Educating patients: a community health care worker holds a small healthcare workshop in the Chongwe district of rural Zambia. (Photo by Brent Stirton for Novartis)

Efforts to improve health care in Africa take on many forms, from broadening access to high-quality modern medicines, to bolstering health care systems.

The Novartis Institutes for BioMedical Research (NIBR) is contributing by discovering novel medicines that address patient needs, including for diseases endemic to Africa.

At the same time, NIBR scientists are also working with local partners in Africa to develop
innovative approaches to improve human health. Two initiatives in Zambia, one addressing asthma and another rheumatic heart disease, show how strengthening health systems can positively impact medical practice.

“It is a privilege to work with colleagues in Africa on approaches attuned to their specific medical needs,” said Mark Fishman, President of NIBR. “Our drug discovery successes are great, but there is more work to do. It is critical to learn where we can help with education and healthcare delivery if we are to be a true agent for change in Africa.”

Asthma

Until recently, asthma received little attention in Zambia. It was widely believed to be under-recognized and under-treated, as it is in many parts of Africa.

In 2008, NIBR and the Novartis Pharmaceuticals Division began working with Lusaka University Teaching Hospital and the Spanish Society of Pneumology and Thoracic Surgery to address these issues.

The company supported a clinical epidemiology and training program at the Lusaka University Teaching Hospital and local clinics in Lusaka. Providing expertise from its research and pharmaceutical operations, free medicines from the Novartis generics division, Sandoz, as well as funding from the Novartis Foundation for Sustainable Development, the program set out to help local partners change medical practice regarding the treatment of asthma in Zambia.

The partnership filled a longstanding research gap by conducting epidemiological studies that measured prevalence of the disease in Lusaka. Studies also found that many asthma patients had major misconceptions about asthma treatment, including the false belief that inhalers are addictive.

The partners used the research data to design and roll out training programs for health workers in several Zambian cities and to launch media activities to address misconceptions about the use of inhalers. Physicians from Zambia traveled to Spain for intensive training in state-of-the-art asthma management and Sandoz donated to the government two types of inhaled asthma medications.

The collaboration is helping to transform the way asthma is treated in Zambia. In 2013, the Zambia Ministry of Health updated their treatment guidelines to be fully aligned with internationally recognized standards of care, which includes emphasizing the use of inhalers for chronic asthma. The change is expected to influence how doctors treat asthma in Zambia for years to come.
Rheumatic Heart Disease

The success of the asthma collaboration encouraged the development in 2013 of a second initiative to strengthen the health system in Zambia.

NIBR is again working with Lusaka University Teaching Hospital and the Zambian Ministry of Health in partnership with the University of Cape Town and Massachusetts General Hospital, this time to combat rheumatic heart disease.

“This is an effort to eliminate the disease across Zambia in our lifetime,” said Dr. John Musuku, a pediatric cardiologist at the university hospital.

It is an ambitious goal. The disease has been eliminated in developed countries but remains endemic in the developing world, where tens of millions of people are affected, largely because patients have poor access to treatment.

Rheumatic heart disease is caused by strepto-coccal pharyngitis – commonly known as strep throat – which can be easily treated with a single penicillin injection. But if left untreated, a small percentage of patients will eventually form scars on the valves of the heart. Over time, this can lead to heart failure and, ultimately, early death. Once rheumatic heart disease develops, monthly penicillin injections or daily penicillin pills are required to slow its progression.

Fortunately, new technology is revolutionizing the way doctors can identify and care for children with rheumatic heart disease. Portable echocardiography machines create ultrasound images of the heart that can show tissue damage even before symptoms appear.

Using this new technology, up to 10 000 schoolchildren in Lusaka will be screened, starting in 2014. Children diagnosed with rheumatic heart disease will be offered monthly penicillin injections donated by Sandoz to the university hospital. And the results of the screening will, for the first time, indicate the prevalence of rheumatic heart disease in a Zambian population using echocardiography.

To help ensure patients receive their monthly injections, local doctors plan to use a new electronic registry to track patients and send automatic SMS reminders to their mobile phones when it is time for treatment. NIBR will also support efforts of the local doctors to strengthen health systems in Lusaka to help children with strep throat receive the treatment they need. Only then can new cases of rheumatic heart disease be prevented.