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The global fight against HIV/AIDS, tuberculosis (TB) and malaria is a daunting, but ultimately solvable, challenge. It will be critical to accelerate the provision of financial and human resources that yield both immediate and lasting impacts. With the backdrop of past initiatives and actions, WHO commends the further commitment of the G8 towards global health needs, as articulated by the heads of state at the Gleneagles summit in July.



ance from UNAIDS, WHO and other key partners. While the target of treating 3 million people by the end of 2005 is, regrettably, unlikely to be reached, the action pathway blazed by the initiative will advance universal access to ART and strengthening of health systems.

The G8 agreed to work towards the goal of providing universal access to antiretroviral treatment (ART), prevention and care for people living with HIV/AIDS by the end of 2010. The heads of state vowed to support African countries in their efforts to reach international malaria targets with known and affordable interventions. They also made a commitment to confront TB, as outlined by the STOP TB Partnership in its recently launched "blueprint" to intensify action to reach the TB Millennium Development Goals in Africa.

With our HIV teams from WHO headquarters and the Regional Office for the Western Pacific, I participated in the seventh international congress on AIDS in Asia and the Pacific this July in Kobe, Japan. According to WHO and UNAIDS estimates, some 8.2 million people in Asia and the Pacific are living with HIV/AIDS and 1.2 million people were infected in 2004. Asian and Pacific countries have done much in their growing efforts to fight the pandemic but still need much more resources and political support to rapidly scale up effective interventions.

TB was also high on the agenda of the meeting of WHO's Regional Committee for Africa. On 26 August the Committee declared TB an emergency in the African region urging African Member States to commit more human and financial resources to strengthen expanded DOTS programmes and scale up collaborative interventions to fight the co-epidemic of TB and HIV.

The positive news since our last newsletter is highly motivating. We are witnessing a growing determination from our public and private partners to accomplish ever-ambitious goals in our common mission to combat HIV/AIDS, TB and malaria.

Also encouraging is the progress announced jointly by WHO and the Joint United Nations Programme on HIV/AIDS (UNAIDS) in the most recent "3 by 5" progress report in June.<sup>1</sup> The number of people receiving ART in developing countries is increasing significantly: it has more than doubled from 400 000 in December 2003 to approximately 1 million in June 2005. Such progress has been possible as a result of the concerted efforts of many countries and donors, with technical assist-

Finally, I would like to inform you, that after 2 productive, challenging years as the ADG for the HTM cluster, I will depart Geneva to serve as a special envoy of the Director-General and will be based in Washington DC. I wish you every success in the campaign against these three pandemics, as you work together in partnership with our fine professionals and staff of WHO worldwide.

Dr Jack C. Chow, former Assistant Director-General, HIV/AIDS, Tuberculosis and Malaria

<sup>1</sup> Progress on global access to HIV antiretroviral therapy. An update on "3 by 5". June 2005 (www.who.int/3by5/publications/progressreport/en/index.html).

## East Africans work with Roll Back Malaria to boost antimalarial medicine supply

*Atanasia Vincent Moshia, a 52-year-old farmer and local Agricultural Extension Officer, proudly shows off her model plot in Patandi, a village near Arusha, United Republic of Tanzania.*

Wedged between more traditional crops of tomatoes and beans is a strip of land bearing neat rows of fragrant bushes about a metre high. The plant is *Artemisia annua*, a newcomer in these parts, and a vital component of the fight against malaria.

*Artemisia annua* is the source of artemisinin, a raw material needed to make artemisinin-based combination therapies (ACTs), the latest generation of antimalarial medicines and in most parts of the world the only effective agents against falciparum malaria, the deadliest form of the disease. Moshia has placed the *Artemisia* plants in a prominent place on this demonstration farm. “I want people to see it when they visit here. Then, I hope they will grow this plant, which is so important for us because it will allow us to have the medicines we need to fight malaria,” she says. The cool, damp conditions during the winter and spring in Arusha make the local climate highly suitable for cultivating the plant, which farmers say represents an excellent cash crop for them.

Until recently the plant was grown mainly in Asia. But for some years, pilot projects have been carried out in Kenya, the United Republic of Tanzania and some other African countries. In autumn 2004, faced with an impending ACT shortage resulting mostly from an inadequate supply of artemisinin, the WHO Roll Back Malaria (RBM) department – working with the United States Agency for International Development (USAID) – decided to provide support through the nongovernmental organization TechnoServe to farmers for growing the plant on a larger scale in Kenya, Uganda and the United Republic of Tanzania. The project is a budding success: it is expected the crops, which will be harvested in 2005 and 2006, will yield sufficient artemisinin for a minimum of 30 million treatment courses of ACTs.

Harvesting the plants – which is done when they reach a height of about 2 metres – is just the beginning of a series of processes necessary to produce the finished medicine. First the plants must be dried, then transported to a facility where the active ingredient artemisinin is extracted. Artemisinin must be then submitted to other chemical processes to derive the active medicines such as artesunate and artemether, which are used in combination with a synthetic medicine against malaria. The four combinations currently approved by WHO are artemether–lumefantrine, artesunate + mefloquine, artesunate + amodiaquine, and artesunate + sulfadoxine–pyrimethamine.

The complex procedures needed to produce them – combined with the fact that they have a very brief shelf-life – make ACTs more expensive than many solely synthetic drugs and more vulnerable to supply problems.

Since 2001, 51 countries, 34 of them in Africa, have followed WHO’s recommendation that they adopt ACTs as the first-line treatment for malaria. Some 18 countries adopted them in 2004 alone. The resulting surge in demand by countries for use in public health facilities – from 2 million treatment courses in 2003 to 30 million in 2004 and a projected 70 million for 2005 – led to a shortfall of artemisinin and ACTs, which WHO announced in November 2004. This year’s East African crop of *Artemisia annua*, combined with



the harvest from Asia, is expected to be sufficient to produce enough medicine for late 2005 and 2006.

Now WHO has its sights on another potential problem. “We are concerned the opposite situation could arise – farmers could produce too much of the plant. A glut during one growing season could discourage them from growing it the next, and we could end up with a shortage again,” said Dr Allan Schapira, Coordinator of RBM’s Policy and Strategy Team. “It is vital that all parties involved in producing ACTs work closely together, to make sure all aspects of the supply chain are well coordinated.”

Conscious of that priority, WHO convened a meeting in June that brought together growers of *Artemisia annua*, representatives of international and nongovernmental organizations, government agencies and companies engaged in manufacturing ACTs or planning to do so and officials from the ministries of health and agriculture of Kenya, Uganda and the United Republic of Tanzania and the Tanzanian ministry of trade.

This was the first time actors involved in every step of the ACT production chain – from planting of seeds to the processing of artemisinin to manufacturing of finished pharmaceuticals – had the opportunity to meet together. Participants in the meeting reviewed the status of ACT supply and anticipated demand in the light of experiences over the past two years. They also pinpointed technical questions that need to be addressed by research and examined strategies to create a sustainable market so as to reduce the price of ACTs.

WHO and the Food and Agricultural Organization of the United Nations (FAO) will follow up on the meeting by jointly mounting a web site where all parties engaged in ACT production can interact and track available commodities.

Another important outcome of the meeting was a new sense of confidence about creating a dependable supply of ACTs – and a message to countries that they should not hold back from procuring these life-saving medicines.

Judith Mandelbaum-Schmid



*Reaching out is an important dimension of health services*

## Meet with Dr Thierry Mertens

**TITLE:** Director, Strategic Planning and Innovation, WHO

**AGE:** 49

**BRIEF BIOGRAPHY:** Dr Mertens, MD, PhD, first worked in international public health in the Caribbean and Africa before being appointed to the staff of the London School of Hygiene and Tropical Medicine in England in 1985. He then worked in South Asia, Brazil and Burkina Faso on programme evaluation before joining the WHO Global Programme on AIDS. He was Director of the WHO Department of HIV and Sexually Transmitted Infections and Director of the WHO Mediterranean Centre for Vulnerability Reduction in Tunis, Tunisia.

Strategic Planning and Innovation (SPI) was created in 2004 as the cross-cutting department of the HIV/AIDS, Tuberculosis and Malaria (HTM) cluster. SPI's mission is to identify actions that strengthen the collective response to the three rapidly evolving epidemics. Central to SPI's mandate is highlighting key bottlenecks that prevent treatment from being scaled up at country level and articulating innovative solutions.

SPI is taking a fresh look at old paradigms in health-care assistance for the developing world. Dr Mertens asserts that health institutions are sometimes conceptualized by policymakers as akin to supermarkets: "In my experience, I see that there is an implicit belief that if drugs and prevention commodities are simply placed on the shelves, people will easily come through the front door, reach out and get what they need, and readily pay the bill as they leave. However, this paradigm fails because many people never even reach the front door of that hypothetical store. Difficult living conditions and inability to pay for basic care prevent people in need from ever approaching that store."

Assisting countries to provide affordable and responsive health care for the poor, amid their shortages of resources and health workforces, is a key challenge for Dr Mertens and his team. Dr Mertens envisions a scenario in which stakeholders engage collectively to reassess existing policies and practices, identify new solutions and then participate in their design and implementation.

SPI will work with regions and countries in designing "road maps" towards universal access to HIV/AIDS, TB and malaria interventions. Integration and ownership are SPI's top principles in advancing that agenda. In Dr Mertens's view, "Integrative strategies are needed to bring together different disease control programmes. A critical necessity for achieving universal access are governments committed to public, open and transparent processes that raise the sense of collective ownership among patients and providers alike. Much work lies ahead, but by engaging stakeholders now and focusing on practical, solvable issues, progress can be rapid and robust."

## DID YOU KNOW?

### The Lilly–WHO partnership to fight multidrug-resistant tuberculosis

TB remains one of the world's leading killer diseases, with specific attention required on two emerging threats: HIV-associated TB and multidrug-resistant TB (MDR-TB). Eastern Europe is the cradle of MDR-TB, with infection rates posing a serious risk to TB control targets across the whole region. But the problem of MDR-TB is not confined to Europe: it is a global challenge, with 425 000 people infected every year. DOTS programmes are a fundamental means of reducing the spread of MDR-TB "super strains", but special efforts are needed in areas where drug resistance has already developed. Second-line TB drugs can treat MDR-TB, but until recently the market for them has been small, with fewer than 10 000 people under treatment in developing countries, making it difficult to bring down costs.

In response to this, WHO established the Green Light Committee (GLC) five years ago, with the aim of guaranteeing access to high-quality, concessionally priced second-line drugs in poor countries. It reviews applications from potential DOTS-Plus pilot projects to determine if they comply with the *Guidelines for establishing DOTS-Plus pilot projects for the management of multidrug-resistant tuberculosis (MDR-TB)*. The GLC has already reviewed more than 30 projects and the Global Fund to Fight AIDS, Tuberculosis and Malaria has appointed the GLC to support its approved projects.

In the early days of the GLC, Eli Lilly increased its production of cycloserine and capreomycin – essential to MDR-TB treatment – and agreed to provide them to WHO at subsidized prices.

Later, in June 2003, Lilly together with the Stop TB Partnership launched a US\$ 70 million MDR-TB initiative. The initiative brings together organizations from several fields of expertise to implement TB control programmes, including the International Council of Nurses, the World Medical Association, and the International Hospital Federation and many others.

Lilly transferred the technology to manufacture both the active ingredients and finished dosage forms of the two drugs to countries where the disease is most prevalent (China, India and South Africa). Purdue University in the United States provides training in good manufacturing practices for those facilities.

In addition, together with the World Economic Forum and the business community, the partnership is now developing educational tools so employees can better understand and prevent MDR-TB. The various tools will be tested, first in India, and then adapted for business communities in other high TB-burden countries.

Glenn Thomas

## Q & A: 3 by 5 Progress update, June 2005

In June 2005, WHO and UNAIDS released their third “3 by 5” progress report. The report revealed the latest numbers showing the extent of global access to antiretroviral treatment. It also highlighted many of the challenges countries are facing and lessons learnt.

**Q.** How much progress have countries achieved under “3 by 5”?

**A.** The progress in scaling up access to ART has been substantial. The new progress report shows that the number of people receiving ART has been increasing in every region of the world. In developing countries, the number is increasing significantly – more than doubling from 400 000 in December 2003 to approximately 1 million in June 2005.

**Q:** What are the levels of progress in high-burden regions?

**A.** In sub-Saharan Africa, the region most severely affected by HIV/AIDS, approximately 500 000 people were receiving ART as of the end of June 2005. This is more than triple the number of people on ART a year ago, and nearly double the number just six months ago. In Asia, the second most affected region, the number of people on ART has tripled since June 2004, to approximately 155 000. More than 50% of this increase occurred in the first six months of this year. But even with the current pace of scaling up access to treatment, will the global “3 by 5” target be reached? In order to reach the “3 by 5” target, the world would need to have reached the milestone of 1.6 million people accessing HIV/AIDS treatment by the end of June 2005.

Despite the progress over the past 18 months, access to treatment continues to fall short of the growing need, and the immediate goal to treat 3 million people by the end of 2005 is unlikely to be met. But acceleration of scaling up access to treatment so far has proven beyond any doubt that treatment in the developing world is feasible, effective and increasingly affordable.

**Q.** What follows “3 by 5”?

**A.** The “3 by 5” target was intended as an interim step towards the goal of universal access to HIV/AIDS treatment for those who need it. In a recent declaration by the G8, the world’s most powerful nations announced their support for the development and implementation of a package for HIV/AIDS prevention, treatment and care, with the aim of reaching universal access to treatment by 2010. We need to embrace this initiative and ensure it is put into action, thus enabling this goal to be realized.

Tunga Namjilsuren

## How WHO assists countries to procure safe, high-quality medicines against HIV/AIDS, TB and malaria

Many developing countries are facing a growing problem of counterfeit and poor-quality HIV/AIDS, TB and antimalarial medicines entering their markets. When governments purchase or produce medicines, quality controls need to be carried out according to established principles to ensure that those medicines are of the desired quality. In many high-burden countries, there is either no national drug regulatory authority in place or it is not very strong. To help governments confront this issue, WHO develops screening tests and specifications for antiretroviral, TB and antimalarial medicines. A specification is a series of tests allowing the identity, purity and content of a medicine to be checked. On the basis of these specifications, national authorities and manufacturers can check if the medicines they produced and/or purchased are of good quality and thus safe.

WHO is pleased to announce that it has released new methods and specifications to test the quality of the medicines listed below (some specifications are in draft form, for comments from experts, quality control laboratories in industry and national authorities).

- TB medicines (draft): rifampicin tablets; rifampicin capsules; rifampicin and isoniazid tablets; rifampicin, isoniazid and pyrazinamide tablets; rifampicin, isoniazid, pyrazinamide and ethambutol hydrochloride tablets; isoniazid and ethambutol hydrochloride tablets.
- Antimalarial medicines (finalized): artemether; artemether capsules; artemether tablets; artemether (injectable form); artemisinin; artemisinin capsules; artemisinin tablets; artemotil; artemotil (injectable form); artemimol; artemimol tablets; artesunate; artesunate tablets; mefloquine hydrochloride; proguanil hydrochloride.
- Antiretroviral medicines (finalized): didanosine; indinavir sulfate; nelfinavir mesilate; nevirapine; ritonavir; saquinavir; saquinavir mesilate.
- Antiretroviral medicines (draft): stavudine; lamivudine; nelfinavir mesilate tablets; nelfinavir mesilate oral powder; saquinavir mesilate capsules.

The draft specifications for TB and antiretroviral medicines will be presented to the forthcoming WHO Expert Committee on Specifications for Pharmaceutical Preparations to be held on 24–28 October 2005 in Geneva, Switzerland. It is anticipated that many will be adopted during that meeting. Melanie Zipperer

For further information on newly released specifications for HIV/AIDS, TB and antimalarial medicines and international reference standards, see: [www.who.int/medicines/](http://www.who.int/medicines/) – <http://mednet3.who.int/prequal/> – [www.who.int/medicines/organization/qsm/activities/qualityassurance/pharmacopea/intpharm\\_arvs.shtml](http://www.who.int/medicines/organization/qsm/activities/qualityassurance/pharmacopea/intpharm_arvs.shtml)

