marketing of such therapies continues in many countries. Ongoing use of artemisinin monotherapy increases the likelihood of drug resistance, a deadly prospect that will make malaria far more difficult to treat.

Between 2001 and 2011, global malaria deaths were reduced by an estimated 38%, with reductions of ≥50% in 10 African countries as well as in most endemic countries in other regions. Again the experience in Rwanda is instructive: from 2005 to 2011, malaria deaths dropped by >85% for the same reasons mentioned earlier in recounting that nation's successes in battling HIV.

Meeting the challenge of malaria control will continue to require careful study of appropriate preventive and therapeutic strategies in the context of an increasingly sophisticated molecular understanding of pathogen, vector, and host. However, an appreciation of the economic and social devastation wrought by malaria—like that inflicted by diarrhea, AIDS, and TB—on the most vulnerable populations should heighten the level of commitment to critical analysis of ways to implement proven strategies for prevention and treatment.

Funding from the Global Fund, the Gates Foundation, the World Bank's International Development Association, and the U.S. President's Malaria Initiative, along with leadership from public health authorities, is critical to sustain the benefits of prevention and treatment. Building on the growing momentum of the last decade with adequate financial support, innovative strategies, and effective tools for prevention, diagnosis, and treatment, we may one day achieve the goal of a world free of malaria.

"NONCOMMUNICABLE" CHRONIC DISEASES

Although the burden of communicable diseases—especially HIV infection, TB, and malaria—still accounts for the majority of deaths in resource-poor regions such as sub-Saharan Africa, 63% of all deaths worldwide in 2008 were held to be due to NCDs. Although we will use this term to describe cardiovascular diseases, cancers, diabetes, and chronic lung diseases, this usage masks important distinctions. For instance, two significant NCDs in low-income countries, rheumatic heart disease (RHD) and cervical cancer, represent the chronic sequelae of infections with group A *Streptococcus* and human papillomavirus, respectively. It is in these countries that the burden of disease due to NCDs is rising most rapidly. Close to 80% of deaths attributable to NCDs occur in low- and middle-income countries, where 86% of the global population lives. The WHO reports that ~25% of global NCD-related deaths take place before the age of 60—a figure representing ~5.7 million people and exceeding the total number of deaths due to AIDS, TB, and malaria combined. In almost all high-income countries, the WHO reported that NCD deaths accounted for ~70% of total deaths in 2008. By 2020, NCDs will account for 80% of the global burden of disease and for 7 of every 10 deaths in developing countries. The recent increase in resources for and attention to communicable diseases is both welcome and long overdue, but developing countries are already carrying a "double burden" of communicable and noncommunicable diseases.

Diabetes, Cardiovascular Disease, and Cancer: A Global Perspective In contrast to TB, HIV infection, and malaria—diseases caused by single pathogens that damage multiple organs—cardiovascular diseases reflect injury to a single organ system downstream of a variety of insults, both infectious and noninfectious. Some of these insults result from rapid changes in diet and labor conditions.

Other insults are of a less recent vintage. The burden of cardiovascular disease in low-income countries represents one consequence of decades of neglect of health systems. Furthermore, cardiovascular research and investment have long focused on the ischemic conditions that are increasingly common in high- and middle-income countries. Meanwhile, despite awareness of its health impact in the early twentieth century, cardiovascular damage in response to infection and malnutrition has fallen out of view until recently.

The misperception of cardiovascular diseases as a problem primarily of elderly populations in middle- and high-income countries has contributed to the neglect of these diseases by global health institutions. Even in Eastern Europe and Central Asia, where the collapse of the Soviet Union was followed by a catastrophic surge in cardiovascular disease deaths (mortality rates from ischemic heart disease nearly doubled between 1991 and 1994 in Russia, for example), the modest flow of overseas development assistance to the health sector focused on the communicable causes that accounted for <1 in 20 excess deaths during that period.

DIABETES The International Diabetes Federation reports that the number of diabetic patients in the world is expected to increase from 366 million in 2011 to 552 million by 2030. Already, a significant proportion of diabetic patients live in developing countries where, because those affected are far more frequently between ages 40 and 59, the complications of micro- and macrovascular disease take a far greater toll. Globally, these complications are a major cause of disability and reduced quality of life. A high fasting plasma glucose level alone ranks seventh among risks for disability and is the sixth leading risk factor for global mortality. The GBD 2010 estimates that diabetes accounted for 1.28 million deaths in 2010, with almost 80% of those deaths occurring in low- and middle-income countries.

Predictions of an imminent rise in the share of deaths and disabilities due to NCDs in developing countries have led to calls for preventive policies to improve diet, increase exercise, and restrict tobacco use, along with the prescription of multidrug regimens for persons at high-level vascular risk. Although this agenda could do much to prevent pandemic NCD, it will do little to help persons with established heart disease stemming from nonatherogenic pathologies.

CARDIOVASCULAR DISEASE Because systemic investigation of the causes of stroke and heart failure in sub-Saharan Africa has begun only recently, little is known about the impact of elevated blood pressure in this portion of the continent. Modestly elevated blood pressure in the absence of tobacco use in populations with low rates of obesity may confer little risk of adverse events in the short run. In contrast, persistently elevated blood pressure above 180/110 goes largely undetected, untreated, and uncontrolled in this part of the world. In the cohort of men assessed in the Framingham Heart Study, the prevalence of blood pressures above 210/120—severe hypertension—declined from 1.8% in the 1950s to 0.1% by the 1960s with the introduction of effective antihypertensive agents. Although debate continues about appropriate screening strategies and treatment thresholds, rural health centers staffed largely by nurses must quickly gain access to essential antihypertensive medications.

The epidemiology of heart failure reflects inequalities in risk factor prevalence and in treatment. The reported burden of this condition has remained unchanged since the 1950s, but the causes of heart failure and the age of the people affected vary across the globe. Heart failure as a consequence of pericardial, myocardial, endocardial, or valvular injury accounts for as many as 5% of all medical admissions to hospitals around the world. In high-income countries, coronary artery disease and hypertension among the elderly account for most cases of heart failure. For example, in the United States, coronary artery disease is present in 60% of patients with heart failure and hypertension in 70%. Among the world's poorest 1 billion people, however, heart failure reflects poverty-driven exposure of children and young adults to rheumatogenic strains of streptococci and cardiotropic microorganisms (e.g., HIV, *Trypanosoma cruzi*, enteroviruses, *M. tuberculosis*), untreated high blood pressure, and nutrient deficiencies. The mechanisms underlying other causes of heart failure common in these populations—such as idiopathic dilated cardiomyopathy, peripartum cardiomyopathy, and endomyocardial fibrosis—remain unclear.

In stark contrast to the extraordinary lengths to which clinicians in wealthy countries will go to treat ischemic cardiomyopathy, little attention has been paid to young patients with nonischemic cardiomyopathies in resource-poor settings. Nonischemic cardiomyopathies, such as those due to hypertension, RHD, and chronic lung disease, account for >90% of cases of cardiac failure in sub-Saharan Africa and include poorly understood entities such as peripartum cardiomyopathy (which has an incidence in rural Haiti of 1 per 300 live births) and HIV-associated cardiomyopathy. Multidrug regimens that include beta blockers, angiotensin-converting enzyme inhibitors, and other agents can dramatically reduce mortality risk and improve quality of life for these patients. Lessons learned in the scale-up of chronic care