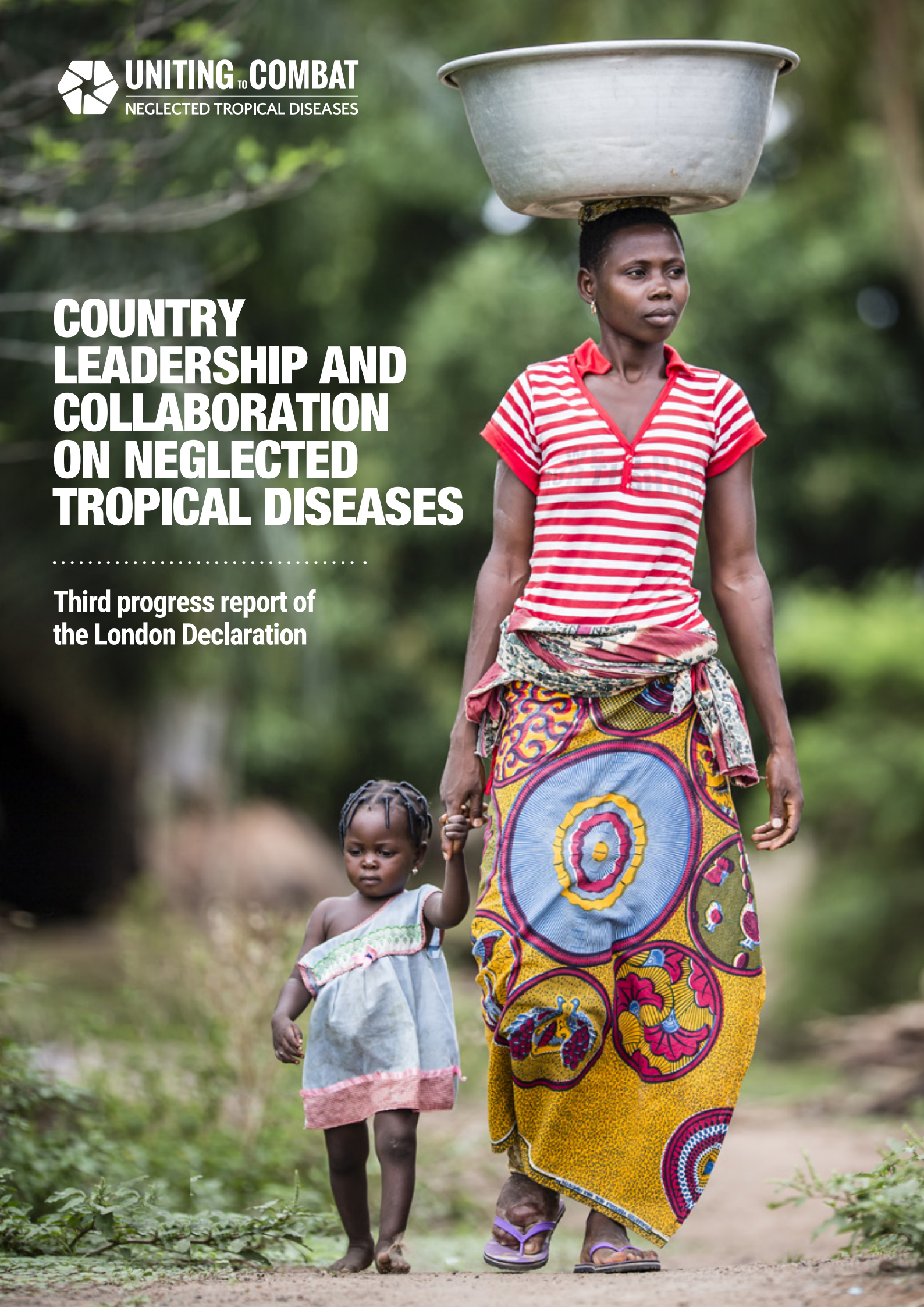
UNITING TO COMBAT
NEGLECTED TROPICAL DISEASES

COUNTRY LEADERSHIP AND COLLABORATION ON NEGLECTED TROPICAL DISEASES

Third progress report of the London Declaration



ABOUT UNITING TO COMBAT NTDS AND THIS REPORT

In January 2012, the World Health Organization (WHO) published an ambitious "Roadmap for Implementation", outlining bold targets for the control, elimination or eradication of 17 Neglected Tropical Diseases (NTDs) by 2020.

Inspired by this initiative, a coalition of diverse partners came together under the banner of Uniting to Combat NTDs, pledging their commitment in a document called the London Declaration on NTDs to provide support towards attaining the WHO Roadmap targets for 10 of these NTDs (Chagas disease, Guinea worm disease, human African trypanosomiasis, leprosy, lymphatic filariasis, onchocerciasis, schistosomiasis, soil-transmitted helminths, trachoma, and visceral leishmaniasis).

This report has been prepared in line with the London Declaration commitment of all Uniting to Combat NTDs partners to provide regular updates on the state of progress towards reaching the WHO Roadmap targets, and to highlight priorities which, if addressed, will help ensure that delivery of those targets remains on track.

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A quick guide to the London Declaration on NTDs

The World Health Organization's January 2012 publication, "Accelerating Work to Overcome the Global Impact of Neglected Tropical Diseases", set out implementation targets for the control, elimination, or eradication of 17 Neglected Tropical Diseases (NTDs) by 2020. This is commonly referred to as the WHO Roadmap.

Drawing inspiration from this Roadmap, leaders of several prominent global health and development organizations, together with industry partners, met in London in 2012 where they pledged to unite in their efforts to support the achievement of the WHO 2020 targets in respect to 5 NTDs manageable largely through mass administration of safe and effective drugs (known as preventive chemotherapy treatment or PCT), and 5 NTDs requiring innovative and intensified disease management (IDM).

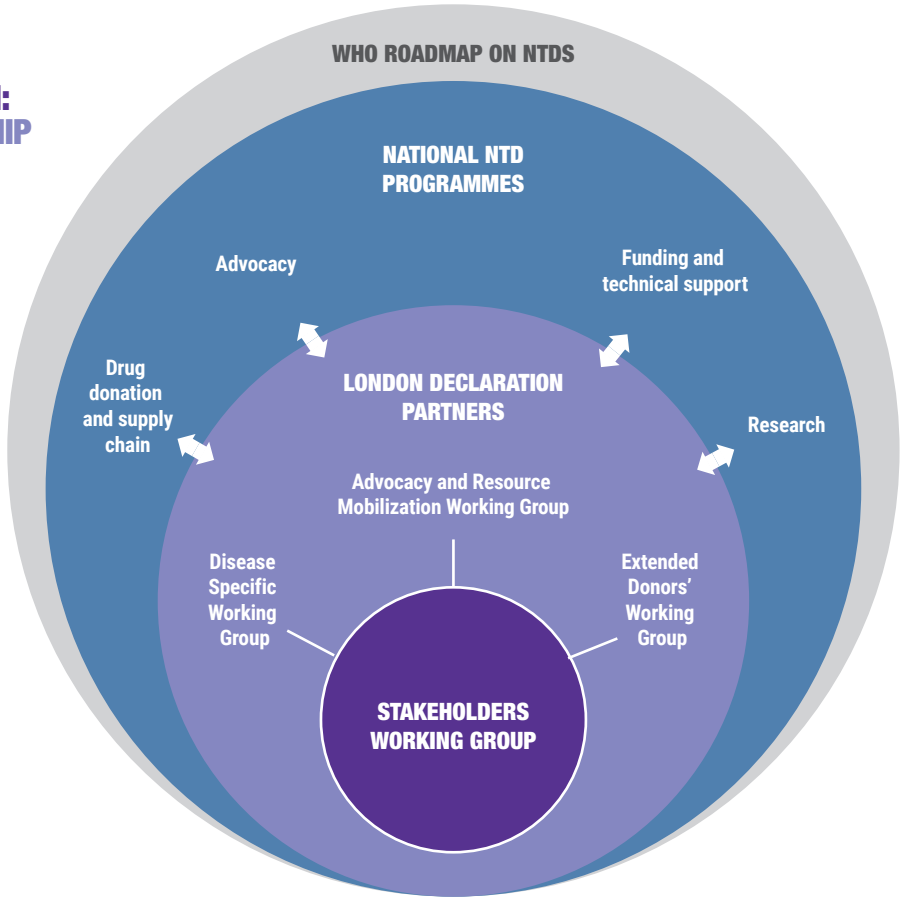
These collective promises of support were formalized into the *London Declaration on NTDs*, and it is around this Declaration that the coalition of partners called Uniting to Combat NTDs was created.

The key pillars of the London Declaration on NTDs and Uniting to Combat NTDs were initial pledges to:

- jointly support the control, elimination, or eradication of the 10 NTDs listed at the bottom of this page;
- enhance collaboration and coordination on NTDs at national and international levels through public and private multilateral organizations in the NTD community and other relevant sectors, such as water, sanitation, and hygiene, and education; and
- report regularly on the fulfillment of commitments by partners, as well as tracking key milestones towards the WHO 2020 targets.

These pledges are backed with commitments to sustain or expand existing drug donation initiatives, provide an initial investment of more than $785 million to support NTD programs, strengthen drug distribution, and increase research and development (R&D) efforts, including sharing expertise and compounds to accelerate R&D of new drugs.

LONDON DECLARATION: A PARTNERSHIP FOR 2020



The Uniting to Combat NTDs Stakeholders Working Group

Who we are

The Stakeholders Working Group (SWG) is tasked with setting the overall strategy for Uniting to Combat NTDs, in addition to overseeing the delivery of the London Declaration commitments. It includes representatives from all stakeholder groups as follows:

Donors
- the United States Agency for International Development (USAID)
- the United Kingdom's Department for International Development (DFID)
- the World Bank
- the Bill & Melinda Gates Foundation

Industry partners
- the Partnership for Disease Control Initiatives (PDCI)
- drug donating industry partners

Advocacy
- the Global Network for Neglected Tropical Diseases (GNNTD)

NTD research
- the Coalition for Operational Research on NTDs (COR-NTDs)
- the Drugs for Neglected Diseases *initiative* (DND*i*)

Civil Society
- the Neglected Tropical Disease Non-Governmental Development Organizations Network (NNN)

Observers
- The WHO NTD Department

What we do

Uniting to Combat NTDs is dedicated to achieving the WHO 2020 targets, and promote a shared and strategic approach to NTD programs. This work is in support of the overall leadership and technical direction that WHO provides to guide the efforts of Ministries of Health and implementing partners to deploy effective strategies for combating these diseases. Through the collaborative efforts of a wide group of partners that are facilitated by the SWG, Uniting to Combat NTDs thereby complements the role of WHO.

On behalf of the coalition partners, the SWG has also compiled a scorecard that is designed to: (i) track progress and form the basis of an annual report on the inroads made towards achieving the WHO 2020 targets and London Declaration commitments; (ii) serve as a record for shared accountability; and (iii) facilitate ongoing problem-solving.

The SWG is supported in its role by the Uniting to Combat NTDs Support Center (hosted jointly by Sightsavers and the Task Force for Global Health) as well as by the following three working groups:

The Disease-specific Working Group, which brings together representatives of the 10 London Declaration NTDs, provides a crucial forum for technical and experiential input from implementing partners. Along with identifying challenges faced in meeting the WHO 2020 targets, the group's members also contribute and help coordinate access to information that drives the Scorecard and progress reporting process.

The Advocacy and Resource Mobilization Working Group is responsible for identifying and developing opportunities for NTD advocacy and potential resources that may be available to fill funding gaps preventing successful achievement of the WHO 2020 targets.

The Extended Donors' Working Group unites donors of all sizes and areas of interest that are dedicated to supporting the efforts of the global NTD community towards reaching the WHO 2020 targets. The working group enables contributors to share where and how they are investing resources, with the aim of creating synergies that can address identified gaps in resources needs.

Preventive Chemotherapy (PCT) NTDs
Lymphatic filariasis (LF or elephantiasis)
Onchocerciasis (river blindness)
Schistosomiasis (snail fever or bilharzia)
Soil-transmitted helminths (STH or intestinal worms)
Trachoma

Intensive Disease Management (IDM) NTDs
Chagas disease
Guinea worm disease (GWD)
Human African trypanosomiasis (HAT or sleeping sickness)
Leprosy
Visceral leishmaniasis (VL or kala-azar)

EXECUTIVE SUMMARY

In the course of human history, few public health efforts can match the scale and ambition of the endeavor to rid the world of 10 Neglected Tropical Diseases (NTDs). These efforts have accelerated over the last three years, as a diverse group of players have come together in one of the largest ever public-private partnerships to deliver the funding, drugs, and technical assistance required.

The good news is that we are beginning to see positive results from this collaboration: a growing number of endemic countries are achieving elimination goals, more people are being reached, and there is increasing national ownership of NTD programs. The political and economic gains from NTD investments make a compelling case for further investment both domestically and from donors.

Nonetheless there are challenges that threaten our ability to meet the WHO NTD Roadmap targets. Currently the supply of donated drugs exceeds our ability to reach communities and more needs to be done to scale up programs. If, as a global consortium of partners, we cannot marshal the resources required to deliver donated drugs to the communities in need, more than a billion people will remain at-risk of harm by NTDs. We need to redouble our efforts.

This third report on progress since the 2012 London Declaration on NTDs highlights important accomplishments and learnings, and identifies areas that warrant greater attention.

Five principal themes have emerged within the report:

1 Control and elimination of NTDs provide one of the strongest returns on investment in public health

Pharmaceutical companies donate drugs worth nearly US$3.8 billion every year, underpinning the cost effectiveness of NTD programs. The on-going health benefits from 2011 through 2030 if NTD goals are reached will be equivalent to nearly **600 million disability adjusted-life years (DALYs[1]) averted**.

Nearly 1 in 6 people worldwide requires treatment for at least one NTD. Aside from the health and economic benefits of tackling NTDs for the endemic countries, the programs offer political benefits for leaders in endemic countries as well as donor countries, who can showcase high impact, 'best buy' foreign assistance programs.

However, the wealth of donated drugs is not enough to defeat NTDs if we fall short of the funding to ensure delivery of those drugs to communities. Currently, it is estimated that there is an annual funding gap of US$200-300 million through 2020.

The WHO has set a target for investment by endemic countries of 0.1% of their domestic expenditure on health. A recent study (described on page 18) suggests that would lead to **US$623 billion in productivity gains** among affected individuals between 2011 and 2030.

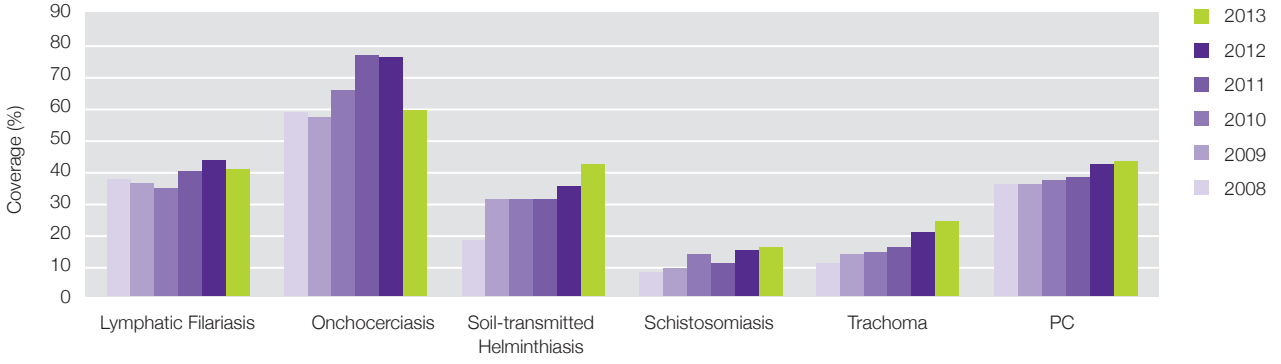
2 Leadership among endemic countries has shown a substantial increase

The past year saw significant increases in country ownership of NTD programs. One key milestone was the creation of the Addis Ababa Commitment on NTDs, initiated by African Ministers of Health to outline their commitments to achieving the WHO Roadmap. To date, 26 countries have signed and other countries are encouraged to join this movement.

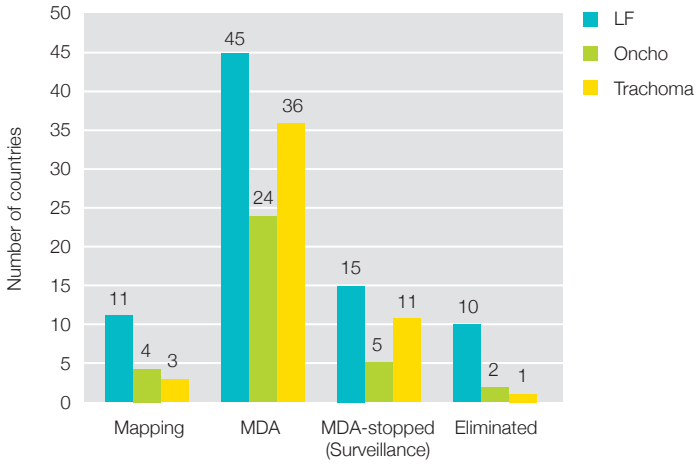
Countries such as Bangladesh and the Philippines are leading the way in securing domestic resources to support significant portions of their NTD programs (85% and 94% respectively). Honduras became the first Latin American country to launch a national NTD plan fully supported by the government.

1. DALYs are a measure of life years lost from disease, adjusted for assumptions about disability as well as the impact of age and future time.

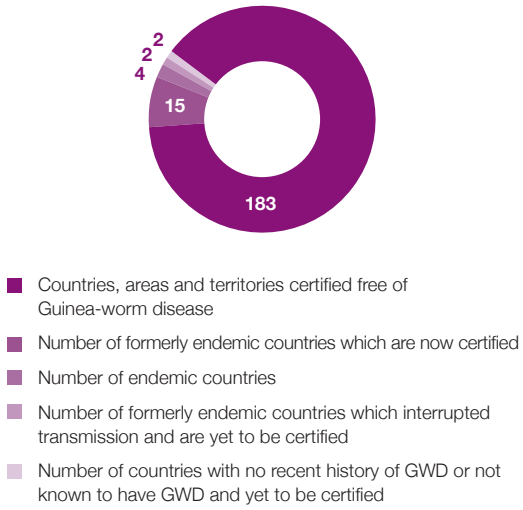
Global status of preventive chemotherapy in 2013



Country progress towards elimination in NTDs



Guinea Worm Disease: Country program status



The World Bank indicates that there are 77 poor countries worldwide that are eligible to receive investment project financing (IPF) resources from the International Development Association (IDA). Some of these resources can support NTD projects if endemic countries integrate NTD programming into their national development plan.

Despite managing endemic disease burdens of their own, both Nigeria and Brazil have demonstrated leadership by contributing to the success of others. In 2015, Brazil joined Nigeria as a donor by providing support to other Latin American countries through Pan American Health Organization (PAHO).

3 The largest public health drug donation program in the world continues to grow

Together the NTD drug donation programs are the largest of their kind in public health, with pharmaceutical companies pledging drugs valued at US$17.8 billion from 2014 to 2020.

Over 5.5 billion tablets have been donated providing 3.5 billion treatments since the launch of the London Declaration in 2012. In 2014 1.45 billion treatments were made available to endemic countries, representing a 36% increase since 2011.

4 Coverage is increasing, but the pace is too slow to meet key milestones

Global coverage is increasing with 43.3% of the population requiring treatment with preventive chemotherapy (PCT) receiving treatment for at least one disease, compared to a rate of 35.5% in 2008. In 2013, there were 114 countries endemic for the four preventive chemotherapy diseases with a total at risk-population of nearly 1.8 billion. Of these, 74 countries reported distributions to more than 784 million people altogether. However, coverage is not increasing rapidly enough to achieve targets. The average annual increase of 1.6% is too low to achieve and sustain impact; increasing the pace is imperative.

5 National NTD programs are achieving elimination goals

Achievements of the Guinea Worm Eradication Program are a testament to what is possible in NTDs. Since 1983, the global program has successfully eliminated GWD in 81% of all formerly endemic countries (17/21). Cases in 2015 are at an all-time low of 5 as at the end of May. Eight countries remain to be certified: Chad, Ethiopia, Mali and South Sudan remain endemic; Kenya and Sudan are at pre-certification stage; and Democratic Republic of Congo and Angola (not known to be endemic), but still have to be certified by WHO.

Onchocerciasis was eliminated in Colombia and Ecuador and trachoma was eliminated in Oman. Some countries have also made progress in stopping treatment in all or some foci. These include Mexico, Guatemala, Uganda, Sudan, Mali and Senegal. Of the remaining 73 countries endemic for LF, 16 countries (22%) are no longer in need of mass drug administration (MDA). Malawi has just announced that they have reached a stage where treatment is no longer needed, increasing that number to 17 countries. These amazing accomplishments show that the ambitious goals set are achievable with effort and resources.

Conclusion

As noted in the 2015 G7 Summit communique, "2015 is a milestone year for international cooperation and sustainable development issues"—and, the fight against NTDs is no different. We have the opportunity now, together, to reach many of the goals laid out in the WHO roadmap on NTDs and position the future elimination of these 10 NTDs as an achievable objective for this generation. Those living in extreme poverty around the world are counting on our help. Let's not keeping them waiting.

SCORECARD

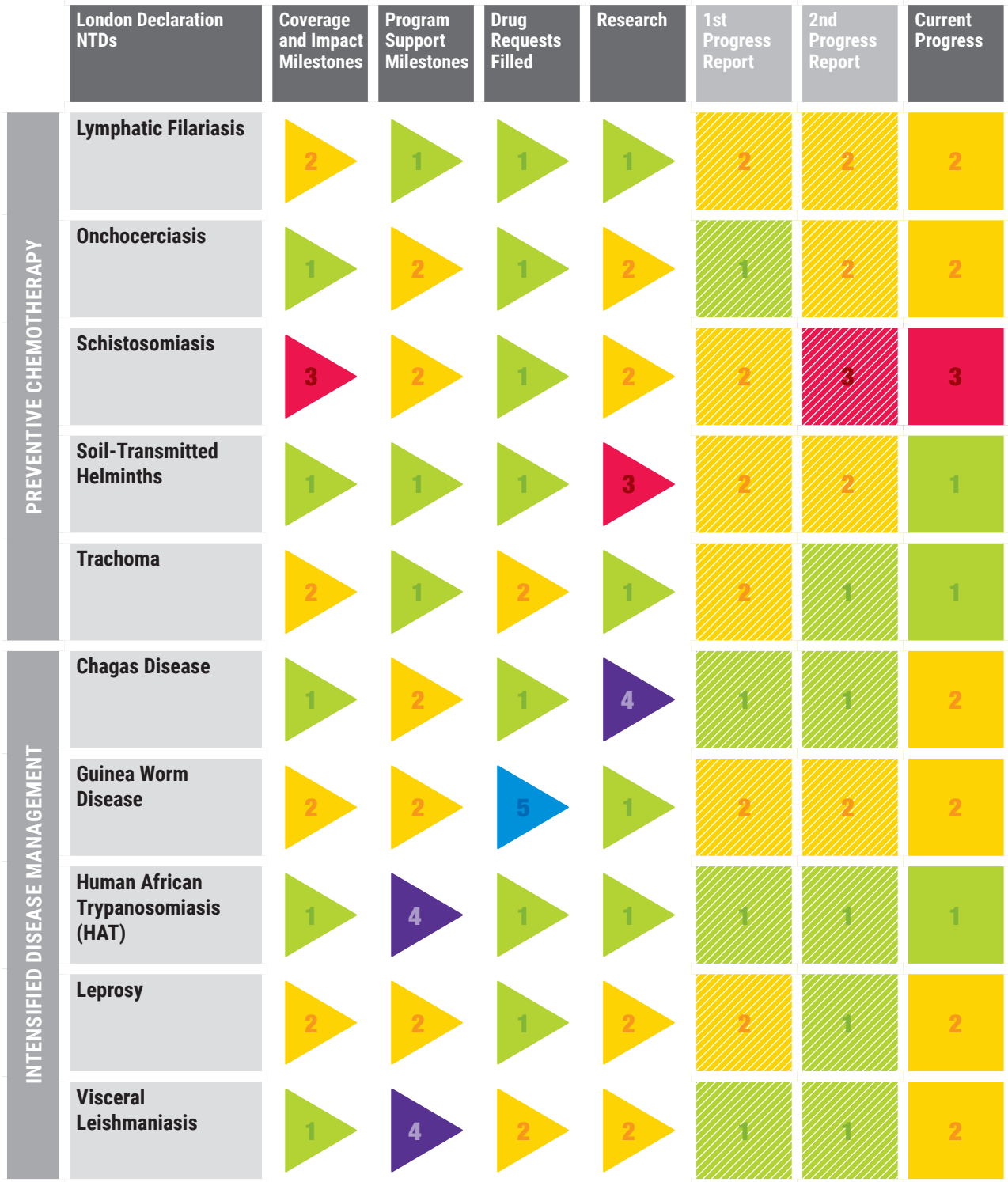
What is the scorecard and how does it work?

The scorecard is a collection of indicators and milestones compiled from the NTD specific community and WHO. Coverage milestones are based on the WHO Roadmap and subsequent guidelines and recommendations for lead focal persons. Additional program support milestones were set by the implementing partners to follow progress towards the WHO Roadmap targets. Indicators and milestones vary across diseases; some are strong and others are less robust, but across all diseases these indicators are improving through important discussions generated by the production and publication of the scorecard. Indicators are strongest where there is an organized community of partners supporting a disease area, like trachoma or LF. The development of indicators and milestones in support of WHO and endemic countries are weakest in disease areas without an organized community of partners. Progress towards achieving the goals is followed by relying on WHO data where possible and with additional input from partners as needed. Disease specific communities e.g. International Coalition for Trachoma Control (ICTC) and the Global Alliance to Eliminate Lymphatic Filariasis (GAELF) first review progress and assess if they believe they are on target using the most current data available. The Stakeholders Working Group, comprised of representatives from all stakeholder groups, then review the progress and make a determination of a final scoring (red, yellow, or green) for each disease according to set criteria and note why the decision was made. Yellow and red indications are not a judgment of the program itself but rather a call to action that additional course correction and resources may be required to achieve program goals.

RESULTS

In the past year the collective NTD community has continued to make significant progress towards the WHO Roadmap targets. The most significant progress was made in human African trypanosomiasis where cases hit a 75 year low with 3,796 cases found after similar numbers of people were screened. This combined with two new tools (one vector control and one point-of-care diagnostic) make continued progress likely towards the 2020 goal. However, as we approach the middle of 2015 it is already clear that many of this year's critical milestones will not be met. We will not achieve full scale up of the delivery of PCT for LF in all endemic countries, nor is it likely that transmission of GWD will be broken/ interrupted by the end of 2015. The scorecard is an attempt to follow this progress across diseases included in the London Declaration so that partners can react and appropriately adjust support to ensure the achievement of the goals.

ANNUAL SCORECARD



Key

- 1 — Achieved or minor delay; or 90–100 percent of requested treatments shipped
- 2 — Delayed but achievement anticipated; or 80–89 percent of requested treatments shipped
- 3 — Delayed, additional action required; or 0–79 percent of requested treatments shipped
- 4 — Global milestones in development
- 5 — Not applicable

Summaries of the scores and rationale are as follows:

Lymphatic Filariasis

LF remains yellow. Despite significant progress, the rate of scale up remains below the target. Mapping of prevalence continues. The target of full geographic scale up in all endemic countries is unlikely to be achieved in time to allow 5 years of treatment prior to 2020. If mapping reveals a lower population in need of treatment, and if resources (financial and human) are available, significant progress could be made in the next year to fill the gap.

Onchocerciasis

Oncho remains yellow, as the program is now targeting elimination not just control, which means more people need to be reached as hypo-endemic areas are included. The number of people reached with MDA increased in 2013, although overall coverage decreased, as the inclusion of hypo-endemic areas increased the number needing treatment. The closure of the African Program for Onchocerciasis Control (APOC) in December 2015 leaves support for the program uncertain, though efforts are underway to put in place a regional entity to support country programmes.

Schistosomiasis

Schistosomiasis remains red as it has the lowest coverage of all PCT diseases at 14.4% in 2012 and 15.6% in 2013. In addition, new mapping of schisto in AFRO countries is increasing the number of identified endemic districts. Twenty-six countries (50%) of 52 endemic countries reported MDA in 2013. Significant improvements could be made in the next cycle as drug supply is expected to increase and the launching of the new Global Schistosomiasis Alliance will increase collaboration within this disease community to help countries scale up.

Soil-Transmitted Helminths (STH)

STH moved from yellow to green. Improved coordination between UNICEF and WHO has led to an improvement in reporting of coverage for pre-school children which now exceeds 50%. Coverage in school-age children is 39%, which is on track for a 75% target in 2020. Coordination of partners as a result of the STH Coalition and the improvement in resources and coverage, are the main drivers for moving to green. However, increases in coverage of pre-school-aged children were primarily due to improved reporting and STH is highly dependent on LF coverage. STH-specific implementation efforts need to increase to maintain a green status.

Trachoma

Trachoma remains green due to its strong partnerships, available resources, and momentum. Trachoma has made tremendous strides in the ambitious mapping efforts. In order for progress to be maintained, drug supply issues, coverage of the F and E components of the SAFE strategy, as well as implementation in the growing number of new districts being identified through the mapping exercise, will need to be addressed.

Chagas

Chagas changed from green to yellow as only 14% of endemic Latin American countries have verified interruption of intra-domiciliary vectoral transmission compared to a target of 30%. Progress measurement has been hampered by a lack of availability of data and lack of partner coordination. However, a newly forming coalition is expected to help, by improving indicators for the partners' contributions, which may encourage increased investments in Chagas. This and better access to annual treatment data may move this back to green in the next cycle.

Guinea Worm Disease (GWD)

GWD remains yellow due to the fact that the 2015 target to end transmission will not be reached. There are also concerns over filling the new funding gap up to the new target of 2020. There has nonetheless been good progress such as Ghana being certified GWD-free in January 2015 and a 48% decrease in the number of villages reporting cases between 2013 and 2014. Four countries are awaiting certification as GWD-free (DRC, Angola, Kenya, and Sudan). If cases are found in any pre-certification country, if cases do not significantly decrease, and if the funding gap is not resolved this would likely be red in the following cycle. Initial data for 2015 shows a decrease in cases and some funding is coming in so we remain cautiously optimistic.

Human African Trypanosomiasis (HAT)

HAT stays green with cases at a 75 year low with 3,796 cases in 2014. The marked success of the control strategies applied, along with the introduction of a new rapid diagnostic test and new vector control tools such as the "tiny targets", gives hope for steady progress in the following cycle. The HAT community needs to ensure that program support is maintained at a high level, because reaching the milestone of lowest disease incidence will require reinforced surveillance in near-elimination foci.

Leprosy

Leprosy moved from green to yellow, partly due to greater rigor of indicators. Additionally, there was poor reporting of data from endemic countries, with only 7 of 25 endemic countries reporting national data, making progress assessment difficult. We remain optimistic that the strong leprosy community and leadership may return leprosy to green in the next cycle.

Visceral Leishmaniasis (VL)

VL moved from green to yellow due to temporary drug delay and poorly defined indicators. Approximately 915 treatments of AmBisome® due in 2014 were not distributed until March 2015, though this delay did not impact programming needs. Currently, 9 of 11 VL endemic countries in the Americas have provided updated epidemiological data. South-East Asia is reporting a reduction in incidence and case fatality rates as well as progress towards elimination, with a reduction in reported VL incidence and case fatality rate by 60% and 81% respectively in 2014. 80% of health facilities in East Africa have diagnostic and treatment capacity compared to less than 60% in 2010. With improved milestones and a refined research strategy plan, progress would be easier to measure and likely move towards green in the next cycle.

COUNTRY LEADERSHIP AND COLLABORATION ON NTDS

COUNTRIES LEADING THE WAY TO A NTD-FREE WORLD

A number of countries are demonstrating strong government ownership, leadership and collaboration in variable financial, political and environmental circumstances, to ensure their NTD programs are successful in meeting 2020 targets.

A key element of country ownership is domestic investment. The following sections of the report will showcase examples of countries making strides toward increasing domestic investments to control and eliminate NTDs. These include:

- domestic financing successes from Latin America and Asia
- overview of the Addis Ababa Commitment on NTDs
- low/no interest loans to eligible countries for NTDs

However, while greater domestic investment is crucial to bridging the estimated US$200-$300 million annual global funding gap for NTDs, it is by no means the only contribution needed.

The box on the right is an illustrative list of just some of the efforts many countries, particularly in Africa, are making that are having a positive impact on country performance at controlling and eliminating multiple NTDs and, in the process, demonstrating the ways they own and lead their country NTD programs:

- decentralizing program management to the regional and district levels;
- transitioning from siloed disease efforts to full integration of PCT diseases, reaching more and costing less;
- actively coordinating with education counterparts to ensure school-based drug delivery programs share costs, resources, and reach optimal numbers of school-aged children;
- actively advocating for NTD control and elimination through public events; and
- thinking creatively about ways to raise domestic funds, including identifying local celebrity spokespeople for NTDs, engaging host country footballers playing in the European League, and adding a US$1 surcharge onto national airline ticket sales, with funds going to NTD treatment gaps.

The box on the right also highlights some important, replicable innovations that are expected to have significant impact in achieving control and elimination goals.

2020 is only five years away and there is still much to do, but continued leadership, and commitment by domestic and international partners, will see all of us meet those attainable goals.

Spotlights in Country Leadership Innovation

Ghana

- Developing a finance strategy for NTD sustainability, linked to its Master Plan, including resource tracking to better understand resource needs, has already borne fruit, with tens of thousands of dollars secured from private local sources in 2014-15

Uganda

- Fostering milestone-based donor funding going directly to 78 districts, reducing bottlenecks at central level, and increasing accountability and commitment at all levels

Togo

- Developing Elimination Committees for each targeted disease to monitor surveillance progress and begin dossier development

Ethiopia

- Requiring implementation of the full SAFE strategy for all implementing partners to combat trachoma
- Leading the call to African Ministries of Health to increase domestic commitments to controlling and eliminating NTDs

Republic of the Sudan

- Contributing essential funding for the F&E part of SAFE and treatment of schisto in high burden states
- Reorganizing NTD work under a newly formed community intervention department

MOMENTUM IN THE FIGHT AGAINST NTDS ON THE RISE

The global development community witnessed a pivotal moment of unprecedented political leadership and commitment to the elimination of NTDs at this year's World Health Assembly meeting (WHA68). On May 18, 2015, current G7 chair and German Federal Chancellor Angela Merkel proclaimed combatting NTDs as one of the three health-related issues for this year's G7 agenda. "Health is a human right," Chancellor Merkel said. "The responsibility of individual countries and global shared responsibility are two sides of the same coin."

That same day, Ethiopia Minister of Health, Dr. Kesetebirhan Admasu, chaired an event dedicated to discussing country level political commitment and accomplishments on NTDs. He opened the gathering by asserting, "NTDs are not only a health agenda, but a development agenda too, for which the poor pay the highest price."

Joined by his fellow ministers of health from Brazil, Malawi, and Sudan, Minister Kesete introduced *The Addis Ababa Commitment on NTDs* – an agreement spearheaded by Minister Kesete himself and already endorsed by 26 countries. In the commitment, ministers of health promise to increase domestic investments to meet the WHO Roadmap targets for NTDs; promote multi-sectoral approaches; encourage adoption of data-driven, long-term strategic plans; and ensure mutual support of NTD programs and overall health systems.

> "Germany has put three health-related issues on the G7 agenda. First, in the light of current events, we are asking what lessons can be learned from the Ebola epidemic. Second, **what can we do to better combat poverty-related neglected tropical diseases?** And third, what can we do about the increasing resistance to antibiotics? This is an issue for industrialized and developing countries alike."
>
> **Chancellor Angela Merkel, G7 Chair, WHA68, May 18, 2015**

Minister Kesete further emphasized the need for government-wide, cross-sectoral commitment in order for any NTD elimination effort to succeed.

Joining the ministers' commitment, the Uniting to Combat NTDs and the Stakeholders Working Group calls upon:

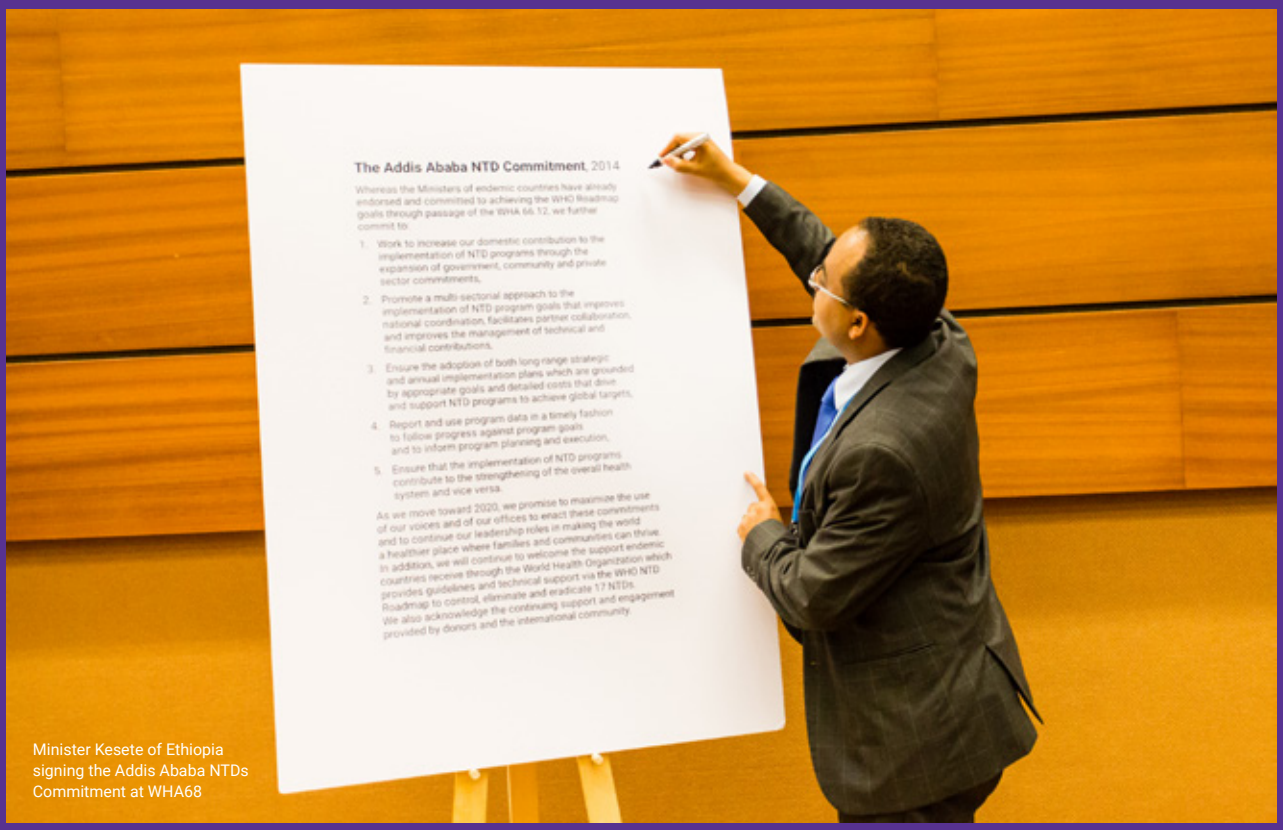
- Countries which have not yet signed on to officially join the effort and dedicate their NTD resources to the priorities outlined in *The Addis Ababa Commitment on NTDs*;
- All ministers of finance and development partners who are meeting in Addis Ababa in July 2015 to actively support and redouble their engagement toward increasing domestic financing for national NTD programs against these diseases of poverty;
- Governments to both fulfill the funding commitments made by their ministers of health and to diligently carry out the necessary actions required to implement integrated NTD elimination programs; and
- G7 to collectively echo Chancellor Merkel's call for universally compulsory International Health Regulations and individually match Germany's financial commitment of €200 million as seed money to help affected countries build functioning health systems.

> "Commitment and ownership at the highest level of government are the first prerequisite for success. The engagement of women is the second."
>
> **Dr. Margaret Chan, Director General WHO, WHA68, May 18, 2015**

It will take a variety of sectors – health, transport, and water and sanitation to name but a few – working collaboratively to ensure all people have equal opportunities to achieve the highest levels of health. As Chancellor Merkel said at WHA68, "Every single person is vitally needed to fight for the human right to health. Let us work together in a spirit of cooperation, and not seek to undermine each other's deeds. The task is so immense and the endeavour so important that every helping hand is needed."

> "The development arena talks about 'value for money' with NTDs, I like to think about 'value for many'."
>
> **Ethiopia Minister of Health, Dr. Kesetebirhan Admasu**

THE ADDIS ABABA NTD COMMITMENT, 2014



Minister Kesete of Ethiopia signing the Addis Ababa NTDs Commitment at WHA68

December 8-12, 2014 marked the first occasion when APOC, JAF and GAELF, together with the first Global STH Coalition and Global Schistosomiasis Alliance all convened in Addis Ababa, Ethiopia for the first time. To commemorate this global coordination, the assembled Ministers of Health and Heads of Delegations would like to use our unique voice to buttress the efforts of many others who have committed to fighting NTDs and combating global poverty.

Whereas the Ministers of endemic countries have already endorsed and committed to achieving the WHO Roadmap goals through passage of the WHA 66.12, we, the undersigned (e.g., Ministers attending the Minister NTD Health Forum on December 9th, 2014), further commit to:

1. Work to increase our domestic contribution to the implementation of NTD programs through the expansion of government, community and private sector commitments;
2. Promote a multi-sectorial approach to the implementation of NTD program goals that improves national coordination, facilitates partner collaboration, and improves the management of technical and financial contributions;
3. Ensure the adoption of both long-range strategic and annual implementation plans which are grounded by appropriate goals and detailed costs that drive and support NTD programs to achieve global targets;
4. Report and use program data in a timely fashion to follow progress against program goals and to inform program planning and execution; and
5. Ensure that the implementation of NTD programs contribute to the strengthening of the overall health system and vice versa.

As we move toward 2020, we promise to maximize the use of our voices and of our offices to enact these commitments and to continue our leadership roles in making the world a healthier place where families and communities can thrive. In addition, we will continue to welcome the support endemic countries receive through the World Health Organization which provides guidelines and technical support via the WHO NTD Roadmap to control, eliminate and eradicate 17 NTDs. We also acknowledge the continuing support and engagement provided by donors and the international community.

Current list of endorsers: Burkina Faso, Burundi, Brazil, Cameroon, Central African Republic, Chad, Congo, Côte d'Ivoire, Democratic Republic of the Congo, Ethiopia, Gabon, The Gambia, Ghana, Guinée Conakry, Guinée Bissau, Kenya, Liberia, Mali, Malawi, Niger, Nigeria, South Sudan, Sudan, Tanzania, Togo, and Uganda

STEPPING UP DOMESTIC FINANCING FOR NTDS

A leadership imperative with far-reaching human and economic benefits

Several countries are showing great initiative on domestic financing for NTD programs, in many instances exhibiting remarkable leadership and foresight in the face of challenging conditions. Countries in Latin America and Asia in particular were recognized in the recently published Third WHO Report on NTDs (2015) for their new levels of political and financial commitment to achieving NTD control and elimination. These regions were acknowledged for their success in moving toward integrating NTD plans with treatment strategy implementation as a way of enhancing and growing national healthcare systems. In Africa too, there has been progress in this direction, with 43 (of 47) endemic countries now operating integrated NTD programs.

An assessment in 2014 estimated that there remains an additional need of US$1.4 billion between 2014-2020 to meet the WHO roadmap targets for the 10 London Declaration NTDs, or approximately US$200-$300 million per year, assuming that current resources available continue (donor, bilateral and domestic spending). Although this gap is relatively small for a global health program at this scale, it remains a significant challenge when put into the context of a shifting economic climate for both traditional donor countries and several endemic countries.

The investment case for NTDs laid out in WHO's third report on NTDs, *Investing to Overcome the Global Impact of Neglected Tropical Disease*, is still very strong. To demonstrate this, the WHO set targets for domestic investment in universal coverage against NTDs, which, given they represent less than 0.1% of domestic expenditure on health across endemic countries, attests to the affordability of NTD programs even in endemic country settings. The increasing emergence of innovative financing mechanisms should also help to fill the US$200-300 million annual gap and ensure these targets are achieved.

The following pages showcase an illustrative selection of NTD-endemic low-and middle-income countries showing exemplary leadership in domestic investment for NTD programs, both as a tribute to what can be achieved even in the face of adversity, and to urge all endemic countries to respond to WHO's call for an immediate major scale-up in domestic financing to combat these diseases. These illustrative countries vary widely in economic status, population and political security, yet have prioritized the control and elimination of their NTDs and have put their resources to work in creative ways, through cross-sector collaboration, disease integration, and targeted funding and technical assistance requests from global donors. These countries model what is achievable across all low-and middle-income endemic countries with the political will and commitment to create sustainable NTD programs. The Addis Ababa NTD Commitment called for just such political will and commitment, and is described on page 13.

A number of low-/middle-income countries have risen to the challenge of funding NTD efforts

Some countries not yet self-financing are putting plans in motion through the development of finance strategies for NTD sustainability, linked to their NTD master plans. As mentioned on page 11, one such strategy[1] is helping national NTD programs to allocate resources effectively, mobilize additional resources to fill financing gaps, reduce dependence on donors, increase national commitment to the NTD program, and diversify resources: critical components to sustainability. Strategies such as these and other innovative financing mechanisms emerging globally, such as low/no interest IDA loans, outlined on page 16, are powerful resources to help endemic countries ensure the achievability of these domestic investment targets.

The considerable and tangible human and economic benefits of NTD investments for the countries affected are examined in more detail in "The compelling case for financing the London Declaration NTDs: a pro-poor strategy and a development best buy" on page 18 of this report and provides further compelling reasons for a step change in commitment. This point was perhaps most succinctly made by Dr. Margaret Chan, Director of the WHO, who noted that "when countries and their partners invest in these diseases, they get a windfall of benefits in return".[2]

1. http://endinafrica.org/news/finance-strategy-a-must-for-ntd-program-sustainability/
2. Foreword of *Third WHO Report on Neglected Tropical Diseases* (2015), World Health Organization.

LATIN AMERICA

BRAZIL

Total population: 200.4 million*

Innovating nationally and supporting wider NTD efforts in Latin America

*2013

NTDs targeted: LF, leprosy, onchocerciasis, trachoma, schistosomiasis and STH

World Bank 2015 classification: Upper-middle-income country

Demonstrated leadership on NTDs

~$1.5 million p.a

spent on integrating leprosy/trachoma/STH school-age treatment

- Was 2nd country in the region to launch integrated national plan, targeting 5 NTDs
- $15 million invested in 796 prioritized municipalities in plan's 1st year (2012), in addition to in-kind contributions by regional and local governments of health infrastructure and human resources
- Through PAHO/WHO is providing other Latin American countries with financial and technical support to combat NTDs

HONDURAS

Total population: 8.1 million*

Central America trailblazer with 1st national NTD plan

*2013

NTDs targeted: STH, Chagas, VL and Leprosy + 5 non London Declaration NTDs

World Bank 2015 classification: Lower-middle-income country

Demonstrated leadership on NTDs

~$20 million (2012-17)

of domestic funds being invested to combat NTDs in the most at-risk areas

- Became the 1st Latin American country to launch a national NTD plan (in 2012), covering the entire cost and health infrastructure burden itself (except for donated drugs and seed funds from PAHO/WHO and other donors)
- In 2013, began integrating deworming within national vaccination program (absorbing the entire cost of ~$77,000), with two deworming campaigns carried out for preschool-age and school-age children in 2014

SOUTH-EAST ASIA

BANGLADESH

Total population: 156.6 million*

Cross-sector efforts end treatment need in many endemic areas

*2013

NTDs targeted: LF and STH

World Bank 2015 classification: Low-income country

Demonstrated leadership on NTDs

85% of NTD costs

totaling ~US$1 million covered by various government ministries

- Ministry of Health NTD control and elimination plan (focused on mass drug administration-MDA) and expanded:
  - from 1 district in 2001 to cover all MDA costs for all 19 LF-endemic districts within 7 years; and
  - From 2005, in conjunction with the Directorate of Primary Education (DPE), covering nearly all MDA expenses for STH (apart from donated drugs) in the 64 districts of the country within 3 years, resulting in 18 of the endemic districts stopping treatment
- Some funds from the Centre for Neglected Tropical Diseases-CNTD/DFID and USAID are provided for surveillance, supervision, and certain supplies

PHILIPPINES

Total population: 98.4 million*

Local synergies help reach widely-dispersed at-risk children

*2013

NTDs targeted: LF, schistosomiasis and STH

World Bank 2015 classification: Lower-middle-income country

Demonstrated leadership on NTDs

94% of budgets

for 3 NTD programs being met through joint departmental efforts

- The Departments of Health and Education have collaborated since around 2000 on deworming children up to 12 years-old scattered across the country's thousands of islands
- For STH (endemic countrywide), deworming treating nearly 30 million children twice a year with donated drugs at community health clinics, with efforts coordinated between the 2 departments and funded by the Health Department's regional offices (at a cost of over US$1.3 million)
- MDA for LF (endemic in 44 of 80 provinces) began in 2001 with limited funding, but is now covered 100% by government (over US$5 million), with 27 endemic provinces now ready to stop treatment (2009-2014)

WORLD BANK FACILITY OFFERS POTENTIAL NTD FINANCING ROUTE FOR POORER NATIONS

If NTDs are prioritized by low-income countries in their health-sector strategies, International Development Assistance (IDA) funds can provide a reliable source of domestic funding for NTDs.

According to the World Bank, low-income countries, including those endemic for NTDs – are eligible for support from IDA funds depending on their relative poverty, which is defined as the Gross National Income (GNI) per capita. 77 of the poorest countries in the world qualify for support from this facility, 39 of which are in Africa (see www.worldbank.org/ida/borrowing-countries.html).

IDA lends money on concessional terms, that is, at little or no interest with long periods for repayment, and also provides grants to countries at risk of debt distress. During the 2014 financial year, lending to 74 low income countries, 36 of them in Africa, amounted to US$22.2 billion, and for 2015, lending was extended to 61 countries, (32 in Africa), amounting to US$19 billion. Of the 2015 lending, US$2.2 billion went to health, nutrition and population whilst education received US$1.8 billion. Part of these resources could have been used for NTD interventions.

Evidence shows NTDs have a negative impact on the economic stability of families, communities and countries and those countries that apply for IDA resources should be encouraged to include support for NTD programs within their development plans, including their national health and education strategies/policies/plans.

Two regional World Bank programs are specifically targeting NTD and cross-border issues with development funds. The Senegal River basin water management and Malaria and NTD Sahel projects both provide opportunities for a group of countries to access IDA resources for NTDs and malaria. The Senegal River Basin water management project allocated US$40 million for NTD interventions and Malaria, and the Sahel project budget for NTD and Malaria in Burkina Faso, Mali and Niger is US$121 million. Another multi-sector project in Madagascar has allocated US$5 million for NTD interventions.

YEMEN

Uncertain political climate threatens progress on NTDs

Total population: 24.4 million*

*2013

World Bank 2015 classification: Lower-middle-income country

At the time of writing, the current situation in Yemen is concerning and unpredictable, with a social, political and humanitarian situation threatening the country's stability. Yet just prior to the onset of this spring's unrest, Yemen was on course to eliminating schistosomiasis by 2017.

In 2010, the Yemen Ministry of Public Health and Population (MPHP) launched a nationwide schistosomiasis control program (also covering soil-transmitted helminths – STH) with a US$25 million IDA grant from the World Bank and partnerships established with the WHO and the Schistosomiasis Control Initiative (SCI). The MPHP's strategy was to combine schisto and STH control with health, education, via schools and outreach, and the concerted engagement of multiple sectors, such as agriculture, education, and water and sanitation.

Since 2010, more than 24.8 million praziquantel tablets for schistosomiasis have been delivered, in combination with albendazole for STH in co-endemic areas. In 2014, disease remapping efforts showed that the number of highly-infected districts was down from 51 in 2010 to 3 and districts with low infection rates increased from 41 to 189, translating into low-infected districts now accounting for more than 87% of the country, up from 15% just five years ago.

Recent events prevented the national program from conducting assessments to determine how many districts had reached the targeted 1% infection rate.[1] On reaching the WHO target, Yemen will be among the few countries to have eliminated the public health burden of schistosomiasis, having already achieved this for Guinea worm disease and lymphatic filariasis – a remarkable feat for the region's poorest nation.

With events on hold, Yemen awaits the opportunity to resume assessment activities and determine its schistosomiasis elimination status.

Yemen serves as a stark example of how even impressive gains made in combating NTDs decrease in an uncertain political environment.

1. WHO's recommended metric of elimination of schistosomiasis as a public health problem: *Helminth Control in School-Aged Children: A Guide for Managers of Control Programs*, World Health Organization (2011). The 2014 assessment showed that two-thirds of the sentinel sites had reached this target.

NEW LEADERSHIP IN AFRICA

For the first time in its 66-year history, WHO Africa Regional Office (AFRO) has a woman at its helm. Earlier this year, Dr. Matshidiso Moeti was appointed as the Regional Director for AFRO by the WHO's Executive Board in Geneva in January 2015.

Coming into this role, Dr. Moeti intends to build an effective, responsive, results-driven WHO in Africa. This is no small feat given Dr. Moeti began her five-year term in the midst of the most recent Ebola disaster.

Originally from South Africa, Dr. Moeti's inspiring career trajectory began with medical and public health degrees from University of London and London School of Hygiene and Tropical Medicine respectively. From there she returned home and eventually led Botswana's Ministry of Health's epidemiology unit and its HIV/AIDS program. After that, she joined UNICEF in Zambia as a health and nutrition program officer and then went to UNAIDS as a regional team leader for Africa and the Middle East. It was after this that Dr. Moeti first joined the WHO's Africa Regional Office, where she held various roles such as Deputy Regional Director, Assistant Regional Director, Director of Non-communicable Diseases, WHO Representative for Malawi, and Coordinator of the Inter-Country Support Team for the South and East African countries.

Uniting to Combat NTDs caught up with Dr. Moeti during WHA68 in Geneva for an interview:

In what ways does being the first female AFRO RD matter to you? What does it mean to you – personally and professionally?

It's an honor bestowed on me to serve my continent and Member States as the first woman WHO Regional Director and more importantly to join my predecessors, the men and women in the Region and indeed around the world, to help reduce the burden of poor health on the people. The role of women is changing and with education and hard work, there is no limit to what any woman can achieve in her personal and professional life.

Your first meeting as Regional Director was on Neglected Tropical Diseases in Brazzaville, was this a happy coincidence for the NTDs community?

As a Regional Director of WHO in the African Region, a region that is currently experiencing the highest burden of NTDs, I made a commitment to the Ministers of Health that tackling NTDs will be one of my top priorities. As you may be aware, these diseases anchor a large proportion of African people into poverty and must be controlled, eliminated and eradicated so as to contribute to the reduction of poverty and attainment of the Sustainable Development Goals.

As an immediate follow-up to my commitment and determination to tackle NTDs, I convened a meeting of the Regional Program Review Group, a technical advisory group that reviews the status of NTD programs in the region and guides countries on critical interventions to be taken to achieve the NTD goals and targets.

What do you think is the single biggest issue that we need to tackle in NTDs?

Addressing the burden of NTDs in the region requires a multi-sectorial approach and combination of strategies that includes, among others, preventive chemotherapy, intensified case management, vector control and provision of safe water, sanitation and hygiene.
One of our biggest challenges in the region is scaling up mass drug administration so as to reach the highest number of people and thus control, prevent, and hopefully eliminate these diseases with the support of our partners. We must take every advantage of the donations of medicines that pharmaceutical companies are providing and ensure that they get to all the people that need them until the diseases are eliminated or eradicated.

What gets you out of bed every morning?

The knowledge that every effort during the day contributes towards making someone in the Region healthy. To see that people have access to basic healthcare; to see the last Guinea worm patient and other successes in health is encouraging. I was thrilled to meet the last Guinea worm patient from Ghana and I want that experience about other endemic diseases.

What excites you most about your new role?

The fact that we've turned a new page and upped our game and are on course to tackle the health challenges facing the African region.

We know you are a lover of Jazz – which is your favorite?

It's impossible for me to name one; but listening to Miles Davis, Sarah Vaughan, John Coltrane, and Ella Fitzgerald have both inspired and soothed me since my teens.

Thank you Dr. Moeti, and all of us at Uniting to Combat NTDs wish you a very successful tenure in your role as Regional Director and very much look forward to working with you in ending these diseases of poverty in Africa.

THE COMPELLING CASE FOR FINANCING LONDON DECLARATION NTD EFFORTS[1]

A pro-poor strategy and a development best buy

Work completed this year by Erasmus indicates that NTD programs have a high return on investment and by targeting NTDs, the poor are reached globally and nationally. This makes NTD programs a pro-poor best buy.

Systematic studies of peer-reviewed literature show evidence that:

- a disproportionate share of the overall NTD burden is carried by low- and lower-middle income countries, and within countries NTDs tend to impact poorer communities;
- NTDs affect the economic livelihoods of individuals and thus households, countries, and regions – to a significant degree; and
- controlling, eliminating, or eradicating NTDs will meaningfully benefit the poorest of the world's poor.

Using data from the Institute for Health Metrics and Evaluation's 2010 Global Burden of Disease (GBD) study, researchers from Erasmus created mathematical models to forecast the health and economic impact of meeting the WHO 2020 targets.

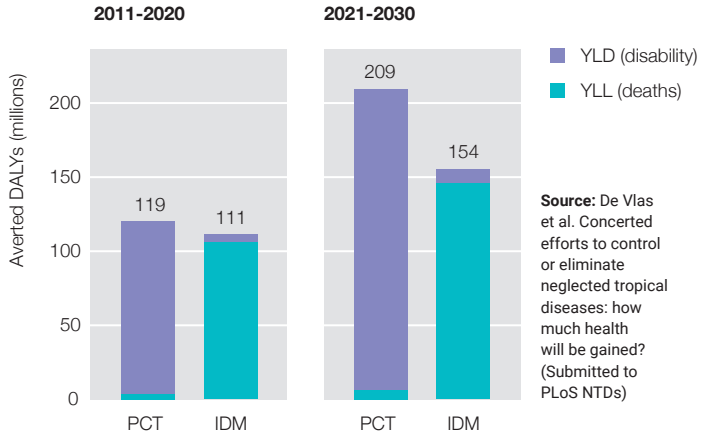
Health impact

- Between 2011 and 2030, an anticipated **600 million DALYs**[2] would be averted as a result of meeting the WHO 2020 targets (see Figure 1). Amongst the preventive chemotherapy treatment (PCT) NTDs, 96% of the health gains would be attributed to averted disability, and within the intensified disease management (IDM) NTDs, 95% of the impact would be realized from averted deaths.
- Included in these gains are approximately **150 million averted irreversible[3] disease manifestations**, such as chronic heart disease resulting from Chagas disease, and swelling of the scrotum (*hydrocele*) and of the lower limbs (*lymphedema*) due to lymphatic filariasis.
- Additionally, **5 million deaths** could be averted, mainly from visceral leishmaniasis (VL) and human African trypanosomiasis.

Economic impact

- **For PCT-NTDs**, meeting the WHO Roadmap targets could mean that, between 2011 and 2030, **US$565 billion could be gained in productivity alone** (see Figure 2). The lion's share of this gain (US$434 billion) would come directly from the alleviation of five STH-related conditions (see Figure 3), the majority of which would be realized in China. Achieving results like these requires scale-up that is effective and equitable. The projected **return on investment[4] (ROI) in the kind of scale-up needed to achieve this is US$51 for 2015-2020, and US$184 for 2021-2030**. Even the most conservative estimate in 2011-2030 would still be be a productivity gain of US$421 billion, corresponding to an ROI of US$30 for 2015-20203, and US$114 for 2021-2030.
- **For IDM-NTDs**, 2011-2030 models show a **productivity gain of US$58 billion**, over half of which can be attributed to averting VL and chronic heart disease caused by Chagas disease (see Figure 4). Averted out-of-pocket payments would total US$35 billion. If only gains in productivity are considered, the ROI from the necessary investments is **anticipated to range from US$1 (worst-case scenario in the period 2015-2020) to US$9 (best-case scenario in the period 2021-2030)** and these values would further increase due to unspent out-of-pocket costs. Perhaps more importantly, these ROIs do not even include the significant health gain that could be expected from achieving the WHO 2020 targets.

Figure 1: Global health benefit of reaching WHO 2020 targets for all London Declaration NTDs. DALYs averted (millions) as Years Lost to Disability (YLD) and Years of Life Lost (YLL) for the period 2011-2030

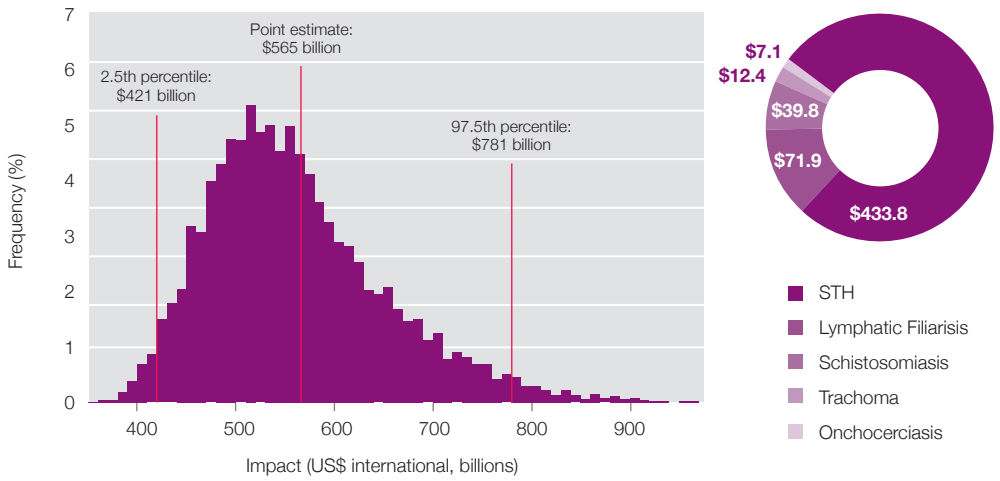


Source: De Vlas et al. Concerted efforts to control or eliminate neglected tropical diseases: how much health will be gained? (Submitted to PLoS NTDs)

The main findings from this modeling, including impact at country level, can be viewed online at www.unitingtocombatntds.org

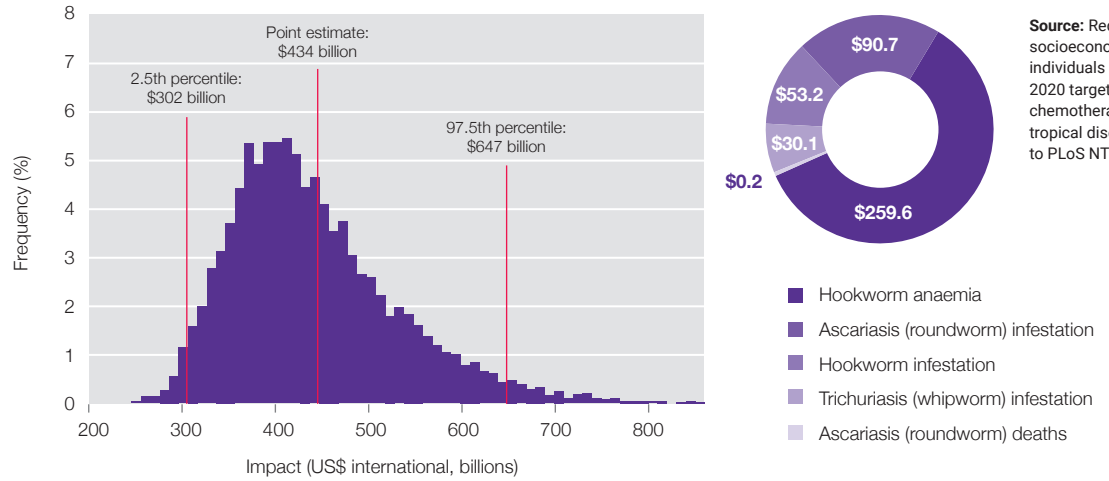
1. Findings of the study "Health and socioeconomic impact of achieving the WHO targets for London Declaration NTDs" by Erasmus MC and Erasmus University Rotterdam (Netherlands), to be published as a collection in PLoS NTDs.
2. DALYs are a measure of life years lost from disease, adjusted for assumptions about disability as well as the impact of age and future time.
3. Surgery can be helpful for hydrocele cases, as well as pacemakers and heart transplantation for chronic heart disease due to Chagas. Still, for most people in developing countries these interventions are normally not available.
4. The investment costs for the calculation of the ROI came from recent WHO estimates published in the Third Report on Neglected Tropical Diseases. The investment costs calculated by the WHO combined targets for the number of people requiring interventions with benchmarks for the cost per person of delivering those interventions, for the period 2015-2020 and 2021-2030. Therefore, the first period for which the ROI was calculated starts in 2015 instead of 2011.

Figure 2. Global economic benefit of reaching WHO 2020 targets for 5 PCT-NTDs, lower and upper estimates from sensitivity analysis, for the period 2011-2030 (billions US$ international)



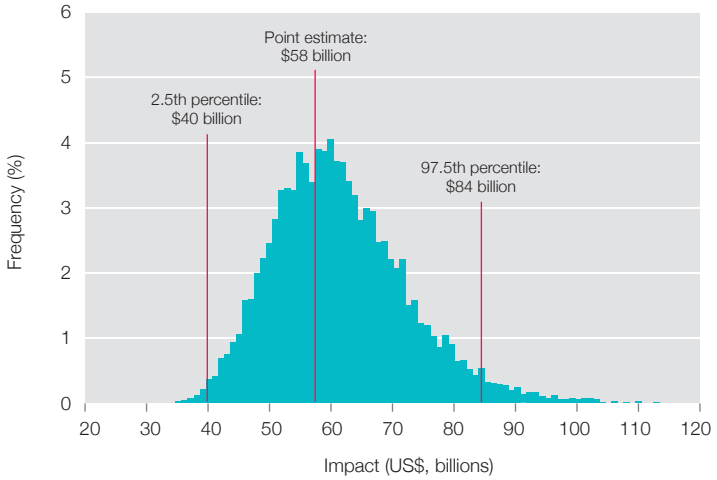
Source: Redekop et al. The socioeconomic benefit to individuals of achieving the 2020 targets for five preventive chemotherapy neglected tropical diseases. (Submitted to PLoS NTDs)

Figure 3. Global economic benefit of reaching WHO 2020 targets for STH, lower and upper estimates from sensitivity analysis, and point estimates per STH-related condition for the period 2011-2030 (billions US$ international)



Source: Redekop et al. The socioeconomic benefit to individuals of achieving the 2020 targets for five preventive chemotherapy neglected tropical diseases. (Submitted to PLoS NTDs)

Figure 4. Global economic benefit of reaching WHO 2020 targets for 4 IDM-NTDs, lower and upper estimates from sensitivity analysis, for the period 2011-2030 (billions US$ international)



Source: Lenk et al. The socioeconomic benefit to individuals of achieving the 2020 targets for neglected tropical diseases controlled or eliminated by innovative and intensified disease management. (Submitted to PLoS NTDs)

Taken together, the London Declaration NTDs constitute a disability and mortality burden of the same order of magnitude as HIV/AIDS, tuberculosis, or malaria. However, the costs associated with reaching the WHO 2020 targets are relatively modest when compared to these "big three", while the benefits are enormous, providing a compelling case that the WHO Roadmap makes a highly cost-effective initiative, with far-reaching global health, societal, and economic impacts.

THE LARGEST PUBLIC HEALTH DRUG DONATION PROGRAM IN THE WORLD

Industry leadership on NTDs

Drug donation update

A cornerstone of both the global NTD program and the London Declaration is the generous contribution of donated drugs from ten pharma partners (Bayer, Eisai, Gilead, GSK, Johnson & Johnson, Merck KGaA, Darmstadt, Germany, Merck & Co., Inc., Kenilworth, NJ, USA, Novartis, Pfizer, and Sanofi). The commitment to provide drugs needed for nine[1] of the ten NTDs outlined in the London Declaration through to 2020 is valued at more than $17.8 billion.

>5.5 billion tablets
in pharma donations since the London Declaration

Since the London Declaration, industry partners have donated just over 5.5 billion tablets for over 3.5 billion treatments, representing an increase of 36%. Treatments in 2014 alone were up 8.5% from the previous year, with more than US$1.45 billion treatments made available to countries in need in 2014 – making this the largest public health drug donation program in the world.

Drugs needed to treat communities endemic for **PCT NTDs** account for the overwhelming majority (99.9%) of donations. In 2014, GSK increased its annual donation of albendazole by 12%, in part to meet the needs of 11 new countries beginning treatment for lymphatic filariasis (LF) and/or soil-transmitted helminths (STH). These consisted of 3 new MDA efforts for LF in Angola, Democratic Republic of the Congo, and Micronesia, along with 10 for STH in Angola, Benin, Colombia, El Salvador, Guatemala, Honduras, Kyrgyzstan, Malawi, Micronesia and Vietnam. The most impressive increase in drug donations was from Eisai, which scaled up over 80-fold its supply of diethylcarbamazine (DEC) for use in treating LF (in areas not also endemic for onchocerciasis) from 1 million treatments in 2013 to over 81 million shipped in 2014. In 2014, Merck produced more than 75 million praziquantel (Cesol 600) tablets. As of the end of 2014, the company had supplied more than 72 million tablets to the recipient countries in Africa in coordination with WHO, representing an increase of 44% over 2013.

2014 PCT-NTDs treatment donations
up 8.5% from 2013

>$17.8 billion
value of drug donations pledged for London Declaration NTDs to 2020

While treatment donations for **IDM NTDs** constituted a smaller volume of drugs, industry partners Novartis, Bayer and Sanofi were steadfast in their commitment towards supplying valuable medicines to combat these diseases, providing nearly 25% more treatments in 2014 than in 2013.

As drug manufacturing has increased to meet national program needs for both PCT and IDM NTDs, supply challenges have been experienced in certain instances, with 2014 delivery of some drugs (Zithromax® for trachoma and AmBisome® for VL) were delayed until early 2015. Pharma partners have, however, worked quickly to overcome these issues and ensure supply is provided to meet the demand.

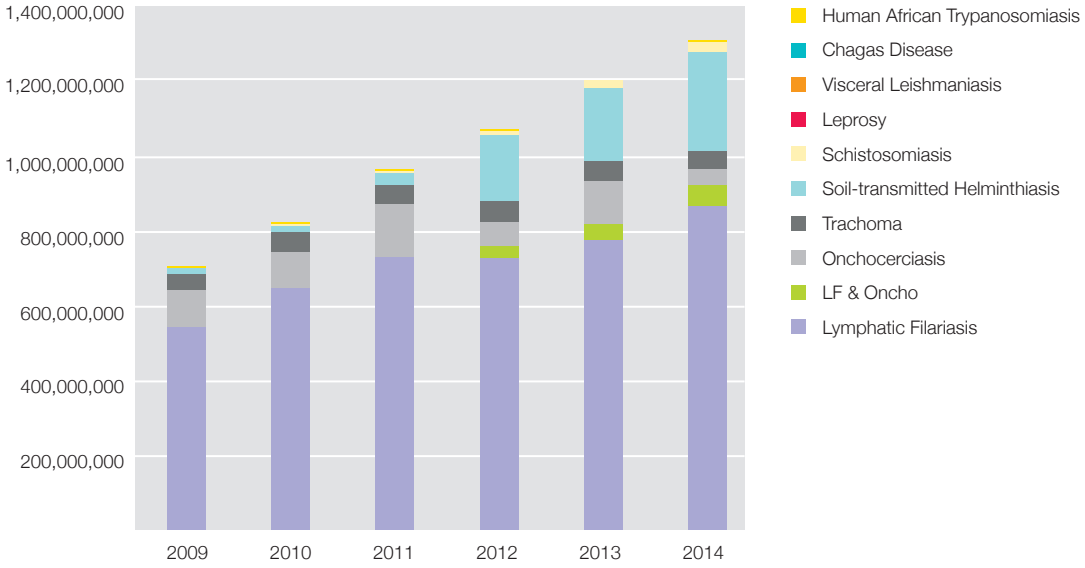
2014 IDM-NTDs treatment donations
up 27% from 2013

The robustness of the commitment of these pharma partners represents a key asset that has enabled NTD programs to build a multi-pronged approach to combating NTDs that is continually strengthening.

Priority for progress: One acknowledged limiting factor is the availability of resources to scale up distribution of these donated drugs to reach endemic communities. An analysis conducted by Abt Associates has estimated that the global program requires around US$1.4 billion to completely leverage the US$17.8 billion in donated drugs through 2020.

1. Guinea worm disease does not have an associated drug that addresses infection.

The drug donation program continues to grow



NTD drug supply-chain progress

Getting drugs to the countries:
First-mile delivery improvements

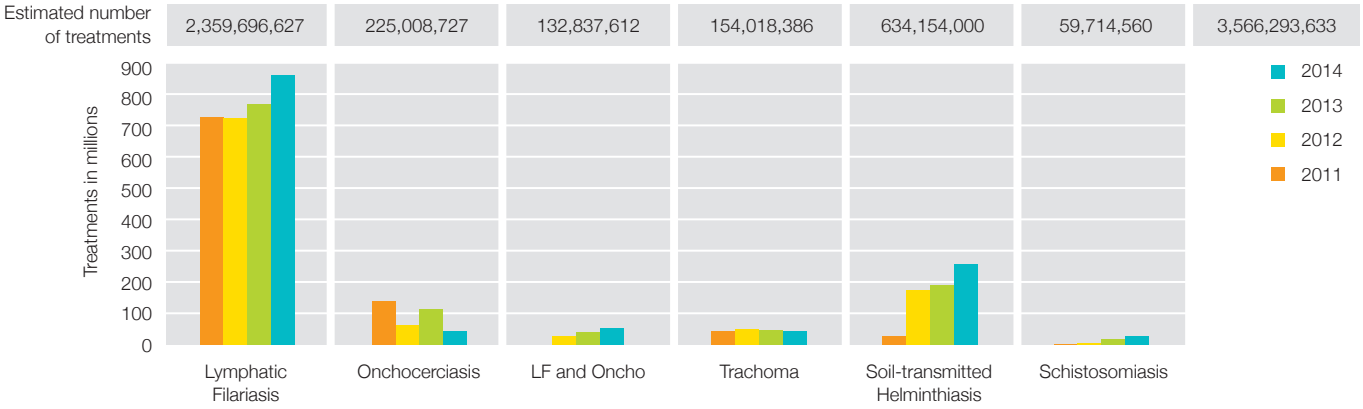
Efficient and effective supply-chain management plays a critical role in ensuring that NTD medicines are delivered to the people who need them. Aimed in part at streamlining and coordinating this process, the NTD Supply Chain Forum (the "Forum") was established in 2012, bringing together the WHO, pharmaceutical donor partners (GSK, Johnson & Johnson, Pfizer, Merck & Co, Inc., Merck, and Eisai), the Gates Foundation, logistics partner DHL, and nongovernmental organizations (Children Without Worms, the Mectizan® Donation Program, the International Trachoma Initiative and RTI International).

As NTD programs scale up around the world, the Forum works to identify gaps and challenges within the "first mile" of the NTD drug supply chain, which encompasses planning and forecasting, manufacture, packaging, shipment, and final delivery of NTD medicines to endemic countries – a carefully coordinated global endeavor. The efforts of the Forum over this past year have resulted in progress in improving drug production timelines, changes in national drug application mechanisms, and better distribution and delivery to the destination countries.

Some highlights of the Forum's work include:

- **Dedicated DHL "Control Tower" for coordination of NTD shipments**
  With its extensive global reach, DHL is a common logistics provider for several donation programs. As such, an initial output of the Forum was to bring several donations under the humanitarian side of DHL's logistics services, thereby enabling NTD drug donations to benefit from DHL's special distribution channels and expertise in efficiently clearing medicines for country entry.
- The creation of a dedicated NTD DHL Control Tower enables the DHL to oversee the clearance of several NTD medicines through customs and ensures delivery to national warehouses. GSK, Johnson & Johnson, and Merck have also extended their delivery past the port of entry through to medical stores, warehouses and beyond. This means that these pharmaceutical donors are now fully responsible for all steps involved in shipping customs clearance and delivery of NTD medicines to the central medical stores or national warehouse in each country. This includes covering all associated costs. In the past, the delivery was made to the port of entry, leaving the local WHO/WR offices to clear the goods and deliver these medicines to their final destination. DHL now provides door to door service to the government warehouse for these pharmaceutical donors in over 98% of cases, resulting in a more controlled and efficient approach to delivering NTD medicines.
- **NTD forecasting and planning tool development**
  With a view to creating one centralized data source for integrated PCT supply-chain decision making, the WHO and the Forum are collaborating to further develop the PCT-NTD Supply Chain Management tool, enabling the sharing of planning and forecasting information with all relevant stakeholders (such as program managers, the WHO, and donors) involved in MDA.

Drug Donation for 5 PCTs (2011-2014): Treatments



- **Supply-Chain Modeling**
  The Forum is using statistical modeling systems and expertise to map supply chains of several NTD medicines so as to streamline delivery of co-administered supplies. The data from the modeling work will be used to better furnish business cases for potential supply-chain improvements, and provide a platform for future scenario analysis including diagnostic supply.

Getting drugs to people:
Last-mile delivery improvements

Since the London Declaration there have been just over

3.5 billion treatments

Ensuring that NTD medicines effectively travel from manufacturers to reach endemic countries is only part of the supply-chain process. There are a number of potential challenges country programs face in reaching communities and individuals, often referred to as the "last mile". With support from the Gates Foundation, John Snow, Inc. recently completed a three-country assessment (of Ghana, Malawi, and Tanzania) to identify challenges and propose solutions to strengthen the NTD last-mile supply chain. Multiple areas and opportunities for improving programs were identified, including:

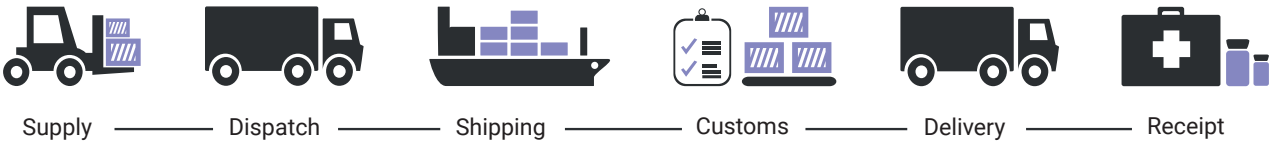
The amount of donated treatments

up 36%

- creating concise training and reference materials with key supply-chain messaging for frontline health workers and community drug distributors, for incorporation into national NTD control program training systems;
- developing guidelines and reference materials on NTD drug management, and on planning and budgeting for the delivery of drugs for MDA;
- strengthening NTD program district-to-central-level accountability to improve feedback and performance for MDA success
- improving performance motivation at the community and health-facility levels.

The Gates Foundation is now reaching out to partners and stakeholders to explore ways of collaborating on the opportunities presented.

Total supply chain visibility



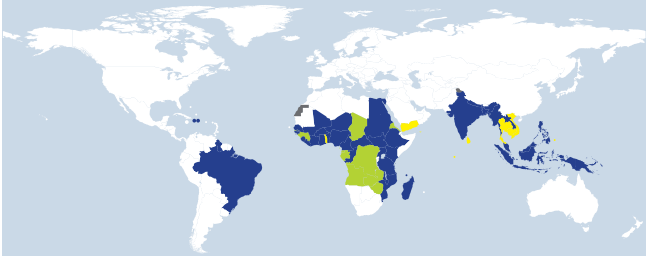
LONDON DECLARATION NTDS: PROGRESS BY DISEASE

LYMPHATIC FILARIASIS (LF)

WHO ROADMAP TARGET

Global elimination as a public health problem by **2020**

Distribution and status of preventive chemotherapy for lymphatic filariasis, worldwide, 2013 (WHO)



- Endemic countries and territories implementing preventive chemotherapy
- Endemic countries and territories where the target was achieved and implementation stopped
- Endemic countries and territories not started implementing preventive chemotherapy
- Not applicable
- Non-endemic countries and territories

Lymphatic filariasis (LF) is a mosquito-transmitted disease caused by parasitic worms that damage the human lymph system. It can cause severe and sometimes very extensive swelling of the lower limbs (*lymphedema*), which can be accompanied by painful episodes of fever. People with lymphedema are prone to bacterial infections that can lead to a mobility-limiting condition where the skin thickens and hardens (*elephantiasis*). In men, LF can also result in swelling of the scrotum (*hydrocele*). LF afflicts the poorest communities, preventing affected individuals from living a productive working and social life, further trapping them in the cycle of poverty.

How many people are affected and where?

1.23 billion people in 58 countries throughout tropical regions in Africa, the Americas, Asia, and the Pacific are at risk of contracting LF.

~120 million

people infected

Global estimates for LF-infected persons currently stand at 120 million, more than 40 million of whom are incapacitated or disfigured as a result. 80% of people at risk live in 10 countries. India alone accounts for over half a billion of the at-risk population, followed (in order of magnitude) by Bangladesh, the Democratic Republic of the Congo (DRC), Ethiopia, Indonesia, Myanmar, Nepal, Nigeria, the Philippines, and Tanzania.

Can it be prevented and/or treated?

Mass drug administration (MDA) with a combination of two donated medicines, Mectizan or diethylcarbamazine (DEC) and albendazole[1], can safely and effectively reduce the number of larvae (microfilariae) in an infected person's blood to a level where the transmission cycle is broken even once drug treatment is stopped. Additional evidence indicates that MDA may also prevent the disease from progressing to lymphedema, elephantiasis, and hydrocele, but it cannot reverse LF-associated disabilities that have already emerged. Additional methods can be used to block transmission using vector control like bed nets.

1. Generously donated as follows: Mectizan® by Merck & Co., Inc., Kenilworth, NJ, USA; DEC by EISAI and Sanofi; and albendazole by GSK.

What strategies are in place to achieve the WHO Roadmap target for LF?

A two-pronged strategy is used by programs in endemic countries:

1. **stopping the spread of LF** through annual MDA aimed at breaking the transmission cycle. This includes disease mapping to assess the need for MDA, and surveillance once transmission has been interrupted to ensure the cycle does not restart; and
2. **alleviating the suffering of those affected** through comprehensive care for clinical problems and hydrocele surgery, in order to prevent and manage LF-associated disabilities.

Did you know?

1 in 6 of the global population is at risk of LF, one of the world's most disabling diseases

Read more about LF at **www.unitingtocombatntds.org**

With crucial groundwork laid, mobilizing vital resources is now a pressing priority

Significant progress has been made in global efforts to combat LF, with LF programs now in place in most countries where the disease is a public health concern. Even so, a number of key challenges threaten the achievement of the WHO Roadmap target for LF, and therefore need to be urgently addressed.

Disease mapping

80%

of high-risk countries fully mapped for LF

Completing mapping for disease prevalence is a crucial step for achieving the WHO Roadmap target. Of the 10 most high-risk countries, the DRC completed countrywide mapping in early 2015, leaving only Ethiopia and Nigeria, both of which are expected to complete mapping in 2015.

Key challenges: The incompleteness of mapping in Africa has proved a major obstacle to starting and scaling up MDA. While funding to address this is now available, and the AFRO Mapping Project plans to complete LF mapping on the continent in 2015, a concerted effort is needed to finish the task.

Mass drug administration

493.5

million people treated worldwide in 2013

Since 2000, a cumulative total of over 5 billion doses of medicines have been delivered to 1 billion people. In 2013 alone, 493.5 individuals were treated across all affected regions.

100% geographical coverage was achieved in 22 of the 58 countries requiring MDA in 2013, and an additional 23 countries are scaling up MDA. In Africa, a new regional NTD support program that will offer technical assistance on all aspects of MDA should be in place by 2016.

Key challenges: At the current rate of progress, scale-up to full geographic coverage in all endemic countries is unlikely to be achieved rapidly enough to allow 5 years of treatment before 2020, unless mapping reveals a lower population needing treatment, and the necessary resources are available. Globally, geographic coverage is only 40%, and 13 endemic countries have not started MDA. Of the 10 countries most at risk, only India and the Philippines have achieved full MDA coverage of their national territory, Indonesia and Nigeria need to scale up quickly, and the DRC needs to start. While, increasing political commitment is leading to more domestic funding for implementation of MDA, and resources are available through bilateral agreements, there are still "orphan countries" that have few resources and no partners.

Preventing and managing disability

59%

drop in LF-linked disability (2000-2013)

Current estimates for 2013 indicate a 59% reduction in LF-associated disability since 2000, with 16.68 million suffering from lymphedema and 19.43 million suffering from hydrocele.

Key challenges: Promoting skincare is important both for restoring mobility and reducing episodes of fever, and this aspect of LF programs needs to be strengthened. Surgery for scrotal swelling has been more effective, but there are still many patients waiting for the procedure.

Post-MDA surveillance

15 countries

now in surveillance phase

Post-MDA surveillance is critical to ensuring the LF transmission cycle has been truly interrupted and will not restart once MDA stops. In an important milestone for Africa, in 2014 Malawi became the second country in the region to stop MDA and move into surveillance, bringing the global total to 15 countries. A further 40 at-risk nations worldwide are ready to stop MDA in some parts of their country.

Key challenges: More cost-effective and sensitive post-MDA surveillance methodologies, such as diagnostic tools like the soon-to-be-available Filariasis Test Strips, are needed to facilitate making decisions on when to stop MDA.

Priorities for progress:

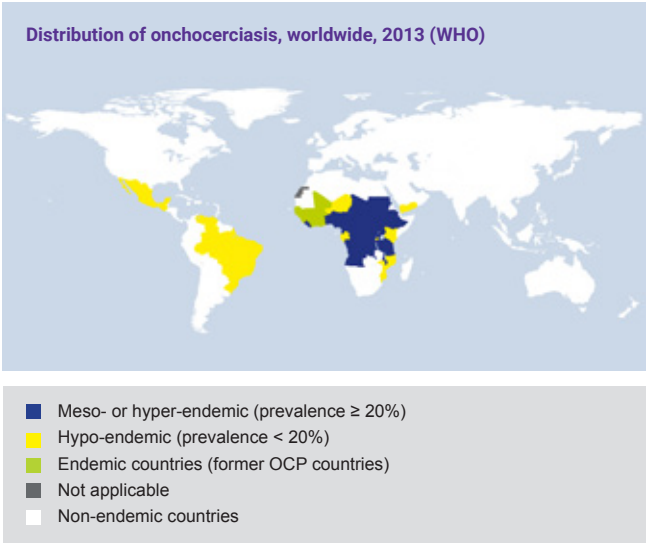
- **In Africa, with mapping due to be completed in December 2015, it is essential that human and financial resources be mobilized immediately to scale up treatment for the WHO Roadmap target to be achieved.**
- **In other parts of the world, where country efforts are under-resourced and lack strategic partners, urgent funding is needed to fill the gap and contribute to keeping global progress on track.**

ONCHOCERCIASIS (River Blindness)

WHO ROADMAP TARGETS

Elimination:

by **2015**: in Latin America and Yemen
by **2020**: in selected countries in Africa



Onchocerciasis (or river blindness) is a disease caused by infection with a parasitic worm transmitted by blackflies, which breed in fast-flowing streams and rivers. Adult worms produce larvae (*microfilariae*) that migrate to the skin, eyes, and other organs, and can cause debilitating itching, disfiguring skin conditions, and visual loss (including irreversible blindness) over time. Onchocerciasis can therefore impact enormously on the lives of those infected, reducing their ability to work and learn.

How many people are affected and where?

Onchocerciasis occurs in 31 countries in tropical sub–Saharan Africa, in pockets in Yemen, and was or remains present in 6 countries in Central and South America.

~169 million people at risk

Of the approximately 169 million people living in onchocerciasis-endemic areas in Africa, an estimated 37 million are infected, representing 99% of the global burden of the disease. Of these, 4 million have skin manifestations, and 2 million are blind or severely visually impaired.

Can it be prevented and/or treated?

There is no vaccine to prevent onchocerciasis infection, but mass administration of an oral drug called Mectizan®[1] to communities in endemic areas can reduce the prevalence of the disease and the parasite load in infected people, and can eventually interrupt transmission. Skin-snip biopsies continue to be used to confirm positive cases, but new improved diagnostic methods are also being introduced.

What strategies are in place to achieve the WHO Roadmap targets for onchocerciasis?

Since donations of ivermectin by Merck & Co., Inc. began in 1987, mass drug administration (MDA) programs have commenced in many areas of the world. Starting from 1995, the partnership around the African Programme for Onchocerciasis Control (APOC) has provided treatment to all countries in Africa needing MDA through an innovative delivery strategy in which individuals are trained to give treatments to fellow community members. This strategy – called Community-Directed Treatment with Ivermectin (CDTI) – has been enormously successful in controlling onchocerciasis in Africa. In Yemen, clinical cases of onchocerciasis are treated with ivermectin, while MDA and blackfly controls will hopefully soon be launched. In Latin America, the regional elimination strategy is centered on twice-yearly MDA with ivermectin to eliminate transmission.

1. Mectizan® is generously donated by Merck & Co., Inc., Kenilworth, NJ, USA ("Merck & Co., Inc.").

Did you know?

Onchocerciasis, the second leading infectious cause of blindness worldwide, is spread by repeated bites from infected tropical blackflies

Read more about onchocerciasis at **www.unitingtocombatntds.org**

As Latin America nears its target, Africa must rally crucial resources to follow suit

While new cross-border cooperation arrangements seem set to assist Latin America in achieving its transmission interruption target, in moving forward Africa will need to contend with various constraints, including a sizeable resource gap and a transitioning onchocerciasis control program, in order to ensure that the gains made by APOC towards elimination are not reversed.

Elimination across Latin America

In Latin America, twice-yearly treatment with ivermectin has interrupted or eliminated transmission of onchocerciasis in 11 of 13 areas in the 6 endemic countries.[2] Blinding onchocerciasis has been considered eliminated from most of the region since 1995.

Of 6 endemic countries

2 countries

verified as eliminated at the national level

In 2013, Colombia became the first country globally to be verified free of onchocerciasis, followed by Ecuador. Mexico and Guatemala anticipate verification in 2015. Only 20,495 Yanomami people living in two endemic areas in Brazil and Venezuela still need treatment.

Key Challenges: Delivering treatment to the Yanomami area of the Amazon region, shared by Brazil and Venezuela, is the greatest challenge to achieving interruption of transmission in Latin America by 2015. To this end, a dedicated border cooperation agreement was signed in May 2014 during the World Health Assembly, and the two countries are working to make this operational.

2. Brazil, Colombia, Ecuador, Guatemala, Mexico and Venezuela.

Elimination in Yemen

Although political considerations in Yemen have hampered achievement by 2015 of the originally-envisaged elimination target, there is renewed government commitment and increased support from partners for moving forward. The country is now rallying toward an elimination target date of 2020, with MDA and blackfly control measures anticipated to start in 2015.

Community-Directed Treatment with Ivermectin in Africa

In Africa, the APOC program's CDTI strategy has delivered hundreds of millions of treatments to people living in endemic areas.

~100.7 million people treated in 2013[3]

Out of a total at-risk population of around 169 million in 1,209 health districts in Africa, around 100.7 million persons received ivermectin through the CDTI strategy (for a coverage of 59.5%) during APOC's 2013 treatment cycle, up from 99 million people in 2012 but representing a drop from the 76.4% treatment coverage for that year. Onchocerciasis control efforts have now led to elimination in focal areas in several countries in Africa. Mali, Niger, and Senegal in West Africa, and Burundi, Chad, and Malawi in Central and Southern Africa are all ready for evaluations in 2015-16 to determine if treatment can be stopped nationally. 12 African countries are expected to achieve countrywide elimination by 2020. In rural sub-Saharan areas, where health systems are weak and under-resourced, CDTI is proving one of Africa's most successful low-cost disease reduction strategies.

3. Figure relates to APOC's 2013 treatment cycle, spanning part of 2014.

181,000 locales engaged in 2013[4]

In the 2013 treatment cycle, 181,000 communities were mobilized and 650,000 community distributors trained in APOC's CDTI strategy.

The strategy averted a total of 8.8 million DALYs[5] between 1995-2010, including 3.7 million from blindness. Another estimated 10.1 million DALYs will be averted between 2011-15.

Key Challenges: It will be critical to address obstacles to achieving and sustaining high treatment coverage, particularly in conflict and post-conflict areas. In 2013, ivermectin distribution was prevented in the highly-endemic Central African Republic by civil unrest. Other areas in Central Africa where loa loa is also endemic remain untreated because individuals infected with both diseases can have serious or fatal complications from ivermectin. A strategy must be developed and implemented for areas where delivering treatment is impeded by such factors.

4. Figure relates to APOC's 2013 treatment cycle, spanning part of 2014.
5. DALYs are a measure of years in perfect health lost through disease.

Priorities for progress

- **For Africa, urgent efforts and support are required to address the huge existing resource gap. Momentum will also need to be maintained once APOC closes down in December 2015, and a new entity takes on responsibility for strategy coordination and technical support to countries in Africa.**
- **For Latin America, cross-border collaboration will be key.**

SCHISTOSOMIASIS

WHO ROADMAP TARGETS

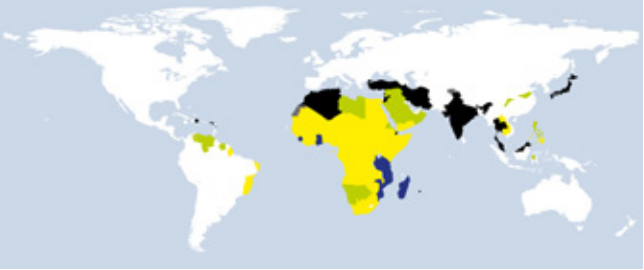
Elimination as a public health problem:

- by **2015**: regionally, in the Eastern Mediterranean, Caribbean, Indonesia, and the Mekong River basin
- by **2020**: regionally, in the Americas and Western Pacific; and nationally, in selected countries in Africa

And*: 75% of school-aged children in need of preventive treatment will be regularly treated in 100% of endemic countries by **2020**

*World Health Assembly resolution target

Distribution of schistosomiasis, worldwide, 2013 (WHO)



- High (prevalence ≥50%)
- Moderate (prevalence 10% – 49%)
- Low (prevalence <10%)
- Countries requiring evaluation of shistosomiasis
- Not applicable
- Non-endemic countries

Schistosomiasis (snail fever or bilharzia) is an infectious tropical illness that people can develop when they come into contact with fresh water contaminated by certain snails carrying the disease-causing parasites, which penetrate the skin and migrate through the body. Infection primarily affects the urinary or intestinal system, causing chronic ill health and in some cases death. Poor hygiene and water-based activities (such as swimming and fishing) make school-age children the most vulnerable, with infection responsible for malnutrition, absenteeism, and impaired intellectual development. Children suffering from persistent and severe schistosomiasis infections are also likely to have chronic irreversible diseases later in life, such as scarring (*fibrosis*) of the liver, bladder cancer, or kidney failure.

How many people are affected and where?

Schistosomiasis is found in all regions of the globe, but 93% of the at-risk population resides in sub-Saharan Africa, where disability and death rates associated with the disease are highest. 70% of people affected live in 10 African countries.[1] A combination of specific behavioral and environmental conditions – contamination of fresh water with snails infected by poor sanitation, and human contact with this water – contributes to schistosomiasis being highly endemic only in particular geographic areas.

261 million

worldwide need treatment

In 2013, 261 million people in 52 countries were estimated as requiring preventive treatment for schistosomiasis, 46% being school-age children.

Can it be prevented and/or treated?

In some endemic areas, infection with schistosomiasis can be prevented through improved sanitation and water supply, snail control, and health education measures. In communities where schistosomiasis infections are known to exist, their prevalence and the parasite load in affected individuals can be reduced through mass administration with the effective and safe drug praziquantel (Cesol 600).[2] The risk of developing advanced stages of the disease is diminished and severe manifestations can even be reversed when treatment is initiated and repeated in childhood.

What strategies are in place to achieve the WHO Roadmap targets for schistosomiasis?

Strategies for control and elimination in endemic areas focus on regular drug treatment of all people in at-risk groups with praziquantel. To achieve sustainable elimination, a comprehensive approach is required that includes measures to ensure safe drinking water, adequate sanitation, and snail control.

Did you know?

Schistosomiasis – a parasitic disease carried by freshwater snails – is second only to malaria for the devastating socioeconomic and health impact it has in tropical countries

Read more about schistosomiasis at **www.unitingtocombatntds.org**

1. Cameroon, the Democratic Republic of the Congo, Ethiopia, Ghana, Kenya, Malawi, Mozambique, Nigeria, Tanzania, and Uganda.

2. Generously donated by Merck KGaA, Darmstadt, Germany ("Merck").

Significant improvement in coverage required to unlock targeted treatment for Africa's most at-risk

As momentum builds, and as mapping is completed, the impact of efforts to combat the disease will depend heavily on global coordination to achieve full scale-up of treatment coverage by maximizing delivery of the anticipated increase in drug supply.

Mass drug administration (MDA)

47.3 million

treated worldwide in 2013

Overall, global treatment numbers for schistosomiasis are only slightly improving each year. In 2013, 47.3 million people were treated with praziquantel (Cesol 600), up from 42 million in 2012.

In contrast, donations of praziquantel (Cesol 600) are dramatically increasing. In 2014, pharmaceutical donor Merck increased its contribution to nearly 75 million tablets, and of 41 African countries requiring treatment, 36 (87.8%) were reached. For 2015, Merck has increased its donation to 100 million tablets, and three of the most affected countries – namely, the Democratic Republic of the Congo, Ethiopia, and Nigeria – will expand their programs to dramatically scale up treatments, particularly to school-age children. For 2016, Merck has committed to increasing its donation of praziquantel (Cesol 600) up to 250 million tablets, equivalent to 100 million treatments. DFID, USAID, the World Bank, and World Vision also purchase praziquantel totaling over 100 million tablets per year.

Of the 52 countries around the world where schistosomiasis is endemic and treatments are needed, 39 (75%) have national programs in place to combat the disease and are committed to delivering praziquantel treatment to at-risk populations. In Africa, Burundi and Zanzibar (in Tanzania) have started projects aimed at achieving sustainable elimination through an integrated package of strategies, including health education, improved sanitation and water supply, and snail control measures.

75%

of endemic countries

operate nationwide schistosomiasis programs

Key challenges: Despite quantities of donated praziquantel (Cesol 600) increasing annually, treatment coverage in endemic countries remains significantly below target – particularly in Africa, the region most affected by schistosomiasis. Only 14 African countries are treating 100% of endemic areas, and the continent's coverage for school-age children – the group specifically prioritized by the 2020 treatment target – remains problematically low. Of the 31 African countries that reported to WHO for 2013, only 7 reached the desired target of treating at least 75% of school-age children.

Increased resources and improved tools, as well as greater political commitment for program implementation – including training and monitoring and evaluation – are necessary to ensure that drugs required to meet treatment targets can be effectively delivered. The announcement in Addis Ababa in December 2014 of the Global Schistosomiasis Alliance, an initiative established by Merck to support the WHO and partners in addressing gaps and challenges in working toward the elimination target, should provide much-needed impetus, and lead to increased awareness and support for treatment with available praziquantel stocks.

Disease mapping

52%

of endemic countries

fully mapped for schistosomiasis

By the end of 2014, of the 52 endemic countries, 27 had been entirely – and 15 partially – mapped for prevalence of schistosomiasis. Through the AFRO Mapping Project, it is anticipated that all African countries will be fully mapped for schistosomiasis by the end of 2015. This will be a decisive achievement, as completion of the disease prevalence map in Africa will allow for the scheduled scale-up of treatments to be targeted where most needed.

Key challenge: With mapping for all African countries nearing completion, the number of endemic districts is increasing, which can be expected to compound the necessity for scale-up of treatment coverage. Coordination with STH school based programs offers an opportunity for scale up.

Priorities for progress:

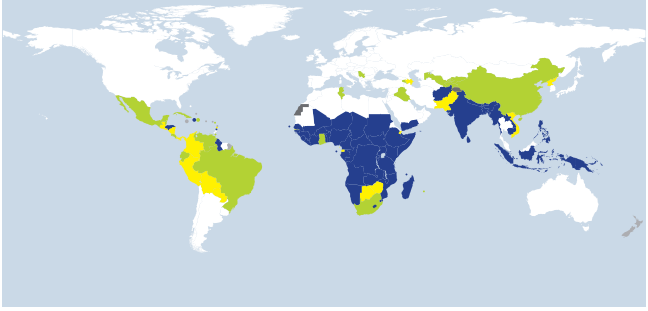
- **Increased treatment coverage in Africa.**
- **Better tools and resources to ensure effective drug delivery and treatment coverage at country level, as well as support for further research into solutions to delivery-related logistical obstacles, especially in Africa.**

SOIL-TRANSMITTED HELMINTHIASIS (STH)

WHO ROADMAP TARGETS

By **2015**: 50% and by **2020**: 75%
of preschool-age and school-age children in need of preventive treatment will be regularly treated in 100% of endemic countries

Proportion of children (1-14 years of age) in the country requiring preventive chemotherapy for STH, worldwide 2013



- High (>2/3)
- Moderate (1/3-2/3)
- Low (<1/3)
- Not applicable
- No data available
- No PC required

Soil-transmitted helminthiasis (STH, or intestinal worms) is caused by a group of intestinal parasites that thrive in places where the soil is warm and humid, and sanitation is poor. The most common STH-causing parasites are roundworm, whipworm, and hookworm. People become infected after they come in contact with soil contaminated with the parasites' eggs. STH reduces the body's ability to absorb nutrients and vitamins, which exacerbates malnutrition, and leads to anemia, increased susceptibility to other infectious diseases, stunted growth, and impaired intellectual development. Symptoms of STH become more evident as the worm load in an infected person increases. STH is a poverty-related disease, linked to broader community development challenges, which severely limits the ability of those infected to live full and productive lives.

How many people are affected and where?

STH affects the most vulnerable communities in tropical and subtropical countries where sanitation is inadequate. As many as 1.5-2 billion people living in the poorest communities of Africa, Asia, the Americas, and the Pacific are at risk of STH.

>876 million
at-risk children worldwide

Of those at risk of STH, over 876 million are children, who are more susceptible due to their frequent exposure to contaminated environments, such as during play. More than 65% of the children needing treatment live in the 10 highest-burden countries, in Africa and Asia.

Can it be prevented and/or treated?

STH can be effectively treated with the drugs albendazole or mebendazole.[1] As reinfection occurs frequently in settings where access to water and sanitation is limited, these deworming drugs must be provided regularly to at-risk populations, particularly preschool-age and school-age children. Preventive measures in at-risk communities include improving access to sanitation facilities and clean water, as well as educating people in personal hygiene (known collectively as Water, Sanitation, and Hygiene, or WASH).

1. Generously donated for deworming of school-age children as follows: albendazole by GSK, and mebendazole (under the brand name Vermox®) by Johnson & Johnson.

What strategies are in place to achieve the WHO Roadmap targets for STH?

Regular mass drug administration (MDA) to children of donated or purchased mebendazole and albendazole is a key component of STH control programs. Since 2013, global efforts have increased to begin MDA, and – where it has already commenced – to expand its scope, especially in the 10 highest-burden countries, in an effort to reach the 75% coverage target by 2020.

Did you know?

STH is the most common parasitic disease affecting humans worldwide, and is one of the leading global causes of stunted growth in children

Read more about STH at **www.unitingtocombatntds.org**

Global MDA coverage on track to meet 2015 WHO Roadmap target

The achievements in combating STH globally have been enormous, with increases in drug supplies and delivery – along with improved collaboration amongst partners – ensuring that efforts are on target to reach 50% treatment coverage for all at-risk children by 2015. In the coming years, STH programs will need to focus on building on this momentum and boosting coordination to scale up treatments even further, in order for the 2020 target of 75% coverage to be met.

Mass drug administration

Drug treatments are the cornerstone of STH programs, and the number of treatments supplied and delivered annually has increased rapidly in recent years. Since 2010, pharmaceutical donors have donated nearly 700 million treatments of albendazole and mebendazole to support deworming of school-age children, and are committed to continuing to provide a significant proportion of the drugs needed to help meet global targets.

396 million

at-risk children treated worldwide in 2013

From 2008 to 2013, the number of children treated annually for STH nearly doubled. In 2013, 396 million children were treated. Of these, 254.3 million were school-age children, for a coverage of nearly 40% in this age group.

Based on this achievement, global MDA efforts are on track to meet the WHO Roadmap target of regular treatment of 50% of the world's at-risk school-age children by 2015.

In terms of preschool-age children, improved collaboration and reporting between UNICEF and the WHO saw an impressive increase in treatment coverage.

~50%

of at-risk preschool-age children treated in 2013

In 2013, 141.7 million preschool-age children were reported to have been treated, representing around 50% of the world's at-risk population in this age bracket – a significant increase from 2012, when only 28% were reported treated, bringing coverage in line with the WHO Roadmap target for 2015.

As at 2013, nearly three-quarters of all countries where treatment is needed, including 7 of the 10 highest-burden countries, were actively carrying out deworming programs.

Key challenges: Despite the success in reaching greater numbers of at-risk children worldwide, MDA needs to be scaled up in the coming years to meet the WHO Roadmap target of regularly treating 75% of all at-risk children in 100% of endemic countries by 2020, with only 27% of endemic countries currently reaching this level of coverage. More coordinated processes for reporting drug coverage across different drug delivery platforms are also required to support monitoring of progress towards these targets.

Global coordination of partners

38 partners united in 2014

for concerted global push on STH

In 2014, the STH Coalition – a group of 38 national and international public-health, donor, WASH, education, and nutrition organizations – was established as a coordinating entity. This coalition has generated much-needed momentum towards advancing STH control in preschool-age and school-age children, improving monitoring and evaluation of STH programs and operational research, and promoting advocacy and enhanced collaboration with the WASH sector. The partnership has also contributed directly to the advances made in STH treatments reaching children.

Key challenges: Maintaining and building coordinated collaborative efforts will be essential in the necessary push for treatment scale-up. Increased collaboration with the WASH, agriculture, nutrition, maternal-health, and education sectors can help ensure that the complementary environmental improvements needed to sustain treatment gains in the long run are in place.

Priority for progress

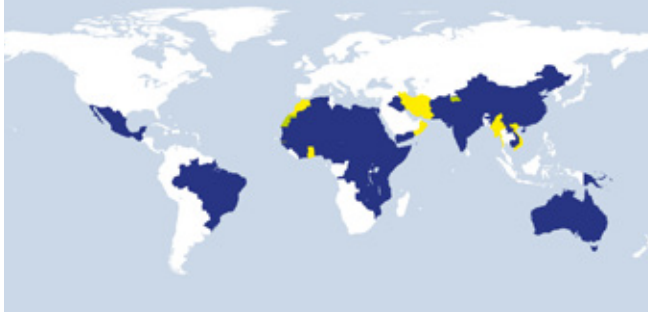
- **MDA for at-risk children needs to be significantly and urgently scaled up.**
- **The impact achieved by MDA needs to be sustained through WASH interventions.**
- **Scale-up of all STH control activities requires increased collaboration with relevant sectors to harness the resources, commitment, goodwill, and skills of all partners.**

TRACHOMA

WHO ROADMAP TARGETS

Global elimination as a public health problem by **2020**

Distribution of trachoma, worldwide, 2013 (WHO)



- Countries and territories endemic for blinding trachoma
- Countries that have eliminated blinding trachoma as a public health problem or which are under surveillance
- Not applicable
- Countries and territories non-endemic for blinding trachoma

Trachoma is a disease caused by a contagious bacterial infection of the eye commonly spread through contact with contaminated hands or items such as clothing, and by flies coming into contact with a person's eyes or nose. Trachoma often begins in early childhood, progressing over the years as episodes of reinfection cause inflammation and scarring of the inner eyelid. In some people, repeated infection damages the eyelids (compromising the eye surface's normal defenses), and the eyelashes turn inwards, painfully rubbing against the eye's surface (a condition known as trichiasis). If left untreated, a series of complications can lead to irreversible blindness. Trachoma is directly linked to poverty, and communities without access to clean water or effective sanitation are the most vulnerable to it. The disease has a devastating impact on livelihoods, as it limits access to education and prevents individuals from being able to work or care for themselves or their families.

How many people are affected and where?

232 million at risk

An estimated 232 million people living in 51 countries across Africa, Asia, Central and South America, Australia, and the Middle East are at risk of trachoma, with 77% living in Africa.

More than 21 million people have active trachoma, with 2.2 million people visually impaired, out of whom 1.2 million are irreversibly blind. The majority of trachoma occurs in children, while women are almost twice as likely as men to develop trichiasis.

Can it be prevented and/or treated?

Trachoma is treatable and preventable with a multifaceted public health approach known as SAFE. The SAFE strategy comprises eyelid Surgery to correct trichiasis, Antibiotics[1] to clear infection, Facial cleanliness to prevent disease transmission, and Environmental improvement such as the construction and use of latrines. For maximum impact, it is essential that the full SAFE strategy be implemented in endemic communities. Even after trachoma is eliminated, surgery is necessary for people already affected with trichiasis.

1. Azithromycin (generously donated to many countries by Pfizer under the brand name Zithromax®), or tetracycline eye ointment.

What strategies are in place to achieve the WHO Roadmap target for trachoma?

The key approach employed is the SAFE strategy described above, which integrates a package of essential measures at an individual and community level. As well as helping to combat trachoma, this full strategy improves sanitation and health in general.

Did you know?

Trachoma – one of the oldest known infectious diseases – is the leading infectious cause of blindness worldwide

Read more about trachoma at **www.unitingtocombatntds.org**

Successful global trachoma mapping is enabling scale-up of sight-saving treatments

Strong partnership and amazing strides in mapping have sustained the momentum of global trachoma efforts, even in the face of various challenges encountered.

Disease mapping

The Global Trachoma Mapping Project (GTMP) aims to find out where trachoma is prevalent at levels indicating a public health problem, so that treatment can be focused where it is needed most.

2.0 million

assessed for trachoma in 23 countries

By the end of 2014, GTMP had examined 2 million people in 1,371 districts of 23 countries for trachoma. By the end of 2015, GTMP will have completed mapping all suspected trachoma-endemic districts worldwide where security is adequate to permit fieldwork to be undertaken safely. This enormous achievement will allow trachoma programs to dramatically scale up SAFE interventions to the level needed to reach the WHO Roadmap target.

Key challenges: The increased number of districts revealed as needing intervention by the new mapping data will necessarily place pressure on existing drug supplies and other implementation resources.

Full SAFE strategy

All targets for the provision of interventions under the S, A, and F components of the SAFE strategy were exceeded in 2013 by national trachoma programs in endemic countries. In 2014, program planning for large-scale full SAFE initiatives took place in 15 African countries, Pakistan, and throughout the Pacific.

Key challenges: 30% of endemic countries still need to implement SAFE to ensure that trachoma can be eliminated as a public health problem. Even in countries that have adopted SAFE, the F and E components of the strategy are currently not sufficiently funded and require stronger measurements of impact and progress.

Antibiotic treatment (the 'A' in SAFE)

54.7 million

received antibiotics in 2014

The number of known endemic districts needing mass drug administration (MDA) with antibiotics increased from 907 in 2013 to 1,429 in 2014. Of these, 596 were approved to receive donated Zithromax®, and 54.7 million people in 465 districts were reached, compared with 54.9 million people in 427 districts in 2013.

As the global program scales up, notable progress is also being made in areas already under treatment. In 2014, 128 districts conducted impact assessments. Of these, 77 (60%) achieved a decline of TF[2] among children aged 1-9 years of at least 50% from baseline. 47 districts (37%) achieved TF among children aged 1-9 years of less than 5%, meaning they no longer warrant antibiotic distribution. This represents a population of 12.6 million people living in areas no longer requiring MDA.

2. Trachomatous inflammation, follicular (TF): defined as the presence of five or more follicles of >0.5 mm on the inner surface of the upper eyelid.

Key challenges: In 2014, the primary challenges related to in-country capacity to deliver product, and availability of less Zithromax® than requested. Encouragingly, stakeholders pulled together to utilize available drugs in the most efficient way to maintain momentum.

Surgical treatment (the 'S' in SAFE)

An estimated 7.3 million people affected by trachoma suffer from painful trichiasis. Eyelid surgery reduces the risk of progression of visual impairment from trachoma, with 138,533 procedures carried out in 2014.

Surgery carried out in

43%

of endemic districts

In 2014, surgery was delivered in 43% of districts worldwide where trachoma-associated trichiasis was a public health problem. In 2015, the target is 50% of districts, and new tools for national program managers and health workers will help them reach this goal.

Key challenges: Moving forward, the surgical component of SAFE will need to focus on achieving quality and scale of surgery to address the global backlog of people waiting for the procedure.

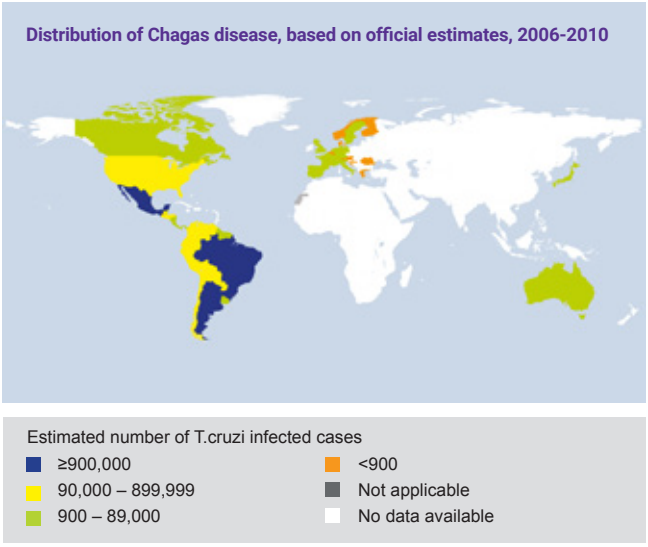
Priority for progress

- **Crucial further resources are needed to support the required treatment scale-up.**
- **Adoption of the SAFE strategy by the 30% of endemic countries yet to do so.**

CHAGAS DISEASE

WHO ROADMAP TARGETS

- by **2015**: transmission within the home via Chagas-carrying insects in Latin America, and through blood transfusions in Latin America, Europe and the Western Pacific, will have been interrupted
- by **2020**: infestations of Chagas-carrying insects in areas surrounding homes will have been eliminated in Latin America



Chagas disease is a parasitic infection often caused by contact with the feces of infected blood-sucking insects (called "kissing bugs") which infest people's homes. It is also known for the illness to be passed on by eating food contaminated by the insects, through blood transfusions or organ transplants, or to children at birth. After an often mild acute phase of a few weeks, with non-specific symptoms such as fever, body aches, rash, diarrhea, and vomiting, most people will go for a long time without showing any signs of the disease, and in many instances will be unaware they have the illness. An estimated 30-40% of infected people will eventually develop serious complications, including heart disease and enlargement of the colon and/or esophagus, which can incapacitate and quite frequently result in death.

How many people are affected and where?

It is estimated that 70 million individuals worldwide live in areas endemic for Chagas disease, the majority in rural parts of Latin America where poverty is widespread. Of the estimated 6 million believed to be infected, most live in the 21 endemic countries across Latin America.

Can it be prevented and/or treated?

Chagas disease can be prevented and treated. Control efforts focus on breaking the human-insect host cycle by treating people already infected and reducing contact with potentially infected insects. Although commercial and laboratory-based blood tests can be used to test for infection, screening is not routinely carried out. All endemic countries have access to anti-parasitic drug treatments (benznidazole and nifurtimox[1]) which are effective against the acute phase of infection, but are increasingly less so the longer a person has been infected. It is estimated that currently less than 1% of infected people are receiving treatment.

What strategies are in place to achieve the WHO Roadmap targets for Chagas disease?

1. **reducing transmission**, through control or elimination of Chagas-carrying insect infestations, including via communal and home environment improvements, organ and blood donation screening, and measures to control transmission at birth;
2. **providing integrated care**, through rapid diagnostic tests, and safe and effective anti-parasitic drug treatment for infected people; and
3. **strengthening the capacity of healthcare systems** to address all aspects of disease care, through standardized guidelines and protocols for the identification and treatment of both acute and chronic patients, as well as via information and surveillance systems geared to identifying, educating and monitoring patients.

1. Nifurtimox is generously donated by Bayer.

~70 million
people at risk globally

Did you know?

Chagas disease, which causes more deaths in Latin America than other major killers like malaria, is mainly spread by a household bug that bites people while they sleep

Read more about Chagas disease at **www.unitingtocombatntds.org**

Control efforts being bolstered by improved collaboration

The multipronged strategic approach to Chagas control has been effective in reducing disease transmission in many areas, but more concerted efforts are needed to improve diagnosis and treatment and to reach interruption of transmission targets. While measuring progress has been hampered by lack of available data and partner coordination, revised priorities for action formulated by Chagas disease experts in 2014 have resulted in increased collaboration among partners, which is reinvigorating control efforts in affected countries.

Interruption of transmission

Brazil, Chile, and the Central American countries have eliminated the main vehicle of transmission – household infestations of Chagas-carrying insects – through sustained control measures. This success has led all endemic countries in the region to step up efforts in this direction. Six Argentinean provinces have verified that transmission through home infestations has been interrupted, with corresponding advances made in the southern macro-region of Peru. All these endeavors have also directly resulted in a reduced incidence of the disease in children.

95%

of at-risk Latin American countries screen blood donations

20 out of the 21 endemic countries in Latin America also currently screen blood used for transfusions. Screening in the remaining country (Mexico) covers 80% of the national territory.

Various measures to control transmission at birth have also been adopted in several countries.

Treatment scale-up

20,000

treated in endemic countries in 2013

Increased coverage in anti-parasitic drug treatment for infected persons saw more than 20,000 people treated in Latin America in 2013. A new centralized drug distribution system for Latin America has been implemented in Panama with support from the Pan American Health Organization (PAHO). However, current treatments produce a high rate of side-effects in patients, with the long treatment periods involved (60-90 days) also making it difficult for drug donations to keep pace with demand. These factors are driving ongoing industry and academic research efforts to find safer and more effective drugs with improved tolerability.

Capacity strengthening of national health systems

Among the initiatives adopted to bolster the capacity of affected health systems to comprehensively address Chagas disease, some major recent highlights include:

- the establishment of a new WHO collaborating center in the Gran Chaco region, focused on providing Chagas-related training for healthcare professionals;
- the development of a global open-source information system for monitoring cases, transmission routes, and other key information for the control of Chagas disease;
- the launch of the BeatChagas website, a new online resource in support of the WHO Roadmap targets for Chagas;
- the website infochagas.org, launched by the Global Chagas Coalition as a repository of evidence, data and general information to support scaling up access to diagnostics and treatment; and
- the Chagas Clinical Research Platform (CCRP) web forum, bringing together more than 300 institutional representatives from over 22 countries in regular debate led by Ministries of Health, the WHO, the PAHO, the International Federation of People Affected by Chagas (FindeChagas), and medical organizations such as the Mundo Sano Foundation and Médecins Sans Frontières.

Priorities for progress:

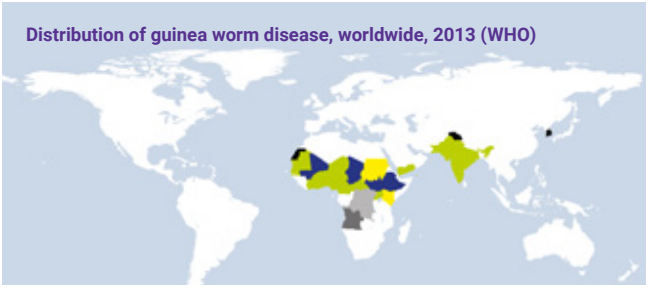
- **Urgent support to cover the additional resource requirement arising from the widely-endorsed 2014 revised priorities for combating Chagas disease.**
- **Assessment of the feasibility of scaling up access to diagnosis and treatment, through pilot projects in selected countries with diverse epidemiological profiles, to arrive at strategies replicable across different endemic areas whilst identifying the most appropriate context-specific delivery model.**
- **Improved partner coordination through a global Chagas disease network.**

GUINEA WORM DISEASE (GWD)

WHO ROADMAP TARGET

Global eradication by **2015***

*Revised to **2020**



- Countries currently endemic for dracunculiasis
- Countries at precertification stage
- Previously endemic countries certified free of dracunculiasis
- Not applicable
- Countries and territories not known to have dracunculiasis but yet to be certified
- Countries with a known or possible history of dracunculiasis endemic before 1980
- Other countries certified free of dracunculiasis

Guinea worm disease (GWD, or *dracunculiasis*) is an incapacitating parasitic illness caught by drinking from water containing water fleas infected with Guinea worm larvae. Once in the body, these larvae reproduce. Over 10-14 months, female larvae can grow to meter-long worms, which then begin to emerge from the skin through intensely painful blisters, usually on the legs or feet, accompanied by fever, nausea and vomiting. Once a worm has started to emerge, it must be carefully and completely removed over a period of weeks. Often, the wound caused develops a secondary infection, increasing the time it takes for an infected person to resume normal activities. Failure to remove the worm can result in additional bacterial infection, as well as infection of the whole body (*septicemia*) and permanent disability.

How many people are affected and where?

GWD affects poor communities in remote parts of sub-Saharan Africa, especially those that depend on stagnant surface water sources for drinking. Today, GWD is on the verge of being eradicated, with less than 130 cases reported in 2014 in only four countries: Chad, Ethiopia, Mali, and South Sudan.

Can it be prevented and/or treated?

There are no existing diagnostic tools to detect current or previous infection with GWD, but regularly filtering[1] and treating[2] drinking water potentially infested with water fleas are effective preventive measures. In addition, health education is used to encourage affected communities to adopt healthy drinking water practices. For people already infected with GWD, health professionals can help break the transmission cycle by ensuring that emerging worms are removed completely, safely, and do not contaminate drinking water sources with larvae.

1. Using finely-meshed cloth filters, generously donated by Vestergaard.
2. With ABATE® larvicide, generously donated by BASF Corporation.

What strategies are in place to achieve the WHO Roadmap target for GWD?

In 1980, the global campaign to eradicate GWD began at the US Centers for Disease Control (CDC). Since 1986, The Carter Center, in collaboration with the WHO, the CDC, and UNICEF, has assisted Ministries of Health to interrupt GWD transmission and coordinate efforts towards global eradication. The strategy of the global program focuses on:

- preventing infection by filtering and treating potentially contaminated drinking water;
- surveillance to detect all cases within 24 hours of worm emergence and to contain cases; and
- maintaining political commitment to reach zero cases of new infection.

Did you know?

Guinea worm is set to become the second human disease in history – after smallpox – to be eradicated, and the first to be so without the use of vaccines or medicine

Read more about GWD at **www.unitingtocombatntds.org**

With global eradication now targeted for 2020, sustaining engagement is key to securing gains made

In the three decades since the GWD global program commenced, its tremendously successful integrated strategy of prevention and surveillance has brought the disease to the brink of becoming the second human disease ever to be eradicated worldwide. Sustained commitment and impetus in the remaining endemic areas will be key in the final push required to reach that target.

Effective prevention and surveillance

126 cases in 2014

≈99.99% drop worldwide since 1986

In the 1980s, 21 countries in Africa, the Eastern Mediterranean, and South-East Asia were endemic.

From the estimated 3.5 million cases registered at the start of the global eradication program in 1986, as few as 126 cases of GWD – the lowest number ever – were reported in 2014 in the four remaining endemic countries: Chad, Ethiopia, Mali, and South Sudan. This represents a staggering 99.99% decrease between 1986-2014. These cases are being carefully managed to prevent contamination of drinking sources, and active surveillance in nearly 7,000 villages in endemic areas in these four countries is ongoing to ensure that any new cases are immediately detected, contained, and treated. As part of the surveillance strategy, a monetary reward scheme has been instituted to encourage people to come forward and report that they have GWD, and awareness of this incentive remains high in endemic countries (83-98%).

~80 million GWD cases averted globally since 1986

Since global eradication efforts were begun in earnest in 1986, it is estimated that the highly effective filtering and treatment of drinking water in endemic areas, as well as the provision of health information to at-risk communities, has prevented an estimated 80 million individuals from becoming infected with devastating GWD.

198 countries certified by WHO as GWD-free

In January 2015, Ghana became the latest country confirmed as having eradicated Guinea worm disease. To date, 15 formerly endemic countries and 183 other countries and territories have been certified by WHO as free of the disease. 2 of 4 formerly endemic African countries, Kenya and Sudan, are in the pre-certification phase, while two others which have had no recent history of the disease – Angola and the Democratic Republic of the Congo – remain uncertified.

Key challenges: Although 13 of the past 14 years have been marked by an annual decrease in the number of reported cases of GWD, the original WHO Roadmap target of global eradication by 2015 will not be met and has been revised to 2020. In this regard, although community and political commitment in some affected countries, such as South Sudan, have enabled major reductions in the face of immense challenges, political insecurity in other endemic areas has impeded the health worker access needed to ensure prompt detection and containment of GWD cases. Inconsistent local community and political engagement has also hampered efforts. In Chad, potentially sustained infection among domestic dogs could additionally pose a further threat to eradication.

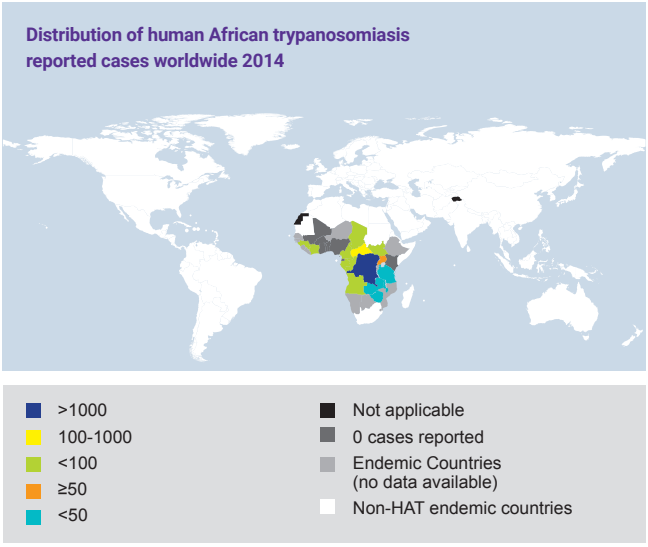
Priorities for progress:

- **Filling the funding gap generated by the extension from 2015 to 2020 to achieve the global eradication target.**
- **Sustained political commitment at all levels in the remaining endemic pockets of Chad, Ethiopia, Mali, and South Sudan will be crucial to reaching the eradication target.**
- **National programs will need to remain vigilant for opportunities to access areas of insecurity in order to locate, contain, and report any cases of GWD.**
- **Further research is required into other potential routes of transmission of the disease.**

HUMAN AFRICAN TRYPANOSOMIASIS (HAT)

WHO ROADMAP TARGETS

- by **2015**: country elimination in 80% of foci
- by **2020**: global elimination as a public health problem



Human African trypanosomiasis (HAT, or sleeping sickness) is caused by infection with parasites transmitted to humans through the bites of infected tsetse flies. The disease manifests in two forms: chronic infection with *Trypanosoma brucei gambiense* (g-HAT) progressing over several years, and acute infection with *Trypanosoma brucei rhodesiense* (r-HAT) progressing over weeks or months. In the first stage the parasites multiply in the body causing fever, headaches, joint pain, and itching. In the second stage, the parasites invade the central nervous system and brain, leading to behavioral changes, confusion, poor coordination, and sensory as well as sleep disturbances (giving the name sleeping sickness). Without diagnosis and treatment, HAT is nearly universally fatal in humans.

How many people are affected and where?

HAT affects 36 countries, mainly in poor rural areas of sub-Saharan Africa. The 7 highest-burden account for 97% of all reported cases. g-HAT occurs in West and Central Africa, with about 98% of the total detected cases, while r-HAT occurs in East Africa. The number of persons affected has been steadily reducing since 1998 due to a comprehensive treatment access program led by the WHO. Twenty-one million people live in areas classified as moderate- to very high-risk, where more than one case per 10,000 inhabitants a year is reported.

Can it be prevented and/or treated?

Early diagnosis can help prevent the disease progressing to the neurological stage. The type of drug treatment administered depends on the form and stage of the disease as follows:

- g-HAT: pentamidine isethionate for the first stage, and a recently-developed nifurtimox-eflornithine combination therapy (NECT) for the second stage;[1] and
- r-HAT: suramin for first-stage patients without evidence of neurological infection, and melarsoprol for the second stage.[2]

Even after treatment, patients require follow-up for up to 2 years to detect any potential relapse.

What strategies are in place to achieve the WHO Roadmap targets for HAT?

Screening for new infections in g-HAT is essential due to the long asymptomatic period, carried out both through active case detection by specialized teams in the villages of at-risk populations, as well as on-demand at health clinics. All cases found are treated with the appropriate donated drugs. Measures to reduce the disease-carrying tsetse fly population, as well as the control of HAT-carrying animals (for r-HAT), are also important components of the strategy.

1. Generously donated as follows: nifurtimox by Bayer, and pentamidine isethionate and eflornithine by Sanofi.
2. Generously donated as follows: suramin by Bayer, and melarsoprol by Sanofi.

21 million

people living in highest risk areas

Did you know?

Another form of trypanosomiasis – found mainly in Latin America – is known as Chagas disease, an NTD also covered by the London Declaration

Read more about HAT at **www.unitingtocombatntds.org**

More robust control and surveillance efforts produce record reduction in cases

Progress over the past decade in reducing the global burden, advances in new tool development, sustained levels of partner commitment, and increased global coordination, have all made the elimination of g-HAT as a public health problem by 2020 a realistic prospect. Nevertheless, a number of challenges will need to be addressed to ensure that progress towards the WHO Roadmap targets remains on track.

Interruption of transmission

~40% drop

in new reported cases from 2013-14

In 2014, the number of new cases of HAT reported to the WHO dropped significantly to 3,796 (down from 6,314 in 2013), reaching the lowest level in 75 years. The target for 2020 is fewer than 2,000 detected cases (and elimination in 95% of known high-infection areas), the marked reduction in 2014 represents reassuring progress towards achieving this.

Reduction in new cases in 2014 marks

75 year low

in HAT transmission

Crucial to this success has been the support of mobile health units in endemic countries, improved surveillance (through strengthened clinics), movement of populations from rural areas to urban outskirts less at risk, and investment in better community-level management of patient-reported cases.

Key challenges: As HAT is endemic in remote areas with weak health infrastructure, there is evidence that not all cases are found. To ensure more effective interruption of transmission, national programs will therefore need to improve active case-finding and optimize case detection in clinics in an effort to detect all cases of HAT. Endemic countries must also take ownership of programs while engaging meaningfully with partners.

Advances in diagnostics, treatment, and news tools development

In 2013, the WHO Expert Committee on HAT control and surveillance reviewed current disease patterns, new diagnostic approaches, and treatments that will invigorate elimination efforts moving forward. One is a new oral drug currently in pivotal Phase II/III trials, which would decentralize and simplify treatment of the disease in both stages of the disease. Additionally, incorporation of HAT rapid diagnostic tests into new "light" mobile motorcycle-based teams has been demonstrated at scale, and has shown better value-for-money and increased coverage per unit time in the Democratic Republic of the Congo (DRC).

A recent major advance in the spatial analysis of the disease through the HAT Atlas and efforts to improve data access and projections in DRC will also be essential for endemic countries as they prepare and implement strategies for elimination.

New drug in Phase

II/III trials

Key challenges: Pending development of new drugs, the diverse treatments currently used for the different forms and stages of disease are complex, making it difficult to integrate vertical HAT programs into health systems. National programs also still require support to identify and treat remaining cases to guarantee reaching the 2020 elimination target.

Multi-stakeholder coordination

In 2014, the WHO convened its first meeting of stakeholders on the elimination of g-HAT. This meeting resulted in the formation of a WHO led network of endemic countries, private companies, international organizations, and donors, developing new tools to combat HAT aimed at ensuring a coordinated, strengthened and sustained efforts to eliminate g-HAT. This coalition will be critical to maintaining the political support needed to secure vital medium-term funding, not only for program implementation, but also for tool development and operational research.

Key challenges: With a declining disease burden, it will be crucial in the near future to sustain country vigilance and donor support, as well as maintained community awareness, in the face of the potential for donor fatigue and community apathy as witnessed in other disease elimination/ eradication programs.

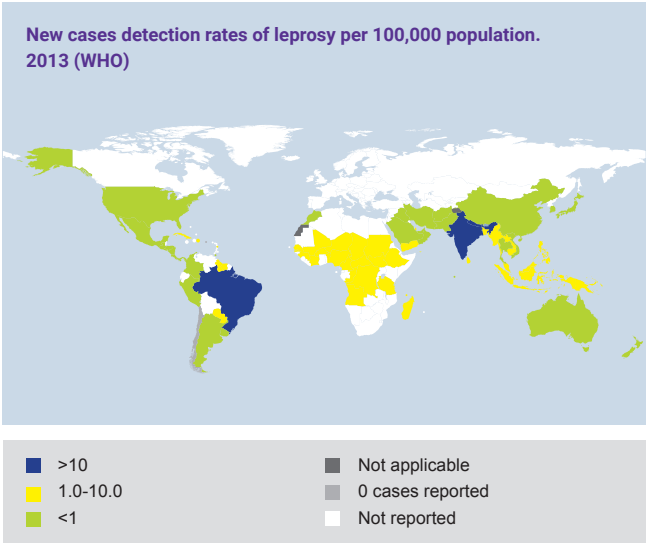
Priorities for progress:

- **Donor engagement to guarantee adequate impact of case detection and treatment activities.**
- **Development of new drugs that are safer, affordable, less complex to administer, and active against both forms of the disease.**
- **Development of well-defined measureable targets and milestones for monitoring progress in program support, incorporating new tools.**

LEPROSY

WHO ROADMAP TARGET

Global elimination as a public health problem by **2020**



Leprosy (or Hansen's disease) is a chronic infectious disease caused by bacteria mainly spread through droplets from the nose and mouth of persons suffering from untreated leprosy (produced, for instance, when they sneeze or cough). The disease, which can have a long incubation period, causes disfiguring lesions on the skin and nerve damage. The first stage of leprosy leads to loss of sensation and muscle weakness in facial muscles, hands and feet (Grade 1 disability). If the disease is not detected and treated, it progresses to a second stage that causes observable and permanent impairments, such as loss and/or shortening of fingers or toes, and vision loss (Grade 2 disability). Leprosy is most common in areas of poverty, where overcrowding and poor nutrition make people more vulnerable to infection, and where it continues to be a major source of disability and social exclusion for persons affected and their families. The consequences of leprosy often persist beyond completion of treatment.

How many people are affected and where?

Leprosy is endemic in around 130 countries, primarily in Asia, Africa and South America, but also in the Middle East and the Western Pacific.

<215,700

new reported cases worldwide in 2013

At the end of 2013, 180,618 cases of leprosy were still registered for treatment out of the 215,656 new cases reported globally during the year.[1] The remainder had already completed treatment. India reported the majority (60%), followed by Brazil and Indonesia.

Can it be prevented and/or treated?

There is no vaccine for the disease, but with early diagnosis and treatment, including detection and treatment of leprosy reactions and nerve damage, the condition is curable and disability preventable. People infected with the disease are treated with multidrug therapy (MDT) using a combination of antibiotics[2] for a period of 6 or 12 months, depending on the type of leprosy. MDT shortens the length of a person's infectious phase. After a few days of treatment, patients no longer spread the disease to others in their community.

What strategies are in place to achieve the WHO Roadmap target for leprosy?

The WHO recommends that all endemic countries employ two key strategies to reach the WHO 2020 target: early detection of cases, and the provision of timely MDT treatment to prevent nerve damage and irreversible disfigurement.

Did you know?

Leprosy – a disease first mentioned in writings dating back to 600 BC – was considered incurable until the 1940s when drugs were developed to treat it, even though the bacterial cause was discovered in 1873

Read more about leprosy at **www.unitingtocombatntds.org**

1. The fact that the number of new cases reported in a given year exceeds the corresponding figure for prevalence of the disease in that year should not be taken as an indication that prevalence of leprosy is on the rise. The prevalence reflects only those patients still on treatment at the end of the year, and does not include those who have already completed treatment by that time.

2. This consists of doses of dapsone and rifampicin, with or without clofazimine, all generously donated by Novartis through the WHO.

With elimination in reach, focus must shift to improved early detection and post-exposure prevention

While successes in reducing new case numbers and pioneering work on combating social stigma represent significant advances, lower than anticipated reductions in the share of new cases with Grade 2 disability – an indicator of delay in case detection – point to further scope for strategic improvements.

Stopping disease transmission

100%
take-up
of WHO-endorsed strategies

The adoption of the WHO-recommended strategies (early detection and MDT) by all endemic countries has led to an appreciable decline in the annual number of new cases in the five years to 2013, down from 244,796 in 2009.

~12% drop
in new cases (2009-13)

A promising new preventive innovation[3] has been shown to reduce the risk of contracting the disease by 50-60% when administered to people who are in close contact with untreated cases of leprosy. Pilot studies in Indonesia have successfully used this preventive measure under routine program conditions, and it is now being introduced in a further 5 endemic countries.

Key challenges: Despite the decreasing trend in the annual number of new cases, the rate of new cases with Grade 2 disability in 2013 was 1.86 per million, representing a decrease of only 3.6% since 2010. At this current rate of decline, endemic countries will not meet the desired milestone of a 35% reduction in Grade 2 disability in new cases per million people by 2015, nor will the global milestone of a reduction of Grade 2 disability cases to less than 1 new case per million people by 2020 be achieved. Efforts are therefore needed to improve early case detection and prompt treatment in all endemic countries.

3. Consisting of a single post-exposure preventive dose of the antibiotic drug rifampicin, purchased by respective government leprosy programs.

Combating social stigma

32%
of top at-risk countries
support organizations of affected persons

8 of the top 25 endemic countries have established and support organizations for people affected by leprosy and their families, with demonstrable evidence that people are accessing their services. These organizations help leprosy patients overcome the stigma associated with the disease that often severely affects patients' mental health, causes social exclusion of affected persons and their families, as well as posing a real barrier to case detection and adherence to treatment.

In Indonesia, new ways of tackling social exclusion have been successfully trialed and have shown that, by targeting stigma strategically, a measurable reduction in the level of community stigma was achievable within a two-year period. These programs have adopted successful participatory approaches that seek to actively involve persons affected by leprosy and their families, and include counseling, contact-based community awareness-raising activities, as well as business training and facilitated microfinance aimed at socio-economic empowerment.

Key Challenges: Despite some success at breaking down leprosy stigma, greater strategic focus is needed to overcome the devastating social exclusion often resulting from prejudices surrounding the disease. In endemic countries, increased political commitment to promote social inclusion measures is required. Civil society efforts that can help prevent leprosy-associated disabilities as well as provide support to people living with such disabilities will also be critical. The organization of self-care groups for leprosy patients is one way of assisting people to manage and prevent further impairments, especially to existing Grade 2 disabilities.

Priorities for progress:

There is an urgent need for:

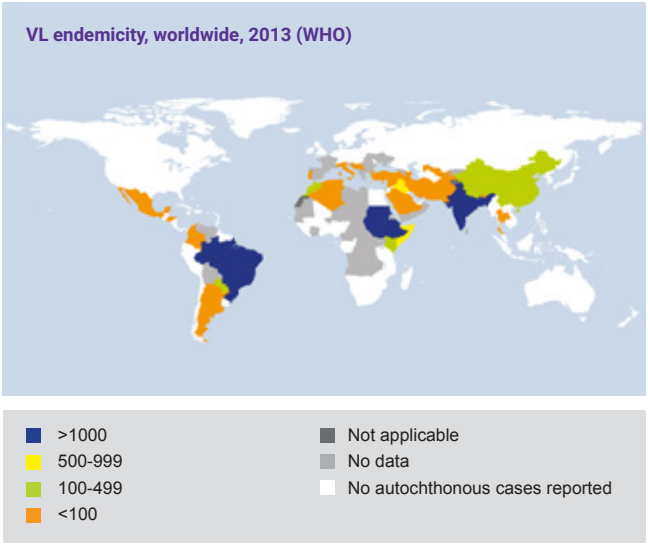
- **a more field-friendly diagnostic test for leprosy. Research focused on developing such tests will help answer many crucial remaining questions regarding the transmission of leprosy;**
- **wide application of existing techniques to prevent disabilities, in combination, where possible, with other NTDs and conditions causing wounds and nerve damage (such as diabetes); and**
- **strategically targeted political and civil society efforts to combat leprosy-associated stigma, so as to remove this major obstacle to early detection and timely treatment.**

VISCERAL LEISHMANIASIS (VL)

WHO ROADMAP TARGETS

By **2020**:

- elimination as a public health problem in South-East Asia
- significant reduction in associated morbidity and mortality in other endemic regions



Visceral leishmaniasis (VL, or kala-azar) caused by infection with leishmania parasites through bites of infected sandflies that breed in and around homes or farms. If VL progresses, it attacks the immune system and affects the bone marrow and internal organs (including enlargement and impaired function of the spleen and liver), as well as causing irregular bouts of fever, substantial weight loss, and anemia. Left untreated, VL can have a fatality rate as high as 100% within 2 years. The disease is linked to poverty and environmental changes.

How many people are affected and where?

310
million at risk
in the 6 most heavily-affected countries

VL is endemic in 76 tropical countries in South-East Asia, East Africa and Latin America. More than 90% of VL cases occur in Bangladesh, Brazil, Ethiopia, India, South Sudan and Sudan, where 310 million people are vulnerable to infection with the disease. In the past twenty years, the number of reported cases has increased significantly, and today around 300,000 new cases are reckoned to occur each year. The estimated global number of deaths from VL ranges from 20,000 to 50,000 annually.

Can it be prevented and/or treated?

In many endemic areas, prevention measures aim at reducing or interrupting transmission by controlling sandflies, such as spraying homes with insecticides. For individuals already infected, early diagnosis and effective case management help prevent disabilities and death. Treatment options vary in their effectiveness and side effects. In Asia, a single intravenous dose of AmBisome®[1] is increasingly the first line of treatment. In East Africa, treatment is with a combination of compounds and antibiotics (pentavalent antimonials and paromomycin) given in a series of painful injections.

What strategies are in place to achieve the WHO Roadmap targets for VL?

A combination of strategies are needed including:

- **early diagnosis and effective case management** to reduce the prevalence of the disease and prevent disabilities and death;
- **control methods** such as insecticide spray to reduce or interrupt transmission by sandflies, and locally-tailored measures to control animals that are host carriers of VL;
- **disease surveillance** to ensure early detection and treatment, and monitor the spread and burden of the disease; and
- **community mobilization and education** to change risk behaviors.

1. Generously donated by Gilead.

Did you know?

Traces of VL, a disease mainly spread through bites from tiny sandflies about a third the size of typical mosquitoes, have been found in 4,000-year-old Egyptian mummies

Read more about VL at **www.unitingtocombatntds.org**

Recent multi-country MoU is reenergizing elimination efforts in South-East Asia

In working towards the elimination target in South-East Asia, countries are harnessing new financial resources and drug donations to build their health systems' capacity to provide treatment and manage cases, as well as to carry out preventive measures such as sandfly control.

Integrated infection reduction measures: South-East Asia

Reported cases

59% down

across 3 highest-burden countries (2011-2013)

In the 3-year period from 2011 to 2013, significant progress was made in reducing the numbers of infections in Bangladesh, India and Nepal, the three countries that account for the majority of VL cases worldwide. The number of reported cases declined from 38,007 in 2011 to 15,609 in 2013 as a result of improved case detection, health systems more equipped to treat VL patients, better access to medicines, enhanced disease surveillance, and targeted spraying to control sandflies. A renewed Memorandum of Understanding (signed in 2014)[2] between these three and other countries in South-East Asia, together with new drug donations and funding from the UK government, are helping to reinvigorate efforts towards achieving the WHO Roadmap target of regional elimination by 2020.

Key Challenges: Several challenges remain, such as the need to address sandfly resistance to the insecticide DDT, scale up preventive screening and patient testing, increase community awareness, prevent treatment delays, and ensure political commitment is sustained.

2. The MoU signatories are Bangladesh, Bhutan, India, Nepal, and Thailand.

Surveillance and control efforts: East Africa and Latin America

5 countries in East Africa now monitoring for VL

Most endemic countries in East Africa have revised their national treatment guidelines and initiated combination drug therapy that has reduced the length and cost of – as well as improved patient adherence to – treatment. Five East African nations – Ethiopia, Kenya, South Sudan, Sudan, and Uganda – have also adopted ongoing surveillance to ensure all cases of infection are detected and treated.

In Latin America,

82% of endemic countries

supplying updated disease stats

11 countries in Latin America are endemic for VL, 9 of which are now providing up-to-date information on the proportion and distribution of the population infected, together with the rate of new cases in their countries. This data will be invaluable in guiding future VL control efforts in the region.

Key Challenges: Despite the widely different factors at play in East Africa and Latin America, efforts to control VL in both these regions face remarkably similar challenges. Although there have been some successes in East Africa, overall, the number of VL cases in both this region and Latin America is not significantly decreasing.

In East Africa, poor socio-economic conditions, malnutrition, combined infection with other diseases, and continued conflicts and population displacements are hampering endeavors to combat the disease. In Brazil, the Latin American country most affected by VL, domestic dogs are the major host carriers and control efforts to date have failed to substantially reduce the number of new cases, which continues to rise in urban areas. In each of the two regions, these context-specific factors are being further compounded by the lower efficacy of existing therapeutics, inefficient sandfly control measures, and poor diagnostics.

Priorities for progress

- **In South-East Asia, top-level political momentum, early case detection, improved access to diagnosis, prompt and effective treatment services, efficacious sandfly control, together with crucial financial and medical resource levels, must all be sustained. Capacity in Bangladesh, India, and Nepal for improved surveillance and response will also need bolstering.**
- **In East Africa and Latin America, scale-up of diagnostic and treatment services, increased capacity to improve access, uninterrupted supply of medicines, strengthened early case detection, and epidemic preparedness and response capacity, along with support for research into improved knowledge and tools for controlling VL transmission vehicles and into enhanced diagnostics and therapeutics, are all required.**

INNOVATIVE PROGRAM COLLABORATION

The Global Trachoma Mapping Project (GTMP)

THE LARGEST INFECTIOUS DISEASE MAPPING EXERCISE IN HISTORY

The aim of GTMP is to accurately map the prevalence of trachoma, the world's leading infectious cause of blindness. In under two and a half years, GTMP partners have worked with 23 ministries of health,[1] using population based survey methods to capture evidence of disease prevalence covering a suspected endemic population of 212 million people.

Over 2.2 million people have been examined by internationally standardized, GTMP-certified ophthalmic health workers using World Health Organization (WHO) grading standards; results have been instantly captured using Android smartphone technology; the data cleaned, quality assured and automatically analyzed; then reviewed and approved by ministries of health using a secure web-based portal. In total, GTMP has trained over 1,221 people, representing approximately 500 mapping teams. These teams have demonstrated incredible stamina and dedication, often working in extreme conditions in remote and geographically hostile environments. We anticipate that by the end of 2015, this significant global endeavor will result in 27 additional countries being able and ready to establish evidence-based trachoma action plans to eliminate the disease using the WHO-recommended SAFE strategy.

2.2M people examined to date: an average of 2,400 people per day or roughly one person per minute over GTMP's mapping life span.

GTMP has exceeded all expectations. Over the lifetime of the project 1,494 health districts have been mapped, leaving approximately 100[2] accessible, suspected-endemic health districts still to be mapped in 2015. The GTMP population based survey methods have been recognized by WHO and the International Trachoma Initiative (ITI) as gold standard epidemiological surveys for trachoma. Ministries of health use GTMP trachoma

baseline data to apply for donations of the antibiotic Zithromax® from Pfizer.

The scale and reach of GTMP has been accomplished because of a collective will to succeed shared amongst 48 collaborative partners[3] (including international non-governmental organizations, regional health bureaus and ministries of health). This monumental and successful project to determine the global public health requirement for trachoma elimination has been made possible by funding and support from both the U.K. government's Department for International Development (DFID)[4] and the U.S. government's Agency for International Development (USAID),[5] who have together contributed approximately £17 million.

GTMP has changed the game for trachoma elimination, providing a clear blueprint for elimination activity and aligning the complex network of stakeholders needed to reach that goal within a newly energized Alliance. There is now no doubt that if sufficient resources can be made available to national programs, GET2020 is achievable.

1. 23 ministries of health include: Benin, Cambodia, Chad, Cote d'Ivoire, DRC, Egypt, Eritrea, Ethiopia, Fiji, Guinea, Laos, Malawi, Mozambique, Nigeria, Senegal, Solomon Islands, Sudan, Tanzania, Uganda, Vanuatu, Zambia, Zimbabwe, Yemen. (In addition ministries of health in Cameroon and Nepal conducted baseline mapping projects during the life of GTMP without the use of GTMP methods.)
2. Please note countries such as Brazil, China and India that have internal government funds to support the mapping of trachoma in suspected endemic districts have not been included in this figure, nor have those districts where trachoma is suspected to be endemic but significant security concerns restrict the ability of GTMP and its partners to operate.
3. INGOs include: AMREF, BICO, The Carter Center, Fred Hollows Foundation, FHI 360, Helen Keller International, International Coalition for Trachoma Control, International Trachoma Initiative (The Task Force for Global Health), Johns Hopkins University, Kilimanjaro Centre for Community Ophthalmology International, Light for the World (Austria), Light for the World (Netherlands), London School of Hygiene & Tropical Medicine, Magrabi Foundation, Mitosath, ORBIS, Organisation for the Prevention of Blindness (OPC), Organizacion Panamericana de la Salud (PAHO), RTI, Sightsavers and the World Health Organization. Regional Health Bureaus include: Amhara, Somali, Tigray and Southern Nations Nationalities and Peoples Regional Health Bereaus, all in Ethiopia. 23 ministries of health are listed in footnote 1 above.
4. DFID provided the original grant for GTMP (£10.6 million)
5. USAID funded GTMP by approximately £0.6 million through the Envision grant managed by RTI, in addition to directly funding RTI and FHI 360 by approximately £6 million to conduct trachoma baseline projects (the majority of the surveys used GTMP methods and systems).

INCREASED COLLABORATION ON TRACKING STH SHOWS PROMISE ON PROGRESS

Soil-transmitted helminthiases (STH) infect over one billion people globally and are related to a high public health burden. WHO recommends the use of preventive chemotherapy (PCT) of high risk groups to control STH-related morbidities. Preschool-age children (pre-SAC) are an important target group for STH control with PCT in the WHO strategic plan on 'Eliminating Soil-Transmitted Helminthiases as a Public Health Problem in Children.' This plan defines the future global pre-SAC and school-age coverage targets of 40% by 2013, 50% by 2015 and 75% by 2020.

WHO tracks progress to global coverage targets through its Preventative Chemotherapy and Transmission Control databank that combines coverage information from numerous partners and delivery mechanisms. According to this databank, global pre-SAC PCT coverage progressively declined from 37% in 2010 to 31% in 2011 and 25% in 2012. Initial coverage estimates for 2013 indicated that 24% of children requiring PCT for STH were reached. WHO and its partners recognize that not all countries requiring preventative chemotherapy for STH reported data to the databank. In particular, data from Child Health Days, which are biannual events delivering a package of child health interventions to pre-SAC, appeared to be incompletely captured. In these events, vitamin A supplementation and deworming are among the most common interventions.

To address the reporting gap for deworming delivered through Child Health Days, UNICEF launched a global reporting exercise linked to UNICEF's well established reporting system for global vitamin A coverage. The deworming coverage data obtained through this reporting mechanism was subsequently checked to avoid double counting and then merged with 2013 data already reported in the PCT databank.

With this additional data, the global 2013 pre-SAC reported coverage increased from 24% to 49%, thus surpassing the 2013 coverage milestone and showing that the coverage target for 2015 (50%) is achievable. Additional data from 8 countries are presently under evaluation, and the global coverage may therefore further increase. South-East Asia exhibited the highest regional pre-SAC PCT coverage in 2013 with 60%, followed by Africa (49%) and East Mediterranean (37%). Pre-SAC PCT coverage in Europe (12%) was the lowest. Coverage data are available from 80% of total pre-SAC population; however, there are still 57 countries where PCT is recommended but where no coverage data are reported. Given that Child Health Days (CHDs) delivered nearly half of all pre-SAC treatments in 2013, the strategic importance of this delivery mechanism for reaching this age group is clear. UNICEF plans to repeat and further extend the PCT coverage reporting for CHDs in subsequent years. With its partners, UNICEF also continues its support to governments to strengthen drug procurement and supply management, improve data systems, and reach the underserved. With the phase out of national poliomyelitis immunization days, efforts to institutionalize CHDs will require particular attention to maintain and further expand global pre-SAC PCT coverage levels.

This work was supported by grants from the Gates Foundation and the Canadian Department of Foreign Aid, Trade and Development.

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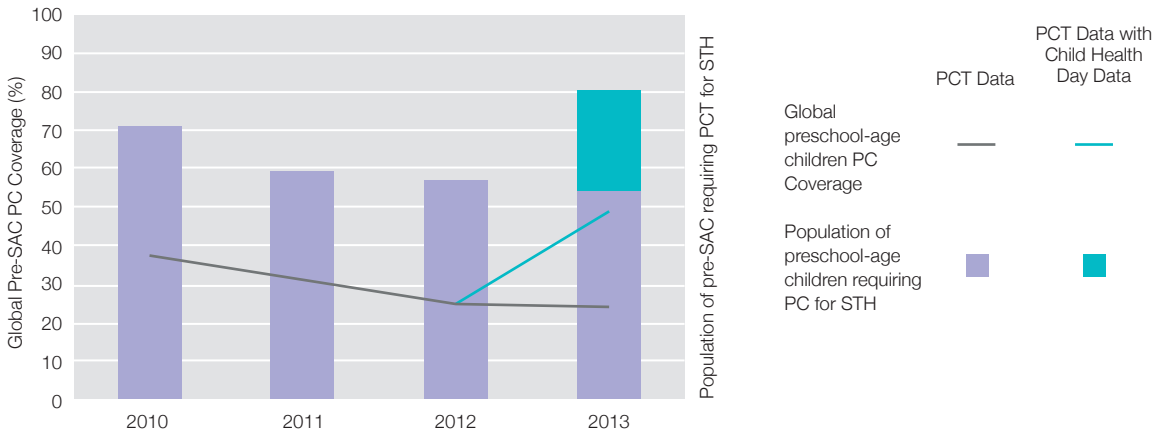
Figure 1: Global coverage of preventive chemotherapy among preschool-age children for soil-transmitted helminthiases and population covered in global preventive chemotherapy and transmission control databank, 2010-2013



Unprecedented collaboration by Non-Governmental Development Organizations (NGDOs) in the fight against NTDs

NGDOs support global and national NTDs programs by catalyzing action towards national ownership; connecting formal health systems with communities; undertaking and disseminating research; building technical capacity; brokering relationships across sectors; and supporting effective program delivery models at the community level that can be scaled up.

The Neglected Tropical Disease NGDO Network (NNN) is a forum for non-governmental development organizations (NGDOs) working to control or eliminate NTDs at the community level. The forum provided by NNN promotes coordination and collaboration for successful implementation of all the NTDs' activities.

Scale-up of MDA campaigns is vital to achieving elimination and control targets. Just as important is prevention (e.g., provision of water and sanitation facilities and hygiene education) to break the cycle of transmission. Equally important is morbidity management to mitigate the consequences of diseases that affect the poorest of the poor.

Recognizing that treatment, prevention, and morbidity management are all core components of successful NTD programs, NGDO members established the following cross-cutting working groups at the 2014 NNN annual meeting, where a record number of 70 organizations came together and as result, set up the following groups:

- **Morbidity management and disability** Working Group. This working group will collaborate with WHO on preparing comprehensive guidance on these issues and how to incorporate them as part of overall program strategies.
- **Water, Sanitation, and Hygiene (WASH)** Working Group. This working group will promote the inclusion of WASH activities in NTD programs and advocate to policy makers, planners and funding partners, the importance and impact of WASH on NTD outcomes.

At the 2015 annual meeting in September, the NNN will consider additional crosscutting issues: identifying strategies for effective vector control and measuring the impact of elimination and control of NTDs on the Sustainable Development Goals.

Morbidity Management and Disability: Ensuring no one is left behind

New tools are now available to ensure that those who suffer from the effects of NTDs can be reached with compassionate care. Millions of people live with the physical, psychological and social implications of Neglected Tropical Diseases and for many, disability is an everyday reality. Morbidity management and disability (MMD) interventions can have a clear and often immediate impact on the lives of the people affected by these diseases of poverty.

A central pillar of the post-2015 discussions has been the call to "leave no one behind". This means that **no international target or goal, including those linked to NTDs, can be considered met unless it is met for all social groups, including people with disabilities**. NTD programs are a way to translate the leave no one behind principle into practice.

Global collaborative efforts to eliminate NTDs have had a strong focus on preventive chemotherapy through mass drug administration. From the perspective of a person affected by NTDs however, a comprehensive response does not merely mean the absence of disease but functional recovery that allows a person to perform their everyday activities and ensures they can participate fully in their community. Effective NTD management of MMD preserves vision, promotes mobility and empowers, while assuring health, education, work, community life, water and sanitation are available and accessible.

Scaling up interventions for NTD-related morbidity and disability will reduce the burden of many NTDs and fill critical gaps in disease management.

For the NTD community, the outcome of the post-2015 dialogues on what will replace the MDGs when they expire is critical. The NTD community hopes not only to see NTDs recognized as a health and development priority alongside other infectious diseases, but also to see increased recognition of disability within a new framework.

An empowering approach

American Leprosy Mission developed a teaching guide and summary cards to address 10 cross-cutting issues common to many NTDs and other health conditions. The updated version is expected to be available in September 2015 and can be found at www.leprosy.org. Some module topics covered include: suspecting and treating disease and health conditions early; practicing good personal and household cleanliness, using footwear, caring for eyes, care to prevent movement limitations and adequate management of edema and wounds. As basic care at the community level is strikingly similar across diseases, these modules will enable people affected, communities and health workers to identify and address common problems early, know when and where to refer, and understand how to monitor results. It encourages ownership and a person-centered, problem-based approach to learning where the trainer/facilitator becomes a "coach".

NTDS AND WASH: INNOVATING TOGETHER

Primary prevention for the control of NTDs relies heavily on improved water, sanitation, and hygiene (WASH). There are numerous NTD transmission routes that can be interrupted with improved WASH. In addition to preventing disease, improved WASH is vital to NTD-related wound and morbidity management and disability prevention.

To date, NTD control initiatives have relied predominantly on mass drug administration (MDA). While MDA includes the treatment of disease, as well as delivery of drugs as preventive chemotherapy (PCT), studies have shown continued re-infection post-PCT where WASH interventions are not part of the strategy.[1]

Water, sanitation and hygiene (WASH) play a critical role in the prevention of and care for 5 of the 10 London Declaration NTDs. While the evidence base of which WASH improvements most efficiently leverage the most effective and sustainable NTD control or elimination, there are multiple areas ripe for informed, active collaboration:

- developing in-country connections in nations with both a strong capacity for MDA and explicit commitments to universal access to water and sanitation;
- creating effective ways for the NTD and WASH sectors to exchange information, and harmonize and amplify behavior-changing messages;
- sharing and/or coordinating mapping and data collection, given both the common geographic and demographic targets, and goal of disease-free communities;
- informing the bi-lateral gaps, barriers, and technical obstacles to NTD and WASH partnering efforts; and
- examining cross-cutting opportunities such as fully integrating the school-based platform of NTD MDA, WASH, and nutrition interventions, which could lead to high-impact health benefits, increased donor commitment, and service-delivery efficiency and cost-effectiveness.

We welcome the new WHO strategy (see box this page), which can only serve to strengthen the collaboration between the NTD and WASH sectors, towards the common goal of meeting the WHO Roadmap targets for NTDs.

1. Jia T-W, Melville S, Utzinger J, King CH, Zhou X-N (2012) Soil-transmitted helminth reinfection after drug treatment: A systematic review and meta-analysis. PLoS Negl Trop Dis 6: e1621. doi: 10.1371/journal.pntd.0001621

A new WHO effort – collaboration on water, sanitation, hygiene and NTDs

A new strategy has been developed to guide national programs and partners in implementing NTD programs, in collaboration with water, sanitation and hygiene (WASH). WASH plays a critical role in the prevention of, and care of 16 of the 17 neglected tropical diseases (NTDs), scheduled for intensified control or elimination by 2020. However, how these important complementary health interventions are implemented, need to be defined to ensure maximum impact.

The vision of the new strategy is *accelerated and sustained achievement of the NTD roadmap targets, particularly among the poorest and most vulnerable, through better-targeted WASH and NTDs efforts*. The strategy informs WHO's actions and those of endemic countries and partners, aiming for *mutual reference and embedding of WASH and NTDs aspects in sector plans and programs, with full integration of programs where appropriate*. It includes four strategic objectives, enhanced awareness and experience sharing, monitoring, increasing evidence for improved practice, and joint planning and delivery.

Collaboration between WASH and NTDs stakeholders is essential to meet many of the NTD roadmap targets, and offers important co-benefits to both communities. Opportunities for joint work include; the development of comprehensive disease control plans, improving the targeting and effectiveness of WASH interventions for disease-control purposes, and improving the quality of facility-based care and self-care aspects of NTD programs.

The new development of a solid path forward, with attention to doing and learning, will guide future work and collaboration. Carrying out this strategy, will not only improve the NTD effort, but will also contribute to the vision expressed in the Sustainable Development Goals, of shared prosperity, strengthened health systems, universal health coverage, and equitable access to resources and services that underpin human development.

RESEARCH AND DEVELOPMENT

INNOVATION TO DRIVE GREATER IMPACT

Research and development (R&D)

Great progress has been made over the past year in pursuing research aimed at facilitating the efforts of national NTD programs to combat the diseases included in the London Declaration, and meet the WHO Roadmap targets. To further these advances, and to perhaps shorten the length of time and investment needed, numerous donors, institutions and collaborators have been partnering to identify, support and carry out research across three principal categories: drugs, diagnostic tools, and operational research.

For the purposes of this report, an initial attempt has been made to capture any research that is ongoing or recently completed for each of these three categories with respect to the 10 London Declaration NTDs. Research institutions, universities and consortiums, along with disease community networking groups, were contacted to contribute to and comment on a growing list of research efforts. Although far from comprehensive, the preliminary list contains more than 150 unique investigations underway to develop much-needed drugs to treat affected communities and individuals, tools that will help programs scale up and scale down safely to achieve program targets, and improved methods for implementing program strategies.

New Drugs

Currently there are more than 40 active studies working to identify or develop new drugs to combat NTDs. Some highlights include:

- a new pediatric formulation of praziquantel[1] will enable national programs to treat an estimated 10-15 million preschool-age children who are infected or at risk for schistosomiasis. Pediatric studies are planned starting in 2016 to show that this new formulation of praziquantel, which is made palatable for small children, is safe, well-tolerated, and effective in the treatment of this age group. Phase I clinical development in healthy adults began in October 2014, with the intent being to have the new formulation ready for registration by 2018, and
- the oral drug fexinidazole, in co-develoment by DNDi, WHO and Sanofi, is set to be a game changer in reaching communities endemic for human African trypanosomiasis (HAT). The current standard of treatment requires patients to travel to well-equipped health centers to receive a combined treatment that includes intravenous drug administration (14 infusions over 7 days). Fexinidazole, currently in Phase II/III trials, promises to be a single oral treatment over 10 days that can be delivered at community level or where point-of-care services are provided. This will decrease costs, complexity, and time required to treat patients suffering from HAT, and hopefully speed progress towards elimination. Regulatory approval and pre-qualification are anticipated in 2018

Diagnostic Tools

As NTD programs move forward, improved tools are needed to measure impact and achieve program goals. This area has not received sufficient attention, and although significant progress has been made, many gaps remain. Effective, reliable and sensitive diagnostic tools remain key to ensuring that national programs are able to judiciously deliver and safeguard highly-valuable donated drugs, as well as determining where additional interventions may be required. Among the 50-plus research investments in this area, some recent progress in new and refined diagnostic tools for NTDs includes:

- a new test offers a less expensive and more sensitive alternative to the diagnostic Kato-Katz standard for mapping and monitoring of schistosomiasis, while also requiring less technical oversight. The WHO has recently endorsed the use of the urine circulating cathodic antigen (CCA) test for *Schistosoma mansoni* in schistosomiasis control programs. The Schistosomiasis Consortium for Operational Research and Evaluation (SCORE) is coordinating the evaluation efforts with multiple partners and researchers. The savings in time and costs will be key to the global schistosomiasis program as it attempts to complete mapping of the disease in preparation to deliver the increased donation[2] of praziquantel (Cesol 600) from 100 million tablets in 2015 and up to 250 million in 2016; and
- in 2014, the Ov16 rapid diagnostic test[3] for onchocerciasis was launched by Standard Diagnostics with support from the nonprofit global health innovator PATH. Now a second-generation tool is under development that adds the Wb123 antigen for lymphatic filariasis (LF) to the same test strip, allowing programs to test and follow impact on both onchocerciasis and LF. This will be invaluable for regions where both are endemic and program decisions on the two diseases are linked. The Ov16/Wb123 biplex rapid test is anticipated to be launched around late 2015, early 2016.

1. Produced by Merck KGaA, Darmstadt, Germany.
2. Generously donated by Merck KGaA, Darmstadt, Germany.
3. Known commercially as the SD BIOLINE Onchocerciasis IgG4 rapid test.

Operational Research

There are over 60 operational research activities identified as engaged in answering questions that will help to improve the implementation of NTD programs, and increase the likelihood of achieving control, elimination and eradication goals by 2020. The types of operational research efforts underway run the gamut from validating the use of new tools, to identifying more effective treatment regimes, or leveraging MDA platforms for better program integration, mapping and impact measurement.

Some examples include:

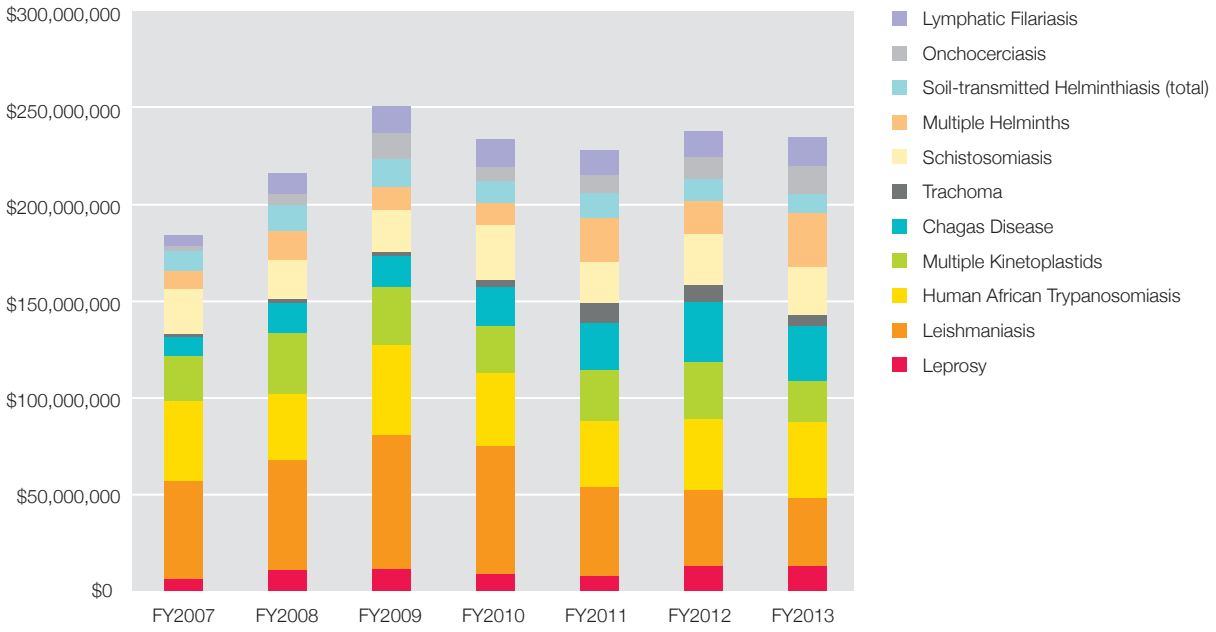
- the work being done by Washington University, in conjunction with the Côte d'Ivoire Ministry of Health, exploring the impact and cost implications of annual versus semi-annual treatment with ivermectin and albendazole in an area where both LF and onchocerciasis are endemic. It is proposed that the more intensified twice-yearly treatment schedule for LF will accelerate the elimination of LF and may have a similar impact on onchocerciasis. Together, these benefits could reduce the total number of years required for MDA, thereby creating savings on delivery costs and decreasing the need for donated drugs. The final results of this study, anticipated by the end of 2017, will likely inform the refinement of WHO treatment guidelines; and
- research carried out to test the benefits of simultaneously assessing soil-transmitted helminths (STH) levels using Transmission Assessment Surveys (TAS). The TAS was designed to determine if MDA for LF can be stopped. Including the assessment of STH allows countries to decide how STH treatment continues following LF scale down. This work was conducted through a partnership between the WHO, the Task Force for Global Health, GlaxoSmithKline, and several Ministries of Health including those from Benin and Tonga. This approach was recently endorsed by the WHO as operationally feasible, programmatically relevant, and potentially cost-effective.

Despite the demands on countries to achieve more ambitious targets, research dollars have not increased to help in reaching these goals. Disease-specific research plans are needed, focused on critical gaps and accelerating progress towards elimination and control targets. Established plans would enable the larger NTD community to be aware of prioritized research topics, know what is currently being funded or still needs resourcing, and understand how to measure progress. This should be a priority in the next year.

Funding for NTD Research

Between 2007-2013, approximately US$1.6 billion was invested in R&D for NTDs. The level of funding in this area has remained constant without any significant increase since 2010. More than 44% (US$700 million) of these resources has been available to researchers since the launching of the London Declaration in 2012, the vast majority (73%) being dedicated towards the Intensified Disease Management (IDM) NTDs, reflecting the particular challenges posed by these diseases, which are not easily managed through MDA campaigns and donated drugs. Innovation will be required to accelerate progress with new tools and strategies in support of endemic country programs and their targets.

Distribution of funding for NTD research by disease (US$1.6 billion between 2007-2013)



CAN WE REACH THE 2020 GOALS USING CURRENT STRATEGIES?

As control programs scale-up their efforts to control NTDs and new tools are being developed in diagnostics, treatments, vector control and surveillance, there is a growing body of evidence and data on which we can base more refined public health strategies.

Epidemiological modelling[1] has become an essential tool in developing public health policy for the control of infectious diseases.

An NTD modelling consortium[2] has been formed with funding from the Gates Foundation, the Children's Investment Fund Foundation and the Novartis Foundation to develop models across the diseases in the London Declaration (except Guinea worm disease) to support strategy development on the most effective control strategies to achieve the goals in particular settings.

For PCT NTDs, the models will be informed by the growing body of data from routine monitoring and evaluation of treatment programs across a range of different countries and epidemiological settings to assess how effective the current strategies are at reducing the level of infection. They will also be considering the potential impact of new drugs or drug combinations as the results of ongoing studies and trials become available. Validating the models against these data will increase their reliability and usefulness at the programmatic level.

The role of modelling in assisting in onchocerciasis control in Africa

Great progress has been made towards the elimination of onchocerciasis in Africa by annual mass treatment with ivermectin. In some areas, ivermectin mass treatment has been going for over 15 years and many of these areas may be close to the complete interruption of transmission. For these countries, there is the prospect of true local elimination and halting of transmission if no new cases arise between then and 2025. In contrast, other countries are lagging behind due to late starts, implementation problems or contraindications for the implementation of ivermectin mass treatment. To eliminate onchocerciasis in these countries by 2025, control activities must be intensified or alternative treatment strategies be implemented.

Using the established ONCHOSIM[3] simulation model, developed by Erasmus MC (Rotterdam, the Netherlands) in collaboration with the Onchocerciasis Control Program in West Africa (1974-2002), it was possible to estimate the final year of treatment for all onchocerciasis endemic areas under the assumption that the current strategies are continued (mostly annual ivermectin mass treatment, in some areas biannual treatment). The modelers identified 47 areas in 12 countries where interventions likely need to continue beyond 2022. This included areas in both currently targeted regions where treatment is already ongoing or has not yet started and potential new areas which are not yet targeted. The analysis highlighted that the Democratic Republic of Congo is likely to pose a particular challenge, with 24/47 problem areas located in this country.

Given this observation, the question then becomes what strategies should be used in those areas which are not Loa loa co-endemic. Possible strategies include increased coverage of treatment or more frequent treatment. The modelling analyses suggest that measures to improve treatment coverage where the achieved levels are <65% should be prioritized. Doubling the frequency of treatment from yearly to 6-monthly might make elimination by 2025 in reach for about half of the identified problem areas: reducing the remaining program duration by about 40%. The most effective strategies for Loa loa co-endemic regions are an area of active research and modelers are closely involved in these activities.

Modelling has been included as an essential tool in the development and evaluation of control strategies for onchocerciasis in Africa, as well as in the assessment of new treatments and diagnostics.

The collaborative relationship between the modelers, other researchers, and policy makers, which included active sharing of data, methodologies, and results, ensured that the models were well informed and addressed the right policy questions, providing valuable lessons for the other NTDs.

1. Modelling is a method for bringing together our understanding of the life cycle of the disease, transmission, clinical processes and health systems to project the likely impact of different strategies.

2. For further information on the research group, their activities and other modelling publications, please see www.ntdmodelling.org

3. ONCHOSIM is a computer program for modelling the transmission and control of the tropical parasitic disease onchocerciasis, or river blindness.

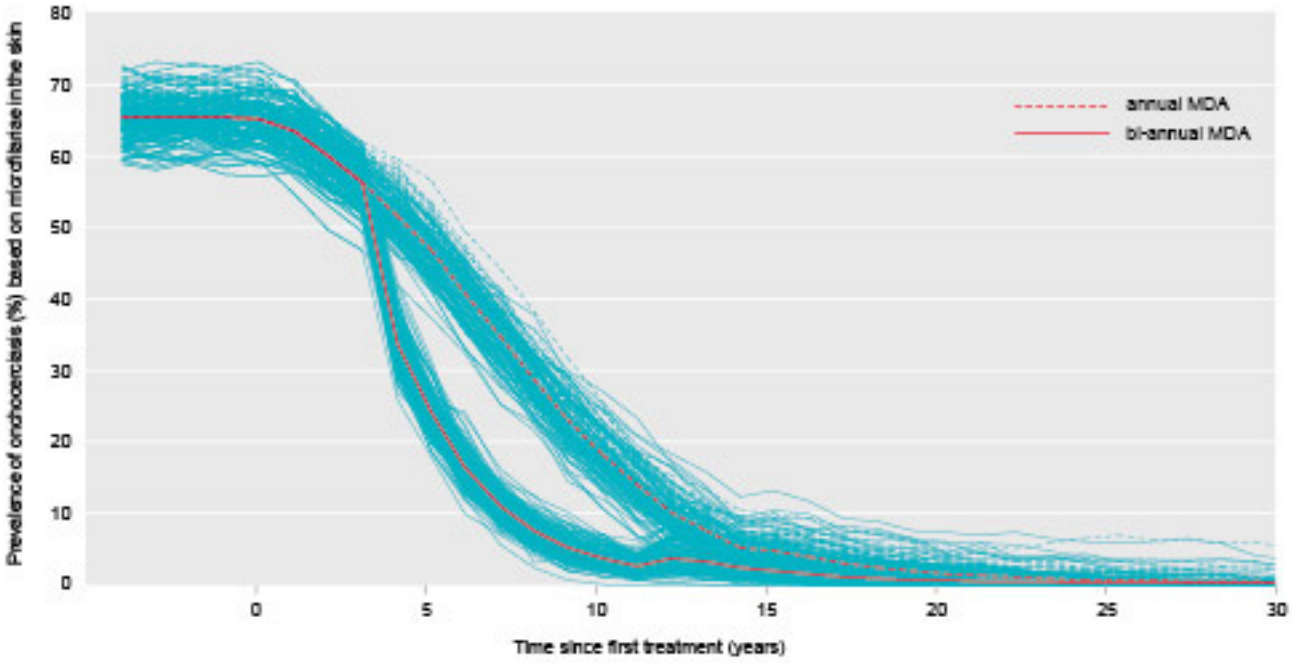
For preventive chemotherapy (PCT) NTDs, the modelers are addressing questions on how frequently treatment should be given, to which age groups, using which drug combinations, and at what coverage to reach the goals more quickly in communities with different prevalence of disease.

For IDM diseases, incidence of diagnosed cases is dependent on the accessibility of the health system, as well as the level of active case detection, in each particular setting. This makes interpretation of these data particularly challenging, but by working with the researchers and control programs to gain a better understanding of the routes to diagnosis and the response to detection of cases, these teams are giving new insights on the underlying dynamics of transmission which will be crucial in controlling these infections. The development of new diagnostics and drug treatments for these diseases are also providing data which have the potential to change our understanding of the epidemiology of these infections, and the modelers are supporting efforts to link data using older and newer diagnostics so that they can be analyzed alongside each other to improve programs and outcomes.

The consortium's results for this year will be published in early November 2015. Further information on the research group, their activities, and other modelling publications will be posted on www.ntdmodelling.org

For Intensive Disease Management (IDM) diseases, such as sleeping sickness or leprosy, the modelers are developing better quantitative estimates, e.g. the time from infection to symptoms, the proportion of the population asymptomatically affected, or the importance of particular vector behaviors.

Prevalence of onchocerciasis (%) based on microfilariae in the skin



Simulated trends in the prevalence of onchocerciasis (based on presence of microfilariae in the skin) for a high endemic community. The figure shows the impact of increasing the frequency of mass treatment from annual (dashed and lighter lines) to biannual (solid and darker lines). In the scenario with annual treatment, the first treatment is given at time=0 and 14 treatment rounds are provided in total (last treatment at time = 13). In the alternative scenario, treatment again starts annually at time 0, but from the 4th treatment round onward treatment is given biannually with 19 treatment rounds in total (last treatment at time 10.5). In both scenarios, 70% of the total population is treated per round, excluding children under 5, and pregnant or lactating women. Simulations were done with the established ONCHOSIM simulation model (Coffeng et al 2014). The presented trends are based on yearly surveys carried out at time 0 with yearly intervals before and after this timepoint, with surveys always just preceding treatment in case the two coincide. The thick lines shows the average predicted trends of 125 simulations per scenario, the thin lines show the results of each of the 125 individual simulation runs per scenario.

ADVOCACY AND PRIORITIES FOR ACTION

G7 LEADERSHIP ON NEGLECTED TROPICAL DISEASES

The conclusion of the 2015 Group of 7 (G7) Summit, held June 7-8 in Schloss Elmau, Germany, offers promising news for people around the world who continue to endure the crushing burden of NTDs. Under Chancellor Angela Merkel's leadership, NTDs remained a priority on the 2015 agenda, devoting much needed attention and dialogue to an issue that affects the most vulnerable and neglected populations across the world.

Leaders of G7 nations – Canada, France, Germany, Italy, Japan, the United Kingdom, and the United States – made a firm commitment to advance the fight against NTDs by investing in prevention and control efforts as well as by supporting priority areas in research and development. The G7 Leaders' Declaration also emphasized the importance of equal access to health services as part of their broader effort to strengthen health systems, including through community-based mechanisms – an approach that has proven to be highly successful in expanding access to NTD treatments.

Equally important, the G7 issued an additional statement, promising to engage the health; water, sanitation and hygiene; and education communities to boost efforts to end malnutrition. We urge the G7 to invest in comprehensive approaches to help expand access to treatments for intestinal worms, an evidence-based, nutrition-specific intervention that improves pregnancy outcomes and childhood development.

This year's commitment builds on the G7's long-standing pledge to fight NTDs, dating as far back as the 1998 Birmingham Summit that established the Japanese-led historic Hashimoto Initiative – the first international parasitic disease control initiative.

Uniting to Combat NTD partners stand ready to marshal the very best talent, resources, knowledge and experience, to work side by side with the G7 to end these diseases once and for all. This year, 2015, offers a pivotal moment for the G7 to wrap up the unfinished NTD agenda and have an immediate, meaningful and sustainable impact, setting the stage for success as the world looks ahead to the new sustainable development goals.

The G7 Leaders' Declaration

Neglected Tropical Diseases

We commit ourselves to the fight against neglected tropical diseases (NTDs). We are convinced that research plays a vital role in the development and implementation of new means of tackling NTDs. We will work collaboratively with key partners, including the WHO Global Observatory on Health Research and Development. In this regard we will contribute to coordinating research and development (R&D) efforts and make our data available. We will build on efforts to map current R&D activities, which will help facilitate improved coordination in R&D and contribute to better addressing the issue of NTDs. We commit to supporting NTD-related research, focusing notably on areas of most urgent need. We acknowledge the role of the G7-Academies of Science in identifying such areas. In particular, we will stimulate both basic research on prevention, control, treatment, and research focused on faster and targeted development of easily usable and affordable drugs, vaccines, and point-of-care technologies.

As part of our health system strengthening efforts we will continue to advocate accessible, affordable, quality, and essential health services for all. We support community-based response mechanisms to distribute therapies, and otherwise prevent, control and ultimately eliminate these diseases. We will invest in the prevention and control of NTDs in order to achieve 2020 elimination goals.

Annex to the G7 Leaders' Declaration

We commit to following an integrated multi-sectoral approach to improving food security and nutrition... We will pursue nutrition specific interventions that have proven to be effective in addressing under-nutrition and micronutrient deficiencies. We will also strengthen our nutrition sensitive interventions in key sectors, such as agriculture, social protection, water, sanitation and hygiene, health, education, and improving food systems.

NTDS AND SUSTAINABLE DEVELOPMENT GOALS

While tremendous progress has been made on the WHO Roadmap targets; gaps still exist. Later this year, the UN General Assembly (UNGA) will meet in New York to adopt 17 Sustainable Development Goals (SDGs) that will carry forward the momentum of the Millennium Development Goals (MDGs) as the sun begins to set on the MDGs timeline. Like the MDGs, the SDGs have a 15-year agenda.

Recognizing that the momentum behind the London Declaration's NTD commitments must continue beyond 2015, Uniting to Combat NTDs stakeholders met in February 2015 to contemplate how NTDs, the London Declaration, and the WHO Roadmap on NTDs will align within the SDG context.

While the eight MDGs did not include specific mention of NTDs, a number of the current SDGs are particularly pertinent to the multi-pronged and multi-sectored efforts to control, eliminate, and eradicate NTDs.

Specifically, SDG 3 – *Ensure healthy lives and promote well-being for all at all ages*, references NTDs under sub-goal or target 3.3:

SDG 3:
"By 2030, end the epidemics of AIDS, tuberculosis, malaria, and **neglected tropical diseases** and combat hepatitis, water-borne diseases, and other communicable diseases."

Given that target 3.3 explicitly mentions "the end of NTDs", it is imperative that this NTD target includes a global indicator. The NTDs Department at WHO has been leading the process of defining an indicator for NTDs and achieved consensus for the following indicator from broader NTD community:

Proposed SDG indicator for NTDs:
"90% reduction in the number of people requiring interventions against NTDs by 2030."

Specific actions that the NTDs community can take to support this are:

- contact the Inter-agency and Expert Group on Sustainable Development Goal Indicators (IAEG-SDGs) established by the UN Statistical Commission to develop an indicator framework for the monitoring of targets at the global level and urge the inclusion of this NTD indicator;
- work with national government officials involved in the post-2015 development agenda and SDG process and urge for the inclusion of a global NTD indicator.
- contact your UN permanent representative in New York and urge for the inclusion of an NTD indicator.

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