



AMERICAN SOCIETY OF TROPICAL MEDICINE AND HYGIENE

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The American Society of Tropical Medicine and Hygiene (ASTMH) – the nation’s leading professional organization for tropical medicine – represents 3,300 researchers and clinicians engaged in the battle against infectious and tropical disease in the United States and internationally. ASTMH promotes world health through research and education to prevent and control tropical diseases.

As part of our efforts, we advocate implementation and funding of federal policies and programs that seek to reduce, prevent, and control myriad infectious tropical diseases, including but not limited to, malaria, Dengue fever, Ebola, cholera, and tuberculosis.

ASTMH supports and encourages Congress and the Administration to expand FY 2010 funding for – and commitments to – tropical medicine research and development.

The Need for Expanded Tropical Medicine Research and Development

The morbidity and mortality caused by tropical diseases is enormous. Malaria alone is responsible for between 350 and 500 million clinical cases and one million deaths annually. However, there are many other tropical infectious diseases also warranting comprehensive control and prevention efforts.

- The World Health Organization (WHO) estimates that at least 1 billion people – one out of every six persons on in the world – suffer from one or more neglected tropical diseases (NTDs), such as Buruli ulcer, cholera, cysticercosis, dracunculiasis (guinea-worm disease), foodborne trematode infections, hydatidosis, leishmaniasis, lymphatic filariasis, onchocerciasis, schistosomiasis, soil-transmitted helminthiasis, trachoma and trypanosomiasis.
- Some tropical diseases are fatal while others affect individuals throughout their lives, causing a high degree of morbidity and physical disability and, in certain cases, terrible disfigurement.
- The populations disproportionately affected by tropical disease are those communities that also are the poorest and most vulnerable and are found mainly in tropical and subtropical areas of the world.

National Institute of Allergy and Infectious Diseases (NIAID)

NIAID, within the National Institutes of Health (NIH), maintains primary responsibility for federal research and development of tropical disease diagnostics, treatment, and related prevention and mitigation therapies. Congress added this responsibility to the NIAID mission statement¹ in the National Institutes of Health Revitalization Act of 1993 (P.L. 103-43).

NIAID funds intramural and extramural basic, clinical, and field research aimed at discovering and developing vaccines, drugs, diagnostics, and vector control methods that can prevent and treat tropical diseases. These efforts include:

- *The NIAID Implementation Plan for Global Research on Malaria:* This program is comprised of five (5) components: vaccine development, drug development, diagnostics, vector control, and strengthening infrastructure and research capabilities. It aims to develop a malaria vaccine; develop new drugs to combat drug-resistant malaria; improve and automate diagnostic tools that are rapid response, field-applicable, and low cost; create insecticides that can eradicate insecticide-resistant mosquitoes that carry the malaria parasite; and strengthen research capabilities of scientists, both domestically and internationally.
- *The International Centers for Tropical Disease Research (ICTDR) Network:* NIAID established the ICTDR network in 1991. Its intent is to coordinate and facilitate NIAID activities related to tropical diseases and tropical medicine. It consists of three components:
 - (1) *Tropical Disease Research Units (TDRU) Program:* Initiated in 1980, the TDRU program is a domestic grant award program that fosters research focused on developing vaccines, drugs, and vector-control programs for diseases caused by parasites, both protozoa (single-celled) and helminthes (multi-cellular worms).
 - (2) *International Collaboration in Infectious Disease Research (ICIDR) Program:* Initiated in 1978, the ICIDR program promotes interaction between foreign and domestic investigators. Grants are provided to American institutions that have established collaboration with foreign affiliates. Research is conducted primarily abroad and focuses on epidemiology, vector biology, pathology, immunology, diagnosis, and treatment of tropical diseases caused by viruses, bacterium, and parasites.

¹ The NIAID mission statement reads: "The general purpose of the National Institutes of Allergy and Infectious Diseases is the conduct and support of research, training, health information dissemination, and other programs with respect to allergic and immunologic diseases and disorders and infectious diseases, *including tropical diseases.*" (Emphasis added). (42 USC 285f).

- (3) *Tropical Medicine Research Centers (TMRC) Program*: Initiated in 1991, the TMRC program provides specialized center awards to foreign institutions to provide research facilities for the study of tropical diseases. TMRCs focus on leishmaniasis, malaria, schistosomiasis, hookworm, and diarrheal diseases.

Centers for Disease Control and Prevention (CDC)

The CDC malaria research program aims to improve understanding of the disease and create better methods of combating it. Research often is performed in collaboration with other institutions and includes both field and laboratory studies. CDC malaria research laboratories serve as a WHO Collaborating Center for malaria.

The research conducted by CDC addresses numerous topics, including: the biology of host-parasite relationships, immune response to malaria, host genetic factors associated with malaria, parasite genetic diversity and drug resistance, HIV and malaria interaction, methods of malaria control, and vaccine development and evaluation. Field studies tend to focus on transmission and host responses and identify specimens for study in the laboratory. Laboratory studies focus on basic research that can in turn be verified in field investigations.

FY 2010 Funding for Tropical Medicine Research and Development

ASTMH maintains that the federal government should boost its funding for – and involvement in – efforts to advance tropical medicine and control tropical disease. Much of this work currently is underway at the NIAID, CDC, USAID, and the Department of Defense. However, additional funds and a greater commitment from the federal government are necessary to make progress in tropical disease prevention, treatment, and control. **ASTMH calls upon the Congress and the Administration to provide \$32.19 billion to the National Institutes of Health (NIH), and specifically \$5.07 billion to the National Institute of Allergy and Infectious Diseases (NIAID), and \$73.5 million to the Fogarty International Center, to support additional biomedical and clinical research related to tropical diseases.**