

For as Long as Necessary: Examining 30 years of MSD's[†] Focus on Achieving Elimination of Onchocerciasis and Lymphatic Filariasis

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Received 2 June 2017; revised 14 September 2017; editorial decision 28 September 2017; accepted 12 October 2017

Established in 1987 by MSD, also known as Merck & Co., Inc., Kenilworth NJ USA, the Mectizan Donation Program (MDP) is the longest running disease-specific program of its kind. Initially aimed at control of onchocerciasis (river blindness), the company expanded its commitment through the MDP in 1998 to include lymphatic filariasis (LF). Both diseases are now candidates for elimination and the company is engaged in several global partnerships to help advance towards that goal. To support the steadily growing demand from country-led disease elimination programs, the company has put in place several administrative and operational improvements. In addition, the company is involved 'beyond the pill', including making financial and management contributions to partners such as the END Fund and the Expanded Special Project to Eliminate NTDs (ESPEN) to support the technical needs of elimination programs. While the time-bound elimination targets are challenging, clear progress is being made for both onchocerciasis and LF, with several national and sub-national areas in Latin America and Africa having stopped transmission of one or both diseases. The company's donation of Mectizan and contributions of financial, management and technical resources reflect the company's long-standing commitment to pursue inventive ways to expand and enhance access to medicine. Continued support from MSD and other partners will enable countries to advance towards their elimination targets for LF and onchocerciasis.

Keywords: Disease elimination, Lymphatic filariasis, Merck & Co., Inc., MSD, NTDs, Onchocerciasis, River blindness

Introduction

Established in 1987 by MSD, also known as Merck & Co., Inc., Kenilworth NJ USA, the Mectizan Donation Program (MDP) is the longest running disease-specific program of its kind.¹ The MDP was initially aimed at controlling onchocerciasis, a neglected tropical disease (NTD) commonly referred to as river blindness.² Onchocerciasis is a tropical parasitic disease spread by the bite of a black fly, and has historically affected more than 30 countries in Africa, Latin America and the Middle East. Symptoms can include pain and itching of the skin, vision loss and eventual blindness.³ Starting in 1974, the primary effort to control river blindness in Africa was through the Onchocerciasis Control Program (OCP) of the World Health Organization (WHO) and involved aerial spraying of insecticides to control the black fly population and limit the spread of the disease. While this approach had some success, new tools were needed to effectively fight onchocerciasis. In the 1980s, 7 years of clinical

studies led by the company (MSD) and conducted in partnership with the WHO showed that one annual dose of the company's drug Mectizan (ivermectin) could halt progression of the symptoms of the disease. Based on that evidence, in 1987 the company pledged to donate Mectizan 'as much as necessary, for as long as necessary' to significantly reduce the disease transmission levels and thus eliminate onchocerciasis as a public health problem.⁴

From the start of the program, MSD was committed to having the MDP organized within a robust structure that supported and reinforced global health goals and objectives related to onchocerciasis. To achieve a suitable governance structure, the company collaborated with the Task Force for Child Survival (now the Task Force for Global Health) to establish the MDP as a program at the Task Force and created the Mectizan Expert Committee (MEC) as an independent body of experts in ophthalmology, epidemiology, public health and tropical diseases to oversee the scientific, medical and technical operation of the

MDP. Dr William Foege, then-president of the Task Force, also served as the first chair of the Mectizan Expert Committee (MEC). Dr Foege's experience leading the successful global effort to eliminate small pox provided inspiration and aspiration to the activities of the MDP and the MEC.⁵ Within this structure, the use of Mectizan was incorporated into the efforts of the OCP and, beginning in 1995, the WHO's successor to the OCP, the African Program for Onchocerciasis Control (APOC).

Expansion and adaptation of the MDP

In 1998, MSD expanded the MDP to include donations of Mectizan for the elimination of another NTD called lymphatic filariasis (LF), also known as elephantiasis, in areas in Africa where LF and onchocerciasis are co-endemic. For LF, Mectizan is administered with another drug, albendazole, with studies indicating that 5–7 years of treatment could break the cycle of disease transmission within communities and thereby eliminate the disease. The company committed to donate Mectizan for LF following the commitment of the pharmaceutical company GlaxoSmithKline to donate unlimited supplies of albendazole for the elimination of LF globally. The addition of LF to the mandate of the MDP required increased coordination, so the MEC was expanded to the MEC/AC (Mectizan Expert Committee/Albendazole Coordination), to ensure proper technical and scientific coordination of the donation programs for both diseases.⁶

MSD and the MDP also responded to changes in the operational environment to address programmatic challenges and support the needs of partners involved in community-level programs, facilitating the effectiveness and expanded reach of disease-specific efforts. A major shift in the program, supported and endorsed by the company, was adoption of the Community Directed Treatment with Ivermectin (CDTI) strategy. CDTI, which was developed by several organizations active in onchocerciasis control efforts and was proven effective through studies led by the WHO, ushered in a pivotal change that moved the program from a patient-by-patient, clinic-based approach to a community-level program that allowed a massive game-changing expansion in reach and impact. Other operational and administrative improvements included increasing the package size of Mectizan to improve transport, distribution and accountability of the medicine and helping to develop and later adopting a joint application form used by countries to request Mectizan and medicines for other NTDs to help country-led NTD programs improve operational and administrative efficiency.⁷

Furthermore, the approach used by the MDP has been cited as the model for other NTD control and elimination programs in addition to global health interventions for malaria, tuberculosis and HIV/AIDS.⁸

Contributions 'beyond the pill'

Over the past 30 years, MSD has donated 2.7 billion treatments of Mectizan for onchocerciasis and LF.⁹ In addition, the company has also provided 'beyond the pill' support, including financial contributions and technical expertise, to assist partners in their efforts to eliminate these diseases. For example, in the

case of onchocerciasis in the Americas, the company supported the Carter Center financially with a US\$1 million matching grant to accelerate those efforts,¹⁰ in addition to providing technical guidance through the MDP and the MEC. And in 2015, MSD and the Pan American Health Organization (PAHO) held a high-level event in Washington, DC, to recognize the significant progress of country-led efforts to rid the Western Hemisphere of onchocerciasis.¹¹

In Africa, the company has been closely involved with the regional structures developed to coordinate efforts to control and eliminate onchocerciasis in Africa, including the WHO's OCP and its successor, APOC. In support of APOC's mission of enabling countries to build national-led efforts to eliminate onchocerciasis, the company made a US\$25 multi-year grant to the APOC trust fund in 2007.¹² As another element of our efforts to help countries achieve elimination of onchocerciasis, in 2016 the company and the MDP partnered with the END Fund, a non-profit organization dedicated to accelerating the elimination of NTDs through resources mobilization and advocacy, to provide a US\$1 million grant to build scientific capacity and support the technical activities of African countries seeking to eliminate onchocerciasis.¹³ And in view of the critical support provided by non-governmental organizations working with local communities in disease elimination efforts, in April 2017 the company announced a US\$300,000 matching grant focused on advancing progress towards LF and onchocerciasis elimination.¹⁴

Beyond donations of Mectizan to support LF elimination efforts, MSD has participated in the Global Alliance to Eliminate LF (GAELF) since its beginning in 2000, serving in an observer capacity and providing annual financial support to ensure productive coordination of its efforts with those of other partners in the effort to eliminate LF.¹⁵ A critical step in achieving elimination involves testing of people in areas at risk to determine where to treat and where the disease has been eliminated. To aid national programs in testing efforts, the company joined a consortium of partners to fund the supply of a new LF test.¹⁶

The company has also engaged in a range of partnership activities to help advocate for and directly advance progress towards elimination of a larger group of NTDs, including LF and onchocerciasis. For example, in 2012, the company was an initial signatory to the landmark London Declaration on NTDs, joining the Bill & Melinda Gates Foundation and a coalition of public and private partners committed to controlling, eliminating or eradicating a set of 13 NTDs. The London Declaration led to the creation of Uniting to Combat NTDs, the group established to advance the goals of the London Declaration.¹⁷ In April 2017 the Guinness Book of World Records awarded a new world record to Uniting to Combat NTDs for the most medicines donated in a 24 h period, representing the commitment of MSD and other partners to make large contributions towards the global NTD elimination goals.¹⁸

The company also provided US\$250,000 in funding to the WHO's ESPEN in 2015.¹⁹ ESPEN was established by the WHO to fill the gap of programmatic and technical support that countries need to progress towards elimination of NTDs and works closely with all partners engaged in that common goal. Beyond the financial support for ESPEN, a company representative sits on the ESPEN Steering Committee as a private sector delegate to provide guidance on efforts to eliminate NTDs in Africa.²⁰

Progress towards disease elimination

Since the launch of the MDP, both LF and onchocerciasis have formally been targeted for elimination, as represented in the WHO's 2012 Roadmap on NTDs. As coverage rates for both diseases reach adequate levels to break the cycle of disease transmission, populations are becoming free from the risk of infection at community, district and national levels.²¹

For the six countries in Latin America historically endemic for onchocerciasis, there was a focused effort beginning in 1996 to eliminate the disease through the coordinated efforts of PAHO, national governments of the affected countries, the Carter Center and other program collaborators. Following more than 20 years of treatment with donated Mectizan, four of the six countries have received WHO verification that onchocerciasis has been eliminated.²²

For onchocerciasis in Africa, the challenges of achieving elimination are significantly greater due to the scale of the endemic areas: some 120 million people in 31 countries are at risk of onchocerciasis infection in Africa, compared with a historical estimate of approximately 500,000 people in the Americas.²³ Nevertheless, progress is being made: the WHO predicts that 12 countries in Africa may achieve elimination by 2020, enabling treatment with Mectizan to be stopped.²⁴

For LF, several countries are moving towards the target of elimination and one country, Togo, in early 2017, became the first African country to receive WHO certification that LF was eliminated.²⁵ In total, 12 countries in Africa are projected to no longer require treatment for LF by 2020.²⁶

Conclusion

MSD's long-term, holistic support for the elimination of LF and onchocerciasis illustrates the company's overall commitment to corporate responsibility, including the pursuit of innovative and sustainable ways to facilitate access to health care and medicines. The company believes it has a responsibility not only to invent new medicines, but also to innovate in how we collaborate with the broader global health community to bring those inventions to the people who need them. Supported by the company's 30-year partnership around the donation of Mectizan and against the backdrop of the disease elimination goals contained in the WHO Roadmap on NTDs, clear progress is being made to eliminate both LF and onchocerciasis, with several national and subnational areas in Latin America and Africa having stopped transmission of one or both diseases. As a foundation of those efforts, the company's additional contributions of financial and management resources continue to enable countries to advance towards their elimination targets. The company's long-term commitment, willingness to adapt to changing circumstances and opportunities and contributions beyond medicine donations have been key elements that have provided a platform for all partners to advance disease elimination objectives. With sustained support from MSD and all partners—governments, non-governmental organizations, academic institutions, intergovernmental organizations and donors—LF and onchocerciasis may someday no longer be a threat to the health of the more than 100 million of people still at risk.

Authors' contributions: KMG, BDC and TM jointly developed the concept of the paper and co-wrote the manuscript. All authors read and approved the final manuscript.

Funding: None.

Competing interests: All authors are employed by Merck & Co., Inc., Kenilworth, NJ, USA and may own stock or stock options.

Ethical approval: Not required.

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