END NEGLECTED TROPICAL DISEASES INASIA

Technical Briefs

Assessing progress in fighting STHs in Bangladesh

Context

Approximately two billion people worldwide are infected with soil transmitted helminths (STH) including Ascaris lumbricoides (round worm), Trichuris trichiura (whip worm) and Ancylostoma duodenale/Necator americanus (hookworm). Over 600 million school-age children are at risk for infection and the potential adverse effects of STH.[1] The most impoverished bear the heaviest burden of STH infections. Conditions associated with high prevalence and high intensity STH infections include poor sanitation, unsafe water and overcrowding.[2] STH in children impairs cognitive processes, leads to iron deficiency anemia and causes growth impairment by adversely affecting nutritional status. Effects on physical health, intellectual growth and work productivity of those infected with STH in turn perpetuate poverty.[3]

The World Health Organization (WHO) has set global goals to reach 75 to 100% of school-age children in need.[4] Globally, national deworming programs utilize a mass drug administration (MDA) approach for the delivery of deworming pills to all school-age children on a regular basis, which not only treats the infected individuals, but also helps to reduce the community burden. This results in lower worm loads overall and less reinfection. Albendazole and mebendazole, the drugs used to treat the most common STH infections, are safe, effective, economical and easy to administer.[5] In addition to treatment, MDA should be accompanied by information, education and communication (IEC) activities, advocacy and training aimed at educating the public about STH.

Controlling STH in Bangladesh

Unfortunately, Bangladesh has all of the requisite conditions for a high STH burden and, in fact, claims some of the highest STH infection rates in the world. All three ecological zones in the country are affected. In 2005, prior to the initiation of programmatic activities, surveys in Bangladesh found a 79.8% prevalence of worm infections.[6] The government estimated that 20 million Bangladeshi children were at risk for STH.[7]

Schoolchild taking deworming pill during mass drug administration national deworming event.

In response, the Government of Bangladesh's Ministry of Health established deworming programs through the National Filariasis Elimination and STH Control Program with the support of various partners including the WHO, Children Without Worms and Johnson & Johnson. Schools in three districts began piloting deworming programs in 2005 and efforts expanded to achieve full national coverage by

2008. School deworming is now conducted for all school-age children aged five to twelve years old through all primary level institutions in the country every May and November. (From 2013, the shift was made to April and October for logistical reasons.) A single pill of either albendazole or mebendazole is administered in the schools to both students and out-of-school children by the MDA approach advocated by the WHO.

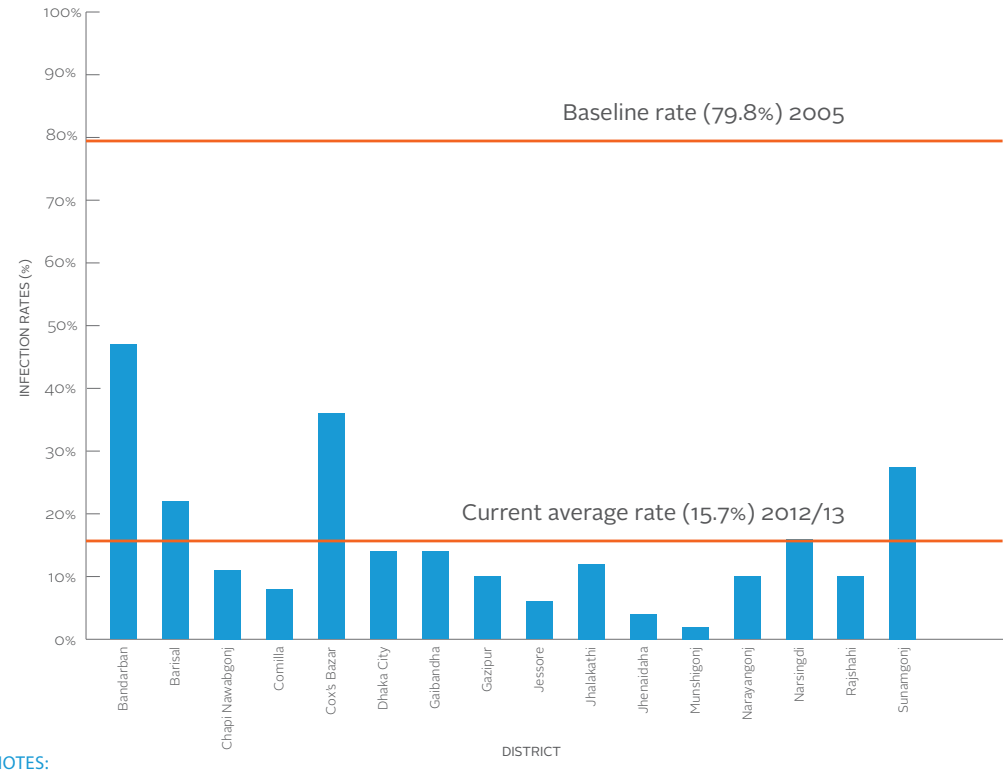
STH Control Program data shows very high levels of coverage,[8] although actual pill ingestion may be less than reported according to the report of the post-MDA validation survey organized by CDC Atlanta in 2010 in Munshigonj and Laxmipur districts. Although the program has been successfully rolled out, it has suffered from gaps and compliance issues which undermine program quality and effectiveness.

At the request of the National Program for STH Control in 2011, the USAID-funded End Neglected Tropical Diseases in Asia (END in Asia) Project, managed by FHI 360, began providing support to strengthen and expand national NTD control efforts. END in Asia contributes to improving the actual coverage and quality of the STH program through the following activities:

- Strengthen monitoring and evaluation (M&E) of program activities through increased supervision, follow-up stool surveys, and development of a comprehensive M&E strategy and database;
- Implement surveys to measure the changes in prevalence of STH and track the impact of the MDAs in five districts including test kit procurement;
- Improve program management through advocacy, orientation and organizational meetings in those division requested by the government; and

Preliminary results from the recent END in Asia-supported STH Follow-up Survey in 2012 and 2013 show a significant reduction in infection in Bangladesh. These surveys involve the collection of stool samples from children in selected schools and closely follow standard WHO

STH INFECTION RATES, BY DISTRICT



NOTES:
Each child only counted once even if multiple infections

guidelines. The Kato-Katz laboratory technique is used to quantify the prevalence of STH infections. Since the surveys were completed just prior to an MDA round, they provided useful information about the programmatic success at reducing the community worm load, which affects re-infection rates. The Bangladesh survey, which was completed in 16 districts, included 815 samples and 15.7% were found to be positive for at least one STH infection. This represents a major reduction from the 79.8% baseline infection rate. These efforts directly contribute to global goals to establish control of worm infections.

The survey results are encouraging and show that MDA of deworming pills is associated with a reduction in worm burden in children in Bangladesh. Nevertheless, even a moderate presence may allow parasites to maintain transmission capacity. It is very likely that if drug interventions were interrupted at this time, prevalence would shortly reach high levels.[9] This evidence illustrates that critical gaps remain in the STH program and that the program must continue its progress in fighting STH. In addition, information gained from this survey will help to guide future STH program strengthening efforts including those supported by END in Asia.

Addressing the remaining needs

During these surveys as well as within coordination meetings and MDA events themselves, program staff became aware of the many challenges that still require attention to ensure a well-functioning program. Ongoing support with orientations, meetings, improved communications and IEC material, and better M&E systems are all essential to ensure that all school-age children can access medication. There are still reports of children not ingesting the dispensed tablets due to fear, rumors or superstitions. More outreach efforts are needed to ensure that out-of-school children who tend to be at even higher risk for STH infection are better served. In addition, a more systematic approach to ensure access to deworming medication by family members and children between 12 and 14 years of age are needed as is operational research on programmatic issues. A comprehensive communication strategy and a focus on media messages to the public will aid in these endeavors.

USAID and the END in Asia program will maintain their support in these critical areas to help the Filariasis Elimination and STH Control Program of Bangladesh achieve its goals. According to Dr. Rouseli Haq, Deputy Program Manager of the Filariasis Elimination and STH Control Program, "We acknowledge the contribution of our partners and anticipate future continuation of their support". END in Asia, as one of the contributing partners, is helping this program enable Bangladeshi children to lead healthier

1. WHO Soil-transmitted helminth infections. Fact sheet 366 June 2012: http://www.who.int/mediacentre/factsheets/fs366/en.
2. Annual Report Bangladesh 2011. Communicable Disease Control Bangladesh. DGHS. MoH and FW.
3. WHO Helminth Control in School Age Children. A guide for managers of control programs. 2nd Edition 2011.
4. WHO 2011.
5. WHO 2011.
6. National STH Survey, Bangladesh 2005.
7. Annual Report Bangladesh 2011.
8. Annual Report Bangladesh 2011.
9. WHO 2011.

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