

**Science for Health:
Ensuring Universal Access to Health
Role of InterAcademy
Medical Panel**

By

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Science is about People

People's needs

Solving people's needs



◆ Science has to be relevant to needs



□ Home & Society

- ◆ Secure home; raise family
- ◆ Enjoy friends
- ◆ Education & harmonious society

□ Health (Longevity)

- ◆ Food security
- ◆ Sanitary & healthy environment
- ◆ Medical and healthcare services
- ◆ Sustaining health

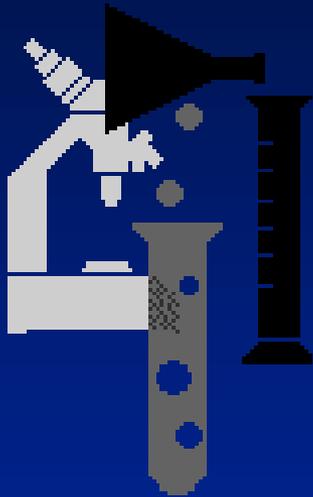
□ Wealth (Prosperity)

- ◆ Pursue interests/leisure
- ◆ Quality of life
- ◆ Societal progress

Essentials of a good life



20th Century Advances from Science

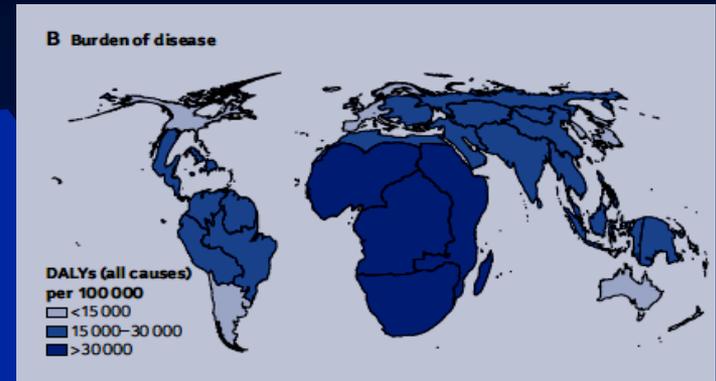


- ❑ Infusion of Science into education and medical practice
- ❑ Problem-based innovations
 - ◆ Water, electricity, food
 - ◆ Buildings, roads, mass transport
 - ◆ Communications, IT, entertainment
 - ◆ Surgery, drugs, vaccines, diagnostics
 - ◆ Many more
- ❑ Training, professionalism & ethics
- ❑ Led to doubling of human life-span



21st Century

The World is far from well: The Unequal World

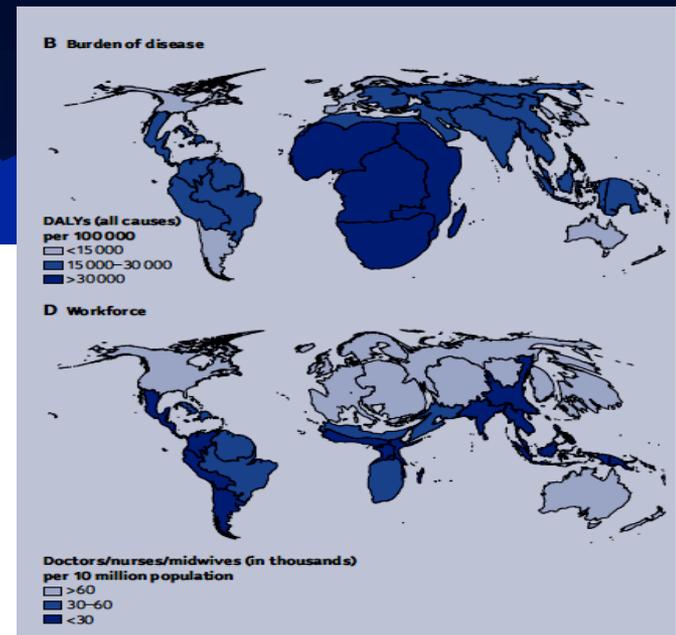
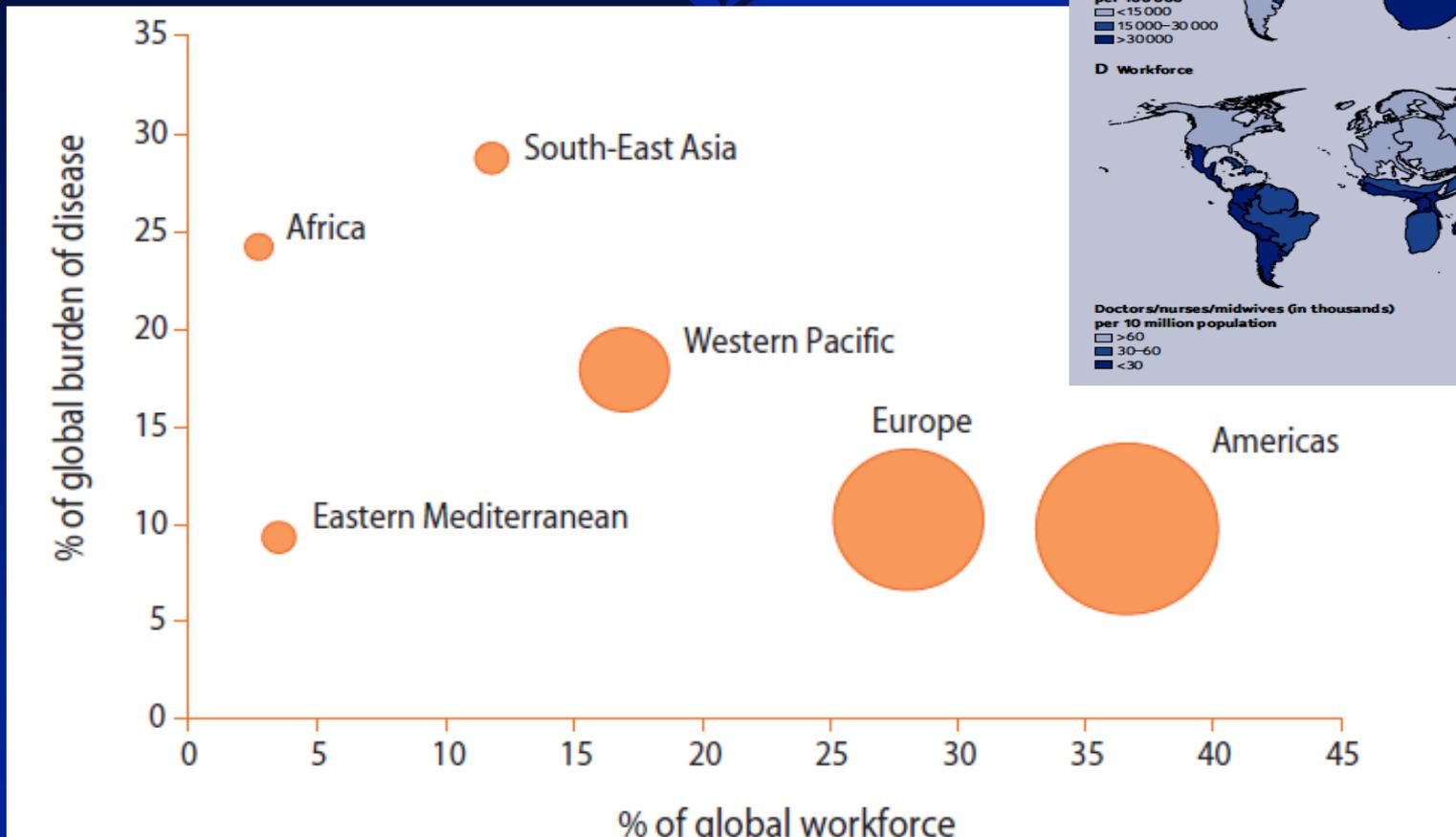


- Gaps and inequities in health
 - ◆ Many do not benefit from 20th Century advances
 - ◆ Poor and developing countries left behind
- 10/90 gap
 - ◆ Only 10% of global spending on health research is devoted to diseases or conditions that account for 90% of the global disease burden.



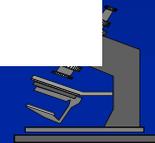
Map From: Frenk J, Chen L, et al. *Health professionals for a new century: transforming education to strengthen health systems in an interdependent world*. Published online at www.thelancet.com on Nov 29, and in *The Lancet* Dec 4, 2010, vol 376; pp 1923–58); reproduced in expanded book, distributed by Harvard University Press.

Inequalities in health workforce distribution by WHO regions



◆ Source: World Health Report, WHO 2006

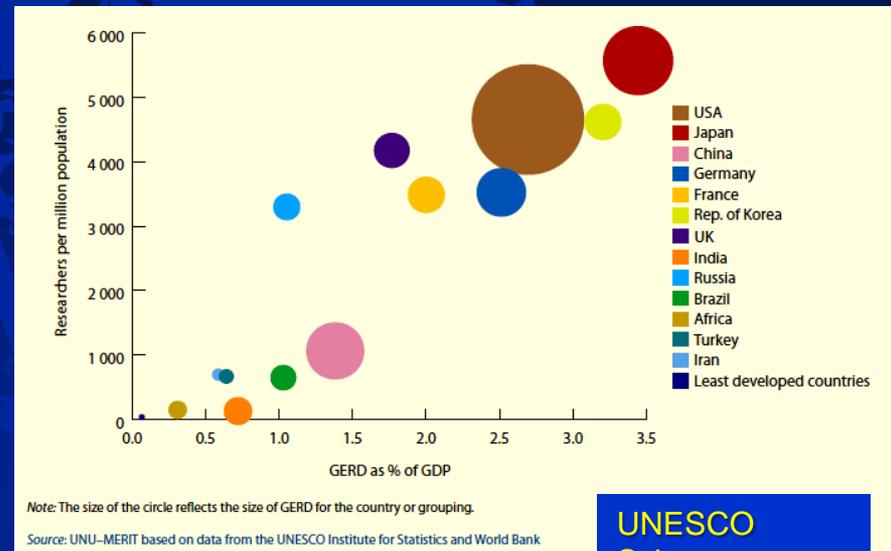
◆ Map from: From: Frenk J, Chen L, et al. Health professionals for a new century: transforming education to strengthen health systems in an interdependent world. Published online at www.thelancet.com on Nov 29, and in *The Lancet* Dec 2010



Research Capacity of Low and Middle Income Countries

- ❑ Lags behind high income countries
- ❑ Less resources to support creative investigation
 - ◆ *Gross domestic expenditure on R&D as % of GDP
 - China (1.98); Malaysia (1.07), Thailand (0.25); Vietnam (0.19); Philippines (0.09);
 - USA (2.79); Germany (2.92); Japan (3.67); South Korea (4.04); Taiwan (2.3); Singapore (2.1);
- ❑ Smaller pool of quality researchers
- ❑ Brain-drain from under-resourced to high income countries

❑ Global investment in R&D 2007

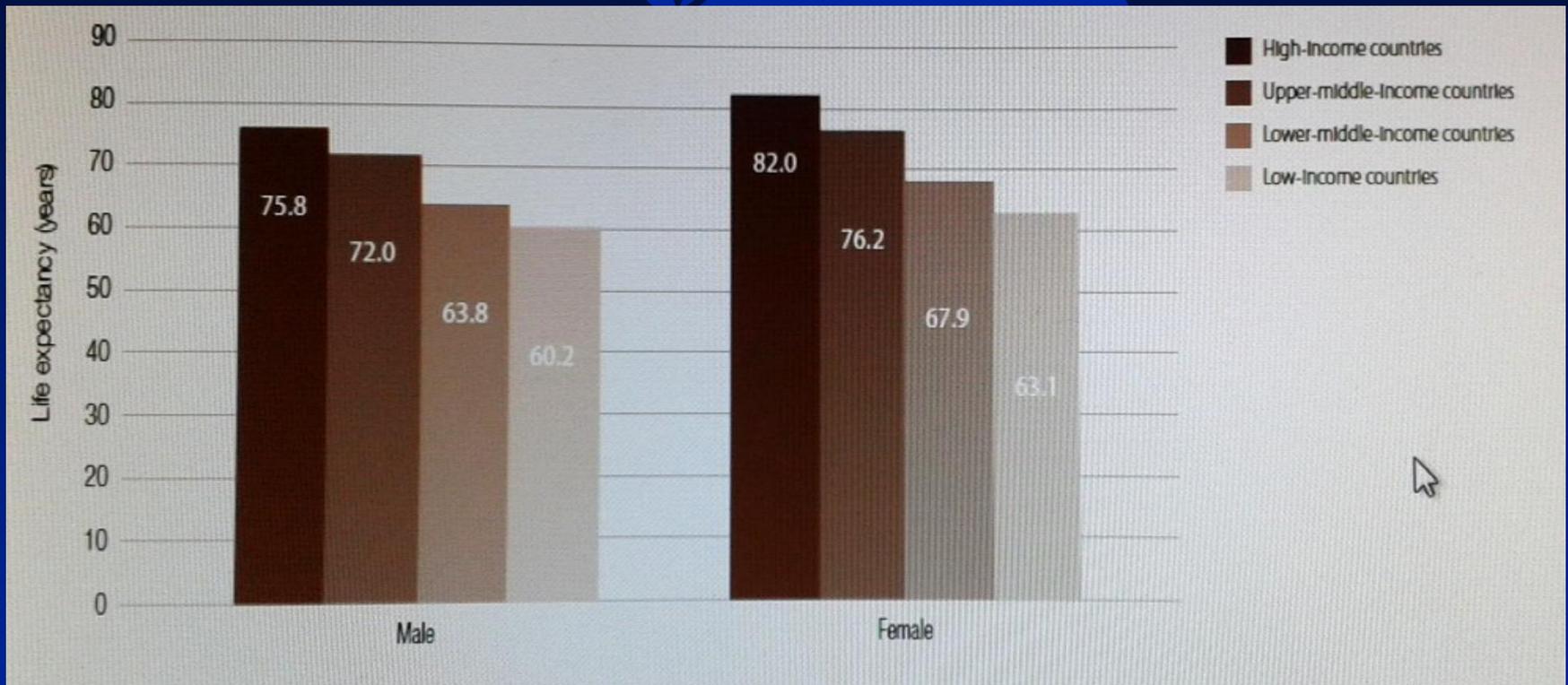


UNESCO
Science report
2010



◆ *UNESCO UIS 2013/ World Bank 2014

Life expectancy by income group countries, 2012



□ We live in an unequal world



World Health Statistics 2014. WHO.

Universal Health Coverage (UHC)

□ Definition

- ◆ Entire population has access to needed health services which are of sufficient quality to be effective, while also ensuring that people do not suffer financial hardship when paying for these services

□ Two essential components

- ◆ Universal access to effective health care
- ◆ Financial risk protection for health



Universal Health Coverage

□ Universal Access to Health care

- ◆ Sufficient human expertise and technical resources
 - Appropriate comprehensive package of services
 - ↓ Curative interventions: Medical, surgical, rehabilitative and diagnostic
 - ↓ Preventive & promotive
 - Better health outcomes when built on Primary Health Care
- ◆ Suitable social infrastructure
- ◆ No discrimination (income, gender, ethnic, religious, etc)

□ Financial Risk Protection for Health

- ◆ Financing through general taxation and/or mandatory universal insurance.
- ◆ Favour publicly funded health-care system
- ◆ Minimize out-of-pocket spending on health care & catastrophic household health costs



UHC – What to cover?

- Determination of healthcare package that is the entitlement of all

- ◆ Package varies with countries?
- ◆ Global package of essential services?

- What about?

- ◆ Rare diseases
- ◆ High cost diseases



Global Prevalence of UHC, 2009



Source: STUCKLER, D., FEIGL, A. B., BASU, S. & MCKEE, M. 2010. The political economy of universal health coverage. Geneva: World Health Organization.

◆ The United States was not included because its current legislation will only achieve >90% insurance coverage by 2014.

Social Determinants of Health

- ❑ Commission on Social Determinants of Health (2005-2008), set up by the World Health Organization and chaired by Sir Michael Marmot
 - ◆ In countries at all levels of income, health and illness follow a social gradient: the lower the socioeconomic position, the worse the health
 - ◆ Significantly affected by economic & political system
- ❑ “Science shows that social factors account for the bulk of the global burden of disease and of health inequalities between and within countries.” – WHO



Social Determinants of Health

□ The WHO Commission's three principles for action :

- ◆ Improve the conditions of daily life – the circumstances in which people are born, grow, live, work, and age.
- ◆ Tackle the inequitable distribution of power, money, and resources – the structural drivers of those conditions of daily life – globally, nationally, and locally.
- ◆ Measure the problem, evaluate action, expand the knowledge base, develop a trained workforce and raise public awareness.

- World Health Assembly resolution (May 2009) urged all member states to tackle health inequities through action on the social determinants of health
- Growing need for sharing knowledge between and within countries about the social determinants of health and what can be done to reduce health inequity and improve population health.
- Research & monitoring. No data means no recognition of the problem.

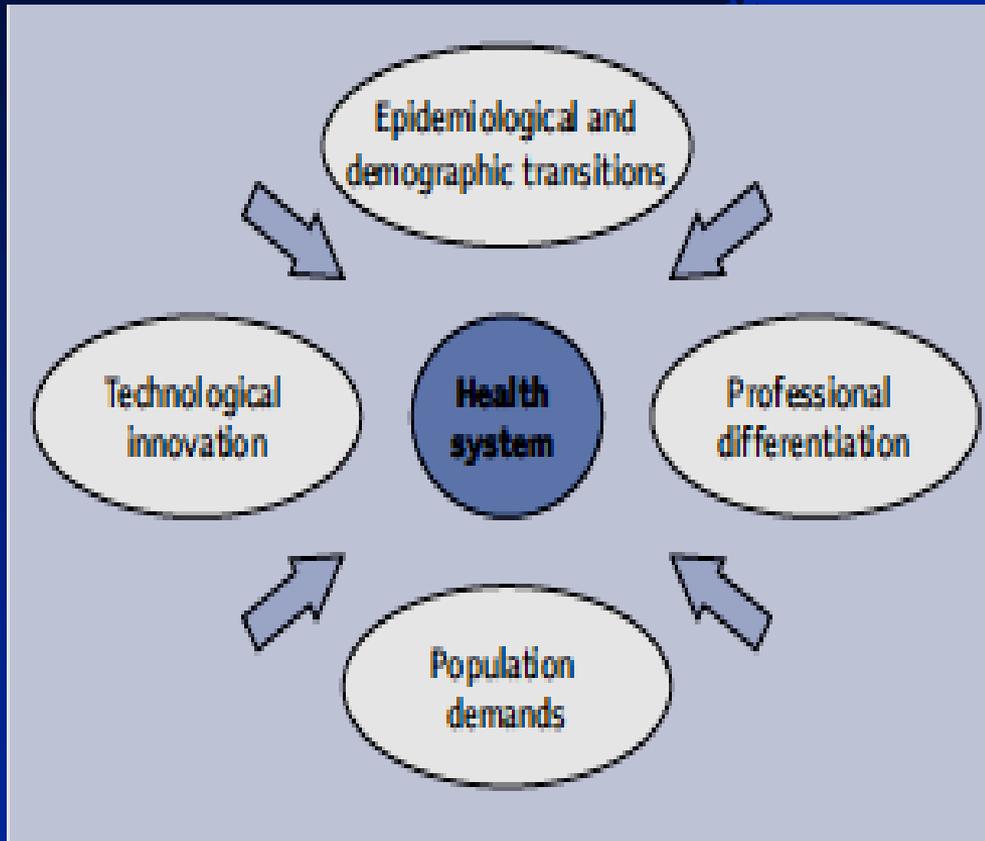


21st Century Challenges in Health and Social conditions

- Multi-faceted, rapidly changing
 - ◆ Healthcare systems and practices
 - ◆ Resilience & capacity to cope with extreme changes
 - ◆ Societal demographics & dynamics



Complex health systems



- ◆ **Rising costs & demands**
 - ◆ Integrate explosive growth of knowledge
 - ◆ Expanding functions – prevention, complex care, community-based, superspecialisation; personalised medicine
 - ◆ Socially diverse patients
- ◆ **Unprecedented teamwork required**
 - ◆ Demands on training and education of healthcare professionals (expertise)
- ◆ **Demands on Healthcare financing**

From: Frenk J, Chen L, et al. *Health professionals for a new century: transforming education to strengthen health systems in an interdependent world*. Published online at www.thelancet.com on Nov 29, and in *The Lancet* Dec 4, 2010, vol 376; pp 1923–58); reproduced in expanded book, distributed by Harvard University Press.



Antimicrobial Resistance: A Call for Action

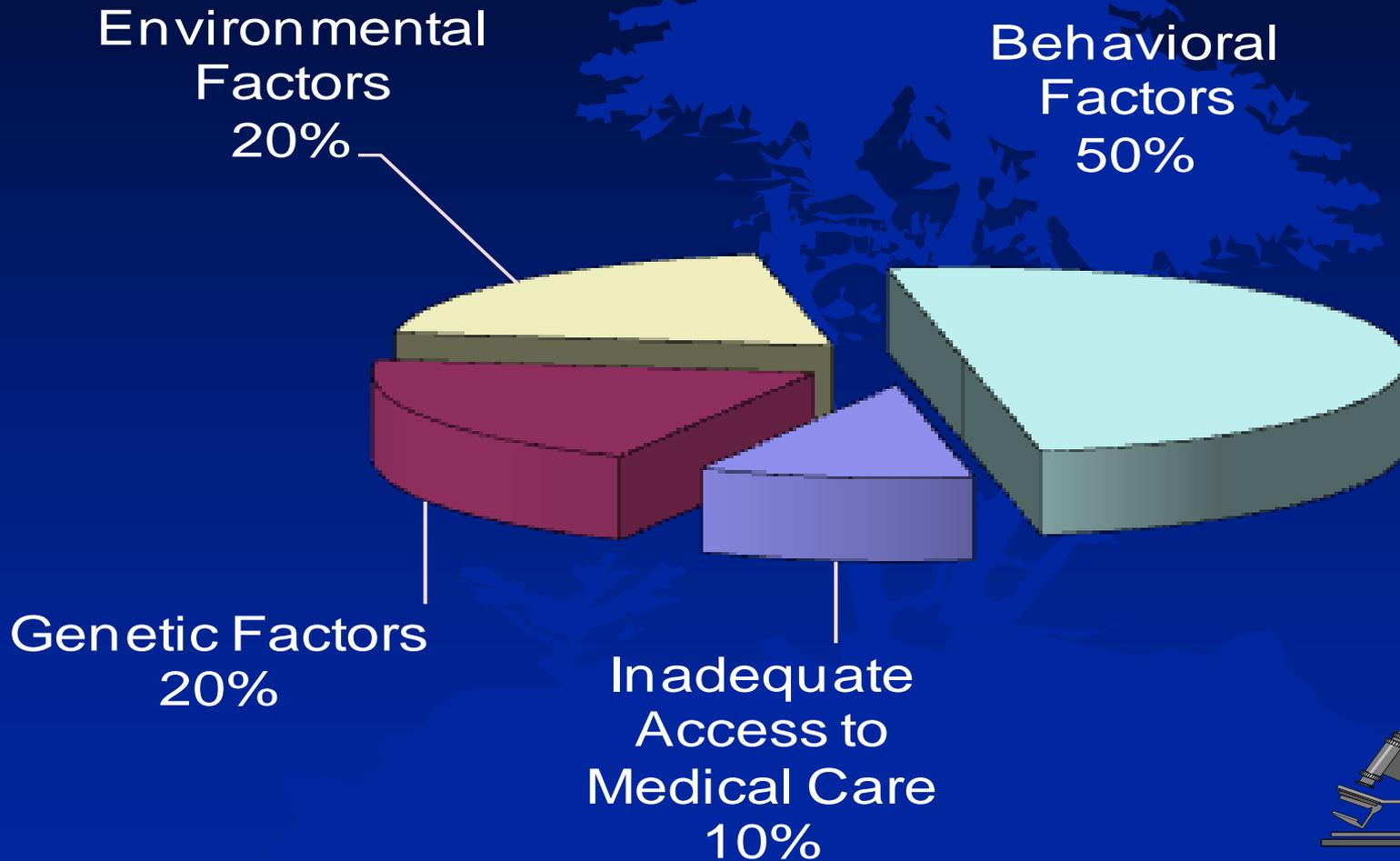
Introduction

Infectious diseases account for about one-quarter of deaths worldwide. Since the introduction of penicillin in the 1940s, antibiotics have occupied a central place in the treatment of bacterial infections and make possible many of the procedures of modern medicine such as chemotherapy, organ transplantation and the care of premature babies. However, although there have been major advances in research into, and treatment of, many communicable diseases, continuing progress in tackling these major challenges for public health is threatened by the dramatic increase in the number and distribution worldwide of pathogens resistant to antimicrobial (antibacterial, antiviral and antifungal) drugs. For example, a recent report by the UK Chief Medical Officer¹ concludes that *"antimicrobial resistance poses catastrophic threat"*. The latest G8 Science Ministers Statement (2013) focused on the global challenge of antimicrobial resistance and the World Health Organisation expressed concern that this rapidly growing problem may impede progress towards

- Antibiotic usage
- Antibiotic policies
- Industrial & agricultural use
- We are running out of antibiotics to use!

Taken together, the work of the academies has compiled a broad range of recommendations for policy development to combat antimicrobial resistance with specific proposals for the coordinated action needed in support of surveillance, technical assistance, research and innovation. It is vital both to preserve the efficacy of existing antimicrobial agents and accelerate the discovery and development of new agents. To be successful, this broad strategy requires a higher political and public profile and a cross-sectoral approach involving health, agriculture, development, economics

Causes of Premature Mortality



Climate change

□ Green house gas emissions & chronic diseases

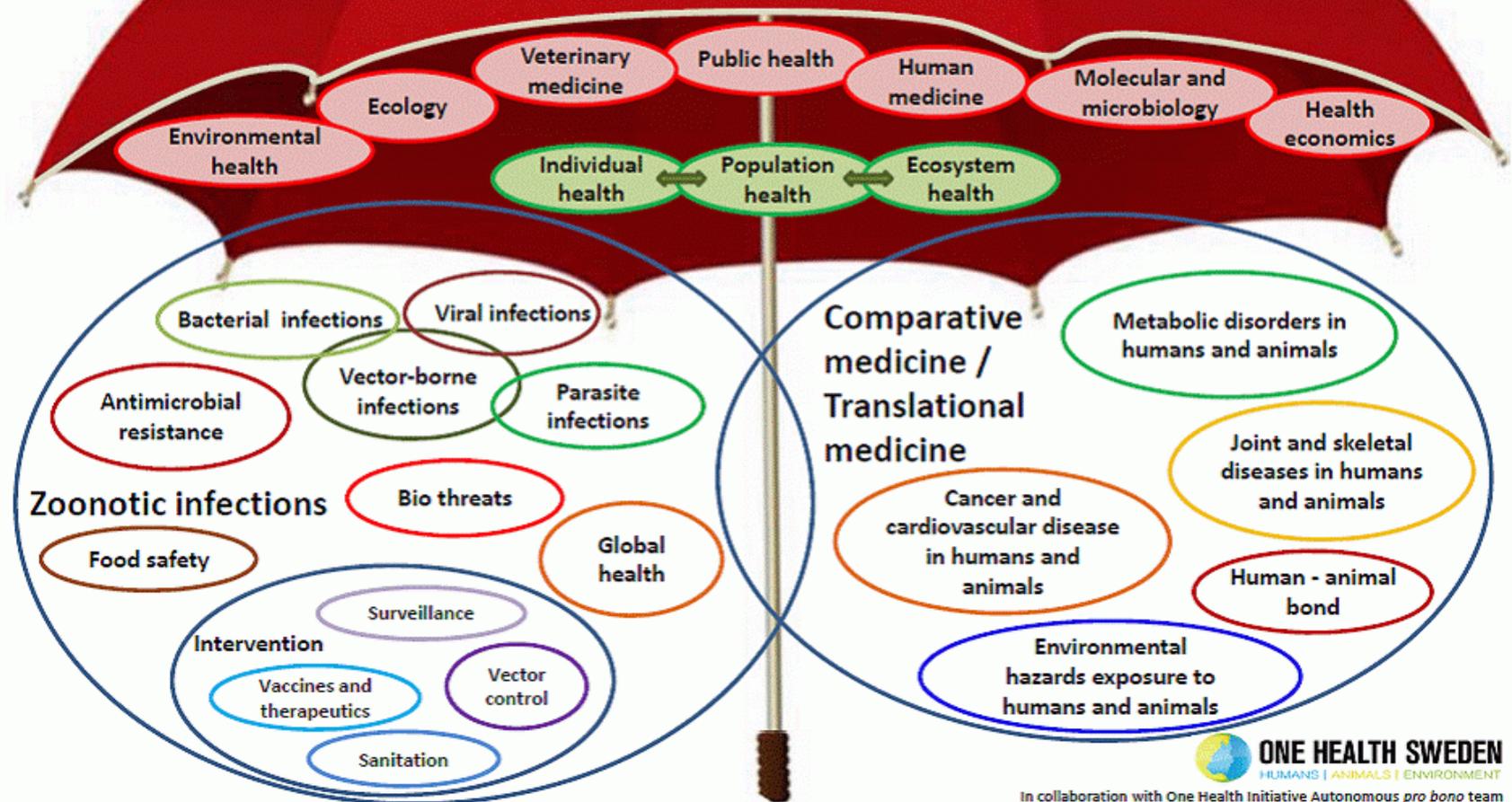
- ◆ Over the last 25 years, global warming has accelerated.
- ◆ Climate change affects the social and environmental determinants of health – clean air, safe drinking water, sufficient food and secure shelter.
- ◆ In London, strategies to mitigate climate change could reduce heart disease and stroke by 10-20%, breast cancer by 12-13%. In Delhi, they are projected to bring a 11-25% cut in the burden of heart disease and stroke, and a 6-17% reduction in diabetes.

□ Environmental disasters & disease outbreaks

□ One Health



One Health



Rapid & mass global travel

- Disease outbreaks
- Cosmopolitan society

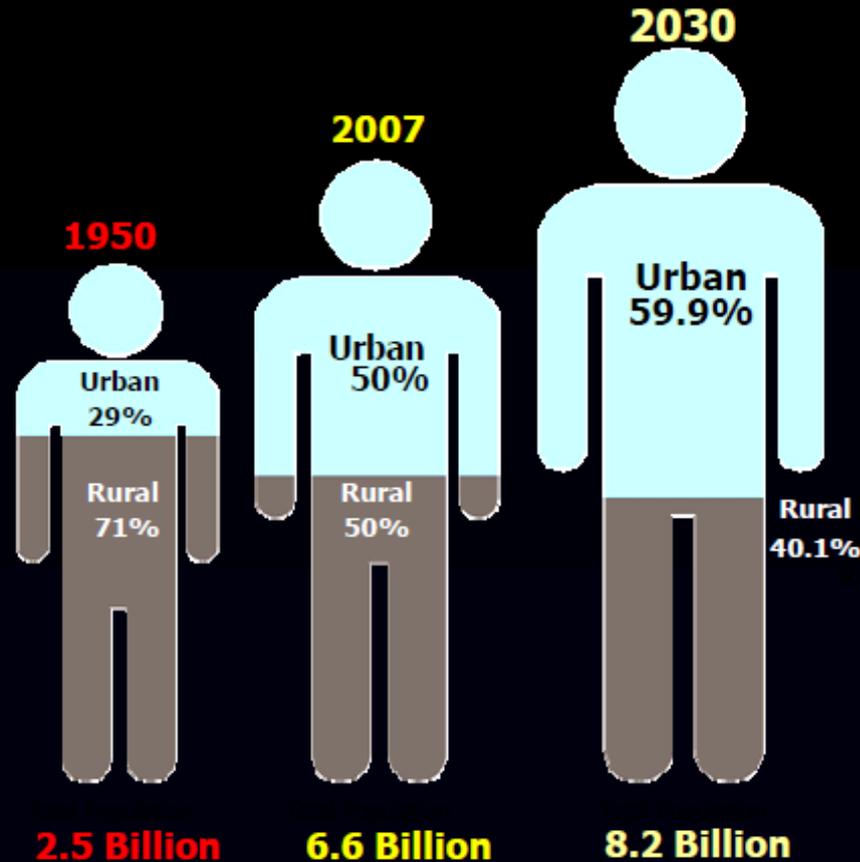
◆ “...the concept of [domestic] as distinct from “international health” is outdated. Such a dichotomous concept is no longer germane to infectious diseases in an era in which commerce, travel, ecologic change and population shifts are intertwined on a truly global scale.”

◆ -U.S. CDC, “Addressing Emerging Infectious Disease Threats: A Prevention Strategy for the United States,”



Urbanisation

Global Population Growth Trends



(United Nations, 2005)

◆ “In 2007, for the first time in world history, half of the world’s population is urban”

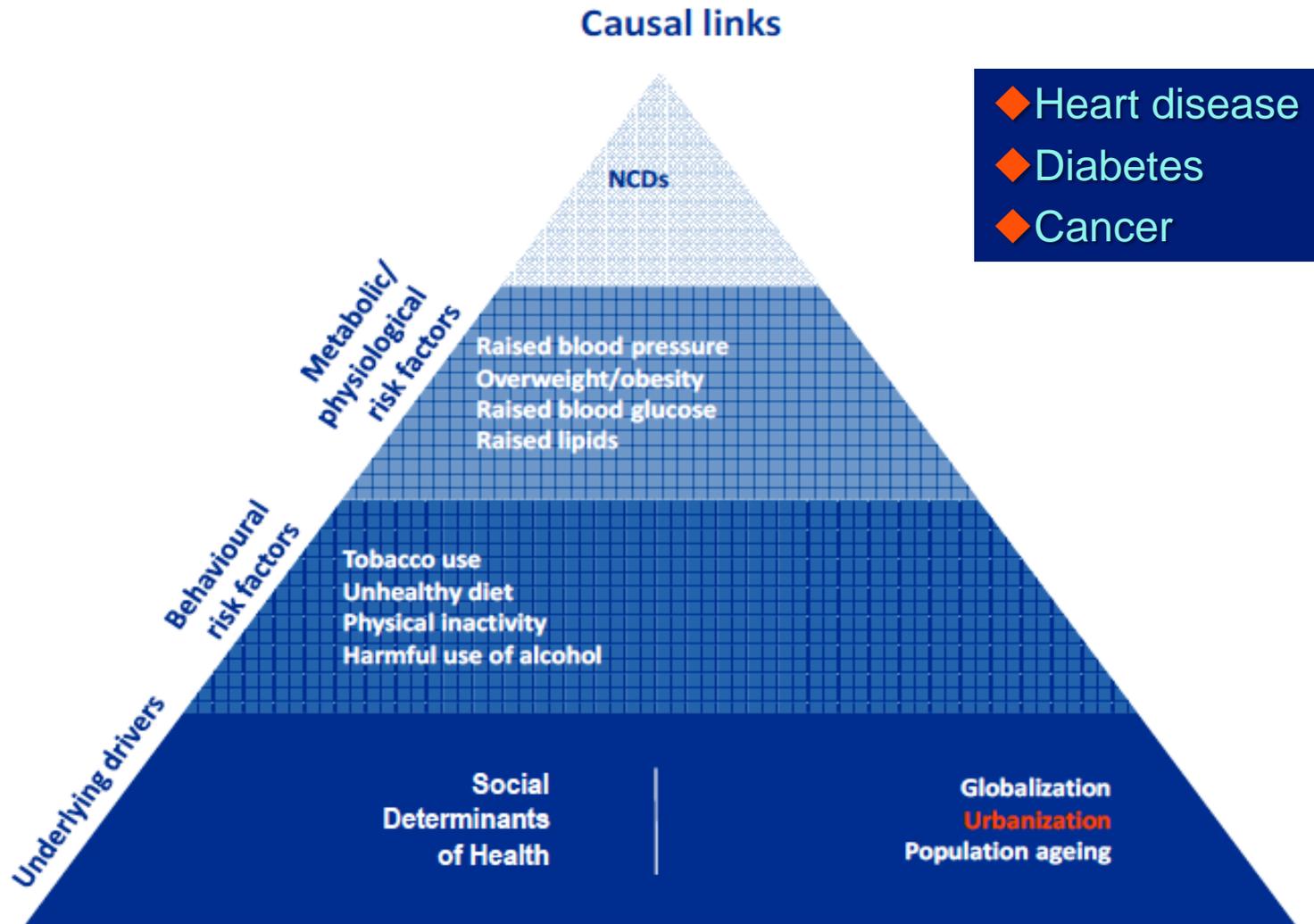
◆ *UN Habitat, 2003*

◆ The problems of mega-cities

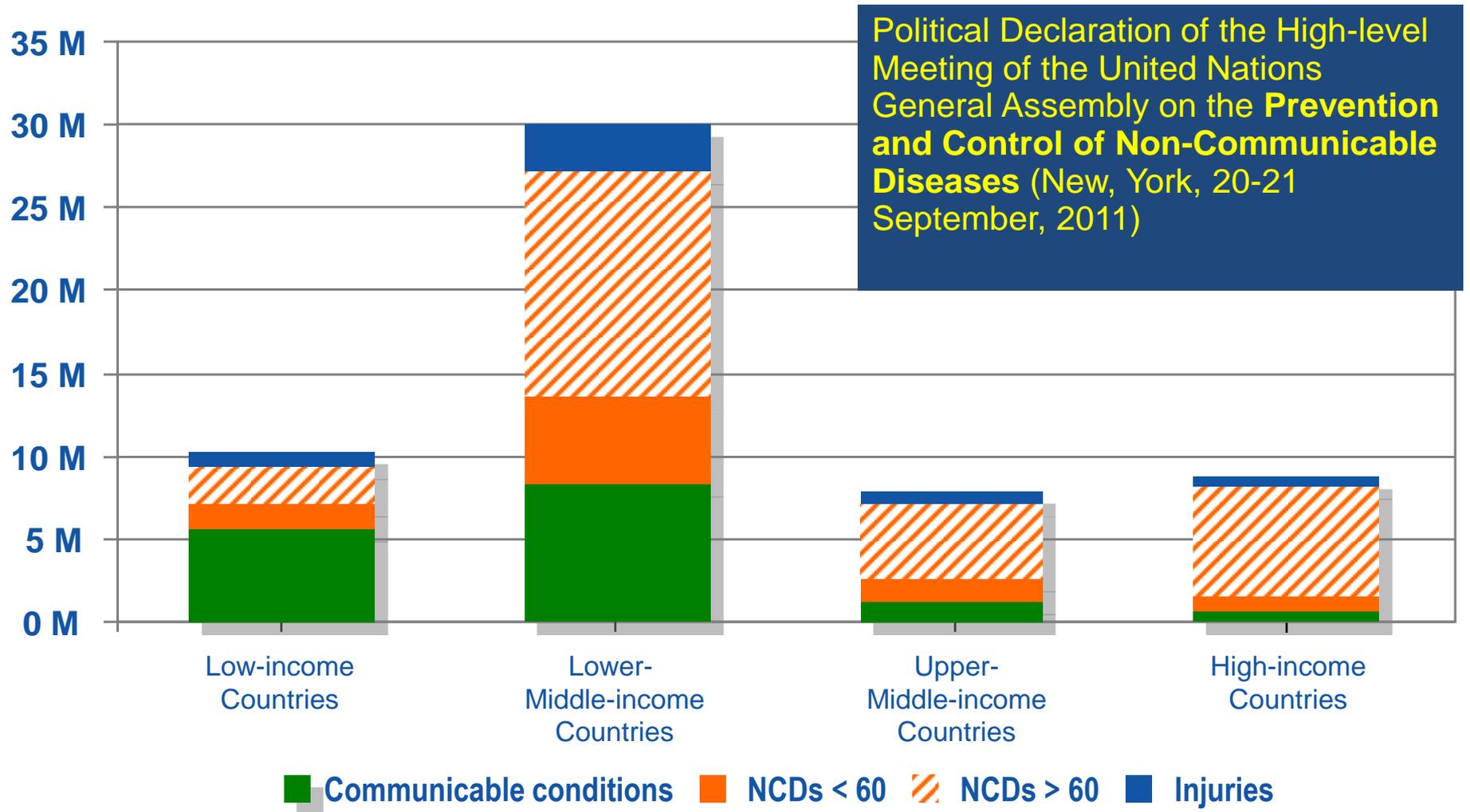
- ◆ Isolation
- ◆ Mental health
- ◆ Adolescent problems
- ◆ Crime



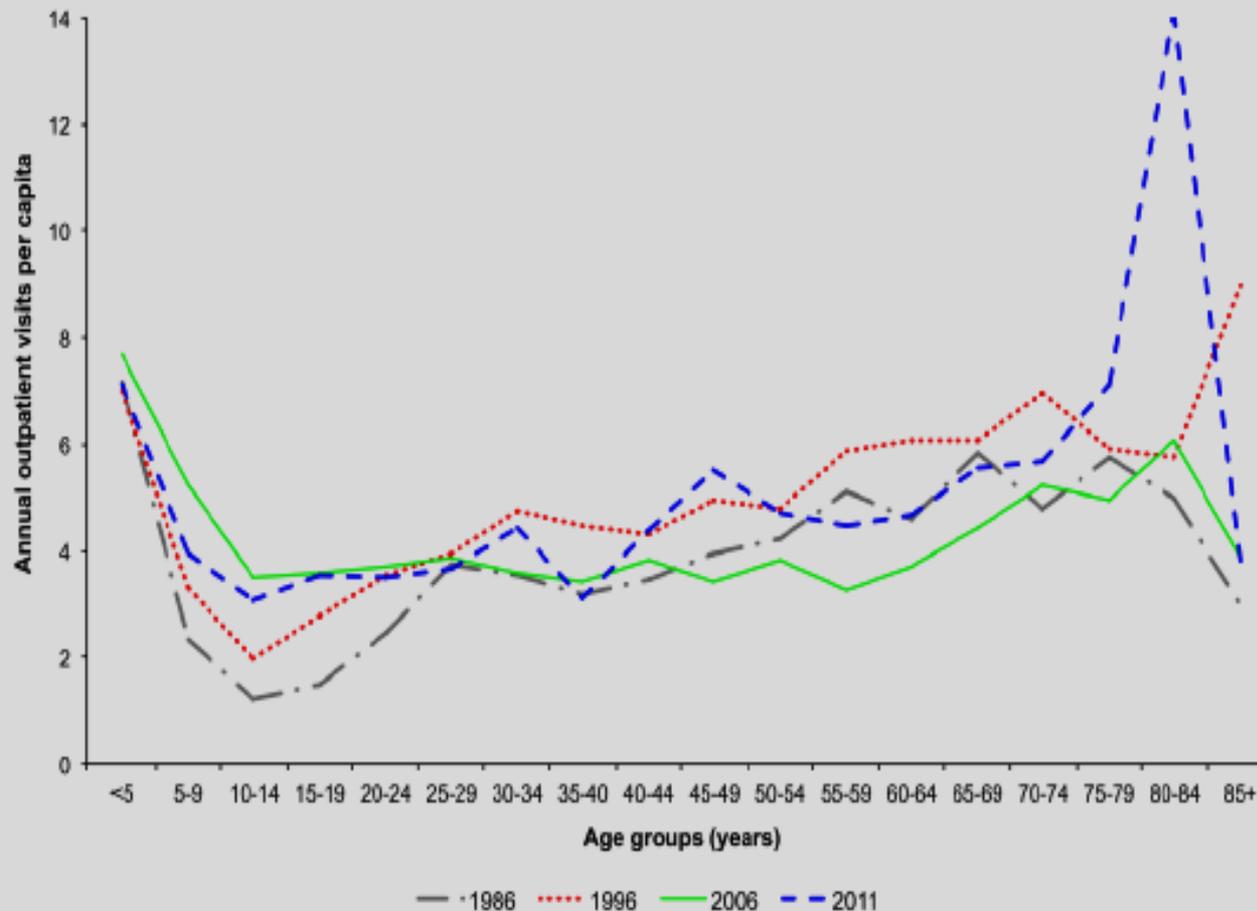
Urbanisation and NCD



Premature NCD deaths before the age of 60



Ageing and healthcare utilization



Source: HEALTH POLICY RESEARCH ASSOCIATES, INSITUTE FOR HEALTH SYSTEMS RESEARCH & INSITUTE FOR HEALTH POLICY 2013. Malaysia Health Care Demand Analysis. Inequalities in Healthcare Demand & Simulation of Trends and Impact of Potential Changes in Healthcare Spending. Kuala Lumpur: Institute for Health Systems Research.



the interacademy medical panel

The InterAcademy Medical Panel

- ❑ is the global network of the world's medical academies and medical sections of academies of science and engineering
- ❑ has 74 member academies
- ❑ is committed to improving health world-wide
- ❑ IAMP activities focus on institutional collaboration to strengthen the role of all academies
 - ◆ to alleviate the health burdens of the world's poorest people;
 - ◆ to build scientific capacity for health;
 - ◆ to provide independent evidence-based scientific advice on promoting health science and health care policy to national governments and global organizations.



Scientists wear many hats!



International Partners in Research Capacity Strengthening

□ Key players: Agencies, Foundations, Global networks, Academic consortia

◆ Research funding

◆ Training

- Research technologies
- Research management
- Leadership

◆ Development & support of networks

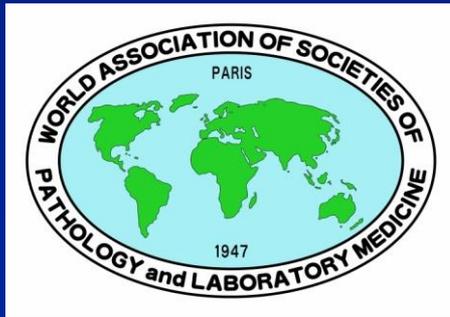
◆ Pairing (North-South; South-South)

- Sandwich PhD
- Collaborative projects, etc

◆ Scientists are key players!



Global collaboration for capacity building in low-resource countries



HEALTH PROFESSIONALS FOR A NEW CENTURY: Transforming Education Systems in an interdependent world

**HEALTH
PROFESSIONALS
FOR A NEW
CENTURY**

Transforming education to
strengthen health systems in
an interdependent world

◆ 30 Nov – 1 Dec 2010

◆ Launch of Lancet Commission
Report

- ◆ Informative learning:
 - ◆ acquiring knowledge and skills - produce experts.
- ◆ Formative learning:
 - ◆ socialising around values - produce professionals
- ◆ Transformative learning
 - ◆ developing leadership attributes - produce enlightened change agents.

The Lancet Commissions

THE LANCET

EDUCATION OF HEALTH PROFESSIONALS
FOR THE 21ST CENTURY
A GLOBAL INDEPENDENT COMMISSION

Health professionals for a new century: transforming education to strengthen health systems in an interdependent world

John Frank, Lincoln Chert*, Zulfiqar A. Bhutta, Jordan Cohen, Nigel Crisp, Timothy Evans, Harvey Fineberg, Patricia Garcia, Yong Ke, Patrick Kelly, Barry Kitamura, Afif Maki, David Nayler, Arad Pabon Mendez, Sarah Reddy, Susan Seuring, Jaime Sepúlveda, David Smeeth, Heidi Turjak*

Executive summary

Problem statement

100 years ago, a series of studies about the education of health professionals, led by the 1910 Flexner report, sparked groundbreaking reforms. Through integration of modern science into the curricula of university-based schools, the reforms equipped health professionals with the knowledge that contributed to the doubling of life spans during the 20th century.

In the beginning of the 21st century, however, all is not well. Glaring gaps and imbalances in health persist both within and between countries, undermining our collective future to share the dramatic health advances ubiquitously. At the same time, fresh health challenges loom. New infectious, environmental, and behavioral risks, at a time of rapid demographic and epidemiological transitions, threaten health security of all. Health systems worldwide are struggling to keep up, as they become more complex and costly, playing additional demands on health workers.

Professional education has not kept pace with these challenges, largely because of fragmented, outdated, and static curricula that produce ill-equipped graduates. The problems are systemic: mismatch of competence to patient and population needs; poor teamwork; persistent gender stratification of professional status; narrow technical focus without broader contextual understanding; episodic innovation rather than continuous care; predominant hospital orientation at the expense of primary care; quantitative and qualitative imbalances in the professional labour market; and weak leadership to improve health system performance. Available efforts to address these deficiencies have mostly flourished, partly because of the so-called rebellion of the professionals—i.e., the tendency of the various professions to act in isolation from or even in competition with each other.

Design of professional health education is necessary and timely in view of the opportunities for mutual learning and joint solutions offered by global interdependence due to acceleration of flows of knowledge, technology, and financing across borders, and the impetus of both professionals and patients. What is clearly needed is a thorough and authoritative re-examination of health professional education, matching the ambitious work of a century ago.

That is why this Commission, consisting of 20 professional and academic leaders from diverse countries, came together to develop a shared vision and a common strategy for postsecondary education in medicine, nursing, and public health that reaches beyond the confines of national borders and the silos of individual professions. The Commission adopted a global outlook, a multiprofessional perspective, and a systems approach. This comprehensive framework considers the connections between education and health systems. It is centred on people as co-producers and as drivers of needs and demands in both systems. By interaction through the labour market, the provision of educational services generates the supply of an educated workforce to meet the demand for professionals to work in the health system. To have a positive effect on health outcomes, the professional education sub-system must design new instructional and institutional strategies.

Major findings

Worldwide, 2420 medical schools, 467 schools or departments of public health, and an indeterminate number of postsecondary nursing educational institutions train about 1 million new doctors, nurses, midwives, and public health professionals every year. Severe institutional shortages are exacerbated by maldistribution, both between and within countries.

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www.thelancet.com Vol 376 December 4, 2010

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IAMP is a partner with China Medical Board and the (US) Institute of Medicine in promoting global dissemination of the report

- ❑ Discussion of report's conclusions and recommendations at a national level.
- ❑ Encourage regional networks of academies to address these issues, and function as forum for information exchange and coordination.



Education of Health Professionals For The 21st Century

Saturday, 1 December 2012

Venue
Auditorium 3, Academic Building
Faculty of Medicine, Sg. Buloh Campus
Universiti Teknologi MARA

iamp
the interacademy medical panel

AKADEMI SAINS MALAYSIA

UNIVERSITI TEKNOLOGI MARA

hosted by:
Academy of Sciences Malaysia

organised by:
Faculty of Medicine, UTM



IAMP Young Physician Leaders (YPL) Programme

- ❑ Foster “a new generation of leaders in global health for the 21st Century”.
- ❑ Develop a critical mass of young physician leaders in a learning and action network worldwide
- ❑ challenge member academies to support young physicians in their countries and to strengthen their leadership skills.

THE LANCET

The Lancet, [Volume 379, Issue 9813](#), Page e25, 28 January 2012
doi:10.1016/S0140-6736(12)60148-2

IAMP tackles a void in medical education: leadership



- ◆ *Launch in 2011 in conjunction with the World Health Summit (WHS) in Berlin, Germany*
- ◆ *Now a network of 108 YPL*



Science advice & advocacy



INTER **iamp**
the interacademy m

Statement on t

A CALL FOR ACTI
IN I

IAMP endorsed G8
statement “**Water and
Health**” *August 2011*

M8 Alliance
Academic Health Centers, Universities and National Academies

iap
the global network
of science academies

**Antimicrobial Resistance:
A Call for Action**

iamp
the interacademy medical panel

**One Health approach acknowledged worldwide—Example Europe February 24, 2014
Endorsement**

Interacademy Medical Panel (IAMP) and the Federation of European Academies of Medicine (FEAM) organized an International Workshop “Integrated Education in One Health” Hungarian Academy of Sciences, Budapest, Hungary on 5 June 2013.

Conference and Workshop

IAMP Scientific Meetings

Political Declaration
of the High-level
Meeting of the
United Nations
General Assembly
on the Prevention
and Control of Non-
Communicable
Diseases (New, York,
20-21 September,
2011)



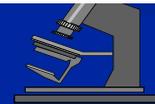
IAMP Scientific Meetings on Non-Communicable Diseases (NCDs)

Brazilian Academy of Sciences 2012

*Academy of Sciences of South Africa
in August 2013*



Conference and Workshop
Conference on Mental Health
International Conference on
Child and Adolescent Mental Health
(The Royal Swedish Academy of Sciences,
Stockholm, 22-23 Oct. 2013)



IAMP workshop in Trieste, Italy, 3-4 July 2014.

‘Promoting action on the Social determinants of Health’,



Intended outputs:

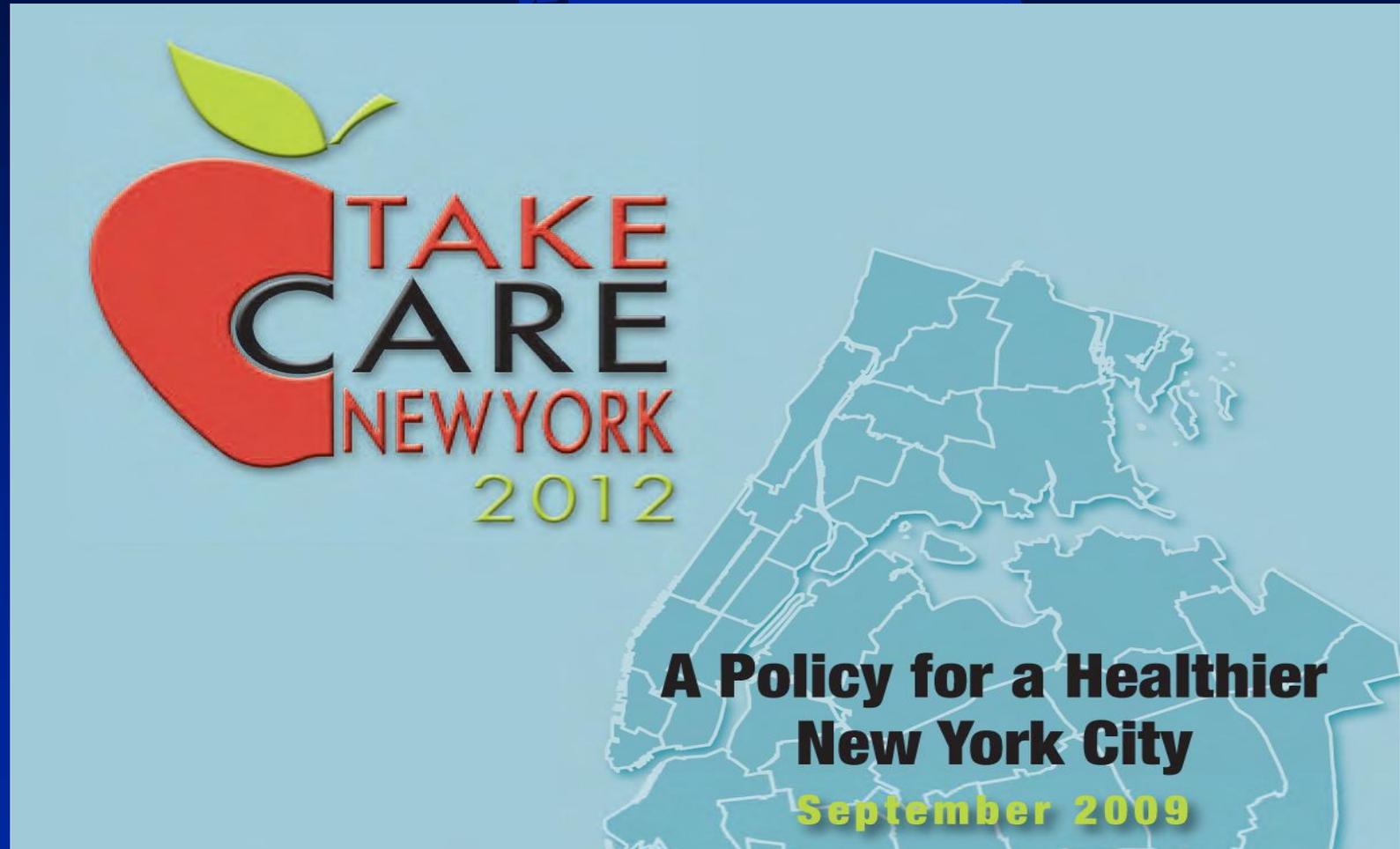
- ❑ Call for action by governments and other stakeholders to address social determinants of health and their impact on health inequity
- ❑ Regional versions of workshop to reach a wider audience to increase knowledge, awareness & action



- ❑ Over 35 participants from 25 countries
- ❑ Academies of Sciences & Medicine and Government officials

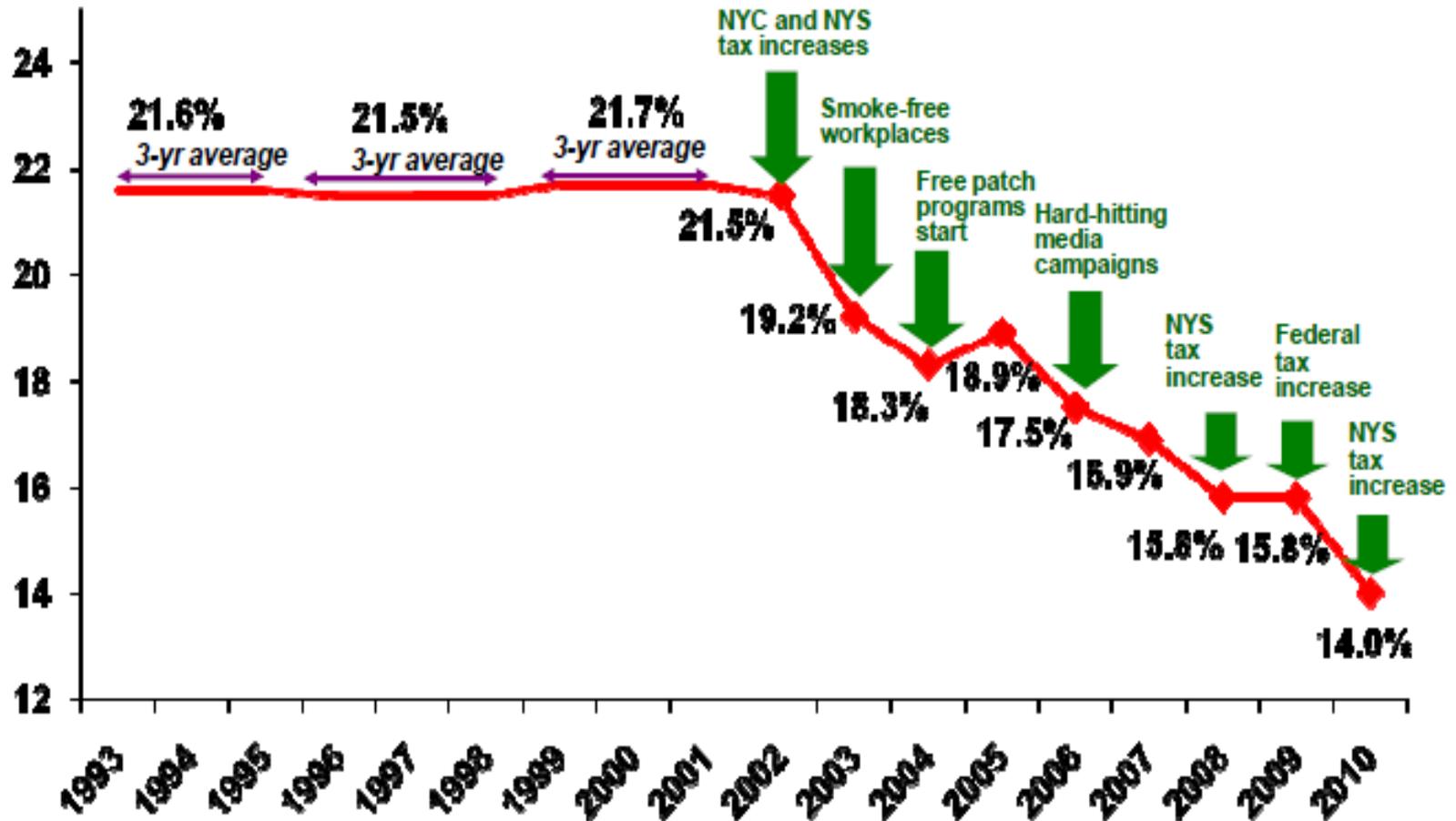


Sustainable Health: Preventive and Promotive action



Effect of Environmental Approaches to Smoking Prevention. NYC, 2002-2010

◆ Percent of adults



Promoting Physical Activity



Find free and low cost exercise classes
and sports leagues at BeFitNYC.org

NYC

Department of Health
and Mental Hygiene
Thomas Farley, M.D., M.P.H.
Commissioner

Department of
Transportation
Janette Sadik-Khan
Commissioner



WANT TO LOWER YOUR BLOOD PRESSURE?

**MAKE NYC
YOUR GYM**



Made possible by funding from the Department of Health and Mental Hygiene

NYC Green Carts: Promoting Access to Fresh Fruits and Vegetables



Media Messages

Clear Your Kitchen of Trans Fat

1. CHANGE your oils.

For cooking and frying, check the ingredients on all oils. If "partially hydrogenated" is listed, switch to a non-hydrogenated oil instead. If there is no ingredients list, ask your supplier or the manufacturer.

For baking, use non-hydrogenated oils or shortenings with low or **no trans fat**.

2. CHOOSE healthy spreads.

Instead of stick margarine or butter, use soft tub spreads with low saturated fat and **no trans fat**.

3. ORDER prepared foods without trans fat.

Check ingredients and ask your supplier for baked products, pre-fried, and pre-mixed foods that are free of partially hydrogenated vegetable oils.

INGREDIENTS: Pasteurized Grade A Non-fat Milk, ~~Fructose~~, ~~Red Bell Pepper~~, ~~Partially Hydrogenated Soybean Oil~~, Salt, Modified Cornstarch, Garlic, Lemon Juice

Make an Oil Change

Read labels and choose products that are free of partially hydrogenated oils.

CALL 311

and ask for *trans fat* or visit nyc.gov/health for more information



THE NEW YORK CITY DEPARTMENT
of HEALTH and MENTAL HYGIENE
Richard R. Bostrom, M.D.
Thomas R. Frieden, M.D., M.P.H., Commissioner
nyc.gov/health



HPDP1X25601 - 7.06

Does Your Kitchen Need an Oil Change?



What Every
Restaurant and
Food Service
Establishment
Needs to
Know About
Trans Fat



ARE YOU POURING ON THE POUNDS?

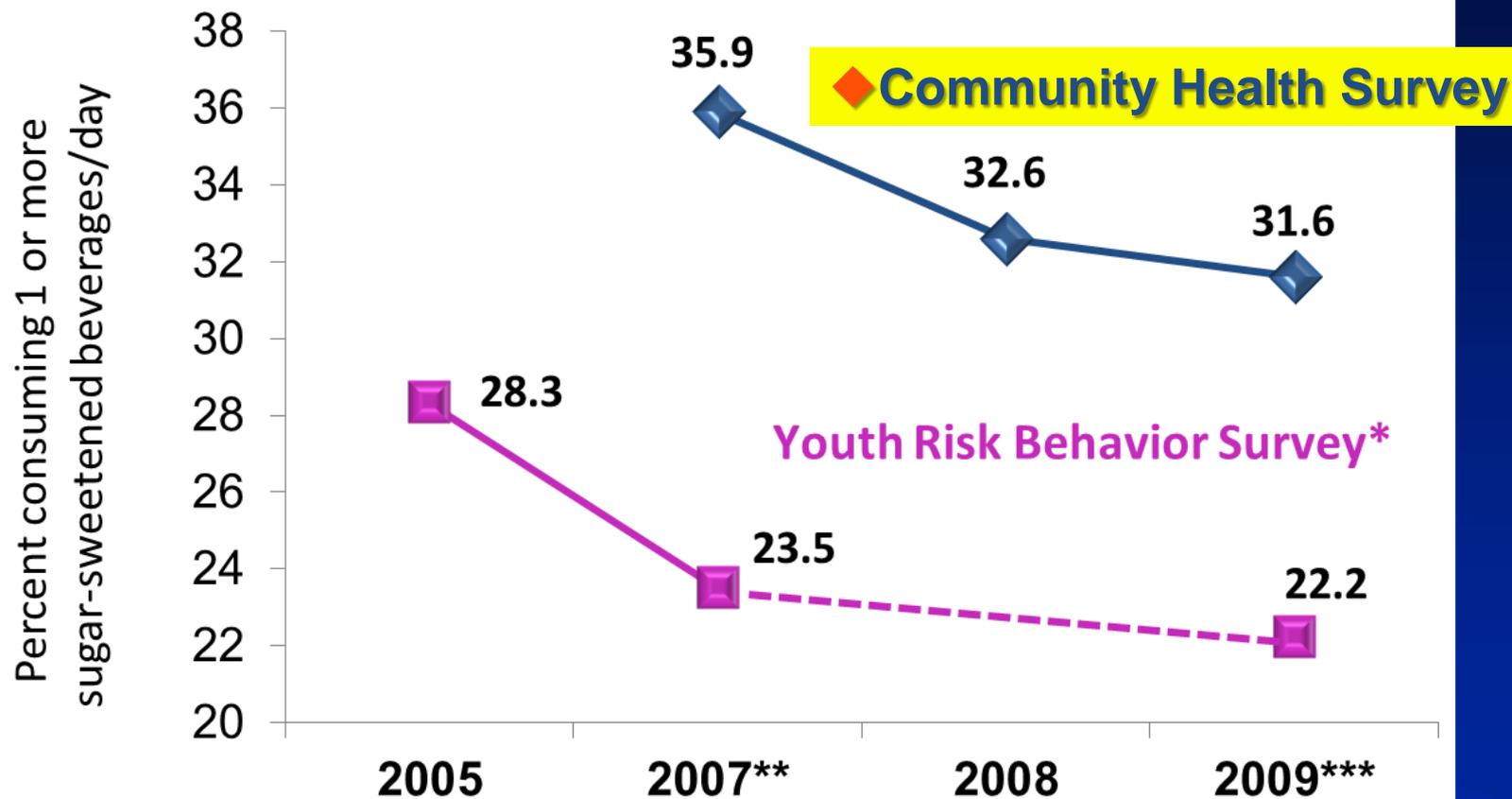


DON'T DRINK YOURSELF FAT.

Cut back on soda and other sugary beverages.
Go with water, seltzer or low-fat milk instead.



Decline in Sugary Drink Consumption in NYC 2005-2009



◆ Sources: NYC Community Health Survey 2002-2009. NYC Youth Risk Behavior Survey 2005, 2007, 2009.

Changing landscape of global collaboration

□ 20 years of change

- ◆ Millennium development goals (MDGs)
- ◆ Global Fund (fight AIDS, TB, malaria)
- ◆ GAVI Alliance
- ◆ Development funds for health
 - 2010- US\$6.7 billion
 - 2011 - US\$28.4 billion

□ Global collaborations can make a difference!



Changing landscape of global collaboration

□ Now in critical transition

◆ From MDG to
an era of
sustainable
development
goals (post-
2015)

- End poverty
- End hunger; sustainable agriculture
- Healthy lives
- Inclusive education
- Gender equality
- Clean water for all
- Sustainable energy
- Economic growth & employment
- Resilient infrastructure
- Reduce inequality between countries
- Safe cities
- Sustainable consumption
- Combat climate change
- Conserve oceans & marine resources
- Protect & restore ecosystems
- Promote peaceful societies
- Strengthen global partnership



Selling point

- *“You cannot tackle hunger, disease, and poverty unless you can also provide people with a healthy ecosystem in which their economies can grow.”*

Gro Brundtland



Selling point: Investing in Health

- “Between 2000 and 2011, about 24% of the growth in full income from low-income and middle-income countries resulted from health improvements”
 - ◆ Governments should prioritize investment in health

The Lancet Commission on Investing in Health, December 2013

Global Health 2035: a world converging within a generation



Thank you!

