

PN-ACU-486

THE CHILD SURVIVAL COLLABORATIONS AND RESOURCES GROUP

Malaria Update: PVO Roles in Global Malaria Initiatives

**Proceedings of a workshop held at
Africare House
Washington, D.C., September 30, 1999**

**Sponsored by the Malaria Working Group of
The Child Survival Collaborations and Resources (CORE) Group**

**Financial and Technical Assistance from
The Child Survival Technical Support Group (CSTS) and
Basic Support for Institutionalizing Child Survival (BASICS)**

**In collaboration with
Centers for Disease Control and Prevention**

UNICEF

USAID

World Bank

World Health Organization



Working Together in Health

for Mothers, Children, and Communities

A

***Malaria Update: PVO Roles in
Global Malaria Initiatives***

**Proceedings of a workshop held at
Africare House
Washington, D.C., September 30, 1999**

**Sponsored by the Malaria Working Group of
The Child Survival Collaborations and Resources (CORE) Group**

**Financial and Technical Assistance from
The Child Survival Technical Support Group (CSTS) and
Basic Support for Institutionalizing Child Survival (BASICS)**

**In collaboration with
Centers for Disease Control and Prevention**

UNICEF

USAID

World Bank

World Health Organization

WORKSHOP PROCEEDINGS:
Malaria Update: PVO Roles in Global Malaria Initiatives

Africare House
Washington, D.C.

September 30, 1999

Written and edited by
The CORE Group Malaria Working Group and
Sharon Tobing, Workshop Coordinator



The Child Survival Collaborations and Resources (CORE) Group
220 "I" Street, N.E., Suite 270, Washington, D.C. 20002
Telephone: (202) 608-1830 FAX: (202)-543-0121

ACKNOWLEDGEMENTS

Dear Colleagues,

The CORE Malaria Working Group is pleased to be sending out the Report from the Workshop entitled *Malaria Update: PVO Roles in Global Malaria Initiatives* held at Africare on September 30, 1999.

The workshop was organized and conducted by the Malaria Working Group of The CORE Group in collaboration with BASICS. It was well attended by members of international organizations and agencies. Many good discussions on points for collaboration were held throughout the day and we look forward to carrying out this collaboration at the field level.

We hope you will find the information in this report helpful and encourage you to share the report with your colleagues. If you need additional copies, please contact the CORE group at vgraham@worldvision.org or telephone 202-608-1830.

Sincerely,



Janet Meyers
Chair of Malaria Working Group
September 30, 1999

"One in ten people worldwide is likely to get malaria this year, with closer to 2 million deaths (especially children)...the challenge of malaria is more important than individual organizations".

Dr. David Nabarro, WHO, September 30, 1999.

"If you have come here to save us, then go home. But if you have come to struggle with us on our common problem, then let's get to work."

Aboriginal Woman

Quoted by Dr. Kopano Mukelabai, UNICEF, September 30, 1999

TABLE OF CONTENTS

1.0	Introduction	4
1.1	Roll Back Malaria Strategy	5
1.2	The CORE Group	6
1.3	Welcome and Opening Remarks	7
2.0	Overview of PVO Malaria Activities	8
2.1	Malaria Case Management	9
2.2	Chemoprophylaxis/Intermittent Malaria Treatment for Pregnant Women.....	11
2.3	Malaria Prevention through Insecticide Treated Nets	12
2.4	Environmental Control	12
2.5	Conclusions	12
3.0	The Roll Back Malaria Initiative	13
3.1	The Malaria Challenge	13
3.2	RBM Concept, Strategy and Approach	14
3.3	Summary of Progress in RBM	14
3.4	Support Networks for the Development of Technical Capacity to RBM.....	15
3.5	PVO Roles	16
3.6	Summary of Question and Answer Period	17
4.0	PVO Collaboration in Operations	17
4.1	World Bank Malaria Program	17
4.2	Malaria and Complex Emergencies	19
4.3	Malaria Control in Complex Emergencies: Highlight South Sudan	22
4.4	Malaria and Behavior Change	24
4.5	Summary of Question and Answer Period	26
5.0	Presentation by USAID Global Bureau	27
6.0	NGO Collaborations in Technical Focus Areas	27
6.1	Improved Community-Based Activities	27
6.2	Facility-Based Activities (IMCI and Drug Resistance).....	32
6.3	Malaria in Pregnancy	34
6.4	Insecticide-Treated Materials	37
6.5	Summary of Question and Answer Period	38
7.0	Presentation by NASA	39

8.0	Communications and Collaboration	40
8.1	USAID	40
8.2	UNICEF	41
8.3	WHO	41
8.4	CDC	41
8.5	Summary of Question and Answer Period	41
9.0	Closing Remarks	43

Annexes

A	Acronym List	44
B	Agenda	46
C	Participant Contact Information	48
D	Briefing Paper on PVO Malaria Control Activities in Child Survival Projects	58
E	Requesting Assistance from RBM Complex Emergencies Network	62
F	Web information for WHO, UNICEF, CDC	64
G	Resource List	66
H	Summary of Jeffrey Sach's Commentary	72
I	Report on 2 nd International Conference on ITNs	74
J	World Bank Projects with Malaria Components (Table)	78
K	Follow-on Malaria and Complex Emergencies meeting hosted by BASICS (10/1/99)	86
L	Effective Strategies to Promote Quality Maternal and Newborn Care (May 3-5, 1999), CORE Group Workshop Presentation Summary on Malaria and Pregnancy (Dr. Monica Parise)	90

1.0 Introduction

The first CORE Group malaria-focused workshop, "*Malaria Update: PVO Roles in Global Malaria Initiatives*" was held at the Africare House in Washington, D.C. on September 30, 1999. More than 50 public health professionals from Private Voluntary Organizations (PVOs), USAID and its contracting agencies, and the international organizational members of Roll Back Malaria and the Centers for Disease Control and Prevention met to launch intensified cooperative collaborations with PVOs in the malaria sector. As a direct result of this workshop, it is anticipated that international organizations and PVO participants will join and work together in enhanced field-level collaboration in the fight against malaria.

The CORE Group (Child Survival Collaborations and Resources Group), a consortium of 35 U.S. PVOs implementing USAID-funded child survival projects, coordinated the workshop through its Malaria Working Group, chaired by Ms. Janet Meyers (Africare). The CORE Group received financial and technical assistance for the workshop from Basic Support for Institutionalizing Child Survival (BASICS) and Child Survival Technical Support Group (CSTS).

The Malaria Working Group organized the workshop as a mechanism to update the PVO community on the latest malaria strategies and technologies employed by the international organizations involved in Roll Back Malaria, and as a means to convey information back to international organizations on innovative malaria-focused PVO field projects. Even more importantly, the workshop served as a way to jump-start a practical dialogue between PVOs and international organizations engaged in the Roll Back Malaria initiative.

The workshop capitalized on the tremendous support and participation of international malaria technical experts fielded by the Centers for Disease Control and Prevention, UNICEF, the World Bank, the World Health Organization, and USAID and its contracting agencies. The collective array of malaria expertise (individual and organizational) among workshop participants is an example of the CORE Group's collaborative initiatives and development of multi-sector exchanges.

Goal:

The *Malaria Update: PVO Roles in Global Malaria Initiatives* workshop was intended to encourage and build practical collaboration among PVOs and the other partners of the Roll Back Malaria initiative.

Objectives:

The workshop had two broad objectives:

1. Initiate a working dialogue to explore potential areas of technical and operational collaboration between CORE Group members and international organizations participating in the Roll Back Malaria initiative.
2. Provide to PVOs a comprehensive and concise update on the most current malaria programming strategies.

Outputs:

Expected outputs of the workshop were the following:

Output 1: PVO Malaria Programming Issues

Intended to provide PVOs with a brief overview of current strategy to increase and enhance their level of malaria programming. The final post-workshop report includes an "issues" section with such useful data as where to find summaries of scientific support of strategy, standards and guidelines for appropriate programming, and decision-making tools for PVO executives.

Output 2: Overview of PVO Activities Related to Malaria in Child Survival Initiatives

A briefing paper written by Uzo Okaoli, a consultant hired by Child Survival Technical Support (CSTS) in collaboration with the PVOs, is included as Annex D. The paper provides an overview of selected PVO activities in malaria.

Output 3: Recommendations for Collaboration in Malaria Programming

To promote PVO involvement, the post-workshop report includes a section which documents the identification of local, national and international discussion hubs and contact points, programming needs and issues, as well as funding opportunities.

Output 4: Resources List

To ease PVO identification of valuable planning and field implementation resources, a list of proven resources (documents, organizations with individual contact names, web resources, etc.) is available to participants.

Output 5: Informational Exchange

A mechanism for information exchange will be created during Session 5 to establish and promote long-term cooperation and communication among PVOs and the international malaria community.

Output 6: CORE Malaria Working Group Follow-up Agenda

Outcomes of the workshop provide a direction for the Working Group in terms of narrowing down potential activities within a manageable scope.

Activities:

The workshop consisted of three types of session activities: 1) presentations, including written outlines/summaries; 2) panel discussions; and 3) a resource table.

The content of this post-workshop report consists of a summary of the speaker presentations as listed in the workshop agenda (please refer to Annex B), additional information identified by the presenters and workshop recommendations, which are included as annexes. Presenters were provided the opportunity to review the summary of their presentations prior to publication.

1.1 Roll Back Malaria Strategy

Malaria is a killer disease resulting in well over a million deaths each year. With 300 million cases reported annually, the disease is a primary cause of debilitating morbidity of global proportions. The scope of the problem is magnified by the fact that a disproportionate number of malaria victims are pregnant women and children, who are particularly vulnerable to the disease.

To implement available and affordable solutions intended to cut malaria deaths in half, Roll Back Malaria was launched in October 1998 by the United Nations Development Programme (UNDP), UNICEF, the World Health Organization (WHO) and the World Bank. WHO provides technical leadership while UNDP and the World Bank provide resources and expertise. UNICEF's strong field presence provides a necessary and important link to governments and NGO partners.

The purpose of Roll Back Malaria (RBM) is to:

- Achieve better coordination among all parties involved, especially donors.
- Strengthen existing health facilities.
- Set up prevention and control measures that will stand up over time.
- Develop and promote new tools to combat malaria effectively, including new drug combinations and personal protection measures such as treated nets.
- Make effective and affordable drugs available to communities in need.
- Encourage the development of even more effective anti-malarial drugs and vaccines¹.

There are six elements of the RBM strategy:

1. Evidence Based Decisions
2. Early Diagnosis, Rapid Treatment
3. Multiple Prevention
4. Well Coordinated Action
5. Dynamic Global Movement
6. Focused Research²

1.2 The CORE Group

The Child Survival Collaborations and Resources (CORE) Group is a network of Private Voluntary Organizations (PVOs). All member organizations have been awarded Child Survival funds by the United States Agency for International Development (USAID)'s Office of Private and Voluntary Cooperation in the Bureau of Humanitarian Response since the program's beginning in 1985. As of September 1999, the CORE Group membership totaled 35.

The CORE Group's member PVOs are U.S.-based non-profit organizations supported by individuals, corporations and governments. Collectively, CORE members have an enormous impact throughout the world addressing not only the challenges of survival for children but of agriculture, education, economics, poverty alleviation, medical care, sanitation, environmental problems, and growth of democracy. CORE represents the health agenda of these PVOs and seeks to promote coordination and collaboration among the organizations as well as with other agencies. CORE provides a networking function which facilitates the exchange of knowledge among organizations. It also plays an advocacy role in promoting the work of these organizations to donors, agencies, corporations, universities, and the general public-- all with the goal to increase Child Survival.

The CORE Group has six organized working groups: Behavior Change Communication; Integrated Management of Childhood Illnesses; Malaria; Maternal Reproductive Health and Safe Motherhood; Monitoring and Evaluation; Nutrition; and Quality Assurance.

¹ From Rolling Back Malaria, UNICEF, March 1999, p.2.

² from David Nabarro, WHO, presentation September 30, 1999.

The working groups promote the sharing of program expertise, and build capacity for delivering ever more effective health programs. The CORE Malaria Working Group was the leadership entity within the CORE Group which conceived of and organized the *Malaria Update: PVO Roles in Global Malaria Initiatives* workshop.

CORE Group Member Organizations (35)

- | | |
|--|---|
| <ul style="list-style-type: none"> • Adventist Development and Relief Agency (ADRA) International • Africare, Inc. • African Medical and Research Foundation, Inc. • Aga Khan Foundation, USA • Andean Rural Health Care, Inc. • CARE • Catholic Relief Services • Christian Children's Fund, Inc. • Concern Worldwide, USA • Counterpart International, Inc. • Esperança, Inc. • Food for the Hungry International • Foundation of Compassionate American Samaritans • Freedom from Hunger • Health Alliance International • Helen Keller International • International Eye Foundation • International Rescue Committee | <ul style="list-style-type: none"> • Islamic African Relief Agency, USA • La Leche League International • MAP International, Inc. • Medical Care Development Inc./International Division • Mercy Corps International • Minnesota International Health Volunteers • Partners for Development • Pearl S. Buck International • PLAN International USA, Inc. • Population Services International • Project Concern International • Project HOPE • Program for Appropriate Technology in Health (PATH) • Salvation Army World Service Offices (SAWSO) • Save the Children • World Relief Corporation • World Vision |
|--|---|

1.3 Welcome and Opening Remarks

CORE Group

Victoria Graham, CORE Group Manager, opened the workshop, greeting the participants and speakers on behalf of the CORE Group and thanking Africare for hosting the meeting. Ms. Graham publicly recognized the contributions of the working group members and representatives from collaborating organizations.

Africare

Yolanda Richardson, Senior Vice-president of Africare, welcomed the workshop participants to the Africare House, which served as the hosting venue for the workshop. Noting that, "crisis drives us to action," Ms. Richardson acknowledged the importance of the malaria problem globally, remarked on the excellent collaboration among agencies in tackling malaria and related health problems, and urged participants to work together to create the political will and commitment needed to make a difference.

CORE Malaria Working Group

Janet Meyers, Health Program Manager for the West Region at Africare and Chair of the CORE Malaria Working Group, put a tremendous amount of time into the planning and forward movement of the workshop. Ms. Meyers greeted the workshop participants and speakers, thanked the Working Group members and Workshop Coordinator for their part in planning the workshop, and reviewed the purpose of the workshop and outputs (refer back to Section 1.0) expected by the end of the working day.

BASICS

Michael Macdonald, Technical Officer, Malaria (BASICS), was instrumental in arranging for many of the speakers and in defining the direction of the various presentations in collaboration with the CORE Malaria Working Group. He welcomed the speakers and participants to a new age of malaria control strategy where organizations are moving from the post-WWI "top down" strategy, which was facility focused, to a new "bottom-up" approach, focused on households and communities. This "bottom-up" approach is being utilized within Roll Back Malaria, based upon what Dr. David Nabarro (WHO) has termed, "the realization that health care decisions are made in the home."

The concept of "home is the first hospital," and increased emphasis on caretaker recognition and treatment seeking in both the formal and non-formal health care systems, is a radical shift requiring new tools and skills for national malaria programs. PVOs have always been working in areas such as community-based nutrition, family planning, and micro-credit schemes.

Dr. Macdonald emphasized that as WHO and national malaria programs reorient to this new approach, collaboration between the PVOs and Roll Back Malaria is essential. Collaboration benefits both parties. PVOs gain the latest technical information and malaria policy makers gain the PVO experiences, best practices and lessons learned.

Dr. Macdonald summarized the purpose of the workshop as not so much the transfer of technical information, but the development of two-way communication between the PVOs and organizations involved in Roll Back Malaria.

2.0 Overview of PVO Malaria Activities

Presenter: Uzo Okoli

Note: The presentation by Ms. Uzo Okoli, which constitutes this section, is supplemented by a written Briefing Paper entitled, "PVO Malarial Control Activities in Child Survival Projects," included as Annex D. The Briefing Paper includes additional interesting PVO examples of what is being tried and what is working well.

PVOs traditionally work with poor, mostly rural and disenfranchised communities. By operating at the community and grassroots levels, PVOs support communities to effect change from within and support the development of infrastructure and income generation activities to increase socio-economic success. It is from this background and extensive knowledge of communities and community mobilization that PVOs engage in Child Survival Projects (CSP) in malaria endemic regions.

CSP malaria control strategies generally consist of malaria case management and surveillance, with an increasing emphasis on malaria prevention. Realizing the importance of full community participation, PVOs work within existing community level structures.

Ms. Okoli, at the request of the CORE Malaria Working Group, reviewed PVO activities in malaria control as a background tool for the Malaria Working Group and the workshop. Her research is primarily based on reports from PVOs implementing CS projects in Africa.

2.1 Malaria Case Management

The objectives of Malaria case management by PVOs can be summarized as follows:

- To ensure early diagnosis and treatment of malaria by significantly increasing caregivers' recognition of fever in children under five years of age and caregivers' prompt and effective action.
- To improve coverage and quality of malaria case management and preventive services offered to vulnerable groups in communities by health volunteers, public and private sectors, and traditional healers.

PVOs working with their respective MOHs in-country and in accordance with local needs improve malaria case management at the facility level by:

- Supporting the training of health center workers in malaria case management both within and outside the context of the newly introduced Integrated Management of Childhood Illnesses (these algorithms are frequently developed by PVOs in collaboration with technical institutions; for example, the Centers for Disease Control (CDC), the Pan American Health Organization (PAHO) and the World Health Organization (WHO).
- Improving the quality of aftercare information given to caregivers attending clinics, on the importance of compliance with treatment regimes, actions in the event of treatment failure, information on malaria prevention and general health promotion.
- Strengthening monitoring, evaluation and supervision systems to identify and rectify problems and improve service response to the local health situation.
- Supporting management systems (including equipment and procurement) to ensure that health facilities meet minimum standards for provision of quality and integrated health services.

At the community level, PVOs train traditional birth attendants (TBAs), community-based health workers and local health committees, as well as volunteers and vendors, where facilities are not accessible, in fever management. Volunteers, local vendors and TBAs have also been trained to treat malaria in pregnancy, including the use of chemoprophylaxis/intermittent treatment.

Establishment of strong links with MOHs at national and district levels has enabled PVOs to advocate modifications in district drug policy. PVOs have been active in ensuring adequate supplies to health facilities in collaboration with MOHs, and developing "sourcing" options for drug re-supply in community pharmacies.

Behavior change is the key to successful reduction in malaria-associated morbidity and mortality in children and pregnant women. PVOs strive to understand community perceptions of malaria (particularly severe malaria) through knowledge, practice and coverage surveys (KPC), and formative research.

Key health messages for malaria recognition include the prompt malaria treatment of children under five with fever, and the prompt referral of children with signs of severe malaria to health facilities.

Communication strategies employed include interpersonal contact, the use of local media such as radio, social events such as church gatherings, and malaria awareness days. It is important to work through community groups, and for volunteers to work with clusters of 20 or fewer households. In a few instances, malaria health promotion has been integrated with literacy training.

2.2 Chemoprophylaxis/Intermittent Malaria Treatment for Pregnant Women

The majority of CS and Maternal and Newborn Care programs in malaria endemic regions promote routine and regular administration of appropriate anti-malarials to reduce the risk of severe anemia during pregnancy, decrease the number of fever episodes, and reduce low birth weight.

In a few countries, national malaria drug policy has been altered in light of widespread and confirmed chloroquine resistance. In Malawi and some districts in Kenya, for example, sulfadoxine/pyrimethamine (Fansidar) has replaced chloroquine as the drug of choice for malaria treatment and intermittent treatment of pregnant women. The intermittent regime of a full-course treatment administered to pregnant women twice, once during the second trimester and again in the third trimester, is easier to administer and compliance simpler to monitor than the more commonly prescribed chemoprophylactic regime consisting of a weekly course of chloroquine prescribed for the duration of pregnancy.

PVOs have adopted a number of strategies to increase access to prophylactic chloroquine through trained TBAs and community health staff, integrating malaria intermittent treatment with antenatal care (including the use of sulfadoxine-pyrimethamine, Fansidar, in some countries at the time of tetanus toxoid administration). Most CS programs recognize the importance of focusing on primigravidae as a particularly vulnerable group for intermittent treatment and administration of malaria chemoprophylaxis, and look to health promotion packages delivered through schools targeting newly married girls and women to encourage early detection and treatment.

Infection with falciparum malaria is considered a major cause of anemia in young children and pregnant women, particularly primigravidae. CS projects address anemia by providing training on anemia recognition, dispensing iron supplements at local health facilities and in the community through TBAs and community health volunteers, and by conducting health promotion activities. However, the incorporation of anemia reducing strategies into malaria control activities is a relatively new strategy.

Examples of PVO programs utilizing effective strategies for malaria case management are:

- **Africare (Malawi)** - Which addresses malaria treatment and prevention practices through adult, "Literacy for Health" classes.
- **AMREF (Kenya)** - Introduced a quality assurance component at the health facility level, to train health workers.
- **PLAN (Ghana)** - Instituted a system of close supervision and follow-up of clinical staff in health facilities in response to findings of a study on malaria clinical practice.

- CARE (Kenya) - Successfully negotiated with the district level of the Ministry of Health for CHWs to carry and administer anti-malarials and antibiotics after appropriate training.

2.3 Prevention through Insecticide Treated Nets

Personal protection using insecticide treated nets (ITNs) and other materials is increasingly becoming integral to PVO CS programs, as part of an integrated malaria control strategy. The community component of the IMCI paradigm recommends the promotion of insecticide treated nets for personal protection of children from malaria.

Most rural communities have little or no access to treated nets, and find the initial cost, and cost of retreatment of the nets prohibitive. For PVOs involved in ITN as part of their CS malaria strategy, the major challenge is to provide adequate coverage of their target groups thus impacting the malaria burden and achieving sustainability through cost recovery.

An increasing number of PVOs are engaged in dialogue with governments over lowering the tariffs on netting and materials. They are also increasingly engaging in inter-agency collaboration in procurement, and delivery and distribution.

Regarding affordability:

- Inter-agency collaboration has in most cases increased affordability of treated nets for local populations.
- At the community level, revolving funds, loans and payment schemes timed to coincide with periods of increased community cash flow are employed.
- PVOs are also working with private companies to increase access of treated nets to their workers through payroll deductions.

The ultimate objective of PVO CS communication strategies for ITNs is to significantly increase the percentage of children under five and pregnant women who consistently and correctly sleep under a treated net. This is no simple task taking into account that in the relatively poor economic climate present in many of the countries, children are given low priority in the use of such perceived "luxury" items.

The creation of a net retreatment culture is one of the greatest challenges to ITN programs. It costs approximately \$0.60 to retreat a net, and while this may seem moderate, it is proving difficult to convince communities of the importance and cost effectiveness of net retreatment. PVOs have employed a number of strategies to offset this challenge.

Examples of PVO programs utilizing effective strategies for the distribution and appropriate and effective use of treated nets and materials include:

- SAVE (Guinea) - Working with a local NGO, OSFAM, to extend distribution channels.
- World Vision - Working with the private drug company Bayer in net provision
- PSI and Africare (Tanzania) - Procuring nets at an excellent cost.

- AMREF (Kenya) - Employed a service providing house-to-house net retreatment.

Mosquito resistance to the pyrethroid insecticides used in net treatment has been reported in Cote d'Ivoire and Kenya. The Ministry of Health often lacks the capacity to monitor this aspect of treated net projects. Few PVOs with CS programs have addressed this issue, partly as a result of relative inexperience in the use of treated nets as a strategy for malaria control.

2.4 Environmental Control

As a component of their malaria prevention activities, a number of PVOs are engaged in encouraging communities to practice environmental control activities such as draining or covering standing water, and cleaning brush from around households. In addition, projects utilize teams responsible for organizing regular community-wide clean-up campaigns to destroy mosquito breeding sites, and hold clean village competitions. While such activities might be effective in promoting cleaner environments and good hygiene and sanitation practices, in most cases, they have little impact on the community's malaria burden as they are small in scale and in most localities, reduce the density of mainly non-malaria parasite carrying mosquitoes.

Examples of Collaborative Efforts:

- CARE/CDC Health Initiative - The CDC supports CARE by providing formative research (example: work on micronutrients and malaria in Tanzania).
- BASICS/HAI - Formative research on malaria diagnosis in Mozambique.
- PSI/AFRICARE - Collaborative projects in Benin and Tanzania.
- AFRICARE/CDC African Integrated Malaria Initiative in Benin, CDC conducting surveys in malaria to be used in developing program interventions.
- PSI/Environmental Health Projects (EHP) - Assessment of mosquito resistance to pyrethroid insecticide.
- MOH/PVOs - Advocacy on behalf of communities. For example, CARE (Kenya) was able to initiate district health policy changes for malaria and pneumonia.
- WHO/PVO - IMCI strategy.

2.5 Conclusions

PVOs have demonstrated a willingness to meet the challenges of finding and implementing sustainable integrated malaria strategies that reduce the disease burden in vulnerable groups. A community based multi-sectoral approach will increase access to many communities and ideally foster positive relationships between PVOs and the communities they serve.

Uzoamaka (Uzo) Okoli worked most recently as a Malaria Consultant to CARE's Somalia and South Sudan office, and has previously worked with MERLIN (South Sudan) and the Tear Fund (Sierra Leone) on malaria programs. She has a Masters degree in Applied Parasitology and Medical Entomology from the Liverpool School of Tropical Medicine, UK.

3.0 The Roll Back Malaria Initiative

Presenter: David Nabarro

A summary of Dr. Nabarro's presentation, "Rolling Back Malaria: How PVOs Can Contribute to the Success of the Roll Back Malaria Partnership," can be obtained in its entirety via email from nabarrod@who.ch.

David Nabarro's presentation served to provide structure to the workshop as a whole by defining the strategy and approach of the international partnership called "Roll Back Malaria" with which PVOs are urged to coordinate their own malaria activities at regional and national levels. He introduced five issues he would be covering, which serve as sub-sections in this synopsis of his presentation:

- The health, human and economic challenge of malaria.
- The RBM concept, strategy and approach.
- Progress to date at global, regional and country levels.
- Support networks for the development of technical capacity to RBM.
- The potential for PVOs to contribute toward rolling back malaria.

RBM has its roots in the Accelerated Programme of Malaria Control in Africa, which came about during the 1990's through an agreement of Organization for African Unity (OAU) Heads of State. The African Initiative on Malaria was launched 1997 by governments and development partners, WHO and the World Bank. Success of the Initiative was made a priority by Dr. Brundtland, Director General of WHO in 1998. The Global Initiative to "Roll Back Malaria" was launched in October 1998 by WHO, in full partnership with the World Bank, UNICEF, and the UNDP. It is significant that this initiative came out of needs expressed by African entities, not the west.

3.1 The Malaria Challenge

Malaria's challenge is a development issue, not a health issue. Malaria keeps societies poor. It is a worsening threat: serious epidemics are being reported. Climate changes and population movements increase the threat. Adding to the problem, the parasite is resistant to commonly used drugs in much of the world.

Malaria primarily affects the poor. Dr. Nabarro referred to a commentary by economist Jeffrey Sachs (please see Annex G for commentary) which demonstrates how malaria promotes, precipitates and maintains poverty. Since the 1970s there has been a rising death rate in Africa from the disease.

Malaria is making a comeback in a number of nations: Armenia, Azerbaijan, Chechnya, Dagestan, Russia, Tajikistan and Turkey to name a few, where the disease was previously eradicated. While chloroquine resistance is nearly everywhere, Fansidar resistance is also widely reported, and in the Mekong grouping of six countries, there is multi-drug resistance. Anti-malarials are frequently unavailable in health centers, but can be found in local shops, which presents another special challenge.

There are promising interventions. Insecticide-treated nets (ITN) can reduce malaria-specific death by over 20 percent (with a range of 18-50 percent). Prompt management of persons with

malaria using effective treatment--ideally within 8 hours of the start of symptoms in children--can reduce mortality even further. Malaria mortality now can be halved, but there is strong need for health sector development, community action, social marketing, PVO support and public-private action (including franchised care) to intensify the response.

Dr. Nabarro mentioned the cost per DALY (disability adjusted life years) averted, an important mechanism used by the World Bank to convey the cost effectiveness of activities such as malaria interventions. Intermittent treatment during pregnancy, improving access to drugs, improving compliance with treatments and distributing ITNs have a DALY averted of less than \$50 (U.S.).

3.2 RBM Concept, Strategy and Approach

RBM calls for a massive effort, a 30-fold increase in:

- The use of insecticide treated materials (40 million nets in Africa per year).
- Treatment within 8 hours of the onset of symptoms.
- The proportion of pregnant women at risk receiving prophylactic treatment.

Coordinated action is essential. Fragmented action encourages drug-resistant parasites and insecticide-resistant mosquitoes. It is for this reason that RBM is a global partnership, and not merely a "U.N. only" driven malaria program. The challenge of malaria is more important than individual organizations.

RBM is a 10-year effort, which will extend to 2010. Its real power stands in partnerships at the country level.

The six elements of RBM strategy are:

- Evidence-based decisions.
- Early diagnosis, rapid treatment.
- Multiple prevention strategies.
- Well-coordinated action.
- Dynamic global movement.
- Focused research.

Since 1998 WHO has sponsored a Malaria Cabinet Project to provide a strategic umbrella to RBM, serve as a secretariat for partnership, encourage consistency of technical support, and promote coordination. This project is authorized through 2003.

3.3 Progress in RBM

Concept, strategy, and consensus-building took place in early 1999 in regional meetings. Country partnerships began in May 1999 and will continue with the development of national intentions for action, with intensification from 2000 forward. There are already several strong examples in Africa, the eastern Mediterranean, Asia and the West Pacific, with extensive NGO involvement.

3.4 Support Networks for the Development of Technical Capacity to RBM

Capacity-building actions are being focused by WHO Country Offices, especially in Africa. There is a need to locate resources and technical support for national actions: PVOs have a definite role here.

Situational analysis is taking place at regional and country offices. Countries in Africa with RBM action underway are: Botswana, Chad, Eritrea, Ethiopia, Gambia, Ghana, Mali, Mozambique, Niger, Sudan (North and South), Swaziland, Tanzania, Uganda, Zambia, Zimbabwe and Mauritania. In other regions, RBM countries are: Afghanistan, Azerbaijan, Bangladesh, Cambodia, southern China, India, Indonesia, Laos, Myanmar, Nepal, Oman, the Philippines, Sri Lanka, Tajikistan, Thailand, and Vietnam.

Some examples of active partnerships include:

- Azerbaijan, where a key partner is an oil company.
- Eritrea, with the World Bank.
- Cote d'Ivoire, with national partners.
- Sudan, with CARE and AGFUND.
- Kenya, with PVO-led action research.

PVOs can have a pivotal role.

Dr. Nabarro shared with the group 12 areas of technical support for national RBM actions, which are designed to help develop national capacity:

1. Conducting situational analysis.
2. Mapping malaria burden and access to health care.
3. Improving health system response.
4. Malaria surveillance and management of epidemics.
5. Treating malaria in complex emergencies.
6. Utilizing insecticide treated materials.
7. Managing vector control issues.
8. Improving case management.
9. Increasing advocacy for RBM: catalyzing the social movement.
10. Heightening awareness of the economic, poverty and gender dimensions of RBM.
11. Improving the monitoring and evaluation procedures.
12. Managing capacity development issues.

He noted the strong support from key strategies including IMCI and Making Pregnancy Safer (MPS) with PVOs and UNICEF, and the upcoming 2nd International Conference in Tanzania in October 1999. Please refer to Annex H for a brief report on this conference, which took place very soon after this workshop and was attended by Malaria Working Group member Larry Casazza (World Vision).

3.5 PVO Roles

Dr. Nabarro provided a substantive list of potential PVO contributions to RBM, which outlines specific kinds of activities PVOs should be building into programs they support:

- Collection of evidence about malaria: who is affected, how, where, when (as part of integrated disease surveillance), effectiveness of responses, drug resistance, and early warning of epidemics.
- Promotion of the correct use of insecticide treated materials, including retreatment for personal protection.
- Selective and safe vector control when indicated (if possible, do not use persistent organic pollutants like DDT).
- Early diagnosis and prompt access to treatment among those with symptoms.
- Direct involvement in community-level action, service provision, policy and coordination in complex emergencies.
- Contributions through IMCI, MPS or similar initiatives when supporting health sector development.
- Social marketing, advocacy, franchising (vital roles).
- Contribution to local capacity to RBM.

PVOs are urged to establish RBM partnerships at the country level (note that there may be some funding available to PVOs at this level). If national partnerships are difficult to find, link up with national malaria initiatives, or with representatives of WHO, UNICEF, UNDP or the World Bank. Information on technical support networks can be requested via email (rbm@who.int).

RBM is interested in hearing success stories to post on the web or use in their newsletter. Dr. Nabarro shared a success story from Afghanistan where covering cattle with insecticide resulted in decreased malaria in the home, decreased ticks on the cattle and increased milk production. Success stories are the "motor of the movement."

David Nabarro qualified as a physician in 1973. He worked in the UK National Health Service, as a District Child Officer in the isolated Dhankuta District of East Nepal with the Save the Children Fund. He has served with the London School of Hygiene and Tropical Medicine, and again with the Save the Children Fund in 1982 as Regional Manager for the Fund's work in South Asia. Other assignments include the Liverpool School of Medicine as a Senior Lecturer in International Community Health, the British Overseas Development Organization (ODA) as a Strategic Adviser for Health and Population Work in East Africa, based in Nairobi; and Chief Health and Population Adviser at the ODA London Office and Department for International Development. Dr. Nabarro was appointed by Dr. Gro Brundtland, Director General of WHO, to manage the World Health Organization's RBM project in October 1998. He took the post in January 1999.

3.6 Summary of Question and Answer Period

- There remains a need for selective, intermittent spraying of homes, especially where there are sporadic malaria outbreaks, but findings indicate that insecticide-treated nets and curtains are nearly as effective, and far more economical than fumigation of entire dwellings; as well as safer for the inhabitants due to a reduced exposure to toxic substances.
- PVOs can help ensure that anti-malarials are in essential drug supplies and kits
- RBM is striving to build an effective program based on cooperation and collaboration, with less red tape and fewer bureaucratic roadblocks.
- Rapid diagnostic tools will play an important role. There is a major meeting coming up within the next few weeks on this topic³.
- WHO, World Bank, UNDP and high-level government representatives associated with malaria activities should be the main contacts at the national level.
- The website currently under development is being designed to reflect the belief that information should be readily available. WHO is facilitating the website development for RBM. This is where to go, for example, to obtain information on country-level resistance.
- Pricing and marketing information on insecticide-treated nets and other malaria prevention and treatment materials should be openly available to PVOs or others (vs. "gift" interventions).

4.0 PVO Collaboration in Operations

David Oot (SAVE) introduced the four panel members for Session 3: Stephen Osika of the World Bank, Maire Connally of WHO/Geneva, Holly Williams of the CDC who serves on the RBM Technical Resources Network, and Jeanne Brown of BASICS. The panel focused on how to expand collaboration between PVOs and the international organizations partnering in RBM, with a view toward PVO partnering potential, expansion and larger-scale operations. Panelists gave short presentations outlining their organizations' malaria-focused activities and/or their own specialty area in the operations arena. A question and answer session followed.

4.1 World Bank Malaria Program

Stephen Osika's presentation provided workshop participants with an understanding of the World Bank's role in RBM and in malaria programming in general, from his perspective as the malaria specialist on the Malaria Team at the World Bank headquarters in Washington, D.C.

³ This internal WHO meeting took place in Geneva October 25-27, 1999. A meeting report is expected by late December, 1999. Check www.who.int/tdr in the malaria section, or contact Mark Perkins, Manager, Diagnostics (WHO) at Perkinsm@who.int.

He covered three main topic areas:

- The World Bank's role in the Roll Back Malaria movement.
- The World Bank and spotlight countries.
- Opportunities for World Bank-PVO collaboration in RBM.

4.1.1 World Bank Role

The World Bank, together with WHO, UNICEF and the UNDP, jointly launched RBM in November 1998. Early activities included joint consultative missions by all partners to Eastern African countries with common borders (a choice based on convenience): Eritrea, Ethiopia, Kenya, Malawi, Mozambique, Tanzania and Uganda. The missions provided an overview of country-specific needs, opportunities and partnerships. PVOs at country levels were consulted during the joint missions.

While the consultation reports have yet to be distributed, a summary of the key findings include:

- Malaria is the leading cause of mortality and morbidity in the countries visited.
- Existing control tools, including available funding for malaria control, are under-utilized.
- Opportunities exist to address malaria cross-sectorally and across projects, for example, through infrastructure, education, IMCI, ECD, etc.
- RBM partnerships need to be operational.
- Malaria needs to be addressed in the context of strengthening the health sector as a whole.

Within the concept of RBM, the Bank is engaged in additional malaria-related activities, including: involvement in pharmaceutical policies; consideration of the economics of malaria; a workshop on infrastructure and malaria (a copy of the workshop report, "*Identifying Opportunities to Address Malaria through Infrastructure Projects*," dated June 9-10, 1999, was included as a handout to participants); cross-sectoral work in education, infrastructure and the environment; involvement in easing taxes and tariffs on bednets; and direct financing. The World Bank has invested over \$200 million (U.S.) in over 25 countries for malaria-related activities, a portfolio of both stand-alone and integrated projects. Refer to Annex I for a listing of World Bank projects with malaria components.

Dr. Osika compared the above malaria investment with the Bank's overall Health Nutrition Population cumulative lending which totals \$10.7 billion for 162 projects in 82 countries. While investment in current malaria-related programs is relatively small, investment is likely to increase within the context of RBM.

4.1.2 Spotlight Countries

The World Bank together with other RBM partners have selected the following countries for focused malaria-related activities. These countries are referred to as "spotlight" countries: Angola, DRC, Ethiopia, Kenya, Mali, Mauritania, Mozambique, Senegal, Tanzania, Uganda, and Zambia.

4.1.3 Opportunities for World Bank-PVO Collaboration in RBM

There are opportunities in the spotlight countries to work with PVOs. PVOs should meet with Bank staff at resident missions at the country level, with Bank public information center staff, with the "malaria team," NGO group and country teams at Bank headquarters. Since much of the Bank's financing is through government entities, PVOs should participate as part of a Bank-government-PVO "dialogue."

Mechanisms for collaboration include the "small grants program" whereby a PVO can bid for funds for activities. Dr. Osika also mentioned the "development marketplace," an initiative within the Bank in which PVOs and other interested parties can present innovative ideas to be supported by the Bank. Additionally, PVOs can be sub-contracted for training and project work, especially for capacity-building.

The Bank is also a "knowledge bank" which has its own institute which provides training and other technical resources. The Bank can work with PVOs/NGOs in procurement (within the context of a Bank financed project), research and analysis, and through dialogue on policy issues with countries.

Stephen Osika is a Public Health Physician with specialist training in Health Management Planning and Policy. He has worked in countries covering both developed and developing health care systems including Belarus, Uganda--his home country, England and Wales. He is currently the malarialogist for the World Bank's Malaria Team based in Washington D.C., joining the team in November 1998. This team is the focal point for the Bank's response to the global Roll Back Malaria (RBM) initiative.

His most recent posting before joining the World Bank's malaria team was that of Lecturer in Public Health Medicine at the University of Wales, U.K., which also included a concurrent appointment as Senior Registrar in Public Health Medicine within the UK National Health Services (NHS).

Dr. Osika has written on health issues covering both the more industrialized and less industrialized countries including topics on decentralization of health services in Uganda, AIDS prevention and care in Uganda, outbreaks of SRSV (Norwalk-like viruses), winter outbreaks of acute diarrhea, notified travel-associated infections, stroke care, breast disease, cardiac rehabilitation, osteoporosis, malaria, and complex emergencies.

4.2 Malaria and Complex Emergencies

Maire Connolly is the Coordinator of the RBM Complex Emergencies Network at WHO. Her presentation examined the special challenges of dealing with malaria in the context of complex emergencies, and explained how the RBM Complex Emergencies Network evolved as a result of these special needs. The Network provides specific support to the work of PVOs engaged in complex emergency situation. There are a variety of ways PVOs can contribute toward rolling back malaria in these difficult working environments.

4.2.1 What is a “Complex Emergency”

A “complex emergency” is a situation affecting large civilian populations with war or civil strife and population displacement resulting in excess mortality and morbidity. Whether refugees or internally displaced persons are moving into host countries or areas of their own countries with or without stable government or government control, or if the area is in a post-conflict rehabilitation mode, Dr. Connolly stressed that these are all very difficult environments.

There are over 40 million refugees/displaced persons reported globally, and over 120 million people affected by complex emergencies. Of the countries with complex emergencies, 80 percent are malaria-endemic. Malaria has been shown to be the biggest health problem faced by those affected by complex emergencies.

PVOs are often the only health providers available, and everyone should realize that dealing with malaria control in complex emergencies may differ from that in stable situations. The displaced populations are more vulnerable through malnutrition or other exacerbating factors; there is an increased risk of epidemics, with the movement of non-immunes to high malaria transmission areas; environmental deterioration encourages vector breeding; local health services may break down, or become overwhelmed; there may not be a stable government, or any government, to work with; there may be many partners responsible for providing health services; with an on-going conflict, insecurity can make long-term planning difficult; and physical and transport barriers can delay access to needed supplies.

Dr. Connolly attended a meeting in December 1998, at which PVOs highlighted problems relating to malaria programming in complex emergencies. These included lack of technical knowledge of malaria among operating agencies; lack of information on drug resistance; delays in access to supplies, and transport barriers; poor coordination among PVOs, UN agencies and local authorities; many gaps in knowledge and few funds available for operational research; and lack of data on the malaria burden in complex emergencies.

As a result of this background understanding, the following key elements have been identified as part of a strategy for malaria control in complex emergencies:

- Situation analysis.
- Site planning.
- Case management.
- Vector control, ITNs.
- Surveillance.
- Epidemic preparedness and response.
- Health education.
- Training.
- Operations research.

4.2.2 RBM Complex Emergencies Network

The RBM Complex Emergencies Network was established and exists to deal with malaria in complex emergencies. It consists of a core group of malaria and emergency experts from organizations including WHO, UNHCR, UNICEF, the CDC, IFRC, ICRC, MSF, Merlin, and the Malaria Consortium, as well as a wider group of 20 additional malaria experts on a roster and available for field support. These experts are based at country, regional and HQ levels. The

Secretariat is in EHA/WHO. Subgroups exist for rapid response, training, surveillance, operations research, and advocacy.

The Network is always trying to add people at country levels who are available for 2-3 week missions. Dr. Connolly would appreciate assistance from PVOs to identify possible candidates.

The Network's Terms of Reference are:

- To advocate the need for effective malaria control in complex emergencies as integrated components of health care services.
- To develop and disseminate technical guidelines.
- To provide technical support at the field level.
- To identify operational research priorities.
- To work with other networks: epidemics, mapping, ITNs.

The Network has 16 current target countries:

Africa:

Angola, Congo Brazzaville, DRC, Liberia, Sierra Leone, Somalia, Sudan, Great Lakes-Burundi, Rwanda, Uganda and Tanzania.

Asia:

Afghanistan, Cambodia, Indonesia, Myanmar and Tajikistan.

The Network can support the work of PVOs in complex emergencies in many ways, including provision of set standards, guidelines and training material. The Network also provides up-to-date information on malaria in each complex emergency situation. Dr. Connolly gave a current example of a five-page document outlining malaria-related activities in East Timor. The Network monitors the malaria burden in each locale—a database is under development and should be ready by early 2000. Operations research priorities are also identified.

The Network can provide field support as well. Dr. Holly Williams (next presenter) went to South Sudan to work with CARE on their planning. The Network can facilitate communication between RBM partners at the country level, where necessary.

4.2.3 Progress to Date

The Network was formally established in April 1999 and has moved rapidly to develop a strategy for malaria control in complex emergencies; prepare case studies in seven countries; prepare epidemiological profiles for nine countries including East and West Timor in Indonesia; develop its Terms of Reference, method of work and functions of its Secretariat; and complete a mission to South Sudan in August 1999 to review malaria control activities and plan next steps with CARE and other PVOs.

An inter-agency manual has been completed on malaria control in emergencies. There is connection with the WHO manual on communicable disease control in emergencies. A malaria database is under construction for the 16 target countries. The following operational research priorities have been identified: vector control, use of ITMs, delivery of ITNs, protection from malaria in pregnancy, and IMCI. Additional priority operational research projects will be identified, and a mechanism created to assist agencies in applying for funds.

The next steps include a rapid response team to East Timor within the next week, together with IRC; a PVO/donor meeting for European-based agencies in London, similar in scope to the CORE workshop⁴; a mission to Angola and DRC to provide technical assistance for malaria control activities; finalizing and disseminating technical guidelines; and a Partners' Meeting on complex emergencies in Nairobi, Kenya in January 2000 to plan RBM activities at the country level. The Network needs expansion, with more involvement of PVO malaria expertise particularly at the country level.

4.2.4 Potential PVO Contributions to RBM in Complex Emergencies

Dr. Connolly presented a comprehensive array of ideas where PVOs can contribute toward RBM in the context of complex emergencies:

- Using malaria as a "pathfinder" to improve general health care provision.
- Using existing tools, such as IMCI and MPS, adapted to emergency conditions.
- Ensuring up-to-date technical guidance in first-line treatment and use of insecticides.
- Ensuring early diagnosis and treatment.
- Brokering agreement on standard treatments, and training health workers in them.
- Ensuring access to health services.
- Promoting and distributing ITNs.
- Monitoring the malaria burden through integrated disease surveillance.
- Linking with RBM partners at the country level, such as other PVOs, WHO, UNICEF, UNHCR, MOH, private sector and donors.
- Developing the technical capacity to lead malaria control activities in a geographical area with RBM.
- Conducting operations research projects, such as the use of ITMs, vector control, drug resistance studies.
- Documenting, publishing, and disseminating experiences and lessons learned.

Maire Connolly has been a Medical Officer with WHO/Geneva since 1995. She has worked in the Department of Emergency and Humanitarian Action since 1997 as a focal point for communicable diseases and most recently as Co-ordinator of the RBM Complex Emergencies Network. She trained in public health/epidemiology in Dublin and London, and holds MD, MPH, DTM&H degrees and has field-level malaria experience in refugee camps in East Africa and South-east Asia.

4.3 Malaria Control in Complex Emergencies: Highlight South Sudan

Holly Williams of the CDC's Malaria Section and a member of the RBM Technical Resource Network, presented an example of the kind of assistance PVOs can expect from requests made to the Network, with a report of a recent trip she made to southern Sudan with Dr. Charles Delacollette of WHO/Geneva.

4.3.1 Background and Terms of Reference

South Sudan has been affected by civil war since 1983. An estimated internally displaced population of 5.6 million has been assisted by relief efforts established by the United Nations in 1989, termed "Operation Lifeline Sudan (OLS)." OLS includes UNICEF, the World Food

⁴ the date of this meeting is expected to be confirmed during January 2000.

Program (WFP), WHO and about 40 NGOs. There are an additional 17 NGOs which operate outside of OLS.

An important aspect of relief assistance is to coordinate with the various rebel movements and their relief/rehabilitation agencies/associations. Relief efforts must tackle security risks, logistical problems, lack of currency, famine and extreme poverty. There is only a 10 percent literacy rate and a tremendous lack of trained health care personnel. Few women are in health care roles. Further, there is a lack of standardized salaries and incentives.

On the malaria front, no coordinating agency exists for overall malaria control standards, despite the major public health problem which malaria poses. Each NGO is setting its own policy; surveillance data is sketchy; and the overall approach continues to be relief-oriented, which may no longer be appropriate for parts of southern Sudan.

The Network mission's Terms of Reference was:

- To conduct a preliminary assessment of the epidemiology of malaria in southern Sudan.
- To review current malaria control activities in Tambura and southern Sudan.
- To review the joint WHO/CARE proposal for malaria control in Tambura County.
- To identify precise activities to improve the effectiveness of malaria control in southern Sudan.

4.3.2 Mission Accomplishments and Summary of Major Findings

The mission itself consisted of a two-week rapid assessment by two consultants, Dr. Holly Williams and Dr. Charles Delacollette. The team met with rebel movement, NGO and UN representatives, in Nairobi, Kenya, Lokichoggio, Kenya (the staging point for OLS operations), and a number of locations within southern Sudan.

The team faced challenging logistical difficulties but was able to assess existing surveillance data, policy guidelines and training curricula; visit health care centers and units and training centers; and participate in informal discussions with villagers. The summary of major findings included:

- A lead agency was identified to define priorities (SRRA).
- There is an urgent need for a coordinating agency to organize and standardize malaria control activities, which should include OLS and non-OLS partners and report to SRRA/RASS.
- Attention should be placed on supplementing and expanding existing training programs for health care workers (note: programs to promote retention should be developed).
- Training should emphasize improved case management, and increase basic skills in assessment, diagnosis and treatment. Consideration should be given to adapting and field testing a simplified version of IMCI.
- Traditional healers, who play a major role as first-line providers, should be incorporated into planning and training programs.
- Adjustments are needed in surveillance to better represent the needs of a community in a post-emergency phase.

- Current baseline levels of resistance to anti-malarials need to be established to assist the development of effective malaria treatment policies.
- Preventive measures should be developed, including ITMs and chemoprophylaxis for pregnant women.
- NGO programs should focus on a limited number of priority interventions, with pilot programs attempted in the most secure areas. Proposals should reflect staged progression of activities.

4.3.3 Requesting Network Assistance⁵

A request should include a terms of reference with a detailed plan of action. The terms of reference should reflect a general consensus of the situational needs as defined by all involved agencies. All agencies involved, including donors, should receive copies of the request for assistance to facilitate open communication. Specific areas of expertise needed should be specified.

Dr. Williams recommends that country-level PVO Health Coordinators should link with the relevant country RBM focal point. For proposed Field Missions please include network support in funding proposals to donors for malaria control.

Holly Williams is a behavioral scientist working for the Malaria Epidemiology Section at CDC. Her main areas of interest are malaria control in complex emergencies, socio-behavioral issues related to malaria control, and understanding the decision-making process related to setting national malaria treatment policy guidelines. She has had both clinical and research experience with various refugee situations, including the Thai/Cambodian border, self-settled Angolan refugees in northwestern Zambia, and in the Tanzanian refugee camps. Dr. Williams has just returned from a malaria assessment in southern Sudan on behalf of the Roll Back Malaria Technical Resource Network for Malaria Control in Complex Emergencies.

4.4 Malaria and Behavior Change

Jeanne Brown (BASICS) led participants through the key behaviors of mothers/care givers, providers and the community, as related to malaria and behavior change. She concluded by outlining potential activities and mechanisms to consider for enhanced collaboration between PVOs and international organizations with respect to malaria behavior change initiatives.

4.4.1 Key Behaviors

It is important to understand key behaviors before efforts can be made to change them. There are several dimensions to consider: whose behavior is being targeted (that of the mother/caregiver, provider or community), and what kind of behavior is being targeted (preventive, curative or sustaining). While there is an important need to influence and support behavior change at all levels, Ms. Brown emphasized the role of sustaining behavior, and the important role of communities, without which preventive and curative behavior change has limited impact.

⁵ Refer to Annex E for a complete summation of how to request Network assistance.

The CHANGE project and USAID have identified seven behaviors for long-term adoption, many of which correspond either directly or indirectly to positive malaria-related behaviors:

Preventive behavior:

1. Antenatal care: seek antenatal care at least twice during pregnancy and take adequate amounts of iodine and folate.
2. Usage of micro-nutrients: correctly use micronutrient interventions.
3. Usage of bednets: ensure that all young children in malaria endemic areas sleep under insecticide treated bednets all year round.

Curative behavior:

4. Recognition and treatment seeking: take the child to an appropriate health care provider if the child has a fever lasting more than one day in spite of household treatment.
5. Treatment/compliance: give appropriate home management including full compliance with instructions for the use of drugs.

Sustaining behavior:

6. Community support: organize, manage and give labor and other resources to support effective mechanisms for improved access to needed health products and services; support ready access to services for sick children.
7. Focus behavior change resources only on efforts which can be realistically implemented and which are proven to be effective.

4.4.2 Recent Efforts

In the CORE Group, both Malaria and Behavior Change Communication Working Groups have been formed. There is recent research on care giving and care seeking behaviors in Zambia, Kenya and Mozambique as well as some research on efficacy of bednets.

4.4.3 Collaboration

To foster collaboration between CORE Group members and international organizations with respect to malaria behavior change initiatives, it is important to share experiences, both successes and failures; to share information; to collaborate in developing effective behavior change strategies and interventions; and to share impact results.

Jeanne Brown is a specialist in communications development and marketing research with several years' experience working on communications and social marketing projects in Africa and the Middle East, including Morocco (where she lived for six years), Jordan, Tunisia, Senegal, Mali, Niger, Togo, Ghana, Uganda, Malawi, and Madagascar. Currently Ms. Brown is a Technical Officer for the BASICS Project.

4.5 Summary of Question and Answer Period

- Increase the sharing of lessons-learned between organizations like WHO and PVOs. Establishment of standard "definitions" and similar ways of recording data, such as using an agreed-upon template. Creation of established mechanisms of transition between frequently moved staff, and time provided to write at the end of their missions.
- Holly Williams is the Network's focal point for U.S.-based PVOs, and Maire Connolly is the focal point for Europe.

If a PVO is considering requesting assistance, have a preliminary discussion with Holly Williams. The Network will discuss this (primarily Holly Williams and Maire Connolly), and respond by the end of the day.

By the start of 2000, there will be funds for the Network. In the interim funds have been provided by WHO for the South Sudan and East Timor missions. For NGOs, the Network must consider options, and prepare a sliding scale. During the first year of activity, it is suggested that PVOs organize themselves within a geographical area, similar to what CARE did in South Sudan. By June 2000 there will be more information available. Currently RBM country assessments receive funds through the WHO office of the country level MOH. Funding decisions are made by the MOH, or among RBM partners at the country level.

- A second meeting focusing specifically on complex emergencies is scheduled for October 1, 1999, at BASICS, to follow-up today's workshop. (Refer to Annex H for a report on the meeting).
- In situations where there is no government dealing with a complex emergency, examples of organizations PVOs would approach include the U.N. (if the area is a protectorate, such as in East Timor); a transition government (such as in Kosovo, which has a U.N. transition government with a WHO-provided health minister, which is working out well); or to a U.N. agency coordinating body (such as for Somali: this was based in Nairobi, Kenya and was very difficult).
- The World Bank clarified that the \$200 million for malaria programming includes multi-year projects. (A table showing all Bank activities in malaria is included as Annex I).
- There have still not been any systematic evaluations of the use of algorithms in case management.
- The behaviors mentioned in Jeanne Brown's presentation have been defined by CORE as a way to see what other agencies are doing in these areas: it is a way to categorize these behaviors, to facilitate communication.
- USAID has provided funds for the CDC and the London School of Hygiene and Tropical Medicine to prepare a state-of-the-art paper on malaria⁶.

⁶ The paper is a state-of-the-art on social science's contribution to malaria. Dr. Holly Williams is the lead author, and her colleague is Dr. Caroline Jones at the London School. There will be a working session in early 2000 in London. Contact Dr. Williams for additional information.

The first draft of the revised KPC malaria section was distributed by *Ciro Franco (CSTS)*. Feedback is encouraged. Email comments to haggerty@macroint.com

5.0 Presentation by USAID Global Bureau

On behalf of USAID's Global Bureau, Hope Sukin stated that malaria is a "top priority issue," and the role of PVOs is absolutely critical. USAID and WHO agree that PVOs have to be at the forefront in this sector. Studies by the Special Programme for Research and Training in Tropical Diseases (TDR) of the World Health Organization in Geneva which covered six countries in the past three years showed that over 80 percent of mortality is due to malaria, and it happens in communities. It is essential that we reach those communities with treatment and caregiver assistance.

PVOs are making a difference. The challenge is, how can we take those instances where we are making a difference and scale up? What are the roles of PVOs and USAID?

Ms. Sukin envisions CORE Group PVOs as part of a network to "scale up." She considers today's meeting very important, and is pleased that partners from UNICEF and WHO participated. She plans to talk with organizers of the workshop and have a debriefing session to determine the next steps for the Global Bureau.

6.0 NGO Collaborations in Technical Focus Areas

The panel provided an update on innovative strategies and collaboration for operations research. It was designed to be very PVO focused: how can PVOs become involved in operations research (including funding mechanisms), and how to acquire information and contribute to the policy discussions on current strategy and best practices. Panelists were Kopano Mukelabai (UNICEF), Monica Parise (CDC) and Michael Macdonald (BASICS and NetMark). The panel was moderated by Elise Jensen (Project HOPE).

6.1 Improved Community-Based Activities

Kopano Mukelabai's presentation provided an overview of UNICEF's partnership within RBM, and focused on improving UNICEF/NGO collaboration at the community level. Major points discussed were:

- UNICEF's role in RMB; major focus area at country levels; RBM support activities during 1999.
- Validated approaches to control malaria; lessons-learned from UNICEF-supported Malaria Control Programs.
- Key challenges for the future; reaching marginalized populations. Enhancing collaborations with NGOs/CBOs.

Dr. Kopano Mukelabai, M.D, DABP, FRCP(E) is Senior Health Adviser for UNICEF, at their New York Headquarters. Previously, he served as the UNICEF Country Representative in Eritrea, and as the Regional Health Adviser for UNICEF to countries in Eastern and Southern Africa. Dr. Mukelabai was formerly Dean of the School of Medicine at the University of Zambia, and Professor of Pediatrics, and Chairman of the Department of Pediatrics and Child Health at

te University Teaching Hospital in Lusaka, Zambia. He is a Diplomate of the American Board of Pediatrics, and a Fellow of the Royal College of Physicians of Edinburgh.

6.1.1 UNICEF's Role in RBM; Major Focus Area at Country Levels; RBM Support Activities during 1999

Dr. Kopano Mukelabai, Senior Health Advisor to UNICEF in New York, introduced his topic by thanking the CORE Group for inviting UNICEF to the workshop, and for having the opportunity to discuss how to improve the collaboration between RBM partners and NGOs/CBOs in implementing malaria control programs at the community level. UNICEF appreciates the role of PVOs/NGOs in health care delivery.

UNICEF was mandated by the United Nations to help meet the basic needs of children so as to attain their maximum potential. UNICEF is an advocate for the protection of children's rights, as outlined in the 1989 Convention on the Rights of the Child (CRC); ensures the survival, protection and development of children which is integral to human progress; mobilizes political will to ensure "*first call for children*" i.e. ensure that children have priority to social services, at all times; helps protect the most disadvantaged children – victims of war, disasters, extreme poverty, victims of violence and exploitation and children with disabilities; mitigates effects of emergencies and mobilize humanitarian assistance; gives priority services to the most disadvantaged children and to countries in greatest need; promotes equal rights of women and girls and ensures their meaningful participation in development activities in their own communities; and works with other partners to attain sustainable human development goals.

UNICEF operates in over 136 countries. Through its programs, which are fully decentralized, UNICEF deals with health, nutrition, water and sanitation, education, gender and participation, capacity building, advocacy and social mobilization issues. Its mission emphasizes early childhood care, survival, growth and development, and continuing efforts to help all children to attain their maximum potential. The CRC guides UNICEF operations and collaboration with partners.

The World Summit for Children in 1990 set a goal of reducing under-five mortality by 50 percent by the year 2000. This goal is unlikely to be achieved unless malaria, HIV/AIDS, pneumonia, diarrhea, malnutrition, measles and neonatal tetanus are effectively controlled. It is important to link IMCI and malaria control, in this context.

To galvanize international support for malaria control, Roll Back Malaria was launched on October 30, 1998 by the Heads of WHO, UNICEF, UNDP and the World Bank. There is international commitment to RBM, including significant political will at the national level.

UNICEF currently supports malaria control programs in 33 countries, 27 of them in Africa, and will support the following activities in its country-based programs:

1. Strengthen the capacities of governments and communities to put into effect sustainable malaria control programs.
2. Ensure that children and their families have access to early, effective and affordable treatment.
3. Promote anti-malaria prophylaxis during pregnancy to prevent malaria complications.

4. Support the nation-wide use of insecticide treated mosquito nets and ensure their regular retreatment with recommended insecticides.
5. Promote health and communication to ensure compliance in the treatment of malaria and in regular use of treated mosquito nets.
6. Strengthen support for community-based malaria control programs and link this with other child health programs such as IMCI.
7. Advocate with governments to reduce taxes on mosquito nets and insecticides.

Dr. Mukelabai shared with participants some of UNICEF's supporting activities within RBM during 1999. These included an increased resource allocation to countries to help scale-up ITN projects (\$2.4 million allocated to 11 countries over and above annual budgetary allocations); increased staffing for malaria at all levels; production of new promotional materials, including a revised chapter in the newest edition of *Facts for Life*, a malaria promotional booklet and a new edition of the *Prescriber* on malaria; coordination of the Technical Resource Network on ITNs; intensification of advocacy for reducing taxes and tariffs on bednets and insecticides (Tanzania has now withdrawn taxes on sale of mosquito nets); work with private sector to promote local production of mosquito nets; increased support to countries with WHO to improve GIS⁷; and support to Health Sector reforms and UNDAF in several countries.

6.1.2 Validated Approaches to Control Malaria; Lessons-learned from UNICEF-supported Malaria Control Programs

UNICEF has been active in malaria control activities for approximately ten years, and some validated approaches and lessons-learned can be concluded, which Dr. Mukelabai shared with workshop participants.

- Community-based studies have demonstrated that the use of ITNs can reduce malaria mortality by 25 percent, but to be effective, nets should be treated every six months with recommended insecticides.
- Anti-malaria prophylaxis/intermittent treatment given during pregnancy can significantly reduce complications.
- Community involvement in running community revolving fund schemes such as the Bamako Initiative, has insured sustainability of running primary health care programs.
- Newer drug combinations on the market can effectively treat cases of severe malaria and reduce mortality.

Lessons-learned include:

- Political commitment at national, regional and community levels is essential.
- Commitment must translate into plans of action and follow up.

⁷ For additional GIS information relating to malaria, contact these individuals: Jean Pierre Meert (meertj@who.int), Kathy O'Neill (oneillk@who.int) or Isabel Nuttall (nuttalli@who.int).

- Demand creation for mosquito nets is achievable, while compliance in retreatment of nets is poor.
- Women play a critical role in village health committees and particularly in running revolving fund schemes.
- Knowledge of malaria symptoms is variable—fever may be attributed to malaria, but convulsions may be attributed to witchcraft.
- 50 per cent of patients with malaria still consult traditional healers or CHWs before going to health centers.
- Payment for mosquito nets and their retreatment should be in-kind or cash especially at harvest time.
- Follow-up supervision by District Health Management Teams is critical to support village health committees.
- Procurement of mosquito nets, insecticides and drugs should be made possible from commercial sources.
- Selection of CHWs and giving appropriate incentives is the key to success.

6.1.3 Key Challenges for the Future; Reaching Marginalized Populations

Dr. Mukelabai also pointed out a number of challenges to RBM. At the individual level, it is essential to recognize malaria symptoms early and seek appropriate treatment. Compliance in use and retreatment of nets needs improvement. At the community level, marginalized populations must be fully included. Drug vendors and village health workers need training and motivation. There needs to be an increase in local production and distribution of nets and insecticides. At broader levels, a key challenge is good partnership coordination and resource mobilization, ensuring sustained political commitment and follow-up action. One necessary critical result should be a reduction of taxes on mosquito nets and insecticides.

The “difficult to reach” are people from diverse ethnic groups and cultures who are being deprived of their fundamental human rights to health, nutrition, education and participation in society. They are among the poorest and most marginalized groups and include those living in remote regions or on the streets, ethnic minorities, indigenous peoples, nomads, single mothers, children with disabilities, children abandoned upon the loss of parents due to AIDS, refugees and internally displaced persons (IDP) due to wars or natural calamities. They are people who lack access to basic social services and opportunities because they cannot afford the fees. They do not have transportation, and may have physical disabilities or face social, political and cultural barriers. They have the highest rates of malnutrition, morbidity, mortality, and illiteracy. These “difficult to reach” people and populations require special attention.

Dr. Mukelabai suggested reaching marginalized populations by focusing on, and asking about, the poorest and most vulnerable women and children. In addition, program development should consist of a mixture of top-down and bottom-up planning, and there should be more designing of longer-term programs.

Programs need to be relevant to local needs, values and customs and utilize a wide variety of formal and non-formal approaches. Be creative and establish new communication channels. Promote community participation in planning and implementing programs. In whatever ways possible, enhance the status of women and girls in society.

To check a malaria program's impact, include the collection of disaggregated baseline data with respect to the most vulnerable groups up front. Suggested monitoring indicators include:

- Availability of mosquito nets at the community level. Are the prices affordable?
- Percentage of children and pregnant women regularly sleeping under treated mosquito nets.
- What facilities are available for net retreatment at the community level.
- Percentage of nets at the community level which get treated regularly with recommended insecticide.
- Availability of first line and second line anti-malaria drugs in health centers and in village pharmacies.
- Ability of village health workers to diagnose malaria cases and prescribe appropriate treatment.
- Ability of mothers and village health workers to recognize danger signs due to malaria and other illnesses so as to refer patients early to the nearest hospital.
- Number of severe cases of malaria treated at the local health facility compared to the year before.

6.1.4 Enhancing Collaboration with NGOs/CBOs

UNICEF has decentralized authority to country offices, which have a mandate to work with governments, communities and NGOs through intersectoral collaboration in the areas of health, education, water and sanitation, information and communication. UNICEF can assist in the procurement of nets, insecticides and drugs; development of IEF materials; advocacy; and social mobilization. Dr. Mukelabai mentioned a potential source of 100 dernier-strength nets, which cost \$3.50 (U.S.) and take 6-8 weeks to arrive⁸.

UNICEF recognizes some of the comparative advantages of NGOs/PVOs, including their ability to work in remote areas and reach disadvantaged populations, respond quickly to emergency situations when needed, and quickly earn the trust of communities. They generally have less bureaucracy and reduced overhead costs, and more flexibility in recruiting staff. In addition to monitoring the situation of malaria at community level, they train CHWs, traditional healers, drug vendors, etc., and distribute mosquito nets, drugs and insecticides to scale-up national programs.

This does not imply that CBOs/NGOs do not themselves face challenges, they do. They must, among other issues, deal with capacity building involving local staff; how to broaden services offered at the community level; consider how to assist communities form local CBOs; work with Youth and Women's groups in local production and distribution of nets; lobby donors and

⁸ Contact Mr. Frans Claassen in Pretoria, South Africa, who can give guidance and technical specifications. His email address is fclaassen@unicef.org.za.

governments to reduce taxation on nets; and link up with other CBOs working in other sectors but in the same regions.

6.1.5 Conclusion

UNICEF is in a good position to enhance the work of NGOs/CBOs through its country-based programs. Private voluntary organizations and NGOs can play a pivotal role in reducing malaria mortality and morbidity. Communities know what they need, even though they may not always know how to achieve their objectives or have the means to do so. The greatest contribution of NGOs/CBOs is the ability to work within communities and provide appropriate health services coordinated with government services at district and national levels.

6.2 Facility-Based Activities (IMCI and Drug Resistance)

Anti-malarial drug resistance poses challenges to malaria control. The adverse public health impact includes increased malaria incidence, increased case-fatality rates, changes in species distributions (increased *P. falciparum*), and increased malaria-associated low birth weight. In the face of increasing drug resistance, PVOs can impact on many of the factors that are needed to enable effective treatment.

The presenter, Monica Parise, cited the following studies:

- World Health Organization. *Assessment of Therapeutic Efficacy of Anti-malarial Drugs for Uncomplicated Falciparum Malaria in Areas with Intense Transmission*. WHO/MAL 96.1077.
- Bloland, P.B. and Ettling, M. *Making Malaria-Treatment Policy In The Face Of Drug Resistance*. *Annals Trop Med Parasitol* 1999; 93(1): 5-23.
- Barat, L.M. and Bloland, P.B. *Drug Resistance Among Malaria And Other Parasites*. *Infect Dis Clinics N. Am.* 1997; 11(4): 969-87.

Dr. Parise's presentation, while providing a technical update, focuses mainly on operational issues. She introduced the following five topics, plus recommendations, which serve as sub-sections to this summary of her presentation:

- Definition of resistance
- Impact of anti-malarial drug resistance.
- Geographical view of status of drug resistance.
- Current policy changes/studies (focus on Africa).
- PVO involvement in effective treatment.
- Recommendations.

6.2.1 Resistance

Resistant parasites have the ability to survive and/or multiply despite the administration and absorption of a drug given in doses equal to or higher than those usually recommended but within the tolerance of the subject. Dr. Parise briefly summarized R3, R2 and R1 type resistance, which measure parasites. What is more useful than measuring parasites, however, is decreasing children dying from malaria. Therefore, measures that incorporate the clinical response to drugs, rather than solely the parasitologic response, are now felt to be more useful.

6.2.2 Impact of Anti-malarial Drug Resistance

Dr. Parise provided a brief summary of the state of drug-resistance malaria: there are now higher malaria-specific mortality rates; an increased proportion of *P. falciparum* infections; increased case-fatality rates; epidemics with significant fatalities being reported when ineffective drugs are put to use; and an increase in malaria-associated LBW when ineffective drugs are used.

6.2.3 Geographical View of Status of Drug Resistance

The main areas where chloroquine-resistant *P. falciparum* (CRPF) has not been reported are the island of Hispaniola, most of Central America, small areas in South America, and parts of the Middle East.

- Africa: Chloroquine resistance is highest in East Africa, moderate in central/southern Africa and lowest in West Africa, although even there declines in efficacy are being noted. There is some evidence that Fansidar resistance is increasing in East Africa, although this remains a very effective drug overall in Africa.
- South-east Asia: Chloroquine- and Fansidar-resistance is in many, but not all, areas. Mefloquine resistance is found in some areas on the Thai border. There is also decreased quinine sensitivity: it takes a longer time to clear parasites than formerly.
- Americas: There are areas with chloroquine-sensitivity on Hispaniola, and Central America north/west of the Panama Canal. Fansidar resistance exists in the Amazon basin. There have been a few reports of decreased efficacy of mefloquine and quinine.

6.2.4 Current Policy Changes/Studies (focus on Africa)

Many countries are beginning to re-evaluate their current policies (which mostly favor chloroquine as the treatment of choice). In the short-term, Fansidar will likely be the next drug that many choose. In the longer-term, other possibilities include Lapdap (chlorproguanil/dapsone), Lapdap and artesunate, Fansidar and artesunate, and chloroquine or amodiaquine and artesunate.

Evaluations are currently underway regarding whether the use of combination therapy (artemisinin derivative with other drug) can decrease the rate of acquisition of resistance and decrease transmission (as was seen in South-east Asia). Safety information is being collected. Large demonstration projects are planned in Tanzania and South Africa.

6.2.5 PVO Involvement in Effective Treatment

Dr. Parise suggests five major areas where PVOs can become involved in supporting effective treatment:

1. **Advocacy**: While PVOs must work within the framework of Ministry regulations (some of which may need revision), negotiation is possible, and this is an area for obvious PVO involvement. Changes should probably be made when there is a clinical failure rate of 25 percent within 14 days—if rates reach 15 percent, thinking should begin on changing policies, leaving adequate time for policies to change. Information may be collected by PVOs, or from MOHs, WHO, or the CDC. Sentinel surveillance is the best way to

monitor drug efficacy. WHO is working on a surveillance database, and the CDC has another database (please refer to Annex G for more information on these databases). Decisions should be based on accurate efficacy data, rather than on anecdotal reports.

2. **Appropriate Protocols:** Protocols for integrated case management include instructions for first-line, second-line and third-line drugs. These need to be targeted to those with malaria symptoms, based on smear diagnosis when feasible. There is need for more work in the areas of severe disease and referral. Community health workers need appropriate instructions and protocol.

Dr. Parise shared an interesting study on "cases correctly treated: 1994, end of training, 1-3 months after training, and in 1997," which shows that correct use of protocols falls off with time, although malaria treatment with chloroquine had less errors than other procedures. It seems clear that health workers need more than instructions, they need a dialogue on why certain procedures work best.

3. PVOs can play a part in ensuring adequate drug supply.
4. IEC: PVOs can interface with communities; participate in counseling of patients and caretakers; and collaborate with the private sector.
5. Training of CHWs. Both facility and community-based workers require training on the effective use of anti-malarials, a clear role for PVOs engaged in health provision.

6.2.6 Recommendations

Dr. Parise emphasized that providing an effective anti-malarial drug is the number one solution to reduce morbidity and mortality in malarious areas. Other recommendations include: rational drug policies based on surveillance data, and new protocols which are based on these policies; adequate supplies of appropriate drugs; and education is needed for patients, caretakers and community health workers.

Monica Parise is a physician trained in internal medicine and infectious diseases. For the past six years she had put her skills to use at the CDC. Her work is primarily international in scope and involves the prevention of malaria and its adverse affects in pregnant women and their infants, primarily in sub-Saharan Africa. She has also worked on malaria control and anti-malarial drug resistance issues. Initially trained as a registered nurse at the University of Pittsburg, Dr. Parise later attended medical school there and later specialized at Harvard University's Brigham and Women's Hospital.

6.3 Malaria in Pregnancy

Malaria infection during pregnancy leads to adverse consequences for both the mother and her infant. These consequences include a contribution to maternal anemia, LBW of the infant, severe disease, spontaneous abortion/stillbirth, and premature delivery. Consequences vary with the level of malaria transmission. Effective anti-malarial medication for prevention or intermittent presumptive therapy (IPT) can decrease placental malaria, LBW, and maternal anemia. PVOs can impact the delivery of effective interventions.

In her second presentation, Dr. Parise cited the following useful, recent studies:

- Steketee R.W., Wirima, J.J. et al. *Malaria Prevention In Pregnancy: The Effects Of Treatment And Chemoprophylaxis On Placental Malaria Infection, Low Birth Weight, And Fetal, Infant, And Child Survival*. Am J Trop Med Hyg 1996 (suppl);55(1):1-100.
- Phillips-Howard, P.A., Wood, D. *The safety of anti-malarial drugs in pregnancy*. Drug Safety 1996; 14(3): 131-45.
- Schultz, L.J. et al. *The Efficacy Of Anti-Malarial Regimens Containing Sulfadoxine-Pyrimethamine And/Or Chloroquine In Preventing Peripheral And Placental Plasmodium Falciparum Infection Among Pregnant Women In Malawi*. Am J Trop Med Hyg 1994; 51(5): 515-22.
- Greenwood, B.M. et al. *The Effects Of Malaria Chemoprophylaxis Given By Traditional Birth Attendants On The Course And Outcome Of Pregnancy*. Trans R Soc Trop Med Hyg 1989; 83(5): 589-94.
- Parise, M.E. et al. *Efficacy Of Sulfadoxine-Pyrimethamine For Prevention Of Placental Malaria In An Area Of Kenya With A High Prevalence Of Malaria And Human Immunodeficiency Virus Infection*. Am J Trop Med Hyg 1998; 59(5): 813-22.
- Menendez, C. et al. *Malaria Chemoprophylaxis, Infection Of The Placenta And Birth Weight In Gambian Primigravidae*. J Trop Med Hyg 1994; 97(4): 244-48.
- Shulman, C.E. et al. *Intermittent Sulphadoxine-Pyrimethamine To Prevent Severe Anemia Secondary To Malaria In Pregnancy: A Randomized Placebo-Controlled Trial*. Lancet 1999; 353:632-36.
- Verhoeff, F.H. et al. *An Evaluation Of The Effects Of Intermittent Sulfadoxine-Pyrimethamine Treatment In Pregnancy On Parasite Clearance And Risk Of Low Birth Weight In Rural Malawi*. Annals Trop Med Parasitol 1998; 92(2): 141-50.
- Dolan, G. et al. *Bednets For The Prevention Of Malaria And Anaemia In Pregnancy*. Trans R Soc Trop Med Hyg 1993; 87:620-26.
- D'Allesandro, U. *The Impact Of A National Impregnated Bednet Programme On The Outcome Of Pregnancy In Primigravidae In The Gambia*. Trans R Soc Trop Med Hyg 1996;90 (5): 487-92.
- Shulman, C.E. et al. *A Community Randomized Controlled Trial Of Insecticide-Treated Bednets For The Prevention Of Malaria And Anemia Among Primigravid Women On The Kenyan Coast*. Trop Med Intl Hlth 1998; 3(3): 197-204.

Dr. Parise recently gave a talk to the CORE Group's "Safe Motherhood" workshop: *Effective Strategies to Promote Quality Maternal and Newborn Care*. Please refer to Annex J for a short summary. Today's presentation included the three following topical sub-sections, plus recommendations for PVO involvement:

- Public health impact.
- Potential strategies.
- Current status.
- PVO involvement for effective intervention.

6.3.1 Public Health Impact

Adverse effects vary with maternal immunity and the level of malaria transmission. In high transmission areas, there will be significant low birth weight and anemia, with the most marked effects in primigravidae/secundigravidae. Some pregnant women will be asymptomatic. In low transmission areas, there is also severe malaria, spontaneous abortion and premature delivery, with all parties affected.

HIV-positive women have higher densities and prevalence of parasitemia. Fansidar efficacy appears reduced, and all gravidities are affected.

Attributable risk estimates are about 5-12 percent of LBW; 35 percent of preventable LBW; and 3-5 percent of infant mortality.

6.3.2 Potential Strategies

Studies to date have shown that children benefit more from bednets than pregnant women, and the effects can be seasonal in some countries. The main intervention is through drugs. Studies show that efficacious drugs (including chloroquine, SP, Maloprim, and mefloquine) can decrease LBW, but chloroquine's efficacy is increasingly limited due to drug resistance. Fansidar has been studied for IPT and other drugs will follow.

Intermittent treatment (IPT) is usually two doses to clear the placenta. Prompt case management is important in all areas.

6.3.3 Current Status

The WHO Expert Committee recommends that intermittent treatment with an effective, preferably one-dose anti-malarial drug delivered in the context of antenatal care should be made available to primi- and secundigravidae as an appropriate method for reducing the consequences of malaria during pregnancy in highly endemic areas. Such intermittent treatment should be started from the second trimester onwards and not be given at intervals of less than one month apart.

Malawi implemented IPT with Fansidar in 1993; Kenya has changed its policy and plan implementation; and other African countries are examining their current strategies. There are still remaining questions such as interaction with folate, which other drugs could be used for IPT, and dosing in HIV-positive women.

6.3.4 PVO Involvement for Effective Intervention

Dr. Parise suggests the following ways PVOs can become involved in helping take the necessary steps to provide effective interventions in pregnancy:

1. **Collect baseline data:** Consideration must be given to the difficulties obtaining information when many women are asymptomatic, and the attitudes of women and health workers to the concept of drugs during pregnancy, ANC attendance, etc. when collecting baseline data (note: the CDC is working on a book on this topic now).
2. **Policies/advocacy:** PVOs can be advocates for policies which aid in the prevention of malaria during pregnancy, and while working within MOH guidelines, can negotiate for changes. Evidence exists in sub-Saharan Africa that IPT with Fansidar is effective, cost-effective, safe and deliverable (questions remain as to whether IPT with chloroquine or other drugs would be as effective). PVOs should strive to implement these policy changes.

3. **Program interventions:** PVOs are in a position to make decisions on facility-based interventions or the need for community-based distribution. Malaria control activities can and should be integrated into an ANC package, which requires dialogue with both reproductive health and malaria control offices. Note that the frequency of dosing may need to be modified in areas with high HIV seroprevalence. PVOs should include surveillance for adverse drug reactions into their programs, or work with the MOH on this. If drug supplies are inadequate, they will be diverted to those with clinical malaria and will not be given to asymptomatic pregnant women. PVOs have a further role in IEC, clearing misconceptions within communities, and training community health workers.
4. **Case management of clinical malaria:** PVOs can ensure appropriate protocols and drugs are available, including those needed to manage severe disease.

6.3.5 Recommendations

To conclude, Dr. Parise recommends that in areas of high malaria transmission where Fansidar is effective and drug resistance does not preclude its use, 2-dose IPT should be provided in the second and third trimesters. There is a need for PVOs and others to work on policies and programs to support this recommendation.

6.4 Insecticide-Treated Materials

Michael Macdonald (Technical Officer, Malaria for BASICS and the Technical Advisor for NetMark) provided an overview of the NetMark public-commercial partnerships project for the sustainable marketing of Insecticide-Treated Materials (ITMs) in Africa. There are four primary areas for PVO technical and operational collaboration with the NetMark Project: demand creation, affordability of ITM services, accessibility and appropriate use (i.e. that targeted pregnant women and children under five are using the ITMs in an appropriate way). A fifth area for PVO involvement is in market or consumer research, or in public health terms, formative and operations research.

6.4.1 Introduction

The tremendous potential of ITMs to reduce mortality, especially in Africa, has been documented through pilot projects. Efforts by Mr. Charles Gursky (Bayer) and others to make ITMs more readily available have led to the development of public-commercial partnerships, and the NetMark Project.

The manufacture and marketing of ITMs is a high risk business with low profit margin. NetMark is a partnership between the public and commercial sectors, to lessen the risk through sharing the costs of research and raising the general awareness of malaria and the benefits of using ITMs. NetMark is a five-year project to create demand for ITMs and create an environment for their sustainable marketing throughout Africa. The Project Partners are the S.C. Johnson Wax Company (a large consumer-products company throughout Africa); the Academy for Educational Development (AED); and group-contractors Group Africa Ltd., Johns Hopkins University, and The Malaria Consortium (London School/Liverpool School of Tropical Medicine), who will be dealing with issues of affordability and equity. There are precedents for this type of arrangement, including the Blue Circle in Indonesia, and the contraceptives distribution program used in Morocco.

6.4.2 NetMark and PVO Collaboration for Malaria Control in Africa

One of the focal areas for NetMark will be raising malaria awareness and demand for ITMs. Issues related to caretaker recognition and demand for quality curative services lie outside the NetMark mandate but offer a very good potential for collaboration with PVOs.

NetMark aims to extend the geographic and economic reach of ITMs. PVOs can play a major role in improving access and affordability of ITM services to those who are truly beyond the reach of the commercial distribution network. NetMark also intends to promote the appropriate use of ITMs for children and pregnant women, positioning ITMs as a health product for women and children, not a luxury product, a message PVOs can complement through their antenatal care services and community-based programs.

An important area for two-way collaboration between NetMark and PVOs is that of capacity-building and operations research. There is particular need to focus on consumer/market areas of research, i.e. formative research.

Michael Macdonald, from Johns Hopkins University, splits his time between BASICS and NetMark. He started out in 1977 as a Peace Corps Volunteer with malaria programs in E. Malaysia (Borneo) and has since worked for the International Rescue Committee and various UN organizations, for malaria, dengue and refugee health programs in South East Asia and Africa. Dr. Macdonald has a doctorate in malaria entomology from Johns Hopkins, but now spends more time with budgets than with bugs.

6.5 Summary of Question and Answer Period

- WHO has effectively used GIS data in West Africa. Quite a few countries have now been mapped (ex. Kenya). WHO has GIS information which PVOs can access⁹ (please also refer to the presentation by Monica Myers of NASA which covers some uses of GIS data).
- While NetMark does not provide grants to PVOs, there could be technical assistance.
- Ghana, Kenya and Nigeria are the most likely countries for NetMark projects. Final decisions have not yet been made.
- Group Africa uses an "Avon/Amway"-type model for marketing, which is being used in Ghana for laundry soap. Similar methods will be used in NetMark.
- While NetMark is focusing on Africa, meetings were held in March for a similar project in the Mekong grouping of countries.
- While the NetMark strategic planning process is still ahead, it will include capacity building with MOHs, trying to take a "20-year view."
- The increased use of cotrimoxinol may also be increasing the resistance to Fansidar. There is some evidence that cotrimoxinol can have some effect on malaria where sulfa

⁹ For additional GIS information relating to malaria, contact these individuals: Jean Pierre Meert (meertj@who.int), Kathy O'Neill (oneillk@who.int) or Isabel Nuttall (nuttalli@who.int).

drug resistance is not prevalent. Monica Parise asks that those with questions about this email her at mep0@cdc.gov. She will check with colleagues at the CDC. Kopano Mukelabai, who helped develop the IMCI algorithm, responded that organizations should not expect to use cotrimoxinol in areas where malaria is very intense.

- MOHs may still be giving chloroquine when it is not effective due to the huge gulf which exists between researchers and policy makers/managers. Scientific data is not understandable in terms of the number of pills, cost, retraining, available infrastructure in country, etc.: these need attention. Combination trials will start in 2000 in Tanzania and South Africa. Parts of these trials will examine some of these problems, and try to answer the question, "How can the data from the trials be used to change policy, and what other questions are researchers not considering?" Note again that most treatment does not occur in the health facility...and this issue is not being considered enough!
- There is training going on in Kenya (Marsh, Kalifi) of private drug suppliers. Email Holly Williams (hbw2@cdc.gov) for references.
- With 60-70 percent of treatment outside the formal sector, programs must consider and involve the private sector. Maire Connolly will send four references to Janet Meyers at [Aficare \(jlmeyers@aficare.org\)](mailto:jlmeyers@aficare.org).
- Youssef Tawfik, the Senior Technical Officer at BASICS (ytawfik@BASICS.org) shared the work of Dr. Northrup who studied children who did not show up in health facilities, and reported that BASICS has adapted his methods from India to Nigeria.

7.0 Presentation by NASA

Monica Myers, Project Manager of the NASA Goddard Space Flight Center's Climate Change and Human Health Initiative, provided an overview of how PVOs and NASA could work together effectively in the health field.

The NASA Earth Science Enterprise is a new Earth-observing program of satellites, data systems, networks and technologies that will be taking new, integrated measurements of the planet at resolutions not before available. This data will be available at either no charge or only the cost of reproduction. The Division of Applications, Commercialization and Education (ACE) is developing new applications for this data and a key focus is human health and the development of Early Warning Systems (EWS) examining infectious disease outbreaks as they are linked to the local environment. Early warning systems (EWS) using environmental data are now in validation and are expected in some cases to predict infectious disease outbreaks up to two years in advance. The research approach is now being used to investigate malaria, dengue, encephalitis, and ebola. In Kenya, Tanzania, Uganda, Ethiopia, Cote d'Ivoire, Madagascar, and South Africa the approach is in use for malaria; in Thailand, Burma, Cambodia, and Viet Nam for dengue. Currently NASA is using eight different sources of data for integrated environmental assessment.

The research team initiating the first model is the International Research Partnership for Infectious Diseases (IntRePID). IntRePID plans on developing a systems-approach to the use of Early Warning Systems. For example, surveillance data is expected to be collected over the Internet using a template derived from the WHO electronic surveillance system, FluNet, in Paris. Remote sensing data from the suite of NASA satellites will be subsetted at the Goddard Space Flight Center Global Change Data Center (GCDC). Predictive algorithms developed by

participating researchers will be run at the GCDC with results returned to the monitoring organization.

Ms. Myers shared a satellite-derived predictive risk map for malaria in Africa, and a second overhead on the seasonality of malaria risk in Africa. A prototype study for malaria is going on now in 51 sites, using 8 km data.

NASA is interested to find out if any CORE Group organizations are willing to partner with this project by providing malaria surveillance data to enable the development of predictive models for Africa or South America. Ideal data sets are those from five to ten years in length. Please contact Monica Myers (myers@daac.gsfc.nasa.gov).

8.0 Communications and Collaboration

Session 5 was a panel entitled "Communications and Collaboration", focusing on communications and contact points for follow-up. Representatives from WHO (Maire Connolly); UNICEF (Kopano Mukelabai); the CDC (Monica Parise); and USAID (Kate Jones) each presented a very brief closing commentary on how communications should be carried forward. This was followed by a general discussion/question and answer period.

Larry Casazza (World Vision) moderated the panel. He pointed out that RBM is moving rapidly to the national level, and up until now there has not been strong PVO involvement. With the stage now set, and with PVOs and international organizations having the same client, all are ready for the networking that can move RBM forward even more effectively. The CORE Group is about moving beyond old "competitions" and focusing on issues and points of contact.

8.1 USAID

Kate Jones said she was discussing collaboration as both a grants manager and a Foreign Service field health officer, because the collaboration really takes place at the country level. USAID/PVC encourages the PVOs to work together at the country level to better influence national policy, collaborate with the donors, and to improve all the PVO programs. She said that she has just heard of CORE Group "clusters" being formed in Kenya and Tanzania. Ms. Jones paraphrased the CEO of one of the PVOs, who is a former executive of a large corporation. He expressed his admiration for the CORE Group and the selfless sharing of technical information that benefits all. He told her that this kind of collaboration is unheard of in Industry.

Of the USAID BHR funded child survival programs, there are 22 Child Survival programs with malaria components, and of these, one is in Asia. This meeting (in Africare) is a start, bringing together PVOs and the other organizations working in malaria. This can continue at the country and even the local level.

As with IMCI, the challenge is to document successes of the PVOs. To do this, Ms. Jones challenged participants to include national and international universities as partners, which are a source of valuable in-country expertise. Some of the PVOs are already doing this.

Katherine (Kate) M. Jones has been a U.S. Foreign Service health officer with USAID for 19 years. She is currently Chief of the Child Survival Division of BHR/PVC, managing the PVO Child Survival Grants Program.

8.2 UNICEF

Kopano Mukelabai is looking forward to active collaboration at the country level. He would like to know where PVOs are geographically, and to begin to share lessons-learned. It may be possible to visit work going on in-country among agencies.

He suggests establishing working groups in-country. It is important to work with women's groups and youth groups. In Eritrea, a study was done of radio listening behavior, and this was used to target information. Schools can be targeted, because teachers and children can be agents of change. UNICEF is working with Ministries of Education to change curriculum (for example, in Malawi with AIDS).

UNICEF and WHO are sponsoring a consultant on IMCI and applying this to malaria. We need a list of knowledgeable national and PVO contacts who can be called upon in-country as consultants.

For communication/contact at international levels, both WHO and UNICEF maintain websites, and hold international meetings like the one coming up in Dar es Salaam (please refer to Annex I for details on this conference).

8.3 WHO

Maire Connolly sees great progress at the international level, with governments, during the last 12 months, but challenged the participants to discover how to get contact with PVO field representatives, and encourage them to meet with the malaria people in their countries. She would like to see a group of 5-6 PVOs together to distribute ITNs in northern Kenya, for example.

8.4 CDC

Monica Parise emphasized that the CDC does many of the technical consultations. She does not know which PVOs are working in each country, but the CDC is open to dialoguing with PVOs in-country if they are aware of the organization's presence. The CDC can provide technical advice, and comment on protocols. Dr. Holly Williams mentioned that the CDC can do mentoring through some drug trials, such as is happening with HAI.

8.5 Summary of Question and Answer Period

- Kenya was given as an example where 700 deaths were reported at one hospital alone due to a seasonal malaria epidemic. Merlin, AMREF and UNICEF called PVOs that deal with drug distribution together to look at short- and long-term solutions. UNICEF supported a situational analysis with the MOH, and this included all the groups doing this kind of work around Kenya. World Vision now has a professional person at the national level in Nairobi to coordinate these activities. There is an extraordinary need for people. Hopefully, in Kenya, expected malaria epidemics will not have the same effect next year.

- PVOs owe it to themselves to raise staff capacity at national levels. PVOs should be included in MOH and other training opportunities.
- It should be noted that there are groups and organizations like the CORE Group PVOs who have funded programs and who can pay for their staff to come to training opportunities when available.
- PVOs have the advantage of a wide range of expertise. IMCI is an example of where the CORE Group's IMCI Working Group disseminated information to CORE Group members, and with PAHO's strong support, PVOs are now at valuable IMCI meetings. HQ-level PVO staff can help identify field personnel who could benefit from participation.
- There are 16 new DIPs and KPC surveys due in March 2000. Kate Jones (USAID) suggested that these projects could be followed for their four-year duration, and that international organizations involved in RBM could be involved in review and in identifying opportunities for large or small involvement.
- It was suggested that at the end of a CDC or similar consultancy in-country, to hold a one-day inter-agency debriefing. The CDC has already put in its recommendations that time be planned on for meetings and preparing trip reports, for sharing purposes.
- Examples given of local PVO groups and partnerships include the quarterly meeting of Mozambique PVOs¹⁰, and Guinea's AIME project (Africare, CDC, BASICS and others), Benin's AIMI project (Africare/CDC partnership)¹¹
- Charles Gursky (Bayer) reports that Bayer began providing technical support years ago. Bayer can provide technical support and training to PVOs, but PVOs must come with a plan and be able to tell Bayer as much about what they want to accomplish as possible. PVOs will find Bayer receptive and helpful. Their major effort is in Africa. Mr. Gursky acts as a catalyst and will help organizations find the specialists needed either in Germany or in Africa. There is a lot of initiative now with RBM on, and there is a lot of interest now. Bayer will be glad to help.
- New collaborations require change. CORE has been a very positive example of how organizations with the same clients, needs and technical resources can come together. All of this puts more challenges on staff and how they use their health technical specialists. The real issue is not funds, but how we interact: a relatively small amount of money from USAID resulted in CORE. The Internet has also already changed how we work.

¹⁰ Larry Casazza (World Vision) can provide details. Contact him at lcasazza@worldvision.org,

¹¹ Janet Meyers (Africare) can provide more information. Contact her at jlmeyers@africare.org

9.0 Closing Remarks

Janet Meyers (Africare, Chair of the CORE Group Malaria Working Group) summarized the workshop, noting that speakers have gone into a fair amount of depth, their presentations have been very technically informative, and that there has been great opportunity for good contacts. *Much of the future collaboration needs to be focused in the field, and this is where we need to make our contacts.* On behalf of Africare, *Ms. Meyers intends to get the information shared in this workshop to Africare's field staff, along with technical updates.* She thanked the speakers and participants for providing plenty of ideas for the CORE Group's Malaria Working Group to use in future planning. Victoria Graham (CORE Group) closed the workshop, noting it as a very stimulating day, and thanking all speakers and participants for their part in making it a success.

Annex A: Acronym List

ACE	.....Division of Applications Commercialization and Education (within NASA)
ACTMalaria	.....Asian Collaborative Training Network for Malaria
ADRA	.....Adventist Development and Relief Agency
AED	.....Academy for Educational Development
AIMI	.....African Integrated Malaria Initiative
AMREF	.....African Medical and Research Foundation
ANC	.....Antenatal care
BASICS	.....Basic Support for Institutionalizing Child Survival
BHR	.....Bureau of Humanitarian Response
CBO	.....Community-based Organization
CDC	.....Centers for Disease Control and Prevention
CGPP-PEI	.....CORE Group Partners Project – Polio Eradication Initiative
CHW	.....Community Health Worker
CORE	.....Child Survival Collaborations and Resources Group
CRC	.....Convention on the Rights of the Child
CRPF	.....Chloroquine-resistant <i>P. falciparum</i>
CS	.....Child Survival
CSP	.....Child Survival Projects
CSTS	.....Child Survival Technical Support
CQ	.....Chloroquine
DALY	.....Disability adjusted life years
DIP	.....Detailed Implementation Plan
DOS	.....Department of State
DRC	.....Democratic Republic of Congo
ECD	.....Early Childhood Development
EHA/WHO	.....Emergency and Humanitarian Action/World Health Organization
EHP	.....Environmental Health Project
EWS	.....Early Warning System
GCDC	.....Goddard Space Flight Center Global Change Data Center
GIS	.....Geographical Information System
HAI	.....Health Alliance International
IARA	.....Islamic African Relief Agency
ICRC	.....International Committee of the Red Cross
IDP	.....Internally displaced persons
IEC	.....Information, education and communication
IFRC	.....International Federation of the Red Cross
IMCI	.....Integrated Management of Childhood Illnesses
IntRePID	.....International Research Partnership for Infectious Diseases
IPT	.....Intermittent Presumptive Treatment
IRC	.....International Rescue Committee
ITM	.....Insecticide-Treated Materials
ITN	.....Insecticide-Treated Nets
KPC	.....Knowledge, Practice, Coverage (Survey)
LBW	.....Low birth weight
MCM	.....Malaria Case Management
MOH	.....Ministry of Health
MPS	.....Making Pregnancy Safer

MSF	.....	Medecins sans Frontieres
NASA	.....	National Aeronautics and Space Administration
NGO	.....	Non-governmental Organization
OAU	.....	Organization for African Unity
ODA	.....	Overseas Development Organization
OFDA	.....	Office of U.S. Foreign Disaster Assistance
OLS	.....	Operation Lifeline Sudan
OMNI	.....	Organizing Medical Networked Information
OSFAM	.....	Family Health Options
PAHO	.....	Pan-American Health Organization
PATH	.....	Program for Appropriate Technology in Health
PSI	.....	Population Services International
PVC	.....	Bureau of Humanitarian Response/Private Volunteer Cooperation
PVO	.....	Private Voluntary Organization
RASS	.....	Relief Association of Southern Sudan
RBM	.....	Roll Back Malaria
SAWSO	.....	Salvation Army World Service Offices
SP	.....	Sulfadoxine-pyrimethamine
SPHERE	.....	Steering Committee for Humanitarian Response & Interaction
SRRA	.....	Sudan Relief and Rehabilitation Agency
TBA	.....	Traditional Birth Attendant
TDR	.....	Special Programme for Research and Training in Tropical Diseases (WHO)
UN	.....	United Nations
UNDAF	.....	United Nations Development Assistance Framework
UNDP	.....	United Nations Development Program
UNHCR	.....	United Nations High Commission for Refugees
UNICEF	.....	United Nations Children's Fund
USAID	.....	United States Agency for International Development
WFP	.....	World Food Programme
WHO	.....	World Health Organization
WVRD	.....	World Vision Relief and Development

Annex B: Agenda

Malaria Update: PVO Roles in Global Malaria Initiatives Workshop Agenda and Schedule

TIME	EVENT	SPEAKERS
8:30-9:00	Registration	
9:00-9:20	Welcome and Opening Remarks	<ul style="list-style-type: none"> • Yolanda Richardson, Senior Vice-president, AFRICARE • Victoria Graham (The CORE Group) • Janet Meyers (AFRICARE), Chair, CORE Group Malaria Working Group • Michael Macdonald (BASICS)
9:20-10:00	Session 1 Introduction of Speaker	Janet Meyers (AFRICARE)
	Presentation: Overview of PVO Malaria Activities.	Uzo Okoli
10:00-10:40	Session 2 Introduction of Speakers	Michael MacDonald (BASICS)
	Presentation: The Roll Back Malaria Initiative	David Nabarro (WHO), Project Manager, Roll Back Malaria
10:40-11:00	Break	
11:00-12:30	Session 3 Panel Moderator	David Oot (SAVE THE CHILDREN)
	Panel: PVO Collaboration in Operations <ul style="list-style-type: none"> • World Bank Malaria Program • Malaria Control in Complex Emergencies • Malaria Communications and Behavior Change 	Stephen Osika (WORLD BANK) Maire Connolly (WHO) Holly Williams (CDC), RBM Technical Resources Networks Jeanne Brown (BASICS)
12:30-1:30	Lunch is provided for participants in [list room]	
1:30-3:30	Session 4 Panel Moderator	Elise Jensen (Project HOPE)
	Panel: NGO Collaboration in Technical Focus Areas <ul style="list-style-type: none"> • Improved Community-Based Activities • Facility-Based Activities (IMCI and drug resistance) • Malaria/Nutrition and Malaria/Pregnancy • Insecticide Treated Materials 	Kopano Mukelabai (UNICEF) Monica Parise (CDC) Monica Parise (CDC) NETMARK Speaker (TBA)
3:30-3:50	Break	
3:50-4:50	Session 5 Panel Moderator	Larry Casazza (WVRD)
	Panel: Communications and Collaboration <ul style="list-style-type: none"> • WHO • UNICEF • CDC • USAID • WORLD BANK 	Maire Connolly Kopano Mukelabai CDC (TBA) Kate Jones Julie McLaughlin/Stephen Osika
4:50-5:00	Summary and Closing	Janet Meyers (AFRICARE) Victoria Graham (The CORE Group)

Annex C: Participant Contact Information

Malaria Update: PVO Roles in Global Malaria Initiatives

#	NAME	TITLE	ORGANIZATION	EMAIL ADDRESS	MAILING ADDRESS	TELEPHONE	FAX
1	Alarcon, David	Finance Manager	The CORE Group	Dalarcon@worldvision.org	220 I St. NE Suite 270 Washington, DC 20002	202 608-1830	202 543-0121
2	Bahrambegi, Ranine	Assistant to the President	Seraphine Foundation	Ranine@mscionline.com		703 276-3000	
3	Brennan, Rick	Director, Health Unit	International Rescue Committee	Rbrennan@intrescom.org	122 East 42nd Street, 12 th Floor, New York, NY 10168-1289	212-551-3000	212-551-3138
4	Brown, Jeanne	Behavior Change and Communications Specialist	BASICS	Jebrown@basics.org	1600 Wilson Blvd. Suite 300 Arlington, VA 22209	703-312-6800	703-312-6900
5	Capps, Jeanne	Consultant	Consultant			301 270-4448	
6	Carter-Foster, Nancy	Director EID/411/AIDS	DOS	Ncarterf.state.gov	US Dept. of State Washington, DC 20520	202 647-2435	202 736-7336
7	Casazza, Larry	Senior Specialist	World Vision	Lcasazza@worldvision.org	220 I St. NE Suite 270 Washington, DC 20002	202 547-3743	202 547-4834

PREVIOUS PAGE BLANK

#	NAME	TITLE	ORGANIZATION	EMAIL ADDRESS	MAILING ADDRESS	TELEPHONE	FAX
10	Davis, Robb	Senior Technical Advisor, Maternal and Child Health	Freedom from Hunger	Rdavis@freefromhunger.org	1644 DaVinci Court, P.O. Box 2000, Davis, CA 95617	530-758-6200	530-758-6241
11	Edison, Jay	Director for Health	ADRA	JayEdison@compuserve.com	12501 Old Columbia Pike Silver Spring, MD 20904	301-680-6380	301-680-6370
12	Elliott, Terry	Senior Program Officer	PATH	Telliott@path.org	4 Nickerson Street Seattle, WA 98019-1699	206-285-3500	206-285-6619
13	Espeut, Donna	Research Specialist	CSTS/Macro	Despeut@macroint.com	CSTS/Macro International, Inc. 11785 Beltsville Dr. Calverton, MD 20705-3119	301 572-0464	301 572-0999
14	Frank, Richard	President	PSI	Dfrank@psiwash.org	1120 19 th St. NW Suite 600 Washington, DC 20036	202 785-0072	202 785-0120
15	Fricke, Andrea	Program Assistant	PATH	africke@path-dc.org	1990 17 St. NW Washington, DC 20036	202 822-0033	
16	Fung, Christian	Health Specialist	IRC	Chrisf@intrescom.org	122 East 42 nd Street, 12 th Floor New York, NY 10168-1289	212-551-3127	212-551-3138

#	NAME	TITLE	ORGANIZATION	EMAIL ADDRESS	MAILING ADDRESS	TELEPHONE	FAX
17	Goldfarb, Priscilla	Executive Director	AMREF	Pgoldfarb@amref.org	19 th W. 44st St. Rm 1708 New York, NY 10036	212 768-2440	212 768-4230
18	Graham, Victoria	Manager	CORE Group	Vgraham@worldvision.org	220 "I" Street N.E., Suite 270 Washington, D.C. 20002	202-608-1830	202-543-0121
19	Gueye, Debbie	Child Survival Coordinator	Medical Care Development International	Dgueye@mcd.org	1742 "R" Street, N.W., Washington, D.C. 20009	202-462-1920	202-265-4078
20	Gursky, Charles	Consultant	Bayer	Charles.gursky.b@bayer.com	64 Mt. Pleasant Dr. Trumbull, CT 06611	203 459-9185	
21	Haggerty, Patricia	Director	CSTS	Haggerty@macroint.com	CSTS Macro International, Inc. 11785 Beltsville Dr. Calverton, MD 20705-3119	703-312-6800	703-312-6900
22	Haroun, Mohamed	Health Desk Officer	IARA	Iaraharoun@aol.com	P.O. Box 7084 Columbia, MO 65205-7084	573 443-0166	573 443-5975
23	Harper, Malayah	Advisor	WHO	Harperm@who.ch	WHO 1211 CH Geneva, Switzerland	41 22 791-4207	41 22 791-4844

#	NAME	TITLE	ORGANIZATION	EMAIL ADDRESS	MAILING ADDRESS	TELEPHONE	FAX
24	Hoekman, Nadine	Field Representative	Health Alliance International	Nhoekman@u.washington.edu	1107 Northeast 45 th Street, Suite 410 Seattle, WA 98105	206-543-8382	206-685-4184
25	Howard, Stephanie	Technical Division Program Assistant	BASICS	Showard@basics.org	1600 Wilson Blvd. Suite 300 Arlington, VA 22209	703-312-6800	703-312-6900
26	Javed, Mary Anne	Program Manager, Health and Nutrition	Christian Children's Fund	Maryja@ccfusa.org	2821 Emerywood Parkway P.O. Box 26484 Richmond, VA	804 756-2700	804 756-2718
27	Jensen, Elise	Regional Director, Africa	Project Hope	Ejensen@projhope.org	Health Sciences Education Center, Carter Hall Millwood, VA 22646	540-837-2100	540-837-1813
28	Jones, Kate	Chief, Child Survival Division	USAID	Kjones@usaid.gov	USAID/BHR/P VC RRB 7.06-087 Washington, D.C. 20523-7600	202-712-1444	202-216-3039
29	Kone, Adama	Regional Director	BASICS	Koneb@telecomplus.sn	1600 Wilson Blvd. Suite 300 Arlington, VA 22209	703 312-6800	Senegal 221 824-2478

#	NAME	TITLE	ORGANIZATION	EMAIL ADDRESS	MAILING ADDRESS	TELEPHONE	FAX
30	LeBan, Karen	Technical Officer	BASICS	Kleban@basics.org	1600 Wilson Blvd Suite 300 Arlington, VA 22209	703-312-6800	703-312-6900
31	Lwin, Sandie	Health Specialist	World Bank	Slwin@worldbank.org	1818 H St. NW Washington, DC 20433	202 458-5827	202 473-8107
32	Macdonald, Michael	ScD	BASICS	Mmacdona@basics.org	1600 Wilson Blvd Suite 300 Arlington, VA 22209	703-312-6800	703-312-6900
33	Madhav, Nitin	Child Survival Technical Advisor	USAID	Nmadhav@usaid.gov	USAID/BHR/P VC RRB 6.07-111 Washington, D.C. 20523-7600	202-712-1307	202-216-3191
34	McLaughlin, Julie	Health Specialist, Africa Region	World Bank	Jmclaughlin@worldbank.org	1818 H Street, N.W. Washington, D.C. 20043	202-458-4679	202-473-8299
35	Mercer, Mary Anne	Deputy Director	Health Alliance International	Mamercer@u.washington.edu	1107 Northeast 45 th Street, Suite 410 Seattle, WA 98105	206-543-8382	206-685-4184
36	Meyer-Capps, Jean	Consultant	Consultant	Jcapps@erols.com		301 270-4448	

#	NAME	TITLE	ORGANIZATION	EMAIL ADDRESS	MAILING ADDRESS	TELEPHONE	FAX
37	Meyers, Janet	Health Program Manager for the West Region	Africare	Jlmeyers@africare.org	440 "R" Street, N.W. Washington, D.C. 20001	202-462-3614	202-387-1034
38	Mukelabai, Kopano	Senior Health Advisor	UNICEF	Kmukelabai@unicef.org	UNICEF 3-United Nations Plaza New York, NY 10017	212-824-6318	212-824-6460
39	Myers, Monica	Project Manager	NASA	Myers@daac.gsfc.nasa.gov	NASA Goddard Space Flight Center Distributed Active Archive Center Greenbelt, MD 20771	301 614-5321	301 614-5268
40	Nabarro, David		WHO	Nabarrod@who.ch	WHO 1211 Geneva 27 Switzerland	<u>41 22 791-2769</u>	<u>41 22 791-4824</u>
41	Nagle, Douglas	Program Manager	Partners for Development	Nagle@jsi.com	1616 N. Fort Meyer Drive, 11 th Floor Arlington, VA 22209	703-528-8336	703-528-7480
42	Newberry, David	Project Director	CGPP-PEI	Newberry@care.org	151 Ellis St. NE Atlanta, GA, 30303-2439	404 681-4579 ext. 170	404 589-2624
43	Niyonzima, Jean Marie	Program Manager	International Eye Foundation	Jmniyonzima@iefusa.org	7801 Norfolk Avenue Bethesda, MD 20814	301-986-1830	301-986-1876

#	NAME	TITLE	ORGANIZATION	EMAIL ADDRESS	MAILING ADDRESS	TELEPHONE	FAX
44	Okada, Ted	Director, Washington Office	Food for the Hungry International	Ted@fhi.net	9705 Commonwealth Blvd Fairfax, VA 22032	202-547-0560	202-547-0523
45	Okoli, Uzo	Consultant	Consultant	Temporarily at uokoli@macroint.com ; Auokoli@hotmail.com	69A London Rd Forest Hill, London SE23 3TY U.K.	44 181 265-1866	No fax available
46	Oot, David	Director of Health, Population and Nutrition	Save the Children	Doot@dc.savechildren.org	1620 "I" Street, N.W. Suite 202 Washington, D.C. 20006	202-293-4170	202-293-4167
47	Osika, Stephen	Health Specialist	World Bank	Josika@worldbank.org	1818 H Street NW Washington, DC 20043	202-458-7432	202-473-8107
48	Parise, Monica	M.D. Medical Officer	CDC	Mep0@cdc.gov	Malaria Epidemiology Section, CDC 4770 Buford Highway MS F22 Chamblee, GA 30341	770-488-7760	770-488-7761
49	Pedatto, Amy	Program Development Officer	Project Concern International	Amy@projcon.ets.com	3550 Afton Road San Diego, CA 92123	619-279-9690	619-694-0294

#	NAME	TITLE	ORGANIZATION	EMAIL ADDRESS	MAILING ADDRESS	TELEPHONE	FAX
50	Preneta, Amy	Foreign Affairs Specialist	DOS	Prenetaam@state.gov	Dept. of State OES-EID Rm 4330 2201 C St. NW 20520	202 647-4824	202 736-7336
51	Pryor-Jones, Suzanne		USAID				
52	Rao, Vijay	Senior Program Coordinator	MCDI	Rao@mcd.org	1742 R St. NW Washington, DC 20009	202 462-1920	202 265-4078
53	Scharl, Liz	Foreign Affairs Specialist	DOS	Scharlec@state.gov	Dept. of State OES-EID Rm. 4330 2201 C St. NW Washington, DC 20520	202 647-4689	202 736-7336
54	Scott, Richard	Deputy Project Director	CGPP-PEI	Rscott@worldvision.org	220 I Street Suite 270 Washington, D.C. 20002	202 608-1830	202 543-0121
55	Slough, Heather	Assistant Development Manager	PSI	Hslough@psiwash.org	1120 19th Street, N.W. Suite 600 Washington, D.C. 20036	202-785-0072	202-785-0120
56	Smith, Sara	Senior Technical Advisor	CGPP-PEI	Sjsmith@worldvision.org	220 "I" Street N.E., Suite 270 Washington, D.C. 20002	202-608-1830	202-543-0121

#	NAME	TITLE	ORGANIZATION	EMAIL ADDRESS	MAILING ADDRESS	TELEPHONE	FAX
57	Starbuck, Eric	DrPH, MPH Child Survival Specialist	Save the Children	Estarbuck@dc.savechildren.org	1620 "I" Street, N.W. Suite 202 Washington, D.C. 20006	202-530-4389	202-293-4167
58	Sukin, Hope	CTO	USAID	hosukin@usaid.gov	AFR/SD/HRD 4.06-032, 4 th fl, RRB USAID Washington, DC 20523- 4600	202-712-0658	202-216-3373
59	Tawfik, Youssef	Senior Technical Officer	BASICS	Ytawfik@basics.org	1600 Wilson Blvd. Suite 300 Arlington	301 879-0963	703 312-6900
60	Tobing, Sharon		Consultant	Sharon.Tobing@att.net	11329 Broken Bow Ct. Beltsville, MD 20705	310-931-9198	
61	Vyas, Darshana	Senior Public Health Specialist	Counterpart International	Dvyas@counterpart.org	1200 18 th Street, N.W. Suite 1100 Washington, D.C. 20036- 2506	202-296-9676	202-296-9679
62	Ward, Dora	Program Officer	CGPP-PEI	Ward@care.org	151 Ellis St. NE Atlanta, GA 30303-2439	404 681-4579 ext. 305	404 589-2624

#	NAME	TITLE	ORGANIZATION	EMAIL ADDRESS	MAILING ADDRESS	TELEPHONE	FAX
63	Wielzynski, Mary	Child Survival Advisor	PSI	Maryw@psiwash.org	1120 19th Street, N.W. Suite 600 Washington, D.C. 20036	202-785-0072	202-785-0120
64	Williams, Holly	M.D. Roll Back Malaria Technical Resource Network on Complex Emergencies	CDC	Hbw2@cdc.gov	Epidemiology Branch Division of Parasitic Diseases, CDC, Building 102, Room 1320 Mailstop F-22 Buford Highway, N.E. Atlanta, GA 30341-3724	770-488-7764	770-488-7761

Annex D: Briefing Paper on PVO Malaria Control Activities in Child Survival Projects

Control of Malaria

Plasmodium falciparum, the parasite responsible for most malaria-associated deaths, affects children in three ways: acute malaria illness; chronic or persistent malaria parasitemia with anemia; and perinatal malaria infection in the mother, which can cause low birth weight and increased infant mortality and potentially increased risk for vertical HIV transmission. Malaria interventions are appropriate for areas where the disease makes a substantial contribution to under-five mortality, either directly or indirectly, as in some areas of South and Southeast Asia, where the disease has an impact on the adult population but the economic burden hurts the entire family. The goal of the malaria intervention is to reduce malaria-associated mortality and morbidity, especially in children and pregnant women. PVOs implementing a malaria intervention may include any or all of the following approaches to malaria control in their programs:

- Improved malaria disease recognition and case management.
- Antenatal prevention and treatment of malaria.
- Reduction in malaria transmission through the community wide (especially children and pregnant women) use of insecticide-treated mosquito nets especially a provision for regular retreatment of the nets.

Activities that are beyond the scope of the PVO Child Survival Grants Program include large-scale insecticide-spraying operations or environmental engineering measures, and communitywide administration of antimalarial drugs, including mass chemoprophylaxis for children. Environmental measures for manipulating mosquito larva breeding sites have only limited effectiveness in Africa.

Malaria Case Management

Malaria case management (MCM) is an essential component of an effective malaria control program. The requirements for a successful MCM intervention are the same as those for pneumonia case management:

- Quality case management.
- Adequate access.
- Essential household actions. (These include: a) early recognition and careseeking for episodes of fever, b) completion of a full course of appropriate treatment, c) further careseeking if the child develops signs of severe disease.
- Providers of antimalarial drugs (including shop owners, drug peddlers, and health personnel) should:
 - Provide a full course of an appropriate drug.
 - Provide information on correct drug use, (not overprescribe or sell unnecessary medications).
 - Refer children with signs of severe disease to health facilities (in the case of shop owners and drug peddlers, the appropriate role will have to be determined based on the local situation).

- Facility-based health personnel should:
 - Diagnose and treat malaria promptly with an effective antimalarial drug.
 - Provide supportive care.
 - Provide treatment of anemia.
 - Provide effective patient education (to ensure compliance with the full course).
 - Refer cases of severe disease, where appropriate.

Chloroquine-resistant strains of *Plasmodium falciparum* are becoming increasingly prevalent throughout Africa. Studies in Senegal show that this increase can have a significant impact on mortality, and so resistance status and strategies for alternate drugs should be addressed in case management programs.

The overlapping clinical presentation of malaria and pneumonia is an important consideration in all areas where children are treated for malaria. Epidemiological studies conducted in several settings in Africa indicate that a substantial proportion of children with fever will also meet a pneumonia case definition (cough or difficult breathing, and fast breathing or chest indrawing) and that almost all children meeting a pneumonia case definition also have fever or a history of fever. Treatments for malaria alone may result in death from pneumonia. Thus, *all malaria protocols for children at the level of the community, drug retailer, and health facility should incorporate case management for pneumonia* (unless it is not possible to do so). Alternative strategies for incorporating pneumonia into malaria protocols include:

- Training, supplying, and supervising health providers to assess for and treat pneumonia, as well as malaria (i.e., also doing a pneumonia case management intervention) or
- Training providers to assess for pneumonia (including measuring for fast breathing and looking for chest indrawing in all children with cough or difficult breathing) and referring children with signs of pneumonia for treatment by another provider (which is only appropriate if caretakers have access to quality pneumonia treatment services) or
- Training providers to ask whether a child has cough or difficult breathing in all cases when doing malaria case management and referring all cases of cough or difficult breathing to another provider for assessment for pneumonia (an approach that will result in referring many children, and that is only appropriate if caretakers have access to quality pneumonia case management services).

Antenatal Prevention and Treatment

Antenatal prevention and treatment of malaria may increase birth weights and reduce maternal and fetal morbidity and mortality. There is also newer evidence that placental malaria may increase risk of vertical HIV transmission and that HIV-positive women do not respond as well to malaria prophylaxis. Women who are pregnant for the first time are at greatest risk for complications arising from malaria. They also might not attend antenatal services as frequently as other pregnant women, especially if they are unmarried or very young. If they get chloroquine, compliance is sometimes a problem. In addition, weekly chloroquine prophylaxis is no longer effective in many countries because of the increasing prevalence of chloroquine-resistant strains of *P. falciparum*. Where there is widespread drug resistance, an alternative treatment protocol should be selected in consultation with the ministry of health. The pattern of drug resistance should be specified for both children and adults. For example, in Malawi the Ministry of Health

now recommends the administration of a full course of treatment with pyrimethamine-sulfadoxine (Fansidar) twice during pregnancy.

Insecticide-Treated Materials (ITMs)

Trials of ITMs (especially bednets and to a lesser extent curtains) in east and west Africa have demonstrated that this simple technology can reduce all-cause mortality in 1 to 59-month-old children. The ITM trials were mainly controlled trials in which nets and insecticide were distributed free. How effective ITMs are under conditions of voluntary acquisition and use is less clear. Experience has shown that to be successful, ITM programs must create conditions for sustained public demand for, access to, and appropriate use of affordable nets and insecticides to treat them. Also, sustained insecticide retreatment programs are more difficult to implement than the supply of nets themselves:

Public demand: At present, public demand for bednets and other insecticide-treated materials varies throughout Africa. Mosquitoes are often not recognized as the cause of malaria. Bednets may have high acceptability in many communities as a defense against nuisance bites but not as a malaria prevention. Insecticide treatment of bednets and curtains is the critical point but not yet widely disseminated.

Access: Bednets are generally available only in urban areas, if they are available at all, and no organized public or private systems exist for delivery of public health insecticide services, although there may be systems for agricultural insecticides.

Affordability: In many places, bednets now cost \$10 to \$25, and insecticide treatments \$1 to \$2 per year. The typical household may require up to three bednets (which should last 2-4 years), but the initial cash outlay may be beyond the reach of most households.

Appropriate use: ITM programs cannot be successful unless a number of ingrained behavioral and social patterns change. Without such changes, it is unlikely that the right populations will use the nets and have them treated correctly. For example, young children may not have priority for use of bednets within households. To be effective, ITM programs should be designed in accordance with local beliefs and social patterns to encourage ITM use by young children and pregnant women.

More difficult than the provision of nets themselves, but of critical importance, are systems for insecticide retreatment. Thus, PVOs should consider implementing insecticide-treated mosquito net activities only when it is likely that a sustainable program of net provision and retreatment can be set up. When nets and insecticide are initially distributed for free, usage may drop dramatically after charges are introduced. There is evidence in Gambia, however, that usage begins to resume after a period of time. PVOs should consider a charge, however nominal, when initiating bednet programs. Nets that are regularly treated with a pyrethroid insecticide have been shown to be far more effective than untreated nets. Therefore, programs should not promote the use of untreated nets. Cotton nets are not suitable for insecticide treatment because the insecticide is absorbed into the interior of the fiber. In countries where use of untreated mosquito nets is already high, programs may only need to introduce insecticide treatment of nets. If malaria transmission is confined to only part of the year, it may be possible to treat the nets once a year instead of every 6 months.

Annex E: Requesting Assistance from the RBM Complex Emergencies Network

A request should include a terms of reference with a detailed plan of action. The terms of reference should reflect a general consensus of the situational needs as defined by all involved agencies. All agencies involved, including donors, should receive copies of the request for assistance to facilitate open communication. Specific areas of expertise needed should be specified.

Dr. Williams recommends that country-level PVO Health Coordinators should link with the relevant country RBM focal point. For proposed Field Missions please include network support in funding proposals to donors for malaria control.

Dr. Williams has provided the following information to assist PVOs in requesting Network assistance:

Please send email requests to:

Dr. Holly Ann Williams
U.S. PVO/NGO Focal Contact Person
RBM Network on Complex Emergencies
CDC, Atlanta
HBW2@CDC.GOV

Dr. Maire Connolly (Mora)
Network Coordinator
RBM Network on Complex Emergencies
WHO, Geneva
Connollyma@WHO.INT

Please put in the SUBJECT HEADER: **RBM Complex Emergency Request or RBM Complex Emergency Network**. (Note: by putting this statement in the header, it will allow the Network to set up a forwarding mechanism of your message(s) so that a request is not missed when Dr. Williams or Dr. Connolly are travelling).

Note: Holly Williams is the Network's focal point for U.S.-based PVOs, and Maire Connolly is the focal point for Europe.

If a PVO is considering requesting assistance, have a preliminary discussion with Holly Williams. The Network will discuss this (primarily Holly Williams and Maire Connolly), and respond by the end of the day.

By the start of 2000, there will be funds for the Network. In the interim funds have been provided by WHO for the South Sudan and East Timor missions. For NGOs, the Network must consider options, and prepare a sliding scale. During the first year of activity, it is suggested that PVOs organize themselves within a geographical area, similar to what CARE did in South Sudan. By June 2000 there will be more information available. Currently RBM country assessments receive funds through the WHO office of the country level MOH. Funding decisions are made by the MOH, or among RBM partners at the country level.

Annex F: Web Information for WHO, UNICEF, CDC

WHO - www.who.int

WHO Roll Back Malaria Homepage - www.who.int/rbm/

UNICEF - www.unicef.org

CDC - www.cdc.gov

Annex G: Resource List

Recommended General References on Malaria Control

Gilles, Herbert M., and David A. Warrell. December 1993. *Bruce-Chwatt's Essential Malariology*. Third edition. London: Oxford University Press.

Healthlink Worldwide. "Child Health Dialogue." Issue 6. London.

This 16-page issue with a supplement on malaria contains information on prevention, recognition, and management of malaria in young children and pregnant women. CHD is free to readers in developing countries.

In addition to the international English edition, 11 regional language editions are also produced. An adapted text is available on electronic mail in selected countries via Healthnet. To subscribe to a published version of "Child Health Dialogue," contact Mary Helena, Publications Secretary, Healthlink Worldwide, 29-35 Farringdon Road, London EC1M 3JB. Tel: +44 171 2420606, Fax: +44 171 2420041, E-mail: info@healthlink.org.uk, Internet: <http://www.healthlink.org.uk/>. For the electronic version of CHD please contact: hnet@usa.healthnet.org. Healthlink Worldwide produces a range of free publications for health workers in developing countries.

Recommended References on Specific Aspects of Malaria Control

Malaria case management in facilities and drug resistance

Redd, S. C., P. N. Kazembe, S. P. Luby, O. Nwanyanwu, A. W. Hightower, C. Ziba, J. J. Wirima, L. Chitsulo, C. Franco, and M. Olivar. 1996. "Clinical Algorithm for Treatment of *Plasmodium Falciparum* Malaria in Children." *Lancet*, 347(96/January 26), 223-27.

This reference brings up important issues for case management: a new case definition for malaria, the issue of overtreatment with the related risk of resistance. To assess this policy and to find out whether a better clinical case definition could be devised, this paper assessed children with fever in two hospital different outpatient departments in Malawi.

Malaria Case Management and Drug Resistance

Bloland, P. B., P. N. Kazembe, and A. J. Oloo. 1998. "Chloroquine in Africa: Critical Assessment and Recommendations for Monitoring and Evaluating Chloroquine Therapy Efficacy in Sub-Saharan Africa." *Tropical Medicine and International Health*, 3(7/July), 543-52.

Gove, S. 1997. "Integrated Management of Childhood Illness by Outpatient Health Care Workers: Technical Basis and Overview." *Bulletin of the World Health Organization*, 75(Suppl. 1), 7-24.

Makler, M. T., C. J. Palmer, and A. L. Ager. 1998. "A Review of Practical Techniques for the Diagnosis of Malaria." *Annals of Tropical Medicine and Parasitology*, 92(4/June), 419-33.

Ofori-Adjei, D., and D. K. Arhinful. 1996. "Effect of Training on the Clinical Management of Malaria by Medical Assistants in Ghana." *Social Science and Medicine*, 42(8), 1169-76.

White, N. J. 1996. "The Treatment of Malaria." *New England Journal of Medicine*, 335(11/September 12), 800-6.

WHO/UNICEF. 1995. *Integrated Management of Childhood Illness*. Child Health and Development. Geneva: World Health Organization. (WHO/CDR/995.14)

The IMCI charts and manuals for health facility clinicians include guidelines for the management of fever in areas of low and high malaria risk, and address the overlap of malaria and pneumonia.

Newton, P. and N. White. 1999. "Malaria: New Developments in Treatment and Prevention." *Annual Review of Medicine*, 50(), 179-92. Faculty of Tropical Medicine, Mahidol University, Bangkok, Thailand. Fnnjw@diamond.mahidol.ac.th

A review paper for those interested in issues of antimalarial resistance. Discusses new drugs and use of bednets. Explains why vaccine is ultimately needed.

Malaria Case Management in the Home and Community

Beales, P. F. 1997. "Anaemia in malaria control: a practical approach." *Annals of Tropical Medicine and Parasitology*, 91(7/October), 713-18.

McCombie, S. C. 1996. "Treatment seeking for Malaria: A Review of Recent Research." *Social Science and Medicine*, 43(6/September), 933-45.

Ruebush, T. K., M. K. Kern; and C. C. Campbell. 1995. "Self-treatment of Malaria in a Rural Area of Western Kenya." *Bulletin of the World Health Organization*, 73(2), 229-36.

Winch, P. J., A. M. Makemba, and S. R. Kamazima. 1996. "Local Terminology for Febrile Illnesses in Bagamayo District, Tanzania, and Its Impact on the Design of a Community-Based Malaria Control Programme." *Social Science and Medicine*, 42 (), 1057-67.

Antenatal Prevention and Control of Malaria

Intermittent sulphadoxine-pyrimethamine to prevent severe anaemia secondary to malaria in pregnancy: a randomised placebo-controlled trial. Shulman CE, Dorman EK, Cutts F, Kawuondo K, Bulmer JN, Peshu N, Marsh K *Lancet* 1999 Feb 20;353(9153):632-6 London School of Hygiene and Tropical Medicine, UK. c.shulman@lshtm.ac.uk

This is considered a seminal paper, central to the malaria in pregnancy strategy.

The efficacy of intermittent treatment doses of sulphadoxine-pyrimethamine in preventing malaria and severe anaemia in pregnancy in a double-blind placebo-controlled trial among primigravid women was studied. It was concluded that intermittent

presumptive treatment with sulphadoxine-pyrimethamine is an effective, practicable strategy to decrease the risk of severe anaemia in primigravidae living in malarious areas.

Nahlen, B. D., et al. 1998. HIV and Malaria overlap and do interact in sub-Saharan Africa Pregnant Women." Abstract, 12th World AIDS Conference (Geneva, Switzerland), June 28–July 3.

Menendez, C., E. Kahigwa, and R. Hirt. 1997. "Randomized Placebo-controlled Trial of Iron Supplementation and Malaria Chemoprophylaxis for Prevention of Severe Anaemia and Malaria in Tanzanian Infants." *Lancet*, 350(9081/September 20), 844–50.

Menendez, C. 1995. "Malaria during pregnancy: A priority area of malaria research and control." *Parasitology Today* 11:178-183.

Steketee, R., B. D. Nahlen, and J. Ayisi. 1998. "HIV and Malaria Overlap and Do Interact in Sub-Saharan Africa Pregnant Women." Twelfth International Conference on AIDS (Geneva, Switzerland) 12(145). Abstract no. 13298.
(Author is affiliated with the CDC in Atlanta, Georgia, 30333. Contact them for the article.)

Steketee, R., and J. Wirima. 1996. "Malaria Prevention in Pregnancy: The Effects of Treatment and Chemoprophylaxis on Placental Malaria Infection, Low Birth Weight, and Fetal Infant and Child Survival." *American Journal of Tropical Medicine and Hygiene*, 55(1, Suppl.), entire volume (16 articles).

Insecticide-Treated Mosquito Nets

Bryce, J., J. B. Rongou, and P. Nguyen-Dinh. 1994. "Evaluation of National Malaria Control Programmes in Africa." *Bulletin of the World Health Organization*, 72(3), 371–81.

Curtis C. F., J. Myamba, and T. J. Wilkes. 1996. "Comparison of Different Insecticides and Fabrics for Anti-Mosquito Bednets and Curtains." *Medical and Veterinary Entomology*, 10(1), 1-11.

Evans, David, Girma Azene, and Joses Kirigia. 1997. "Should Governments Subsidize the Use of Insecticide Impregnated Mosquito Nets in Africa? Implication of a Cost-effectiveness Analysis." *Health Policy and Planning*, 12(2), 107–114.

Healthlink, Worldwide. 1997. *Insecticide Treated Nets for Malaria Control*. London: Healthlink, Worldwide.

A directory of suppliers of insecticides and mosquito nets for sub-Saharan Africa. Includes practical information on the preparation and use of treated mosquito nets; suppliers of finished nets, bulk netting, insecticides and related products for malaria control; and a list of useful contacts and resource materials. Single copies free of charge. (34 pages)

Lengeler, Christian, Jacqueline Cattani, and Don de Savigny, eds. 1996. *Net Gain: A New Method for Preventing Malaria Death*. Ottawa: International Development Research Centre/World Health Organization. (189 pages)

Mills, A. 1998. "Operational Research on the Economics of Insecticide-treated Mosquito Nets: Lessons of Experience." *Annals of Tropical Medicine and Parasitology*, 92(4), 435-47.

The following three documents are available from the Malaria Consortium "Converting Expertise and Partnerships Into Operational Realities"; for more information see <http://eps.lshtm.ac.uk/~ethestho/MALCON.HTM>

Chavasse, D., C. Reed, and K. Attawell. 1999. *Insecticide Treated Net Projects: A Handbook for Managers*. DfID: Malaria Consortium.

Partnerships for Change and Communication. *Guidelines for Malaria Control*. Division of Control of Tropical Diseases, World Health Organization. Developed in collaboration with Malaria Consortium U.K.

November 1996. *Approaches to Malaria Control in Africa - Part 1. Analysis and Opportunities for Malaria Control Support in Selected Countries in Africa—Ghana, Kenya, Malawi, Namibia, Tanzania, Uganda, Zambia, Zimbabwe*. (A Malaria Consortium initiative).

Malaria and Iron Supplementation

Stoltzfus, R., and M. Dreyfuss. 19___. *Guidelines For The Use Of Iron Supplements To Prevent And Treat Iron Deficiency Anemia*. Johns Hopkins University/International Nutritional Anemia Consultative Group. The purpose of these guidelines is to provide practical, scientifically sound guidance to those responsible for planning and implementing anemia control programs. (Refer to nutrition references for ordering details.)

Shankar, Anu, et al. "Iron Supplementation And Morbidity Due To Plasmodium Falciparum: A Meta-Analysis Of Randomized Controlled Clinical Trials." Unpublished (as of October 1999. Supported by Johns Hopkins and the USAID OMNI project. Ashankar@jhsph.edu.

Verhoeff, F. H., B. J. Brabin, L. Chimsuku, P. Kazembe, and R. L. Broadhead. 1999. "An Analysis of the Determinants of Anaemia in Pregnant Women in Rural Malawi—A Basis for Action." *Annals of Tropic Medicine and Parasitology*, 93(2/March), 119-23. School of Tropical Medicine, Liverpool, England.

Haematological data are presented on 4,104 pregnant women attending the antenatal-care facilities of two hospitals in a rural area in southern Malawi. Variables associated with an increased risk for moderately severe anaemia were iron deficiency (RR = 4.2; CI = 3.0-6.0) and malaria parasitaemia (RR = 1.9; CI = 1.3-2.7) in primigravidae, iron deficiency (RR = 4.1; CI = 2.7-6.3) and mid-upper-arm-circumference < 23 cm (RR = 1.8; CI = 1.1-3.0) in secundigravidae, and iron deficiency in multigravidae (RR = 3.1; CI = 4.3-6.9).

Malaria and GIS

MARA. 19___. Mapping Malaria Risk in Africa. <http://www.mara.org.za/>.

This reference gives a good idea of how GIS can be usefully employed in health care. It contains all the essential components for an understanding of disease determinants and spatial scale.

Internet References

The Environmental Health Project Web site with links to several malaria topics, including bednets: <http://www.crosslink.net/~ehp/webliog.html>. EHP Malaria Bulletins: can be assessed at <http://www.crosslink.net/~ehp/products.htm> Maternal and Newborn Care. Homepage is: <http://www.crosslink.net/~ehp>

Also, the Malaria Foundation maintains a Web site, <<http://www.malaria.org/>> with links to the WHO "Roll Back Malaria" project, The Malaria Consortium, and the Asian Collaborative Training Network for Malaria (ACTMalaria), among other entities.

PubMed—National Library of Medicine <http://www4.ncbi.nlm.nih.gov/PubMed/>

WHO/World Bank Malaria Network (many good online documents)
<http://www.malariainetwork.org>

ACTMalaria: (an intercountry initiative between and among Bangladesh, Cambodia, China [Yunnan Province], Indonesia, Lao People's Democratic Republic, Malaysia, Myanmar, Thailand, and Vietnam) <<http://www.beebop.com/actmalaria/>>

Annex H: "The Economic Burden of Malaria"

Abstract:

Malaria and poverty are intimately connected. Controlling for factors such as tropical location, colonial history, and geographical isolation, countries with severe malaria had income levels in 1995 only 33% of countries without malaria, whether or not the countries were in Africa.

The high levels of malaria in poor countries are not mainly a consequence of poverty. Malaria is very geographically specific. The ecological conditions that support the more efficient malaria mosquito vectors primarily determine the distribution and intensity of the disease. Countries that have eradicated malaria in the past half century have all been subtropical or islands. These countries' economic growth in the five years following eradication has almost always been substantially higher than growth in their region.

Cross-country regressions for the 1965-90 period confirm the relationship between malaria and economic growth. Taking into account initial poverty, economic policy, tropical location, and life expectancy among other factors, countries with severe malaria grew 1.3% lower per year, and a 10% reduction in malaria was associated with 0.3% higher growth per year.

The paper concludes with speculation about the mechanisms that could cause malaria to have such a large impact on the economy, including the possibility that the effects attributed to malaria are really the result of other unmeasured tropical diseases."

From "The Economic Burden of Malaria", a working paper by John Luke Gallup and Jeffrey D. Sachs, Harvard Center for International Development, October, 1998.

The working paper in its entirety can be found at:
<http://www.cid.harvard.edu/cidpeople/jeffreysachs/publicat.html>.

Annex I: Report on October 1999 Dar es Salaam Conference

(Courtesy of Larry Casazza, World Vision)

Report on the Second International Conference On Insecticide Treated Nets (ITNs) October 11-14, 1999 in Dar es Salaam, Tanzania

The second international conference on insecticide treated nets held in Dar Salaam, Tanzania was organized by the Malaria Consortium, UNICEF, USAID, WHO, and the Government of Tanzania. The purpose of the conference was to:

- Identify and promote public/private-sector partnerships for sustainable ITN use.
- Engage policymakers in discussions on the development and implementation of ITN activities at regional and country levels.
- Advocate integrated approaches for the promotion of insecticide treated net use.
- Serve as a platform for special issues, for example, the rationalization of taxes on nets and insecticides.
- Share information and experiences.

The program was a combination of plenary presentations and panel discussions focusing on:

- The role of the Roll Back Malaria Global Partnership in the wide-scale use of Insecticide treated Nets.
- State-of-the-art research.
- Respective roles in public/private partnerships.
- Removing barriers to trade in bednets and insecticides.
- Building strategic frameworks for developing national eradication strategies.
- Technical and operational implementation issues related to retreatment; safe use of insecticide; assessment, monitoring and evaluation tools.

The conference dealt with many issues of great importance to the NGO community, including the role of NGOs in meeting the challenge to provide 60 million African families with insecticide treated mosquito nets over the next five years. Last year 70,000 African children died from malaria when a \$4 (U.S.) bednet could have saved them. A recent review of bednet studies conducted by the Cochran Collaboration found that those children who slept under treated bednets were 50 percent less likely to develop malaria compared to control groups.

Malaria and health development experts at the conference agreed that a number of strategies are needed to increase the availability of bednets. They include:

- Increasing local production and demand.
- Public/private partnerships to bring down the cost of bednets, and develop markets.
- Encouraging the governments of endemic countries to remove all tariffs on bednets and insecticides.
- Encouraging private and public donors to subsidize the provision of bednets for those who cannot afford them.
- Educating affected populations on the need to regularly retreat bednets with safe insecticide.

Commercial marketing strategies are expected to play a major role in increasing the availability, usage, and retreatment of bednets. It is estimated that with social marketing campaigns combined with subsidies, the price of a treated bednet could be lowered to less than \$2 (U.S.) making bednets an affordable and desirable purchase for even the poorest of families.

How the ITN Intervention Developed

The pioneering work on the entomological efficacy of ITN's opened the door for the necessary morbidity trials, which in turn, paved the way for the essential, but costly large-scale mortality trials that have produced such compelling evidence to qualify ITNs as a credible and essential public health intervention. Then came the test of translating efficacy trials to effectiveness in real-life settings. This led to large numbers of relatively small-scale operational experiences with a variety of public, private, and mixed sector implementations, some of which have been assisted by TDR's Operational Research Network. These steps have brought us on schedule to the present.

The challenge now is to go beyond these projects, to change behavioral norms so that in the future, protection in malaria-endemic areas would be available to all through a system providing high access and high utilization of ITNs—in other words, moving towards the culture of net use and of net retreatment. This challenge presents a clear opportunity to NGOs who work at the community level.

From Projects to Programs

A series of case studies were presented from countries where insecticide treated bednets have already seen considerable use. These include Vietnam where insecticide is provided free by the government and low-cost nets are produced and purchased by all but the very poorest of families. In Tanzania where three net producers exist, social marketing of bednets is in process. Both Zambia and Ghana are pursuing public/private initiatives. But much more needs to be done if the target of a 30-fold increase in use of insecticide treated materials and effective vector control is to be realized in Africa.

The consensus of the meeting was that ITN usage has reached a critical juncture where linear scaling up may simply not work. ITNs are now universally accepted as an efficacious, essential, public health intervention. Promotion of ITNs is now mentioned in most national malaria strategies, yet we are a long way from high coverage and access.

Rough estimates of the production needed to reach desired coverage with bednets in Africa are more than 32 million new nets per year and over 320 million retreatments per year. Obviously we cannot rely entirely on commercial nets and insecticide producers for this coverage; there is a need for creative financing and pricing practices carried out with the facilitation of NGOs in order to boost demand and stimulate the private-sector to gear up for the necessary market. Some examples are: credit with repayment over time, cross-subsidy approaches, subsidy for retreatment and finally, subsidy for targeted initial distribution of nets. Everyone agrees the nets should be sold together with insecticide with the user making the first application. Subsidies should be so targeted that they cover only the poorest of the poor; any leakage of subsidized nets back into a black market would discourage private commercial sector efforts.

For the NGO community, we can act as a broker between the producers of both nets and insecticide and communities we serve. Economies of scale are potentially available when NGOs combine their orders for a preferential factory price. The net producers seem willing to entertain

such bids since most of them now are producing below their peak volumes.

To assist NGOs in locating both nets and insecticide supplies, UNICEF has stationed Mr. Frans Claassen in Pretoria, South Africa. He will not serve as a purchasing agent, but can give guidance and technical assistance. His e-mail address is: fcclaassen@unicef.org.za

Several constraints and suggested solutions were identified and discussed as shown below:

CONSTRAINTS	SOLUTIONS
ACCESSABILITY/AVAILABILITY	<ul style="list-style-type: none"> • MULTI-DIMENSIONAL DISTRIBUTION SYSTEM • ESTABLISH DEPOTS AT NATIONAL AND DISTRICT LEVELS • LOCAL PRODUCTION RESOURCES
KNOWLEDGE AND ATTITUDES	<ul style="list-style-type: none"> • PUBLIC AWARENESS CAMPAIGN • ENDORSEMENT BY HIGH PROFILE PERSONALITIES • ETHNOGRAPHIC RESEARCH FOR APPROPRIATE MESSAGE DEVELOPMENT • DEVELOPMENT OF IEC • USE BY SATISFIED CLIENTS AT COMMUNITY LEVEL
COST AND PRICES	<ul style="list-style-type: none"> • FULL RECOVERY • TARGETTED SUBSIDY • PROVISION OF NETS BY LOCAL GOVT.
TAXATION	<ul style="list-style-type: none"> • REPEAL IMPORT TAX
SPECIFICATIONS	<ul style="list-style-type: none"> • TECHNICAL STANDARDS AS SET BY WHO • LOCAL ADAPTATIONS AS DETERMINED BY MARKET RESEARCH
SEASONALITY	<ul style="list-style-type: none"> • PROMOTION WHEN INCOME AVAILABLE • PREPAREDNESS FOR EPIDEMICS

In summary, this conference presented overwhelming evidence that malaria is the leading cause of death for under fives in most endemic countries. Also its contribution to morbidity and mortality rates in antenatals is enormous. Now that there is confidence that ITNs can reduce deaths by over 20 percent (WHO, 1999), the challenge is to generate the massive increase in access to, and use of treated nets. In addition to their contribution to promotion of widespread net use, NGOs should also use their advocacy strength to deliver to governments and donors the message of the likely impact of ITNs on the economy, health, education and environmental situations in the countries we serve.

Annex J: World Bank Projects with Malaria Components (Table)

World Bank Projects with Malaria Components					
Country	Project Name	Date Effective	Contact	Total Loan \$m	Components
Africa Madagascar	National Health Sector Improvement	5/28/91	Sla Ben Halima	31	<p>Malaria within Communicable Disease Programs -</p> <p>Objective: To continue and expand the Emergency Malaria Control Program developed in 1998.</p> <p>Key Features:</p> <ol style="list-style-type: none"> 1) Improve MOH management, supervision and evaluation of malaria control activities carried out by village volunteers and of related MOH drug supply and cost recovery mechanisms; 2) Pursue, evaluate, and adapt vector control strategies and programs based on intra-domiciliart spraying of insecticides; 3) Develop and generalize efficient protocols for monitoring and treating acute and drug-resistant cases of malaria; 4) Reactivate malaria prophylaxis for the high risk groups consisting of pregnant women and children under 5; 5) Support a program of applied research and pilot activities on the acceptability and cost-effectiveness of reducing transmission through the use of mosquito nets and treated curtains, mosquito larva control, insect repellents and environmental sanitation; 6) Train a corps of malariologists; 7) Develop and broadcast public information campaigns and promote sensitization programs. Technical inputs for the design and management of the malaria control program are being provided by WHO. 1998 strategy was oriented towards epidemiological surveillance.
Eq. Guinea	Health Improvement Project	3/26/92	Michele Lioy	5.5	<p>This project has a 2 pronged strategy to control malaria:</p> <ol style="list-style-type: none"> 1) The first part focuses on high-risk groups, mainly pregnant women, infants and children under 5, malaria patients and people with chronic conditions, particularly in regard to early detection. The centers or villages involved in the program would receive anti-malarial drugs and appropriate training for their administration. Chemotherapy would be used for clinical cases involving fever while chemoprophylaxis would be utilized for preventive care, especially for pregnant women and children under 5.

Country	Project Name	Date Effective	Contact	Total Loan \$m	Components
Eq. Guinea (Continued)	Health Improvement Project	3/26/92	Michele Lioy	5.5	2) The second part aims at controlling and reducing the anopheles mosquito. To ensure the program's sustainability and reduce its costs, social mobilization would be required to involve individuals and communities in the protection against mosquitoes. Sanitation measures would be promoted in rural and urban areas. In support of the government's malaria control program, the project will finance the cost of anti-malarial drugs, travel, and training costs for local malaria program staff, 15 microscopes for analysis, spraying equipment, insecticides, 500 machetes, training of program workers and technical assistance for the execution of activities.
Uganda	District Health Services Pilot and Demonstration	2/7/95	Mary Mulusa	45	Emphasis on malaria in package of Essential Health Services. Project to finance drugs, equipment and supplies, bednets, monitoring and evaluation, and short term technical assistance. Project also includes a full-scale test of community-based mechanisms to sell and maintain impregnated bednets for up to one-third of the district's population.
Senegal	Endemic Disease Control Project	5/8/97	Anwar Bach Baouab	14.9	Development goal: To support the government in its efforts to alleviate the burden of endemic and epidemic diseases with a particular emphasis on malaria. USD 4.61 million to be allocated for malaria, schistosomiasis and onchoseriasis control. One of the project's benchmarks is to reduce infant mortality attributable to malaria by 25%.
Comoros	Health Project	2/26/98	Eileen Murray	8.4	Project supports Health Sector Reforms, and in this context finances a Malaria Control Program as one of its 3 components. The project's overall objective is to reduce the mortality from common diseases, particularly malaria, by ensuring a better utilization of health facilities for the delivery of quality health care to the vast majority of the population, and by organizing vector control activities to reduce the incidence of malaria
Mauritania	Health Sector Investment Project	3/31/98	Sergiu Luculescu	24	An estimated US\$ 5.2 million to be used for malaria-related activities.
Ethiopia	Health Sector Development Program	10/27/98	David Berk	100	
Mali	Health Sector Development Program	12/17/98	Anwar Bach Baouab	40	

Country	Project Name	Date Effective	Contact	Total Loan \$m	Components
Guinea-Bissau	Social Sector Project	2/23/93		8.8	
Guinea	Health and Nutrition Sector Project	3/1/94	Astrid Helgeland Lawson	24.6	
Benin	Health and Population Project	5/30/95	Denise Vaillancourt	27.8	
Cote d'Ivoire	Integrated Health Services Development Project	6/27/96	Ed Elmendorf	40	Project includes operational research, including research on bednets.
Niger	Health Sector Development Project	9/5/96	Denise Vaillancourt	40	
Eritrea	Eritrea Health Project		Montserrat Meiro-Lorenzo		
Malawi	PHN Sector Credit (closed)	3/26/91 6/30/99	Norbert Mugwagwa	55.5	In strengthening basic programs, malaria was focused on by improvements to logistical support, the supply of anti-malarial drugs, and drug resistance monitoring.
Sao Tome & Principe	Health & Education (closed)	6/18/91 6/30/98	Tonia Marek	12	Included comprehensive program to control malaria consisting of vector control, epidemiological operations and treatment, information, education and communications, and institutional development. Emphasis was placed on environmental sanitation, education and communications, surveillance and clinical services. Use of insecticides was minimal and closely controlled. Approximately \$3 m was spent on malaria.
Middle East Morocco	Social Priorities Program	5/30/96	Anne Pierre Louis	68	
South Asia Pakistan	Family Health	5/7/91	Bashirul Haq	45	Reorganization of malaria control activities in the context of strengthening Health Services
Pakistan	Family Health II	2/3/93	Bashirul Haq	48	Project strengthens and expands communicable disease control activities as well as diagnostic capabilities.
Sri Lanka	Health Services Project	12/19/96	Anne Tinker	18.8	\$ 3.55 m is allocated for malaria control, a major component of the Health Services Project. Follows the WHO strategy.

Country	Project Name	Date Effective	Contact	Total Loan \$m	Components
India	Malaria Control Project		Peter Heywood/ Salim Habayeb/ Julie Mittman	164.6	This self-standing malaria project has 5 components: 1) Integrated early detection and prompt treatment of clinical cases component, to ensure quality and accessibility of treatment; 2) Selective vector control component, to replace indoor residual spraying by more targeted spraying of insecticides; 3) Medicated mosquito net program component, to increase the use of ITNs; 4) Epidemic response and intersectoral collaboration component, to strengthen regional offices to identify and control outbreaks & epidemics; 5) Institutional strengthening component, to improve management and planning skills of state and district level staff.
Pakistan	Social Action Program Project II (closed)				Project strengthens and expands communicable disease control activities and diagnostic capabilities.
Bangladesh	Population and Health IV (closed)		Sudhakar / Jagmohan Kang		Malaria specifically targeted in the context of controlling vector-borne diseases.
East Asia					
Lao, P.D.R.	Health System Reform and Malaria Control	1/5/95	Jo Martins	19.2	Within the Malaria Control component of this project, IDA supported prethroid impregnated bednets, drug administration and education for behavior modification; improved access to treatment at all societal levels; selective vector control; and the creation of a small operations research program to support entomological studies to identify vector behavior, etc.
Vietnam	National Health Support Project	1/16/96	Richard Meyers	101.2	Interventions include early detection and prompt treatment, and impregnated bednets.
Cambodia	Disease Control and Health Development	12/24/96	Rama Lakshminarayanan	30.4	Support for the malaria control program includes provision of drugs and laboratory supplies, impregnated bednets, training, logistical support and technical assistance. Other interventions include early diagnosis and prompt treatment.
Vietnam	Population and family Health Project	1/16/96	Althea Hill	50	Approximately \$24.2 m is allocated to assist the National Malaria Program

Country	Project Name	Date Effective	Contact	Total Loan \$m	Components
Indonesia	Provincial Health (pipeline)	6/27/00	Maureen Law	45	
Latin America					
Venezuela	Endemic Disease Control	12/8/92	Bruce Carlson	94	Supports intradomiliary spraying and use of bednets. Training, operational research, insecticides, public education, laboratory construction and development of GIS are focused on.
Brazil	Disease surveillance & Control Project	9/17/98	Jean de St. Antoine	100	
Honduras	Nutrition & Health Project (supplement)		Maria Luisa Escobar?		
Ecuador	Social Development II: Health and Nutrition	7/21/92	Patricio Marquez	70	To increase effectiveness, malaria-related activities will be integrated with routine activities in health facilities located in malaria-prone regions.
Nicaragua	Health Sector Reform Project	12/16/93	Marie-Odile Waty	15	
Mexico	Second Basic Health Care Project	9/26/95	Nair Carmen Hamann	310	
Argentina	Communicable Disease Surveillance & Control	In preparation?	Alexandre Abrantes		
Economic and Sector Work Brazil	Implementation Completion Report, Amazon Basin Malaria Control Project (closed)	1/92 6/97	Alexandre Abrantes / Renato Gusmao (PAHO)		

Country	Project Name	Date Effective	Contact	Total Loan \$m	Components
India	Maharashtra Health Systems Development				
The Gambia	The Impact of Treated Bednets on Childhood Mortality in the Gambia			1988	Two interventions, bednets treated with Permethrin and chemoprophylaxis with Maloprim, were conducted in primary health care (PHC) villages, with non-PHC villages serving as controls. The study showed that general and malaria-specific mortality in young children was sharply reduced by introducing Permethrin-treated bednets.
Outside Health Sector					
Malawi	Environment Management Project		Agi Kiss		Includes a Bilharzia/Malaria Control component. \$250,000 has been allocated specifically for malaria-control activities, including promotion of insecticide-treated bednets, support to community groups for the sale of bednets, and education.
Ghana	Ghana Urban Environmental Sanitation Project		Fadi Doumani / Jim Listorti		Aims to produce lessons on intersectoral collaboration; guidelines to identify, evaluate and prioritize health problems outside the health sector based on "burden of disease" assessments; and identification of instruments, interventions and monitoring indicators. Urban malaria and other vector-borne diseases are one of three focal areas.
Senegal	Long Term Water Sector Project				Efforts to incorporate environmental health objectives into the project identified the opportunity to reduce malaria through the promotion of "drip irrigation". This has been demonstrated in Asia and parts of West Africa to reduce vector breeding
Armenia	Greater Baku Water Supply Rehabilitation Project				
Azerbaijan	Aspharon Water Canal Rehabilitation Project		Jan Drozdz		
Azerbaijan	Second Irrigation Project		Jan Drozdz		
Senegal	Education Project				

Country	Project Name	Date Effective	Contact	Total Loan \$m	Components
Guinea	Education Project				
Kenya	Education Project				Situational analysis being undertaken.
Ethiopia	Environmental Assessment of Gilgel Gibe Hydroelectric (Energy II) Project			1997	The Environmental Impact Assessment (EIA) identifies and assesses five negative environmental impacts likely to result from preparing, constructing, and operating the Gilgel Gibe Hydroelectric Project. One of these, intensification of diseases linked to water including malaria, is mitigated by building a buffer around and deepening the margins of the reservoir; providing health education; and preventing shanty town development near construction camps.

* List may not be comprehensive. Data extracted from project documentation (ie:PADs/SARs) and may not directly reflect country-level action.

Annex K: Follow-on Malaria and Complex Emergencies meeting at BASICS (10/1/99)

(Courtesy of Dr. Maire Connolly)

Dr. Connolly and Dr. (Holly) Williams met with a group of representatives from 10 different organizations (university programs on refugee and migration issues, federal government agencies, and PVOs).

Dr. Williams was identified as the focal person for U.S. PVOs/NGOs for all network activities. Requests for assistance from the network should be channeled through Dr. Williams, with a "cc" to Dr. Connolly. They will establish an email forwarding systems so that requests will receive attention during the periods when both are on travel status. Written guidelines on requesting network assistance were distributed to all persons attending the meeting.

Discussions centered around various field concerns:

1. The need for up-to-date information and training on various subjects:
 - State of the art approaches with vector control (e.g., spraying versus source reduction strategies).
 - Case management (e.g., should microscopic examinations be decentralized, what is the role of rapid diagnostic tests in a complex emergency, should passive case detection be used?).
 - Promotion of ITNs at the community level.
 - Drug policies (how can RBM focus more attention on systems that would enable MOH and other policy makers to make appropriate decisions for malaria policy).
2. Education of donors, raising additional monies to support field training programs, as well as time for agencies to publish and disseminate their findings (e.g., evaluations of programs, "lessons learnt from the field," both of which are examples of areas that PVOs recognize as important to document, yet difficult to accomplish).
3. The identified need for an agency in each complex emergency situation to take responsibility for coordination of all malaria control activities:
 - Difficulties voiced in recognition of the realistic turf battles that occur between PVO/NGOs;
 - The noted reluctance of most PVOs to share data/case management strategies with other PVOs, unless asked by a more prominent organization, such as WHO or RBM Network (example given was that of CARE trying to elicit information on how other agencies handled malaria in South Sudan in order to write their proposal).

- A lead agency would have to possess known expertise in malaria control in complex emergencies, as well as the political clout to pull together and enforce standards of operation for all PVOs/NGOs in complex emergency situations.
 - The need for secondment of an epidemiologist or other consultant to coordinate activities in large complex emergencies, such as South Sudan or the Democratic Republic of the Congo (DRC).
4. The noted variability between the levels of expertise and training needs of the various PVOs, and the difficulties encountered by the smaller, less-well funded PVOs.
 5. The problems related to working in volatile areas, with inconsistent representation of PVOs in the area. Concerns were raised that often, when health-care PVOs leave an area due to conflict, agriculturally-focused PVOs remain in emergency situations as they focus their work on development goals for the affected communities. The agricultural PVOs are then asked to collect health-care data, for which they are not trained or adequately prepared.
 - When planning training or health programs, the need to examine countries which host complex emergencies in terms of sectors, rather than a whole. The specific needs of each sector may be very different (the DRC was given as an example).
 6. The overall need for increased training of PVO/NGO staff, focusing on the training of instructors and support for the national or local staff, rather than the expatriates.
 - There are few data on the retention of PVO/NGO staff, particularly in regard to how long the staff member stays after receiving advanced training in public health areas.
 - The need for standardized training courses: one role the network could play would be to suggest performance standards (suggestion was made not to go for minimally acceptable standards, but to start with establishing higher standards from the beginning). Setting a high level of standards might compensate, somewhat, for the varying levels of sophistication between PVOs/NGOs.
 - The need to link training standards with the SPHERE program.
 - The need to link SPHERE standards to grant guidelines, rather than always asking for voluntary compliance. This includes the need for the network to stress this point to the donor agencies.
 - Guidelines developed by the network for training could be accompanied by self-guided modules and other focused training materials.
 - Guidelines could be disseminated on the Web, through email, and at regional workshops.
 - The consider the optimal duration of a network-designed training session. Concerns were raised that one day is too short to be effective.

- The network could link to the World Education program (located in Boston) to discuss how to best package training materials.
- The network can link to other databases for consultants, such as the CORE database, or consultants that UNHCR uses. These consultants could be “loaned” to PVOs/NGOs for short-term assistance.

Future Activities:

1. PVOs/NGOs will send Dr. Holly Williams (“cc” to Dr. Maire Connolly) the following information:
 - A list of countries in which they are active.
 - Current malaria control activities.
 - The top 2-3 concerns they have in regard to providing malaria control in complex emergencies.
2. Dr. Williams, with the assistance of Mr. Nitin Madhav, will explore options of meetings between Dr. Williams, Dr. Connolly and representatives of USAID and OFDA, possibly in January 2000. Meetings will be coordinated with ongoing work between RBM and USAID.
3. Dr. Connolly will follow-up with RBM to develop a web site for the network, or to add network information to the RBM site which would:
 - Educate and sensitize PVOs/NGOs to the problem of malaria in complex emergencies.
 - Outline what NOT to do in the situations of complex emergencies, such as outdoor spraying.
 - Provide guidelines or suggestions for the best ways to use malaria control principles in order to develop strategies for malaria control programs.
4. Additional advocacy activities could include:
 - Development of a flyer to promote the types of assistance offered by the network.
 - Development of a one-page brief that describes activities of both RBM in general and the network in specific, with country representatives listed for RBM access.

Annex L: Effective Strategies to Promote Quality Maternal and Newborn Care (May 3-5, 1999), CORE Group Workshop Presentation Summary on Malaria and Pregnancy (Dr. Monica Parise)

(from the workshop proceedings)

Dr. Parise emphasized that malaria in pregnant women is significant because it can lead to adverse consequences for both the mother and child. Most of the existing data relates to *Plasmodium falciparum*, though there appears to be emerging information that *P. vivax* may also contribute to adverse maternal/fetal outcomes. When we consider the spectrum of malaria illness that occurs in pregnant women, we must distinguish between areas of high and low malaria transmission as malaria's effects depend on the degree of maternal immunity (and, thus, on the intensity of transmission).

In areas of low transmission, generally all pregnant women have low levels of immunity and therefore, women of all parities are at risk of malaria and its complications at any time during gestation. These complications include: severe malaria illness (high fevers, anemia, cerebral malaria, and death), abortions, stillbirths, and congenital malaria. In areas of high malaria transmission (e.g. much of sub-Saharan Africa), where women have acquired substantial malarial immunity, severe malarial illness is uncommon but placental infection, which is associated with low birth weight (LBW), can occur; primigravidae and secundigravidae are most affected. In both high and low transmission settings, malaria often contributes to anemia, which is also associated with LBW.

The main intervention for prevention of malaria during pregnancy has been the use of antimalarial drugs. Antimalarial drugs that are contraindicated during pregnancy include tetracyclines and primaquine. Chloroquine (CQ), quinine, pyrimethamine, proguanil, clindamycin, and sulfadoxine-pyrimethamine (SP) are safe. There is limited safety data on halofantrine, the artemisinin derivatives, and atovaquone. In low transmission areas, because women are symptomatic when they have parasitemia, the focus is on prompt recognition of illness and appropriate case management. In high transmission areas, because many women are asymptomatic, the intervention focus is on prevention, i.e. chemoprophylaxis or presumptive management—such as intermittent presumptive therapy (IPT). IPT with SP, one dose at the first antenatal clinic visit in the second trimester and a second dose in the third trimester, has been demonstrated to be safe, efficacious, easily deliverable, and cost-effective for the prevention of placental malaria in areas of high transmission.

Although it appears that HIV-seropositive women require more doses of SP (i.e. at least three) than HIV-seronegative women, this must be confirmed in other studies. The efficacy of IPT with CQ in areas where *P. falciparum* remains sensitive to CQ is also under investigation.

Before beginning a program for prevention of malaria in pregnant women, it is useful to have a baseline evaluation of the impact of malaria during pregnancy in that geographical area and an assessment of how the intervention may fit into existing antenatal care services. The baseline evaluation of the extent of the problem, which is also useful for comparison purposes when one is evaluating program impact, includes: an assessment of prevalence of febrile illness, anemia, peripheral/placental parasitemia, and LBW in women in antenatal clinics and delivery units. The evaluation of the opportunities for intervention within the existing antenatal care system includes: an assessment of client- and facility-dependent factors to assess women's attitudes about malaria,

antimalarial drugs during pregnancy, their use of antenatal care (especially timing and number of visits), and barriers to their use of services. The important data necessary to evaluate potential barriers related to use of health care facilities include: an assessment of current clinic policies and practices, interactions between health care workers and women, and availability of equipment, supplies and drugs.

Recommendations:

- Gather important baseline information prior to program implementation, including an assessment of the public health impact of malaria in pregnant women (prevalence of parasitemia, anemia, LBW, etc.) and the opportunities to intervene within the existing antenatal system.
- Use two-dose IPT with SP to prevent placental malaria in areas of high malaria transmission where *P. falciparum* is not resistant to SP.
- Use the drug of choice for treatment of uncomplicated malaria during pregnancy: CQ is the drug of choice for non-falciparum malaria or for *P. falciparum* in areas without CQ-resistance; for treatment of *P. falciparum* in areas with CQ-resistance, efficacious drugs include SP, quinine/SP, quinine/clindamycin, or quinine alone. If the malaria species is not known, treatment must be directed against *P. falciparum*.
- Treat complicated malaria with parenteral quinine (with or without SP or clindamycin).