

Tackling the proliferation of curable diseases in regions suffering from poverty

Introduction

"Neglected tropical diseases (NTDs) are a diverse group of communicable diseases that prevail in tropical and subtropical conditions in 149 countries and affect more than one billion people, costing developing economies billions of dollars every year. They mainly affect populations living in poverty, without adequate sanitation and in close contact with infectious vectors and domestic animals and livestock."

This is the current official definition of NTD's by the World Health Organization (WHO). NTD's have been a crucial topic for only the past couple of years. The reason for the neglect of NTD's is the so-called "big three" diseases: Malaria, tuberculosis and HIV/AIDS. These have a higher mortality rate and have been in the center of medical attention for decades now. While alaria and tuberculosis are being fought with success; the number of people infected with tuberculosis has been decreasing steadily since 2000 (curently 9.6 mil. cases of which 1.5 mil resulted in death) and the number of people infected with Malaria has decreased by 37% in the past 16 years (214 mil cases worldwide of which 0.5 mil. resulted in death), HIV/AIDS remains a mysterious opponent.

As morbid as the mortality of the "big three" is, NTD's worldwide numbers are shocking. Seventeen neglected tropical diseases are prioritized by WHO. These diseases are common in 149 countries, affecting more than 1.4 billion people (including more than 500 million children) and costing developing economies billions of dollars every year. They resulted in 142,000 deaths in 2013 –down from 204,000 deaths in 1990. Of these 17, two were targeted for eradication (dracunculiasis (guinea-worm disease) by 2015 and yaws by 2020), and four for elimination (blinding trachoma, human African trypanosomiasis, leprosy and lymphatic filariasis by 2020). Only 22 cases of dracunculiasis remained as of the end of 2015.

Economic impact

Compared to the treatment of the "big three", treatment of most NTDs is extremely cheap and investments in treatment plans have been proved to be beneficial not only socially but also economically. These diseases also cost the government in terms of health care and lost worker productivity through morbidity and shortened life spans. In Kenya, for example, deworming is estimated to increase average adult income by 40%, which is a benefit-to-cost ratio of 100. Each untreated case of Trachoma is estimated to cost \$118 in lost productivity. Each case of Schistosomiasis causes a loss of 45.4 days of work per year. Most of the diseases cost the economies of various developing countries millions of dollars. Large scale prevention campaigns are predicted to increase agricultural output and education levels. The problem is that some of these actions are very costly and for example the treatment of Buruli Ulcer can cost over twice the yearly income of an average household in the lowest income quartile in most developing countries.

Social and health impact

Several NTDs, such as leprosy, cause severe deformities that result in a social stigma. Lymphatic filariasis, for example, causes severe deformities that can result in a denial of marriage and inability to work. Studies in Ghana and Sri Lanka have demonstrated that support groups for patients with lymphatic filariasis can increase participants' self-esteem, quality of life, and social relations through social support and providing practical advice on how to manage their illness. Deworming treatment is also correlated with increased school attendance.

WHO Roadmap for NTDs of 2012

WHO published in 2012 the NTD "roadmap" which contains milestones for 2015 and 2020 and which specifies targets for eradication, elimination and intensified control of the different NTDs. For example:

- NTDs planned to be eradicated: dracunculiasis (by the year 2015), endemic treponematoses (yaws) (by 2020)
- NTDs planned to be eliminated globally by 2020: blinding trachoma, leprosy, human African trypanosomiasis, lymphatic filariasis
- NTDs planned to be eliminated in certain regions: rabies (by 2015 in Latin America, by 2020 in South-East Asia and Western Pacific regions), chagas disease (transmission through blood transfusion by 2015, intra-domiciliary transmission by 2020 in the region of the Americas), visceral leishmaniasis (by 2020 in the Indian subcontinent), oncocerciasis (by 2015 in Latin America), schistosomiasis (by 2015 in Eastern Mediterranean region, Caribbean, Indonesia and the Mekong River basin, by 2020 in the region of the Americas and Western Pacific region)
- NTDs planned to be eliminated in certain countries: human African trypanosomiasis (by 2015 in 80% of areas in which it occurs), oncocerciasis (by 2015 in Yemen, by 2020 in selected countries in Africa), schistosomiasis (by 2020 in selected countries in Africa) Intensified control with specific targets for the years 2015 and 2020 are provided for these NTDs: dengue, buruli ulcer, cutaneous leishmaniasis, taeniasis/cysticercosis and echinococcosis/hydatidosis, foodborne tremadode infections, soil-transmitted helmintheases.

Integration with WASH programs

Water, sanitation and hygiene (WASH) interventions are essential in preventing many NTDs, for example soil-transmitted helminthiasis. Mass drug administrations alone will not protect people from re-infection. A more holistic and integrated approach to NTDs and WASH efforts will benefit both sectors along with the communities they are aiming to serve. This is especially true in areas that are endemic with more than one NTD.

NGO initiatives

There are currently only two donor-funded non-governmental organizations that focus exclusively on NTDs: "Schistosomiasis Control Initiative" and "Deworm the World".

Sources and links:

- <u>http://www.un.org/en/ecosoc/about/mdg6.shtml</u>
- <u>http://www.who.int/neglected_diseases/NTD_RoadMap_2012_Fullversion.pdf</u> This document is long, but it is highly recommended to at least read through it.
- <u>http://www.un.org/en/ecosoc/philanthropy2/pdf/summary.pdf</u> The first part of the document is relevant.
- <u>http://sd.iisd.org/news/who-unveils-five-year-wash-plan-to-tackle-neglected-tropical-diseases/</u>