic diseases. Three documents were to be finalized at a September consultation meeting: a global position statement, a national policy framework and an IU-level manual finalized.

2.6.2 RPRG integrated mechanism

The current RPRG is appointed by the Regional Director to review LF country programmes and advise WHO on approval of drug applications and provide some technical guidance.

RPRGs are usually composed of five to 11 members serving terms of two or three years, with the WHO regional office as the secretariat, Headquarters as an *ex officio* member and drug donation companies as observers. The current drug application and annual report forms are the only source of official data for Headquarters and are long and complicated. For albendazole donations, the current mechanism is that WHO regional offices, as secretariats of RPRGs, submit requests to Headquarters, Headquarters procures directly from GSK and GSK ships to the countries.

If MDA is planned for July through December, countries should submit annual reports and drug applications by February to be approved at the RPRG meeting and immediately shipped. If MDA is planned for January through June, countries usually submit an application which is circulated electronically and reviewed on an ad hoc basis. Given the expansion of drug donation partners for preventative chemotherapy diseases, the RPRG terms of reference might need to be revised.

For example, Eisai's donation of DEC will extend to all countries except India and these applications also will need to be approved by the RPRGs. Headquarters is creating joint application forms and annual reporting templates in order to ease the paperwork burden for country programmes. A meeting was to be held in early July in Geneva with all the regional office focal points and RPRG chairs to discuss how to move forward with integrating RPRGs to approve drug applications for LF, STH and schistosomiasis.

2.6.3 Integrated Vector Management (IVM)

IVM is a rational decision-making process for the optimal use of resources for vector control. A global strategic framework exists as well as a global position statement on IVM for malaria and LF. The strategic framework consists of activities in advocacy, cross-sector collaboration, integrated approach, evidence-based decision-making and capacity-building. IVM can be used in areas with loaisis to help countries scale up quickly and as part of post-MDA activities. More specific IVM programme guidance was to be worked out in 2011. The GPELF encourages countries, in areas where vectors for malaria and LF are similar, to collaborate with malaria programmes to figure out areas of integration, given the common goals and strategies of both the LF and malaria programmes.

Discussion: The Philippines reported that they are drafting IVM guidelines and training materials with the malaria programmes and will disseminate to the Region when finalized. While there is no specific emergency procedure for requesting drugs, the PacELF office usually has a buffer stock of albendazole and DEC on hand for emergency requests. For disposal of expired albendazole for countries without high-temperature incinerators, GSK will work with the Western Pacific Regional Office to collect and transport to South Africa for disposal.

2.7 Implementation issues and solutions

Dr Eva Christophel opened a discussion on critical implementation issues and potential solutions. She reminded participants that elimination of LF was a high regional priority and that country programme managers should include in their draft plans the resources, both technical and financial, that they need to finish the job.

2.7.1 Policies, strategies and guidelines

Many countries and areas still lack national policies and guidelines, particularly those that are part of integrated NTD plans and include morbidity management. Countries and areas were urged to make NTDs a visible part of their national health plans in order to show donors a high level of country commitment. The validity of the test-and-treat strategy as an alternative to MDA needs to be confirmed so that countries and areas appropriately can compile dossiers for verification of LF elimination. The regional office will gather research and programmatic data on the test-and-treat strategy to submit to the STAG-NTD to approve as an implementation strategy. The role of vector control for LF tailored to specific country situations also needs to be clarified.

2.7.2 Programme issues

Many countries do not have identifiable NTD programmes and there is a lack of structure for LF at subnational levels, e.g. the lack of nomination of focal points in the Federated States of Micronesia. In some countries and areas, different IUs are at different stages of LF implementation, making it challenging to end the programme. Countries and areas were encouraged to use national task forces for LF or for NTDs, if feasible.

2.7.3 Ensuring high MDA coverage

Many countries and areas had problems reaching certain noncompliant groups during MDA, including ethnic minorities, migrants and men. In addition, many programmes had large numbers of people excluded for safety reasons, including all elderly people, handicapped people and those who were ill. While the directly-observed treatment strategy is policy in all programmes, they find it challenging to ensure that treatment truly is directly observed during MDA.

Countries and areas, particularly in the Pacific, often grapple with the logistics of MDA, such as travelling to all outlying islands. The test-and-treatment strategy was regarded as a good

alternative to MDA in isolated and remote sites and in hot spots. For both the MDA and test-and-treat strategies, sometimes the top-down approach works better than a bottom-up one.

2.7.4 Assessments

In terms of assessments, there was a need to take into account the uniqueness of the Pacific, e.g. the small population on islands and in developing and adapting survey sample protocols for the Region. There was still uncertainty about how much of a risk immigrants and returning migrants were in countries and areas that had almost reached elimination. In some countries, i.e. Viet Nam, technical partners offered conflicting advice about how much data was needed for verification dossiers. In other countries and areas, such as Fiji and French Polynesia, there often was a lack of review of MDA rounds and feedback of survey results to the health system and communities.

2.7.5 Diagnostics: ICT

While confirmatory tests are not available in the field, the quality of the ICTs has improved and JCU is available to do confirmatory testing on positive results. Positive controls are available through the filarial research repository at NIH (http://www.filariasiscenter.org/molecular-resources/research-materials/positive-control-for-the-binax-filariasis-now-test). There are still problems with the availability, affordability and supply of ICTs though procurement of ICTs for 14 Pacific island countries and areas that have been supported by JICA. In addition, positive results are difficult to interpret, particularly if they are in adults or in migrants.

2.7.6 Drugs

The Philippines had problems with getting timely supplies of quality DEC due to limited manufacturing capacity, although most countries and areas in the Pacific received DEC through the JICA donation and have access to a subregional supply through the WHO Country Office in Fiji. Problems with the quality assurance of DEC could be mitigated by including DEC (and other NTD drugs) in the WHO/UNICEF prequalification project, although it was acknowledged that this would be a costly and timely process. In terms of expired albendazole, in countries and areas without high-heat incinerators, GSK offered to work with the WHO regional office to gather and ship the expired drugs to South Africa to be destroyed.

2.7.7 Integration

Integration is already happening throughout the Region. LF programmes have integrated with STH control in Tuvalu and Kiribati. The Federated States of Micronesia, the Marshall Islands and Kiribati have active leprosy programmes that effectively can be integrated with the existing LF programmes. Vanuatu has integrated a prevalence survey on yaws with the continuing malaria indicator survey. Similarly, some LF and malaria activities have been integrated in Papua New Guinea. American Samoa is combining LF social mobilization with outreach activities in environmental health and tobacco programmes. In Palau, the programme plans to implement a combined baseline survey for LF, STH and other infectious diseases.

2.7.8 Health systems issues

Health systems issues included a lack of ownership of the LF programme among general health staff and a competition with other pressing issues such as dengue outbreaks. It was still not clear how best to integrate LF and other NTDs into long-term surveillance in routine health systems and whether the appropriate laboratory capacity existed in all countries, particularly for microfilaraemia testing in areas with night-biting vectors.

Finally, the issue of LF morbidity management and disability prevention was still not enough of a global and national priority. There was a lack of national policies and guidelines on the subject and,

in most countries and areas, basic information on prevalence of lymphoedema and hydrocele cases was not available. Clinical cases in many places were not taken care of by the health system. Headquarters' forthcoming documents should help, and countries were encouraged to integrate active case-finding and management with other chronic disease programmes. Participants supported the idea of establishing a regional morbidity training centre in Fiji.

2.7.9 Social issues

In terms of social issues, programmes often did not have adequate human and financial resources to conduct sufficient social mobilization. In some countries and areas, communities have complained about many rounds of MDA.

2.7.10 Funding

Overall, government budgets have been lacking, recently cut or delayed. Very limited funding has reached the Pacific, mostly from Japan, the United States of America and drug donation companies. There is a need for advocacy at all levels, particularly to engage France and other European countries, the Australian Agency for International Development (AusAID) and the Asian Development Bank. Regionally, there is a need to identify the five priority countries for special support and resource mobilization and establish a regional trust fund. A fundraising strategy takes into account that, for some countries and areas, it is easier to receive supplies and equipment than to find time to craft proposals.

2.8 Presentations on national Lf M&E progress and plans

2.8.1 Group 1: Post-MDA Surveillance

Tonga

Tonga completed its final MDA in 2005, a C survey in 2006 and a child transmission survey in 2007. A second child transmission survey targeting all Class 1 students was planned for September 2011 for a cost of US$ 20 000. Tonga hopes to submit a dossier for verification in 2012.

Cook Islands

Cook Islands completed its final MDA in 2006 and C surveys in 2007 and 2008. A child transmission survey testing all 4-15 year olds was implemented in four islands (Pukapuka and Nassau, Aitutaki and Mitiaro) between 2010 and 2011 An assessment was to be carried out in 2011 in hospitals of 200 ICT samples in Rarotonga and Aitutaki. A survey testing all 4-15 year olds enrolled in primary schools will be carried out in Pukapuka, Aitutaki and Mitiaro in 2013. About US$ 5000 is needed for each island. Cook Islands hope to submit a dossier for verification in 2014 and be verified by 2015.

Niue

Niue conducted its final MDA in 2004. A survey of the entire population in 2004 (after the fifth MDA) found a prevalence of <1% Ag. A survey during the period 2009-2010 among the entire population found a few positive cases, but the prevalence was still <1% Ag. Niue was encouraged to submit a verification dossier using this data with technical assistance from JCU.

Vanuatu

Vanuatu consists of six provinces, all of which are endemic for LF. The country has conducted two post-MDA surveillance surveys, one in all six endemic provinces and the other in the four baseline high-prevalence provinces, including Penama, where a TAS was implemented as operational

research. So far, no Ag positive children were found during the two sets of survey. There was no consensus regarding whether another nationwide survey was needed to confirm interruption of transmission since the second post-MDA surveillance survey covered only four out of the six endemic provinces. In either case, Vanuatu aims to prepare a verification dossier by 2013.

The Marshall Islands

The Marshall Islands conducted MDA between 2002 and 2006 in two endemic islands (Mejit and Ailuk). A nationwide survey, including Mejit and Ailuk, was carried out during the period 2007-2008 to assess LF endemicity with only one Ag positive case (0.1% of 1559 tested). An expert panel was asked to consider the next steps for the Marshall Islands and recommended the following:

> Over 80% of secondary-school-aged children go to schools on the four main islands of the Marshall Islands. For the first post-MDA surveillance survey, the programme should test all first-year secondary school students from all public and private schools on the four main islands. The home addresses of the students should be included in order to determine if all islands are represented and to track back if necessary. If positive cases are found, further consultation with WHO would be necessary. ICTs can be provided by WHO.

The recommendations were presented for the RPRG's endorsement at a RPRG meeting on 3 June 2011.

2.8.2 Group 2: MDA

Samoa

Samoa implemented MDA rounds between 1999 and 2003. A C survey was implemented in 2007. Another MDA round was implemented in 2008 with 95% coverage of the eligible population. Two more MDA rounds are scheduled during the period 2011-2012 for the entire population, with a stopping-MDA TAS in 2013, and the first post-MDA survey in 2015. The programme has an issue with noncompliant groups, such as adult men. Suggestions were made to target men for social mobilization activities, using rugby players as spokesmen, church groups to help disseminate drugs, etc. Samoa still needs funding to implement the additional MDA rounds in combination with the Communication for Behavioural Impact strategy. Funding required for each MDA round is about US$ 140 000. The Australian and New Zealand High Commissions are potential sources of funding.

Fiji

Fiji implemented a C survey in the Northern Division in 2011 and will implement a TAS survey (as post-MDA surveillance) in the Western Division. MDA will be implemented in the Central, Eastern and Northern divisions. The programme needs assistance in reviewing the 94 sentinel and spot-check sites previously used and to determine which ones should be sampled again. The United States Centers for Disease Control and Prevention will provide support for managing survey data within the Ministry of Health and field testing antibody tests. In 2012, a TAS will be implemented in the Central and Eastern divisions if sentinel sites in 2012 show <1% Ag levels. Post-MDA surveys will be implemented in 2013 and 2015, with a dossier submitted for verification by 2017.

In terms of the test-and-treat strategy, the programme plans to complete a report for the pilot project and ask for an external review. It will continue to treat the 116 people that are still positive. Additional funding would be necessary if Fiji decides to expand the coverage of the test-and-treat strategy to other remote islands within the Central and Eastern divisions. The morbidity activities need support for upscaling and improving the clinical aspect and require a morbidity control officer with the appropriate clinical background.

Kiribati

Kiribati is divided into three IUs. On the Line Islands, testing and treatment will continue in 2011; however, regular boat services are unavailable to the two outer islands. A CTS survey will be completed in the Gilbert Islands (excluding South Tarawa) in 2011 while the final round of MDA is planned for South Tarawa. Technical assistance will be needed in 2012 to assist with the formulation of morbidity plans, including tracing hydrocele cases in South Tarawa. Mass deworming for school-aged children will continue and could be co-implemented with a TAS in 2013. Sufficient ICTs have been allocated for the test-and-treat strategy as well as the TAS.

Tuvalu

Tuvalu consists of nine inhabited islands, all of which are LF endemic. MDA was implemented during the period 2001-2005. A test-and-treat strategy was begun in 2007, with mass treatment and Ag screening of the entire population (~70% tested). The positives from the 2007 survey were treated quarterly in 2009 and some were retested with ICTs in 2010. Treatment and retesting are continuing in conjunction with a school deworming programme.

The LF programme will implement in 2012 awareness and community workshops for LF and deworming programmes, cleaning campaigns and spraying and fogging of the capital. A TAS of all 6 and 7 year olds will be implemented along with deworming as well as a national survey for morbidity (along with leprosy if necessary) and training of health workers and patients on home-based care. Deworming will continue in 2013 and a post-MDA TAS will be implemented in 2013 or 2014. Technical assistance is needed for the deworming survey, policy and planning, analysis of LF and deworming data and surveys and training in mosquito identification. Only one officer is responsible for all environmental health activities, including LF, vector survey plans and procuring equipment and chemicals.

French Polynesia

French Polynesia implemented eight rounds of MDA between 2000 and 2007, but a 2008 C survey still found high prevalence. The programme started MDA in 2010 with directly-observed treatment and achieved 71% directly-observed coverage of the eligible population. MDA was completed in May 2011, but coverage data are yet to be compiled. The programme plans to do sentinel and spot-check site assessments in 2012 and, depending on the results, to implement a stopping-MDA TAS or another round of MDA in 2013. Areas could be divided into evaluation units based on low and high coverage areas. In 2018, if all goes well, the country could apply for verification. The programme needs funds for provision of DEC, ICTs, vector control activities, retraining on Communication for Behavioural Impact and response to side-effects. In terms of morbidity, the programme knows the numbers of cases, but has not implemented any activities.

2.8.3 Group 3: Further assessment needed

The Federated States of Micronesia

A baseline prevalence of >30% Ag was found on Satawal in Yap State. Subsequently, Yap was considered as endemic. MDA was conducted there from 2004 to 2008. An expert panel was asked to consider the next steps for the country in terms of surveillance in Yap and what data were necessary to confirm nonendemicity in three other states where MDA never was conducted. It recommended the following:

*Yap***:** A stopping-MDA survey was conducted in Yap State during the period 2007-2008. A post-MDA surveillance survey should be conducted between 2011 and 2012. A standard TAS cannot be implemented given the logistical difficulties of reaching all the outer islands in the state. The secondary school enrolment rate is high. A sample size of at least 1000 students

should be tested. All first-year secondary school students in all public and private secondary schools should be tested. If calculations show that this will not yield a sample of 1000, then all second-year secondary school students also should be included in the testing. The home addresses of the students should be included in order to determine if all islands are represented and to track back if necessary. If positive cases are found, further consultation with WHO would be necessary. A second post-MDA surveillance survey should be conducted in 2014.

*Kosrae, Pohnpei, Chuuk***:** A survey should be conducted in each state to confirm nonendemicity. This survey should test at least 1000 secondary school students starting with first-year secondary school students and expanding upwards, if necessary.

The recommendations were presented for the RPRG's endorsement at a RPRG meeting on 3 June 2011.

Palau

The baseline LF survey implemented in 2000 tested 1500 people and found 30 Ag positives in one village. This village was treated. A follow-on survey is planned for 2012, integrated with other programmes. While funding is secured for this survey, human resources are an issue. No clinical cases of LF-related disease have been found.

Wallis and Futuna

Wallis and Futuna has been implementing LF MDA for decades. A stopping-MDA C survey was implemented in 2006, finding an Ag prevalence of <1%. The country is planning its first post-MDA surveillance survey in 2012, using an extended range of 5-9 years old. The programme needs 1400 ICTs at a cost of US$ 10 000 to complete this. A second post-MDA survey is planned for 2014, if necessary, with the submission of the dossier for verification in 2016. An expert panel was asked to consider the sampling strategy for the post-MDA surveys and recommended the following:

Wallis and Futuna should implement a post-MDA surveillance survey in 2012 following TAS guidelines. Given that the number of first- and second-year primary school students is less than 1000 (the recommended lowest sample size for the TAS for *Aedes* areas), the programme should expand the age range to test all children in primary school years one to four to reach at least 1000 samples.

The recommendations were presented for the RPRG's endorsement at an RPRG meeting on 3 June 2011.

2.8.4 Group 4: Mekong-Plus Countries

Philippines

The Philippines is working to strengthen integration in IUs with continuing MDAs. The programme has challenges with timely procurement of DEC and budget gaps for travel of local health workers, orientation of local staff and drug coverage surveys. Midterm sentinel and spot-check site assessments will take place in 2011 in 23 IUs, stopping MDA surveys in six IUs, a first post-MDA survey in two IUs and a second post-MDA survey in one IU.

The first post-MDA surveys will be conducted in four IUs in 2012. For morbidity management and disability management, the programme aims to finish mapping (potentially integrating with measles or EPI campaigns), disseminate national policy guidelines and integrate case management training with leprosy. It also needs to identify outlets for hydrocele surgery and mobilize funds for disability management kits and surgery. In terms of vector control, the programme will formulate a plan for LF, dengue and malaria, design training modules and pilot implementation, if funds can be

found. Technical assistance is needed to formulate a sustainable post-MDA surveillance plan. The Philippines plans to submit a dossier for verification by 2019.

Malaysia

At baseline, 116 IUs were found to be endemic with an at-risk population of 1.1 million. In the most recent evaluation, one IU had prevalence <1% Mf. An expert group mission in 2010 recommended two more MDA rounds in East Malaysia because of inconsistent coverage in previous MDA rounds. In East Malaysia, a stopping-MDA TAS is planned for 2013 and a post-MDA TAS in 2015. In Peninsular Malaysia, a stopping-MDA TAS is planned for 2011 with a post-MDA TAS in 2015. The second post-MDA TAS that will represent all endemic areas is planned for 2017. Continuing surveillance and integrated vector management are also under way in areas with malaria elimination. The programme is exploring how to deal with imported cases from Myanmar, potentially using a test-and-treat strategy for mobile populations.

Brunei Darussalam

Brunei Darussalam mapped Brugian antibody prevalence during the period 2006-2007 in four districts. All districts were found to have antibody levels <1%, but four subdistricts had 1%-2% antibody prevalence. An expert mission recommended in 2010 that Brunei Darussalam either conduct two rounds of MDA in the three districts, which included these four subdistricts, or carry out a test-and-treat strategy in the four subdistricts as well as in the four neighbouring subdistricts that were not covered in the baseline survey.

Brunei Darussalam presented a draft plan in Fiji that proposed MDA in the second halves of 2012 and 2013, a post-MDA TAS in 2015 and a second post-MDA TAS in 2017, with a dossier for verification expected for submission in 2018. An expert panel was asked to provide guidance on an appropriate age range for the TAS surveys, given small numbers of 6 and 7 year olds (first and second grade students), and the use of antibody tests for measurement. The following was recommended:

> Brunei Darussalam should implement two rounds of MDA in four targeted subdistricts and four neighbouring subdistricts that were not covered in the baseline survey. One year after the second round is finished, a TAS survey using Brugia Rapid antibody tests should be implemented in at least 400 children. Given that the number of first and second grade students in the three targeted districts might be less than 400, it is recommended to expand upwards to include third year students, etc., until at least 400 children can be sampled. If positive cases are found, further consultation with WHO would be necessary.

The recommendations were presented for the RPRG's endorsement at an RPRG meeting on 3 June 2011.

Viet Nam

Viet Nam finished the MDA in 2008 but did not implement a stopping-MDA survey until the period 2010-2011. The first post-MDA survey is planned for 2013, and potentially a second one in 2015, with a verification dossier to be submitted by 2016. The programme aims to implement a morbidity survey and training as well. It needs assistance with purchasing ICTs and Brugia Rapid tests.

The Lao People's Democratic Republic

The Lao People's Democratic Republic finished mapping in 2009, with all five endemic districts in Attapeu Province. The MDA is scheduled for the period 2010-2014, with sentinel and spot-check site assessments after the second MDA and fifth MDA rounds. A stopping-MDA TAS is planned for 2015, with the first post-MDA TAS in 2017 and the second post-MDA TAS in 2019. The

programme plans to submit a dossier for verification in 2020. The programme lacks the budget for training of trainers, implementation, drug procurement and ICTs. There are programme challenges with integration with malaria control and how to ensure migrants are treated.

Cambodia

Cambodia completed its final MDA in 2009, with a stopping-MDA survey in 2010. The first post-MDA survey is planned for 2013, with a second one in 2015, and a verification dossier to be submitted in 2016.

2.9 Update and review of selected neglected tropical diseases

Professor Ramachandran reported back to the group on the conclusions of the side meeting on Papua New Guinea. The Western Pacific Regional Office will move forward with a high-level delegation to meet with the Ministry of Health to discuss how best to quickly move forward with LF elimination activities. In addition, the JCU will facilitate a working group with World Vision Australia, WHO and others to formulate a proposal for AusAID to support pilot MDA activities in a few districts. The proposal will focus on the linkages between improving maternal and child health, deworming and LF MDA. Finally, the GNNTD will look for support for the DEC-fortified salt programme.

2.9.1 Regional overview of selected NTDs and regional targets by 2016

Dr Tuan gave an overview of the NTDs included in the Regional Action Plan, such as STH, schistosomiasis (SCH), foodborne trematodiasis (FBT), echinococcosis, yaws, leprosy, scabies and trachoma.

With regard to LF, the provisional regional indicator and target is that 10 additional countries and areas will have eliminated LF by 2016 compared with the 2011 baseline (3/25). These countries and areas include Niue and Tonga (2012); Vanuatu (2013); Cook Islands (2014); the Marshall Islands (2015) American Samoa, Cambodia and Viet Nam (2016). The target also includes Palau, the Federated States of Micronesia, Wallis and Futuna and New Caledonia.

STH is a public health problem in 25 of 37 countries and areas. In the "Mekong Plus" subregion:

(1) Cambodia and the Lao People's Democratic Republic have achieved the deworming target of at least 75% of school-aged children treated regularly.

(2) The Philippines have achieved 82.68% coverage among 1-5- year-olds.

(3) Viet Nam is at 50% coverage of school-aged children.

(4) China is conducting STH MDA, but no data are available.

In the Pacific subregion, LF MDA continued during the period 2001-2007 in 11 countries, but few assessments have been made to determine the impact of LF MDA on STH prevalence.

(1) Kiribati, Solomon Islands, Vanuatu and Tuvalu are conducting mass deworming of schoolchildren.

(2) The Federated States of Micronesia, Kiribati and Vanuatu are deworming preschool children in conjunction with Vitamin A distribution campaigns.

The provisional regional indicator and target for 2016 is that 16 countries and areas will have achieved or maintained a 75% national deworming coverage of school-aged children and preschool-aged children at risk compared with the 2011 baseline (6/30 for school-aged children). In addition, four countries have achieved or maintained 75% coverage of women of childbearing age.

Schistosomiasis is endemic in four countries (China, Cambodia, the Lao People's Democratic Republic and the Philippines), all of which are conducting preventive chemotherapy.

(1) In Cambodia, no severe cases have been found for the past few years.

(2) In China, activities include snail control, with a plan to interrupt transmission by 2015.

(3) In the Lao People's Democratic Republic, preventive chemotherapy was restarted in 2007 after a recurrence of cases.

The regional indicator and target for 2016 is that all four schistosomiasis-endemic countries maintain 75% preventive chemotherapy coverage of population at risk compared with the 2011 baseline.

Foodborne Trematodiasis (FBT) is a public-health problem in at least seven countries (China, the Republic of Korea, Cambodia, the Lao People's Democratic Republic, Viet Nam, Malaysia and the Philippines and possibly Papua New Guinea).

(1) Cambodia, China, the Lao People's Democratic Republic and Viet Nam are all implementing mass or targeted treatment for opisthorchiasis and clonorchiasis.

(2) In Viet Nam, there are continuing case detection and treatment activities for fascioliasis and paragonimiasis.

(3) The Lao People's Democratic Republic has included health education measures in its school curriculum.

The regional indicator and target for 2016 is that eight countries will have completed mapping of all endemic FBT infections compared with the 2011 baseline (5/8).

Echinococcosis is endemic in at least two countries (China and Mongolia), but little is known about the extent of the problem.

Yaws is endemic in at least three countries (Papua New Guinea, Vanuatu and Solomon Islands), with a regional indicator and target for 2016 that at least one country will have eliminated yaws (Baseline: 0/3).

Three countries (the Marshall Islands, Kiribati and the Federated States of Micronesia) have not declared leprosy elimination (defined as reaching a prevalence of <1 leprosy case per 10 000 population). The regional indicator and target for 2016 is that three countries will have achieved leprosy elimination compared with the 2011 baseline (34/37).

For trachoma, the regional indicator and target is that all countries in the Region have achieved elimination of blinding trachoma.

Overall, NTD programmes have gaps in the areas of programme management, strategy development, advocacy and funding and research. There is a need to complete mapping of the targeted diseases in all countries, create a standard reporting system and finalize detailed guidelines on control activities for foodborne trematodiasis (FBTs), cestodiasis and integration among helminthic diseases. In terms of advocacy and funding, these diseases are a low priority for both

governments and donors alike. Most affected countries rely on external sources, but these are difficult to find. Finally, there is a lack of research that directly answers questions from the field about implementation and monitoring.

Discussion: There was a need for clarity on the basis of the 75% target for STH, when deworming can be stopped, and how to move from deworming through LF MDA to other strategies as LF MDA phases out. In addition, a suggestion was made that veterinary public health experts should be included in meetings discussing these diseases as many of them are zoonotic in origin.

2.10 Soil-transmitted helminthiasis

Success Stories: Cambodia

Dr Chea Huch discussed the current STH programme in Cambodia, which targets 7.8 million people (1.1 million preschool-aged children, 2.8 million school-aged children and 3.9 million women of childbearing age). Preschool-aged children (12-59 months) are targeted through twice yearly vitamin A, with mass distribution activities in May and in November, with 86%-90% programme coverage at a national level in 2009 and 2010. School-aged children (5-14 years old) are treated twice yearly through school-based outreach, with mebendazole donated by Johnson & Johnson. The programme achieved 90%-95% coverage in 2009 and 2010. Pregnant women are reached through the maternal health service twice; once after the first trimester and once after delivery. The programme has been able to target between 290 000 and 414 000 women a year, which is only 7%-8% of all women of childbearing age.

Impact assessments found 0.06%-42.7% prevalence in 1863 stool samples from three provinces in 2009 and 0.8%-33% in 3273 stool samples from three other provinces in 2010. The programme reported gaps in implementing regular baseline prevalence surveys, drug efficacy and safety monitoring and coverage surveys. Future plans include intensifying behaviour change communication activities, strengthening intersectoral linkages, supporting operational research and conducting stool surveys more regularly, i.e. every three to five years per WHO guidance.

Discussion: The group requested a further analysis of the data to explain why there was such a wide range of prevalence levels found during impact assessments. It also was recommended that studying health outcomes, such as infant birth weight in treated and untreated mothers, would be helpful to complement the prevalence assessments.

Success Stories: Kiribati

Teiti Bwenawa explained that a baseline STH survey, implemented in two schools in the capital, found 100% prevalence. The programme started in 2009 with one round of deworming in schools (2-19 years old), targeting 33 000 children with a coverage level of 33%. The programme implemented twice yearly mass deworming in schools in 2010, targeting 42 000 children with 33%-50% coverage. The programme is integrated with EPI and LF activities and drugs are distributed by public health nurses, nurses aides and teachers.

While no formal evaluation was carried out, schools and families reported that, after deworming campaigns, absenteeism, worm prevalence and diarrhoeal disease prevalence were reduced and students were more conscious of their health. The programme experienced challenges relating to communication with schools, delivering drugs to the outer islands, receiving data and high staff turnover. The future plans include strengthening coordination with other programme managers, improving awareness and providing updates for parent teacher associations, health talks during MDA and a school competition for pupils. The programme needs support purchasing kits for stool surveys and technical assistance to carry out the surveys.

Success Stories: Tuvalu

Falealili Feagai presented an overview of the STH programme in Tuvalu, which targets 1115 preschool children (2-5 years old) and 1918 school-aged children (6-13 or 14 years old) on all nine islands. A baseline survey during the period 2001-2002 found 88%-100% of students in two schools were infected. The first MDA round was carried out in five islands in 2009; the first round was carried out in the other four islands in 2010 and the second round in one island.

The second round of MDA was implemented in two islands in 2011. Drugs are distributed by public health staff and qualified nurses in schools, houses and hospitals. Deworming was integrated with the first phase of the LF test-and-treat activities. In the past three years, the programme learnt that schools need early and clear notice in order to support the programme and that mothers are happy for the children to take the tablets at school or at the hospitals.

Programme challenges include follow-up of children not in school, timely drug distribution to outer islands, awareness-raising among parents and teachers and finding funding for purchasing drugs and training public health and education staff. Future plans include updating survey data, expanding educational programmes to all schoolchildren and upgrading the health staff capacity.

Discussion: Other data relating to prevalence levels in Tuvalu was shared. A 2004 study on Nukefetau Island found that 70% of the islanders tested had STH infections and that trichuriasis infection had not decreased much compared with 2001 data. In response, the programme switched from albendazole to mebendazole. However, albendazole and mebendazole are equally as effective against trichurisis (whipworm), although they are less efficacious against trichuriasis than other STHs. A 2008 JCU survey in two areas found ~60% STH prevalence rates and a 2010 follow-up study in one area found high rates of trichuriasis, but not ascaris and hookworm.

Success Stories: The Lao People's Democratic Republic

Dr Simone Nambanya, Vice Director of the Centre of Malariology, Parasitology and Entomology, discussed the Lao People's Democratic Republic's STH programme, which targets 781 000 preschool children (<5 years), 981 000 school-aged children (6-11 years old) and 1.3 million women of childbearing age (15-49 years old). A national survey in 2002 found prevalence levels of 91% ascaris, 18.6% hookworm and 81.4% trichuriasis in school-aged children. Preschool-aged children are reached through the EPI programme, which is supported by UNICEF, and had 83% coverage in 2009 and 88% in 2010. School-aged children are targeted for twice annual treatment in eight provinces and annual treatment in one province (given that LF MDA is also taking place there) through a school-based approach, with 98% coverage. Mebendazole is donated by Johnson & Johnson.

Women of childbearing age are reached annually through the tetanus vaccination campaign, which had 55% programme coverage in 2009 but did not occur in 2010. The programme benefits from support from the Ministry of Education, which signed a memorandum of understanding to contribute to Millennium Development Goal 1. Teachers (who are enthusiastic to treat children at no cost), parents (who are pleased that children have less abdominal pain) and the community also are supportive of the programme.

However, there are still challenges finding funding to buy drugs for women of childbearing age and access to clean water and health education is low. Future plans include up scaling water and sanitation activities; integrating STH into health education; implementing a survey measuring anaemia, STH prevalence and intensity and knowledge, attitudes and practices among women of childbearing age (2011); implementing an impact survey of preschool-aged children (2012); and implementing an impact survey among school-aged children (2013). The Government of Luxembourg and WHO both support the programme.

Discussion: Given that deworming is basically a stop-gap measure during the time it takes water and sanitation coverage to increase, it would be helpful to have guidelines with regard to what levels of water and sanitation are necessary to stop deworming. Children Without Worms is trying to find donors to support a pilot project to look at water and sanitation and hygiene activities in relation to deworming in the Lao People's Democratic Republic.

Success Stories: Philippines

Dr Leda Hernandez, Division Chief, Infectious Disease Office, presented an update on the Philippines STH programme. The entire country is endemic for STH; a 2004 UNICEF survey found 66% prevalence in preschool-aged children (with 7.8% heavy-intensity infections) and a 2006 study found 54% prevalence in school-aged children (with 23% moderate- and high-intensity infections).

The programme targets 12.8 million preschool-aged children and 14.1 million school-aged children while activities addressing women of childbearing age are implemented by another office in the Department of Health. The programme tries to integrate with LF MDA in coendemic areas. For preschool-aged children, MDA occurs in April and October and November, with distribution by LF health workers and volunteers. Coverage for the first round in 2010 was 82%. For school-aged children, drugs are distributed by nurses and teachers in January and July, in coordination with schistosomiasis drugs where necessary.

A 2009 survey found 43.7% prevalence (8.34% heavy-intensity infections) in preschool-aged children and 44.7% prevalence (19.7% moderate- and high-intensity infections) in school-aged children. Follow-up surveys funded by Johnson & Johnson in three provinces showed that overall and moderate- and high-intensity infections all decreased after treatment.

There is a need to increase and sustain partnerships, including the establishment of a multisectoral mechanism, and time must be spent ensuring that local government units feel ownership and commitment to the programme. The challenges facing the programme include capacity-building, integration with NTDs, funding for rapid assessment surveys, ensuring a timely reaction to severe adverse events, lack of impact data and sustainability.

Future plans include a STH prevalence and intensity assessment among school-aged children every three years, a baseline STH prevalence survey among pregnant women, strengthened integration with other NTDs and other programmes and a stakeholder meeting to determine the involvement of other organizations. The Department of Health in July 2011 was to have launched overlap maps that show coendemicity of malaria, STH, LF, leprosy, dengue as well as economic indicators.

Discussion: The group discussed reasons for the increase in high-intensity infections among preschool-aged children even though prevalence decreased. Reduction in prevalence and intensity after MDA generally is variable, but it is usually necessary to implement a couple of rounds before a decrease is seen. It was unclear the risk posed by highly infected adults that were reinfecting children at home.

Children Without Worms

Kim Koporc, Director of Children Without Worms (CWW), described CWW as a drug donation programme overseeing Johnson & Johnson’s donation of mebendazole to governments and GSK's donation of albendazole for deworming in African countries. CWW also supports hygiene education and water and sanitation activities in collaboration with other partners, e.g. Helen Keller International in Cambodia. CWW is based at the Task Force for Global Health and advised by an independent advisory committee, with includes WHO as an observer.

In the Western Pacific Region, it currently donates mebendazole to the STH programmes in Cambodia and the Lao People's Democratic Republic. Ministries of health and education can submit

applications for nationwide STH campaigns for school-aged children if they meet the basic criteria of disease burden, resources to implement MDA and political commitment. The current process is to submit applications to CWW as well as RPRGs through the Western Pacific Regional Office. The advisory group then reviews applications and donated drugs are shipped to WHO Country Offices, which gives them to ministries of health for distribution.

Working with WHO, CWW is helping to formulate a global strategy for STH control. Once the responsibilities of the expanded RPRGs are finalized, CWW will confirm the application process and establish an advisory committee as a technical extension of the STAG-NTD. Applications are available at www.childrenwithoutworms.org, with donations available in January 2012.

Summary of the success stories

Dr Ehrenberg summarized the morning presentations.

(1) Cambodia has achieved high coverage levels through integration with vitamin A campaigns. Another key to success has been the political endorsement, but there is a need for strengthened intersectoral collaboration, which is a key issue in many countries. WHO could help follow up prevalence and intensity data issues.

(2) Kiribati is an interesting example of a country with logistical transport issues, but the focus on school surveys is good. Assessing the impact of STH MDA on school absenteeism and hand-washing is an interesting idea. The programme needs resources for surveys and kits. There are challenges and opportunities for integrating with EPI, HIV, etc.

(3) Tuvalu has house-to-house distribution for preschool-aged children and school distribution for school-aged children, but programme coverage remains low because of logistical problems in all the islands. The political commitment of the ministries of health and education has been helpful as well as the involvement of women's groups, but human resources are still a problem. Instead of implementing new surveys, it would be helpful for the programme to see all research data, e.g. JCU's surveys related to STH levels.(4) The Lao People's Democratic Republic has sustained deworming for many years above the 75% target and is expanding to women of childbearing age. The programme's integration with maternal and child health and EPI is a wise approach, especially when looking for donor support. The partnership in the country has been successful, with funding from the Asian Development Bank, Luxembourg, CWW and WHO.

(4) The Philippines has made strides in integrating its programmes but still has challenges with decentralization and scaling up. The survey results, which show increasing intensity, should be explored further.

(5) In general, all partners need to think outside the box about how to get more resources for the Region. WHO urges the Pacific islands to introduce these topics to governments through the Healthy Island Initiative or at the ministers of health meetings.

(6) Framing STH programmes in the context of maternal and child health, food security and health systems strengthening should be helpful for attracting donor support. WHO is promoting NTD control and elimination programmes because they are very cost-effective with great benefits for children's health, but these activities need to be part of larger sustainable development and poverty issues. In addition, the issue of access to prevention and treatment activities for ethnic minority groups, especially in China, the Lao People's Democratic Republic and the Philippines, should not be forgotten.

2.11 Distribution of roles among partners involved in STH

Dr Tuan presented an overview of the roles necessary to implement a comprehensive STH programme (Table 4). The STH strategy has three components: mass treatment, health education and sanitation. Mass treatment activities include procurement or donation of drugs, distribution of tablets, monitoring of drug distribution and evaluation. The distribution usually cannot rely only on health staff but needs to include teachers.

The health education activities include development of information, education and communication (IEC) materials, delivery of the materials and evaluating the use of the materials. This is often conducted by the ministry of health. The sanitation component, which often needs better integration with the environmental health sector, focuses on increasing the availability of clean water and hygienic latrines as well as the use and maintenance of these latrines. In order for these components to run smoothly, coordination needs to occur at the national policy level as well as in programme management and advocacy.

Table 4. Distribution of partners in STH control

	Task	MoH	local MoH	Education sector	Environment sector	WHO	UNICEF	Women union	UNFPA	Relevant networks (GNNTD)	Drug donors	Donors for op costs
Overall	Development of national policy for STH (under NTD umbrella)	XXX		X	X	XX	X	X	X	X	XX	XX
	Fund raising	XX		XX	XX	XX	X			XX	XXX	XXX
	Other advocacies			X	X	X	x		X	XX		
Mass Treatment	Procurement of qualified deworming tablets	X				XX	XXX	X	X			
	Facilitate drug donation	X	x			XX					XXX	
	Distribution of deworming tablets	XXX	XXX	XXX		XX	XXX	XXX			X	
	Monitoring of the drug distribution	XX	X	X		X					XX	
	Evaluation of the drug distribution	XX	X	X		X					XX	
Health Education	Development of IEC materials	X	X	XX			X					
	Delivery of IEC materials			XXX			X					
	Monitoring of IEC activities	X	X	XX			X					
	Evaluation of the the impact of IEC activities	X		X			X					
Sanitation	Availablity of clean water			X	XX					X		XXX
	Availability of hygienic latrine			X	XX			X				XXX
	Convince the community to use it			X	XX			X				XXX
	Convince/support the community to maintain it properly			X	XX			X				XXX

2.12 School-based interventions and the role of the education sector for STH programmes

Alex Schratz, Executive Director of Fit for School (www.fitforschool.ph), gave an overview of the Essential Health Care Programme in the Philippines. This programme of the Department of Education integrates daily hand-washing with soap, daily tooth-brushing with fluoride toothpaste and biannual deworming. The evidence on the interventions' effectiveness shows the potential of the education sector beyond drug distribution in MDA. Schools are important as they function as second homes for students, children share what they learn at schools with their families, parents and communities are also involved in schools and schools can be models in communities for sustainable prevention interventions.

The preventive approaches promoted by Fit for School are multidisease, have effects on a mass scale and are affordable, effective and feasible. Within the framework of effective, intersectoral school health programmes, the education sector should take the lead – recognizing that healthy children learn better – by providing delivery infrastructure free of charge, making good hygiene practices part of daily school routine and promoting water and sanitation infrastructure improvements as community models.

The health sector should set effective policies that recognize the potential of the education sector and make use of its structure and labour as well as procure and distribute deworming drugs. Through intersectoral working groups at all levels of governance, health personnel can give technical guidance and support to teachers, especially on how to report and respond to severe adverse events and to raise awareness on the importance of documentation and reporting of deworming activities.

If intersectoral collaboration is effectively institutionalized and put into operation, many issues around STH MDA also can be addressed more easily, i.e. allowing teachers to deliver drugs, better guidance to teachers on administering and reporting, collaboration between school health personnel and community health workers and harmonization of MDA schedules for deworming, LF and schistosomiasis.

Fit for School's work, which is supported by the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), GSK and AusAID, includes advocacy, capacity development, research and development. It does not implement the programme or work at a school level. At a national level, Fit for School partners with the Department of Education and the League of Provinces, a partnership that is mirrored at the decentralized level with school divisions and provincial governments. It is the divisions' teaching and health personnel that implement the programme whereas it is the provincial governments (through their health budgets) that allocate the programme's funding.

Key principles of the approach are to practice good hygiene as a group under supervision of a teacher – not health personnel – in an environment with the necessary materials and water access. Clear implementation templates and guidelines for schools complement capacity-building at the administrative level.

For example, a US$ 40 washing facility that serves 20 children serves as a model that easily can be modified for individual schools. The toothbrushes, toothpaste and soap are produced by a local manufacturer and are pre-packaged to facilitate procurement and make it more transparent. Another key principle is incentive-setting. For example, schools must have water access and hand-washing facilities as a precondition for receiving hygiene materials. Moreover, provincial governments recognize the popularity of the programme and are able to capitalize politically from financing it.

The Essential Health Care Programme was piloted during the period 2007-2008, reaching 200 000 children, with funding provided by two provinces as well as donors. By 2010, it had scaled up to 27 local government units, reaching over 1 million children. AusAID and GIZ support the consolidation and expansion of the programme both in scale and in scope, i.e. the integration of sanitation components and targets. GIZ also promoted the Fit for School approach in Cambodia, the Lao People's Democratic Republic and Indonesia.

Fit for School has supported the development of a process monitoring tool to track implementation coverage and quality. A team consisting of a school nurse, a parent and a community representative uses a three-page form in order to compare the implementation status against best practices. It brings stakeholders together to discuss results of this monitoring. For impact evaluation, Fit for School is carrying out a longitudinal study, measuring two cohorts (one intervention and one control, which is implementing a traditional school health programme) from first grade to sixth grade. Measurements of nutritional status, socioeconomic status, absenteeism, worm and oral infections and

academic performance are all taken and show significant improvements in nutritional status and oral health after one year of implementation.

2.13 Way forward with other NTDs: Country reports from selected countries

2.13.1 Foodborne trematodiasis (FBT) in the Republic of Korea

Dr Hyeng-Il Cheun, of the Division of Malaria and Parasitic Diseases at the Korea National Institute of Health, gave a presentation on parasitic diseases in the Republic of Korea. The country started a New Village movement in the 1960s for economic development and hygiene improvement. One of its goals was to eliminate intestinal parasites. Prevalence surveys were conducted during the period1971-2004. By 2004, only clonorchiasis remained a public health problem, with an overall prevalence of 2.4%, increasing to 8%-11% with regional differences in populations living near major rivers.

Males had higher prevalence levels than females, with highest prevalence in the over-40 year old age group. To combat this problem, the government implemented blood and stool surveys in potential high-risk areas. While neither method is very powerful in detecting infection, they are the best diagnostic methods currently available. MDA could not be implemented because a doctor's prescription is necessary for treatment with praziquantel. Instead, the government implemented hygiene education, including disseminating advertisements in public health centres. However, clonorchiasis is spread by eating raw fish, and it is difficult to change eating habits. So it is likely that health promotion against the habit of eating raw fish will need to continue for some time.

2.13.2 FBT in Viet Nam

Dr Do Trung Dung described the FBT situation in Viet Nam, where liver flukes such as *Clonorchis sinensis*, *Opisthorchis viverrini*, *Fasciola gigantica* and *Fasciola hepatica* are the key public health problems and *Paragonimus* species (lung flukes) are an emerging public health problem.

There are 2.9 million people at risk of clonorchiasis and opisthorchiasis in 24 provinces, with 346 000 people at high risk in six provinces. In provinces with over 20% prevalence, praziquantel treatment is given to those targeted for high-risk behaviour (eating raw fish) once a year. In provinces with less than 20% prevalence, individual case treatment is the strategy.

Targeted treatment was expanded between 2006 and 2010 to 95 communes in four provinces with coverage levels between 52% and 89% (and 42% geographical coverage in 2010). About 0.3% of people treated had side-effects. Surveys in Binh Dinh and Thanh Hoa provinces before and after MDA showed a decline in prevalence. However, in Hoa Binh Province, prevalence increased because the post survey only chose to sample high-risk people. Treatment will be continued during the period 2011-2012, accompanied by behaviour change communication in endemic communities, continued mapping and assessment of efficacy of treatment.

Fascioliasis is endemic in 132 of 698 districts in 47 of 63 provinces, with over 90% of the patients older than 15 and 62% female. Prevalence among animal reservoirs is 98% in buffalos, 31% in cattle and 71% in goats. A key risk factor for human infection is high consumption of raw vegetables. The programme has formulated guidelines for diagnosis and treatment, trained health staff in 41 provinces and implemented IEC prevention activities at all levels.

Awareness has increased in communities and among doctors, and most of the provinces and some of the district hospitals can diagnose and treat cases. Treatment is either a single or double dose of triclabendazole; 52 300 tablets of which were donated by Novartis between 2004 and 2009. The programme needs an improved diagnosis and treatment process to reduce the costs of hospitalization. It is assessing prevalence in sentinel sites and might pilot MDA for high-risk people. Further

collaboration with the veterinary sector is necessary for animal deworming and the water and agricultural sectors for treating agricultural and wastewater.

Seven provinces have been mapped for paragonimiasis. Three target provinces implemented community health education in 2007 as well as active and passive detection and treatment of 5563 cases. Only a few cases were continuing with treatment during the period 2008-2010. WHO has provided funding to map paragonimiasis. Guidelines have been formulated to look for paragonimiasis in the sputum of resistant tuberculosis cases but have not yet been implemented.

Limitations of these FBT programmes include the difficulties in changing eating habits, low capacity for behaviour change communication within the government and a lack of human and financial resources. In addition, there is no national control programme for NTDs, which leads to difficulties in coordination and integration.

Discussion: WHO is developing FBT guidelines which were to be disseminated by August 2011. These guidelines include prevalence levels at which different activities should be implemented.

2.13.3 Schistosomiasis in Cambodia

Dr Huch discussed the history and present status of schistosomiasis control in Cambodia. The first endemic province was identified in the 1970s, but pilot control activities started in 1995. These activities were scaled up to all endemic districts by 1997 in two provinces along the Mekong River. There are 82 000 people at risk in about 100 villages.

February to April is the peak of the transmission season, which coincides with the fishing season. A 1995 clinical examination found 49% prevalence of hepatomegaly in the entire population and 90% in children 10-14 years old. Eight rounds of MDA with praziquantel and mebendazole were completed during the period1995-2002, with coverage levels ranging from 62%-86%. MDA was applied in 2003 only to school-aged children and those who are fishing.

The national control programme implemented MDA again during the period 2004-2008 because of gaps in snail and reservoir host control, with coverage levels ranging from 63%-95%. Prevalence decreased from an average of >40% in 1995 to <4% in four sentinel villages in 2010. A prevalence survey of 1500 stool samples in four sentinel communities in 2010 found <5% schistosomiasis prevalence but high STH prevalence. However, MDA will not be enough for eradication of schistosomiasis, so there is a need to continue MDA.

No animal survey has been conducted to assess the magnitude of infection in dog and pig reservoirs in endemic areas. Programme gaps also include a lack of studies on the efficacy of praziquantel and mebendazole as well as the lack of a pharmacovigilance system. Finally, support is needed for sentinel site surveys to be conducted every two to three years.

Discussion: It might be helpful to coordinate timing of MDA rounds with the Lao People's Democratic Republic to ensure that no cross-border transmission is occurring since the two countries are connected by the Mekong River. Since the volume of water in the river is too high to conduct any useful type of snail control, it was recommended to improve sanitation and implement health education aimed at children.

2.13.4 Yaws in Vanuatu

Dr Lasse Vestergaard gave a brief background report on yaws and discussed the yaws programme in Vanuatu. Yaws is usually diagnosed clinically, but the diagnosis is less specific if health staff are not properly trained. Serological testing is not conducted routinely, except in

prevalence surveys. Yaws is easy to treat – with one injection of long-lasting penicillin – and treatment is recommended for cases and close contacts.

If drugs are not available, wounds should be dressed by community health workers. Almost 100% treatment coverage of cases and contacts is needed in order to interrupt transmission. Oral antibiotics, like azithromyacin, which could be given in lowest-level health facilities, would help programmes achieve full treatment coverage; however, the use of azithromyacin for yaws treatment is still in clinical trials.

The elimination of yaws in India provides a good case study, where programme activities included identification, advocacy, piloting and expansion of project, staff development, community mobilization and detection and treatment of cases and contacts every six months by house-to-house surveys. After three years of no case-finding, India was verified as having eliminated yaws.

In Vanuatu in 2001, after detection of some cases, mass treatment with injectable penicillin was conducted with 92% coverage in Santo Island, but no follow-up data were collected. A 2008 survey showed 17% seroprevalence on Tanna Island, but the prevalence on other islands in Vanuatu is not yet known. A National Task Force on Yaws has been established and the programme has started mapping. The programme would like to train health workers, implement active case-finding and treatment, implement clinical and serological surveillance and supervise, monitor and evaluate these activities.

In addition, advocacy and community mobilization activities, capacity-building at all levels and operational research on oral antibiotics are priorities. The programme faces challenges in combining vertical and horizontal approaches to detection and treatment as community health workers can only refer cases for treatment.

The assessment of yaws prevalence was part of the nationwide household Malaria Indicator Survey (between April and June 2011), a random representative sample based on geographical information system maps of 80 village clusters across six provinces. Fully 22 households were sampled per cluster, with 7500 individuals, and about 3000 people under 15 years old included in the sample.

Using personal assistant data collection, the survey collected malaria blood slides, filter papers, anaemia measurements and a crude clinical assessment of yaws using pictures. It also asked questions on bednet ownership and child immunization coverage. For suspected yaws cases, the survey collected information on a history of a yaws injection treatment within the last 12 months. In those suspected cases of those less than 15 years old, samples were collected for antibody tests and confirmatory enzyme-linked immunoabsorbent assays.

Discussion: The group discussed the relevance of incorporating screening for yaws into other disease programmes, such as malaria or LF MDA, particularly since the prevalence of yaws in other countries is unknown. It was cautioned that proper training first would need to be implemented so that staff could distinguish yaws from other skin diseases.

In Tonga, there have not been any clinical cases of yaws, but routine screening of blood donors has picked up a few positive samples in all age groups. In Papua New Guinea, JCU is collecting sentinel site samples and, with funding, could collect samples for yaws antibody tests. Difficulties in integrating other NTD programmes with yaws were discussed, particularly since yaws activities often fall under skin disease departments and not environmental health. It would be helpful to have more clarity on what the process and dossier for verification for elimination would be for yaws.

2.13.5 Echinococcosis in Mongolia

Dr M. Darmaa, Deputy Director of the National Centre for Infectious Disease with Natural Foci, presented the status of echinococcosis and the programme to control it in Mongolia. Most of the echinococcosis in Mongolia is cystic (CE), given the nomadic lifestyle. Only five alveolar echinococcosis cases were confirmed before 1995. A 1960 study found a prevalence of echinococcosis of 21.9% in the forest-steppe, 20.9% in the steppe and 10.9% in desert regions. A 1972 article analysed 846 CE cases from 21 hospitals during the period 1964-1970 and estimated that the prevalence rates of CE were 1.3 per 10 000 in western provinces, 0.7-1.2 per 10 000 in central provinces and 0.1-0.6 per 10 000 in southern provinces.

Clinical cases of echinococcosis in Mongolia are managed by surgeons. In 1950, 7.8% of all surgical patients in Mongolia were due to CE, whereas the rate was 1.9% in 1990. CE was the cause of 18% of the surgical cases in the First Hospital of Ulaanbaatar in 1993. A total of 144 CE cases were reported during the period 1989-2009. Between 2008 and June 2009, 98 cases had liver cysts (68.1%). Molecular genotyping of 50 hospitalized patients from 12 provinces showed that genotypes G1-3 were present in 68% of patients and G6-G10 in 32%. Future plans for the programme include strengthening an intersectoral committee with health and veterinary sectors, establishing a laboratory for protozoology and looking for support for a prevention and surveillance project.

Discussion: The data suggest high prevalence of CE in Mongolia and a potentially serious public health problem given that it is probably under-diagnosed in herdsman in rural areas without access to the health system. However, the control strategy the government is implementing is still unclear. The strategy used in New Zealand was educating farmers to eliminate feeding raw offal to dogs. In places where it was not possible to boil offal, dogs were given only the head and lower legs of sheep to eat.

The Western Pacific Regional Office will explore the idea of a small grant through Headquarters funding for FBT and will communicate with the Government of Mongolia formally to request more information. It was recommended that experts from China or Iran also might be able to provide technical assistance.

2.13.6 Technical discussion on the way forward

Dr Aratchige led a discussion of the next steps to address these diseases. These disease programmes face many challenges, including the fact that the diseases affect the most neglected of the neglected populations and remain under-assessed in many population groups and geographic areas. They often are not included in national health agendas and most countries and areas lack resources to control them. In some cases, adequate tools for control do not exist. However, countries and areas were urged to think of bundling these programmes with NTD and other disease programmes.

WHO recommended formulating one national NTD plan, which should include disease-specific approaches within a broad advocacy and strategic framework. These plans and strategies should be worked out and implemented in collaboration with other sectors, such as animal health and water supply and sanitation. WHO has guidelines available for trachoma and schistosomiasis and is preparing guidelines for FBT control programmes.

A first step in moving the NTD agenda forward should be an endemicity assessment, which includes mapping of prevalence and intervention coverage. In addition, there might be a need to assess risk factors, knowledge, attitudes and practices and animal-to-human transmission dynamics of particular diseases. Continuing interventions exist for some of these diseases, such as integrated MDA for schistosomiasis in Cambodia, the Lao People's Democratic Republic and the Philippines.

Other interventions are targeted at high-risk groups, such as hot-spot selection and treatment of FBT in Viet Nam. At a minimum, countries and areas should ensure case management is available,

including active or passive detection of exposed or symptomatic cases. Health education is a common intervention in selected countries as well, such as inclusion of prevention practices in school health curricula. Continuing advocacy is needed to work with partners to bring NTDs onto donor agendas and refocus those agendas on those diseases to which less attention has been paid. Integrated national NTD plans can be formulated, as was done in Cambodia, the Lao People's Democratic Republic and Viet Nam. In these plans, programmes should explore covering multiple diseases in a single MDA and combining elimination interventions, e.g. for LF, yaws and leprosy.

Discussion: The group discussed how to include other NTDs, such as emerging zoonotic diseases and cysticercosis, in national NTD plans. Countries and areas were requested to advocate for inclusion of these diseases in food safety strategies, although it was acknowledged that this would be difficult to do without true measure of the burden. In addition, the Western Pacific Regional Office would begin to discuss these issues with the staff responsible for food safety projects.

2.14 Regional orientation and development of an NTD action plan (2012-2016)

Dr Eva Christophel explained the draft NTD regional action plan, which will be presented to the next session of the Regional Committee in October 2012. It follows on a draft plan which was formulated at the Pacific 2009 programme managers meeting but includes more information on individual disease programmes. The goals and indicators included in this plan were presented by Dr Tuan earlier.

There are five objectives of the plan:

(1) to strengthen advocacy and partnerships;

(2) to enhance resource mobilization, policy development and planning;

(3) to scale up access to interventions and treatment (preventive chemotherapy and case management) in areas where the prevalence for specific NTDs reaches the WHO-recommended threshold, in an integrated approach where feasible;

(4) to strengthen integrated NTD M&E and surveillance; and

(5) to strengthen research.

In terms of scaling up access, the prevalence thresholds for implementing MDA are as follows:

(1) LF: Ag >1%;

(2) STH: >20%;

(3) schistosomiasis: >10%;

(4) FBT: >20%; and

(5) Yaws: >10%.

Morbidity control for LF, FBT, yaws, schistosomiasis, trachoma and echinococcosis, including training and surgery camps, are interventions that are included in the action plan. Integrated vector management also is included in areas with overlap of vectors.

To strengthen integrated NTD M&E and surveillance, activities such as creating a framework and database are included in the regional plan. Country activities should focus on reporting intervention coverage and severe adverse events. Assessments are conducted through sentinel and

spot-check sites and TASs for LF, prevalence and intensity surveys for STH and through integration with STH M&E for FBT. In order to strengthen research, countries and the Region must identify gaps and priority needs and improve a mechanism for sharing and dissemination of results.

Discussion: The group noted that a well-crafted executive summary was important because this is often the only part that is read by ministers and donors. Keeping the national plans in the same format as the regional plan also was regarded as a benefit. Without a strategic direction and clear goals and activities, donors will not be interested. Finally, the plan should be helpful when trying to integrate across sectors within a country.

Dr Tuan provided a review on the annual report on NTDs other than LF. So far, 11 countries have submitted their annual reports. They are Cambodia, China, the Republic of Korea, the Lao People's Democratic Republic, Kiribati, Malaysia, Mongolia, the Philippines, Solomon Islands, Tuvalu, Vanuatu and Viet Nam. For STH, the reports are available from seven countries, namely Cambodia, Kiribati, the Lao People's Democratic Republic, the Philippines, Solomon Islands, Vanuatu and Viet Nam, with drug coverage levels ranging from 39%-100%.

For schistosomiasis, all four endemic countries have submitted their reports, with drug coverage levels ranging from 38%-94%. For FBT, four countries (Cambodia, the Lao People's Democratic Republic, the Republic of Korea and Viet Nam) have sent their reports, with drug coverage levels ranging from 9%-89%.

Dr Tuan also presented the NTD national action plan template. In principle, it has the same structure as the regional action plan framework that Dr Christophel presented on Day 3 with the following key components:

(1) National goal

(2) National indicators in which each key NTD will have one indicator

(3) Key activities:

- Strengthen advocacy, coordination, partnerships and social mobilization for NTDs.

  (i) Develop, review and update national policies, strategies, guidelines and standard operating procedures.

  (ii) Formulate or update NTD national action plans which can be used as fundraising tools.

  (iii) Intensify resource mobilization for NTDs at regional, national and subnational levels.

- Enhance resource mobilization, national policy development and revision and planning in order to scale up and sustain NTD programmes.

  (i) Develop, review and update national policies, strategies, guidelines and standard operating procedures.

  (ii) Formulate or update NTD national action plans which can be used as fundraising tools.

  (iii) Intensify resource mobilization for NTD at regional, national and subnational levels.

  (iv) Strengthen the integration and linkages of NTD programmes and financial plans into sector-wide and other national financing mechanisms.

- Scale up access to NTD interventions and treatment, including strengthening of NTD programmes and NTD service delivery.

  (i) Scale up mass drug administration and preventive chemotherapy for NTDs in areas where the prevalence for specific NTDs reaches the WHO-recommended threshold, in an integrated approach where feasible.

  (ii) Strengthen and scale up integrated case management for NTDs and prevent disability as part of primary health care and hospital services.

  (iii) Strengthen integrated vector management for targeted NTDs.

  (iv) Strengthen primary health care in the context of control and elimination of NTDs.

- Strengthen integrated NTD monitoring and evaluation and surveillance.

  (i) Create and promote an integrated national NTD M&E and surveillance framework and database (as part of the global NTD data management system and global NTD plan).

  (ii) Conduct and strengthen integrated national M&E and surveillance activities for NTDs in the context of national health information systems (including strengthening reporting and response to severe adverse events).

- Strengthen research capacity on NTDs.

2.15 Development and/or review of national plans

Participants were divided into four groups to work on NTD national integrated action plans. These groups were: Group 1 (those who have intensive/multi-NTD programmes), Group 2 (those who have programmes for one or two NTDs), Group 3 (those who are conducting mass deworming), and Group 4 (those who may not have NTD programmes yet).

2.15.1 Group 1: Intensive NTD programmes

The Lao People's Democratic Republic

(1) For STH, the programme needs to maintain high coverage in preschool-aged and school-aged children and monitor prevalence levels in 2016. It will look for continued support from NGOs, the private sector and WHO, specifically for women of childbearing age.

(2) For FBT, the programme needs to scale up MDA from one district to four provinces, starting with a survey targeting high-risk sites to determine prevalence and then implementing MDA. These activities were supported in the past by WHO, but the programme needs a budget to continue MDA for several years and then carry out an evaluation.

(3) For schistosomiasis, the programme needs to scale up coverage of MDA in two targeted districts and implement an assessment in spot-check sites. In addition, prevalence information for other districts is 10 years old and should be reassessed. The programme needs external funding for MDA and health education.

Cambodia

(1) For STH, the programme will continue with MDA for preschool-aged and school-aged children and women of childbearing age. It needs support for surveys and community-based assessments in six provinces for school-aged children.

(2) For schistosomiasis, the programme will continue MDA in two provinces.

(3) For FBT, the programme will train personnel for control in four provinces. Mapping of baseline endemicity is needed in four provinces and knowledge, attitude and practice studies conducted in selected villages. After collecting the prevalence data, the programme will decide whether MDA is necessary.

Viet Nam

(1) For STH, the programme will continue and scale up MDA for preschool-aged children in 18-35 provinces, for school-aged children in 30-45 provinces and women of childbearing age in 15-25 provinces. It also will implement behaviour change communication activities, train health care workers and teachers and assess prevalence in 12 provinces.

(2) For FBT, the programme will continue MDA to high-risk people in four provinces during the period 2011-2012. It will then assess prevalence to determine next steps.

(3) It also would like to determine if *Toxocara canis* (dog roundworm) is a public health problem compared with other human parasitic diseases.

The Philippines

(1) For STH, the programme needs to increase coverage to 80% in 1-12 year olds and start MDA in special population groups, such as women of childbearing age and ethnic groups, by 2012. It was to assess the effects of LF MDA on STH prevalence in 2011 and assess STH prevalence in sentinel sites. The programme also aims to implement capacity-building in diagnosis and case management among health workers and orient volunteers and teachers on MDA. The programme needs support for travelling allowances for local health workers and drug distributors. It also would like to host a partners meeting to map where other partners are giving assistance.

(2) For schistosomiasis, the programme needs to increase MDA coverage to 80% through 2016. It would like to conduct rapid assessments during and after MDA to know if there were missed areas. In established endemic areas, the programme will monitor prevalence and snail infection. Clinical cases in adults and children need to be managed by the health system. Severe adverse events management guidelines will be disseminated. The programme will train health workers on diagnosis and treatment and orient drug distributors on MDA. It needs support for the procurement of praziquantel, particularly because there is hesitation to use the same company because many side-effects were reported in the past round. There also is a need to procure praziquantel in suspension for children. Procurement through the Philippines company is much more expensive than through WHO.

(3) For FBT, the programme needs baseline data on all FBT, starting with paragonimiasis in 2011. It will implement a knowledge, attitude and practices survey to identify areas with risky behaviours and then decide whether to implement selected vs. mass drug administration. It needs to build the capacity of health workers in diagnosis and treatment. It is lacking funds for large surveys.

(4) The programme will have integrated components of capacity-building, orientation of partners on NTDs, health promotion and communication, advocacy and partnership- building, vector management and morbidity control.

2.15.2 Group 2: Programmes for one or two NTDs

Brunei Darussalam

(1) The NTD plan is focused on LF, with the goal of elimination by 2018. While there is no data on STH, it is likely not a problem. For LF, the programme will conduct community mobilization for MDA in 2012, two rounds of MDA in 2012 and 2013 with two follow-up TAS surveys. These activities will be funded by the Ministry of Health.

Malaysia

(1) STH is considered a problem in specific population groups and the programme will conduct surveys in these groups to confirm. Cases currently are detected and treated at the primary health care level. Advocacy is needed to the ministries of Health and Development, as well as local government, to ensure support for social mobilization and MDA.

(2) For LF, two rounds of MDA will be conducted in 2011 and 2012 as well as a morbidity survey so that clinics can register cases and train patients in lymphoedema management. Integrated vector management for LF and malaria, including bednets and spraying, is continuing.

(3) The programme also aims to strengthen regional research support, such as the regional tropical disease conference that will be hosted by Malaysia later this year.

Mongolia

(1) For STH, there is limited information on prevalence, but the WHO 10-year review showed increasing prevalence. There is a need for the WHO Country Office to work with the Ministry of Health to analyse STH data and potentially carry out a baseline survey.

The Republic of Korea

(1) For FBT, the programme will implement a national survey (0.1% of the population) to measure prevalence and intensity of intestinal parasites in 2012.

2.15.3 Group 3: Conducting mass deworming

The Federated States of Micronesia

(1) STH activities are carried out by the nutrition programme as part of the vitamin A campaign, so the LF focal point will coordinate with it to share data. There is potentially a need to conduct a survey to re-evaluate the situation of STH. In addition, the programme would like to formulate a national strategy and policy for NTDs. During preparation of the national NTD action plan, the country would convene a roundtable to bring other sectors and departments on board.

Kiribati

(1) For STH, the programme will continue deworming in three groups of islands, from 2012 onwards. It needs budgetary support for drug procurement, transport, laboratory technician training for stool surveys and collection of 300 samples from schools in the outer islands. This is a potential budget gap of US$ 10 000.

(2) For yaws, there is a need for budgetary support for transport and technical assistance to collect blood tests in the five islands with a past history of yaws.

Tuvalu

(1) The national NTD action plan will include environmental sanitation and hygiene activities and community awareness-raising. The LF focal point will collaborate with the STH programme staff upon return. The plan will include a survey for positive leprosy cases and training of health staff in clinical case management.

Vanuatu

(1) A survey is necessary to provide feedback to health staff and teachers on the prevalence of STH.

(2) For yaws, the outcomes of the malaria survey, which included active case-finding for yaws, will provide a direction for the national action plan. Most likely there will be a need to develop IEC materials and implement more active case-finding.

Cook Islands

(1) STH activities will continue through drug distribution by public health nurses, but there is an outstanding need of support for hygiene education for schoolchildren and the provision of safe water and sanitation. JCU will help support a stool survey during the period 2012-2013.

(2) Vector management also will be included in the plan, including data from community risk maps. There is a need of US$ 16 708 for chemicals and equipment for insecticide spraying and for response to dengue outbreaks.

Discussion: Cook Islands was asked to send updated data on deworming activities to the Western Pacific Regional Office. The group asked if WHO Headquarters could develop clear guidance on diagnosing and treating strongyloides, particularly given the risks of treating infected patients with immunosuppressive drugs.

The Marshall Islands

(1) The STH programme is under the nutrition section and supported by UNICEF. MDA has been continuing twice a year for many years for 2-14 year olds. The LF focal point will work to share data with the STH programme upon return. Technical advice is needed regarding when STH MDA can be stopped and how to formulate integrated guidelines for STH and LF. The programme will need to work with local NGOs and improve collaboration between the ministries of Health and Education. The LF programme focal point requested a letter from WHO to the Minister and Secretary of Health with advice on how best to develop an integrated programme, including the collaboration and sharing of data.

(2) For LF, surveys will be conducted in high schools on four islands, but the programme needs money for per diems, travel and ICTs.

2.15.4 Group 4: No NTD programme

Niue

(1) For STH, the programme only found one positive of 200 students sampled in 2001. It will conduct a prevalence survey in 2012 among about 200 students, but it needs technical assistance for stool sampling and training for laboratory technicians. A deworming programme has been implemented for 20 years through public health nurses, including testing and treating new school entrants. The budget gap is at least US$ 3000.

Discussion: Some group members questioned why a STH programme should be continued if prevalence is so low. Given that the sample size of the prevalence survey was small, JCU volunteered to help assess whether the water and sanitation situation in Niue is such that it is a risk factor for continued STH transmission.

French Polynesia

(1) For STH, a 2001 survey among 150 school children showed low prevalence (6% urban, 12% rural). While STH is not a public health problem, there is concern about what will happen after LF MDA stops. Water and sanitation coverage levels vary by archipelago.

(2) Scabies has a high prevalence among certain populations, but there are no funds to buy ivermectin for mass treatment.

Tonga

(1) A STH baseline survey showed a prevalence of 10% before five rounds of LF MDA. The programme would need US$ 25 000 to support a collection of stool samples during the child transmission survey in September 2011 to assess current prevalence.

Palau

(1) The last deworming campaign against STH was about 25 years ago. No stool analysis has been conducted since 2008 since regular surveillance did not find any positives. Senior laboratory technicians have retired and there is no quality control for testing. However, every food handler is required to have a public health certificate, which requires stool testing so the data could be analysed for prevalence rates. The programme plans to do a stool survey in conjunction with the LF survey of 5-14 year olds in 2012.

(2) As for leprosy, Palau has reached the elimination target but is still seeing two to four cases a year. So it likely will add a skin survey to the LF/STH survey or a tuberculosis survey.

Discussion: The group discussed how communication should move forward after the meeting, particularly to help countries finalize their action plans. Support for a coordinator post in Fiji for the Pacific countries and areas should be prioritized, and many thanks were given to Masayo Ozaki for her excellent work. In addition, JCU committed to facilitating the LF/STH survey in Palau, including support for supplies, technical assistance for survey design and laboratory skills. JCU also could preserve stool samples for any country that requests them, which can be sent upon receipt of a letter from the country customs office.

Samoa

(1) For STH, the programme implemented STH MDA in 2008 but has not assessed if the prevalence has decreased. There were plans to conduct a survey in October and November 2011 among 50 students each from the third grade in five primary schools; however, the laboratory capacity to analyse these samples is limited. In terms of water and sanitation, the government signed a five-year European Union-funded project, which includes improving safe water supplies, wastewater facilities and sanitation. This project should ensure that all primary schools will be covered with toilet blocks. The health promotion unit also will continue with programmes to improve the hygiene knowledge of students and teachers. The water supply is improving with two main suppliers and a water quality monitoring unit. The programme plans to implement STH MDA in 2011 and 2012 with a follow-up prevalence survey in 2015.

Wallis and Futuna

(1) The programme would like to combine an STH survey with the LF TAS. However, this activity will need to be discussed with the laboratory because it is unclear if the requisite capacity, equipment and logistics exist. Water and sanitation coverage is lower on Futuna, so the programme might stratify the STH survey by island. It will need external funding to support this survey.

Papua New Guinea

(1) In terms of STH, a number of stakeholders, including the Department of Education, World Vision and the WHO Country Office, need to be consulted to formulate a plan of action with the school health programme. The LF programme would need to identify funding sources, build capacity for STH surveys and develop IEC materials for MDA and for hygiene improvement. It would like to pilot the prevalence survey and MDA in one district. The combined STH and LF programme could be marketed as a "no more worms" programme in order to attract the attention of donors such as AusAID and World Vision.

Fiji

(1) In terms of STH, the deworming programme started nationwide in 2010 as part of a micronutrient supplementation program based on a nutritional survey which found high levels of anaemia and iron deficiency in some parts of the country, but no parasitic evidence was collected. It is a four-phase programme targeting all primary school-aged children, secondary school-aged children, lactating mothers and women of childbearing age. The programme needs technical assistance to finalize an epidemiological assessment. In addition, there is a need for an intersectoral approach and further integration of programmes within the Ministry of Health.

3. CONCLUSIONS

The main conclusions of the meeting were as follows:

3.1 General

3.1.1 Countries and areas in the Region have made remarkable progress, especially in LF, in which the goal of eliminating LF in most countries and areas is in sight. 3.1.2 Progress has been achieved despite huge logistic challenges and with a minimum of budget, some dedicated long-term donor support and the extreme dedication and hard work of the people who implement the programmes.3.1.3 One aspect of LF, which has been neglected, is morbidity alleviation and disability prevention and needs to be integrated into the primary health care and curative system.3.1.4 As LF declines, emphasis and enthusiasm has to carry over to other NTDs, building on the LF programme structures with the expectation of similar success.3.1.5 New donors and sufficient new funds are needed to finish the job because in the endgame phase programmes require more funds to collect quality data from well-designed and carried-out surveys.3.1.6 New WHO guidelines have provided a framework on important M&E issues, especially sampling, which now have been adapted to individual country situations so that the way forward is clear.3.1.7 Every country should have a national NTD task force and focal point.

3.2 Recommendations were divided into categories of LF elimination, resource mobilization and partnerships, policies, integration, implementation, guidance, M&E and programme support.

3.2.1 LF elimination

a. LF elimination in the Western Pacific Region must be finished, with 10 countries and areas achieving the elimination goal by 2016 and the remaining 12 countries and areas by 2020.

b. Papua New Guinea must be the Region's major focus in order to achieve LF elimination by 2020, using innovative strategies and multisector, multipartner approaches. These approaches include MDA, DEC-fortified salt and integrated vector management.

c. New donors and sufficient new funds should be mobilized to finish the job because the endgame phase requires more funds to meet the level of quality control required.

3.2.2 Resource mobilization and partnerships

a. More funds need to reach countries and areas to allow them to finish the job with LF and to strengthen other NTD programmes aggressively. Resource mobilization needs to be massively expanded in the Region at all levels.

b. New partnerships should be created, existing ones expanded and intensified and stakeholders and their possible inputs mapped because they are crucial to make the Region's huge and ambitious agenda happen. The Western Pacific Regional Office should map organizations and potential partners in the Region and share this information with countries and areas.

c. The creation of a Western Pacific Regional Trust Fund for NTDs should be pursued.

d. A regional coordination mechanism, possibly through the RPRG, for all drug donations should be considered in consultation with donors.

e. Drug donations for additional NTD drugs should be pursued.

f. A special partnership to support Papua New Guinea should be formed that can raise the required funds needed to move the LF programme forward to elimination and in the process address other helminth diseases.

3.2.3 Policies

a. The NTD Regional Action Plan, including indicators, should be finalized and presented to the Regional Committee for endorsement as soon as possible.

b. Each country and area should finalize its NTD plans in line with the regional plan and make NTD a component of their national health policy, thereby ensuring that there are clear goals and activities for NTD.

c. The scope of NTD programmes should be expanded to include scabies, strongyloides, and dengue where relevant.

3.2.4 Integration

a. NTD should be an integrated part of maternal and child health and school health programmes because they have a major impact on the health and development of children. In the Pacific, they should be an integral part of the Healthy Islands Initiative and incorporated into programmes on food safety and water supply and sanitation.

b. Integration of NTD activities with other programmes, e.g. maternal and child health, STH, leprosy, yaws, malaria, environmental health, and sectors such as education and the commercial sector, should be pursued vigorously.

c. NTD interventions should be combined to make best use of resources, e.g. combining LF transmission assessment surveys with deworming campaigns or surveys and case finding.

3.2.5 Implementation

a. The test-and-treat strategy should be submitted to the STAG-NTD for review and endorsement as part of the LF elimination strategy for small populations.

b. Strict implementation of directly-observed treatment must be a key part of the LF strategy as countries move to elimination.

c. Each country actively should implement LF morbidity management and disability prevention as an integral part of its primary health care system (including active case-finding and hydrocele surgery).

d. Women of childbearing age should be included in deworming activities.

e. Quality assurance of NTD medicines should be addressed urgently: inclusion of NTD medicines in the WHO/UNICEF prequalification project should be pursued and funds raised.

f. Availability of free ICT and Brugia Rapid tests should be expanded to all countries and areas which need it.

g. Severe adverse events should be monitored, reported and responded to by national programmes, with support from WHO when needed. The regional NTD database should include severe adverse events.

3.2.6 Guidance

a. Headquarters should provide clear guidance on when to scale down STH MDA, on criteria for verification of yaws elimination and on the use of stool test methodologies other than Kato Katz for helminth surveys, especially in the Pacific.

b. Headquarters should develop a manual on STH for programme managers.

3.2.7 M&E

a. Remaining issues with the new LF guidelines, e.g. sampling in smaller countries, timing of surveys, should be worked out on an individual country basis.

b. National NTD data on prevalence and/or intervention should be reported annually to the Western Pacific Regional Office by all endemic countries and areas, based on a revised simpler form.

c. Impact of STH MDA should be periodically assessed (3-5 years).

d. The impact of interventions, including vector control and surveillance, for one disease on other diseases should be monitored, e.g. long-lasting insecticide-treated nets and indoor residual spraying for malaria on LF in Papua New Guinea, LF MDA on STH.

3.2.8 Programme support

a. The two subregional programme review groups that have been operating for LF (Mekong-Plus and the Pacific) should be reorganized into a single Western Pacific RPRG that covers not only LF but all the NTDs. The membership of the RPRG should include a broad spectrum of technical expertise covering both LF and other NTDs. New terms of reference need to be agreed.

b. The mandate of PacELF should be revised to include other NTDs.

ANNEX 1

WORLD HEALTH ORGANIZATION

ORGANISATION MONDIALE DE LA SANTÉ

REGIONAL OFFICE FOR THE WESTERN PACIFIC
BUREAU RÉGIONAL DU PACIFIQUE OCCIDENTAL

REGIONAL PROGRAMME MANAGERS MEETING ON LYMPHATIC FILARIASIS AND OTHER SELECTED NEGLECTED TROPICAL DISEASES

WPR/DCC/MVP(5)/2011.1
24 May 2011

Nadi, Fiji
30 May-2 June 2011

ENGLISH ONLY

PROGRAMME OF ACTIVITIES

Day 1 (Monday, 30 May 2011)
Chairperson: Prof. C.P. Ramachandran

07:45	Registration
08:00	Opening remarks – ***Western Pacific Regional Director (video message), DCC and WR/DPS*** Welcome address – ***Ministry of Health, Fiji***
08:30	Self introductions
08:45	Designation of Chairman, Vice-Chairman and Rapporteurs Administrative announcement Group photograph / coffee break

Lymphatic Filariasis (LF) part

09:30 Global and regional update

- Update on global programme – ***Dr Ichimori***
- Overview of LF situation in WPR – Mekong plus and Pacific– ***Dr Tuan/Ms Ozaki***
- Overview of the new LF and M&E guideline – ***Dr Ichimori***
- Specific aspects of the new guideline – ***Dr Ottesen***
- LF morbidity control – regional experience **– *Dr Capuano***

12:30 **Lunch break**

13:30 Country reports + discussion

- Group 1 – AMS, CAM, COK, MSI, NIU, TON, VAN & VTN
- Group 2 – BRU, FIJ, FRP, KIR, LAO, MAA, PHL, SMA & TUV
- Group 3 – MIC, NEC, PAL & WAF
- Group 4 - PNG

15:30 **Coffee break**
15:50 Presentation of the matrix + discussion

Day 2 (Tuesdays, 31 May 2011)
Chairperson: Prof. C.P. Ramachandran

08:00 Wrap-up Day 1

08:15 Presentations by partners

- Task Force for Global Health – ***Dr Ottesen***
- GAELF – ***Ms Fahy***
- GNNTD – ***Ms Miller***
- GSK – ***Dr Wright***
- JCU – ***Dr Melrose***
- JICA – ***Ms. Nakaoka***

09:15 Panel discussion on challenges

10:15 **Coffee break**

10:30 Country experience

- MDA and country-tailores intervention strategy in the Pacific – Fiji
- Stopping MDA – Cambodia
- Post MDA surveillance – Vanuatu

Discussion

- Update on research of vector control in the elimination in the Pacific– ***Dr Bossin***

12:10 **Lunch break**

13:10 Group work to draft plans of action and determine financial requirements

14:30 Presentation of draft plans of action

- Post MDA surveillance + discussion
- Reassessment + discussion
- MDA and/or other forms of intervention + discussion

17:50 Wrap-up LF

Day 3 (Wednesday, 1 June 2011)
Chairperson: Dr Padmasiri Aratchige

08:00	Update and review of selected NTDs (non-LF) • Introduction and objectives for NTD – ***Dr Christophel*** • Regional goal, strategy and update on selected NTDs – ***Dr Tuan***

Soil transmitted helminthiasis (STH)

08:30	Success stories – CAM, KIR, LAO, PHL & TUV
09:20	Children Without Worms – ***Dr Kim Koporc***
09:30	Matrix of the distribution of roles among partners involved in mass deworming – ***Dr Tuan***
09:45	**Coffee break**
10:30	School-based intervention and the role of education sector for STH programme – ***Mr Schratz*** Discussion
12:00	**Lunch break**
13:00	Topics on other NTDs • Foodborne trematodiasis (in developed and developing countries) – ROK & VTN • Schistosomiasis (success stories) – CAM • Yaws (elimination plan) – VAN • Echinococcosis (update) – MOG
15:15	**Coffee break**
15:30	Regional orientation and development of national plans of NTDs – ***Dr Christophel***/***Dr Tuan*** • Regional action plan and its indicator • Group work to review the revised version Discussion

Day 4 (Thursday, 2 June 2011)
Chairperson: Dr Padmasiri Aratchige

08:00	Regional orientation and development of national plans of NTDs (con't.) • National action plan template – ***Dr Tuan*** • Regional/national NTD database – ***Dr Tuan*** • Resource mobilization – ***Dr Christophel***
10:00	**Coffee break**
10:20	Development and/or review of national plans (group work) • Review, discuss the situation in each country • Develop, revise, finalize the skeleton of the national action plan for each country
12:00	**Lunch break**
13:00	Group work (con't.)
14:00	Group work presentation + discussion
15:15	**Coffee break**
15:35	Conclusions and recommendations

ANNEX 2

WORLD HEALTH ORGANIZATION

ORGANISATION MONDIALE DE LA SANTÉ

REGIONAL OFFICE FOR THE WESTERN PACIFIC
BUREAU RÉGIONAL DU PACIFIQUE OCCIDENTAL

REGIONAL PROGRAME MANAGERS' MEETING ON LYMPHATIC FILARIASIS AND OTHER SELECTED NEGLECTED TROPICAL DISEASES

WPR/DCC/MVP(5)/2011/IB/2
2 JUNE 2011

Nadi, Fiji
30 May – 2 Jun 2011

ENGLISH ONLY

INFORMATION BULLETIN NO. 2

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