MAJOR ACHIEVEMENTS IN 2012

Preventing childhood deaths by managing fevers
A NEW APPROACH BRINGING TOGETHER MALARIA AND PNEUMONIA TREATMENT BY COMMUNITY VOLUNTEERS

This work builds on long-term TDR research that shows that trained community health workers (CHWs) can be instrumental in providing primary health care services in under-served health care settings. Such community-based or directed-health care schemes are now being further investigated to see whether CHWs can diagnose and treat fever, which is a symptom of malaria but can also be caused by pneumonia or diarrhoea. These three illnesses are the major cause of childhood death in Africa. The approach is called integrated community case management (iCCM) of malaria, pneumonia and diarrhoea. A widely disseminated supplement of 16 research articles in the *American Journal of Tropical Medicine and Hygiene* was co-edited by TDR on the topic, and research continues. In 2012, WHO and UNICEF produced a joint statement calling for scaling up of community approaches for diagnosis and treatment of these diseases, noting the growing evidence base for this approach.

Helping improve the quality of rapid diagnostic tests for malaria
A SERIES OF REVIEWS COMPARING THE PERFORMANCE OF TESTS IN A STANDARDIZED WAY

Established in 2007 and now with a series of four reviews published, this evaluation is helping malaria control programmes and offices that buy diagnostic tests to know which ones are reliable and effective. Overall, the majority of resubmitted products evaluated in the 2012 round either maintained or improved their performance. The work, which has been done in partnership with the World Health Organization and the Foundation for Innovative New Diagnostics, has now been handed over to WHO’s Global Malaria Programme to promote stronger integration into malaria programmes.

Supporting the elimination of river blindness
IVERMECTIN INTERRUPTS TRANSMISSION

A major study conclusively showed that treatment with ivermectin not only controls river blindness (onchocerciasis), but it also interrupts transmission and has been able to eliminate the parasite in some endemic areas in Africa. This TDR-supported study, in coordination with the African Programme for Onchocerciasis Control (APOC), builds upon years of partnership in the fight against this disease.

FOR MORE INFORMATION ON TDR: www.who.int/tdr
A SECOND DRUG BEING STUDIED

Moxidectin is another drug being studied for treatment of river blindness, which could speed up disease elimination and expand the areas in which transmission could be interrupted. Analysis of the data from the Phase III clinical trials that were completed in 2012 will be published in 2013, allowing the community to consider the evidence needed for rational discussion about its future usage.

Improving dengue prevention, diagnosis and treatment

HANDBOOK FOR CLINICAL MANAGEMENT OF DENGUE

This handbook, which is currently in great demand by the public health community, supports the training of healthcare workers to diagnose and treat dengue. It was developed by the WHO Department of Control of Neglected Tropical Diseases and TDR.

DENGUE CLASSIFICATION PROCESS POTENTIAL MODEL

A revised dengue case classification system was identified through a careful review of past diagnosis and treatment plans. This classification is better able to standardize clinical management, raise awareness about unnecessary interventions, match patient categories with specific treatment instructions, and make the key messages of patient management understandable for all health care staff dealing with dengue patients.

REDUCING DENGUE MOSQUITO BREEDING

A five-year multi-country research programme carried out in urban and peri-urban Asia concluded in 2012 with a major publication in Pathogens and Global Health. The initiative aimed to identify and test strategies for community-based ecosystem management interventions to reduce dengue transmission. The work took place in six countries of South Asia and South-East Asia using a combined research approach investigating the ecological, biological and social dimensions of dengue vector breeding. It significantly reduced the mosquito densities in some sites and provided a powerful evidence base to guide community-based approaches to dengue vector control in others.

IDENTIFYING NEW TOOLS TO CONTROL DENGUE MOSQUITOES

A three-year study in Asia and Latin America was completed in 2012. It examined the efficacy of interventions combining the use of insecticide-treated materials, the targeting of the most productive mosquito larval breeding water containers, and biological control for dengue prevention. The study resulted in both new cost-effective interventions and training of local public health personnel.
A series of research priority reports to support policy-makers and funders

The launch of the Global report for research on infectious diseases of poverty in April 2012 initiated a series of research priority reports during 2012 and 2013. The Global Report outlines the issues and challenges and calls attention to the need for multidisciplinary approaches, particularly in three themed chapters on the environment, health systems, and innovation and technology. It also reviews the research funding landscape, examining the key challenges and identifying specific values for funding decisions.

During the course of the year, four additional reports were published within the highly regarded WHO Technical Report series – these were its first reports on research and were based on the work of the TDR Think Tank. They included:

THE WHO/TDR TECHNICAL REPORT SERIES ON RESEARCH

- Research priorities for helminth infections
- Research priorities for zoonoses and marginalized infections
- Research priorities for Chagas disease, human African trypanosomiasis and leishmaniasis
- Research priorities for the environment, agriculture and infectious diseases of poverty

Supporting the development of effective donor collaborations

Research institutions in low- and middle-income countries now have an important document outlining best practices for funding proposals. The Five keys to improving research costing in low- and middle-income countries was published by ESSENCE on Health Research, a multilateral donor initiative to Enhance Support for Strengthening the Effectiveness of National Capacity Efforts. TDR provides secretariat support to this group of donors who are examining how to better support countries through common frameworks, such as this one on costing of research.

“This is essential reading for policy-makers, funders and research leaders.”

Marie-Paule Kieny, Assistant Director-General of the World Health Organization’s Health Systems and Innovation.
Expansion of career development fellows

Twelve new fellows from developing countries completed their Career Development Fellowships (CDF) with pharmaceutical and research institute partners. There they developed specialized skills not readily taught in academic centres to take home to lead major R&D projects. The ultimate goal is to reduce research bottlenecks as more new products enter the development pipeline, and develop strong research capability in poor countries trying to manage infectious diseases. The programme has supported 27 fellows from 16 countries since its beginning in 2000, and many are now leading clinical development projects and helping their countries’ institutions increase research capacity.

A PROFILE: DR TAFIREYI MARUKUTIRA

As an asthmatic child, Tafireyi Marukutira came into contact with the medical establishment early and often. "Between the age of 6 and about 16, I was in and out of the hospital all the time," he says. "I was meeting so many doctors and nurses, and I think that’s one of the main things that initially drew me to the field. I wanted to be like them and I wanted to help myself and those who were asthmatic."

A native of Midlands, Zimbabwe, Marukutira earned his medical degree just as the country’s economy began to unravel, hemorrhaging jobs and plunging millions into poverty. By 2002, fuel shortages, soaring inflation, and the specter of famine had driven tens of thousands of Zimbabweans to flee, resulting in an exodus of talent to neighboring countries.

Marukutira, for one, found his way to Botswana. After several posts in the ministry of health, he joined the newly opened Botswana-Baylor Children’s Clinical Centre of Excellence, part of the Baylor International Pediatric AIDS Initiative, in Gaborone, and, while there, went on to pursue dual masters degrees in public health and management of HIV/AIDS.

In the case of Marukutira, Zimbabwe’s loss was Botswana’s gain. And for the young scientist himself, emigrating to the latter was a crucial step along a career path that would take him from the Midlands to the Midwest of the United States for a twelve-month TDR Clinical R&D Career Development Fellowship in the Chicago offices of Astellas Pharmaceuticals where he was commonly known as Tafi.

“I learned so much from my time at Astellas,” Marukutira recalls, describing his work in the company’s anti-infective department, where he was able to observe all phases of a compound’s clinical development. “The training in good clinical practice, project management, research design, writing manuscripts and running a clinical trial–those are the skills I’m using today as principal investigator on one of our main research projects.”

Indeed in addition to advancing his own career, the fellowship has allowed Marukutira to have a meaningful impact on his home institution. “At the moment, we have two proposals out for research projects, and this would not have been possible without the expertise I now have,” he says. “That expertise has enhanced our institutional profile, putting us in a position to apply for these grants that we know we can now get.”

Gabriel Anabwani, Executive Director of Botswana Baylor Children’s Clinical Centre of Excellence and Marukutira’s mentor, echoes that belief. “We feel the fellowship has had a very positive impact,” he says, explaining that it’s allowed Marukutira to work at a higher level than he had been before. “He’s currently working on a number of projects,” says Anabwani, “including as a principle investigator on a CDC-funded study of adherence to HIV medicines in adolescents in Botswana. What we’re now trying to do is get him into larger research grants–and we’re confident we can do that.”

So too is Marukutira, who received another honour last year, the International AIDS Society (IAS)/CCABA (Coalition for Children Affected by AIDS) Prize for Excellence in Research Related to the Needs of Children Affected by AIDS, for an abstract he presented at the AIDS Conference in Washington, DC--part of a study entitled “The voice of the HIV infected and affected school-age children in Botswana,” on which his mentor, Anabwani, was principle investigator. This prize is awarded to an investigator whose abstract demonstrates excellence in research that is likely to lead to improved services for children affected by HIV and AIDS.