

Promoting
Cardiovascular Health
in the Developing World

**A Critical Challenge
to Achieve Global Health**

INSTITUTE OF MEDICINE
OF THE NATIONAL ACADEMIES

**Report Brief,
Report Summary, and
Full Prepublication Report
can be downloaded for free:
www.iom.edu/globalcvd**

**Derek Yach
Oxford Health Alliance
April 20th 2010**

Study Charge

- **The National Heart, Lung, and Blood Institute asked the Institute of Medicine to convene a committee to:**
- Study the evolving global epidemic of cardiovascular disease
- Offer conclusions and recommendations pertinent to its control

Committee on Preventing the Global epidemic of Cardiovascular Disease Meeting the Challenge in Developing Countries

VALENTÍN FUSTER (*Chair*), Mount Sinai Heart

ARUN CHOCKALINGAM (*through January 2010*), Faculty of Health Sciences, Simon Fraser University

CIRO A. DE QUADROS, Albert B. Sabin Vaccine Institute

JOHN W. FARQUHAR, Stanford Prevention Research Center, Stanford University School of Medicine

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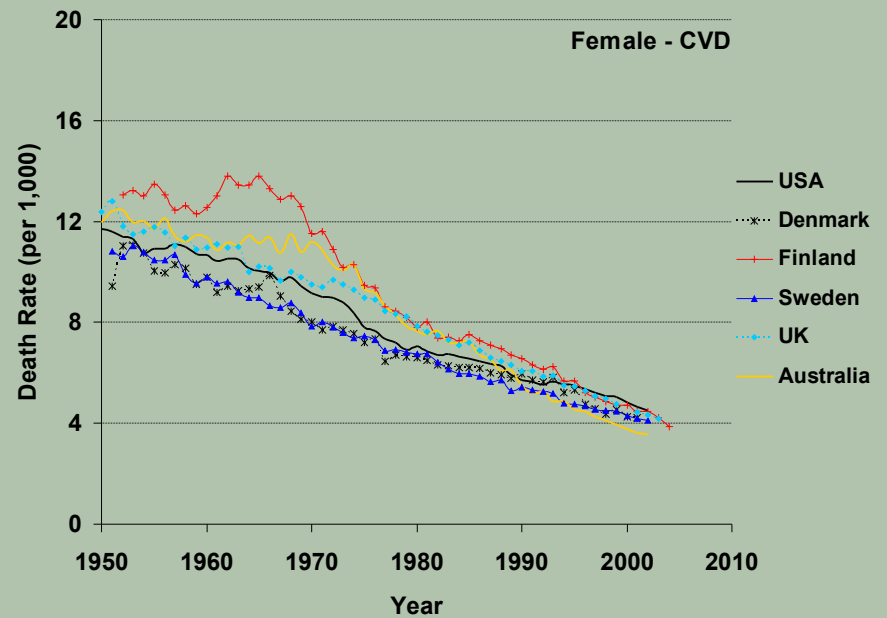
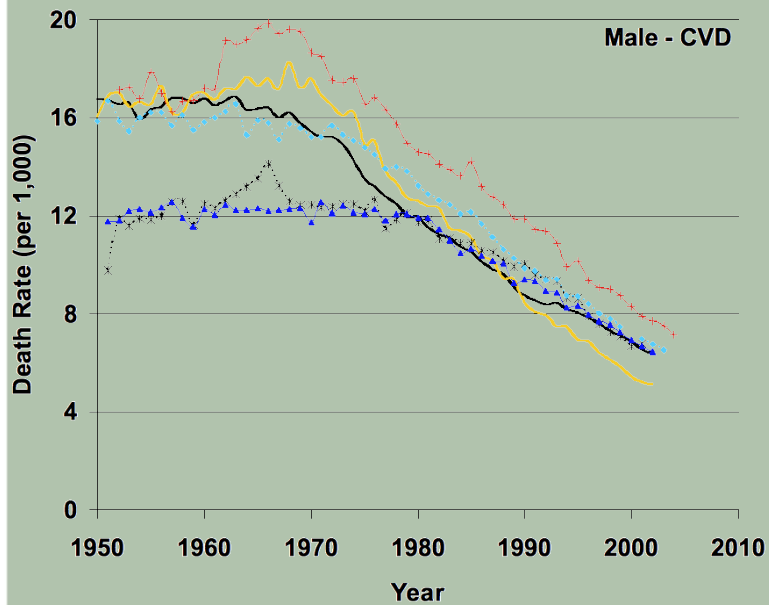
SYLVIE STACHENKO, The School of Public Health, University of Alberta

DEREK YACH, PepsiCo

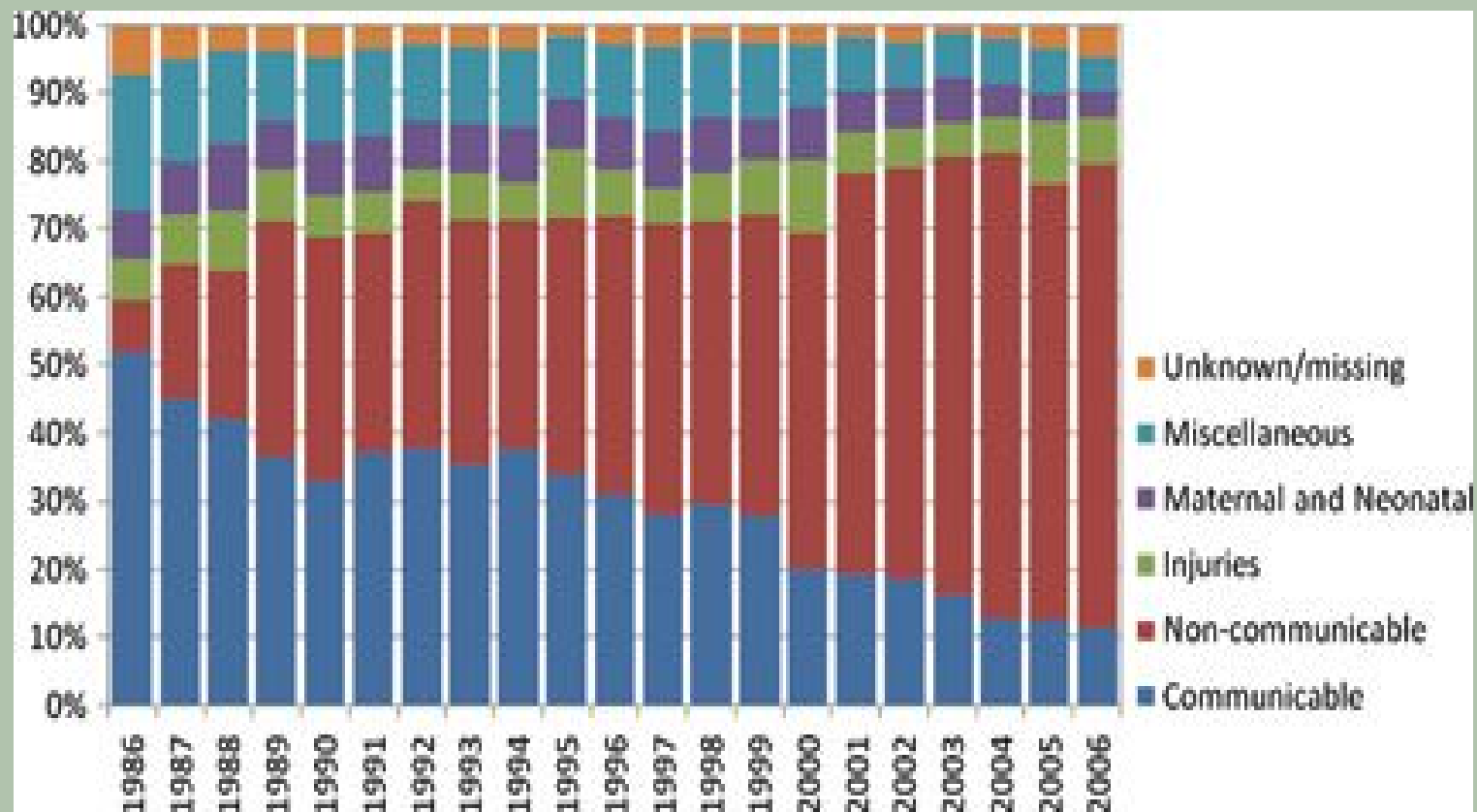
Major Messages of the Report

- Alignment of goals and priorities with local epidemic, capacity, resources, and priorities
- Recognition of the overriding reality of resource constraints
- Integration of efforts across chronic diseases with common risk factors; and with infectious chronic diseases (HIV/AIDS and TB)
- Actions across multiple sectors of government and society
- Government coordination and leadership
- Need for more knowledge of effective, economically feasible interventions and programs and how they can be successfully implemented
- Integration with health systems strengthening and other existing global health priorities
- Evaluation and monitoring as a critical component of success

Age-Standardized Cardiovascular Mortality trends in selected high-income countries



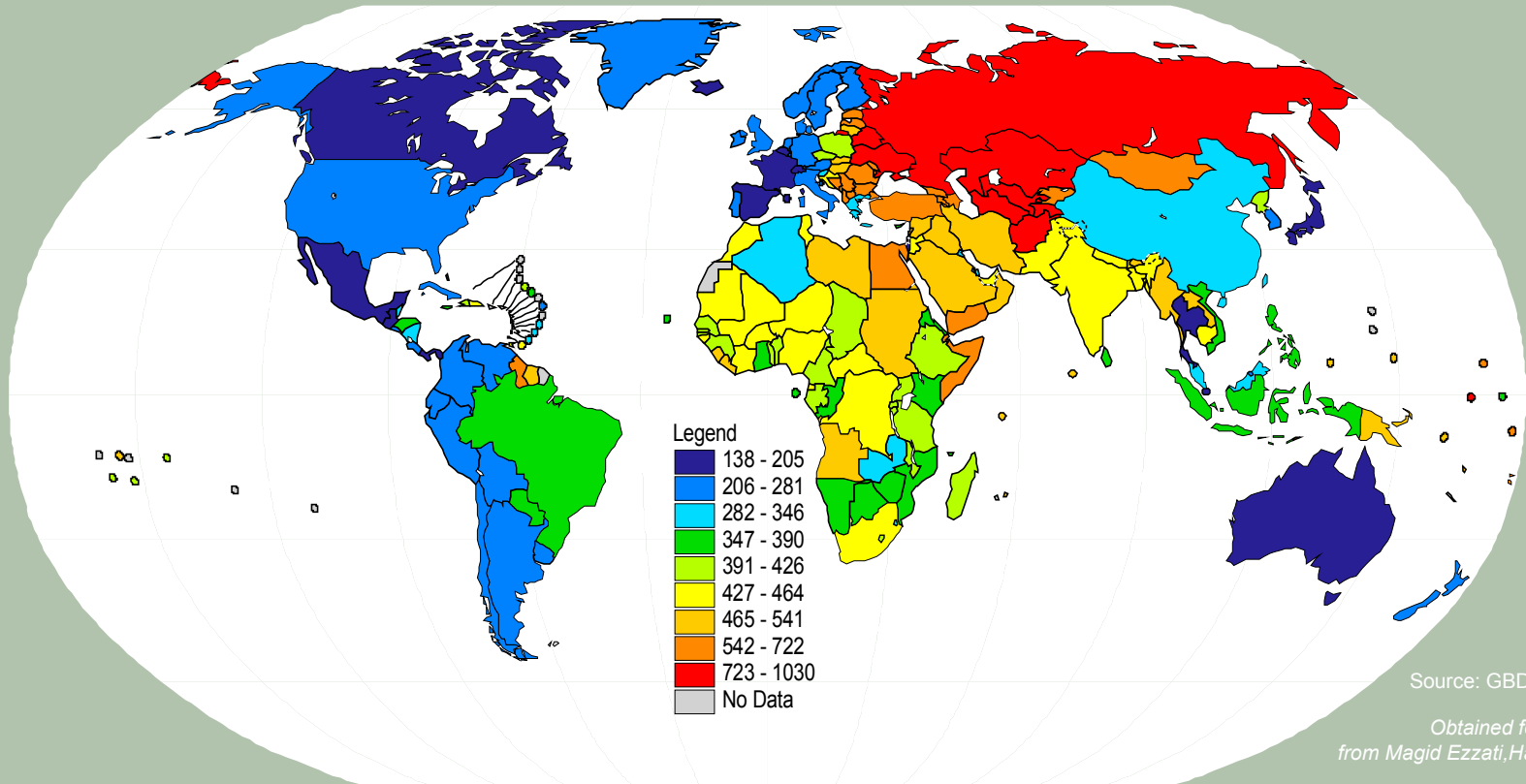
Change in broad cause of death for both sexes in Matlab, Bangladesh 1986-2006



Karar, Z et al; Global Health Action, 2009.

Cardiovascular Disease

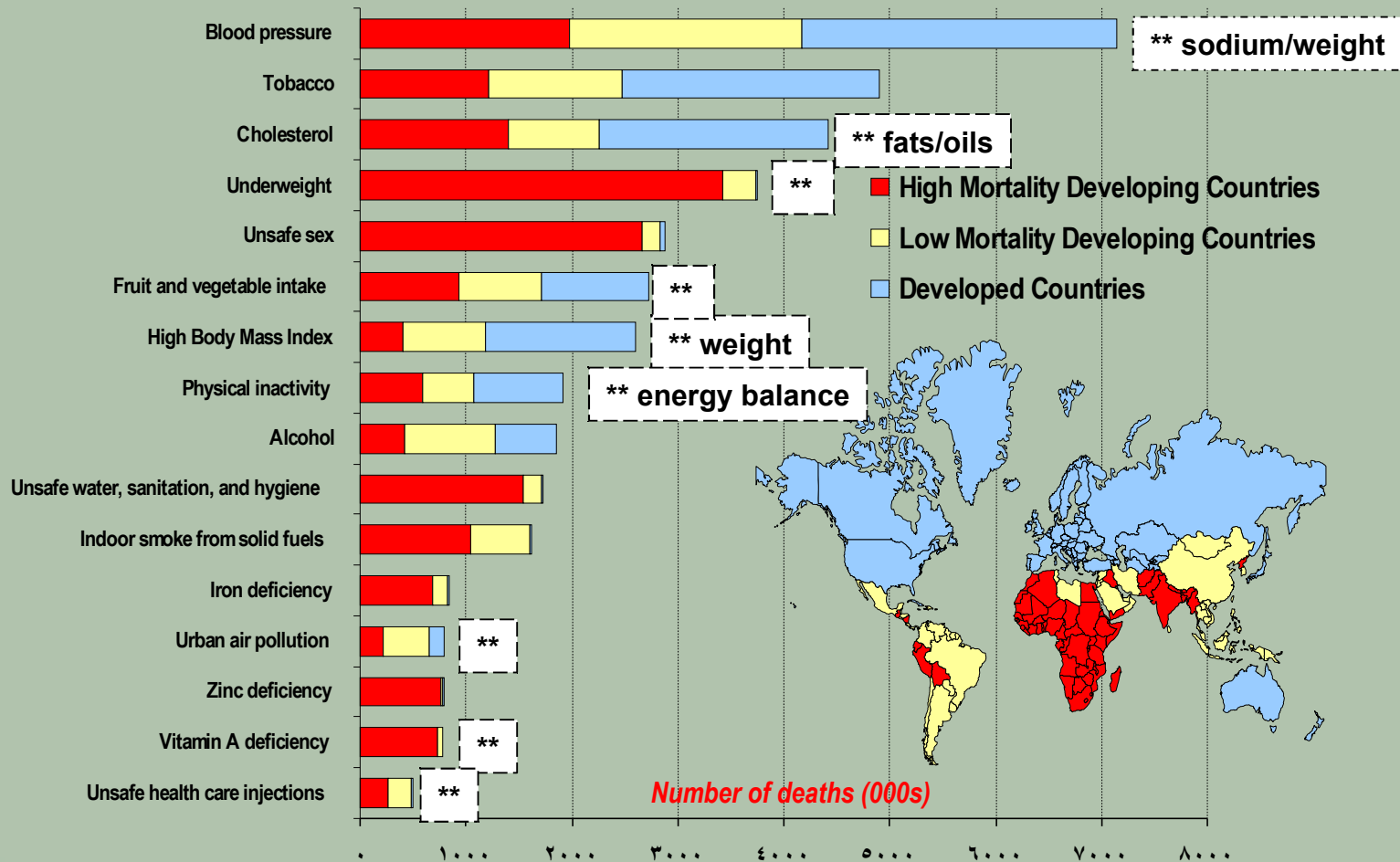
(Age-standardized death rate per 100 000, males)



The boundaries and names shown and the designations used on this map do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted lines on maps represent approximate border lines for which there may not yet be full agreement.

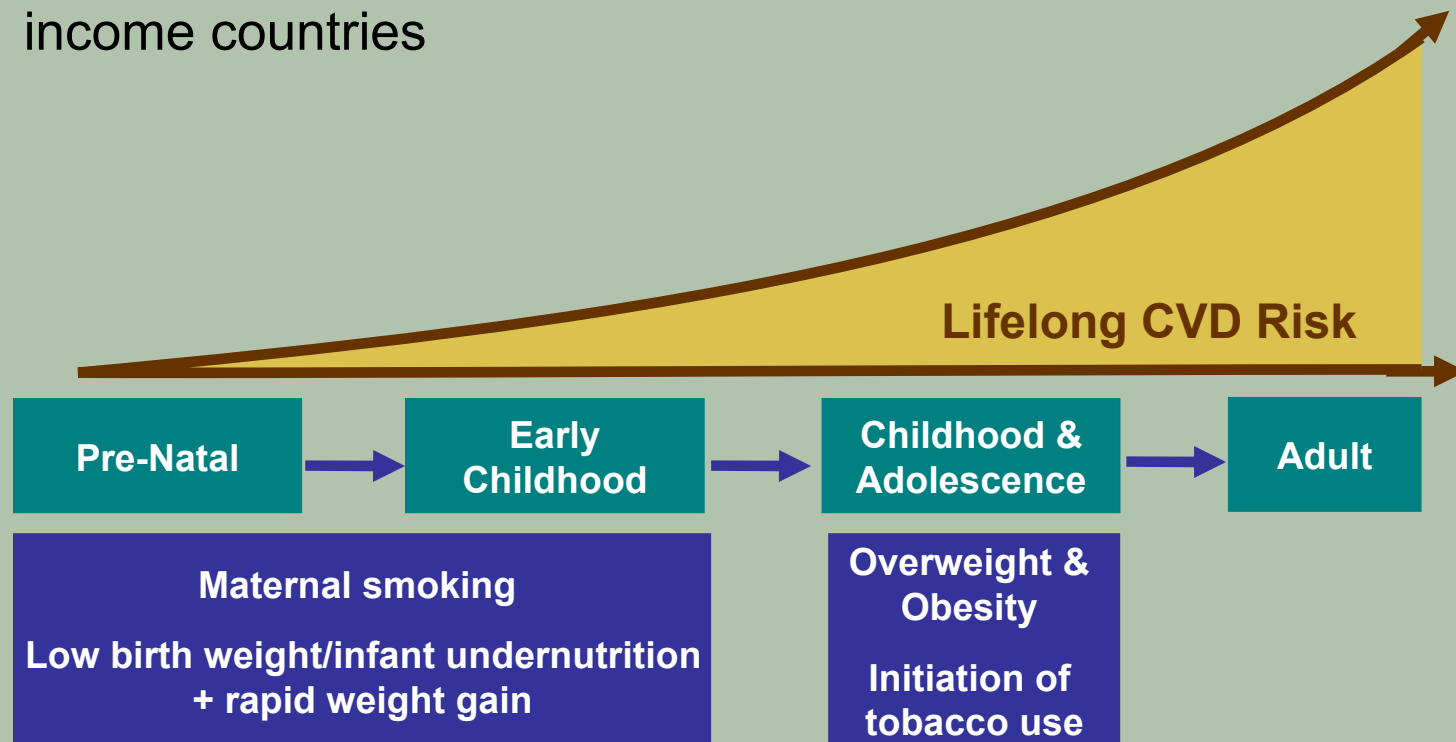
© WHO 2004. All rights reserved

Deaths in 2000 Attributed to Selected Leading risk Factors



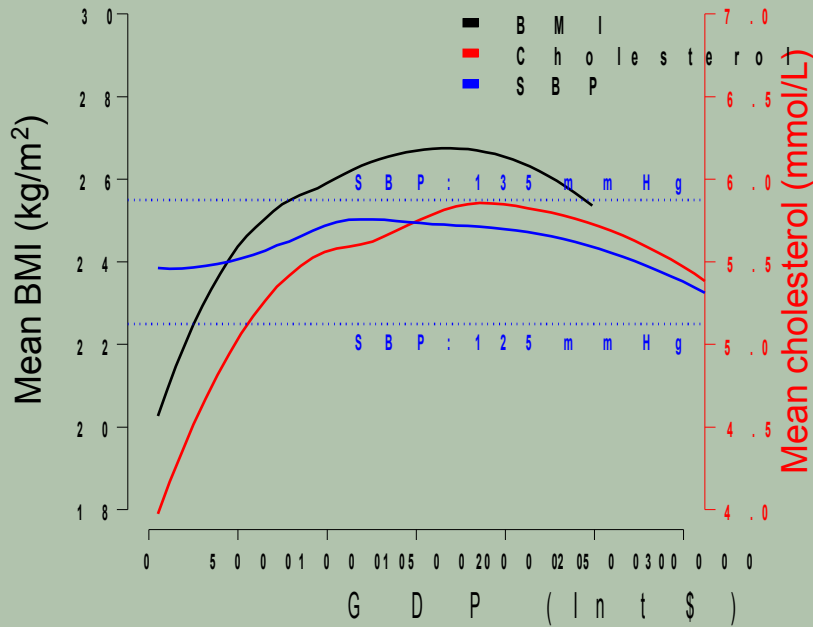
A Lifecourse Perspective

- CVD risk accumulates starting early in life
- Trends in early life risks are rising in low and middle income countries

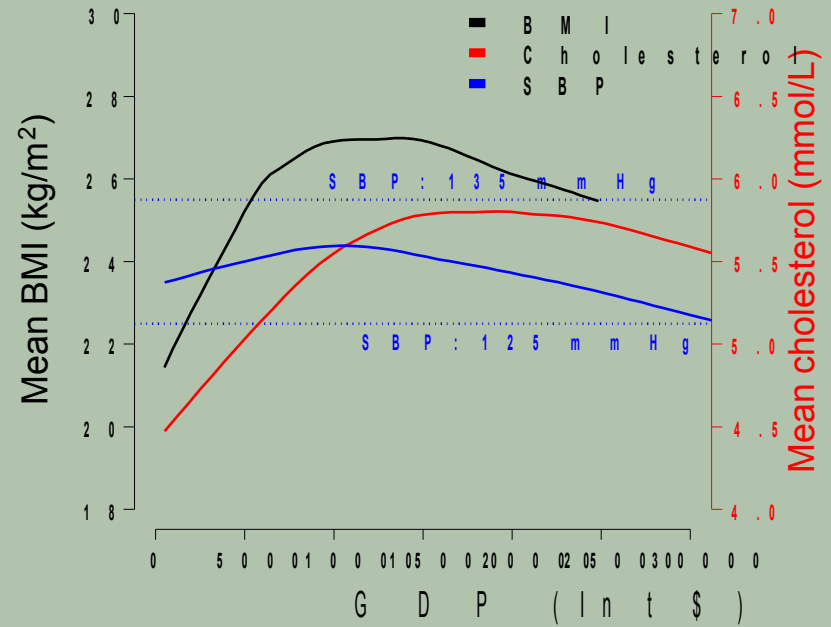


Mean, BMI, SBP and TC in relation to national income

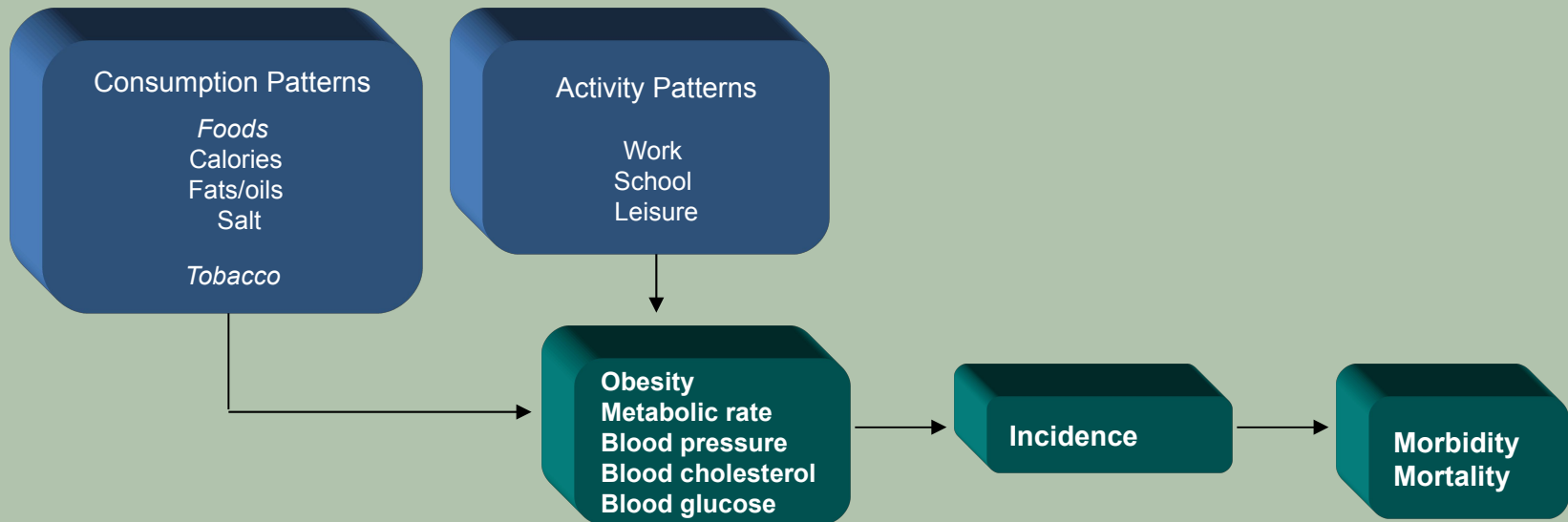
Male



Female

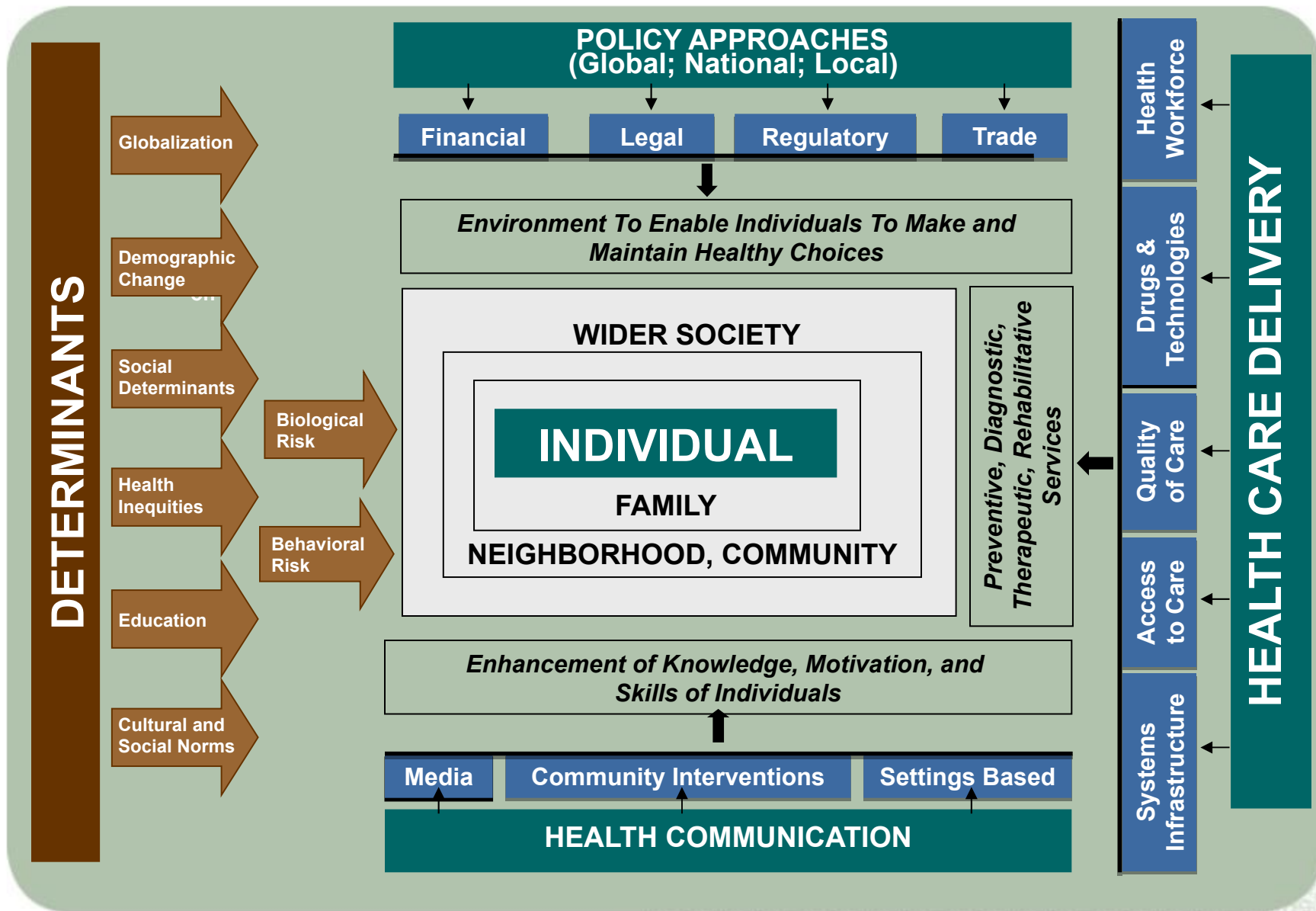


We know the risk factors that contribute to CVD...



It seems simple...

- To reduce the burden, reduce the risk factors and treat disease



Priority Strategies Based on Available Intervention and Economic Evidence

- Tobacco control strategies (implementation of the Framework Convention for Tobacco Control)
- Salt reduction strategies (in food supply and in individual consumption)
- Improved clinical prevention for high-risk individuals

IF they can be adapted and implemented

The Challenge is How

Summary of barriers:

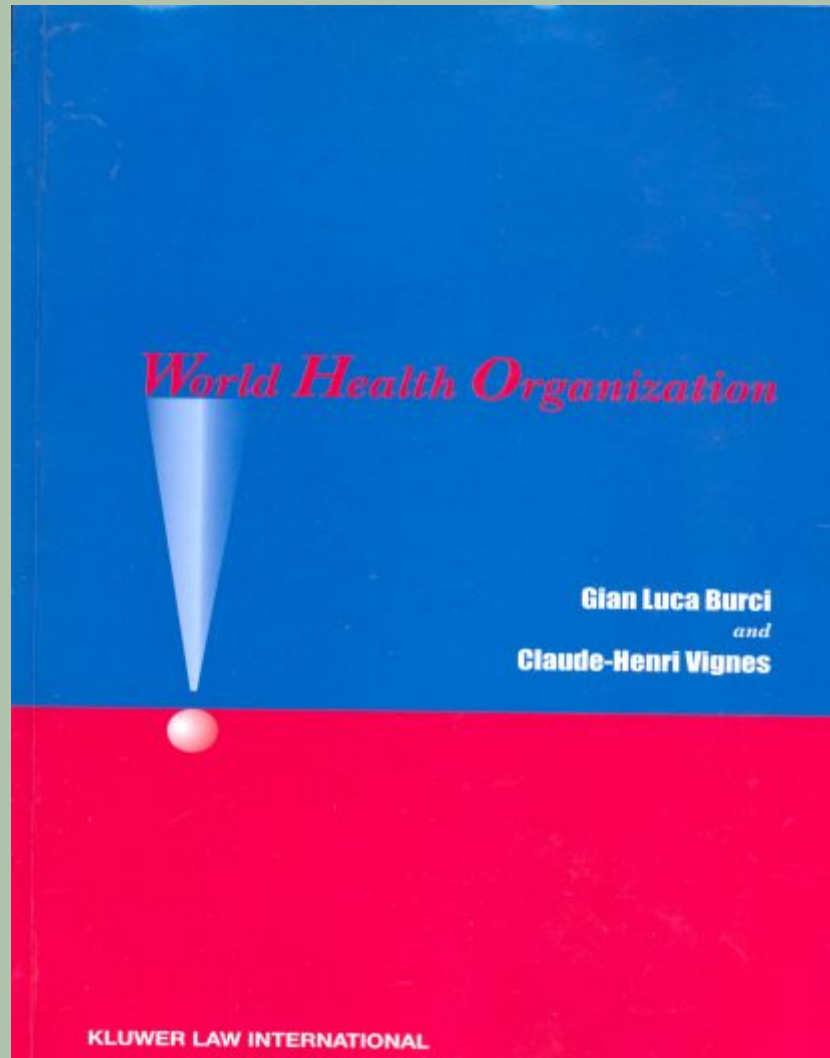
- Lack of knowledge about the effectiveness and feasibility of policies, programs, and services in the contexts in which they need to be implemented;
- Insufficient capacity to meet CVD needs in low and middle income countries
 - health workforce and health systems infrastructure capacity
 - implementation/enforcement capacity for policies and regulations
- Other competing health and development priorities
- Lack of financial and other resources
- Fragmentation of efforts among stakeholders at all levels (global and local)

Recommendations to Overcome these Barriers

- Building the knowledge base
- Local solutions that can benefit from global support
- Meeting resource needs
- Organizing major players for action

Recommendations to Meet Resource Needs

- Recognize Chronic Diseases as a Development Assistance Priority
- Advocate for Chronic Diseases as a Funding Priority
- Define resource needs



FEATURE

Grand challenges in chronic non-communicable diseases

The top 20 policy and research priorities for conditions such as diabetes, stroke and heart disease.

Abdallah S. Daar¹, Peter A. Singer¹, Deepa Leah Persad¹, Stig K. Prammings², David R. Matthews³, Robert Beaglehole⁴, Alan Bernstein⁵, Leszek K. Borysiewicz⁶, Stephen Colagiuri⁷, Nirmal Ganguly⁸, Roger I. Glass⁹, Diane T. Finegood¹⁰, Jeffrey Koplan¹¹, Elizabeth G. Nabel¹², George Sarna⁶, Nizal Sarrafzadegan¹³, Richard Smith¹⁴, Derek Yach¹⁵ and John Bell¹⁶

Chronic non-communicable diseases (CNCDs) are reaching epidemic proportions worldwide¹⁻³. These diseases — which include cardiovascular conditions (mainly heart disease and stroke), some cancers, chronic respiratory conditions and type 2 diabetes — affect people of all ages, nationalities and classes.

The conditions cause the greatest global share of death and disability, accounting for around 60% of all deaths worldwide. Some 80% of chronic-disease deaths occur in low- and middle-income countries. They account for 44% of premature deaths worldwide. The number of deaths from these diseases



Poor diet and smoking are two factors that contribute to the millions of preventable deaths that occur each year.

R. CANDIA/AP

P. PARKS/AFP/GETTY

Global Alliance for Chronic Diseases



Recommendation 8: Collaborate to Improve Diets

WHO, the World Heart Federation, the International Food and Beverage Association, and the World Economic Forum, in conjunction with select leading international NGOs and select governments from developed and developing countries, should coordinate an international effort to develop collaborative strategies to reduce dietary intake of salt, sugar, saturated fats, and trans fats in both adults and children. This process should include stakeholders from the public health community and multinational food corporations as well as the food services industry and retailers. This effort should include strategies that take into account local food production and sales.

PepsiCo's Global Goals and Commitments

Products	Marketplace	Community
<p>Provide more food and beverage choices made with wholesome ingredients that contribute to healthier eating and drinking.</p>	<p>Encourage people to make informed choices and live healthier.</p>	<p>Actively work with global and local partners to help address global nutrition challenges.</p>
<ul style="list-style-type: none"> ▪ Increase the amount of whole grains, fruits, vegetables, nuts, seeds and low-fat dairy in our global product portfolio. 	<ul style="list-style-type: none"> ▪ Display calorie count and key nutrients on our food and beverage packaging by 2012. 	<ul style="list-style-type: none"> ▪ Invest in our business and research and development to expand our offerings of more affordable, nutritionally-relevant products for underserved and lower-income communities.
<ul style="list-style-type: none"> ▪ Reduce the average amount of sodium per serving in key global food brands by 25 percent by 2015. 	<ul style="list-style-type: none"> ▪ Advertise to children less than 12 years of age only products that meet our global science-based nutrition standards. 	<ul style="list-style-type: none"> ▪ Expand PepsiCo Foundation and PepsiCo corporate contribution initiatives to promote healthier communities, including enhancing diet and physical activity programs.
<ul style="list-style-type: none"> ▪ Reduce the average amount of saturated fat per serving in key global food brands by 15 percent by 2020. 	<ul style="list-style-type: none"> ▪ Eliminate the direct sale of full-sugar soft drinks in primary and secondary schools around the globe by 2012. 	<ul style="list-style-type: none"> ▪ Integrate our policies and actions on human health, agriculture and the environment to make sure that they support each other.
<ul style="list-style-type: none"> ▪ Reduce the average amount of added sugar per serving in key global beverage brands by 25 percent by 2020. 	<ul style="list-style-type: none"> ▪ Increase the range of foods and beverages that offer solutions for managing calories, like portion sizes. 	

Tackling Technological Challenges

Reduce salt, preserve taste

Start with the human:
taste receptors

Look to nature: sea salt

Leverage processing
technology

Develop proprietary salt
platform benefiting
different products

Reduce sugar, preserve flavor

Start with the human:
taste receptors

Look to nature: stevia

- Extract
- Optimize taste profile
- Retain shelf life

Mix and match ingredients to
achieve different taste profiles

Populate robust
sweetener pipeline

Recommendation 9: Collaborate to Improve Access to CVD Diagnostics, Medicines, and Technologies

National and subnational governments should lead, negotiate, and implement a plan to reduce the costs of and ensure equitable access to affordable diagnostics, essential medicines, and other preventive and treatment technologies for CVD. This process should involve stakeholders from multilateral and bilateral development agencies; CVD-related professional societies; public and private payers; pharmaceutical, biotechnology, medical device, and information technology companies; and experts on health care systems and financing. Deliberate attention should be given to public–private partnerships and to ensuring appropriate, rational use of these technologies.

1st Ultra-Portable ECG machine Developed and Launched in India: The GE MAC 400

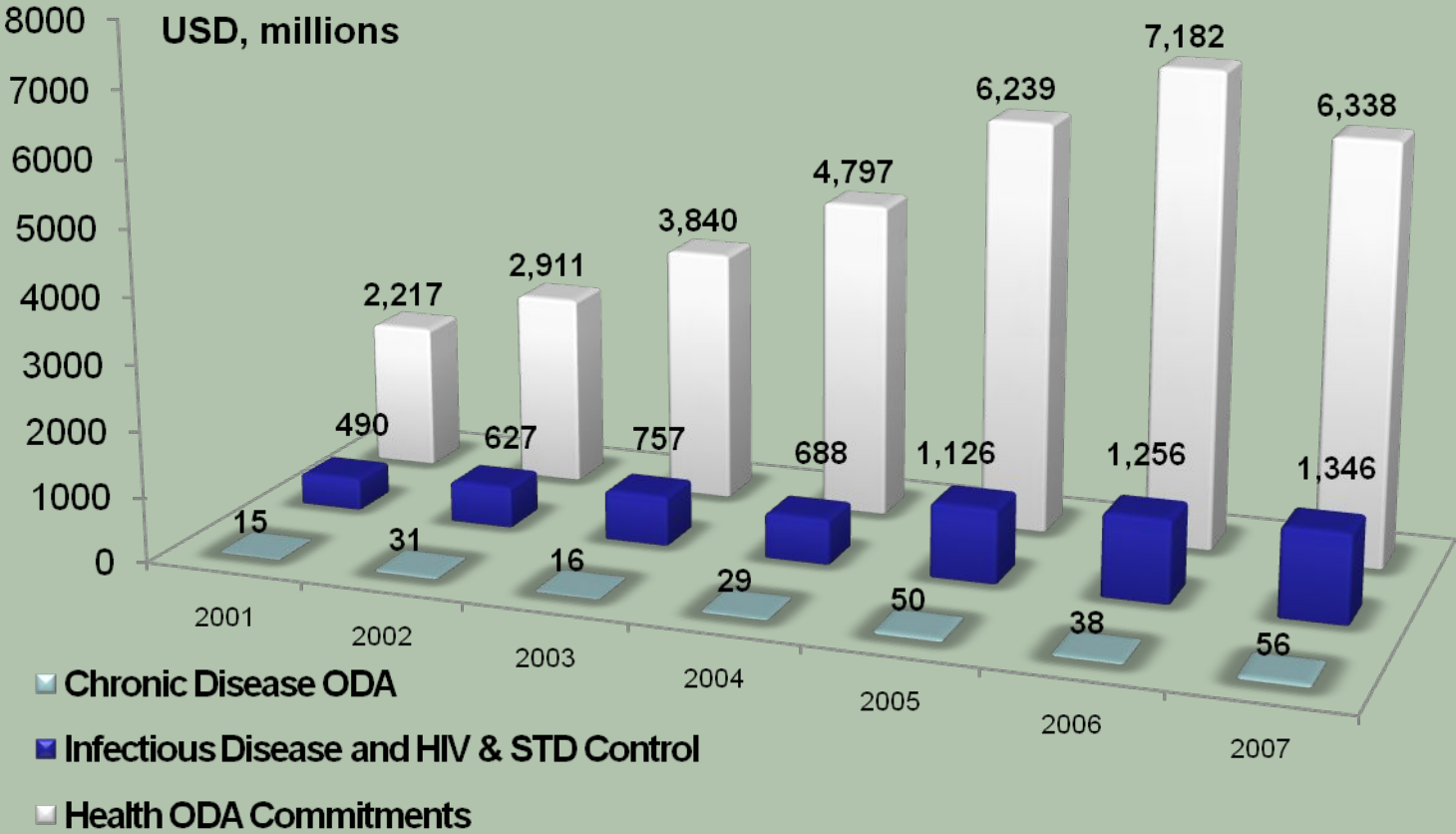


Recommendation 11: Define Resource Needs

The Global Alliance for Chronic Disease should commission and coordinate case studies of the CVD financing needs for five to seven countries representing different geographical regions, stages of the CVD epidemic, and stages of development. These studies should require a comprehensive assessment of the future financial and other resource needs within the health, public health, and agricultural systems to prevent and reduce the burden of CVD and related chronic diseases. Several scenarios for different prevention and treatment efforts, training and capacity building efforts, technology choices, and demographic trends should be evaluated. These assessments should explicitly establish the gap between current investments and future investment needs, focusing on how to maximize population health gains. These initial case studies should establish an analytical framework with the goal of expanding beyond the initial pilot countries.

Resource needs

Health Development Assistance Funding 2001-2007



Center for Global Development, Forthcoming

Organizing for Action: Essential Functions and Many Key Players

	Stakeholder Group	Funding	Advocacy	Leadership	Policy	Implementation	Capacity Building	Research	Monitoring and Evaluation
<u>International</u>	WHO		✓	✓	✓				✓
	World Bank	✓		✓	✓		✓	✓	
	WEF			✓	✓				
	FAO		✓	✓	✓		✓		✓
	UNICEF		✓	✓	✓				✓
	UNGASS			✓					
	International Aid Agencies	✓		✓	✓	✓	✓	✓	
	Global Health Research Initiatives			✓			✓	✓	✓
	U.S. Government	✓		✓	✓	✓	✓	✓	✓
	International NGOs		✓	✓		✓	✓	✓	
	Private Donors	✓							
	Industry	✓	✓	✓	✓	✓	✓	✓	
	PPPs				✓			✓	
<u>Regional</u>	UN / WHO Regional Offices		✓	✓	✓	✓	✓	✓	✓
	Regional Development Banks	✓		✓	✓		✓		
	Regional NGOs		✓	✓		✓	✓	✓	
<u>National/Subnational</u>	National Governments	✓		✓	✓	✓	✓		✓
	Ministries of Health	✓	✓	✓	✓	✓	✓		✓
	National Research Institutes/ MRCs	✓		✓			✓	✓	
	Local Governments	✓		✓	✓	✓	✓		✓
	Local NGOs		✓	✓		✓	✓	✓	
	Local Academia			✓		✓	✓	✓	✓
	Local donors	✓							

In Summary, the Committee Concluded that...

- Reducing the burden of CVD worldwide, and particularly in developing countries, is an achievable goal.
- Without better efforts to promote cardiovascular health, it will not be possible to achieve global health as a whole.
- It will require building successful collaborations to pursue clear goals that reflect local circumstances
- Rather than competing against other health and development priorities, we need to engage policy makers and global health colleagues to integrate attention to chronic diseases within existing global health missions and efforts.

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The Committee thanks...

- NHLBI for sponsoring the study
- The speakers, consultants, and reviewers listed in the report who contributed to this project.
- The IOM staff especially Bridget Kelly

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