

IANPHI's core mission is to create or significantly strengthen national public health institutes in low-resource countries. Through 10 NPHI development projects, we help national governments develop the public health systems needed to save lives.

ETHIOPIA: *PREPARING FOR EMERGENCIES*

Lack of an emergency preparedness plan for its 75 million citizens and lack of critical laboratory equipment has constrained Ethiopia's ability to respond to frequent environmental and infectious disease emergencies. IANPHI is supporting the Ethiopian Health and Nutrition Research Institute's (EHNRI) transition into a comprehensive NPHI through development of a strategic plan as well as improved emergency response and laboratory capacity to detect disease outbreaks. EHNRI has trained workers at all levels in disease surveillance reporting to improve emergency response, critical to saving lives and reducing the spread of disease. IANPHI funding is also helping EHNRI develop important laboratory capacity, including molecular sub-typing of bacteria to rapidly identify disease outbreaks. IANPHI funding has leveraged investments in emergency response and laboratory capacity from the U.S. CDC, WHO, and other donors, including Perkins+Will, a U.S.-based architectural firm, which designed the new emergency operations center. EHNRI's long-term objectives also include building capacity to conduct surveillance, research, and prevent noncommunicable diseases.

GHANA: *DEVELOPING A COMPREHENSIVE GHANA PUBLIC HEALTH INSTITUTE*

Ghana aspires to have an NPHI that demonstrates that public health is a national priority. The widely held view that disease prevention and health promotion are clinical issues and that the role of public health is mainly administrative constrains disease control efforts. The creation of GPHI provides an important opportunity to raise the profile of public health in Ghana and address the most pressing health problems of its citizens. IANPHI aims to help the Ghana Health Service decrease deaths, illnesses, and disabilities by taking an evidence-informed approach to public health.



Initial efforts include building legislative support for a strong, comprehensive institute that will focus on understanding the health problems in Ghana and using data to prevent and control them. Pilot programs will enhance communicable disease detection and control, and, in close collaboration with the U.S. CDC, will address Ghana's high rates of maternal and neonatal mortality, which have prompted Parliament to declare a public health emergency. IANPHI will assess current public health capacity, facilitate development of a strategic framework for health, and help implement and fund a redesigned, expanded public health system.

GUINEA-BISSAU: *REBUILDING FROM THE ASHES*

Before IANPHI's engagement in this civil war-torn country, Guinea-Bissau's public health infrastructure consisted of a bombed-out laboratory, a fledgling school of public health, and a privately funded field study site. IANPHI, with technical assistance from Brazil's FIOCRUZ, led efforts to bring together the country's disjointed public health system into an NPHI. The new institute (INASA) inaugurated in February 2011 is strengthening core public health



Long-Term Development Projects *continued*

functions including laboratory science, data collection and analysis, and disease outbreak monitoring. A laboratory mentorship program is being developed with the Federal University of Rio de Janeiro. The fledgling national school of public health will soon move into a new facility built by the Chinese government, which also has pledged \$10 million to build a new institute headquarters. As the first donor to the new institute, IANPHI has worked closely with INASA's entrepreneurial leadership to forge partnerships and leverage funds and assistance from the World Bank, WHO, UNICEF, the Global Fund, the National Secretariat against AIDS, architects HDR-CUH2A, and the governments of Brazil, China, Denmark, France, Nigeria, Portugal, and Spain.

MOZAMBIQUE: *TRACKING AND STOPPING PUBLIC HEALTH THREATS*

Mozambique has some of the world's poorest health outcomes and highest rates of HIV-AIDS, TB, malaria, and infectious diseases. The country has limited data available on major disease threats, including immunization coverage and infectious disease cases. Without regional reference labs and no central public health lab, Mozambique has difficulty determining the cause of outbreaks and diagnosing cases. With IANPHI support, in 2010 Mozambique created an expanded National Institute of Health and attracted close to \$14 million in PEPFAR and U.S. CDC funds for a new central public health facility, expected to be constructed in 2012–2013. The U.S.-based architectural firm HDR-CUH2A contributed design services. The Mozambique Ministry of Health has donated the land and VAT exemption to the project and will support training needs. Based on a strategic plan developed with technical assistance from Brazil's FIOCRUZ, NIH will focus on quickly identifying outbreaks and preventing their spread; better understanding the major causes and treatment of febrile illness; and creating a new nationwide laboratory system linked to a central public health facility to accurately diagnose cases.

MOROCCO: *TARGETING ENVIRONMENTAL HAZARDS, MATERNAL MORTALITY, AND CHRONIC DISEASE*

Morocco faces multiple public health burdens: infectious diseases, high maternal mortality rates, a growing incidence of noncommunicable diseases, and risks posed by environmental toxins. Inadequate laboratories and surveillance as well as a lack of technical and research expertise hinder evidence-based decision making. Initial IANPHI funds leveraged more than \$3 million for an EU-funded French cooperation project to implement a new NPHI. Based on input from IANPHI and EU-funded workshops, Morocco's Ministry of Health is creating an NPHI that would monitor, assess, and respond to health threats. The NPHI would coordi-



IANPHI, FIOCRUZ, and architects CUH2A recommended moving this malaria research insectory to a safer location in the planned Mozambique NIH facility.

nate public health functions, enhance technical expertise (including new laboratories and training), and strengthen surveillance and health information. The Moroccan Ministry of Health has committed \$12 million for a new facility, and the U.S.-based design firm Perkins+Will has offered technical expertise.

NIGERIA: *RAPIDLY IDENTIFYING AND TREATING MDR-TB*

Africa's most populous country has a high prevalence of HIV, TB, and HIV-TB co-infection. With IANPHI grants, leveraged by funds from other donors, Nigeria is building national capacity to identify and treat multidrug-resistant TB strains and reduce deaths. The Nigerian Institute for Medical Research (NIMR)—one of the first to conduct national surveys using the new WHO-approved Hain Assay—found that 6.1% of patients had organisms resistant to both isoniazid and rifampin. Partners, including the U.S. CDC, South Africa's National Institute for Communicable Diseases, Hain Lifescience, and the Harvard School of Public Health, have donated instruments to perform liquid cultures, a power generator, a vehicle to transfer samples, lab expansion, and training. NIMR now processes some 300 samples a week with results certified by WHO as 100% accurate. As a result of the project, Nigeria received WHO Green Light Committee approval for second-line antituberculosis drugs at reduced cost for treatment of MDR-TB. NIMR's work has led to better surveillance and detection and more appropriate medications at reduced cost—resulting in a strengthened science-based approach that has saved lives and reduced disease spread.

TANZANIA: BUILDING NEW CAPACITY TO PREVENT CHRONIC DISEASE

A pioneer in Africa in infectious disease surveillance and response, Tanzania's National Institute for Medical Research (NIMR) has leveraged IANPHI support to become a forerunner on the continent in chronic disease surveillance. Data collection is now ongoing in two districts. Training at all levels has been a critical part of the effort, and a prevention component is being developed, including



Chronic diseases, including those associated with tobacco use, account for 60% of all deaths.

educational materials that foster community awareness of noncommunicable diseases (NCDs). IANPHI also funds two NCD-focused fellows in the Tanzania Field Epidemiology and Laboratory Training Program, and the U.S. CDC has developed a model curriculum for NCD-focused training. NIMR leaders expect to transform disease surveillance capacity and provide an evidence base for government decision making and resource allocation. Project partners in efforts to prevent and

control NCDs also include Finland's THL, the University of Copenhagen, AFENET, and Muhimbili University of Health and Allied Sciences.

TOGO: IMPROVING LAB DIAGNOSES

Despite minimal donor presence, fragile infrastructure, human resource deficits, and an underfunded public health sector, Togo's leaders believe that a comprehensive NPHI is critical to meet the nation's many health challenges. IANPHI investments support a planned merger of the National Institute of Hygiene and the Ministry of Health's Division of Epidemiology into an NPHI. IANPHI funds are helping improve laboratory services, especially diagnosis of bacterial, viral, and parasitic diseases; improving influenza diagnosis; and providing benchmarks for food and water safety. Stronger laboratory and epidemiology services promise more accurate and timely diagnosis, improved treatment and service delivery, and evidence-based prevention interventions. Partners include WHO/Togo, France's InVS, and the U.S. CDC. The French Cooperation Agency and the German aid organization GIZ also are on board as are IANPHI's member institutes: Morocco's Pasteur Institute was key in procuring essential laboratory equipment, and InVS also is serving a mentorship role. A recent milestone was a new surveillance report, which provides feedback on sub-national results of surveillance, epidemiology investigations, and outbreak response.

BANGLADESH: STRENGTHENING DISEASE SURVEILLANCE AND OUTBREAK RESPONSE

Bangladesh has limited ability to get accurate data quickly from its 400-plus local disease reporting sites and integrate it at the sub-national and national levels. IANPHI support to the Institute of Epidemiology, Disease Control and Research (IEDCR) will help build capacity to track potential outbreaks and emerging threats that typically show up first in far-flung locations, significantly improving health outcomes for the people of Bangladesh. Strategic investments will support web-based reporting, initially funded by CDC and supported through an institutional linkage with the Dhaka-based international health research organization, ICDDR,B. The project will improve accuracy and timeliness of data and fill critical needs for outbreak response, facilitate development of surveillance in new areas such as noncommunicable diseases and injuries, and lay the foundation for a national plan to strengthen public health laboratory services and systems as an integral part of strengthening surveillance and outbreak response.

UGANDA: LAYING THE FOUNDATION FOR FUTURE RESEARCH GROWTH

The Uganda Virus Research Institute (UVRI) is a key source of expertise for many of the country's infectious disease functions, including outbreak investigation, clinical trials, scientific research, and laboratory science. Since 2007, IANPHI has underwritten development of a resource center, strategic plan, telephone system, and a Research Support Office to increase UVRI's capacity to manage, coordinate and execute large projects. Pro-bono technical assistance from the Nigerian Institute of Medical Research has been crucial to the project. UVRI's leadership has successfully used IANPHI support as a catalyst, leveraging about \$16 million in research support from external partners.



IANPHI funded research to determine rotavirus strains in Uganda—the major causes of severe diarrhea and dehydration in children. UVRI hopes to develop a targeted vaccine.