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## Enhancing and extending partnerships to combat neglected tropical diseases

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Neglected tropical diseases affect more than 1.4 billion people around the world and kill half a million each year. These are “diseases of poverty,” with most of those infected living on less than \$1.25 per day. The seven most common NTDs -- ascariasis, whipworm, hookworm, schistosomiasis, lymphatic filariasis, trachoma and river blindness – “debilitate, deform, blind and kill,” leading to a global health burden in years of healthy life lost greater than tuberculosis or malaria, exceeded only by lower respiratory infections, HIV/AIDS and diarrheal diseases.<sup>1</sup> To address these unmet medical needs effectively, we need continuing research & development into new tools to provide safe treatments for NTDs and to guard against resistance, as well as increased investments in implementation and coordination of programs to bring existing remedies to those who need them. This brief essay focuses on the latter question.

There are safe and effective drugs already available to help control – and potentially eliminate – the most common NTDs, many of which are donated by pharmaceutical companies including Merck & Co., Inc., GlaxoSmithKline, Johnson & Johnson and Pfizer. Building on these philanthropic efforts through public/private partnerships, the integrated control of NTDs is possible for often as low as 50 cents per person per year.<sup>2</sup> Yet there is still much work to be done – in scaled-up implementation, in advocacy, and in resource mobilization – to ensure that these interventions reach the millions who still lack access to them.

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<sup>1</sup> See <http://gnntdc.sabin.org/about-ntds> and “Issues note: raising the profile of neglected tropical diseases,” prepared for the Special Event on Philanthropy and the Global Public Health Agenda,” February 23, 2009; available at <http://www.un.org/ecosoc/phlntrpy/docs/Issues%20note-Raising%20the%20Profile%20of%20Neglected%20Tropical%20Diseases-4%20Feb%202009.pdf> (quotation from page 2) .

<sup>2</sup> David H. Molyneux, Peter J. Hotez, Alan Fenwick, “‘Rapid-impact interventions’: how a policy of integrated control for Africa’s neglected tropical diseases could benefit the poor,” *PLoS Medicine* 2 (November 2005): 1064-1070, DOI: 10.1371/journal.pmed.0020336 See also Peter J. Hotez et al., “Incorporating a rapid-impact package for neglected tropical diseases with programs for HIV/AIDS, tuberculosis and malaria,” *PLoS Medicine* 3 (May 2006): 576-584, DOI: 10.1371/journal.pmed.0030102; and Peter J. Hotez et al., “Control of neglected tropical diseases,” *New England Journal of Medicine* 357 (September 6, 2007): 1019-1027.

In this note, focusing on Africa and the private sector's role in particular, I will consider three aspects of the issue: What are some of the specific challenges to eliminating NTDs in Africa? How can we initiate and build on existing partnerships to raise the profile of NTDs and accelerate progress in combating them? How can access to NTD treatment and knowledge be facilitated?

## **1. What are some of the specific challenges to eliminating NTDs in Africa?**

To set the context for understanding these challenges, let's consider the Merck MECTIZAN Donation Program (MDP), the first large-scale, comprehensive global health initiative of its kind. Through the MDP, working with many partners, Merck provides the drug MECTIZAN to treat onchocerciasis, or river blindness, in all countries where the disease is endemic.<sup>3</sup>

In 1987, Merck announced that it would donate MECTIZAN (ivermectin) to all who needed it, for as long as needed. More commonly known as "river blindness," onchocerciasis is transmitted through the bite of black flies and can cause intense itching, disfiguring dermatitis, eye lesions and, over time, blindness. The disease is one of the leading causes of preventable blindness worldwide. MECTIZAN relieves the agonizing itching that accompanies the disease, and halts progression towards blindness - two characteristics of the diseases that dramatically affect the quality and duration of life. With only one annual dose, MECTIZAN is well suited for distribution in remote areas by community health workers. It is the only well-tolerated drug known to halt the development of river blindness.

To ensure the appropriate infrastructure, distribution and support for the donation initiative, Merck established a unique, multisectoral partnership, involving the WHO, the World Bank and UNICEF, as well as ministries of health, non-governmental development organizations and local communities. Since the program's inception, Merck has donated more than 3 billion tablets of MECTIZAN through the partnership, with more than 700 million treatments administered since 1987. The program currently reaches some 130 million people in Africa, Latin America and the Middle East (Yemen) each year. (Since 1998, MECTIZAN has also been used in combination with albendazole – donated by GlaxoSmithKline - to help eliminate lymphatic filariasis in countries where this disease and river blindness are co-endemic.)

In Africa, the use of MECTIZAN is coordinated by the African Program for Onchocerciasis Control (APOC) and administered through community-directed treatment programs across the continent. APOC has trained 31,000 health workers and 350,000

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<sup>3</sup> Jeffrey L. Sturchio and Brenda D. Colatrella, "Successful public-private partnerships in global health: lessons from the MECTIZAN Donation Program," in B. Granville, ed., *The Economics of Essential Medicines* (London: Royal Institute of International Affairs, 2002): 255-274; Brenda D. Colatrella, "The Mectizan Donation Program: 20 years of successful collaboration - a retrospective," *Annals of Tropical Medicine and Parasitology* 102, Supplement 1 (September 2008): S7-S11; and D. H. Peters and T. Phillips, "MECTIZAN Donation Program: evaluation of a public-private partnership," *Tropical Medicine and International Health* 9 (April 2004): A4-A15. See also [www.mectizan.org](http://www.mectizan.org).

community health distributors in 117,000 communities. Today, the delivery system for MECTIZAN also serves as an avenue through which other health and social services have been introduced, such as vitamin A distribution, cataract identification, immunization campaigns, training programs for community health workers and census-taking. To illustrate just how powerful this broad-based partnership is, consider that in 2007, this network of community health workers reached more than 13 million people with add-on interventions: 5.3 million bednets, 4.3 million people who benefited from home management of malaria, 3.7 million who received vitamin A, 2.5 million treated for schistosomiasis and 500,000 treated for trachoma.

The MECTIZAN experience has led to important lessons learned about the challenges to further scale-up to address NTDs:

- **Mobilizing the necessary human resources** is critical, taking into account such issues as health worker capacity and the appropriate balance among volunteers and paid staff.
- **Providing sufficient physical infrastructure** is also a sine qua non of effective scale-up – everything from adequate roads to implementing best practices in drug storage, drug delivery and computerized record-keeping.
- **Procurement and supply management** are mundane but essential issues. These include
  - Coordinating supply chains of donations and commercial products alike. Some products are sole-source (e.g., ivermectin for onchocerciasis); others are multi-source (praziquantel for schistosomiasis is donated and sold by Merck KGaA and MedPharm.) Knowing the most efficient way to procure drugs by NGOs or Ministries of Health can be a challenge.
  - Calculating and communicating accurate and early demand forecasting. Drugs for most diseases exist and are either donated or available through low-cost commercial channels. But a rapid increase in unforeseen demand will stress the supply chain.
- **Optimizing existing vertical programs through merger into horizontal structures/co-implementation** with other NTD programs – as well as integration with national health systems in general. With appropriate planning and coordination, it is possible to maintain disease-specific objectives (e.g., elimination vs. control outcomes), while taking advantage of synergies involved (as, for example, with the add-on interventions undertaken through community-directed treatment with ivermectin noted above).
- **Identifying, conducting and sharing the necessary research on monitoring and evaluation of programs.** There is a critical need for further studies on “when to stop treatment”, serious adverse events mitigation and reporting, and

pharmacokinetic studies of drug interactions, to give just three examples. As a good illustration of "what works", the Atlanta LF Support Center received a \$12M grant from the Bill and Melinda Gates Foundation for this type of research, which will contribute greatly to determining the endpoint of treatment for global LF programs.<sup>4</sup> Another example of the kind of assessment that is welcome is a technical conference being held in Burkina Faso this week under the auspices of APOC (with support from Merck, the Gates Foundation and the WHO) to evaluate the current landscape, future potential and specific needs for understanding where onchocerciasis might be eliminated in Africa and MECTIZAN treatment stopped.

- **Setting realistic and achievable targets.** There have been significant recent increases in donor funding and product donations / preferential pricing for drugs to address NTDs. Having clear targets and meeting them is an excellent way to focus on continuous improvement – and to ensure that donors maintain their interest and support by seeing the return on their investments in measurable improvements in public health.

## **2. How can we initiate or build on existing partnerships which would raise the profile of NTDs and accelerate progress in combating them?**

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One of the most important recommendations for raising the profile of NTDs and accelerating progress in combating them is to **build on existing partnerships** where possible instead of trying to build new ones in each case. For example, the African Program for Onchocerciasis Control (APOC) is building on its long experience with onchocerciasis to include LF and other interventions. This utilizes the existing foundation of health care workers, support from Ministries of Health and donor relationships as a springboard to more effective, integrated treatment. Merck and the World Bank are major supporters of this approach through the APOC Trust Fund.

There are also important **opportunities to evaluate synergies between the Global Fund and NTD programs.** For instance, recent studies in Nigeria, Ethiopia and elsewhere are showing the positive interaction of vector control through bednet distribution on both diseases. This improves the efficiency of both malaria and LF programs and points to the possibilities of improved impact through further collaboration.<sup>5</sup>

Other multilateral organizations (e.g., UNDP, UNICEF) can and should **continue to explore opportunities for achieving mutual objectives with NTD programs,** especially given the contribution that improved NTDs control will make to achievement of the Millennium Development Goals. Within all such partnerships and programs, each partner must focus on core competencies – there is plenty of work to go around, so **technical groups and advocacy organizations should complement, not compete, with one another.**

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<sup>4</sup> See <http://www.taskforce.org/lfsc/index.html>

<sup>5</sup> David H. Molyneux et al., "Neglected tropical diseases and the Global Fund," *The Lancet* 373 (January 24, 2009): 296-297.

With these recommendations in mind, everyone interested in scaling up the response to NTDs should work to enable the activities of groups engaged in advocacy, fundraising and funding of NTD programs. These include the:

- Global Network for Neglected Tropical Diseases (GNNTD), coordinated by the Sabin Vaccine Institute, which has recently received a grant of \$34 million from the Bill and Melinda Gates Foundation to help scale up prevention and treatment efforts through a new “End the Neglect 2020” campaign<sup>6</sup>
- Disease / sector specific programs, e.g., GET2020 for trachoma, Vision2020 for preventable blindness, and the Global Alliance for the Elimination of Lymphatic Filariasis <sup>7</sup>
- Global Health Progress, a coalition of research-based pharmaceutical companies and other stakeholders committed to improved global health outcomes through partnerships on neglected tropical diseases and other areas such as strengthening health systems and improving access to care and treatment in the developing world<sup>8</sup>

### **3. How can access to NTD treatment and knowledge be facilitated?**

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Forums like today’s ECOSOC meeting are an important element of how to continue raising awareness of the issues around NTDs and to catalyze broader discussions and potential collaboration. Publication of the conclusions of this forum and related events and their dissemination throughout the global health and donor communities (including the private sector) will help to encourage those with resources and expertise to get involved in the effort to scale up NTD interventions.

Another important way to facilitate these outcomes will be through **optimizing the activities of, and interactions among, existing NTD stakeholders**, such as:

- PDCI (Partnership for Disease Control Initiatives) – a group of pharmaceutical companies and their associated donation-supported, disease-specific programs, which meets regularly to share best practices and coordinate efforts with each other and other actors (WHO, USAID, etc.)<sup>9</sup>

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<sup>6</sup> See [www.gnntdc.sabin.org](http://www.gnntdc.sabin.org).

<sup>7</sup> See Joseph A. Cook, “Eliminating blinding trachoma,” *New England Journal of Medicine* 358 (24 April 2008): 1777-1779; World Health Organizations, *Report of the Eleventh Meeting of the WHO Alliance for the Global Elimination of Blinding Trachoma*, Cairo, April 2-4, 2007, WHO/PBD/GET/11 (Geneva, Switzerland, WHO, 2007), <http://www.who.int/blindness/GET%2011%20REPORT%20final%20.pdf>; [www.v2020.org](http://www.v2020.org); and [www.filariasis.org](http://www.filariasis.org).

<sup>8</sup> See [www.globalhealthprogress.org](http://www.globalhealthprogress.org).

<sup>9</sup> See Apoorva Mandavilli, “Free to fight disease” *Nature Medicine* 14 (1 June 2008): 594-597, for the context in which PDCI operates.

- The Bill and Melinda Gates Foundation (as both donor and convener) – as noted above, their recent grant to the GNNTD will help create a global structure to leverage various complementary NTD efforts.
- GNNTD (Global Network for Neglected Tropical Diseases) – formed by the Sabin Vaccine Institute in 2006 to support advocacy and coordination efforts among various NTD programs.
- USAID / RTI – In September 2006, the United States Agency for International Development (USAID) launched the now \$350 million NTD Control Program at Research Triangle International, the first global effort to support country programs to integrate and scale up delivery of preventive chemotherapy for five targeted NTDs.<sup>10</sup>
- Task Force for Child Survival and Development – the Atlanta-based NGO that houses the MECTIZAN Donation Program (with an added LF component) and Johnson & Johnson's Children Without Worms (soil-transmitted helminth control program).<sup>11</sup> The co-location of these programs working with the WHO, NTD country programs and other stakeholders offers opportunities to streamline drug application and reporting processes.

**Simplifying the procurement of drugs for NTD interventions** will also help to facilitate scale-up. As an example, Merck and GSK have combined the application process for MECTIZAN and albendazole for use in river blindness and lymphatic filariasis programs in Africa. This saves time and resources for Ministry of Health staff, partner NGOs, and pharmaceutical industry partners alike.

Another important area to ensure **increased facilitation of knowledge transfer** is data standards and reporting. The WHO's recently formed department of NTDs is taking leadership in the area of data reporting and management, regional coordination, general country NTD / Ministry of Health support and, most recently, drug demand forecasting and procurement.<sup>12</sup> Advocating for **accountability to agreed-upon standards** in this area, as well as common objectives (as articulated by GAELF, GET2020, Vision2020, etc.), will be an important element for coordinating and scaling-up the global effort to address the NTDs.

#### **4. Conclusion**

Partnerships among governments, NGOs and the private sector are helping to realize concrete and measurable improvements in public health and health infrastructure in the developing world – and offer an important mechanism for addressing such global public health challenges as those posed by neglected tropical diseases. Catalyzed by the philanthropic initiatives of pharmaceutical companies like Merck, GSK, Pfizer and Johnson & Johnson, major interventions against the leading NTDs are already reaching

<sup>10</sup> See [http://www.usaid.gov/our\\_work/global\\_health/id/ntd\\_brief.pdf](http://www.usaid.gov/our_work/global_health/id/ntd_brief.pdf).

<sup>11</sup> See <http://www.taskforce.org/aboutus.asp>

<sup>12</sup> A new online NTD data tool is a valuable resource for all actors:  
[http://www.who.int/neglected\\_diseases/preventive\\_chemotherapy/databank/en/index.html](http://www.who.int/neglected_diseases/preventive_chemotherapy/databank/en/index.html)

hundreds of millions of those affected throughout Africa and other parts of the developing world. Other private sector partners have also begun to contribute to efforts to improve the training and capacity of health care workers and infrastructure in developing countries. We can expect similar developments in response to the need for scaling up and improving drug distribution and procurement.

These efforts have already demonstrated the power of partnerships to help reduce the ill health and inequalities that NTDs cause. By building on existing partnerships, raising the profile of NTDs and facilitating improved access to knowledge of treatment successes and best practices in achieving them, the global campaign to combat these diseases holds out hope that we can indeed “end the neglect.”