POLICY: BIOMEDICINE

Partnership Between South and North Crystallizes Around Malaria

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In less than the life-span of a single scientific career, the tradition that personal excellence drives important science has been augmented twice: first through the development of centers of excellence, where a group of scientists works together in one location, and more recently by "networks of excellence," which are collaborations unrestricted by geography. The formation of these international scientific partnerships, enabled by improved mobility and communication, is guided by three principles: a common intellectual challenge, complementary expertise, and personal liking. Several fruitful collaborations in research are currently springing up between partners on different continents. These networks pose a challenge for management, but for colleagues in scientifically isolated countries they provide unprecedented opportunities. A new initiative concentrating on malaria in Africa seeks to take advantage of some of these opportunities. Here we describe our personal views about why this initiative is innovative and how it became possible.

Africa

What is needed for Africa to participate actively in networks of excellence? First, capacity-building—training and development of research capacity, adapted to specific needs and based on good science—in the labs of high-quality African scientists. These labs must also be involved in developing the international collaborative research networks, and African scientists should be provided with the means to compete for international research funding, on topics of their choice and in collaboration with the partners of their choice; they should not be saddled with donor-driven topics. Second, scientists in the Northern Hemisphere (the "North") who focus on issues relevant to the Southern Hemisphere (the "South") should be afforded the full range of opportunities to collaborate with scientists from those regions. Third, the facilities to train a new generation of internationally competitive scientists should be put in place in Southern countries: Currently, almost all Southern scientists are trained in the North.

For health-related scientific initiatives, two major barriers must be overcome. One is the lack of programs designed to foster partnerships and scientific networks across continents. In this global era, hardly any disease is the exclusive problem of a certain region, and investments in health should be made with a global perspective. The second barrier is more formidable. One legacy of reckless exploitation of the South by the North is the "post-colonial syndrome." This collective feeling of guilt in the North, resulting in unquestioning donations to the South, is exemplified by a quotation from a senior African health official, who cynically summed up the situation as: "I [the official] am black, so I am right." The time has come for equal South-North partnership, including healthy, two-way constructive criticism. A genuine partnership implies that African scientists have a balanced influence on setting the research agenda, even if the majority of the funds come from the North.

These issues are now being addressed internationally in the new Multilateral Initiative on Malaria (MIM). This coordinated effort could, however, go far beyond malaria and benefit the entire field of health and biomedical research.

Why Malaria?

Malaria, a highly complex disease, needs the formation of partnerships of African researchers more than any other disease. This is mainly because the increased scientific capability in Africa that would result from such a partnership would result in better control of the disease in the region.

Several interrelated developments have focused global attention on malaria in recent years: One was its categorization as a reemerging disease that is likely to threaten the Northern Hemisphere once again, or at least to affect those who travel for pleasure or power. Traditionally, there is a strong global bias toward funding research on diseases that affect the more developed regions of the world. Although this may be shameful, it should not be denied. The organizations involved in the new malaria initiative now enjoy a unique political climate in which to break through this traditional bias.

First, international political considerations surfaced at the Global Malaria Conference in Amsterdam in 1992, where many governments of malaria-endemic countries raised awareness of the malaria problem and readdressed its control with existing tools. A Global Malaria Control Strategy was adopted (*1*).

Second, the "Transatlantic Agenda" in 1995 made malaria a focal issue for collaboration between the United States and the European Union (EU) member states (*2*).

Third, a bottom-up approach within the scientific community resulted in the establishment of the Malaria Foundation, which as part of its mission facilitates international partnerships (*3*).

Fourth, research on malaria has progressed rapidly. Findings from molecular epidemiology and basic molecular parasitology indicate that malaria can exist in many forms, which has caused great alarm. This flexibility on the part of the parasite severely complicates control efforts and the development of novel drugs and vaccines.

Fifth, the chronic underfunding of malaria research by the public sector (*4*) and the limited financial resources of the developing world, which limit industrial investments in the disease, have begun to trigger worldwide responses.

Recently, the World Bank and the regional office of the World Health Organization (WHO) in Africa (WHO/AFRO) have considered a scheme for renewing investment in control efforts. Thus, malaria is also of great interest to institutions concerned with socioeconomic development in the South, notably in Africa, where malaria is a very important socioeconomic burden.

What structure was already in place to be built on? Research programs such as the EU's Scientific and Technical Cooperation with Developing Countries, Health sector (INCO-DC), and the National Institutes of Health's (NIH's) program for International Centers for Infectious Disease Research had gradually developed mechanisms to support Southern scientists, either directly or in combination with Northern colleagues. WHO's Special Programme for Research and Training in Tropical Diseases and several individual countries in Europe had invested substantial sums for many years in training the current generation of African scientists. This ongoing commitment has resulted in a small but solid human capital basis for South-to-South and intercontinental collaboration.

1997—The Year of Malaria?

At an NIH meeting in 1995, representatives of the Institut Pasteur, INSERM, the

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United Kingdom's Medical Research Council, the Wellcome Trust, and NIH agreed that increased cooperation was needed and that a useful initial focus would be malaria in Africa. At an international follow-up meeting in April 1996, a plan was developed for a meeting in Africa to address "challenges and opportunities for cooperation on malaria in Africa." In 1997, MIM began to crystallize.

In January of that year, 150 scientists from all over the globe (including 50 from 22 different African countries) and senior officials from the major research-supporting agencies met in Dakar, Senegal, to develop innovative approaches to funding malaria research (5). The African scientists insisted on genuine partnership; they valued interactions with the North and were not inclined to view the research agenda for Africa in a nationalistic or a "continentalistic" way. They emphasized the need for tailored capacity-building.

Participants agreed that continuing dominance by Northern partners does not yield lasting partnerships, a principle that everyone now accepts. As the research capacity in most African institutions (not to be confused with institutes located in Africa) remains small, the limits of what can be done are frequently shaped by contacts with the North. In addition, institutional capacity building in Africa requires major financial and infrastructure investment that cannot be provided by the limited funds of research agencies alone. It became clear in Dakar that capacity-building and operational control programs, the latter traditionally being mainly the responsibility of governments and bodies concerned with development, need to be coordinated with research programs.

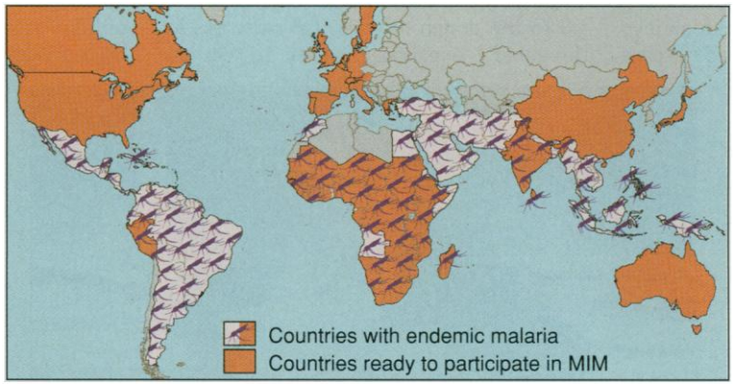
The meeting in Dakar called for expressions of interest in studies on malaria involving multiple centers and capacity building. This resulted in over 100 submissions, clarifying the challenges and opportunities. The submissions also made painfully clear that the number of scientists in Africa who are strong enough to be equal partners with Northern institutes is limited and that they could easily be overwhelmed by a new initiative.

A follow-up meeting with participation from development agencies and industry was held in The Hague, Netherlands, in July 1997 to reflect on the priorities defined in Dakar and to set out a framework to respond to them in a coordinated fashion. MIM was defined as a loose federation of funding bodies with a common interest in malaria. It was agreed that agencies with a mandate to support peer-reviewed research will support the creation of partnerships.

An important added value of MIM lies in coordination among the agencies to foster multi-center studies. The discussions were continued in London in November, where the coordinating structure was established and a decision made to inform the general public about the concepts of MIM through the Malaria Foundation.

A Wider Perspective

Beyond the core group of research funding agencies, MIM has been a catalyst for coordination on a much grander scale. It is providing a focal point for interaction among health professionals, scientists, research-funding agencies, national and international development-related agencies, political bodies such as the Organization of African Unity (OAU), the G8 summit, and the pharmaceutical industry.



Working together to control malaria.

Much better understanding of malaria is needed before truly effective control strategies can be designed for different circumstances. Structural participation in this process by scientists of endemic countries is now seen by everyone as crucial. Research should therefore have an increased profile in future control efforts, while scientifically based control programs will strengthen research worldwide as well as capacity for malaria control in Africa. Malaria is an important barrier to development, and the OAU (6), as well as the Council of Development Ministers of the EU (7), have emphasized the importance of research for development. The World Bank has announced that its malaria control initiatives will be coordinated with the research initiatives of MIM. It is also expected that MIM will accelerate ongoing discussions about innovative ways for the public and private sectors to collaborate.

A potential Achilles' heel of MIM is that the orders-of-magnitude difference in funding from different sources might prove disruptive or that cultural differences among research agencies, development agencies, and industry may cause problems. The traditional lack of communication between research and development bodies in the North, and between scientists and their governments in the South, needs to be readdressed to enable the smooth collaboration between research and control efforts at the operational level. However, there has been a remarkable spirit of cooperation between the different agencies, and most of the hurdles are being cleared. MIM may test whether such a revolutionary collaboration is possible in a structural and sustainable manner, rather than on an ad hoc basis as has been done in the past.

The Future

MIM provides a practical and political context in which to optimize the use of funds for malaria research and control. It is already benefiting research worldwide through improved coordination. It will allow operational and basic scientists to generate tailored partnerships to address targeted issues and will contribute to improved public awareness, which may translate into increased funding for research and control partnerships between regions where malaria is endemic and the North. Ultimately, this might prove to be the only way to break the stranglehold of malaria.

We anticipate that the multilateral coordination among research agencies and between research and control-oriented efforts will have a long-term impact far beyond malaria research. Research and interventions on other diseases, and health care systems generally, are largely supported by the same agencies that now collaborate on MIM. It is therefore likely that benefits gained in the MIM process will be transferred to other aspects of health and the related socioeconomic problems of the South.

References and Notes

1. Available at www.who.ch/programmes/ctd/act/malaact.htm.
2. New Transatlantic Agenda Action Plan, EU–US Summit, Madrid, 3 December 1995; see http://europa.eu.int/en/comm/dg01/pol22.htm.
3. See www.malaria.org.
4. PRISM report no. 7 (Wellcome Trust, London, UK, 1996).
5. See www.niaid.nih.gov/dmid/malafr/ [D. Butler, *Nature* **386**, 535 (1997)].
6. Harare Declaration on Malaria Prevention and Control in the context of African Economic Recovery and Development, Assembly of the Heads of State and Government, June 1997.
7. Council Resolution on Research and Technology Development in Relation to the EU's Development Cooperation Policy, Brussels, 5 June 1997.