

# BEST SCIENCE FOR ALL

## THE URGENCY OF MEDICAL INNOVATION FOR NTDs

Over the past decade, 36 countries have eliminated at least one neglected tropical disease (NTD) as a public health problem. This hard-won progress is testimony to the value of bold global partnerships, the strength of national responses, and the resolve of front-line health staff.

However, the COVID-19 pandemic and related restrictions have significantly disrupted essential services and activities for NTDs. To reach targets for disease control and elimination set by the World Health Organization (WHO) 2030 Roadmap on NTDs, much more needs to be done.

For some NTDs, interventions using existing medical tools have helped to curb transmission, for example through preventive mass drug administration campaigns. **But for most NTDs, inadequate investment in medical research and development (R&D) threatens progress toward sustainable disease elimination. We still lack tools for prevention, diagnosis, and treatment** that are simple, safe, and effective – and that can be easily integrated into already overburdened health systems.

**Together with our partners and affected communities, DNDi is working to develop and deliver the medical innovations neglected patients need.**

Thirteen years ago, the only treatment for sleeping sickness was so toxic it killed one in twenty patients. Today, a cure exists in the form of a safe and simple course of pills that have helped halve new cases of the disease and accelerate progress toward elimination targets.

Until recently, people with visceral leishmaniasis endured month-long hospital stays to receive painful daily injections. Today, we have new treatments, hospitalization has been cut in half, and work is underway to develop the first-ever all-oral treatment.

And in the 1990s, millions of people died of malaria each year because treatments were no longer effective – and it could take weeks for test results to be confirmed. Over the past 15 years, hundreds of millions of lives have been saved thanks to new treatments and on-the-spot rapid tests.

These successes were made possible because of global, regional, and international partnerships united behind a common vision: a world in which everyone has access to simple, safe, effective tests and treatments for NTDs. They were made possible because of increased global leadership and resolve, represented in the 2012 World Health Organization NTD Roadmap and London Declaration on NTDs.

**An investment in medical innovation for NTDs is an investment in achieving the Sustainable Development Goals and delivering on the promise and possibility of health for all.**

Governments, funders, academic and research institutions, and civil society each have a decisive role to play in developing better tools for testing and treatment, which bring transformational benefits for patients and health systems alike. Rapid diagnostic tests and simpler, safer, more effective medications lessen the complexity of treatment and care, reduce waste and inefficiency, and bolster health system reach and resilience – all of which help to save lives.

The global response to COVID-19 has enabled major scientific advances and the development of new vaccines, diagnostics, and treatments at unprecedented speed. We must apply the same energy to drive medical innovation and guarantee equitable access to the fruits of scientific progress for all people in need.



## BRIDGING THE GAPS

NTDs affect 1.7 billion people worldwide, almost half of them children. And they impact already vulnerable and marginalized communities the most – devastating families and stifling social and economic development. Current tests and treatments for most NTDs have serious limitations that hamper the provision of life-saving medical care and impede disease control and elimination efforts.



Existing treatments for **leishmaniasis** can be painful, toxic, lengthy, and costly, and poorly adapted for use in the most affected communities. Treating leishmaniasis is also difficult because it depends on several factors, including the form of the disease, other co-existing infections, the parasite species, and geographic location – with treatment responses differing across endemic regions, including South Asia and East Africa. Women and children are disproportionately impacted by all forms of the disease, including visceral leishmaniasis (or kala-azar), which is deadly if not treated, and non-lethal cutaneous leishmaniasis, which causes disfiguring skin lesions that can cause life-long scars and lead to severe social stigma.



Mass drug administration (MDA) campaigns for **river blindness** (or onchocerciasis) have been successful as a prevention tool but must be repeated over and over again because ivermectin, the drug that is used, does not kill the adult worms, which can live in the human body for more than 10 years. In some areas, elimination efforts are hampered by another parasitic infection known as Loiasis, or ‘African eye worm’. Individuals with a very high amount of Loa loa larvae in the blood are at risk of life-threatening complications if they receive ivermectin. A simple oral treatment is urgently needed to overcome these gaps and accelerate elimination efforts.



The fungal infection **mycetoma** has no effective cure: the most common ‘treatment’ is amputation. Worldwide, there is only one clinical trial ongoing, yet the disfiguring disease threatens millions of people living across the ‘mycetoma belt’, an area stretching from Central and South America to the Sahel, the Middle East, and South Asia. No simple test exists to diagnose mycetoma in remote settings.

**With simpler tests, and safer, more effective treatments, we can bring these and other NTDs under control** – and put an end to their devastating impact on peoples’ lives.

**But sustained R&D funding shortfalls for NTDs continue to limit the pace and scale of scientific innovation to meet neglected patients’ needs.** The most recent G-FINDER report\* found that funding for NTD research reduced to USD 328 million in 2020 – a 6% decrease from 2019, marking four years of decline and continuing a decade of relative funding stagnation.

**Improving health and saving lives requires bold new commitments to accelerating innovation and advancing robust test-and-treat strategies – including proactive agendas for maternal and child health, climate-sensitive diseases, and gender-responsive R&D that ensure no one is left behind.**

\*<https://www.policycuresresearch.org/analysis/>

## THE POWER OF PARTNERSHIPS

**DNDi was created in response to the frustration of clinicians and the desperation of patients faced with medicines that were ineffective, unsafe, unavailable, unaffordable, or that had never been developed at all.** Today, we are a network of more than 200 partner institutions that spans the globe, united in our belief that all people should benefit from medical innovation and have access to the fruits of scientific progress – no matter their income or where they live. Together, we have helped save millions of lives by delivering nine new treatments for people with sleeping sickness, visceral leishmaniasis, Chagas disease, HIV, hepatitis C, and malaria, including four treatments designed specifically for children.

**One remarkable example of our progress is the development of fexinidazole – the first all-oral cure for sleeping sickness.** Approved in 2018, the new treatment is now being rolled out in the Democratic Republic of Congo (DRC) and neighbouring countries, where for decades doctors have dreamed of safer, simpler treatments for patients affected by the deadly disease.

This extraordinary achievement would not have been possible without the dedication of our donors, pharmaceutical industry partners, and research partners, especially in Africa. Credit for the treatment breakthrough goes to our Congolese partners in particular – to researchers who carried out world-class



clinical studies in some of the most remote regions of DRC, frontline healthcare teams who travelled to isolated villages to screen more than two million people for sleeping sickness, and leaders who gave the disease the attention it deserves by strengthening control measures and forging new partnerships to maximize growing scientific and service delivery capacity in their country.

Today, our partnerships are going even further – working to complete development of acoziborole, a single-dose oral treatment that, coupled with new rapid diagnostic tests, holds tremendous promise for efforts to achieve and sustain sleeping sickness elimination. **Innovation is the key to a disease-free generation.**

## FOSTERING INCLUSIVE AND SUSTAINABLE SOLUTIONS

**Scientific and public health leaders in low- and middle- income countries (LMICs) are shaping new innovation ecosystems that have the potential to transform how R&D can meet neglected patients' needs.** DNDi has worked for nearly two decades to amplify and accelerate their progress, building trusting and equal partnerships with clinicians, scientists, and affected communities in LMICs to define the most pressing R&D needs, share knowledge and expertise, bolster medical research, development, and production capacity, and accelerate access to new treatments.

Strengthening the capacity of national health systems to ensure the sustainability and efficiency of NTD treatment, care, and support is a cornerstone of the 2030 NTD Roadmap.

**To help deliver missing tools for testing and treatment, national and international financing commitments for NTDs must go further to strengthen South-South R&D collaboration and maximize R&D capacity in LMICs.**





**We cannot protect the past decade's gains against NTDs or reach the WHO NTD 2030 Roadmap targets without renewed and expanded public leadership, cooperation, and resolve.**

The Kigali Declaration on NTDs calls for investment in research and innovation for new drugs and diagnostics for areas prioritized in the WHO 2030 NTD Roadmap and calls on for government leaders and all stakeholders to show their resolve with robust commitments to address the needs of millions of the world's most vulnerable people.

Now is the time to amplify efforts to **develop, roll out, and scale up innovative new tools to test and treat NTDs.**

## THE COMMITMENTS WE NEED FROM LEADERS

**DNDi calls on government leaders to commit to the critical building-blocks of long-term sustainable elimination of NTDs.**

- 1. Enable the development and scale up of innovative new tools to test and treat NTDs by:**
  - Prioritizing innovation for NTDs in national research, development, and implementation plans
  - Promoting open, collaborative, and integrated R&D approaches by and with affected communities
  - Supporting the development of new, context-sensitive tools to diagnose and treat NTDs, particularly tools that can be used at the primary healthcare level to expand access
  - Incorporating new tools into essential packages of care and scaling up test-and-treat approaches
- 2. Invest sustainably in R&D and access to new tools for NTDs by:**
  - Funding national research, surveillance, and cross-disease platforms for drug supply and delivery
  - Ensuring sustainable access to new health tools through new domestic and international financing strategies that support transitioning from large-scale donations of medicines and diagnostics to country-procured and -financed essential health tools

## OUR COMMITMENT: SAFEGUARDING PROGRESS TO END THE NEGLECT

**At DNDi, we will do our part.**

- 1. We will deliver life-saving new treatments** – including new chemical entities – for people affected by sleeping sickness, leishmaniasis, Chagas disease, river blindness, mycetoma, and dengue fever, including advancing a proactive agenda for maternal and child health, climate-sensitive diseases, and gender-responsive R&D through our work on NTDs. We will continuously assess new opportunities to close treatment gaps and address patients' unmet needs, such as for schistosomiasis and snakebite.
- 2. We will join public, private, and not-for-profit partners from around the world** – particularly in Africa, Asia, and Latin America – to collaborate as equal partners in defining R&D priorities, strengthening South-South and cross-regional research alliances, and developing robust strategies to ensure sustainable access to new health tools.
- 3. We will advocate for change and work to influence public policies** to enable a more effective and equitable global biomedical R&D system that ensures all people benefit from medical innovation and have access to the fruits of scientific progress.

## OUR APPEAL

Achieving impact for neglected patients and sustaining progress against underfunded diseases rests in our ability to secure multiyear financial contributions. Together with partners over the coming five years, DNDi aims to secure close to USD 500 million to achieve our goals and contribute to driving science forward and ensuring equitable and affordable access to safe and effective therapeutic innovations.

**DNDi calls on our current supporters to sustain and expand their commitments to NTDs over the decade to come. And we welcome the engagement of new public and private donors as we champion inclusive and sustainable R&D and access – hand in hand with our partners in countries most affected by NTDs.**