PLENARY SESSION 3

Securing Future Growth Through Functional Cooperation

Keynote Speaker:

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Dean, Duke-NUS Graduate Medical School

Singapore

Health Care as an inclusive growth sector

Inclusive growth

- APEC aims to achieve Balanced, Inclusive, Sustainable, Innovative, and Secure Growth.

Inclusive Growth: We seek to ensure that all our citizens have the opportunity to participate in, contribute to, and benefit from global economic growth.

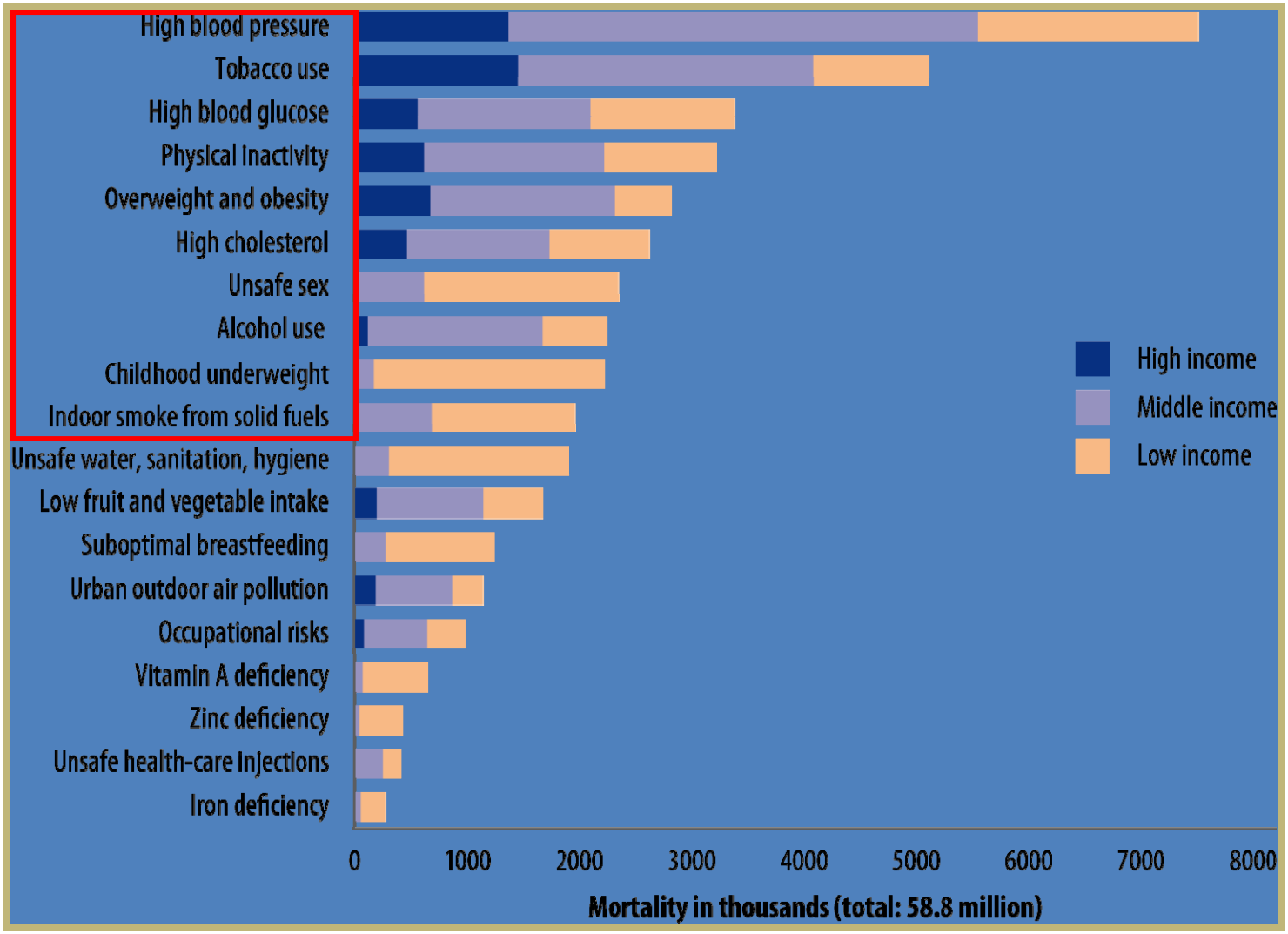
Innovative Growth: We seek to create an economic environment that promotes innovation and emerging economic sectors.

Health is a key ingredient in inclusive growth
Health is wealth
Health and wealth can become a virtuous or a vicious cycle

Where are we now?

SNAPSHOT

Deaths Attributed to Leading Risk Factors, by country income, 2004

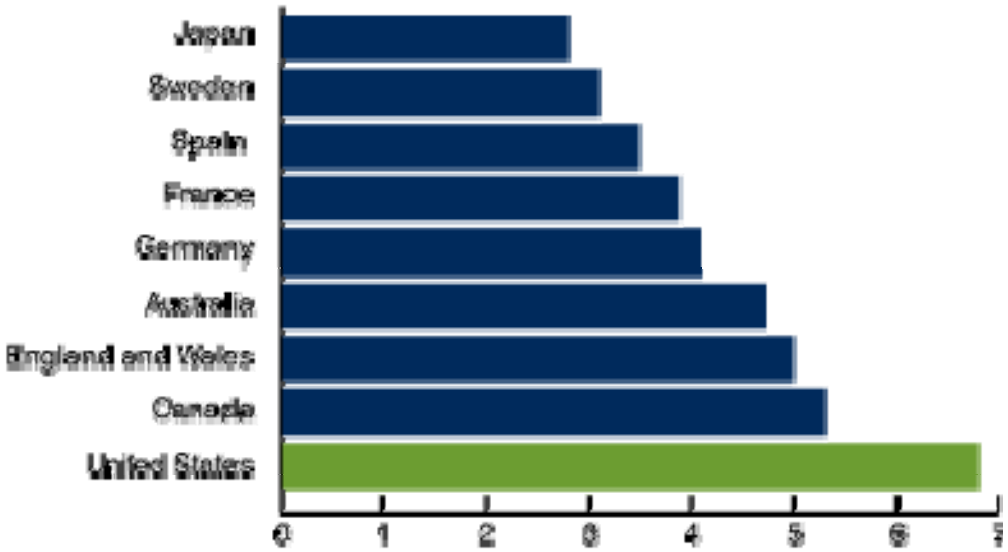


Source: Global Burden of Disease, 2004 Report, WHO, 2008

Infant Mortality Rate

Infant deaths per 1,000 live births

International Comparison, 2007



^ Denotes baseline year.

Data: National and state—National Vital Statistics System, Linked Birth and Infant Death Data (AHRQ 2003, 2004, 2005, 2006, 2007a); international comparison—OECD Health Data 2007

Caveat

- May not be measuring the same thing
- Effect of premature births
- Peculiarities in measurements; Citizens only citizens plus immigrants', citizens living abroad,etc

Mortality Rates

- **influenza** and **pneumonia** (down 8.4 percent)
- **homicide** (down 6.5 percent)
- **accidents** (down 5 percent)
- **heart disease** (down 4.7 percent)
- **stroke** (down 4.6 percent)
- **diabetes** (down 3.9 percent)
- **hypertension** (down 2 .7 percent)
- **cancer** (down 1.8 percent)
-

  Read more: http://transgenerational.org/aging/demographics.htm#ixzz1rcqBSODZ

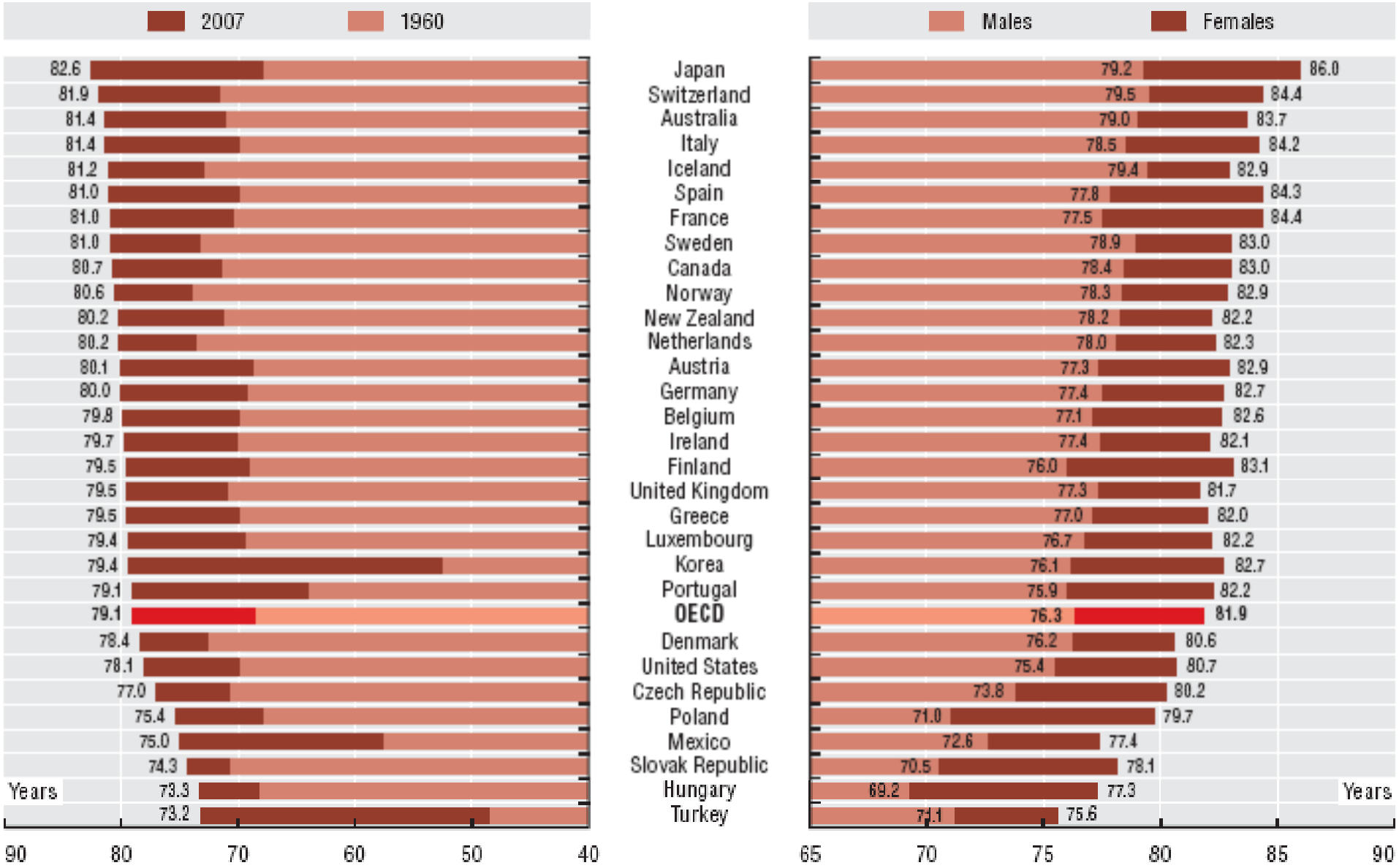
Net Effect Living Longer

Longevity

- Two thousand years ago the average Roman could expect to live 22 years. Those born in 1900 could only expect to live 47.3 years.
- 1930, life expectancy had risen to 59.7 years, rising again in 1960 to 69.7 years.
- Life expectancy increased 1.4 years from 76.5 in 1997 to 77.9 in 2007.
- Today, a newborn can expect to live for 78.3 years

http://transgenerational.org/aging/demographzz1rcqfaqig

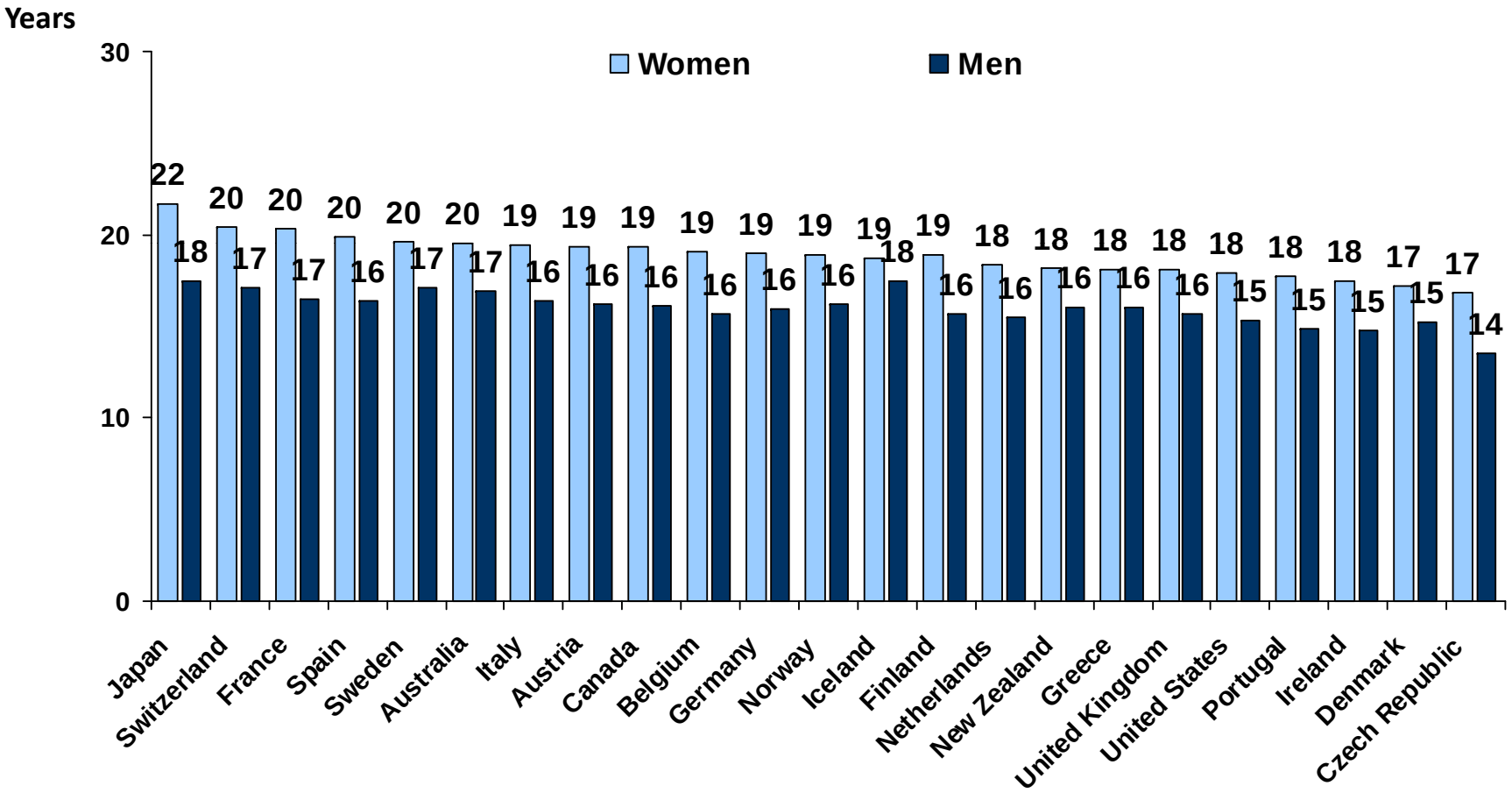
Life expectancy at birth has increased by more than 10 years in OECD countries since 1960, reflecting a sharp decrease in mortality rates at all ages



***Source*: OECD Health Data 2009, OECD (http://www.oecd.org/health/healthdata).**

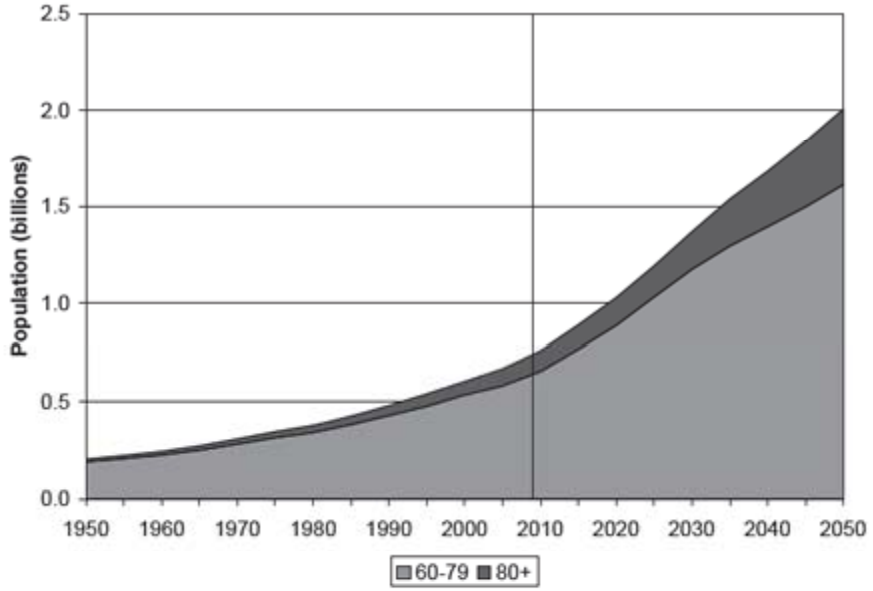
Healthy Life Expectancy at Age 60, 2002

Developed by the World Health Organization, healthy life expectancy is based on life expectancy adjusted for time spent in poor health due to disease and/or injury



Note: Indicator was not updated due to lack of data. Baseline figures are presented.
Data: The World Health Report 2003 (WHO 2003, Annex Table 4).

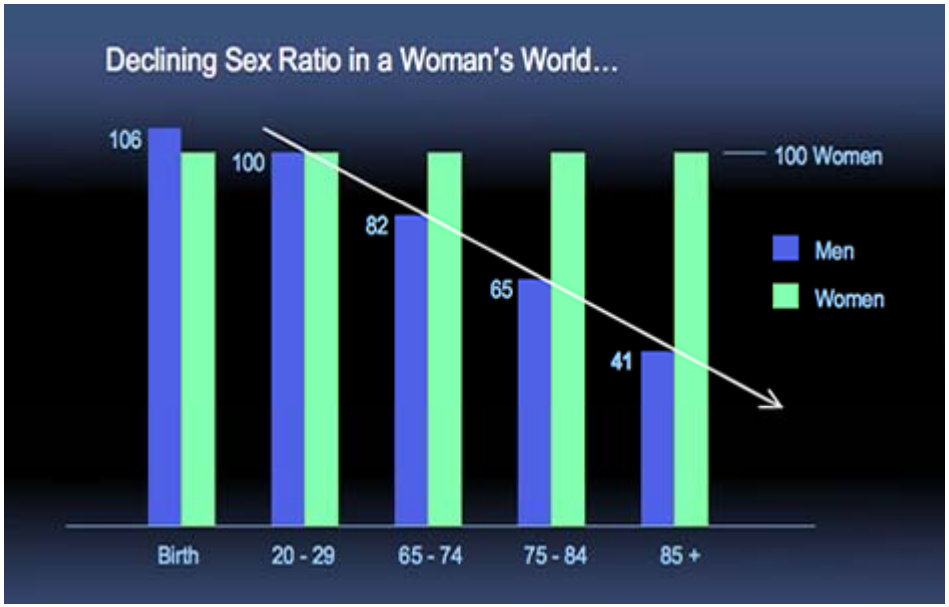
Tsunami of elderly



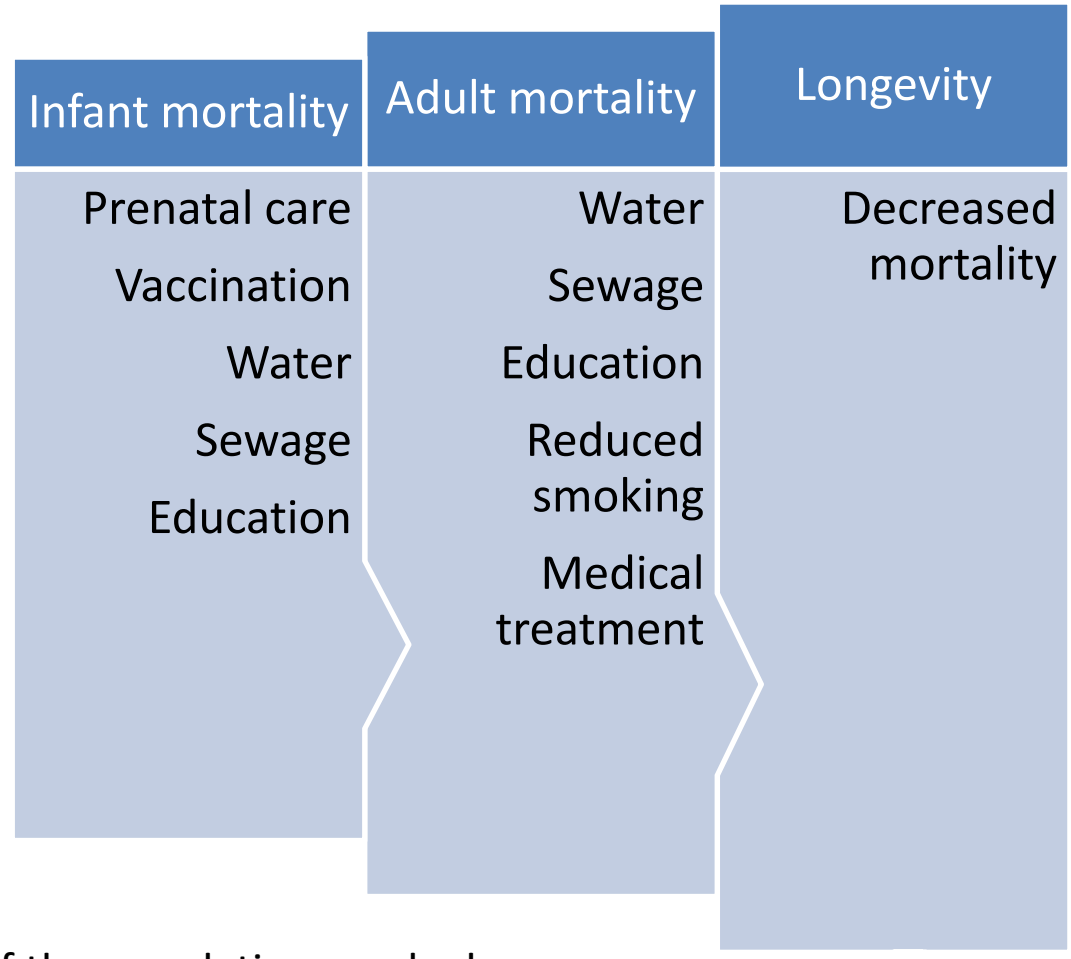
- 1950 to 2050, the world population will have increased by factor of 3.6; those 60 plus will by a factor of 10; and those 80 plus by 27 fold.

Read more: http://transgenerational.org/aging/demographics.htm#ixzz1rcs10y2d

Women’s world



Why ?



1960: 42% of the population smoked
2010: 21% of the population smokes

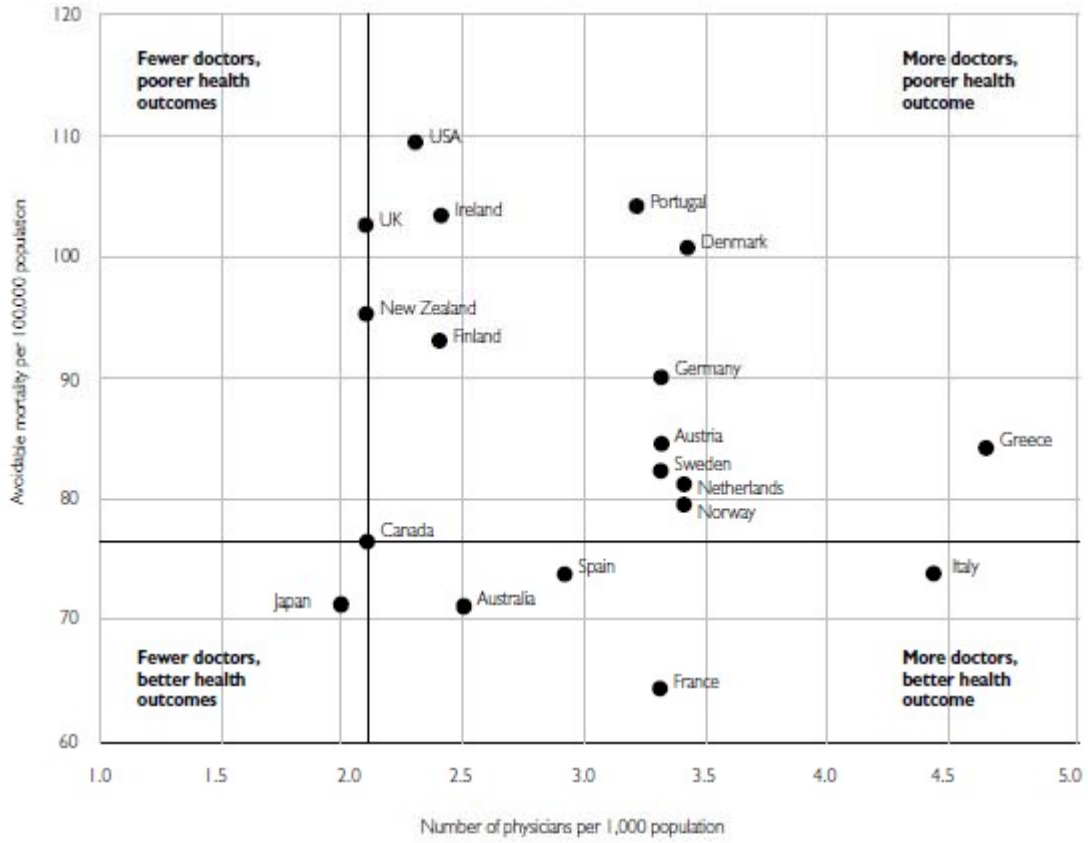
Major Reason is not the health care system, number of beds, number of doctors but sanitation, clean water, income and literacy rates

Life expectancy and health care system

- Studies of multiple countries using regression analysis found no significant relationship between life expectancy and the number of physicians and hospital beds per 100,000 population or health care expenditures as a percentage of GDP.

Physicians and health care outcomes

FIGURE 1. Avoidable mortality by physician supply in 19 OECD countries, 2002



Source: Physician-to-population ratios from 2005 OECD Health Data for 2002/03. Avoidable mortality as reported by Nolte and McKee (2008).

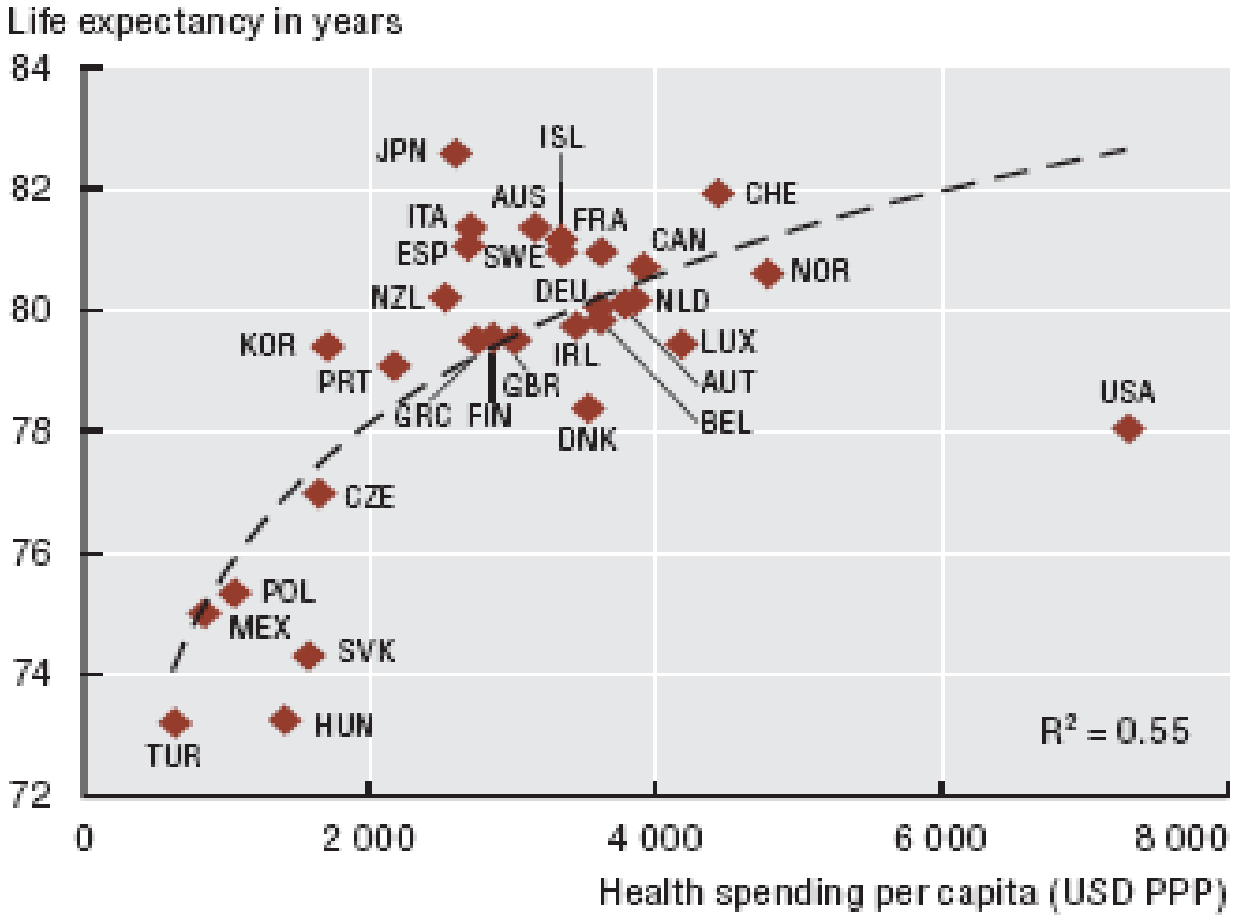
Hospital beds are dwindling

- 1960: 9.2 hospital beds per 1000 people
- 2010: 3.1 hospital beds per 1000 people

Higher health spending per capita is generally associated with higher life expectancy, although this link tends to be less pronounced in countries with higher spending.

YOU GET LESS BANG FOR THE BUCK AS YOU REACH HIGHER SPEND

2007 (or latest year available)



***Source*: OECD Health Data 2009, OECD (http://www.oecd.org/health/healthdata).**

Life expectancy and health care system

- Life expectancy is a poor statistic for determining the utility of a health care system
- ???a health care system has minimal impact on longevity
- Greece, the least per capita on health care, has higher life expectancy Belgium, Denmark, Finland, Germany, Netherlands, the United Kingdom and the United States. Spain, which spends the second least per capita on health care, has higher life expectancy than ten other countries that spend more

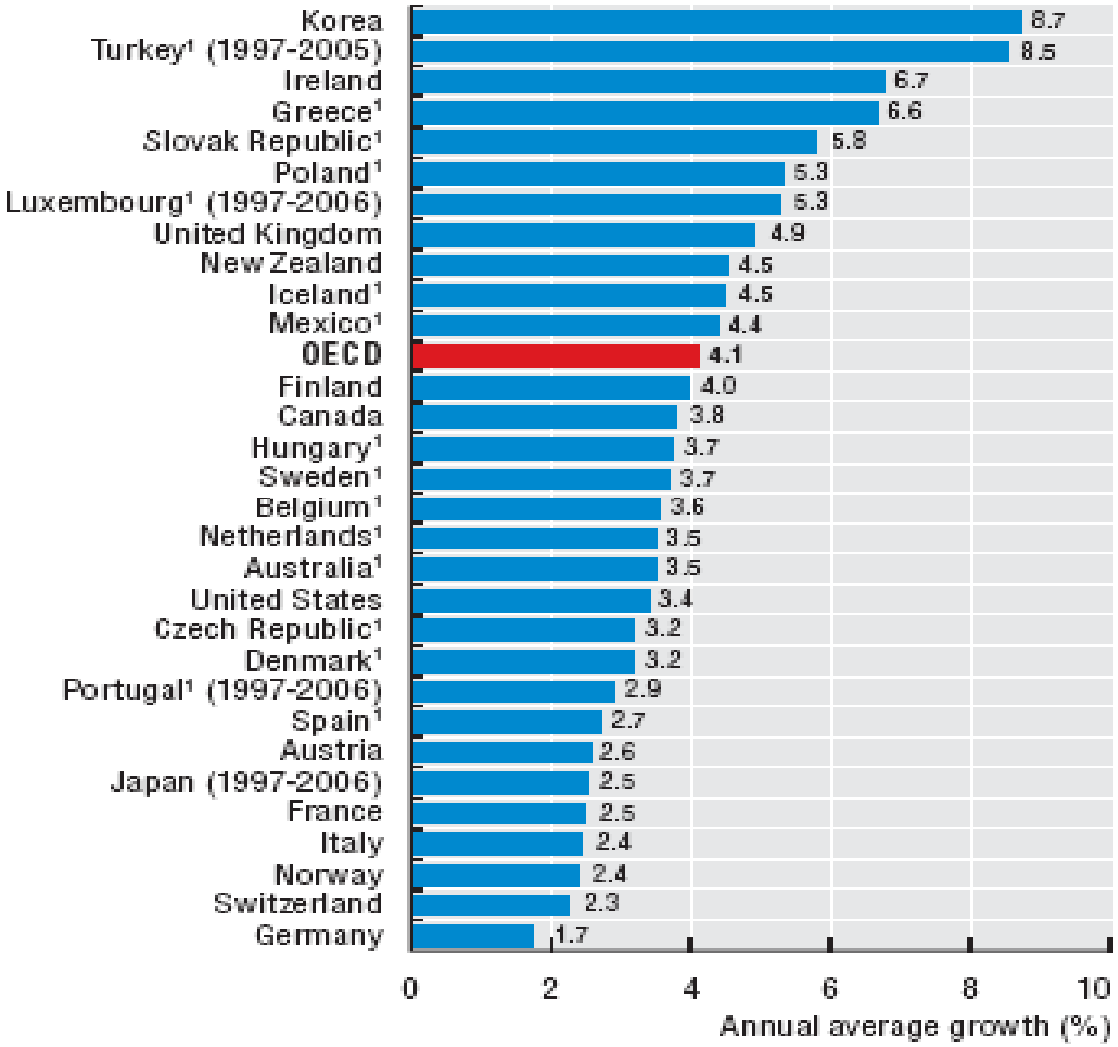
A more focused example

- One-third of the difference between white and African-American life expectancies in the United States accounted for by income; another third by personal risk factors such as obesity, blood pressure, alcohol intake, diabetes, cholesterol and smoking and the final third was due to unexplained factors. (M. W. Otten Jr, S. M. Teutsch, D. F. Williamson and J. S. Marks, "The Effect of Known Risk Factors on the Excess Mortality of Black Adults in the United States," Journal of the American Medical Association, 1990, Vol. 263, No. 6, pp. 845-50.)

We live longer and our health care costs are going up

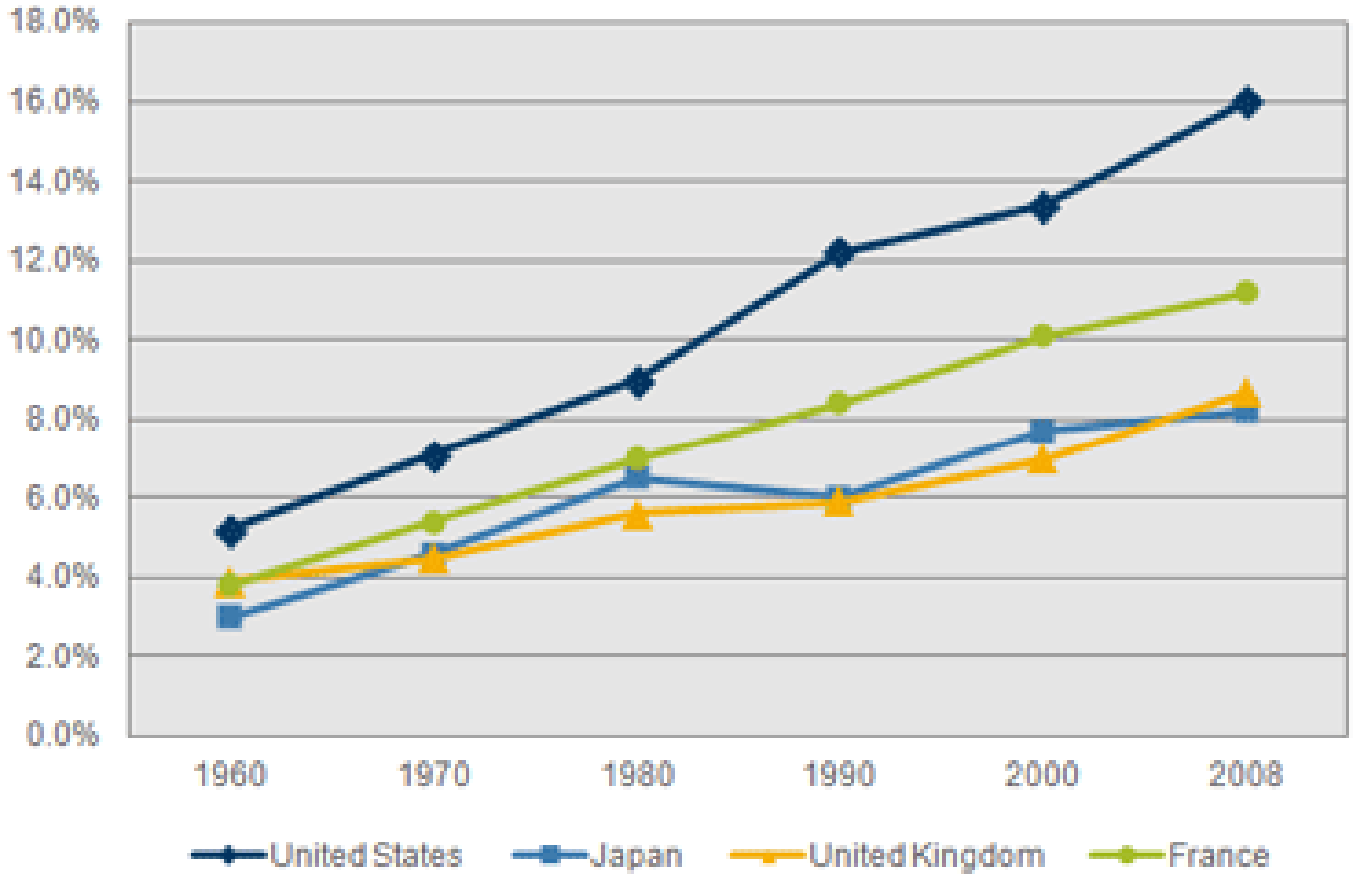
OECD countries, health expenditure has grown by more than 4% per annum

Annual average real growth in per capita health expenditure, 1997-2007



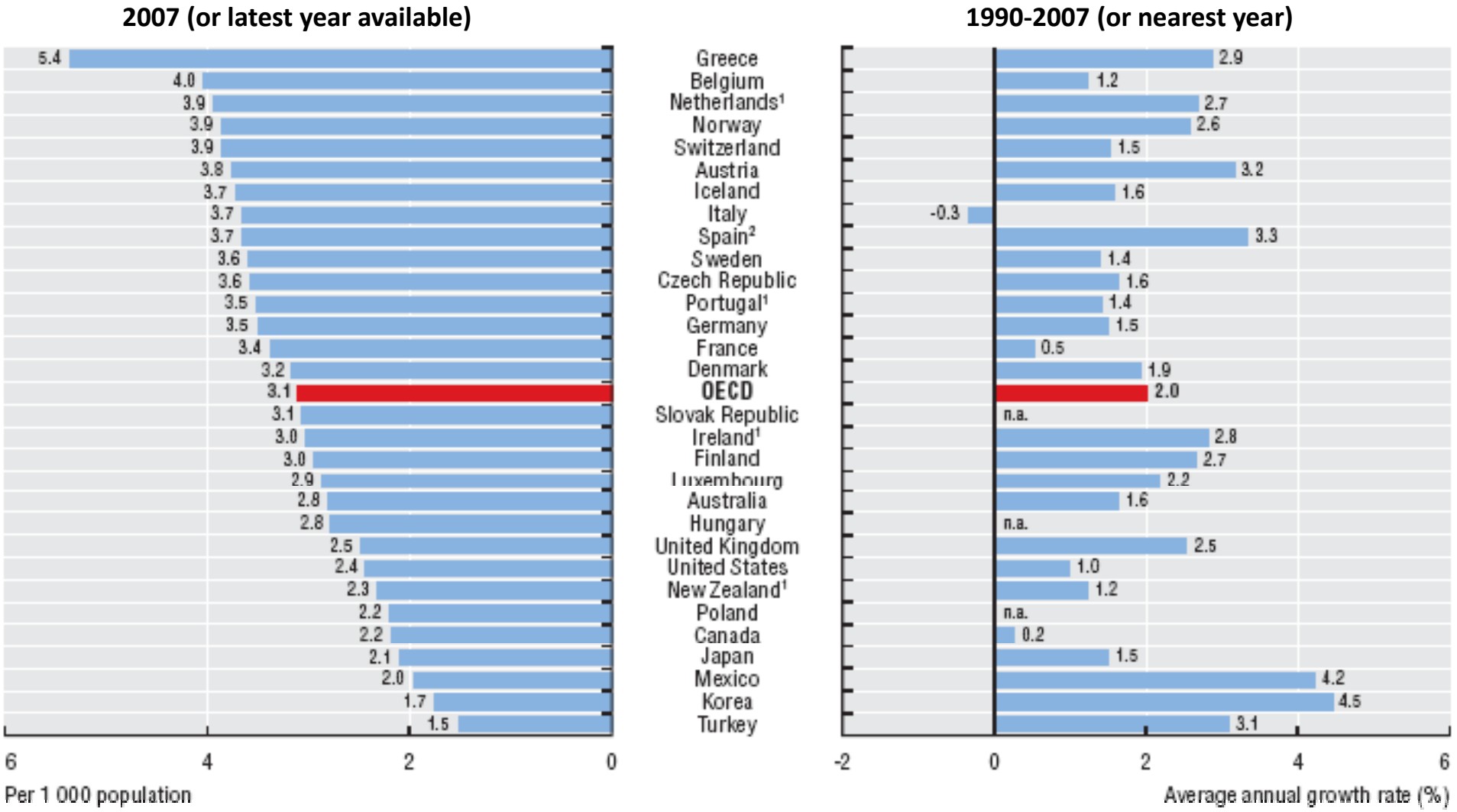
***Source*: OECD Health Data 2009, OECD (http://www.oecd.org/health/healthdata).**

GDP allocated to health is increasing in all OECD countries,



***Source*: OECD Health Data 2008, OECD (http://www.oecd.org/health/healthdata).**

The number of physicians per capita has increased in all OECD countries since 1990, except in Italy

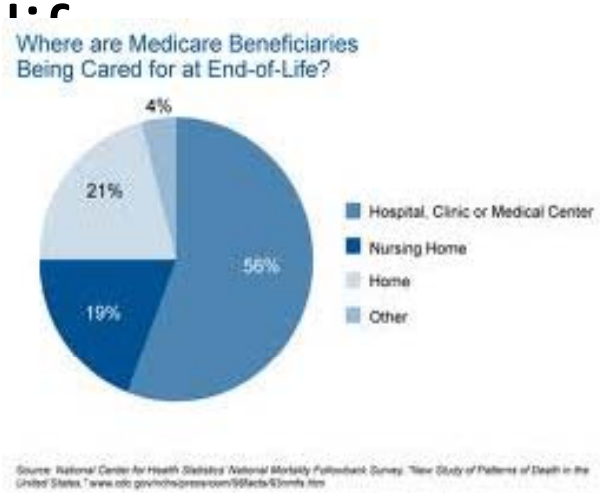


1. Ireland, the Netherlands, New Zealand and Portugal provide the number of all physicians entitled to practise rather than only those practising.
2. Data for Spain include dentists and stomatologists.

***Source*: OECD Health Data 2009, OECD (http://www.oecd.org/health/healthdata).**

Why are the costs going up?

- 1. Estimates show that about 27% of Medicare's annual $327 billion budget ($88 billion) goes to care for patients in their final year of life.



A vast majority of Americans say they want to die at home, but 75 percent die in a hospital or a nursing home.

- "Families cannot imagine there could be anything worse than their loved one dying. But in fact, there are things worse. Most generally, it's having someone you love die badly,"

  Asked what he means by "die badly," Byock told Kroft, "Dying suffering. Dying connected to machines. I mean, denial of death at some point becomes a delusion, and we start acting in ways that make no sense whatsoever. And I think that's collectively what we're doing."

- CBS news interview Dec 2010

2.Education or lack of it

- Multiple studies have concluded that most patients and their families are not familiar with end-of-life options like living wills, home hospice and pain management.

  "The real problem is that many of the patients that are being treated aggressively, if you ask them, they would prefer less aggressive care. They would prefer to be cared for at home. They'd prefer to go to hospice. If they were given a choice. But we don't adequately give them a choice,"

3. Wrong incentives

- Incentives efficient for doctors to manage patients in a hospital situation,
- most doctors get paid based on the number of patients that they see,
- most hospitals get paid for the patients they admit.

Supply and demand

- "In medicine we have turned the laws of supply and demand upside down," "Supply drives its own demand. If you're running a hospital, you have to keep that hospital full of paying patients. In order to, you know, to meet your payroll. In order to pay off your bonds."

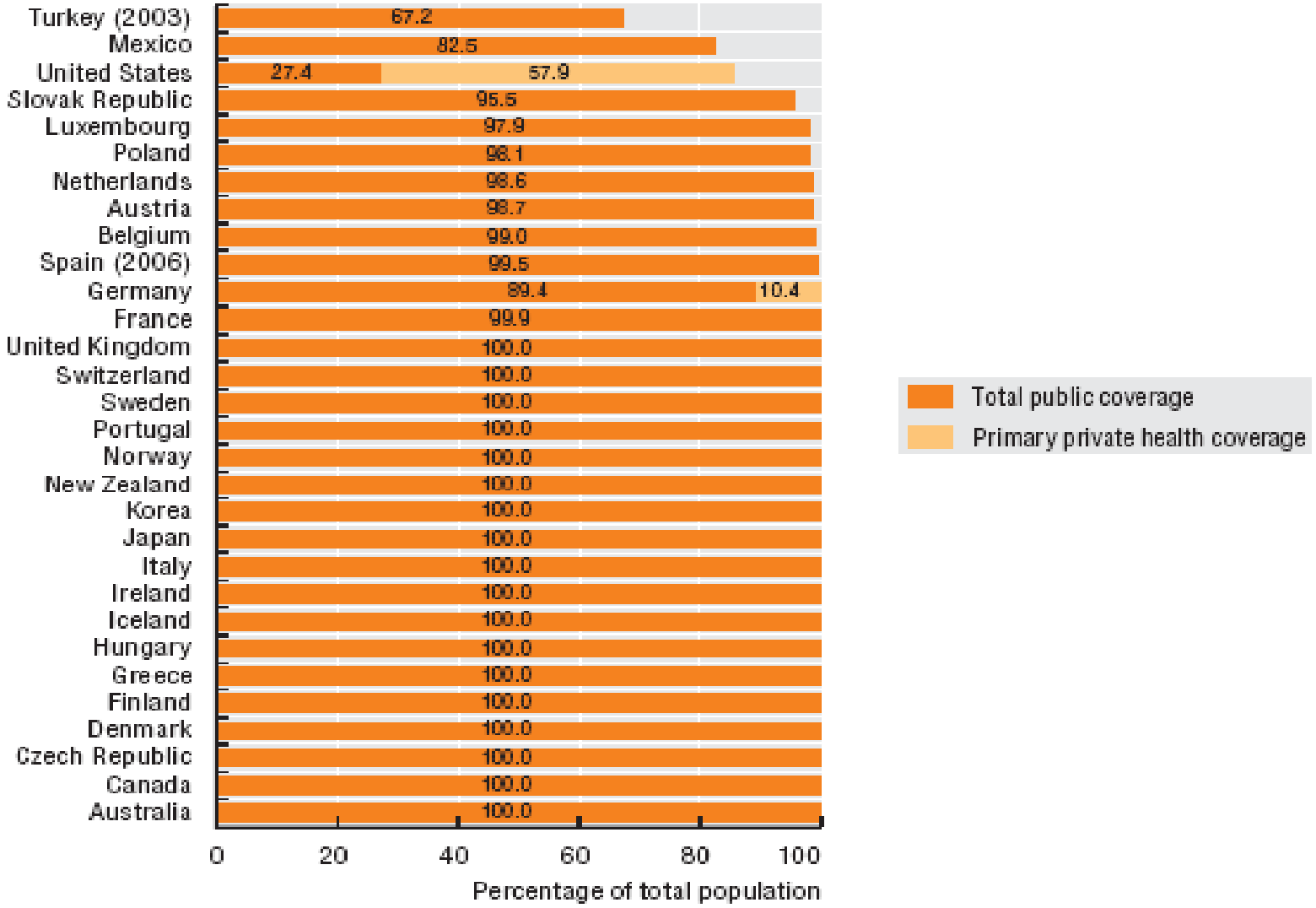
  "So, the more M.R.I. machines you have, the more people are gonna get M.R.I. tests?"

Evidence based Medicine or not

- By law, Medicare cannot reject any treatment based upon cost. It will pay $55,000 for patients with advanced breast cancer to receive the chemotherapy drug Avastin, even though it extends life only an average of a month and a half; it will pay $40,000 for a 93-year-old man with terminal cancer to get a surgically implanted defibrillator if he happens to have heart problems too.

All OECD countries have achieved universal or near-universal health care coverage, except Turkey, Mexico and the United States

2007



***Source*: OECD Health Data 2009, OECD (http://www.oecd.org/health/healthdata).**

How important is Universal health? Taiwan

- 1995, Taiwan implemented universal national health insurance legislation, coverage increased from 57% to 98%.
- Wen and colleagues compared trends in life expectancy for the decade before introduction of national health insurance (1982-1994) with the decade after (1994 to 2004). Life expectancy for men improved 2.39 years during the decade after national health insurance, did not differ statistically from the gain of 2.27 years during the decade before national health insurance.

What we want?

DISEASE BURDEN REDUCTION

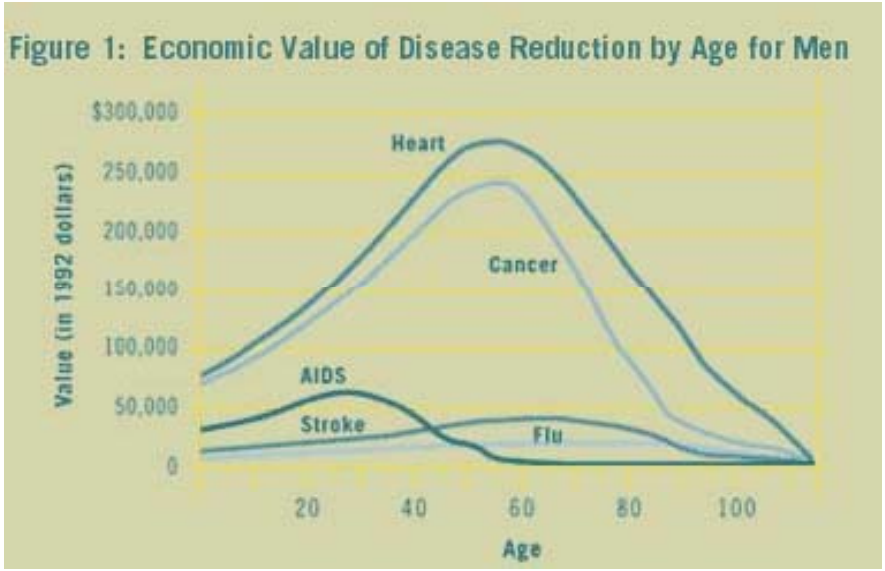
Projections of Global Burden of Disease from 2004 to 2030 (DALYS)

Rank	2004	2030	Rank
1	Lower Respiratory Infection	Unipolar Depression	1
2	Diarrheal Diseases	Ischemic Heart Disease	2
3	Unipolar Depression	Road Traffic Accidents	3
4	Ischemic Heart Disease	Cerebrovascular Disease	4
5	HIV/AIDS	COPD	5
6	Cerebrovascular Disease	Lower Respiratory Infection	6
7	Prematurity and low birth weight	Hearing loss, adult onset	7
8	Birth asphyxia and birth trauma	Refractive errors	8
9	Road Traffic Accidents	HIV/AIDS	9
10	Neonatal infections and others	Diabetes mellitus	10
15	COPD	Neonatal infections and others	11
14	Refractive errors	Prematurity and low birth weight	12
15	Hearing loss, adult onset	Birth asphyxia and birth trauma	15
19	Diabetes mellitus	Diarrheal Diseases	18

Source: Global Burden of Disease, 2004 Report, WHO, 2008

Economic value for disease reduction

- Murphy and Topel U.Chicago reducing the death rate from heart disease or cancer by 20 percent would generate $10 trillion in economic VALUE RESEARCH IS ESSENTIAL FOR LONG HAUL



Steps

- Public Health is the key
- Do not forget economic growth especially personal income
- Education
- Universal coverage insufficient by itself but helps
- Planned integrated properly incentivized system

PUBLIC HEALTH IS THE KEY

IOM report 2012

Revitalizing Public Health

The poor performance of the United States in life expectancy and other major health outcomes, as compared with its global peers reflects what the nation prioritizes in its health investments. It spends extravagantly on clinical care but meagerly on other types of population-based actions that influence health more profoundly than medical services. The health system's failure to develop and deliver effective preventive strategies continues to take a growing toll on the economy and society.

How Does Public Health Fit In?

- **Definition** – the science and art of preventing disease, prolonging life and promoting health through the organized efforts and informed choices of society, organizations, public and private, communities and individuals
- **Focus –** to improve health and quality of life through the prevention and treatment of disease and other physical and mental health conditions, through surveillance of cases and the promotion of healthy behaviors

A note on Public Health

- What are some major public health issues in across the world?
  - Infectious diseases
    - AIDS, tuberculosis, malaria, rabies, etc.
  - Chronic & Non-communicable diseases
    - Obesity, diabetes, hypertension
  - Tobacco & smoking cessation Environmental health and climate change
    - Water & sanitation Air Pollution
  - Food and drug safety and quality
  - Access and poverty
    - Health costs often main single reason people fall into poverty

Environmental Threats

- WHO estimates that up to 24% of the global disease burden and 23% of all deaths can be attributed in part to environmental factors.
  - Unsafe water, sanitation and hygiene
  - Indoor smoke from solid fuels
  - Lead exposure
  - Urban air pollution

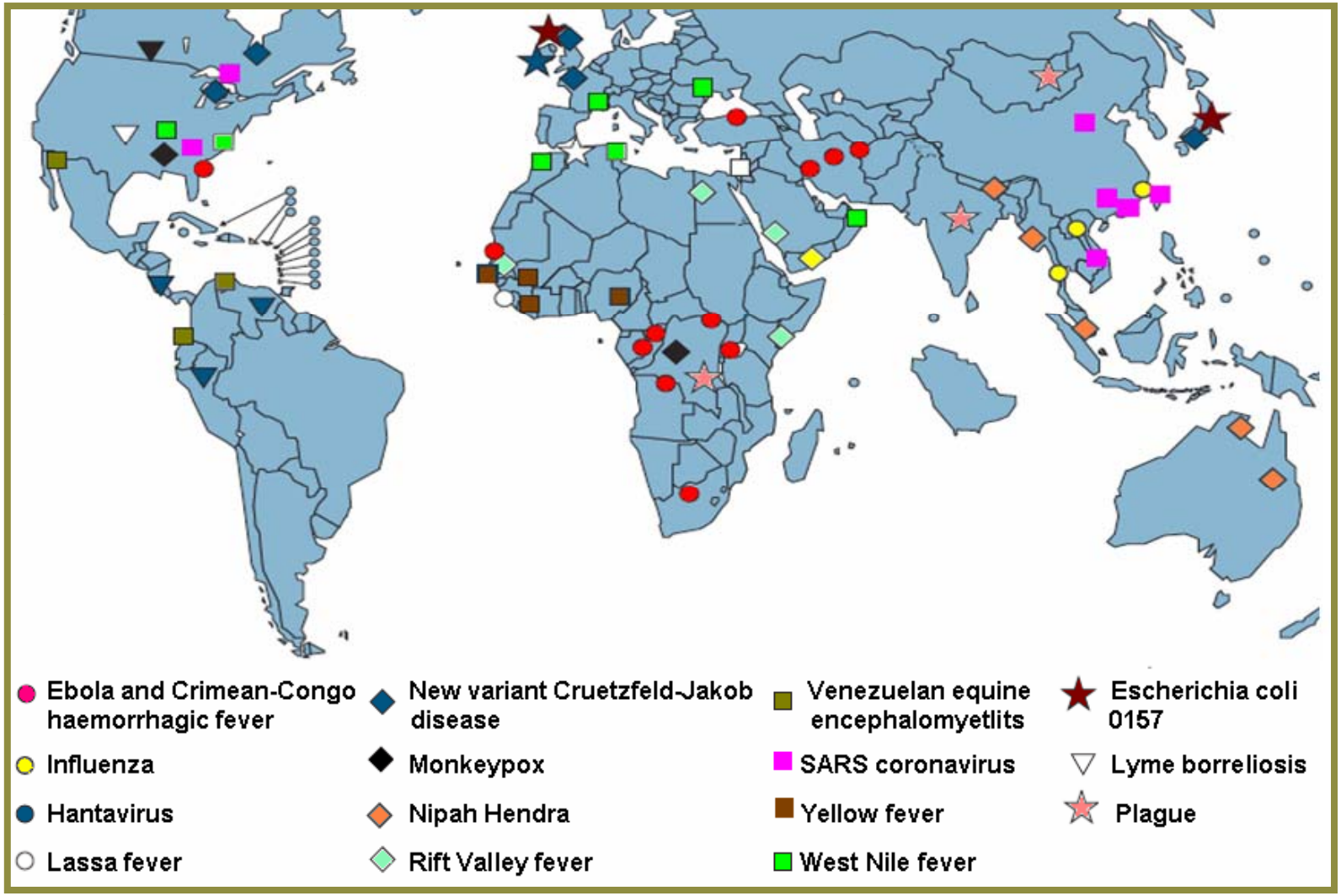
A note on Public Health

- What are some major public health issues across the world?
  - Environmental health and climate change
    - Water & sanitation
    - Air Pollution
  - Food and drug safety and quality
  - Access and poverty
    - Health costs often main single reason people fall into poverty
- Hard to discuss health care reform without discussing public health reforms

IOM report

- Recommends doubling Congressional appropriations for public health, from approximately $12 billion to $24 billion. This represents a small fraction of the more than $2.5 trillion currently spends on health, mostly towards medical care.
- suggests this investment will be highly effective in building a healthier population, thus limiting the ongoing growth of the clinical care system

Recent (Re)Emerging Infectious Diseases



Source: WHO. The World Health report 2007: A Safer Future.

PERSONAL INCOME

Great Smoky Mountain

- The Great Smoky Mountains Study includes a
- Cherokee Indian reservation, and among the study group were 350 Cherokee children. In 1996,
- the Cherokees opened a gambling casino
- every member of the tribe would receive from birth a percentage of the casino's profits.

Great Smoky Mountain Study

- Four years after the income supplements began, 14 percent of the Cherokee families in the study
- had moved above the federally defined poverty level. profiles of the tribe's children during the four years before and the four years after the casino opened, the frequency of psychiatric symptoms had decreased among the children of families that had moved out of poverty

Casino: More Personal Money , More Time, Better Health

the Cherokees opened a gambling casino

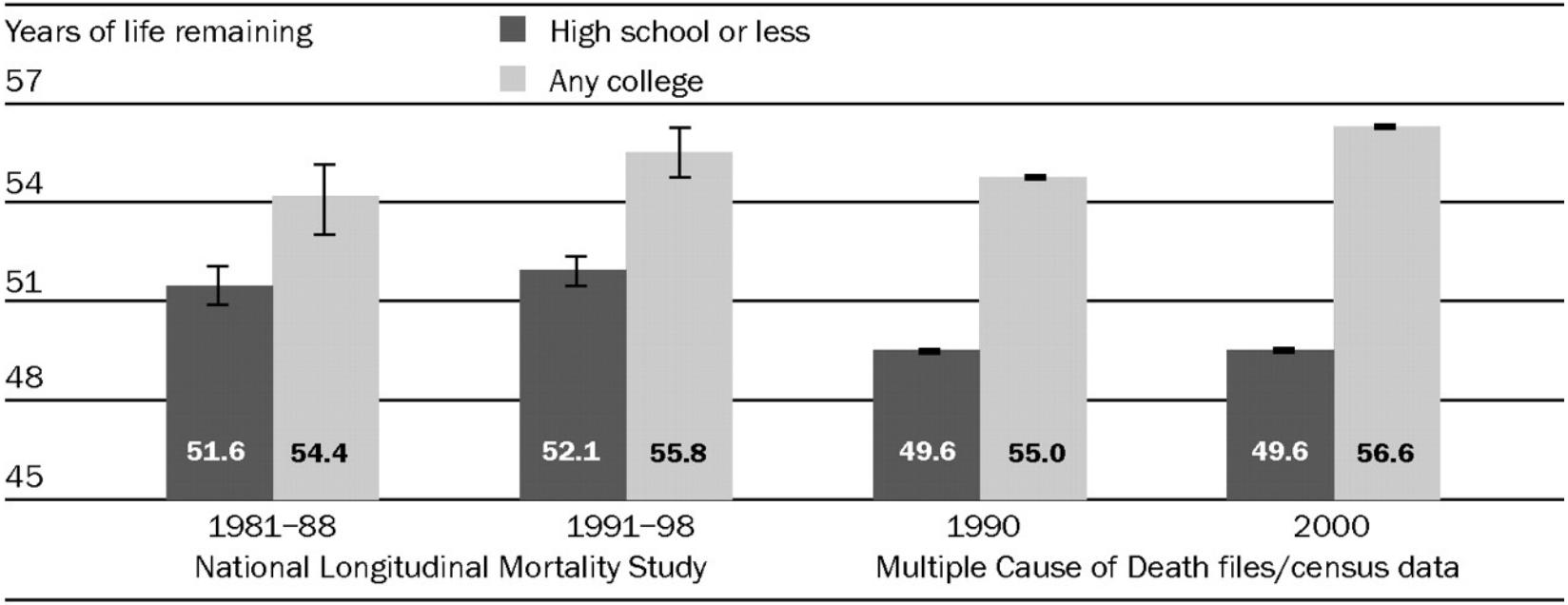
every member of the tribe would receive from birth a percentage of the casino's profits. Their children health improved.

Education

Life Expectancy Among Americans At Age Twenty-Five, By Education Level, Selected Years 1981–2000.

EXHIBIT 1

Life Expectancy Among Americans At Age Twenty-Five, By Education Level, Selected Years 1981–2000



SOURCE: Authors' calculations using data on non-Hispanic blacks and whites in the National Longitudinal Mortality Study (NLMS) and death certificate data from the Multiple Cause of Death (MCD) files linked to census data.

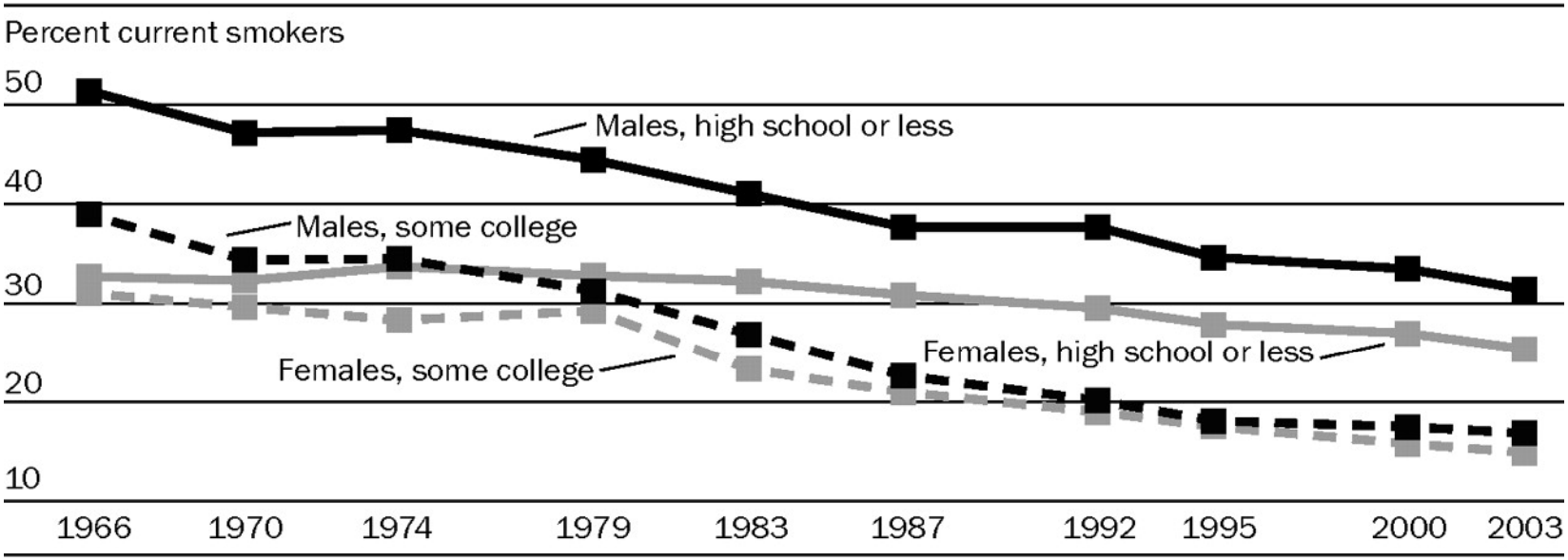
Meara E R et al. Health Aff 2008;27:350-360

HealthAffairs

Rates Of Smoking Among Americans Age Twenty-Five And Older, By Sex And Education Level, Selected Years 1966–2003.

EXHIBIT 5

Rates Of Smoking Among Americans Age Twenty-Five And Older, By Sex And Education Level, Selected Years 1966–2003



SOURCE: Authors' calculations using data from the National Health Interview Survey, various years.
NOTES: Smoking rates are age-standardized to the 2000 population standard. Square symbols are shown for years for which data were available; lines between are linear interpolations of the data points.

Meara E R et al. Health Aff 2008;27:350-360

HealthAffairs

THE SINGAPOREAN HEALTH CARE SYSTEM

Singapore
The Singaporean Health Care System

- Total population:
  - **4,658,000**
- Gross national income per capita (PPP international $):
  - **$ 49,780**
- Life expectancy at birth m/f:
  - **79/84**
- Healthy life expectancy at birth m/f:
  - **70/74**
- Probability of dying under five (per 1,000 live births):
  - **2 / 1,000**

Singapore - System

- Emphasis on health promotion and disease prevention
- Dual public and private health delivery system
- Multi-tier health protection
  - Government subsidy for public hospitals
  - Medisave – compulsory individual medical savings accounts established in 1984
  - MediShield and ElderShield – riskpool financial risk of patients suffering major illness of severe disability
  - Medifund – medical endowment fund, safety net for needy patients

Singapore – Delivery

- 80% of primary health care served by private medical practitioners with the government providing the remainder, ratio reversed for hospital care
- Primary health care
  - Network of 18 outpatient polyclinics – subsidized, one-stop health care centers
    - Average outpatient fee $6 - $15 USD
  - In addition, over 2400 private medical practitioners'

Singapore - Financing

- Medisave and Medishield managed under a compulsory savings program
  - 40% employee's wages (20% employer, 20% employee) go towards account to be used for housing, college loans, health care and retirement
- Government subsidies provide additional financing
  - Based on sliding income scale and patient's ability to pay
  - Provision of health care services depends on setting which care provided and amenities

Singapore - Cost

- 3.9% of GDP spent on health care, compared to 16% in the US and 9% OECD average
- Health expenditure $1,550 per capita
- Low expenditures on health care, attributed to government cost control, rationing based on wealth and social and demographic characteristics unique to Singapore
- Despite low per capita expenditure, effective health system
  - Infant mortality 2 per 1,000 births compared to 9 per 1,000 for the US

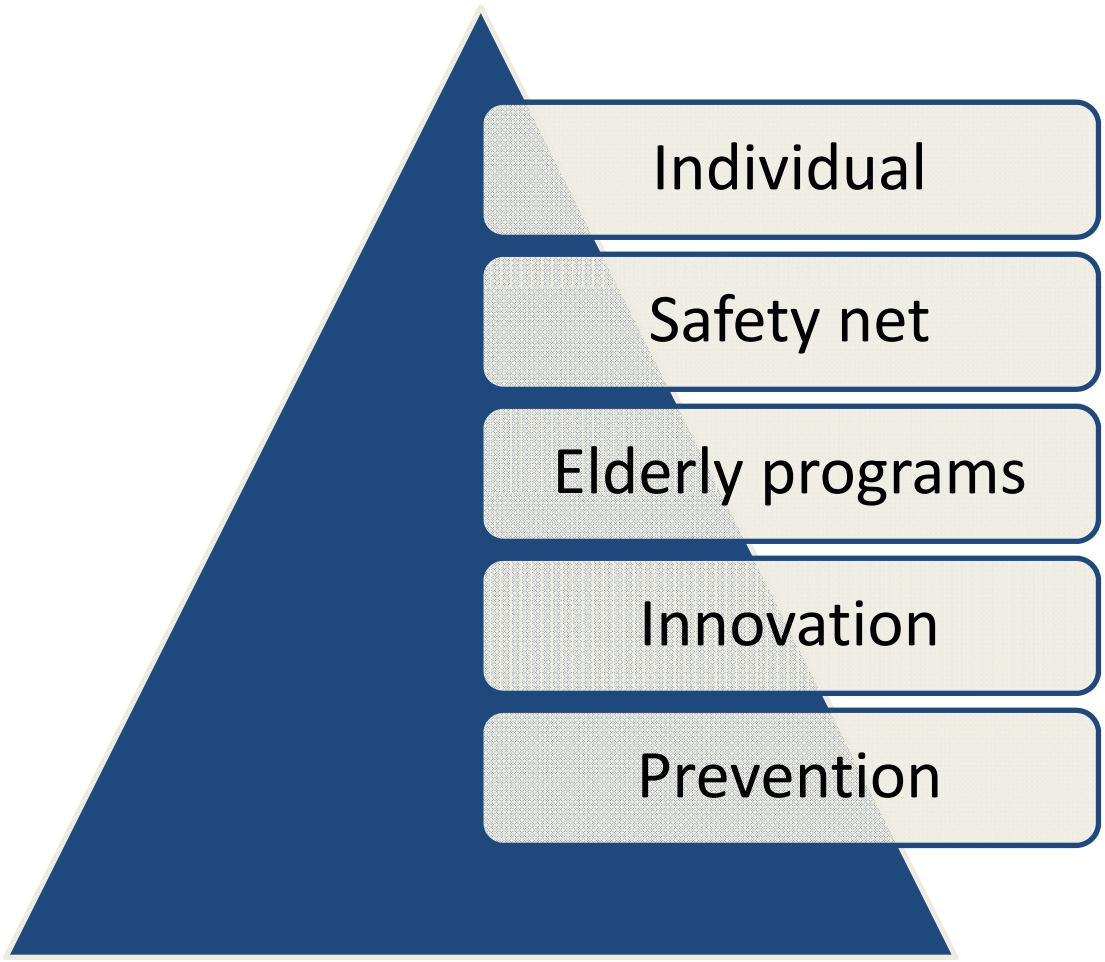
Singapore – Challenges

- Aging population – number of residents aged over 65 years predicted to increase from 8.5% in 2009 to 19% in 2030
- Cost containment given aging population and higher demand for good medical care

Singapore – Long-term care

- Mix of individual responsibility and community safety net
- Co-pay for parts of services and more for higher level of service
- Eldershield
  - Singaporeans automatically enrolled at age 40 (unless opt-out)
  - Continue paying premiums until age 65 and are covered for life
  - Claims strictly capped

Key elements



Final thoughts

- Public Health is key
- Population Medicine
- Systems approach
- Proper balance between individual responsibility and national safety net
- Education and discussion of end of life care
- Research to reduce disease burden is essential for long term