INTRODUCTION

PROMOTING GLOBAL CARDIOVASCULAR HEALTH:

THE INSTITUTE OF MEDICINE RECOMMENDATIONS

Cardiovascular disease and related noncommunicable diseases were once considered a problem that only wealthy, industrialized nations faced. Together, they now rank as the leading cause of death across the globe. The vast majority of those deaths—more than 80 percent—occur in low- and middle-income countries. These diseases affect people from rural villages in India and Africa to small towns in Chile and major cities in the U.S., China, Europe—and everywhere in between. Beyond the human toll, there is also heavy economic impact: Heart attack, stroke, diabetes and other cardiovascular-related illness are extremely costly, straining both personal and national finances. This special issue, Promoting Cardiovascular Health Worldwide, explores the problem—and outlines the solutions.

The U.S. Institute of Medicine formed a committee to create a set of tangible recommendations that would catalyze and focus action around this important global health problem. The resulting report, Promoting Cardiovascular Health in the Developing World, was released in 2010. Funded by the U.S. National Heart, Lung and Blood Institute, it detailed the reasons behind the exponential growth in cardiovascular-related illnesses and the behaviors that contribute to them and outlined ways to reduce the global burden of these diseases. The recommendations highlighted a need for new tools, national policies and results-oriented programs. They also emphasized collaborations among governments, global health and development agencies and the international business community.
### BARRIERS

- Lack of awareness
- Competing priorities for government/donors
- Weak health systems
- Conflicting obligations in private sector
- Insufficient data on effectiveness
- Inadequate coordination among stakeholders

### ESSENTIAL FUNCTIONS

- Building Priorities, Advocacy and Funding
- Policy and Program Implementation
- Data Management and Research
- Global Coordination and Reporting

### RECOMMENDATIONS

1. Recognize Chronic Diseases as a Development Assistance Priority
2. Advocate for Chronic Diseases as a Funding Priority
3. Improve National Coordination for Chronic Diseases
4. Implement Policies to Promote Cardiovascular Health
5. Include Chronic Diseases in Health Systems Strengthening
6. Improve Access to CVD Diagnostics, Medicines and Technologies
7. Collaborate to Improve Diet
8. Improve Local Data
9. Define Resource Needs
10. Research to Assess What Works in Different Settings
11. Disseminate Knowledge and Innovation among Similar Countries
12. Report on Global Progress

The following year, in September 2011, the United Nations General Assembly convened a high-level meeting on noncommunicable diseases, placing the issue squarely on the world's agenda and demanding immediate action.

In this issue, some of the world's foremost authorities on cardiovascular disease elaborate on the Institute of Medicine's 12 recommendations to address this massive, worldwide problem. We provide concrete examples of programs that are working effectively on the ground, reflect on global progress made since 2010—and define a way forward.

**THE GLOBAL CARDIOVASCULAR EPIDEMIC**

There are myriad factors feeding the current cardiovascular disease (CVD) epidemic, including heredity, lifestyle choices and the impact of other illnesses. Genetic predisposition, high blood pressure, high cholesterol and diabetes are all contributors, along with a high-fat, heavily salted diet and limited physical activity as well as smoking and other tobacco use.

Although preventing and treating these diseases appears straightforward, the reality is much more complex. Each risk factor may be exacerbated by any of a number of other issues: poverty, war, social inequity, lack of education, culturally based or traditional medicine and limited access to health care, among others. And even in the best of circumstances, behavioral changes are difficult to make.

There is a surprising lack of awareness regarding the scope of the problem among large, potential international donors. This limits the financial and human resources available for prevention and control efforts. Meanwhile, a host of other priorities compete for both government and donor attention, with some people expressing concern that other important health initiatives might suffer if greater attention were paid to noncommunicable diseases. Action is further complicated by uncertainty about the ability to implement efficient programs in developing countries—where limited health systems are currently unable to effectively treat, manage or prevent these illnesses.

Over the last decades, a steady stream of international declarations, campaigns and conferences have spread the word that CVD is reaching epic proportions in developing countries. However, chronic diseases remain the least-funded area in global health. Together, they received less than 3 percent of all health aid from 2001 through 2007, although there have been nascent attempts by philanthropic organizations and private foundations to help bridge part of the funding gap.

Ultimately, success or failure in controlling this suite of cardiovascular-related diseases will depend on coordinated public and political resolve across the globe. That will, first and foremost, require leadership. Strong advocates must establish clear priorities, encouraging proactive government policies and eliciting adequate funding programs that are appropriate to each region. That can only be assured by conducting locally relevant research. In many cases, health departments will have to upgrade their health record systems to track patient health—and gather nationwide disease data.

Here, we build on the Institute of Medicine's recommendations, highlighting programs from around the world that are successfully addressing aspects of this global epidemic.

**BUILDING PRIORITIES, ADVOCACY AND FUNDING**

**RECOMMENDATION 1**
**Recognize Chronic Diseases as a Development Assistance Priority**
**Epidemics without Borders**

Although cardiovascular and related chronic diseases are starting to be recognized as part of the global health agenda, there is still relatively little investment from international development assistance agencies and the global health donor community; in many nations, these diseases are still largely ignored. Many developing countries lack well-staffed, well-equipped primary care facilities and need technical assistance to implement treatment and prevention programs, evaluate their effectiveness and find the funds to pay for them. Mobilizing support across the global health arena is critical. Gregory Paton and his colleagues describe the challenges involved in making these diseases a priority, and provide a vision for the future based on successful models that have germinated since the U.N. Summit on Noncommunicable Diseases.

**RECOMMENDATION 2**
**Advocate for Chronic Diseases as a Funding Priority**
**Funding the Fight against Chronic Diseases**

Without powerful advocates, these diseases will not get the attention or the funding they need. This article notes that garnering adequate support will require a strong coalition of international and local NGOs and advocacy groups along with patients and their families. Together they must raise the alarm about the ever-growing prevalence of cardiovascular diseases, the human toll and economic impact as well as the effectiveness of prevention and treatment programs. Their targets: private foundations, charities, governmental agencies and individual donors.

In this article, Valentin Fuster provides examples where governments, development assistance agencies and other donors have been convinced to invest in prevention and control despite cash-strapped health budgets and many competing priorities.

**POLICY AND PROGRAM IMPLEMENTATION**

**RECOMMENDATION 3**
**Improve National Coordination for Chronic Diseases**
**Kenyans Come Together against Chronic Diseases**

Chronic diseases need representation at the highest level of government. Many countries have a strong precedent, having created HIV/AIDS commissions that report directly to a high-level cabinet member. This structure allows for coordination with key agencies—health, agriculture, education and transportation—as well as direct communication with legislators to ensure inclusion in public policy.

But an entire gamut of coordinated, sustained initiatives will be needed to promote global cardiovascular health, according to Gerald Yonga, not least of which are screening, early treatment and community-level education that empowers healthy individual behavior. The author explores Kenya’s integrated approach in this article.
**Recommendation 4**

**Implement Policies to Promote Cardiovascular Health**  
*How Policy Makers Can Advance Cardiovascular Health*

To promote cardiovascular health and to reduce risk, both national and local governments should implement proven policies that are carefully tailored to individual communities' needs. Policy makers may consider a range of regulations, incentives and voluntary measures, such as raising tobacco taxes, placing restrictions on the marketing of certain foods to children, strengthening school physical education requirements, imposing subsidies or import duties on certain foods and enacting clinical guidelines. Input from both citizens and industry can help determine a working balance of the most effective measures. In this article, Sonia Angell and her colleagues summarize a range of approaches.

**Recommendation 5**

**Include Chronic Diseases in Health Systems Strengthening**  
*Echoing the Lessons of HIV*

The rising burden of cardiovascular disease requires stronger health care systems, and as countries ramp up, they should plan for improved prevention, diagnosis and management. That includes recruiting public health leaders who understand chronic disease management—and training a medical workforce capable of treating these conditions. It also means integrating CVD within primary health care services as well as within existing infectious disease and maternal–child health programs.

This article by Miriam Rabkin and co-authors describes the successes of the global HIV response and the ways those lessons can be applied to the fight against chronic diseases.

**Recommendation 6**

**Improve Access to CVD Diagnostics, Medicines and Technologies**  
*Delivering Care Where It’s Needed*

It will be impossible to effectively fight this war against chronic disease without proper weapons: affordable medicines, diagnostic equipment, new technologies and more. These can be made widely available with leadership from government officials and consultation with experts on health care systems and financing. It will also require partnerships between development agencies, insurance companies and cardiovascular disease associations as well as firms that manufacture pharmaceuticals, medical devices and software. This article by K. Srinath Reddy and his co-authors includes case studies of successful programs and collaborations.

**Recommendation 7**

**Collaborate to Improve Diet**  
*Get Down to Business*

We need international strategies to encourage healthier eating habits in both adults and children that lower consumption of salt, sugar and high-fat foods. In addition to public education programs to change personal behavior, healthier food choices must be available within the food supply chain. Jose Saavedra notes that this will require collaboration across wide arenas, from the public health community and international agencies to the entire food industry, including such players as the International Food and Beverage Alliance, multinational and local food manufacturers, restaurants and retailers.

**Data Management and Research**

**Recommendation 8**

**Improve Local Data**  
*Collecting Reliable Data*

Current data is essential to controlling chronic diseases. However, many countries lack the information gathering capabilities needed to inform local priorities and to measure the impact of policies and programs. Globally, governments should create and maintain robust health monitoring systems to quantify cardiovascular disease risk and the prevalence of disease as well as the number of deaths it causes in local populations, say C. James Hospedales and his co-authors—systems created with financial and technical assistance from WHO, the U.S. Centers for Disease Control and Prevention, USAID and other experts. Recommendation 8 details efforts to improve monitoring in different parts of the world.

**Recommendation 9**

**Define Resource Needs**  
*What Will It Take to Do More?*

Planning and taking effective action requires knowing, at the country level, the areas of greatest need, the existing capacity, the available resources and what it would cost to do more to address cardiovascular disease and other chronic diseases. Rachel A. Nugent and Celina Gorre discuss what information is needed to better understand these elements, and how case studies in a few diverse countries could pave the way to do these kinds of analyses more broadly.

**Recommendation 10**

**Research to Assess What Works in Different Settings**  
*One Size Does Not Fit All*

Programs that successfully control heart disease, stroke and other CVD-related illnesses in wealthy countries do not always translate to low- or middle-income countries. On-the-ground research is critical to ensure that interventions are appropriate to the local setting and culture. Cristina Rabadán-Diehl and colleagues describe several efforts to spearhead this kind of research through collaborations between funders and public health agencies in partnership with local governments, NGOs, universities and communities. The successful models they describe are also aimed at improving the research capacity for cardiovascular diseases in developing countries.

**Global Coordination and Reporting**

**Recommendation 11**

**Disseminate Knowledge and Innovation among Similar Countries**  
*Share What Works*

With good communication networks, countries are able to share knowledge, innovations and technical capacity with other nations on how to make intervention approaches work in different local environments. Regional reporting is also needed to inform appropriate action to address cardiovascular...
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and other chronic diseases. That information also helps build international support for both regional and national solutions. Efforts to maximize growing efforts to disseminate CVD information and innovation are described by authors Shanthi Mendis, C. James Hospedales and Jagat Narula.

**RECOMMENDATION 12**

**Report on Global Progress**

The WHO Monitoring Model

Charting progress in a consistent, standardized way is key to moving ahead. It will help the global community define goals, coordinate efforts, communicate shared messages, take decisive action and know whether these efforts are effectively reducing the burden of chronic disease. On a local level, it will help governments identify shortfalls in resources and recognize needed policy changes. Shanthi Mendis and Oleg Chestnov describe the global monitoring framework embedded within WHO’s noncommunicable disease programs—and lay out the benchmarks that have been set to prevent and control non-communicable diseases.

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iven the massive, growing burden of heart disease, stroke, diabetes and other related illness, promoting cardiovascular health is now critical—and eminently possible. But it will require long-standing commitment, strong leadership and collaboration based on well-defined goals, with targeted investment of financial, technical and human resources. Given that many noncommunicable diseases share the same suite of risk factors (tobacco use, physical inactivity and poor diet) and are impacted by similar social factors (poverty, access to medicines and urbanization), an integrated approach will yield the greatest benefits.

Specific recommendations and guidance have been described in the Institute of Medicine report; this special issue provides concrete examples of successful programs in communities around the world. We hope that it offers a road map for improved global cardiovascular health.

*Any opinions herein are those of the authors alone and should not be construed as representing the views of the Institute of Medicine of the U.S. National Academies.*

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