



The Malaria Crisis in Africa

Information about the malaria crisis in Africa has been propagated widely over the past few years. It is now well known that about 3,000 children in Africa are dying every day from malaria. Leaders of governments in the USA, Europe and elsewhere have pledged funding for malaria control activities, and private resources have been mobilized and made available. The Global Fund for AIDS, Tuberculosis and Malaria (GFATM) has disbursed upwards of \$1 billion for malaria activities.

There is discussion about bednets saving lives and about the scale of the distribution of bednets. There is discussion about the increasing use of interior residual spraying and how many houses have been sprayed. There is discussion of the purchase and distribution of drugs, especially the more effective Artemisinin based drugs. There is discussion about new research. There is discussion about the new money being committed. There is discussion about the need for transparency and accountability and results based programming.

Going Beyond Discussion

There are, however, no data that relate costs to results. At any rate, no data that are easily accessible to the interested public and concerned experts.

There is a transparency and accountability crisis in the international relief and development sector in general and the malaria subsector in particular. Funds are being committed, funds are being disbursed, and activities undertaken, but little or nothing is reported about the cost effectiveness of any of this work.

The cost accounting and performance accountability is very weak by any reasonable standards. There is little practical interest in this at the top levels of the involved organization, and little capacity to do this work in any meaningful way. Virtually nothing of the data that one might reasonably expect are available.

Integrated Malaria Management

The principles of integrated malaria management were used by Col. Gorgas over 100 years ago during the construction of the Panama Canal. Malaria has been controlled and essentially eradicated in the United States and other parts of the world using long available mosquito and malaria control techniques.

Vector control is an important community based activity and widely used to limit the spread of disease and simply for nuisance control ... except in Africa.

An integrated malaria management approach is not being used in Africa and there is no accountability for cost effectiveness. There is nothing that shows fiscal responsibility and no public accounting. The presently favored interventions may be costing between 2 and 10 times more than an optimized program.

Elements of IMMC

Integrated mosquito and malaria management has two components:

1. the data dimension, and
2. the operational interventions.

Cooperation not Competition

The organizational construct of IMMC is to cooperate for performance excellence rather than to compete to replace established organizations.

The first goal is to provide a data system that will:(1) facilitate the reporting of cost and results and the comparison of cost effectiveness across a variety of situations, and (2) facilitate decision making about operational activities.

A second goal is to facilitate access to suitable interventions in communities where the data show there is a need, and there are no suitable interventions being supplied by established programs.

The Data Dimension

The data dimension comprises:

1. mapping,
2. surveillance,
3. data logistics
4. data analysis,
5. modeling,
6. cost accounting, and
7. operational planning.

Data has enormous value when it is used to optimize performance, and best done by collecting relevant, timely information, doing analysis to understand the information and presenting the information in a way that is understandable for decision making.

IMMC Interventions

The integrated mosquito and malaria management interventions are:

1. Interior residual spraying (IRS),
2. Source control,
3. Mosquito control (ULV spraying),
4. Medical: drug therapy, drug prophylaxis,
5. Personal protection: bed-nets (ITN).

These interventions in combination using scientific and cost data to determine the best approach can control mosquitoes and malaria in Africa just as they have done in other parts of the world. Using an optimized combination will have a multi-year cost that is substantially lower than any one intervention standing alone, and provide the best socio-economic outcome.

Performance Metrics - Cost Effectiveness

The specific outcome metrics are:

1. mortality caused by malaria,
2. morbidity caused by malaria,
3. prevalence of the malaria parasite in mosquitoes,
4. prevalence of the malaria parasite in humans.

These outcome are related to a specific geographical community that has an identified population size, a geographic area (acres), an inventory of houses and certain information about sources, the physical geography and about weather conditions.

Cost effectiveness is determined using available costing information, performance modeling that uses standard costs established by Tr-Ac-Net in cooperation with the NCSA, and surveillance data about the impact of mosquito and malaria control interventions.

More about IMMC

Use of local professional and support staff

The IMMC program is based on the maximum possible use of local professional and support staff. The value of this approach is validated by cost and performance data.

Surveillance and data collection

Surveillance and data collection is routine and ongoing. It shows where malaria is most serious and where and when mosquitoes can be most effectively controlled. The data can be compiled using traditional pencil and paper or using PDA or cellphone technology.

Data collection may include data already being compiled at health centers and hospitals, but will not usually be limited to these data sources.

Data collection should be an activity that is ongoing and suited to operational optimization and not limited to periodic surveys that establish a single point of data.

Tr-Ac-Net database

Tr-Ac-Net's database has a focus on performance at the community level, the problems of local development, local priorities and constraints, and the available actors. The database includes cost effectiveness of development interventions and will serve as a prototype for a broader database of cost effectiveness in the malaria sub-sector.

Use of satellite imagery

IMMC uses satellite imagery where it has the potential to facilitate rapid improvement in data acquisition and operations. Satellite imagery can be interpreted to help

focus activity on specific areas where there is likely to be a high level of malarial activity.

Data logistics

Getting data transmitted reliably at low cost will be done using most appropriate technology. Good infrastructure and modern information technology makes it possible to record and transmit information in a very efficient manner. Access to the Internet can be done either using community based telecentres, using other Internet access points or using contracted IMMC satellite links.

Data modeling

Data modeling is done by IMMC in cooperation with the National Center for Supercomputing Applications (NCSA) located at the University of Illinois, Urbana-Champaign. NCSA will undertake complex multivariate analysis that will help to optimize interventions in any specific environment.

Training and learning

Training is a priority in order to facilitate using the maximum possible number of local staff. International experts are used for primarily for data analysis, training and knowledge transfer.

Community awareness

IMMC has a focus on community results, and this is an integral part of making the community aware about malaria and how it must be controlled for ever.

Participants in IMMC

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