

Building research capacity for Heart, Lung and Blood Disorders through global networks

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NIH Global Health Interest Group

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Global Health Research: A New Era



- Increasing attention to global health
- Shifting patterns of disease burden from acute infectious to chronic diseases
- Emerging biomedical research leadership and support organizations

Graphic from *Research!America*

What is NHLBI Doing in Global Health

- Structure
- Programs
 - REDS-III
 - Centers of Excellence in LMICs
 - GACD- Hypertension Program
- Resources

Structure

- Office of Global Health (April 2010)
- A component of the IOD- NHLBI
- Role of OGH includes:
 - Facilitation & Coordination across NHLBI
 - Liaise with other NIH ICs, HHS, USG
 - Link with other national and international organizations (public, private, multilateral)
 - Program Management (in partnership with PDs)
 - Centers of Excellence
 - GACD - RFA

Programs

- REDS-III
- Centers of Excellence Program
- GACD-Hypertension Program

- ❑ Goal of the REDS-III (Recipient Epidemiology and Donor Evaluation Study-III) research program is to improve the safety and availability of transfused blood products in the U.S. and internationally.
- ❑ Seven year multicenter program with international and domestic components, charged with conducting epidemiologic, survey and laboratory studies in blood donors and transfusion recipients.
- ❑ A cohesive, global, and dynamic program.



The Epidemic of Non-Communicable Diseases

nature

Vol 450 | 22 November 2007

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. Pramming², 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

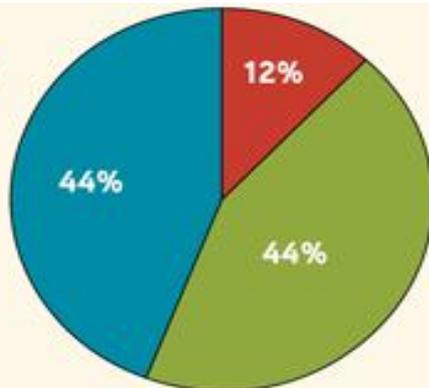


Poor diet and smoking are two factors that contribute to the millions of preventable deaths that occur each year.

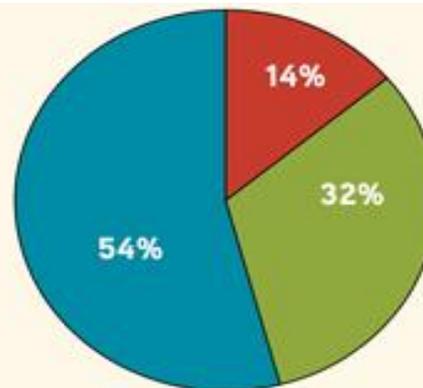


The Increasing Burden of Chronic Non-Communicable Diseases: 2002-2030

Low- and Middle-Income Countries

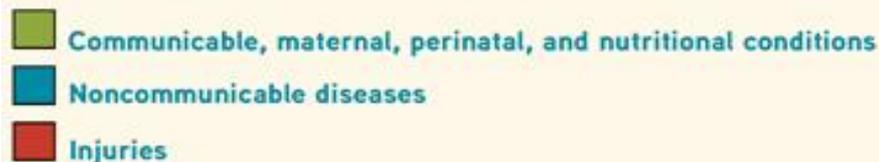
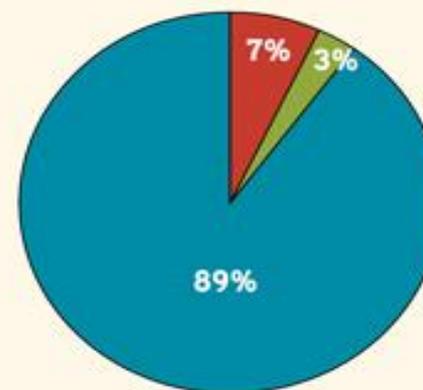
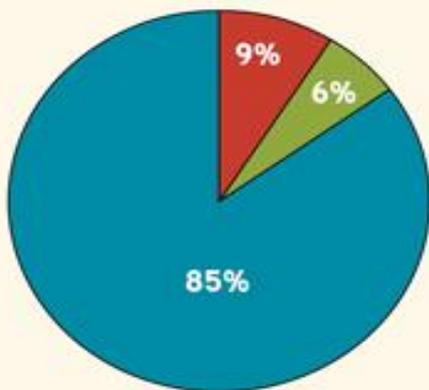


2002



2030

High-Income Countries



Source: P01 AG 017625 (PI Murray)
Lopez, et al. *Global Burden of Disease by Risk Factors*. (2006)



National Heart, Lung, and Blood Institute

Global Health Initiative

Preventing Chronic Disease

NHLBI Global Health Initiative Program

- **Goal:** To establish Centers of Excellence to combat non-communicable chronic cardiovascular and pulmonary diseases (CVPD) in developing countries
- **Each Center of Excellence :**
 - Enables research capacity building
 - Trains future chronic CVPD investigators
 - Conducts research on new or improved approaches, programs, and measures to prevent or treat chronic CVPD

NHLBI/UHG Collaborating Centers of Excellence (since 2009)



Centers of Excellence: Research + Training

RESEARCH

- Epidemiological surveillance
- Dietary factors associated with cardiovascular disease
- Effects of indoor air pollution
- Stroke registry
- Prevention
- Rural vs. urban
- Validation of non-laboratory based screening tools

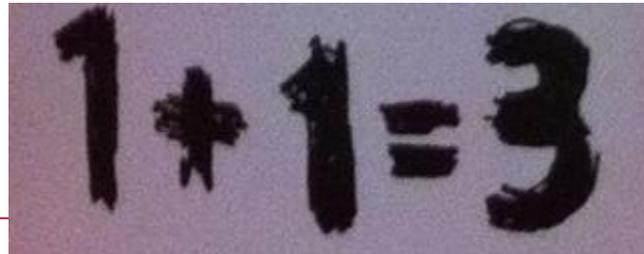


TRAINING

- Short courses
 - Chronic disease epidemiology
 - Clinical research
 - Biostatistics
 - IRB, DSMB
- Master's level programs
- Scholarships
- Postdoctoral and junior faculty
- Mentorship programs

The whole is better than the sum of its parts

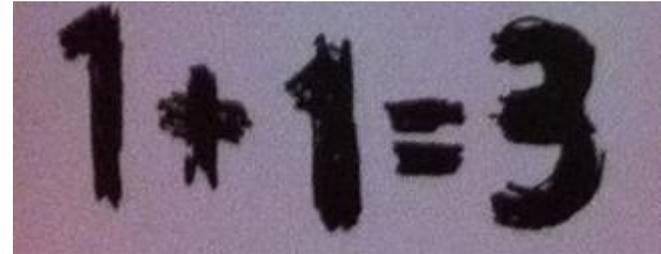
- Sub-committees:
Epidemiology, Community Health Workers, Training, Pulmonary
- Regional networks: COEs in India and Latin America
- COEs working and publishing together
- Five supplements to support collaborative work across the COEs
- One training supplement on the Developmental Origins of Health and Disease (DOHaD)
- Develop database to aggregate COE common data elements
- Five supplements to align COEs research with the GACC RFA on Cookstoves and child mortality



The whole is better than the sum of its parts

New partners:

- US-CDC
- Medtronic Foundation
- American Thoracic Society
- International Academy of Cardiovascular Sciences
- National Institute of Mental Health (NIH)
 - **RFA-MH-13-040**: “Challenges in Global Mental Health : Integrating Mental Health into Chronic Disease Care Provision in LMIC” (Applications due: June 20, 2012)
- National Institute of Child Health and Human Development
 - **PAR-11-270**: “Biomedical/Biobehavioral Research Administration Development (BRAD) Award [G11] (Guatemala and Bangladesh)



How we leverage investments

- **NIH Clinical Center Courses:**
 - Principles and Practice of Clinical Research (China, Bangalore and Kenya)
 - Ethical and Regulatory Aspects of Clinical Research: Guatemala (1), Kenya (9)
- **Grants writing workshop in Bogota, Colombia:** Partnership with Colombia MoH, PAHO, CDC, NIH (Peru, Guatemala, Costa Rica)
- **Summer Institute** on Randomized Behavioral Clinical Trials- (2012:Kenya & Bangladesh; 2013: Guatemala & Peru)
- NHLBI and FIC sponsored **Five COE members** to attend the NIH Household Air Pollution Research Training Institute , October 2012 (Argentina, Bangladesh, Kenya and South Africa)
- **Grants writing workshop in South Africa, November 18-20, 2013- Johannesburg**

THE COE network in Scientific meetings

- **2013 World Hypertension Congress** Special NHLBI sponsored symposium featuring the COE network (speakers- NHLBI, Argentina, Guatemala, India Delhi, Kenya). June 2013, Istanbul, Turkey.
- **2013 International Congress of Nutrition-** Special NHLBI sponsored symposium featuring the COE network (speakers- NHLBI, China, Guatemala and Tunisia). September 2013, Granada, Spain.
- **2014 World Congress of Cardiology- Melbourne, Australia**

Enhancing the COE initiative training

NHLBI will support enhancement of several proposals:

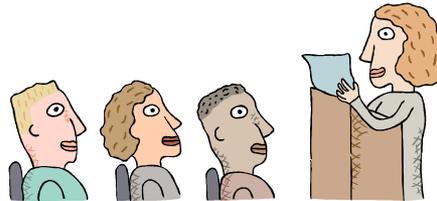
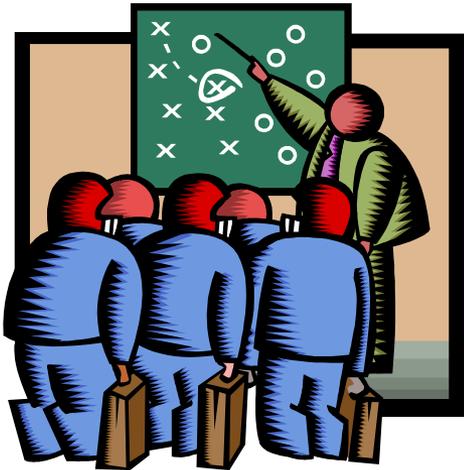
- **Verbal Autopsy:**
 - Short courses (Argentina, Peru, Mexico): Short workshops on autopsy techniques that includes practice interviews and analysis of the results
- **Health Economics Web-based Module:**
- **Training area on ACC site**
 - A repository of COE training materials, strategies, and products
 - Interactive area for Trainees to exchange ideas, information, and to network
 - Seed Grants- AWARDED – 13 Projects on February 2013
 - A library of web-based trainings
 - Tracking System Trainees post-training

COE PROGRAM EVALUATION

- Process Evaluation: completed summer 2012
- Implementation of Process Evaluation recommendations: completed summer 2013
- Feasibility Study Evaluation: Report received April 2013
- Outcome evaluation: Plan development – Fall 2013

COE Program: Final Meeting

- Bethesda, Maryland
- April 13-16, 2014
- Network members will gather to present results

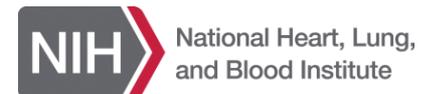


Global Alliance for Chronic Diseases



GACD

GLOBAL ALLIANCE FOR CHRONIC DISEASES
AN ALLIANCE OF HEALTH RESEARCH FUNDERS



Global Alliance for Chronic Diseases



- The Global Alliance for Chronic Diseases (GACD) is the first collaboration of eight major international biomedical research funding agencies to address the specific needs of chronic noncommunicable diseases.
- Announced June 15, 2009

GACD Current Members: Public Funders of Biomedical Research



National Health and Medical Research Council



Canadian Institutes of Health Research



Chinese Academy of Medical Sciences & Chinese Academy of Sciences



Indian Council of Medical Research



South African Medical Research Council



Medical Research Council



National Institutes of Health



European Commission, Health Directorate at Research DG

GACD Goals



- Coordinate implementation research activities
- Seek common approaches to guide policy
- Develop and share best practices
- Build research/economic capacity

First GACD Program: Reducing the Impact of Hypertension in LMICs

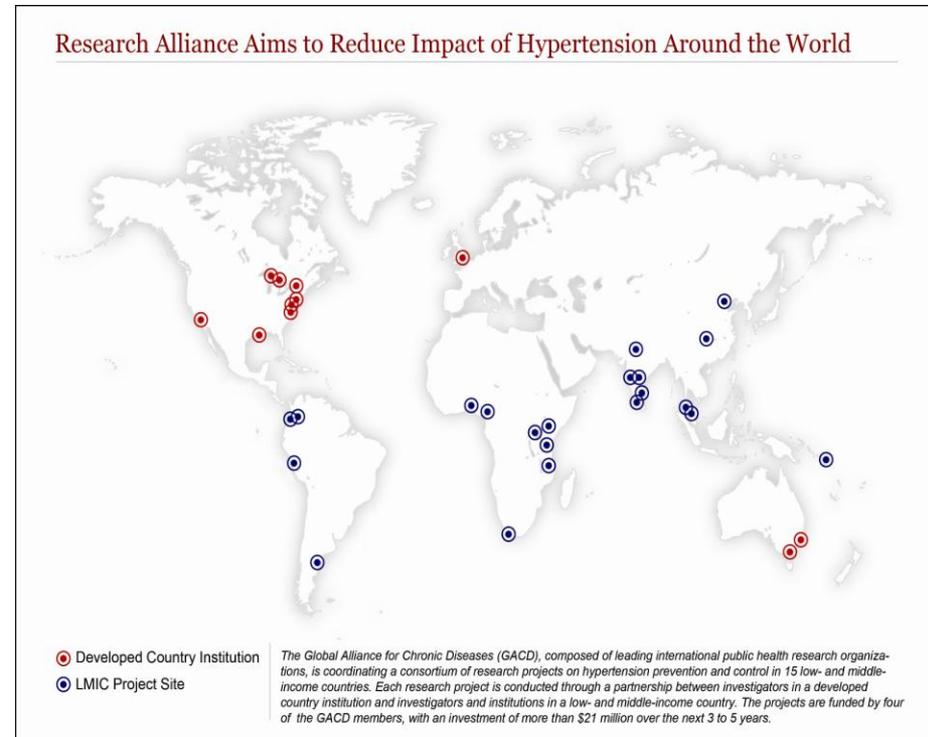
Goals of the Program:

- To develop a better understanding of **key barriers and facilitators at local and national levels** that affect hypertension control and to consider how these implementation challenges can be overcome
- To understand how innovations for hypertension control can be **introduced** and **scaled up** across a range of settings
- To identify what elements of systems **most need to be strengthened** to prevent hypertension and its consequences (e.g. stroke)
- To improve hypertension control rates while **reducing disparities** in hypertension control **across population sub-groups**

<http://www.nhlbi.nih.gov/about/globalhealth/alliance-chronic-diseases/index.htm>

GACD Hypertension Program

- 15 community-based research projects that will focus on implementing effective approaches to control high blood pressure
- The projects represent an investment of more than US\$21.8 million over three to five years
- Research in 15 different low- and middle-income countries:
 - Argentina
 - China
 - Colombia
 - Fiji
 - Ghana
 - India
 - Kenya
 - Malaysia
 - Nigeria
 - Peru
 - Rwanda
 - Samoa
 - South Africa
 - Tanzania
 - Uganda



GACD

GLOBAL ALLIANCE FOR CHRONIC DISEASES
AN ALLIANCE OF HEALTH RESEARCH FUNDERS

NIH Funds 5 GACD projects

NHLBI :

- Task shifting and BP control in **Ghana**: A cluster-randomized trial
- Comprehensive approach for hypertension prevention and control in **Argentina**
- Launching a salt substitute to reduce BP at the population level in **Peru**
- Optimizing linkage and retention to hypertension care in rural **Kenya**

NINDS :

- Tailored Hospital-based Risk Reduction to Impede Vascular Events after Stroke (THRIVES) in **Nigeria**

Partners Have Complementary Roles

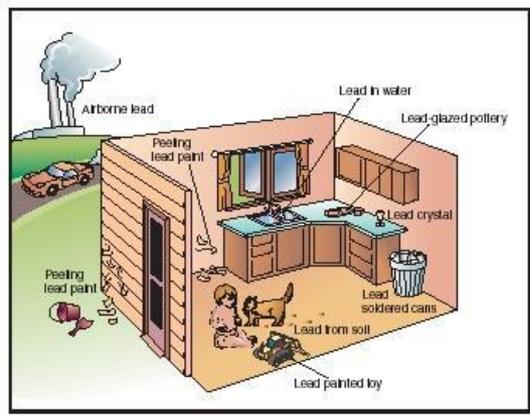


Multi-Sector Solutions to Health Problems

Secondhand Smoke



Lead Poisoning



- Transportation
- Housing
- Education
- Agriculture
- Urban Planning
- Local Ownership
 - Community
 - Business leaders
- Policymakers

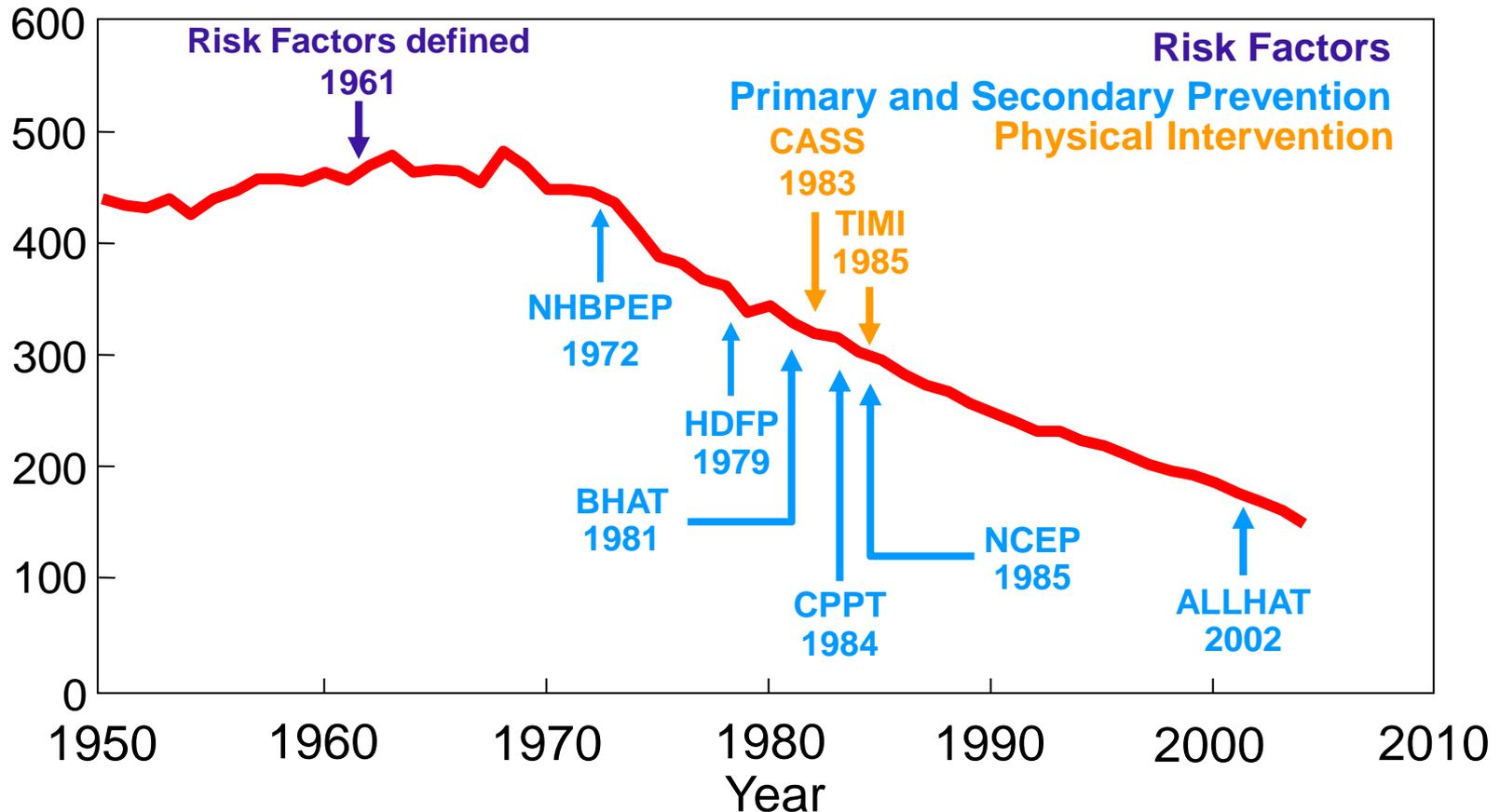
Opportunity for Prevention



- The major causes of chronic diseases are known.
- If these risk factors were eliminated,
 - Prevent at least 80 percent of all heart disease, stroke and type 2 diabetes
 - Prevent over 40 percent of cancer

Research to Results: Age-Adjusted Death Rates for Coronary Heart Disease, U.S., 1950-2004

Deaths/100,000 Population



Resources

- IOM report
- NHLBI Global Health Strategic Plan
- OGH website

IOM Report on Global Cardiovascular Health

Promoting
Cardiovascular Health
in the Developing World

**A Critical Challenge
to Achieve Global Health**

INSTITUTE OF MEDICINE
OF THE NATIONAL ACADEMIES

- Commissioned/funded by NHLBI in 2008
- Report released in *March 2010*

**Report Brief,
Report Summary, and
Full Report
can be downloaded for free:**

www.iom.edu/globalcvd

NHLBI Global Health Strategic Plan



NHLBI Global Health Strategic Plan

2012-2017

Office of Global Health
National Heart, Lung, and Blood Institute



U.S. Department of Health and Human Services
National Institutes of Health
National Heart, Lung, and Blood Institute

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NHLBI Office of Global Health

NHLBI'S GLOBAL COMMITMENT

UNITED HEALTH AND NHLBI COLLABORATING CENTERS OF EXCELLENCE

GLOBAL ALLIANCE FOR CHRONIC DISEASES

NHLBI GLOBAL HEALTH PROGRAMS

PARTNERS IN GLOBAL HEALTH

RESOURCES

OFFICE OF GLOBAL HEALTH STAFF

MEDIA ROOM

Centers of Excellence Investigator Portal
password-protected

Reducing Chronic Diseases Must Be a Global Priority

Chronic diseases are universal. They affect the young and the elderly, the rich and the poor, and every ethnic group. They impact entire communities and entire nations, and they cost millions of dollars in lost productivity and care.

Populations in developing countries are disproportionately affected by chronic diseases, with more individuals developing chronic diseases at younger ages than those in higher income countries. Chronic diseases account for around 60 percent of all deaths globally, and 80 percent of these deaths occur in low- and middle-income countries.

The impact of chronic diseases is rapidly growing among populations in developing countries, where, without action, deaths due to chronic diseases are expected to continue to increase substantially. With action, however, 36 million premature deaths worldwide could be averted by 2015, according to the World Health Organization (WHO), with nearly half prevented in people under 70 years old.

Scientific investments in chronic disease research, care, and translation in developing countries are essential to reducing the global burden of chronic diseases.

More than 35 million people worldwide die from chronic noncommunicable diseases — especially heart disease and stroke, diabetes, lung diseases, and cancer — twice the number of deaths from infectious diseases, maternal and perinatal conditions, and nutritional deficiencies combined.

Last Updated: August 27, 2012

News

[Global Heart: Special Issue on Indoor and Outdoor Air Pollution, and Cardiovascular Health, edited by Eser Tolunay and Arun Chockalingam of NHLBI](#)

[The Lancet Global Burden of Disease Study 2010](#)

August 27, 2012: NHLBI Global Health Strategic Plan
(9 MB)

Promote Global Health



UNITEDHEALTH & NHLBI COLLABORATING CENTERS OF EXCELLENCE | LEARN MORE

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Global Health Initiative
Preventing Chronic Disease

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Together, We Can

“International partnerships are crucial to fighting this massive epidemic.

All nations are feeling the devastating impact of ...non-communicable diseases and, consequently, must be part of the solution. This convergence of interests presents exceptional opportunities - and enormous responsibilities - to those of us in the medical research community.”

Roger Glass, Director, FIC, 2011



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