Chronic Non-Communicable Diseases:
A Global Problem with Local Solutions

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Of the 56 million global deaths in 2012, 38 million, or 68%, were due to non-communicable diseases.
Deaths from NCDs are displacing deaths from infectious disease even in rural Bangladesh.
The 2009 Global Risk Report of the World Economic Forum rated chronic diseases as a more costly global risk than the global financial crisis, with potential costs estimated between $250 billion to $1 trillion dollars.
Low Funding

No significant relationship between aid and burden of disease
e.g. Stuckler et al Lancet 2009; Sridhar and Batniji Lancet 2009; Subrckee et al Bull WHO 2009
What is the problem?

• 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
The fraction of discovery Science reaching patients in clinical practice is very low

Westfall et al. Practice-based research--"Blue Highways" on the NIH roadmap

- It takes an average of 17 years for only 14% of new scientific discoveries to enter day-to-day clinical practice.
- Americans receive, on average, only half of recommended preventive, acute, and long-term quality health care.
Clinical inertia still persists in translating research discoveries to health impact

- 1980s: Benefits of lowering blood cholesterol proved beyond doubt.
- 1990s: Safe and powerful drugs, including statins, developed.
- Today: ~ 30-40% of eligible patients still sub-optimally treated.
Social Ecological Model

- **Federal and State**
  - Policies to regulate and support healthy actions

- **Community**
  - Policies, standards, social networks

- **Institutions**
  - Policy, regulations and informal structures

- **Interpersonal**
  - Family, peers, social networks

- **Individual**
  - Knowledge, attitudes, beliefs and behaviors
A Focus on T4 Translation Research

Biomedical Model

Bench Research
- Fundamental Discovery Science
  – Animal Studies

Bedside
- 1st Human Studies
- Controlled Observations
- Phase I Clinical Trials

Patients
- Phase II and III Clinical Trials

Practices
- Phase IV Clinical Trials
- Comparative Effectiveness Research

Real World Setting
- Dissemination and Implementation Research

Discovery Science

T1
Translation to Humans

T2
Translation to Patients

T3
Translation to Clinical Practices

T4
Translation to Real World Settings

Inputs: Using best population-level interventions for obesity prevention

Early Care and Education
School
Community
Health Care
Home, Family
Cross-Setting Linkages

Multi-Level Multi-Setting Model: Applying population-level interventions in multiple levels and settings

Supportive Policies, Systems, Environments

Intervention Populations

Healthy Eating
Active Living

Outputs: Filling research gaps and sharing findings with stakeholders

Create Healthy Places for Children

Education
Social Support
Key Areas for Action

1. Early childhood
2. Empowering parents and caregivers
3. Healthy foods in schools
4. Access to healthy, affordable food
5. Increasing physical activity
Innovations

• *Let’s Move!*

• Collaboration with Private Sector

• Whole-of-Government Approach
But disparities persist and severe obesity may be on the rise
Global Health Leadership: Key Issues

- Policy and public health approaches are essential to crafting solutions.
- Economic factors have promoted spread of NCDs
- Prevention requires approaches which are not in the health care sector
- Research needs are poorly understood
Collins says global health a top priority

New NIH Director Dr. Francis Collins singled out global health as one of five areas he wants to focus on during his tenure, citing it as an example of “soft power” the United States cannot afford to pass up.

1. High-throughput technologies in genomics and nanotechnology
2. Developing diagnostics, preventative strategies and therapeutic tools through public–private partnerships
3. Reining in the costs of health care with comparative-effectiveness research and personalized medicine
4. Expanding research into diseases affecting the developing world
5. Increasing budgets and investing in training & peer review to achieve a predictable funding trajectory
GRAND South is a network of 11 centres in Asia, Africa and Latin America doing research, building capacity, and developing policy to reduce the burden of NCDs.

Florence Smith is a research assistant at C3 Collaborating for Health, a London based, global NGO that works to prevent NCDs. Read her interesting article on NCD. Following is the link:

http://blogs.bmj.com/bmj/2014/05/30/florence-smith-ncds-and-hiv-wheres-the-intersection/?g=widget_default

Florence Smith: NCDs and HIV—where's the intersection?
blogs.bmj.com

At first glance, NCDs (non-communicable diseases) and HIV/AIDS seem to have little in common. However, a recent symposium...
The Global Alliance for Chronic Diseases (GACD) is the first collaboration of nine major international biomedical research funding agencies to address the specific needs of chronic noncommunicable diseases.
GACD Goals

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

- 15 community-based research projects that will focus on implementing effective approaches to control high blood pressure
- 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
What expertise is needed ACROSS disciplines?

Promote and encourage research in cross-cultural contexts across scientific disciplines --- biomedical, social & behavioral science

Examples - Epidemiology, statistics, anthropology, sociology, health economics, political science, policy analysis, ethics
What expertise is needed ACROSS SECTORS?

- Multiple sectors - beyond health - including social determinants
  - food security
  - environment
  - workplace conditions
  - housing
  - Education
- Knowledge brokers to inform policy using best evidence
Promoting Cardiovascular Health in the Developing World

A Critical Challenge to Achieve Global Health

SCIENTIFIC AMERICAN CUSTOM MEDIA

Promoting Cardiovascular Health Worldwide

Perspective on the 12 Recommendations of the Institute of Medicine

Edited by:
Valentin Fuster, Jagat Narula, Rajesh Vedanthan, Bridget B. Kelly
Global Health: A New Era

Global Health IS America’s Health

Graphic from Research!America
HHS Global Health Strategy Goals

GOAL 1. Protect and promote the health and well-being of Americans through global health action

GOAL 2. Provide leadership and technical expertise in science, policy, programs and practice to improve global health

GOAL 3. Advance US interests in international diplomacy, development and security through global health action

A Healthier, Safer World
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THANK YOU