

Integrated control of the neglected tropical diseases

A neglected opportunity ripe for action

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“Neglected tropical diseases (NTDs) continue to have crippling effects on one billion people around the world. Elimination of some of them is feasible before 2015, with commitments from the international health community, national governments, the UN system, and the Secretary-General. At the halfway point in the path to reach the Millennium Development Goals, control of NTDs will have a direct impact on alleviating poverty for large populations, and could strengthen some components of health systems in the poorest countries. Simple and effective relief is available from the effects of half of the NTDs. Most of the drugs are donated. Necessary investments are time-limited and relatively modest. Success stories demonstrate the strength of technical strategies. Control of these NTDs would benefit from a scale-up of drug access, expanded coverage, and integrated partnerships among stakeholders. Strategies to control the other NTDs require more complex combinations of interventions. But with increased investments and strengthened health information systems, significant improvements can be made. Fundamental prerequisites for success are increased flexible funding, national leadership and attention at the highest levels on the global agenda.”

Options for Action

- UN Secretary-General advocates for the NTDs on the development agenda.
- Hold an annual Global Partners Meeting on NTDs under the auspices of the UN to review progress, generate pledges and develop monitoring mechanisms for accountability purposes.
- Establish a partnership for the procurement of essential medicines, to reach a goal of 100% coverage of free, high-quality medicines in endemic countries by 2012.
- Implement an information system to track progress.
- Establish an NTD Fund to mobilize and channel funding to control NTDs and to strengthen health systems or alternatively expand the mandate of the Global Fund to fight AIDS, Tuberculosis and Malaria to include NTDs
- Boost donor and national commitment to poverty alleviation through NTD control
- Expand delivery system through health systems strengthening and routine village-based surveillance



**World Health
Organization**



Background

Crippling diseases: ancient companions of poverty

The neglected tropical diseases (NTDs) are a group of 13 chronic disabling infections¹ that sometimes kill and often disfigure. Individuals are often simultaneously affected by several of these diseases. Apart from chronic disability, long-term consequences include impaired childhood growth and development, adverse pregnancy outcomes, and reduced economic productivity. Physical disability is compounded by the misery of stigma and discrimination, especially among girls and women. Such poverty-promoting features are one reason why populations in parts of Africa, Asia, and the tropical regions of the Americas remain mired in poverty.

NTDs are indicators of poverty and disadvantage. Of the world's poorest 2.7 billion living on less than US\$2 per day, an estimated 1.2 billion are affected by NTDs. These diseases tend to concentrate in remote rural areas, urban slums or conflict zones, and thrive in conditions of impoverishment.

Despite the magnitude of suffering represented by these numbers, affected populations have low visibility and little political voice. This translates into a low profile for NTDs when public health priorities and health budgets are set.

NTD control represents a largely untapped development opportunity to alleviate poverty in the world's poorest populations, and therefore has a direct impact on the achievement of the Millennium Development Goals. This potential is further underscored by the availability of effective low-cost tools, proven control strategies, a high return on investment, and a solid track record of success.

Ready-to-go solutions with broad impacts

For the majority of NTDs, effective and operationally feasible solutions exist. More can be done for the poorest, now. WHO has led a vision to move away from a classification based on disease biology towards a public health classification of the NTDs based on available control tools.

The "tool-ready" category of diseases, which affect the largest number of people globally, is those for which powerful and inexpensive control tools are currently available and for which well-developed implementation strategies are immediately feasible. Large-scale use of safe and single-dose medicines (preventive chemotherapy) makes their control, prevention and possible elimination more likely than ever before. The major tasks for control of the tool-ready diseases are to expand coverage of packaged preventive chemotherapy interventions in order to access at-risk and hard-to-reach populations with innovative delivery systems and to continue regular treatment.

On the other hand, current control strategies for the "tool-deficient" diseases rely on costly and difficult-to-manage tools. For most of those diseases, early detection and treatment are vital to avoid irreversible disability or death. There is an urgent need to develop simple, safe and cost-effective tools and to make them accessible. Such innovative tools will drastically alter the existing control strategies.

There are currently two fundamental strategic interventions that exist for rapid relief from the consequences of all NTDs – both tool-ready and tool-deficient ones. For all those manifesting clinical signs of diseases, early case detection and appropriate case management is critical. For the tool-deficient diseases this is the only approach currently available. It requires skilled personnel, sometimes complicated treatments and therefore a strong health system. In other cases, such as for people suffering from the hidden effects of worm infections and trachoma, regular deployments of safe single-dose medicines represent a simple and very effective treatment. These treatments can be extended to all at-risk populations through innovative delivery by non-technical personnel, such as teachers and community-based volunteers. The medicines that target such "tool-ready diseases" bring immediate, dramatic and continued relief despite ongoing transmission, especially in children and women of childbearing age. Regular treatment improves maternal health, reduces neonatal mortality, promotes childhood growth and development, increases school attendance and avoids chronic irreversible disease at a later stage in life. Experience shows that transmission of these diseases can decrease to the point of elimination, especially when regular treatment is complemented by improvements in safe water supply, housing, hygiene and sanitation, vector control and veterinary public health.

These interventions are highly cost-effective with immediate benefits that are powerfully visible. These benefits, in turn, stimulate public demand for treatment, thus paving the way for community engagement. Moreover, strategies that aim to reach all at-risk populations with preventive interventions can preclude a large number of permanent disabilities, effectively freeing health systems – and households – from the burden of chronic care.

¹ The 13 parasitic and bacterial infections known as the neglected tropical diseases include three soil-transmitted helminthiasis (ascariasis, hookworm infections, and trichuriasis), lymphatic filariasis, onchocerciasis, dracunculiasis (guinea-worm disease), schistosomiasis, Chagas' disease, human African trypanosomiasis, leishmaniasis, Buruli ulcer, leprosy, and trachoma. An expanded list could include dengue fever, the treponematoses, leptospirosis, strongyloidiasis, foodborne trematodiasis, cysticercosis, and scabies, as well as other tropical infections.

² These include three soil-transmitted helminthiasis (ascariasis, hookworm infections, and trichuriasis), lymphatic filariasis, onchocerciasis, dracunculiasis (guinea-worm disease), schistosomiasis, leprosy, and trachoma.

³ These include Chagas' disease, human African trypanosomiasis, leishmaniasis and Buruli ulcer.

A comparatively modest investment

Some disease-specific NTD programmes have produced impressive results at a fraction of the cost of other priority public health interventions against infectious diseases. For example, the US\$175 million external funding support to date for the eradication of guinea-worm disease represents approximately 25% of the funding available for the Polio Eradication Initiative during 2007 alone. For guinea-worm eradication, onchocerciasis control and lymphatic filariasis elimination, calculations of the economic return on investment have shown a rate of return ranging from 15–30%.

In 2007, a paper published in the *New England Journal of Medicine* calculated that the projected average total cost for drugs and delivery is as low as US\$0.40–0.79 per person per year in sub-Saharan Africa. Thus, an entire at-risk population of about 500 million could be treated for US\$400 million or less annually.

Challenges and proposed actions

Challenge 1 – NTDs, Hidden successes, emerging opportunities

Few decision-makers are aware of the success and opportunity represented by neglected tropical diseases. All elements are in place for a rapid scaling up, with a correspondingly broad impact. The long term commitment of the private sector is expressed in drug donations “as long as needed”. However, attention, in the form of financial and political support, has gone preferentially to high-mortality diseases, such as HIV/AIDS, malaria, and tuberculosis, and high-profile diseases, such as polio.

Current Initiatives

WHO and its partners have promoted the value and cost-effectiveness of NTD control as a pro-poor strategy. The Department of Control of Neglected Tropical Diseases, established by WHO, is working with a broad range of partners to implement a paradigm shift from a disease-oriented approach to an integrated one using a three-pronged strategy: broader coverage with rapid-impact interventions, strengthened vector control to reduce transmission of several diseases, and improved surveillance and high-quality care. Research and development, including operational research, underpins activities in all three areas. The impending eradication of guinea-worm disease, strongly supported by the joint action of the Carter Center, UNICEF and WHO, will be a landmark achievement demonstrating the power of low-cost tools and community mobilization to rid the world of a disease.

Options for Action

At the technical implementation level, a radical change in thinking is necessary. There needs to be a move out of individual areas of expertise towards collaboration among a range of institutions across disease areas to deliver an integrated NTD control approach. Within the UN, WHO, has relied on support from UNICEF and the World Food Programme to deliver interventions for NTD control. Such arrangements can be further expanded and systematized. At a political level, high-level support for action on NTDs, especially from the UN Secretary-General, could expand leadership at a global level. Above all, UN-coordinated action and advocacy, especially on the part of the **UN Secretary-General, could raise the profile of these diseases on the development agenda**, thus generating the awareness and political commitment needed for rapid intensification of control. Potential fora include advocacy at the G8 and the MDG summits.

Challenge 2 – Working with Partners

As with most health challenges, the control and eradication of NTDs requires strong partnerships across sectors, which are differently resourced and have different perspectives. Control of NTDs requires coordination and sustainability on the part of both donors and national governments – from health to finance ministries – and a mechanism for holding all partners accountable for meeting agreed commitments. When uncoordinated, the activities of partnerships can overburden developing countries with multiple delivery systems, cumbersome monitoring and reporting requirements, duplicated efforts, and fragmented results.

Current Initiatives

The control of NTDs received a major boost two decades ago when Merck & Co., Inc. pioneered the Mectizan® Donation Programme for fighting river blindness. This model of public-private partnership, involving Ministries of Health, non-governmental development organizations and civil society, has led the way for other pharmaceutical companies to donate high-quality drugs to treat NTDs. Currently, eight NTD drug donation agreements are in

place, with WHO managing six of them. Allied to these donations are strong non-governmental development organizations, such as the Carter Center, and UN agencies which have consistently supported drug distribution. More specific networks and partnerships generally engaged in NTDs include the Global Alliance to Eliminate Lymphatic Filariasis, the Schistosomiasis Control Initiative, and the Global Network for Neglected Tropical Disease Control. Recent initiatives, such as the International Health Partnership, recognize the need for joint planning among partners, in direct collaboration with ministries of health. Through its country offices and direct links with ministries of health, WHO has long performed this function for the NTDs.

Options for Action

An annual Global Partners Meeting on NTDs under the auspices of the UN, on the footsteps of the one organized by WHO in April 2007, could represent the meeting point of all partners to review progress, generate pledges and develop monitoring mechanisms for accountability purposes – while maintaining lean bureaucratic demands on countries. This initiative would also help sustain the momentum for action on NTDs. The meeting should report on achievements towards a 2015 deadline, in line with the MDGs.

Challenge 3 – Securing access to essential NTD medicines

More drugs are needed to scale up preventive chemotherapy to reach the 22% of the world population affected by these diseases. These drugs should be provided at no cost to ensure universal access and high coverage. A precondition for success is uninterrupted access to good quality and either low-cost or free medicines in sufficient quantities. Due to the high numbers of people in need, increased demand for anthelmintic drugs will reduce global availability of critical raw materials, or damage existing markets, if not well coordinated. Past reliance on market forces means that a significant gap exists today between demand and supply. The lack of long-term sustained market perspectives has discouraged generic companies from entering the market. Patchy forecasting, orders and procurement have led to long delays, irregular supplies, high prices and sometimes questionable quality.

Current Initiatives

NTD medicines are currently available through a number of sources, importantly through donations by the pharmaceutical industry, pooled procurement by UNICEF and WHO, soft loans by the World Bank, national government budgets and funding by bilateral agencies, foundations and NGOs.

Options for Action

WHO has proposed closing the critical gap between demand and supply by establishing **a partnership for procuring essential medicines to expand preventive chemotherapy**. The partnership would bring together key actors (health, trade and finance authorities from endemic and donor countries, funding agencies, pharmaceutical companies, and international organizations) and leverage their complementary strengths. **The goal would be to reach 100% coverage of high-quality medicines in endemic countries free-of-charge by 2012**, ensure adequate supply of NTD medicines and **implement an information system to track progress and provide a sound basis for estimating medical needs**. WHO can be well-positioned to lead the partnership in light of its experience, technical leadership, extensive networks and existing partnerships, including those with pharmaceutical companies donating NTD medicines. For drugs that are not currently donated, financing needs to be available to purchase the full package of drugs needed for preventive chemotherapy and finance their distribution.

Challenge 4 – External financial assistances

As these diseases impose their greatest burden on low-income countries, control continues to depend on long-term, though not indefinite, external financial assistance. NTD control remains primarily a public sector responsibility. Going to scale requires more resources, and the objective of using control efforts to strengthen health systems will require additional investment. Predictable external support for 5 to 10 years will be needed.

Current Initiatives

Industry, private organizations and agencies have provided significant support for the implementation of integrated preventive chemotherapy in countries where co-endemicity among seven NTDs is prevalent. The rapid-impact package comprises four of six drugs to target these NTDs, and assuming that the essential four drugs are donated or will be subsidised, the estimated average total cost is as low as US\$0.40 to US\$0.79 per person per year in sub-Saharan Africa. The Gates Foundation paved the way with key funding in areas such as the elimination of lymphatic filariasis and the control of schistosomiasis. Most recently, the President of the United States pledged that his administration will make US\$350 million available for NTD control over the next 5 years. President Bush challenged other donors, including G8 partners, to provide an additional US\$650 million. Such funds would help close the treatment gap in high-burden countries.

Options for Action

Complementing existing financial support mechanisms, donors could establish **a well synergized funding mechanism** to mobilize and channel resources for the implementation of interventions for NTD control, including drug procurement at country level to minimize overhead costs. This funding should also be used to strengthen health systems and investigate opportunities for linkages with other programmes. Fund allocation should be flexible and, based on country-specific priorities but should also remain transparent and accountable. Models for realizing these features include the Global Polio Eradication Initiative, the Global Campaign for Dracunculiasis (guinea-worm disease) Eradication and the Stop TB initiative.

Alternatively, a global funding mechanism could be achieved by **expanding the mandate of the Global Fund to Fight AIDS, Tuberculosis and Malaria**. This expansion could involve providing resources for NTD control or elimination within the present system of bids from Country Coordinating Mechanisms, and adding expertise to the Global Fund Technical Review Committees. This option, however, will require GFATM Board deliberation and approval.

The former would allow speedy funding allocation, permitting fast progress towards World Health Assembly targets. The second option would rely on existing mechanisms but may slow down implementation due to required Board approval and reliance on more complicated systems.

Challenge 5 – National ownership

To be sustainable, control programmes must be nationally owned, and strategies must match national health priorities and capacities. Abundant experience shows that effective integration and sustainable control are less likely when resources are controlled and managed from abroad. Integration means that NTD control is embedded in the National Health Plan under the leadership of the appropriate ministry with the government's political commitment.

Current Initiatives

Several countries have committed national resources to the control of NTDs; these have generally been middle-income countries (Brazil, China, Egypt, India, Sri Lanka, and Thailand). However, increasingly since 2000, several least developed countries have committed resources from national budgets to NTD control and have created budget lines to ensure implementation of programmes. Examples include Bangladesh, Burkina Faso, Ghana, United Republic of Tanzania, and Uganda.

Options for Action

Control of NTDs must be a priority in national health plans with responsibility assigned to an appropriate ministry, and backed by the political and financial commitment of the government. In addition, a government's willingness to budget and release funds is a signal of commitment that earns the confidence of donors. **The UN Secretary-General's focus on making a real impact on poverty including through NTD control will boost donor and national commitment** to tackle a major cause of global impoverishment, which affects the poorest living in least developed countries.

Challenge 6 – Delivery systems

Delivery systems in general need to overcome three problems: (1) very large numbers of people are affected who (2) live in low-income countries and (3) live in hard-to-reach places or shanty towns lacking health infrastructure. Weak primary health care systems, especially in Africa, and the absence of operational models for their improvement are fundamental, perennial problems. Fortunately, NTD control for the "tool-ready" diseases requires infrequent (once or twice yearly) contact with the health services. Much of the delivery can be carried out by non-medical staff, with effective supervision. However, major demands on capacity come from the need to reach all at-risk populations.

Current Initiatives

Nationwide control programmes have successfully exploited existing community infrastructures as the delivery system. These include schools (through school health programmes such as those implemented by the World Bank through the FRESH initiative or school feeding programmes supported by the World Food Programme), and other existing services, such as those for childhood immunization. Programmes, including those for guinea-worm eradication and community-directed treatment with ivermectin, have also been used as delivery systems. Teachers and community volunteers have been rapidly trained as staff. Much has been achieved using these resources.

Options for Action

True sustainability depends on **strengthened health systems**, and these need to be built as one of the highest priorities facing health development. An operational model for strengthening primary health care can be found in the Preventive Chemotherapy Strategy, launched by WHO in 2006. This strategy can bring the discipline and measurable outcomes of disease control to bear on fundamental elements of a health care system. Such elements include supply chains for drug delivery, systems for monitoring, surveillance, and evaluation, and mechanisms for engaging community action.

Establishing **routine village-based surveillance of critical diseases and conditions** is key. This should be part of efforts, led by ministries of health, to strengthen the health information system, using existing government mechanisms with the necessary support of civil society and non-governmental development organizations. Initiatives such as the Health Metrics Network, can also be tapped for support. Within the context of this baseline information, integrated interventions for NTD control can be meaningfully combined with other routine delivery services, such as those for childhood immunization, school health, and malaria interventions. The objective is to aim for a short-term impact, while simultaneously building capacity to deal with additional priority problems over the long-term, thus gradually phasing out the disease-specific approach. In this way, initial gains in disease control can be sustained as part of an improved health system that produces measurable results.

Conclusions

The prospects of controlling the NTDs provide unprecedented opportunities for making a real impact on the poorest and most vulnerable. Effective drugs are available at no or very low cost. Evidence demonstrates the potential for dramatic and sustainable results. Delivery strategies have been devised that are compatible with conditions in very low-income settings. Interventions can be integrated or bundled, and existing delivery systems can be used, thus increasing operational efficiency in a value-added way. The heavy burden of these diseases in hundreds of millions of people can be relieved at a comparatively low cost.

Unprecedented opportunities and proven successes compel action, and this action can spearhead the reform of several components of health care systems. Six key elements need to be in place: 1) increased advocacy at the highest levels, 2) committed partnerships among all stakeholders, 3) increased access to effective drugs, 4) medium-term external technical and financial support, 5) national ownership, and 6) expanded delivery channels with public support in affected countries.

With these elements in place, NTDs can be controlled by 2015. Some can even be eliminated by that date. This would make a major impact on the MDGs, alleviating the burden of avoidable mortality and morbidity in the world's poorest.