MEETING REPORT

Seventeenth Meeting of the RBM Partnership
Monitoring and Evaluation Reference Group (MERG)
15-17th June 2011
New York City, United States of America

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Acronyms

ACT	Artemisinin-Based Combination Treatment
A + M	Artesunate-Mefloquine
AR	Artemisinin Resistence
ASAQ	Artesunate-Amodiaquine
BCC	Behaviour Change Communication
CHAI	Clinton Health Access Initiative
CDC	Centers for Disease Control
DFID	Department for International Development
DHA PPQ	Dihydroartemisinin-Piperaquine
DHS	Demographic and Health Survey
EIR	Entomological Inoculation Rate
Global Fund	Global Fund against HIV/AIDS, TB and Malaria
GMP	Global Malaria Programme (WHO)
GHI	Global Health Initiative
GPARC	Global Plan for Artemisinin Resistance Containment
HH	Household
IPT	Intermittent Preventive Treatment
IRS	Indoor Residual Spraying
ITN	Insecticide Treated Net
JHUCCP	Johns Hopkins University Center for Communication Programs
LLIN	Long-Lasting Insecticidal Net
LSHTM	London School of Hygiene and Tropical Medicine
M&E	Monitoring and Evaluation
MACEPA	Malaria Control and Evaluation Partnership in Africa
MDG	Millennium Development Goal
MDSS	Malaria Decision Support System
MERG	Monitoring and Evaluation Reference Group
MESST	Monitoring and Evaluation Systems Strengthening Tool
MICS	Multiple Indicator Cluster Survey
MIS	Malaria Indicator Survey
MOH	Ministry of Health
NCD	Non-communicable Disease
NGO	Non-governmental Organization
NMCP	National Malaria Control Programme
PATH	Programs for Appropriate Technology for Health
PMI	US President's Malaria Initiative
PSI	Population Services International
PR	Periodic Review
RBM	Roll Back Malaria
RDT	Rapid Diagnostic Test
RDMA	USAID's Regional Development Mission for Asia
SP	Sulfadoxine-pyrimethamine
SSF	Single Stream of Funding
TA	Technical Assistance
TOR	Terms of Reference
UN	United Nations
UNC	University of North Carolina
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
WB	World Bank
WHO	World Health Organization

Participants

Chair: Richard Cibulskis (WHO), Holly Newby(UNICEF)

Participants: Fred Arnold (MEASURE DHS/ICF Macro), Suprotik Basu (UN Secretary General's Special Envoy for Malaria), Achuyt Bhattarai (CDC/PMI), Hana Bilak (PATH-MACEPA), Marc Boulay (JHCCP), Valentina Buj (UNICEF), Nichola Cadge (DFID), Liliana Carvajal (UNICEF), Misun Choi (USAID/PMI), John Paul Clark (World Bank), Justin Cohen (CHAI), Erin Eckert (GHI/USAID), Thom Eisele (Tulane University/ MEASURE Evaluation, Scott Filler (Global Fund), Lia Florey (MEASURE DHS/ICF Macro), Elodie Genest (MACEPA-PATH), Rene Gerrets (University of Amsterdam), Iain Jones (DFID), Andrew Jones (CHAI), Albert Kilian (Malaria Consortium),Eline Korenromp (Global Fund), Marcel Lama (Global Fund), Eric Mouzin (RBM Secretariat), Bernard Nahlen (PMI), Joseph Njau (CDC), Kathryn O'Connell (PSI), Anne Pierre-Louis (World Bank), Eugenie Poirot (CDC), Charlotte Rasmussen (WHO), Melanie Renshaw (ALMA), Stephen Resch (Harvard University), Rene Salgado (PMI), Collenn Staatz (Emory University), Rick Steketee (PATH-MACEPA), Boi-Betty Udom (RBM Secretariat), Renee Van der Weerdt (UNICEF), Doreen Weatherby (Bestnet Europe Ltd), Michael White (Imperial College London), Paul Wilson (Columbia University), Steven Yoon (CDC/PMI)

Logistics: Elizabeth Patton (MEASURE Evaluation/ICF Macro)

0.0   Meeting Objectives

Review ongoing MERG Taskforce work
Updates from partner organizations
Review economic issues relevant to MERG
Discuss post-2011 and 2015 goals
Discuss MERG business issues

1.0   Ongoing MERG Taskforce work

Survey and Indicator Guidance Taskforce

1.1   Changes to guidance regarding vector control indicators
Albert Kilian-Malaria Consortium

The Survey and Indicator Guidance Task Force met in April to begin the process of revising the RBM Guidelines for Core Population-Based Indicators. The Task Force decided to add a number of indicators regarding insecticide treated nets (ITN) to reflect to the universal coverage strategy and to revise the definition of an ITN to exclude pre-treated nets. Pre-treated nets are only distributed in a small number of countries and the question asking about the pre-treatment status of nets should be removed from surveys outside of these countries. Respondent-reported pre-treatment of nets is a highly unreliable measure as demonstrated by the analysis of survey data in countries where these nets are not available.

The new core indicators proposed for the guidelines include: proportion of households with at least one ITN for every two people; proportion of population with access to an ITN within their household; and proportion of individuals who slept under an ITN the previous night. Proportion of existing ITNs used the previous night is suggested as a supplemental indicator.

Dr. Kilian also analyzed data to assess the level of "false positive" indoor residual spraying (IRS) reporting from household surveys. He found that between 0.2 and 0.4 percent of households falsly reported that their dwellings had been sprayed in areas where no IRS had taken place. The percentage was higher in urban areas. Based on the infrequency of false positives, no changes to the ITN/IRS indicator are suggested.

The first draft of revsions to the RBM Guidelines for Core Population-Based Indicators is currently being circulated for comment. There will be a second round of revisions and comments. Individuals interested in reviewing the document should contact Elizabeth Patton (epatton@icfi.com).

1.2   Changes to guidance regarding prompt and effective treatment indicators
Richard Cibulskis-WHO Global Malaria Programme

The current indicators regarding case management do not exclude non-malarious fevers. This is increasingly problematic considering the fact that many countries have scaled up diagnostic testing considerably and no longer recommend presumptive treatment of fever. In these countries, the current case management indicators will decrease even if the proportion of malaria cases treated with appropriate anti-malarials increases.

The Survey and Indicator Guidance Task Force discussed these issues at their meeting in April. The group recommended analyzing existing data to determine whether there is a way to utilize RDT results from surveys to distinguish malaria cases from all fevers. It was not possible to obtain informative data since cases with negative RDT results had a greater propensity to have had ACTs - presumably because they had sought treatment. The Task Force also recommended examining caretaker recall of diagnostic test results. Initial analysis of data from Uganda showed a high percentage of positive tests. Further analysis is required.

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Two new provisional indicators regarding case management were proposed and are included in the first draft revision of the Guidelines for Core Population-Based Indicators. These include: proportion of children under 5 years old with fever in the last 2 weeks for whom advice or treatment was sought from an appropriate provider (within 24 hours of onset of fever); and proportion receiving ACTs/first line drugs among children under five years old with fever in the last two weeks who received any antimalarial. The metrics for these indicators is still under consideration. These indicators measure both treatment seeking and appropriate treatment, complementing the current the indicator regarding diagnostic testing. The previous case management indicators will still be included in the document as historical indicators. An explanation of the problems with these indicators will be included in the document.

The first draft revision to the RBM Guidelines for Core Population-Based Indicators is currently being circulated for comment. There will be a second round of revisions and comments. Individuals interested in reviewing the document should contact Elizabeth Patton (epatton@icfi.com).

1.3   MIS Update and FAQ document
Elizabeth Patton-MEASURE Evaluation, Lia Florey-MEASURE DHS

The Malaria Indicator Survey (MIS) package is currently being updated to reflect changes made to the Guidelines for Core Population-Based Indicators. This package will be accompanied by a Frequently Asked Questions document that will be posted on the MERG website and the malariasurveys.org website.

Anyone who would like to review any part of the MIS package or MIS FAQ or add a question to the MIS FAQ document should contact Elizabeth Patton (epatton@icfi.com).

1.4   MIS FAQ document for low-incidence settings
Albert Kilian-Malaria Consortium

While the MIS was primarily targeted to highly endemic countries in SSA, there are increasing questions on what to do when transmission drops including: who should be tested and when does a survey become useless as a tool to capture parasitemia. An FAQ document for low incidence settings is being created to answer these and other questions. Albert Kilian suggested guidance that if expected parasite prevalence is >20% parasitemia testing should occur among the age-group of 6-59 months; however, if parasite prevalence is below 20% but above 5% surveys may consider expanding parasite testing to children <10 years. If parasite prevalence is estimated to be below 5% but above 1%, all ages should be tested and if parasite prevalence is less than 1%, coutries should shift to active surveillance of confirmed cases, and use surveys to look at intervention coverage.

There was some concern over the recommendation to test school-aged children as they are a difficult population to capture in surveys as they are more likely to be at school during the hours that surveys are generally conducted. Additionally, children age 5-10 at home are more likely to be ill than those who are not.

This document will be circulated with the other FAQ document for comment.

1.5   Changes to guidance regarding parasitemia testing in surveys

At their meeting in April, the Survey and Indicator Guidance Task Force also discussed methods for parasitemia testing in surveys. David Bell from FIND joined the task force by phone. He expressed that using the top 20% of RDTs from the WHO/FIND/TDR/CDC product testing would be preferable to microscopy in surveys because of the significant quality issues with taking and reading blood films in survey conditions. Microscopy from surveys is too variable to make comparisons over time.

The draft Guidelines for Core Population-Based Indicators has revised guidance for parasitemia testing to recommend the use of RDTs in settings where P. *falciparum* is the main malaria parasite and to use both RDTs

and microsopy in settings where there are mixed infections. A final decision on this will be made after the guidelines are circulated for comments.

MERG members made some suggestions for improving these recommendations. The prevalence should be rephrased from point –prevalence to a two-week period prevalence to account for the fact that RDTs measure antigenemia which can persist for two weeks after malaria treatment. Additionally, there is a need to state that when comparing RDTs with historical microscopy data, one should be aware that the estimate from RDTs will be higher.

The group discussed how often parasitemia testing should take place, how they should be interpreted, and at what administrative level they should be done as some are now asking for district level estimates. These points should also be discussed in the guidance.

Routine Systems Taskforce

1.6   **Update of WHO surveillance guidelines**
          Richard Cibulskis-WHO Global Malaria Programme

The WHO Surveillance Guidelines are currently being revised to provide guidance on disease surveillance and operations. Surveillance guidelines have not been issued since the 1950/ 1960s, yet tools and strategies have changed. This guidance focuses on surveillance, routine information systems and decentralized analysis and provides guidance on interpretation and use. It aims to cover all stages of the malaria transition and covers strategies for data collection, setting up systems and using data for program management.

The draft document is being edited in June and will be circulated in July. The final launch of the guidelines in conjunction with WHO guidance on scaling up of parasitological testing will occur in September. Volunteers were identified to take part in the review in July.

Reporting

1.7   **Progress & Impact Series– Decade of Progress Report**
          Rick Steketee-PATH MACEPA

The May 2009 RBM Board created an Oversight Subcommittee to provide strategic direction and Board oversight to the reporting effort– The Progress and Impact Series – leading to the Global High-Level Event in September 2011. To date, seven reports have been released as part of the RBM Progress & Impact series, including: Country Funding and Resource Utilization; World Malaria Day 2010: Africa Update; Saving Lives with Malaria Control: Counting Down to the Millennium Development Goals; Focus on Senegal; Mathematical Modeling to Support Malaria Control and Elimination; Business Investing in Malaria Control; Economic Returns and a Healthy Workforce; and Focus on Zambia. Three other reports are programmed, including: Malaria Outside of Africa; Progress on Malaria Elimination to Date; A Decade of Progress in Malaria Control.

The Decade of Progress in Malaria Control report will be launched at UN General Assembly, New York, mid-September 2011. Many MERG members and other RBM mechanisms have contributed to the report which is currently being edited.

Morbidity Taskforce

1.8   **WHO case incidence and mortality country estimation models update**
          Richard Cibulskis-WHO Global Malaria Programme

To estimate the total number of confirmed malaria cases two methods are used. Outside of Africa (and in some African countries) there is a focus on parasitologically confirmed cases reported through HMIS which are adjusted for: lack of case confirmation, missing HMIS reports and health service coverage. For countries with poor data, mainly in Africa, a map of transmission intensity from MARA is utilized. For the population

living at different levels of transmission, intensity and malaria incidence rates for different levels of transmission intensity are combined to estimate the number of malaria cases.

Estimating frequency of fevers from household surveys provides highly variable results and may be prone to overestimation, while estimating fevers from estimates of malaria cases provides lower numbers. Surveys are dependent on the time of year, understanding of the question and recall bias.

Mortality Taskforce

1.9 LiST Update
Thom Eisele-Tulane University

The LiST model estimates relative reduction in child mortality due to scale-up of empirically-proven child survival interventions. The model computes deaths prevented by cause each year as difference between estimated deaths with intervention scale-up and estimated deaths that would have happened had no scale-up occurred from baseline year (simulated counterfactual). It was recently used to estimate number of child malaria deaths prevented from vector control (ITNs and IRS) and prevention of malaria in pregnancy (IPTp and ITNs) scale-up 2001-2010 across 34 malaria endemic countries in Africa.

Dr. Eisele presented an update for the upcoming RBM Progress and Impact High-level report- with the inclusion of ITN coverage estimates for 2010 for Nigeria, DRC and Southern Sudan. Nigeria (42%), DRC (51%) and Southern Sudan (53%) prevented a significant number of lives saved from scale-up of ITNs. According to the model, between 2000 and September 2011, 1.2 million malaria-caused deaths were prevented by malaria prevention intervention scale-up. Additionally, the number of malaria deaths declined by 22% in 2010 compared to 2000.

1.10 Update on RBM MERG guidance for program impact evaluation
Erin Eckert-USAID Global Health Initiative

Increased funding for malaria control in the past decades in SSA has led to scale up of key interventions (ITNs, IRS, IPTp, treatment) and there is need for an assessment of the effect of this scale up on malaria burden for further improvements. The RBM partnership developed a guidance document for tracking progress and showing results (Rowe et al., 2007). This document proposed a plausibility design to measure impact of malaria control programs. There is need to update this guidance in light of the 2010 measurement needs and new evidence.

A decision was made at the RBM Expert's Consultation on Mortality Measurement in April 2010 to revise this document. A core writing team was identified and an outline of the guidance document was developed. Each section has been written by a member of this team and the entire team is reviewing a preliminary draft of the document. The full draft will then be reviewed by the MERG. The current title of the guidance document is: A Plan For Evaluating The Impact of The Scale-Up of National Malaria Control Programs in sub-Saharan Africa in the Past 10 Years. The target audience of this document is the staff of NMCP, MoH, and funding agencies and individuals with background and understanding of M&E. It is not intended to be an exhaustive resource on statistical modeling techniques.

Update on other MERG Task Force activities

1.11 Capacity Building Task Force
Elizabeth Patton-MEASURE Evaluation

The Capacity Building Task Force has not met for a few years. It was started when MERG was started. One of first things done was an assessment of capacity needs led by Malaria Consortium. There was a report on infrastructure and human resources needs. This was prior to PMI and Global Fund and not many resources

were available for infrastructure at the time but the group discussed developing an M&E training. At this point, MEASURE Evaluation has developed a curriculum and there are annual two-week workshops in English and French taking place in Ghana and Burkina Faso.

Elizabeth Patton will attempt to assemble the task force again. Initially, there will be some discussion via email and phone to determine what types of issues the group would address. However, the group will not meet until it has laid out a list of tasks to be completed. It would be ideal to have the group focus on more than training alone.

The idea of focusing some effort on the M&E System Strengthening Tool and its application was put forth as a starting point. It could be taken as a first step for countries to define capacity building needs. Individuals interested in joining the group should contact Elizabeth Patton (epatton@icfi.com).

2.0 Updates from partner organizations

2.1 ACTwatch update
Kathryn O'Connell-PSI Kenya

ACTwatch has completed a number of research studies to determine what affects access to antimalarials. These include 13 outlet surveys carried out by PSI which examine the trends in the availability, volumes and price of antimalarials. LSHTM has implemented six supply chain studies which look at the determinants of the price and availability of anitmalarials at different levels of the supply chain. PSI also conducted seven household surveys to examine the trends in the levels of use of different antimalarials and determinants of use. Additionally, there were three other studies for AMFm conducted in Kenya, Tanzania and Zanzibar. In 2011 and 2012, nine more outlet surveys, six household surveys and one supply chain study will be completed. ACTWatch will end in 2012, and as of yet it is unclear whether there will be a second round.

2.2 DHS/MIS update
Lia Florey-MEASURE DHS

Lia Florey provided a list of completed, ongoing and upcoming Demographic and Health Surveys (DHS) and Malaria Indicator Surveys (MIS). Completed MIS surveys and datasets conducted by MEASURE DHS are available on the www.malariasurveys.org website. While some surveys that were not conducted by MEASURE DHS have provided reports to the website, which was designed to hold all MIS data and reports, none have provided a dataset. Swaziland is in the process of doing this for the 2010 MIS. Reports and datasets should be sent to Lia Florey and Lflorey@icfi.com.

The MERG was concerned by the fact that MIS implementers are so hesitant to realease their data. There are at least eight surveys which have not done this. The MERG Co-chairs will draft a letter to send to MIS implemntors urging them to provide their data. They will attempt to have Awa Marie Coll-Seck sign the letters.

2.3 MICS 4 update
Holly Newby-UNICEF

MICS 4 surveys are underway. Holly Newby provided a handout listing each survey and its status. Surveys are in various stages of implementation from planning to report drafting. Two have already been completed. These surveys are taking place in a variety of different countries in various regions.

Someone suggested that it would be useful to have a combined list of MICS/DHS/MIS surveys. MEASURE DHS and MICS will work together to produce this.

2.4   Update on Drug Resistance Indicators
CharlotteRasmussen-WHO

The Global Plan for Artemisinin Resistance Containment (GPARC) has the goal of protecting ACTs as an effective treatment for Pf malaria. It aims to define priorities to contain and prevent artemisinin resistance; motivate actions and provide clear accountabilities for key stakeholders; mobilize resources to fund AR containment and prevention; increase collaboration and coordination on AR containment activities and define governance mechanisms and indicators to assess progress.

Through monitoring of the GPARC, implementation of recommendations and progress towards the overall goal of preventing and containing resistance will be assessed. Indicators will draw on existing data collection relevant for monitoring of GPARC whenever possible. Dr. Rasmussen reviewed the various suggested indicators for GPARC. There was a suggestion to assure that there were not too many indicators so that the reporting burden will not be overwhelming for countries.

Volunteers were requested for the development and review of these indicators. Nichola Cadge, Abdinasir Amin, Kate O'Connell offered to do so. Other volunteers should contact Charlotte Rasmussen at rasmussenc@who.int

2.5   USAID's Global Health Initiative and the role of PMI/malaria within it
Erin Eckert-USAID Global Health Initiative

The United States Government started the Global Health Initiative (GHI) in 2009 with seven principles. These include: 1. promote women, girls and gender equality focus; 2. encourage country ownership/leadership; 3. strengthen health system and program sustainability; 4. leverage and strengthen key multilateral organizations, global health partnerships and the private sector; 5. foster strategic coordination and integration; 6. improve metrics, monitoring and evaluation; and 7. promote research and innovation. GHI does not have additional funding, but is a restructuring of existing programs.

Regarding malaria, GHI has one target: through the President's Malaria Initiative (PMI), halve the burden of malaria for 450 million people, representing 70 percent of the at-risk population in Africa. Malaria efforts will expand into Nigeria and the Democratic Republic of Congo. Monitoring of health targets will be carried out through surveys and national data; special studies/project data on 'principles'; annual reporting through FACTS Info; narrative information on process and principles. Countries are encouraged to develop own M&E plans for GHI strategies. However, there is an increased emphasis on demonstrating impact.

There was a suggestion that individuals from GHI meet with individuals at World Bank, who recently underwent a similar restructuring, to discuss lessons learned.

2.6   Global Fund update
Eline Korenromp, Marcel Lama-Global Fund

Value for Money is emphasized in Round 10 of the Global Fund. Dr. Korenromp reviewed the Value for Money Checklist presented on Round 10 signing. This includes elements on program strategy, effectiveness, and efficiency & economy, and funding.

In round 11 there will be a minimum government contribution to national disease program budget required to receive Global Fund grants. The contribution varies be income level in each country as follows: low-income countries-5%; lower-lower-middle income countries-20%; upper-lower middle income countries-40%; and upper-middle income countries-60%. Countries must show that government contribution to the National Disease Program increases each year.

Dr. Korenromp reviewed Global Fund the national program budget and expenditure tracking, periodic reviews and evaluation strategy.

Marcel Lama previded an update on Global Fund monitoring and evaluation. He discussed the revision of the Global Fund toolkit which aims to provide guidance on developing robust M&E systems at country level and gather selected indicators to monitor program results and impact. Previous versions of this document were released in 2004, 2006, 2009. Multiple partners collaborated to create these documents including: RBM MERG, WHO-GMP, UNICEF, PMI, etc. Dr. Lama asked for volunteers to review the newest version of the malaria section of the toolkit. There are several principles for the review, including: reducing the number of indicators and placing more emphasis on high level outcome and impact and less on output.

Dr. Lama also discussed the M&E System Country Profiles; Rapid Quality of Services Assessments; and the Global Fund Data Quality Strategy.

2.7   ALMA Scorecard
Melanie Renshaw-ALMA

The African Leaders Malaria Alliance (ALMA) was launched in 2009 as a collective, coordinated response to complement efforts to rid Africa of malaria and it is a growing coalition of 39 African heads of state and government. ALMA partners with the UN, ministries of health, ministries of finance, the private sector, development banks, the Bill & Melinda Gates Foundation, the William J. Clinton Foundation, MMV, MTAP, WHO, RBM and the UN Foundation.

The ALMA scorecard was conceptualized to improve accountability, monitoring and response to gaps in malaria control efforts and to help track progress against the Global Malaria Action Plan (GMAP). It is a simple tracking mechanism requested by ALMA Heads of State in order to trigger timely and targeted responses. The scorecard tracks national progress in 46 countries against each indicator on a monthly basis and is categorized and color-coded using a traffic-light system: red- "not on track", yellow- "some progress" and green-"target achieved/on track".

There are actually two versions of the scorecard: one with approximately 13 high level outcome metrics targeting Heads of State/Ministers, and a second scorecard with over 30 outcome and process indicators targeting country teams and partners. The scorecard utilizes an automated Excel based tool and is hosted by WHO.

The revised scorecard will be shared with Heads of State and Government in Malabo on the 30th June and the next quarterly reports will be sent to Heads of State and Ministers by August 2011

3.0   Review economic issues relevant to MERG

3.1   Introduction to economic issues relevant to MERG
Richard Cibulskis-WHO Global Malaria Programme

As the Global Malaria Action Plan suggests, the MERG "provides guidance around effective, financing, tracking of funds within countries, and the economics of malaria." In practice, this has not always been the case. Dr. Cibulskis presented various issues that need to be considered including (i) the costs of delivering programs and cost effectiveness of interventions (ii) how much funding is needed to reach global targets and (iii) the economic impact of malaria and malaria control. He also discussed the different approaches that can be used to inform these issues.

Costs and cost effectiveness

3.2   Cost analysis of ITN programs in Kenya, Uganda & Zanzibar
Charlotte Zikusooka-HealthNet Consult Ltd

Dr. Zikusooka presented the findings of a recent cost analysis of ITN programs conducted in Kenya, Uganda, and Zanzibar in order to understand the factors that influence the unit cost of delivering nets and provide a

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database for future budgeting of ITN programs. Key informant interviews and extensive review of documents were used to estimate financial and economic costs. The results of the analysis showed that the largest component of the unit cost was the net itself in all three countries (82-85% of total financial cost), while the delivery costs (including personnel, transportation, and miscellaneous overhead fees) varied by country. Suggestions for further action included lowering the price of LLINs and encouraging countries to periodically conduct micro costing studies.

3.3 Reductions in ACT use after RDT scale up
Thom Eisele-Tulane University

Dr. Eisele shared preliminary results from a study which examined the economic implications of RDT scale-up in Zambia. The study objective was to assess changes in ACT consumption before and after RDT rollout in 3 districts using HMIS data from 25 health centers and ACT and RDT cost data from the WHO Global Price Reporting Mechanism. On average RDTs reduced the percentage of patients receiving ACTs by 9%, leading to a potential of $1500/year savings per facility; however, other factors must be accounted for when assessing the economic implications of these findings.

3.4 Systematic review of the costs and cost-effectiveness of anti-malaria interventions
Michael White-Imperial College London

A systematic review of costs and cost effectiveness of antimalarial interventions was conducted using PubMed, Google Scholar, African Studies Online and additional studies. Studies were combined, analyzed in detail and split by intervention into the categories: ITN, IRS, IPT, diagnostics, treatment and other. Costs were extracted and adjusted for inflation and the results were shown as both financial and economic costs. The cost-effectiveness analysis included measuring malaria and intervention impact by DALYs saved, malaria associated deaths averted and malaria cases averted. Results were presented according to the various intervention categories.

Financing and expenditure

3.5 Resource utilization for malaria control in 12 countries
Emily White Johansson-UNICEF

The resource utilization for malaria control study focused on 12 countries receiving funds from GF, WB, and PMI from (2005-2008). Changes in expenditures in relationship to scale up of coverage, specifically of ITNs were examined. MICS, DHS, MIS, and comparable survey data from DR Congo, Ethiopia, Ghana, Kenya, Mauritania, Mozambique, Nigeria, Rwanda, Senegal, Sierra Leone, Tanzania, and Zambia were used. Since committed and disbursed funds can be reprogrammed, only expenditure data from the World Bank Booster Program, PMI, Global Fund, and other health product/equipment related procurement were used for the assessment. Specifically looking at ITN procurement spending and ownership, Ethiopia, Kenya, Zambia, Rwanda and Senegal were considered high performers, while middle performers included Sierra Leone, Tanzania, and Ghana. Low performing countries were Mauritania, DR Congo, and Nigeria. Findings showed a close relationship between ITN procurement spending per capita at risk and household ITN ownership coverage gains. Spending spikes were seen prior to distribution campaigns. The assessment showed that different levels of spending was related to coverage gains. For example, high performers spent roughly $1-2 on ITN procurement per capita at risk between surveys while middle performers spent roughly $0.40-.70 and low performers had little spending. In order to initially reach 80% coverage from baseline levels, it is predicted that roughly $2-3 is needed per capita.

There is a future plan to update and expand the analysis to 14 more countries while improving the results of existing countries. Nine of the 14 countries performance comparable to the previous assessment, but five reflect higher spending for lower coverage gains. Reasons and solutions for those five countries must be assessed in detail. There is also a need for analysis of net scale-up and net replacement activities using 'population protected' indicators.

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3.6 WHO Malaria Expenditure Studies
Eugenie Poirot-CDC/WHO

Since the data sources for malaria financial tracking are fragmented, WHO has undertaken small-scale expenditure studies. Ten countries were studied (Afghanistan, Azerbaijan, Benin, Georgia, Ghana, India, Myanmar, Philippines, Sri Lanka, and North Sudan). These countries utilized a standardized tool for collecting financial information on malaria program expenditures, such as the amounts spent on malaria specific interventions (IRS, ITNs, treatment, etc.).   The method resulted in a quick turnaround of the desired information resulting from simple data collection and management; however, for some countries there were problems with incomplete data and inconsistencies in data between sources. Overall, this method could provide an up-to-date snapshot of total malaria expenditures for all stakeholders.

3.7 Expenditure tracking in Ethiopia, Rwanda, Senegal & financial sustainability
Andrew Jones-CHAI

Andrew Jones presented some possible strategies for obtaining sustainable funding for malaria programs in controlled-low endemic settings. These included financing, new domestic funding sources and novel mechanisms for long-term predictable funding. By conducting a program expenditure analysis looking at total malaria expenditure and reported malaria morbidity and mortality utilizing population prevalence surveys from preceding years, a realistic estimate for the annual cost of sustained malaria control was calculated by country. The analysis looked at program support, diagnostics, treatment, and prevention separately. It also looked at government and donor funding to see how it fluctuates over time. In order to improve the diversity and predictability of malaria financing and create sustainability, there will be a need to achieve financial sustainability by working with the Ministries of Health and Finance. In Rwanda, Tanzania, Ethiopia, and Senegal there are plans to cover malaria expenditures using innovative ideas. For example, a Zanzibar tourist tax could cover 10-25% of current malaria costs. Yet, country support, donor advocacy, and global leadership remain instrumental to build support for sustained malaria control.

3.8 Value for money in malaria programming
Paul Wilson- Columbia University

Resources for malaria control are likely to be constrained in coming years, especially in countries that have achieved a degree of control. Finding ways to do as well or better with less will be a crucial element of a sustainable financing strategy. The concept of Value for Money was presented in light of the reality that resources for malaria control are likely to decrease in countries that achieve control. Value for money does not mean pursuing the least expensive option. Value for Money recommendations depend on goals and constraints.

Looking at sub-Saharan Africa, a framework for analyzing Value for Money was created which emphasizes sustaining control instead of scale-up of interventions or elimination. Understanding the pattern of current spending, levels of allocation, and spatial targeting of various interventions are necessary for sustaining malaria control.

Dr. Wilson discussed opportunities and research priorities regarding Value for Money. Immediate opportunities include phasing out overlap of IRS & ITN in low-risk areas and completing the scale-up of RDTs in the public sector. In the medium term, research could focus on net replacement models, net longevity in the field, evidence on the interaction of IRS & ITN and net prices. In the long term, priority areas include alternatives to broad net coverage in low-risk areas, feasibility of local elimination, and new insecticides for bednets.

Household Expenditures

3.9 Panel discussion on health expenditure data from household surveys
Fred Arnold-MEASURE DHS , Lia Florey-MEASURE DHS, Kathryn O'Connell-PSI Kenya

Lia Florey presented the health expenditure questions that have been asked in various country MIS. Types of questions for payment for interventions were presented as well as actual examples from country MIS. Not many people have used these data, as far as we know. Based on preliminary analysis it appears that many people do not know the costs or cannot provide them. These data may not be very reliable.

In MICS4, two countries, Mali and DRC, had broad health expenditure data, not specifically related to malaria. These modules were added without the guidance or support of headquarters. Country experiences indicate that it was difficult to train on these and it may have distracted attention from core questions. Importantly, the questions used were not standard and it may be helpful to have a standardized modules/questions in the future if there is a demand for this sort of information.

DHS has developed a health expenditure module and it is being pre-tested in Egypt. There are a lot of issues surrounding the module. Questions have to do with outpatient and inpatient care, but they are asked at the household level from one respondent. To do this correctly, you need a whole survey. Health systems 2020 has done this and it is complex and expensive. Key issues include timing: recall is problematic after 6-12 months. However, you need at least 6 months to look at inpatient visits because they are rare. Outpatient data asks about the last month. Even the trimmed version of the module is at least 4 pages long. This module will probably be included in more surveys in future but the utility of the general health module for malaria may be limited at this point since the module does not focus on malaria. Another consideration is that the household respondent may not have all of the accurate information on expenditures.

The MERG discussed some of the issues brought up by the panel. A need for more coordination of efforts to collect expenditure data was brought up. It was also pointed out that household surveys may not be the best way to get these data. Some analysis may be helpful for determining this

3.10 Economic costs of malaria to the household
Joseph Njau

A literature review establishing the financial and non-financial burden of malaria at the household level was conducted to find direct and indirect (productivity days lost and cognition) costs. Findings included a substantial variation in the definition of malaria direct costs. Most costs were for outpatient visits, febrile illness and monotherapeutic treatment (not ACT use). Few studies discussed costs by seasonality.

Treatment costs averaged about $4 per episode, while prevention costs averaged $2.50 per month. Study methods were variable but common themes in the methodology were found (drug costs, consultation fees, laboratory costs, transport, food, and lodging, etc.). Indirect costs focused on productivity days lost while a few studies reported school days lost. Household malaria costs reported in the literature were generally consistent over time; however, most of the studies may not be representative of actual malaria costs as they are conducted in a few pockets of well-known research areas (Tanzania, Ghana, Gambia, Nigeria). Dr. Njau recommended that studies on impact of malaria on cognition utilize quasi-experimental designs in the future. He stated that there is need for new and more accurate data to answer questions on the economic burden of malaria at the household level.

Economic impact of malaria

3.11   Economic impact of malaria on industry
Eric Mouzin-RBM Secretariat

Dr. Mouzin presented private-sector successes in malaria control in various countries. In Zambia, efforts to protect employees from malaria at Mopani Copper Mines, Konkola Copper Mines, and Zambia sugar resulted in a 90% decrease in malaria cases and absenteeism. Investments by Marathon Oil in Equatorial Guinea helped reduce malaria parasite prevalence in children by 57% in four years; the project was extended through 2013 to develop local capacity and extend the program to the mainland. AngloGold Ashanti reduced malaria cases in the Obuasi region significantly and became the first private-sector partner to be the principal recipient of a Global Fund grant. Mozambique also had success in reducing malaria infections through the BHP Billiton's malaria control program. These private-sector experiences can be helpful working alongside national programs and can achieve significant impact on the malaria burden.

3.12   Securing sustained financing for malaria control
Justin Cohen-Clinton Health Access Initiative

Dr. Cohen's presentation discussed how decision makers often focus on investing in the remaining burden of disease, but the true gains from investing in control involve cases averted. Focus countries should aim to measure health impact through estimating cases and deaths averted. Economic impact of controlled activities should aim to evaluate the cost averted per malaria episode, quantify averted case management costs to the public health sector and others and calculate cost-effectiveness of continued investment in terms of cost per DALY averted. Analyses were shown for various countries including Zambia and Ethiopia.

3.13   Economic impact of ITNs for malaria control in high-burden sub-Saharan Africa
Stephen Resch-Harvard School of Public Health

Dr Resch discussed the economic impact of LLINs for malaria control. LLINs have a generally been accepted as having high value for money, but quantifying impact is important. One must look at cases averted by ITN/LLIN and take another step to examine what resources would have been used if those cases had not been prevented. Dr Resch analyzed both first order effects on resource use including the direct costs of health services and indirect costs such as funerals and absenteeism. He calculated the unit costs of case management and severe malaria and put a value on time costs and funeral costs using various assumptions. Results based on these calculations were presented. Next steps for this work include peer review, sensitivity analysis, quantifying impact along additional pathways and review of macroeconomic studies.

3.14   Implications for MERG

The MERG decided that it was necessary to restart the economic task force. The first step will be to define objectives. There was some brainstorming on possible objectives and activities. The task force could provide a forum to share work and make sure that there is collaboration, disseminate malaria-related economic studies (including those on cost-effectiveness) and build consensus when it comes to ecomomic issues. Some economic aspects of interest included: financing need, economic modeling, how malaria control has changed patterns of expenditures, and malaria in particular sectors. The task force could also work to standardize tools, identify gaps in knowledge that would be useful to pursue, disseminate and advocate for the work already being done, and provide feedback to those conducting work related to economics and malaria. Nicola Cadge will create a draft TOR for other interested parties to review.

4.0   Post-2011 and 2015 goals

4.1   Post-2011 RBM Goals, Targets, Milestones and Priorities
Melanie Renshaw-ALMA Secretariat

The post-2011 objectives, targets, milestones and priorities of the RBM partnership have been approved by the RBM Board and will be released in the near future along with a 12-page document explaining them. The objectives are to reduce global malaria deaths to near zero by end 2015; reduce global malaria cases by 75% by end 2015 (from 2000 levels); and eliminate malaria by end 2015 in 10 new countries (since 2008) and in the WHO Europe Region. The targets are fairly ambitious. It is important to note that while each target is listed under a specific objective, it may not necessarily align only to that objective, but to a number of objectives.

The group suggested that it would be helpful to add one additional page explanation, assuming that many people would not read the larger document. Some of the terms and concepts in the objectives and targets will need to be clearly defined in the 12-page document. MERG members will review this document and make suggestions. It has been disseminated to 17th RBM MERG participants by Rick Steketee.

4.2   Post-2015 MDG goal setting
Holly Newby-UNICEF

Goal setting for post 2015 goals will begin soon. Other technical groups including the Water Supply and Sanitation group are already discussing this. It is expected that there will be wider participation in the goal setting process than there was for the MDGs, which have been criticized for how their targets were set. Many countries are not close to achieving these goals, pointing out a need to work towards more realistic, but still slightly ambitious goals. It would also be helpful to ask why countries have not achieved goals in order to create better strategies for the future.

Additionally, it is probable that non-communicable diseases will be included. Therefore, It may be good to examine the linkages between malaria and NCDs to see how activities in each field can complement each other.

5.0   MERG business issues

5.1   MERG work plan
The MERG work plan for 2010-2011 is being funded by RBM. Last year it was developed rapidly by the MERG co-chairs and secretariat. Due to the limited amount of time allocated to complete and submit the work plan and budget, there was no time to seek input from other MERG members. The 2012 work plan is due in November 2011. There will be wider consultation in its development. Heads of each task force will be contacted to submit key tasks/deliverables and funding requests for the work plan and budget. Each task or deliverable should be aligned with one of the RBM key performance indicators. A revised version of these indicators will be available in the near future. Funding country participation in MERG and task force meetings was mentioned as a priority for the work plan and budget.

5.2   Upcoming MERG meeting

The next MERG meeting will take place in January 2012 in Kenya.

6.0   Summary of Agreements and Follow-Up Actions

Action Item	Person/ Organization Responsible	Tentative Due Date
Create white paper about new population-based indicators	MERG co-chairs	Jan 2012
Finalize update of Guidelines for Core Population-Based Indicators	Survey & Indicator TF	At next TF meeting
Review MIS Package revisions	SI TF	August 2011
Finalize and disseminate MIS FAQ and FAQ for low transmission settings	E. Patton, A. Kilian, SI TF	December
Finalize Surveillance Guidelines and contact volunteers for review	WHO – Routine TF	July 2011
Ask Awa and RBM to formally request MIS reports and data for malariasurveys.org	MERG co-chairs	September 2011
Send MIS reports and data to Lia Florey	MIS implementors	
Create joint list of MIS/DHS/MICS surveys	ICF Macro/ UNICEF	
Contact individuals willing to collaborate on GPARC indicators (Abdinasir Amin, Nichola Cadge, Kate O'Connell)	Charlotte Rasmussen	End of June
GHI and World Bank to discuss lessons learned from recent World Bank restructering	E. Eckert, J.P. Clark	July
Draft ToRs for Economic Task Force	DFID	
Contact Elizabeth Patton if you would like to join capacity building task force	E. Patton	July
Contact Elizabeth Patton if you would like to review Core Indicators Document or MIS package	E. Patton	End of June
12 page summary of post-2011 goals and targets to be circulated for comments to core voting members	Rick Steketee	
Work on some suggestions for the wording of post-2015 goals	MERG co-chairs	Next MERG meeting
Request actvities, performance indicators, budget items from task force chairs to be included in 2012 MERG workplan and budget	MERG Secretariat	July 2011
The next MERG meeting will take place January 2012 Kenya	MERG Secretariat	