Report of the Fourth Annual Business and Technical Meeting of the Asia Pacific Malaria Elimination Network (APMEN)

7-10 May, 2012

JW Marriot, Seoul, Republic Of Korea

APMEN Co-Chairs
Sir Richard Feachem and Dr Byung-Yool Jun

APMEN Secretariat
Prof. Maxine Whittaker, Dr. Roly Gosling,
Ms Arna Chancellor, Ms Cara Smith Gueye, Ms Amanda Lee
Welcome Reception
MC: Ms. Mina Cha

Welcome and Introductions

Dr Byung-Yool Jun
Director Korea Centers for Disease Control,
APMEN Co-Chair

Sir Richard Feachem
Director, Global Health Group University of California, San Francisco, USA
APMEN Co-Chair

Formal Dinner inclusive of a Cultural Show funded and supported by Korea Centers for Disease Control

Day Two – Tuesday 8 May, 2012

Opening Remarks

Dr Myeong-Chan Cho, General Director, Korea National Institute of Health on behalf of Dr Byung-Yool Jun,
Director, Korea Centers for Disease Control, APMEN Co-Chair

Sir Richard Feachem, Director, Global Health Group, University of California, APMEN Co-Chair

Dr Richard Cibulskis, Coordinator, Strategy, Economics and Elimination of the Global Malaria Programme, on
behalf of Dr. Robert Newman, Director of the Global Malaria Program, World Health Organization

Professor Graham Brown, Board Member, Roll Back Malaria, on behalf of Dr Thomas Teuscher, Interim Executive
Director of the Roll Back Malaria Partnership

Dr Steven Bjorge, Team Leader, Malaria and other Vector borne and Parasitic Diseases Team, Cambodia, World
Health Organization, on behalf of Professor Shin Young-soo, WHO Regional Director for the Western Pacific

Dr Krongthong Thimasarn, Medical Officer, Malaria, Myanmar Office, World Health Organization, on behalf of Dr.
Samlee Plianbangchang, WHO Regional Director for South-East Asia

- Thank you to Dr Byung-Yool Jun, Director of the Korea Centers for Disease Control and the Korea National
  Institute of Health teams that have helped plan and support APMEN IV in Seoul.
• APMEN has again grown since APMEN III in Kota Kinabalu with new Country Partner, Cambodia, and new Partner Institutions, the Malaria Research Centre, Universiti Malaysia Sarawak and the Mahidol Vivax Research Center.

• In recent years, we have seen the malaria map shrink. If we are going to be successful, we cannot relax, cannot let our guard down. Malaria elimination is a long term aim, but it can be reached. Japan, Republic of Korea, Singapore, and Brunei have reached elimination. Yet the 1993 resurgence of malaria in the Republic of Korea and outbreaks in the Bahamas and Jamaica demonstrate how fragile this success can be. Continued advocacy for investment in malaria control is needed.

• Some of the biggest needs right now are areas where APMEN can play a role: drug and insecticide resistance, capacity building, surveillance, *Plasmodium vivax* (*P. vivax*), a joint strategy for the Asia Pacific Region and ensuring information exchange and documentation of successes towards elimination. APMEN countries are working together and sharing experiences.

• In the WPRO region, the people most at risk for malaria live or work in forest canopy, including migrant labourers, ethnic minorities, subsistence farmers and military personnel. In the SEARO region, the highest burden exists in ethnic communities, subsistence farmers, forest and forest fringes, and mines, hydropower and construction projects. We need to find ways of locating and targeting these at-risk populations. Non-health sector involvement, such as mining firms, need to be involved in the fight. A regional approach will be required, with all sectors and all partners.

• The Republic of Korea aims to re-eliminate malaria by 2015, but needs the cooperation of the Democratic People’s Republic of Korea. APMEN should be involved in the creation of a malaria-free Korean peninsula. Collaboration with partners is key.

• Ideas for APMEN include: 1) strengthening surveillance systems, 2) sustaining financial support through advocacy and good results, 3) strengthening financial partnerships, 4) community partnerships, and 5) test mechanisms for effective delivery of interventions.

• Through collective actions, evidence-based interventions, and sustainable finances, we can reach the goal of eliminating malaria.

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Session 1: Malaria Elimination: Progress, Prospects and Priorities
Chair: Dr Myeong-Chan Cho
Presenter:
Sir Richard Feachem, APMEN Co-Chair, Director, Global Health Group, University of California, San Francisco, USA

[see presentation slides]

The global map portrays progress made in the last century. APMEN highlights in 2012 include a growing membership, training and capacity building, building of the evidence base, and further recognition of APMEN. Estimating on a 5-year basis, approximately $20 million (4 million per year) would be required to adequately continue to support APMEN. APMEN is currently in discussions with a number of potential funders. In the APMEN countries, total malaria cases have declined: there was a 60% decline 989,248 (2000) to 398,067 (2010). 79% of all APMEN malaria cases occurred in Cambodia, Indonesia, and the Solomon Islands.
Malaria in Sri Lanka now has a new face. It has become a disease of adult men caused by *P. vivax*. We also can see this in the Republic of Korea and it is predicted that in every country we will see this trend. However, women and children remain vulnerable and the risk of resurgence will remain very real – protection of these population groups must be continued.

Priorities for the Network and the region include:

1. Containment and elimination of artemisinin-resistant *Plasmodium falciparum* (*P. falciparum*).
2. Surveillance and response systems: increase sophistication of case identification, including identification of indigenous and imported cases. This will lead us to stamp out local foci that clearly exist in areas where cases are contracted. Countries well ahead in this area are not necessarily the largest or richest.
3. Diagnosis of *P. vivax*, especially subclinical infections, and treatment.
4. *P. knowlesi* is not a big issue yet for elimination, but has uncertainty and we need to know more. We need to know where exactly it is and where it is going. It needs to be mapped and we need to track it.
5. Maintaining the gains. A comprehensive account of 75 malaria resurgences since 1930 was documented recently. The most common cause of resurgence is the decline in financing for malaria and the break-up of national malaria control programmes. Most leaders do not yet know this story.
6. Sub-regional malaria elimination goals could give extra momentum to APMEN efforts, such as a malaria-free Korean peninsula, a malaria-free Borneo, *P. falciparum*-free Mekong Delta.

**Discussion**

- In some countries malaria incidence is of priority, such as in Papua New Guinea. How does *Plasmodium knowlesi* rank in terms of priority?

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**Session 2: Overview of malaria elimination in the Republic of Korea**

Chair: Dr Chong Chee Kheong

Presenter:

Dr Hye-Kyung Park, Director of Division of Communicable Disease Control, Korea Centers for Disease Control

[see presentation slides]

The Republic of Korea (ROK) is a country of 50 million people. The main malaria risk areas are located near the DMZ, including Incheon City, Gyeonggi, and Gangwon Province. Last year there were 800 cases of local malaria and 50 imported cases. The most important risk is reintroduction of *P. falciparum* from travelers and importation from the Democratic People’s Republic of Korea (North Korea). ROK currently supports vector control in DPRK. Collaboration with the private sector is important. ROK was 20 years malaria free up until 1993, when a single infection in a soldier then led to 4,000 cases in the next five years.

**Discussion**

- Definition of malaria elimination in ROK is < 1/100,000. The definition for other countries is zero indigenous cases in the population.
- DPRK has not defined areas for control, pre-elimination and elimination. It is possible to coordinate stratification through our Chinese APMEN representatives who work with DPRK.
• Surveillance system and its inclusion of private practitioners and/or private labs: they have to report by law.
• The cost of diagnosis and treatment: there is a universal insurance plan for all South Koreans that includes a small cost. Non-residents can get free malaria diagnosis and treatment at public health facilities.

Session 3: Country Elimination Profiles - Cambodia
Chair: Dr Wichai Satimai
Presenter:
Dr Kheng Sim, Deputy Director, National Center for Parasitology Entomology and Malaria Control, Cambodia

[see presentation slides]

Cambodia has seen major decline in malaria incidence and mortality and now aims to eliminate malaria in phases by 2025. The Cambodian Prime Minister announced the new strategy in 2011. The national office sets the policies which are then implemented by decentralized provincial and district health departments. Cases due to \textit{P. falciparum} have reduced. Malaria is now considered an occupational risk (forest-related) among males 15-49 years. Scale up of Village Malaria Workers (VMW) has occurred since 2004 and there are now over 1,500 VMW. The project has demonstrated significant reductions in test positivity rates, malaria incidence and mortality. Three areas (Pallin, Battambang, and Kampot) of Cambodia have seen, since introduction of long-lasting insecticide-treated nets (LLIN) and early diagnosis and treatment (EDAT), a significant decrease in artemisinin-combination therapies (ACT) failure rates. Vector control is an integral part, with an aim of 100% net coverage by 2012. Indoor residual spraying (IRS) is only conducted in areas with active cases. A malaria information database has been established in 20 provinces. The movement of mobile populations from non-endemic to highly endemic forested areas poses a challenge and one strategy implemented is the provision of LLIN hammocks in Pallin. Strong collaboration from neighboring countries assists with this work. The ban on oral artemisinin monotherapy in 2011 has been enforced by the Department of Drugs and Food & Ministry of Interior, Anti-Economic Police.

Discussion
Discussion focused on counterfeit and substandard drugs, and the use of Malarone. The resistance discussion focused on treatment without confirmation, non-compliance of proper dosage. 75% use the private sector when they have a fever.

Session 4: Study Tour to the Demilitarized Zone (DMZ) and Paju Clinic
Chair: Dr Won Ja Lee and Dr Kim Jung Yeon
Presenters:
Ms. Tae-Young Lim, Head of Preventive Medicine Team, Department of Public Health Administration
Overview of study tour:
- The APMEN participants visited the Demilitarized Zone (DMZ) between North and South Korea and Paju Clinic in a border province close to the DMZ. The first reoccurrence in malaria occurred in Paju City in 1993 and since that time there have been multiple outbreaks along the Imjin River. Paju is considered an endemic zone in Korea, and there are 390,000 people in Paju City. There were 154 civilian malaria cases in 2007 and 52 in 2011. Malaria impacts more males than females, and a younger age group of between 20-29 years. Joint control exercises are held with the Gaesung industrial district of North Korea, by providing repellent agents and pesticides.

Optional Han River Dinner Cruise funded and supported by Korea Centers for Disease Control

Day Three – Wednesday 9 May, 2012
Session 5: Country Partner breakfast briefing of the APMEN Vector Control and Vivax Working Groups
Presenters:
- Dr Moh Seng Chang, Chair, Vector Control Working Group
- Professor Ric Price, Chair, Vivax Working Group

Day Three : Introduction to theme: Efficiency
Facilitator:
- Dr Jim Tulloch, Independent Consultant, former Principal Health Adviser, AusAID

Elimination will require efficiency. In addition to presentations that focus on elimination, facilitator Jim Tulloch was invited to reflect and encourage debate on how to make elimination an efficient strategy, based on his experiences in the Mekong Region with the artemisinin resistance containment project.

Evaluation, rigor, and management of activities must be boosted. There is a high level of dependence on external funding and a lack of consistency within programmes. Activities were discontinued because financing came to end, not because of a programmatic decision. The extra funding has allowed for programs to think “big” and scaling up has been dramatic. Yet with this funding there have been no incentives to encourage efficiency. In a context of less money there may have been different decisions. Reduced funding can also lead to innovation, which means finding something which is better, cheaper, or both.

Discussion
- Artemisinin resistance: globally, is there more that we can do? We need to continue to raise the political profile and not separate the resistance challenge to the rest of malaria control and elimination. All of these are questions of intensity and rigor of response. The resistance issue is an elimination issue.
## Session 6: Surveillance

Chair: Dr Albino Bobogare

Presenters:
- Dr Richard Cibulskis, Coordinator, Strategy, Economics and Elimination, Global Malaria Programme, World Health Organization
- Dr Christina Rundi, Public Health Physician, Vector Borne Diseases Division, Disease Control, Ministry of Health, Malaysia
- Dr Lasse Vestergaard, Medical Officer, Malaria, other Vector borne and Parasitic Diseases, World Health Organization, Country Office, Philippines
- Dr Rabindra Abeyasinghe, Immediate Past APMEN Advisory Board Chair
- Dr Herdiana Hasan Basri, Child Survival and Development Cluster - CDC Officer, UNICEF Banda Aceh, Indonesia

[see presentation slides]

The new WHO surveillance guidelines and an infographic on Test, Treat and Track (T3) were shared. Preliminary results from the APMEN Case Investigation Survey were shared, highlighting that while all respondents report conducting case investigation, the activities conducted and information collected differs across the region. A presentation highlighted the utility of targeting interventions and use of microstratification, comparing its use in strong vs. weak health systems. Experiences from the surveillance system of Sabang Municipality, Aceh Province of Indonesia were presented which included: stratification processes, active and passive case detection, case investigation, mass blood surveys, and real-time reporting.

### Discussion

- The case investigation survey shows that surveillance is an intervention, whether it is a vertical program or an integrated part of the national surveillance program. In most cases, malaria is a notifiable disease, but in many cases it is not as effective. In some countries, it is at a sub national level. As part of elimination work, there is a need to improve routine surveillance systems.
- Case investigation must take into account the entomology and locate and treat local vectors.
- The T3 strategy is already adopted in many countries. T3 has not yet been costed.
- For stratification, should programs reach the most affected areas first or go for early wins: with limited resources, how should one balance? Sri Lanka stratified its response to malaria in 1996, with WHO assistance. There the health system was relatively strong. Simultaneous is the best approach, if possible.
- Aceh is an inspiring story; there has been great progress in a short amount of time considering the political problems and the tsunami. East of the Wallace Line, are there primates and do they include macaques?
- Surveillance includes response, but where do we respond - around the radius around the case, the case’s residence, the place where the case received infective bites, or around the known local breeding sites – which radii make the most sense? The goal is to find cases, whether they are imported or indigenous, and methods must be effective and cost-effective. There is a great deal of uncertainty and this impacts effectiveness and cost. Choice of radius has a huge impact on cost.
- The scope of active case detection activities in Sarpang: mass blood screenings are done to see how many are asymptomatic (immunity is low), but this is not done routinely because it is costly and time-intensive. Adults do not present with symptoms and they have low parasite density.

**Reflections on efficiency:**
Efficiency starts with clarity about what you want people to do. The responses to surveillance data was highly variable, there is a lack of clarity about what is done and why. Simplicity is best – tailor response to your capacity, make sure it is operationally sensible. Guidelines need country contextualization.

There needs to be evaluation of what is actually working, to test the guidelines. For example, is every case really being investigated? Efficiency is not about having guidelines unless they are managed and supervised, which requires management.

Next meeting should include: Private sector – what is actually occurring in the private sector? How important is it to get information from the private sector, and when does that become important in the path toward elimination? Also need to explore technological interventions for reporting. The use of technology and real time reporting and when it is best put to use was also suggested as potential issues for the next meeting.

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**Session 7: Mobile Populations**
Chair: Professor Gao Qi
Presenters:
- Dr Jaime F. Calderon Jr., Regional Migration Health Adviser, International Organization for Migration, Regional Office for Asia and the Pacific
- Ms Catherine Smith, Medical Anthropologist

[see presentation slides]

Two presentations were given during this session. A presentation on migration in the Asia Pacific Region was given through the International Office for Migration (IOM), describing their work in different countries and within the region. Second, findings from an APMEN literature review were presented, describing different modes of mobility, such as enduring, long-term or unexpected. Future directions of work are mapping mobility, identifying points of access, or future forms of collaboration.

**Discussion**
- IOM is implementing a community based malaria intervention in the South Eastern part of Myanmar, and in 7 border provinces in Thailand. While the IOM Missions in Thailand and Myanmar are sharing information, the malaria interventions between the two countries are not yet geographically coordinated in the border areas between Thailand and Myanmar.
- IOM needs technical support of other agencies. The National Malaria Control Program (NMCP) of Sri Lanka was not able to screen refugees returning to Sri Lanka for malaria. Is there a way to work with the resolutions that exist in order to have access to these populations? The World Health Assembly resolution on health of migrants (WHA 61.17) stipulates a goal of service delivery to migrants.
• IOM is working with the Ministry of Health in Sri Lanka in developing the Guidelines for the Health Assessment of Migrants including the formulation of national policies related to migration health developments in Sri Lanka.

• The migration categories are broad and do not capture subpopulations. The most vulnerable group is unaffiliated people with a village, company.

• What are the different strategies for mobile populations across different phases of malaria control and elimination?

Reflections on efficiency:
• Efficiency requires focusing on the right people, which in many cases are migrants and mobile populations. Mobile people have limited access to health care and are vulnerable, as they partake in high-risk activities through employment. We may need to evaluate interventions on this topic as exposure to risk.

• Now may be the time to know more by doing more – it may be time for fewer studies and more intervention.

• Identifying partners and their comparative advantage is important. Employers are one area we need to intersect. IOM’s comparative advantage might be contributing knowledge across more countries.

Session 8: Advocating for “Sustaining the Gains”
Chair: Dr Rita Kusriastuti
Panelists:
   Professor Graham Brown, Board Member, Roll Back Malaria
   Professor Carol Hopkins Sibley, Co-founder and Scientific Director, WorldWide Antimalarial Resistance Network (WWARN)
   Ms Andrea Lucard, Executive Vice President, External Relations, Medicines for Malaria Venture
   Mr Mika Kontiainen, Director of Disease Prevention and Control, Health Policy Section, AusAID

[see presentation slides]

Panelists shared their views on strategies for advocacy in their work.

Panelist 1: Malaria could learn a great deal from HIV/AIDS on advocacy. Engagement with other sectors beyond health, communities, and bringing the Network to the attention of leaders will be important to sustaining the gains and protecting investments. Integration within the health system is another key topic. Three key areas: drug resistance, insecticide resistance and the need for surveillance.

Panelist 2: Efforts need to focus on answering these questions: What do you do? Why do you do it? How? And why should we care? People need to hear and know these answers. What is your audience? For example, MMV develops the tools that APMEN will need to make elimination possible. Why? Because we understand that control and elimination is critically important. This requires long term research and development. How MMV does this: public/private partnerships across the research/scientific circle (product development partnerships). Why: APMEN should care because you need the tools. How do we know that we should invest in you? An example:
MMV developed four new drugs in the last four years, with treatment distributed to children all over the world. What can you say about APMEN in that way? And a related question: are research publications the most important way to get to your governments?

Panelist 3: APMEN should provide tools to use data collected for a coordinated analysis, then use this information in presentations to your ministries. Distill studies into useful information for people at various levels. Coordinate information, analysis and transfer with simple messages.

Panelist 4: Brevity, clarity, focus, simplicity, and consistency in messages is key – at a maximum of two pages. Be aware not to allow the technical message to overcomplicate the political message. Create 4-5 simple points covering what is the problem, what needs to be done, what do we want from the Minister, what’s in it for them. Know their agenda - oftentimes it is about showing leadership and engaging with stakeholders, or joining with other programs. Suggested to work at multiple levels of government and communicate and work with advisors. Ministers depend on them so get them on board first. Build a coalition of support. Work across ministries, such as finance, foreign affairs and the prime ministerial departments.

Report back from group work

Group 1: How to build and further increase awareness of the need for sustained resourcing and support of malaria elimination and post elimination activities for elimination and progress at the national level?
- Integrate surveillance for malaria into other surveillance strategies for tropical diseases. Need to understand the political structure of the country and its leaders.

Group 2: How to build and further increase awareness of the need for sustained resourcing and support of malaria elimination and post elimination activities for elimination and progress at the regional level?
- Regions are a compelling framework because need solutions to the cross-border realities of malaria. Need to make sure that those people pushing elimination messaging harmonize efforts with political leaders, and that messages are similar across.

Group 3: How to build and further increase awareness of the need for sustained resourcing and support of malaria elimination and post elimination activities for elimination and progress at the global level?
- Elimination is a long march. Disease is complex, simple messages are to be used first - leave off the footnotes. Argue for protecting investments already been made, and put a positive spin on a negative message where you can.

Group 4: How to build and further increase awareness of the need for sustained resourcing and support of malaria elimination and post elimination activities for emerging issues such as drug resistance and P. vivax?
- Let patients voice what they need (take cues from HIV). Decentralization of NMCP – increase awareness at lower levels, then national levels. Show something that can be measured, such as the cost benefit of the elimination program.

Group 5: How can we increase sustainability and financing (sources for future funding in particular) for each country and the region?
• Diversify financing sources, manage costs wisely, build and sustain constituencies for elimination. Demonstrate protection of women, pregnant women in particular. Integrate where possible.

Discussion
• The need for brevity and clarity in messaging is an important point. Also important is to know your target person’s agenda and what is in it for him/her.
• The model of the African Leaders Malaria Association (ALMA) should be considered as well as further community engagement. People involved are the electorate – that’s how you focus Ministers and parliamentarians attention.
• Professional lobbyists can help to characterize a problem.
• APMEN must have and demonstrate consensus on messaging - show that APMEN is a bandwagon worth joining.
• Trade up and use positive messaging, pushing the part of the world that is going to do amazing things for malaria: APMEN is taking something positive and taking it to the finish line. The APMEN countries are leading the way to eliminating malaria.
• The question was posed: how much should APMEN invest in advocacy and at what level (national, regional, global)? Advocacy to influence new decision-makers is a priority. Voice of the patients must also be heard and used effectively but this is not without its challenges in elimination agenda. Perhaps APMEN can coordinate a letter from a well-known official to all APMEN countries. Investing in advocacy for ASEAN requires working through the hierarchy, from officers to Ministers to heads of state. ALMA has strong leader champions who have familiarity with health issues, can be a long process. ASEAN Plus Three meeting will focus on artemisinin resistance, to be held in Phuket, Thailand (18–20 July 2012).

Session 9: Drug Resistance
Chair: Professor Dennis Shanks and Professor Ric Price
Presenters:
  Professor Carol Hopkins Sibley, Co-founder and Scientific Director, WorldWide Antimalarial Resistance Network (WWARN)
  Dr David Sintasath, Asia Technical Director, Malaria Consortium
  Dr Thongsuk Thimasarn, Medical Officer, WHO Myanmar

[see presentation slides]

The identification of and consequences of artemisinin resistance in *P. falciparum* infections was discussed. A two-step APMEN plus plan was presented (special weapons and tactics). A definition of resistance and the containment project goal was presented, including Malaria Consortium’s role in the containment project of Thailand and Cambodia. Then a presentation was given on drug resistance monitoring and containment projects in Myanmar.
Discussion

- Although there appears to be a genetic basis to artemisinin resistance little is known of the underlying mechanism of slow parasite clearance.
- What are the alternatives to current ACTs? Should treatment strategies still contain an artemisinin derivative?
- Operational issues of the containment project were discussed. The importance of reducing the transmissibility of resistant parasites was emphasized. When the goal is eliminating malaria or resistance parasites, then any control strategy must tackle the sexual stages of parasites.
- Has the containment project contained artemisinin resistance? Probably not since recent evidence suggests delayed parasite clearance is also present on the western border of Thailand. This highlights the need to broaden the regions for active surveillance for slow parasite clearance.
- What can APMEN bring to this discussion? The strategy for containment is the same as that for elimination: high quality malaria control, implemented with level of coverage, rigor, and supervision.

Session 10: APMEN Hypothetical Panel Session - Sustaining Malaria Elimination Programs
Chair: Dr Jim Tulloch
Panelists:

Professor Dennis Shanks, Australian Army Malaria Institute, APMEN Partner Institution
Ms Cecilia Hugo, ACTMalaria, APMEN Partner Institution
Dr Gawrie Galappaththy, Sri Lanka NMCP
Dr Chong Chee Kheong, Malaysia NMCP
Dr Kevin Palmer, Independent Consultant

Scenario: In the scenario described during the session, external funding for LLIN, IRS, and RDTs will be lost or significantly reduced.

From the panel the following major strategies were identified:

- Improving efficiency of the existing malaria control strategies.
- Increasing and sustaining local political commitment to malaria control and elimination.
- Engaging more effectively with the broader health system.
- Seeking other and innovative funding and resourcing streams.
In detail:

Efficiency of the existing malaria control strategies could include:

- We may not need all of these interventions (ones listed in the hypothetical scenario) to achieve and maintain elimination. Efficiency could be improved by reducing the coverage of or removing the least or less effective strategies.
- By better targeting and planning for various resourcing and funding scenarios.
- Where transmission is still high, target LLINs, stratifying to the lowest administrative unit.
- Adding staff is not an option in this scenario, and staff must be focused on surveillance, which is an essential part of the programme.
- The experience of the Global Malaria Eradication Programme was without significant financial support, gains in the population’s health were lost. The focus needs to be on ensuring that areas with remaining high malaria transmission get the bulk of the support. However all areas, even ones with very low or no local transmission will continue to need some health personnel.

Increasing and sustaining local political commitment to malaria control and elimination:

- Governments should continue to support malaria interventions. Maintaining this support requires a greater level of political commitment, identifying the positive economic development gained through malaria control, such as an increase in tourism, could help. Another economic benefit to highlight is the money saved in health costs through malaria control.

Engaging more effectively with the broader health system:

- Engaging Community Health Workers more in malaria control and elimination activities is another strategy – but will required good levels of integration.
- Unfortunately, there are few examples of efficiency through integration. It is always difficult to take a specialist and ask them to do many things.
- Working more closely and effectively with the broader health structure, and to assist in strengthening that health system.

Seeking other and innovative funding and resourcing streams:

- Private sector involvement of large or small companies operating in the country can also be helpful.
- Finding ways to better utilise existing health personnel.

Discussion

- There is a major loss of money and loss of support by donor countries is resulting in a major restructuring of both the operations and funding mechanisms of the Global Fund. Global Fund is focusing upon the 20 highest burden countries: is this working against malaria elimination? The argument for supporting elimination needs to be made in Geneva, where the Global Fund Board Members need to hear the message.
- To assist the Global Fund Board to focus its resources, WHO is actively participating in setting prioritization criteria. There is a move towards using indicators that will not “penalise” countries for progress.
- If you highlight the progress and produce results, the money will follow.
• Indonesia is trying to increase the use of elements of the existing health systems such as human resources and logistics management. This continues to need further strengthening.
• On the issue of partnerships: without funding, if not already established, there is a risk that the intersectoral collaborations may decrease.
• Is there a way to make better use of the money you have? e.g. the use of community health workers.
• In many countries, there is a “contingency” factor built into many items of the budget – which may allow the countries to absorb some cuts in overall funding.
• Performance-based funding is difficult, but it has worked.
• Microstratification as a potential solution.
• Global Fund grants have assisted in scaling up the level and coverage of malaria control measures. In areas where low to no malaria transmission has occurred, some activities to sustain malaria elimination such as case investigation (surveillance/response) may be possible. In the other areas one can consider setting up a cluster system for case surveillance.
• Some elements of a malaria programme are easier to gain political attention e.g. infrastructure and not health services. So whilst we have funding, integrate the health services elements of malaria programmes.
• Integration into a weak health system probably would not work. So must have some focus on health system strengthening.

**Session 11 and 12: Evaluation of Network - Partner Institutions**
Facilitator:
Ms Catherine Smith, APMEN Secretariat

The notes from these sessions are confidential and for the purposes of evaluation of the Network. The Network will be presented the findings of the evaluations throughout the coming year and these will inform strategies and activities for the Network.

**Session 13: Dinner meeting for the APMEN Country Partner Representatives**

**Day Four – Thursday 10 May, 2012**

**Session 14: APMEN 2011-2012 Activities**
Chair: Dr Sarath Deniyage
Presenters:
  - Ms Cecil Hugo, APMEN Fellowship Program
  - Dr Supawadee Pounsombat, APMEN GIS Training Program attendee and 2011 APMEN Fellow
  - Mr Albino Bobogare, APMEN Community Engagement Workshop in Thailand
  - Dr Mario Baquilod and Dr Christina Rundi, APMEN Case Studies: Philippines and Malaysia
2011 Fellowship applications, strengths and challenges, and highlights from Fellows were noted. The average of four weeks in 2010 has been increased to 8 weeks. The ongoing data collection for the Malaysia Case Study was described and the planning underway for the Philippines Case Study. Two capacity building activities namely, a GIS training and the Community Engagement Workshop were summarized.

Discussion
- 2012 APMEN Fellowship round awaiting AusAID contract in July 2012.
- In answering a query about the capacity building plan to support the APMEN Fellowships, it was noted that each Fellowship is developed by the individual and their Home and Host Institutions. Two Fellowship recipients have also participated in a relevant course as part of their Fellowship. Other capacity building strategies include: Fellows shadowing other professionals, on-the-job based mentoring and coaching. In the case of an actual training program such as the APMEN GIS training curriculum this formal curriculum was developed as was made available during the program. It can be made available to interested persons if requested. APMEN needs to decide how they want to proceed with the future of GIS training following the evaluation.

Session 15: Vector and Vivax Working Groups, 2011-2012 Updates
Chair: Dr Chea Nguon
Presenters:
   Dr Moh Seng Chang, Vector Control Working Group
   Professor Ric Price, Vivax Working Group

Vivax Working Group
The Vivax Working Group (VxWG) chair presented on the achievements of the past year and the decisions made by the VxWG Country Partners and Partner Institutions at the annual meeting held in Incheon immediately prior to the APMEN IV meeting. During the business meeting it was agreed that the group would continue its focus on collecting and assimilating evidence, through a technical support program (previously known as the Small Grants Program), continue investment in Primaquine Clinical Trials, shifting to Phase II and III of Genotyping Action Plan and Literature Reviews.

In addition, the VxWG also agreed to adopt a Co-Chair position and two technical leads, one for Primaquine and one for Genotyping. The Co-Chair and technical leads will act as important contact points that will increase the reach and accessibility of the technical support across the region.

Vector Control Working Group
The new chair of the Vector Control Working Group (VcWG) presented on past achievements and planned activities, which included further information sharing, capacity building exercises, operational support and research.

Discussion

- There is a need for practical policy and roll out in the field, but first to get the tools right. Treatment with 14 days of primaquine – we don’t know if it works, and adherence is poor. Before building capacity to provide a treatment that may not work, first we have to gather the tools, evidence and then make it work for your program. Program input on what works, what doesn’t work is critical. Then we can work farther on case investigation and roll out.
- Management of LLIN distribution is important. The VcWG discussed disposal of nets, how to use old nets that are not effective anymore. Vanuatu has a small study on disposal of old nets, this might be helpful.
- What do we need to improve in vector control for elimination? Entomologists will be important in elimination. The group is working on an operational training course for entomology in elimination setting, will share curriculum with everyone for input.

Session 16: Business Meeting
Chair: Dr Mario Baquilod and Dr Rita Kusriastuti
Presenters:
  Professor Maxine Whittaker, Co-Coordinator, APMEN Joint Secretariat (UQ Office)
  Dr Roly Gosling, Co-Coordinator, APMEN Joint Secretariat (GHG Office)

[see separate Business meeting minutes and presentation slides]

Session 17: Strategic Direction / Conclusions

Dr Won Ja Lee, Director, Division of Malaria & Parasitic Diseases, Korea Centers for Disease Control, on behalf of Dr Byung-Yool Jun. Director, Korea Centers for Disease Control, APMEN Co-Chair

Dr Krongthong Thimasarn, Medical Officer, Malaria, Myanmar Office, World Health Organization

Dr Steven Bjorge, Team Leader, Malaria and other Vector borne and Parasitic Diseases Team, Cambodia, World Health Organization

Dr Richard Cibulskis, Coordinator, Strategy, Economics and Elimination of the Global Malaria Programme

Sir Richard Feachem, Director, Global Health Group, University of California, APMEN Co-Chair
Speakers provided closing remarks on the meeting, strategic future direction and conclusions. APMEN V will be held in Indonesia in 2013. WHO Global Malaria Programme, WHO SEARO and WHO WPRO thanked the organizers, remarking that APMEN is a young but well-established organization. APMEN has contributed awareness to the necessary strategies for elimination. Mobile populations are a big factor, as well as treatment for \textit{P. vivax}. Joint problem solving is happening in this region. Other counties and other regions would benefit from the progress that APMEN has achieved.

APMEN is a family of action-oriented programs, supported by researchers, and getting the job done by using the best evidence to guide and correct the course. APMEN currently runs at approximately $1.5$ million each year, but needs to build to a budget of $4$ million per year to truly harness the potential of the network. Diversification of funds coming to APMEN, this will require Country Partners support in this endeavor. Conversations with KOICA have commenced and will continue. Brunei has been an important colleague and partner, and APMEN would like Brunei to contribute to the growth and sustainability of the network. Japan and the Japan International Cooperation Agency (JICA) should be invited to attend APMEN, to learn about the Network. The Network must now look to see who may fund future APMEN endeavors.

**Session 18: Evaluation of Network - Country Partners**

**Facilitator:**

Ms Catherine Smith

This sessions notes are confidential and for the purposes of evaluation of the network. The network will be presented the findings of the evaluations throughout the coming year and these will inform strategies and activities for the network.