



Supportive Environments for Healthy Communities

Issue 42 February 10, 2012 | **WASH and Neglected Tropical Diseases**

On January 30, 2012, USAID, the Gates Foundation, the World Health Organization and others launched the [Uniting to Combat Neglected Tropical Diseases](#) partnership to accelerate progress toward eliminating or controlling 10 neglected tropical diseases (NTDs) by the end of the decade. These diseases affect more than 1 billion people and lead to US\$10 billion each year in lost productivity and treatment costs worldwide. These diseases disproportionately impact poor and rural populations who lack access to safe water, adequate sanitation, and essential medicines. This *WASHplus Weekly* contains fact sheets and recent studies that discuss how water, sanitation, hygiene (WASH) and environmental management interventions affect the prevalence and impacts of several of these diseases.

The London Declaration and Eliminating NTDs by Ned Breslin, Water For People. *Huffington Post*, Feb 8, 2012. ([Link to article](#))

Global leaders and forward-thinking philanthropists and donors committed to eradicating Neglected Tropical Diseases (NTDs) by signing onto The London Declaration. This is a big and bold move, as NTDs are brutally efficient at undermining the health and nutritional status of hundreds of millions of people worldwide. Yet I am saddened by the emphasis on vaccines and medicines as the seemingly only vehicles to eradicate NTDs by London Declaration signatories. And I wonder where water, sanitation and hygiene are in this mix, as by all accounts it is not anywhere to be seen in the NTD eradication initiative. Why is that?

Accelerating Work to Overcome the Global Impact of Neglected Tropical Diseases: A Roadmap for Implementation, 2012. World Health Organization. ([Full-text](#))

Vector control must be scaled-up and coordinated, in many cases linked with water supply, sanitation and water development projects. As many neglected tropical diseases are rooted in poverty, lasting measures such as better sanitation and improved supply of safe water in deprived communities will ensure long term economic growth and brighter prospects for food production.

The Neglected Tropical Diseases of India and South Asia: Review of Their Prevalence, Distribution, and Control or Elimination, *PLoS Neglected Tropical Diseases*, Oct 2011. D Lobo, Manipal University. ([Full-text](#))

This article summarizes current knowledge on the prevalence, distribution, and disease burden of the NTDs in India and South Asia, focusing on aspects particular to the region. South Asia accounts for approximately one-quarter of the world's soil-transmitted helminth infections, one-third or more of the global deaths from rabies, and one-half or more of the global burden of lymphatic filariasis, visceral leishmaniasis, and leprosy. The region is also experiencing an emerging problem with three major arbovirus infections, i.e., dengue, Japanese encephalitis, and chikungunya.

Chagas Disease

- **Chagas Disease Fact Sheet**, 2011. Doctors Without Borders. ([Full-text](#))

Chagas disease is endemic in 21 Latin American countries and cases have also been reported in the U.S., Europe, and Japan. It is a disease associated with socioeconomic exclusion and is the largest parasitic killer in the Americas.
- **Evaluation of Spatially Targeted Strategies to Control Non-Domiciliated *Triatoma Dimidiata* Vector of Chagas Disease**, *PLoS Neglected Tropical Diseases*, May 2011. Coentín Barbu, Université de Perpignan Via Domitia. ([Full-text](#))

Chagas disease is one of the most challenging parasitic diseases in Latin America. Today's challenge is to control vectors that are non-adapted to the human domicile, but still able to transmit the parasite through regular short stay in the houses. Combining the use of insect screens in houses at the periphery of the village with the cleaning of the peri-domicile areas of the center of the village provides a cost-effective control.

Dengue

- **Dengue and Severe Dengue: Fact Sheet No 117**, 2012. World Health Organization. ([Full-text](#))

At present, the only method to control or prevent the transmission of the dengue virus is to combat vector mosquitoes. Some control methods include: preventing mosquitoes from accessing egg-laying habitats by environmental management and modification; disposing of solid waste properly and removing artificial man-made habitats; and covering, emptying and cleaning of domestic water storage containers on a weekly basis.
- **Prevention and Control of Aedes Aegypti-borne Diseases: Lesson Learned from Past Successes and Failures**, *AsPac J. Mol. Biol. Biotechnol*, Sept 2011. Duane J. Gubler, Duke-NUS Graduate Medical School. ([Full-text](#))

A lesson learned is that no single approach to *Ae. aegypti* control will provide success when used in isolation. The ecological variation found in large tropical cities requires an integrated approach to controlling *Ae. aegypti*, the methods used depending on the city and the ecology. Effective *Ae. aegypti* control will likely require a combination top-

down and bottom-up approach that integrates chemical, biological, genetic and community-based control methods.

Dracunculiasis (Guinea Worm Disease)

- **Dracunculiasis: Fact Sheet No. 359**, 2012. World Health Organization. ([Full-text](#))
There is no vaccine to prevent nor is there any medication to treat Dracunculiasis, also known as Guinea worm disease. However, prevention is possible and some of these strategies include: preventing drinking water contamination by advising the patient to avoid wading into water; ensuring wider access to safe drinking-water supplies to prevent infection; filtering water from open water bodies before drinking and implementing vector control by using the larvicide temephos.
- **Dracunculiasis Eradication and the Legacy of the Smallpox Campaign: What's New and Innovative? What's Old and Principled?** *Vaccine*, Dec 2011. F Richards, Carter Center. ([Abstract](#))
Dracunculiasis eradication efforts have as primary tools health education, filter distribution for drinking water filtration, and case containment, all guided by rigorous village based surveillance. Additional tools are treatment of selected water sources with ABATE^R (temephos) larvicide and provision of protected drinking water supplies. The global campaign has made remarkable progress through both innovation and adherence to eradication principles.

Lymphatic filariasis

- **Lymphatic Filariasis: Fact Sheet 102**, 2012. World Health Organization. ([Full-text](#))
Lymphatic filariasis (also known as elephantiasis) is transmitted by different types of mosquitoes for example by the Culex mosquito, widespread across urban and semi-urban areas; Anopheles mainly in rural areas, and Aedes, mainly in endemic islands in the Pacific.
- **Impact of Polystyrene Beads as a Mosquito Control Measure to Supplement Lymphatic Filariasis Elimination Activities in Socotra Island, Yemen**, *Eastern Med Health Jnl*, July 2011. A. Al-Kubati, Ministry of Public Health. ([Full-text](#))
This study evaluated the efficacy of applying expanded polystyrene beads (EPBs) on the Culex mosquito population and the effect on lymphatic filariasis (LF) transmission. The EPBs intervention resulted in a reduction in mosquito density of 80% and a 64.3% reduction in microfilaria prevalence. The majority of interviewed households (98%) thought EPBs considerably reduced the mosquito population. Application of EPBs is an effective supplement for achieving the goal of LF elimination.

Soil-transmitted Helminthiases

- **Soil-transmitted Helminthiases**, n.d. Peace Corps. ([Full-text](#))
Soil transmitted helminths, more commonly known as intestinal worms, are among

the most prevalent and have the most damaging effect on the health of preschool children. These worms, including roundworm, hookworm and whipworm, represent a serious public health problem wherever the climate is tropical, and inadequate sanitation and hygienic conditions prevail.

- **Effect of Sanitation on Soil-Transmitted Helminth Infection: Systematic Review and Meta-Analysis**, *PloS Medicine*, Jan 2012. Kathrin Ziegelbauer, Swiss Tropical and Public Health Institute. ([Full-text](#))

This systematic review and meta-analysis to assess the effect of sanitation (i.e., access and use of facilities for the safe disposal of human urine and feces) on infection with soil-transmitted helminthes found that sanitation is associated with a reduced risk of transmission of helminthiases to humans. Access to improved sanitation should be prioritized alongside preventive chemotherapy and health education to achieve a durable reduction of the burden of helminthiases.

Trachoma

- **Priority Eye Diseases: Trachoma**, 2011. World Health Organization. ([Full-text](#))
Trachoma, *Chlamydia trachomatis*, a microorganism that spreads through contact with eye discharge from the infected person (on towels, handkerchiefs, fingers, etc.) and through transmission by eye-seeking flies, is one of the oldest infectious diseases known to mankind. It affects about 84 million people of whom about 8 million are visually impaired. Environmental risk factors for trachoma include water shortage, flies, poor hygiene conditions, and crowded households.
- **A Cross-sectional Survey of Water and Clean Faces in Trachoma Endemic Communities in Tanzania**, *BMC Public Health*, June 2011. M Rog, Johns Hopkins University. ([Full-text](#))
Attitudes toward face washing and household water use appear to have changed dramatically from 20 years ago when clean faces were rare and men made decisions on water use in households. The sources of these attitudinal changes are not clear, but are positive changes that will assist the trachoma control program in strengthening its hygiene efforts.

Please let WASHplus know if you have resources to share or if you have suggestions for future Weekly topics.

Each *WASHplus Weekly* highlights topics such as Urban WASH, Indoor Air Pollution, Innovation, Household Water Treatment and Storage, Hand Washing, Integration, and more. If you would like to feature your organization's materials in upcoming issues, please send them to Dan Campbell, WASHplus knowledge resources specialist, at dacampbell@fhi360.org.



About WASHplus - WASHplus, a five-year project funded through USAID's Bureau for Global Health, creates supportive environments for healthy households and communities by delivering high-impact interventions in water, sanitation, hygiene (WASH) and indoor air pollution (IAP). WASHplus uses proven, at-scale interventions to reduce diarrheal diseases and acute respiratory infections, the two top killers of children under five years of age globally. For information, visit www.washplus.org or email: contact@washplus.org.

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