LALONDE *(mid 70.)*

Factors influencing our health:

5-10% genetic factors

5-10% environmental factors

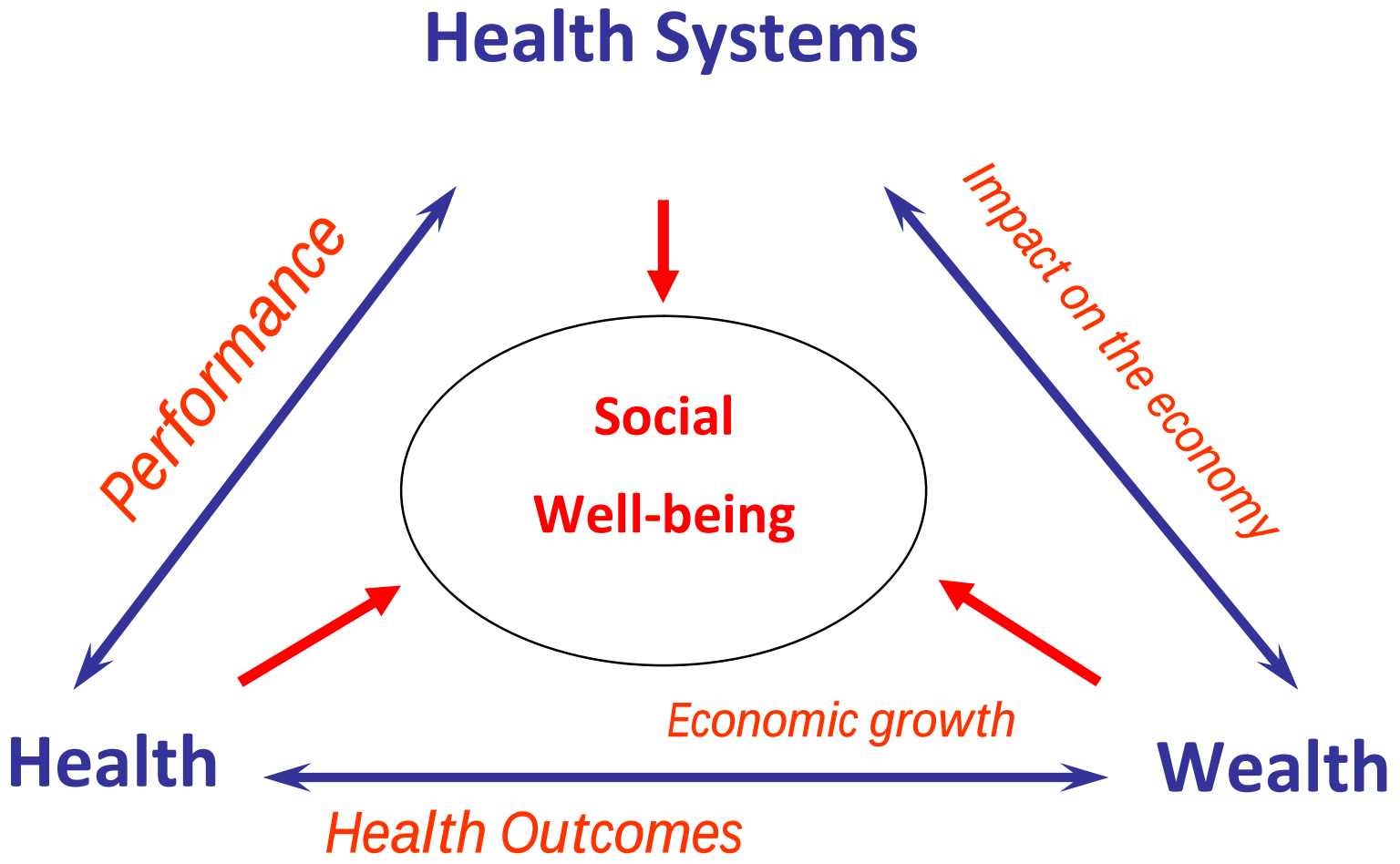
10-20% medical care

20-25% social environment

40-60% life style

The Tallinn Charter (WHO 2008)

relates health systems, health and wealth

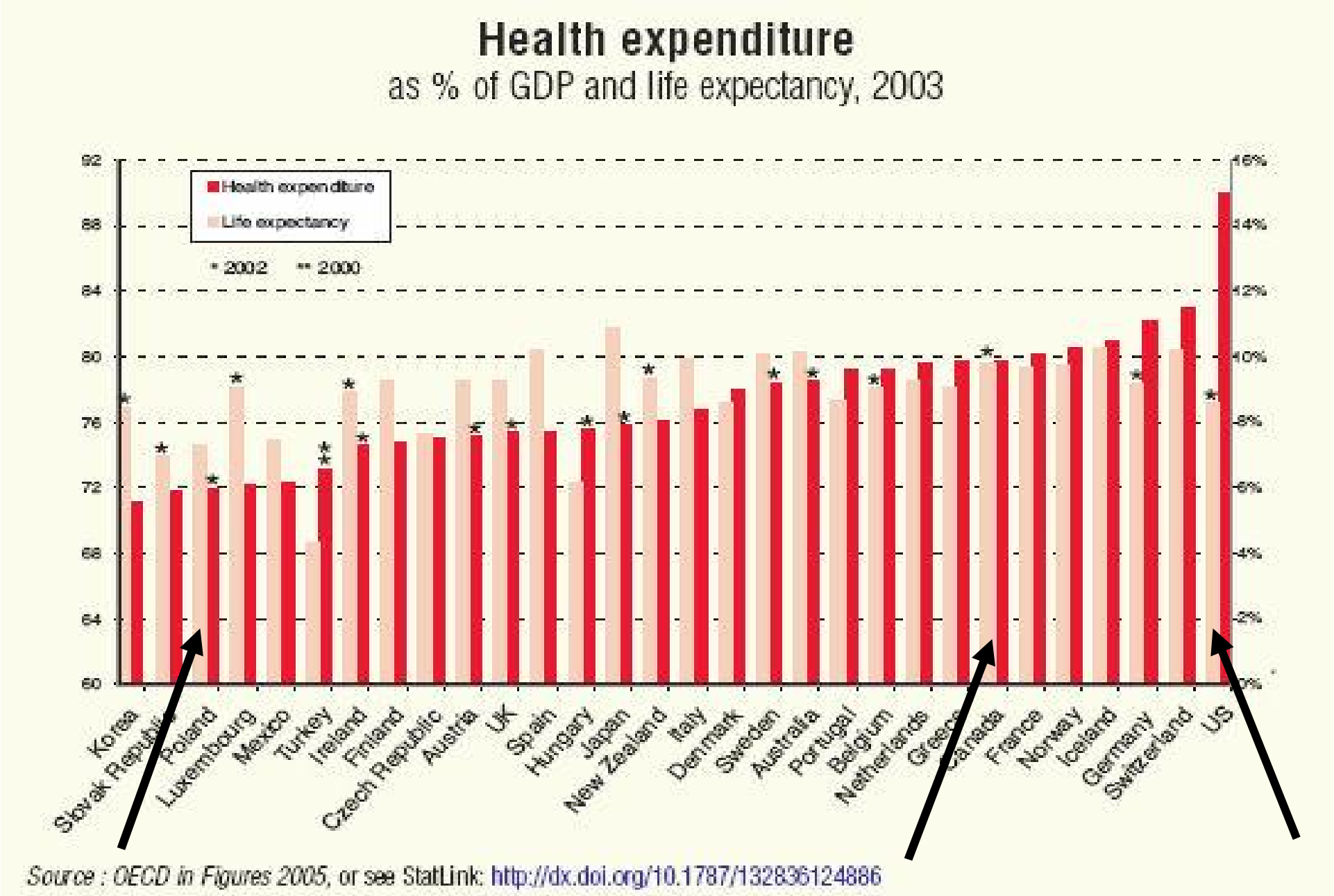


1.US

Nation’s health and performance of health system

Tomasz Zdrojewski

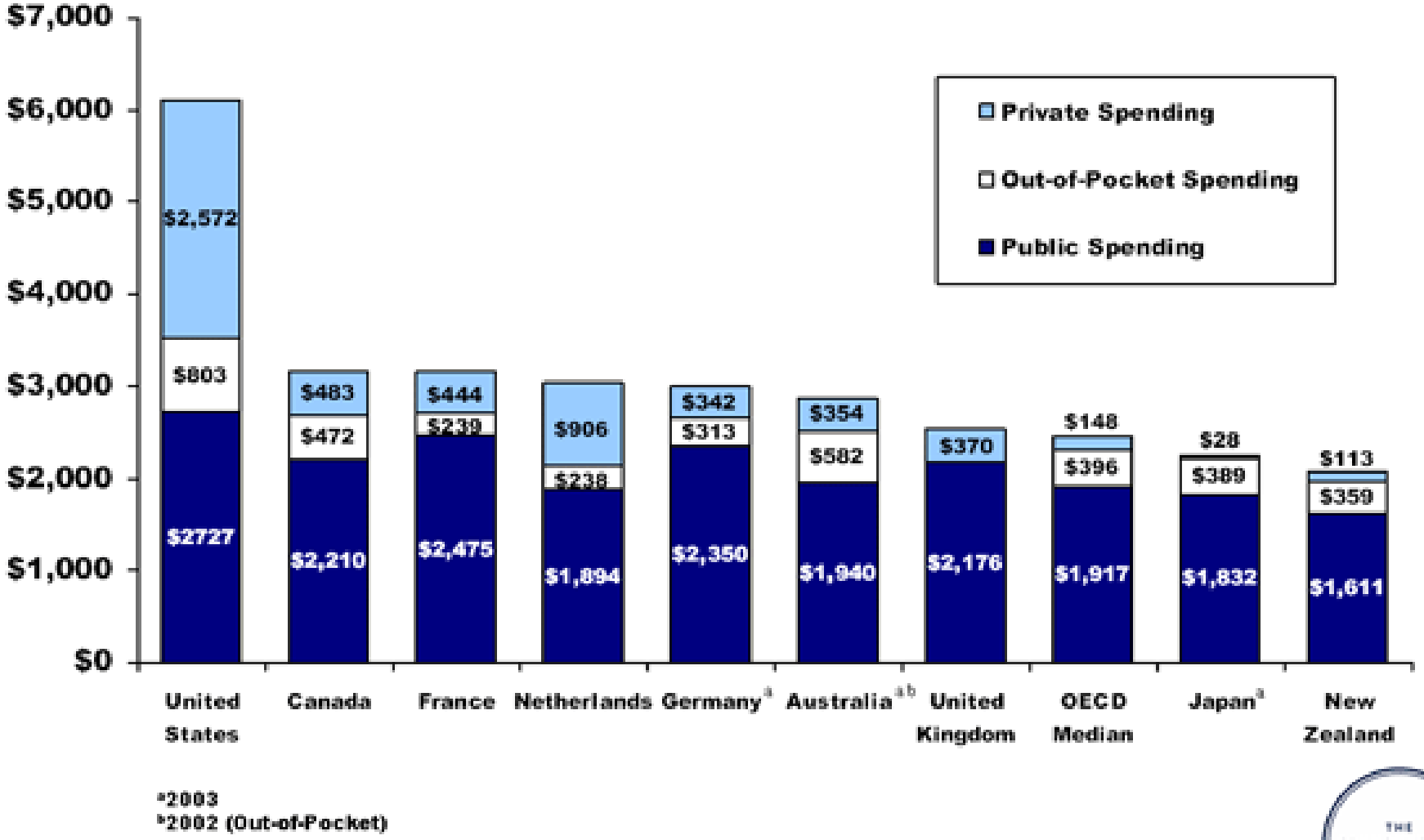
The economic dilemma in global competition and a nation's health…



Source : OECD in Figures 2005, or see StatLink: http://dx.doi.org/10.1787/132836124886

Health Care Expenditure per Capita by Source of Funding in 2004

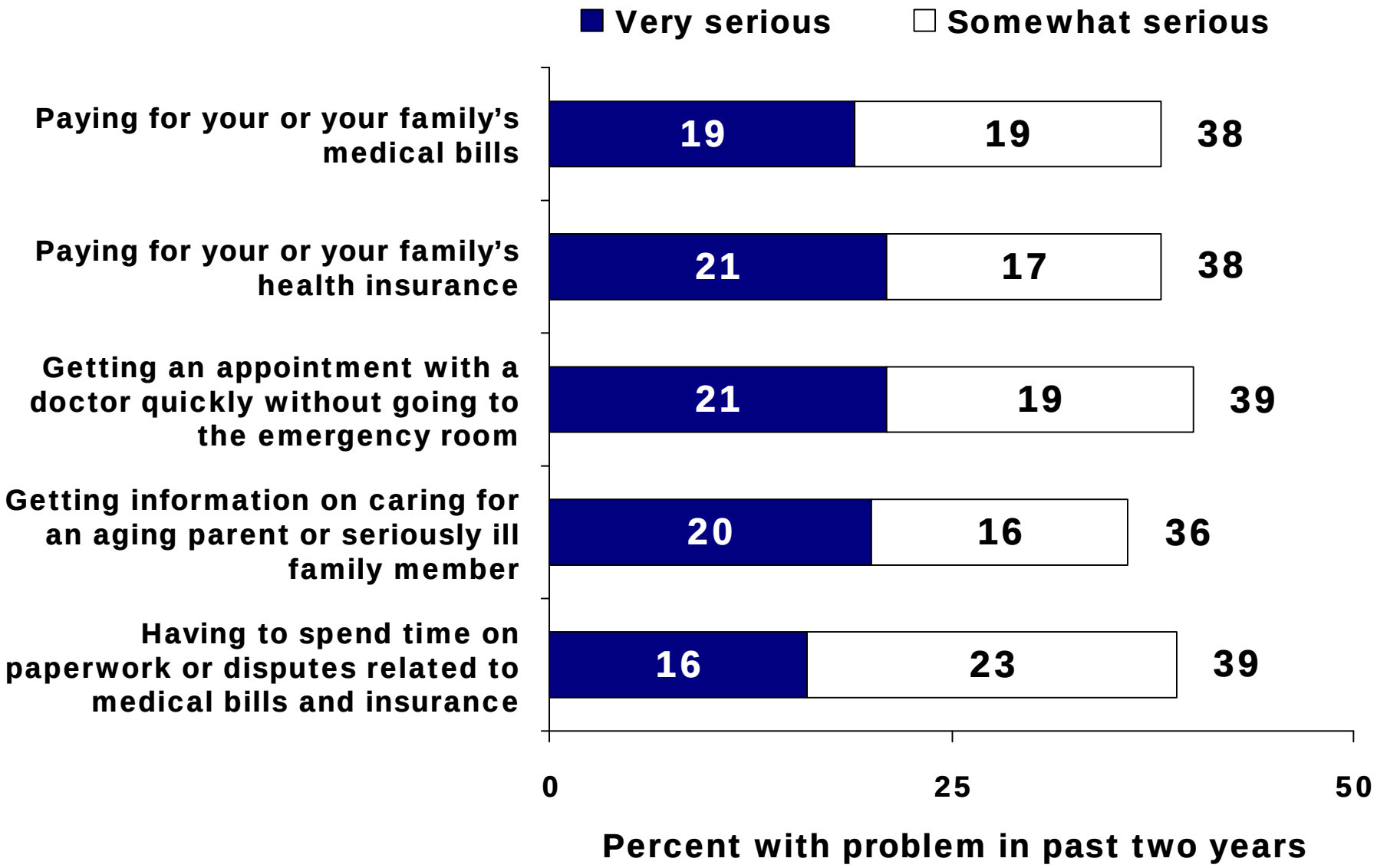
Adjusted for Differences in Cost of Living



[a]2003
[b]2002 (Out-of-Pocket)

Source: The Commonwealth Fund, calculated from OECD Health Data 2006.

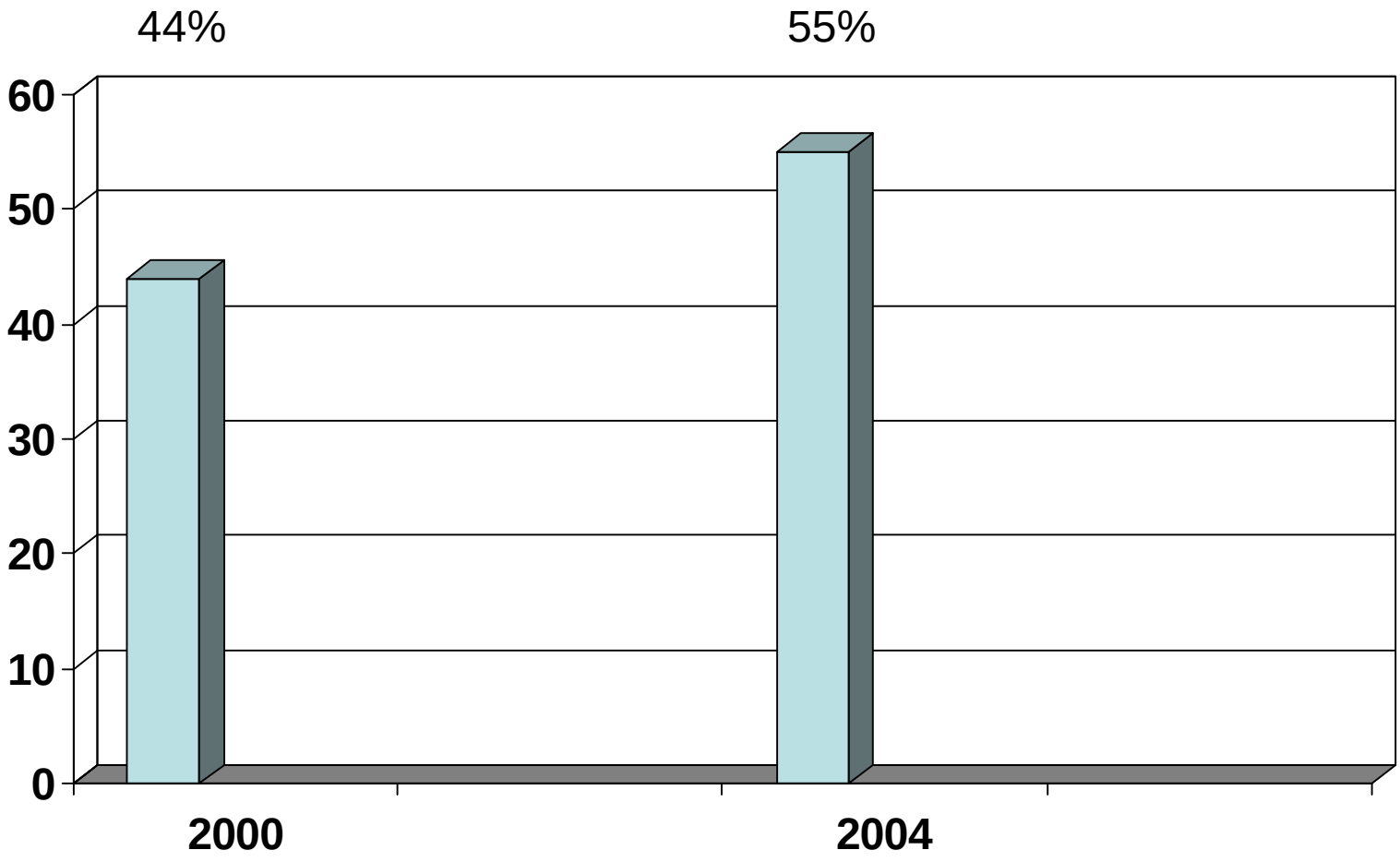
Figure 4. Two of Five Adults Had Serious Problems with Access, Cost, or Administrative Aspects of Care



Source: Commonwealth Fund Survey of Public Views of the U.S. Health Care System, 2006

Perceptions.....

Percent dissatisfied with quality of healthcare in US



Gallup Poll Sept 2000, n=1,008

Kaiser Fam Found/AHRQ/Harvard, Nov 2004; n=2,012

2.

Poland vs. US

Tomasz Zdrojewski

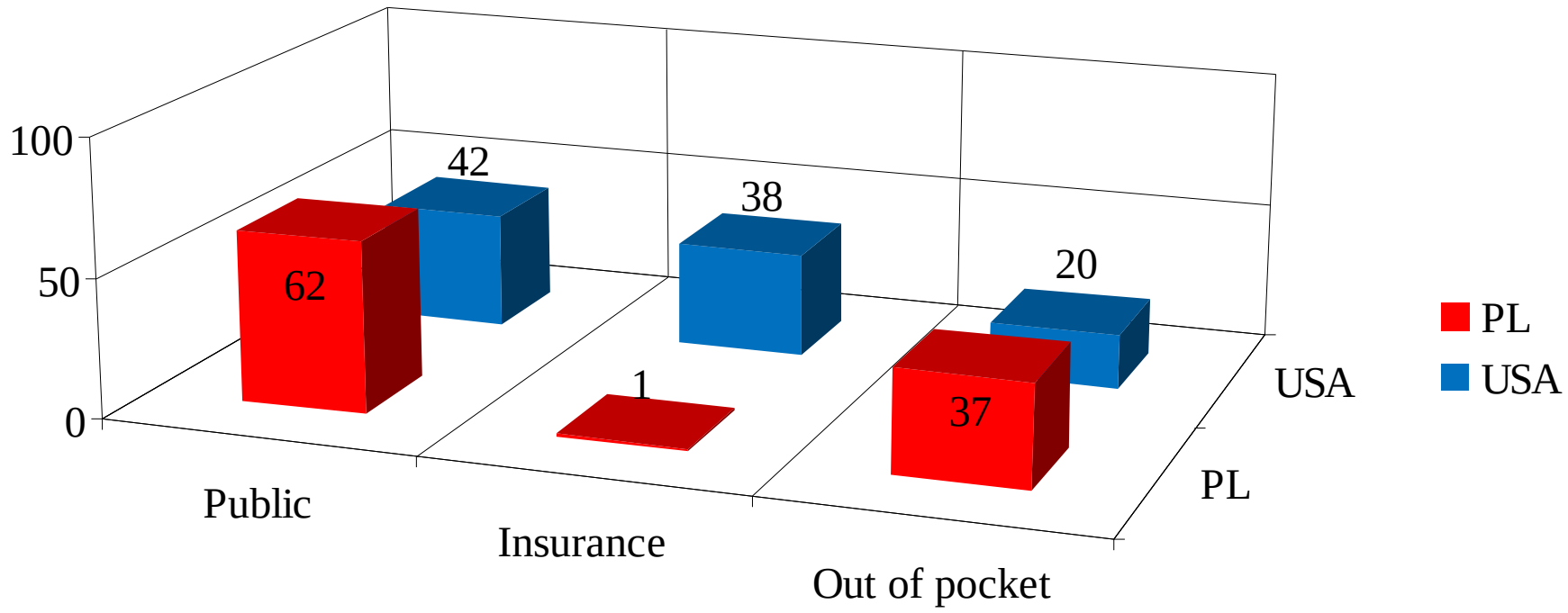
2008

	Poland	US
Population	38.5 mln	303 mln
GDP per capita	17 324	47 194

Expenditures: Health

24 mld USD	2 200 mld USD
618 / per capita	7260 / per capita
7.25 % GDP PL	16.2 % GDP USA

Expenditures: Pl vs. USA

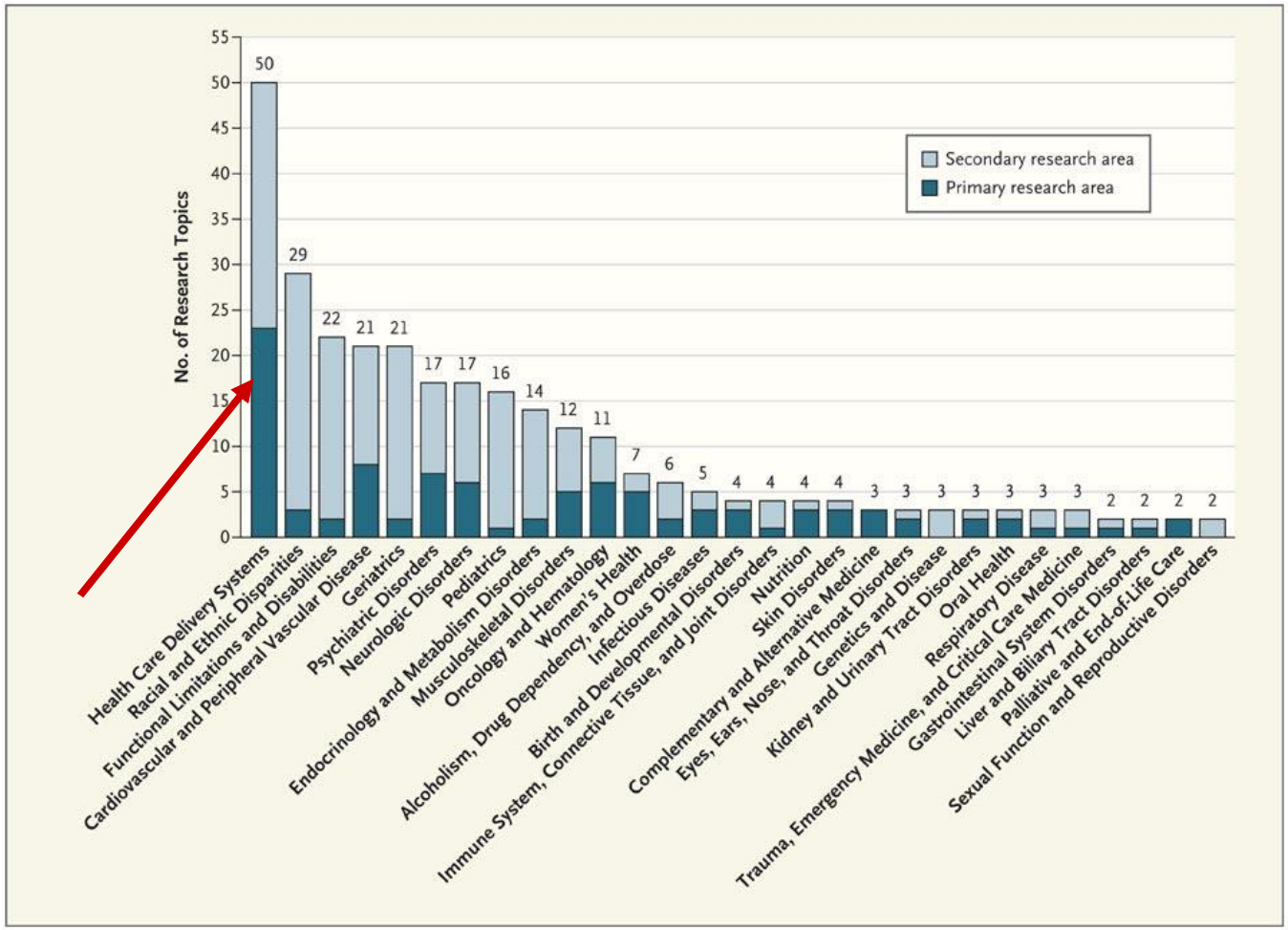


3. CER

Poland & US

Tomasz Zdrojewski

Distribution of the IOM's Recommended CER Priorities



Iglehart J. N Engl J Med 2009;10.1056/NEJMp0904133

The NEW ENGLAND JOURNAL of MEDICINE

Topics proposed for research

1. Comparative effectiveness of strategies **to enhance clinical and funding decisions** by optimizing evidence base **with non-standard methods (e.g. Bayesian)** versus standard metanalytic tools and commissioning new clinical/pragmatic trials
2. Comparative effectiveness of analytically **IT assisted systematic public funding decision making** versus unsystematic discussion-based decision making
3. Comparative effectiveness of improved health care supported by home-use clinical status monitoring systems (**e-health and telecare**) versus standard care
4. Comparative effectiveness of factors and **strategies that influence society's level of satisfaction** from public healthcare system on the basis of international comparison

Topic 1

Comparative effectiveness of strategies to enhance clinical and funding decisions by optimizing evidence base with non-standard methods (e.g. Bayesian) versus standard metanalytic tools and commissioning new clinical/pragmatic trials

Current situation:

- lack of head-to-head trial data
- real-life data missing or of low quality
- standard metanalytic tools deemed insufficient for aggregating data with varying quality
- commissioning new trials means millions of dollars and several months or even years of postponing the funding decision (or a conditional coverage decision with data gathering)

Bayesian methods of aggregating evidence carry the promise for minimizing time and cost of developing evidence necessary to make especially funding decisions by enabling a reliable aggregation of non-controlled non-randomized data with those derived from higher quality clinical studies.

A proposition to currently focus on developing software to enable popularization of Bayesian methods of aggregating evidence among HTA

Topic 2

Comparative effectiveness of analytically IT assisted systematic public funding decision making versus unsystematic discussion-based decision making

Current situation:

- decision makers faced with multidimensional frameworks for funding decisions
- increasing public expectation for transparency and reasoning for funding decisions
- difficulties in systematic approach in discussion-based decision making

New analytic approaches adapted from other areas of strategic and investment decision making use of the achievements of both mathematics and economy. They might minimize the risk for biased funding decisions which would result in lowering financial litigation risk. With such analyses you get some ten variants to choose from instead of hundreds that you are faced with initially.

Topic 3

Comparative effectiveness of improved health care supported by home-use clinical status monitoring systems (e-health and telecare) versus standard care

- A proposition to currently focus on developing mathematical IT-based models to estimate undesired clinical conditions risk based on the chosen parameters values monitored at home by e-health or telecare solutions
- Clinical area(s) to focus on: heart failure
- Possibility for testing of specific solutions in Poland

Topic 4

Comparative effectiveness of factors and strategies that influence society's level of satisfaction from public healthcare system on the basis of international comparison

Current situation:

- major reform of US health care system
- high level decision makers and politicians need to know the methods to address this issue in public debate to optimize chances for success

Clearly a good strategy to develop such methods is to analyse the factors and interventions used in countries that have experience with single payer health insurance system.

The current proposition focuses on two countries: Netherlands and Poland. As they distinctly differ in health expenditures levels and position in health systems international rankings, this would enrich the outcomes of the proposed analysis

Explaining the Decrease in Deaths from Coronary Disease

4. IMPACT Model

N I H

UNIVERSITY OF LIVERPOOL

Unal, Critchley & Capewell, Circulation 2004 109(9) 1101-7

4. IMPACT Model

Comparison of Δ's in Poland & US

for years 1990 -2005 ?

Tomasz Zdrojewski

Vilnius, 1937

UK male doctors born 1900–1930: continuing cigarette vs never smokers. 50-year follow-up of mortality, 1951–2001

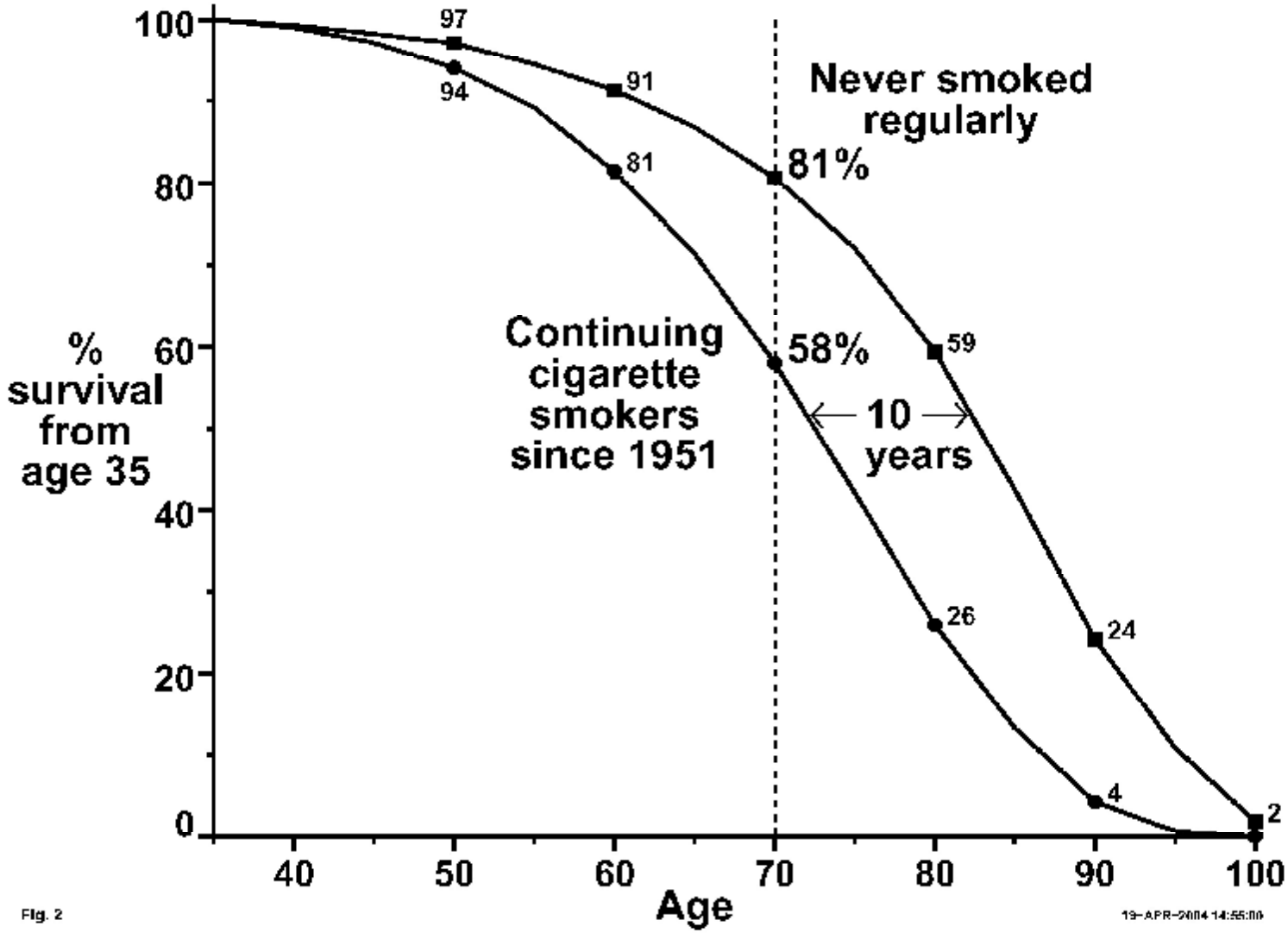
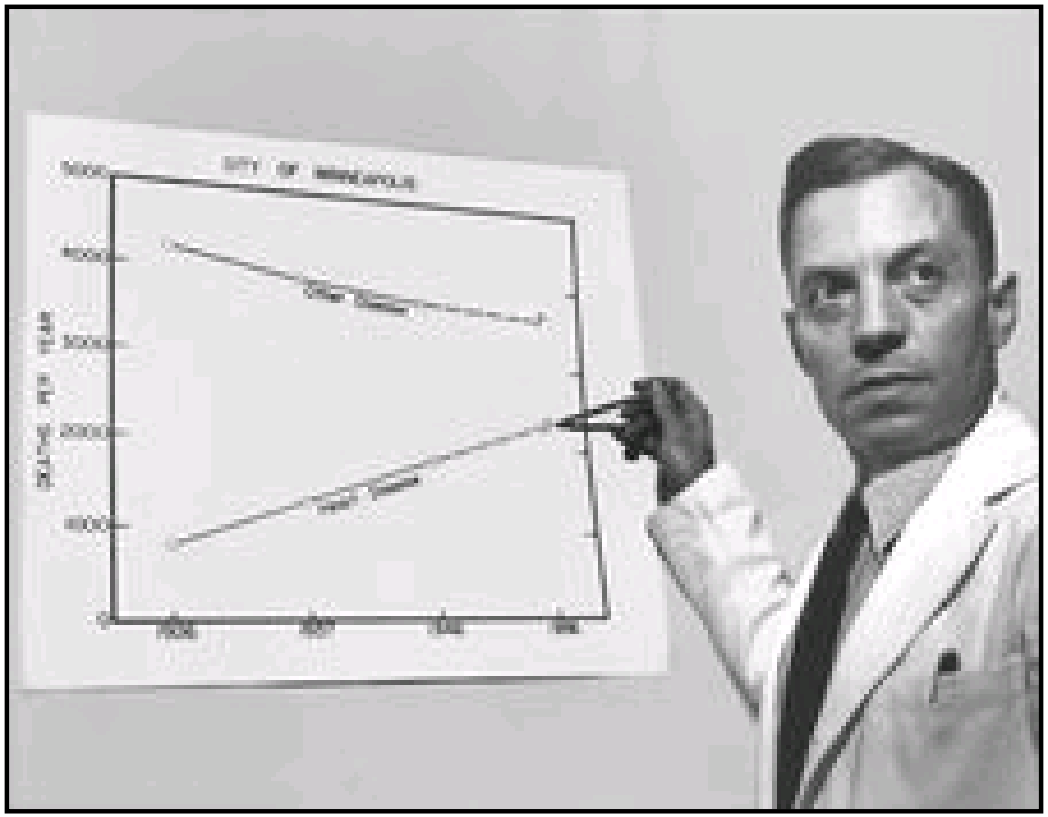


Fig. 2

19-APR-2004 14:55:09

1945-1950 USA

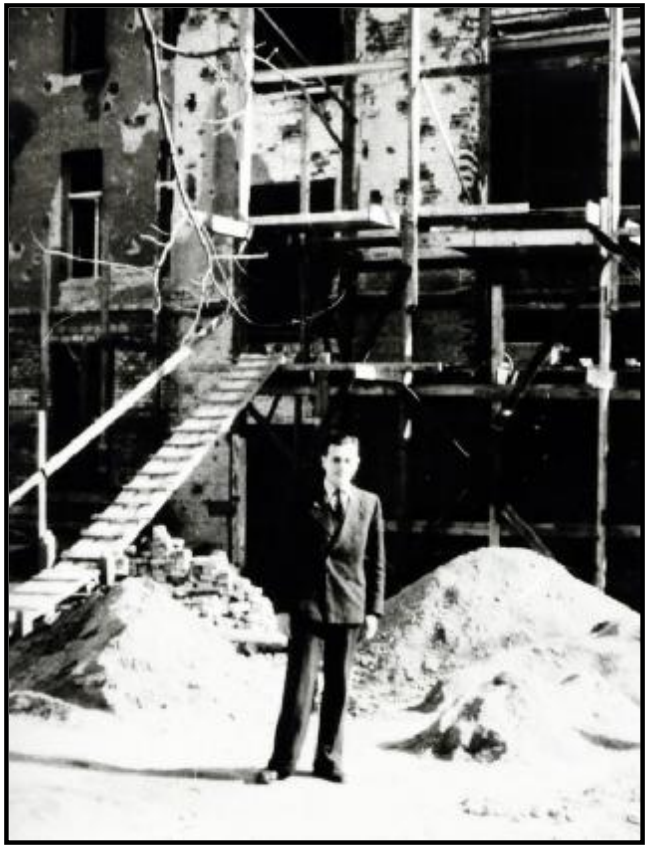


Year 1947. Dr Ancel Keys lecture
Number of deaths in Minneapolis in 1920-1945 are presented
The extrapolation of trends suggests Epidemiologic Transformation
Heart diseases epidemic is predicted by author
He propose to change priorities of epidemiology and prevention
Framingham Heart Study begins in two years…

Ancel Keys Archive, School of Public Health, University of Minnesota

1945-1950 Medical University in Gdansk

The collection of the
Library of Basic Science Institute



President of Medical University

The modern era: 1972 - present

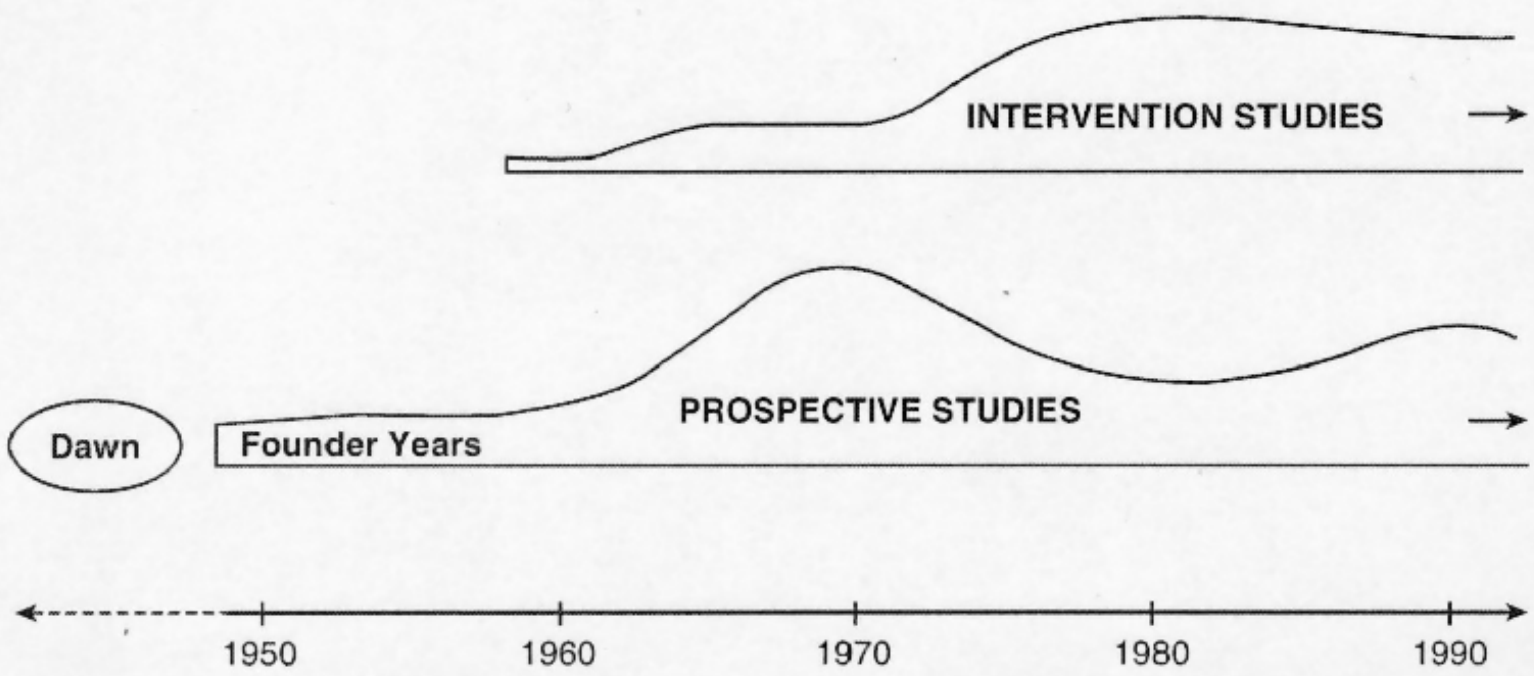
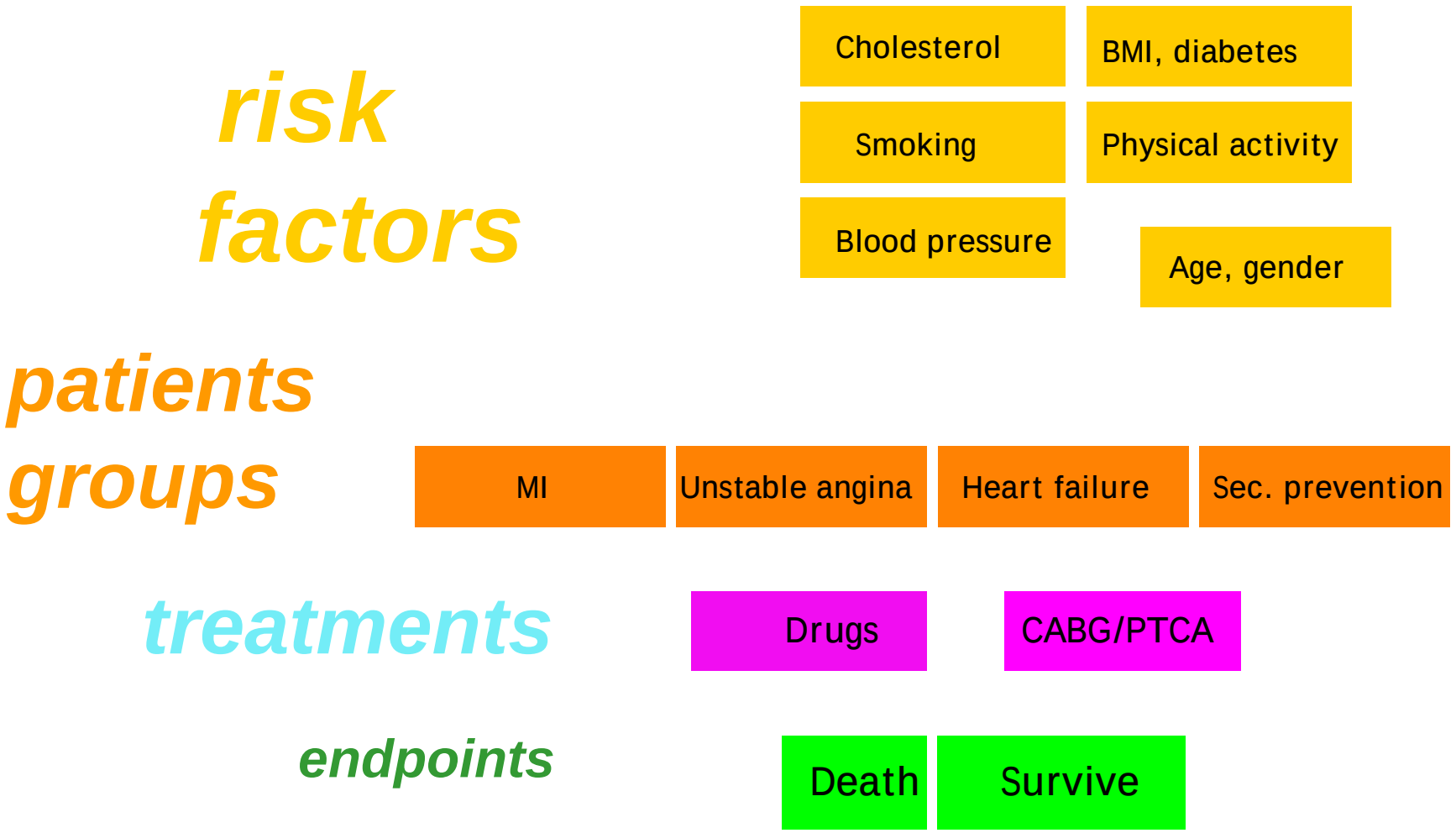


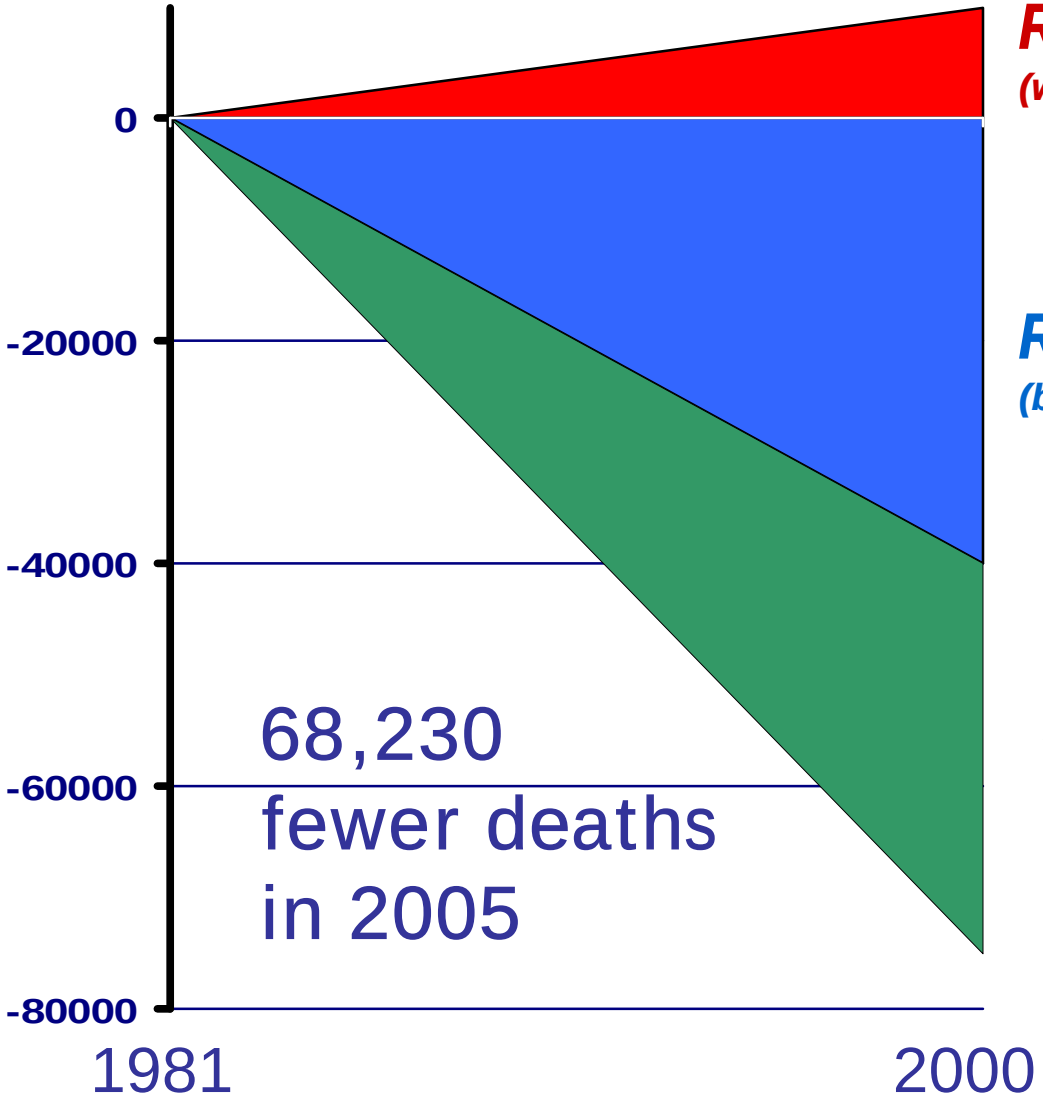
Fig. 7.1 Cardiovascular disease epidemiology historical development. Reproduced with permission from Epstein FH (1996). Cardiovascular disease epidemiology. A journey from the past into the future. Based on the 1993 Ancel Keys Lecture. Circulation, 93, 1755–64.

Main components of IMPACT model:



Unal, Critchley & Capewell, Circulation 2004 109(9) 1101-7

Explaining decreasing mortality from coronary heart disease in England and Wales in 1981-2000



Risk factors +13%

(worse)

Obesity (increase)	+3.5%
Diabetes (increase)	+4.8%
Physic. act. (decrease)	+4.4%

Risk factors -71%

(better)

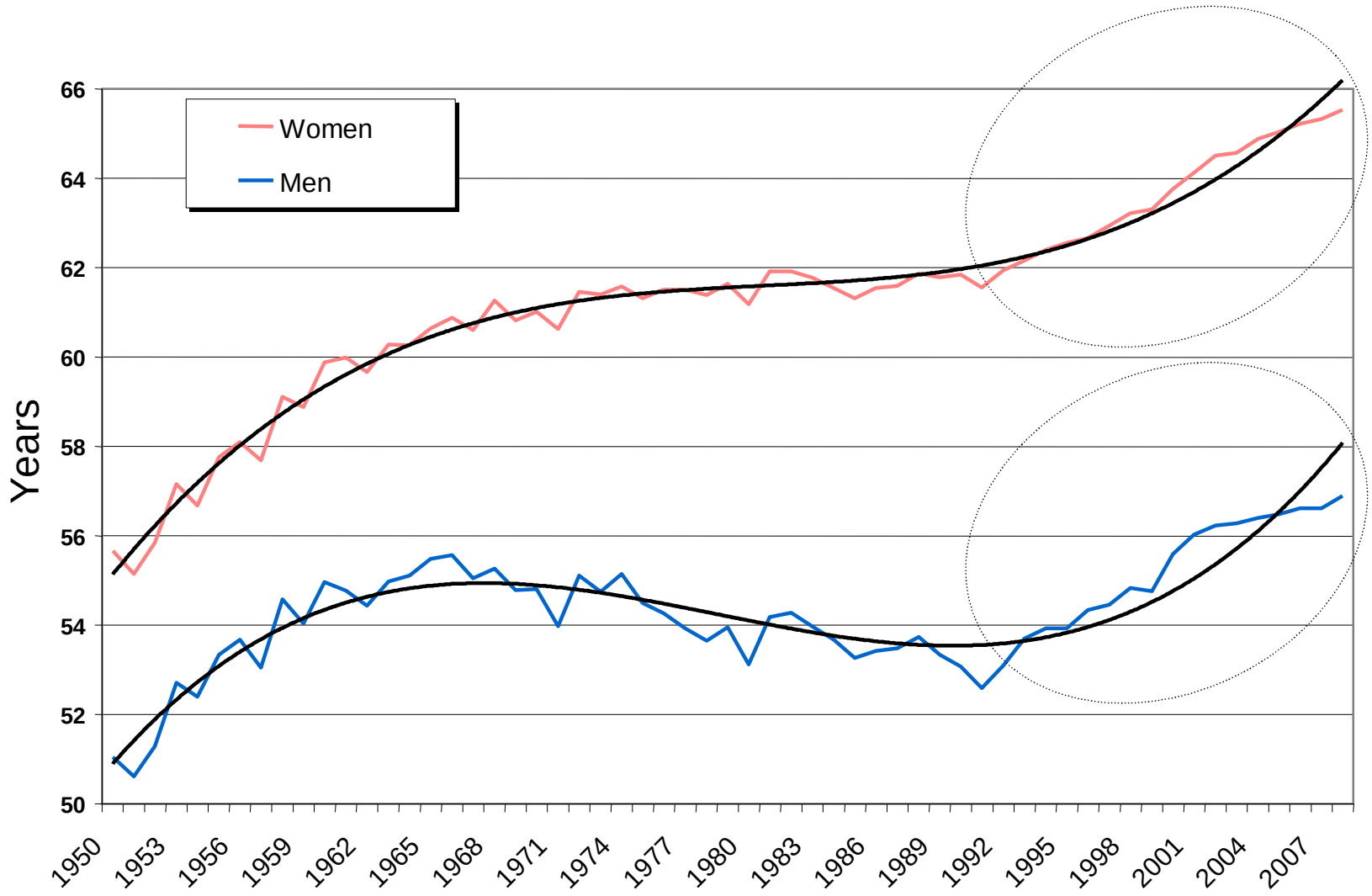
Smoking	-41%
Cholesterol	-9%
Population BP	-9%
Psychosocial	-3%
Other	-8%

Treatment -42%

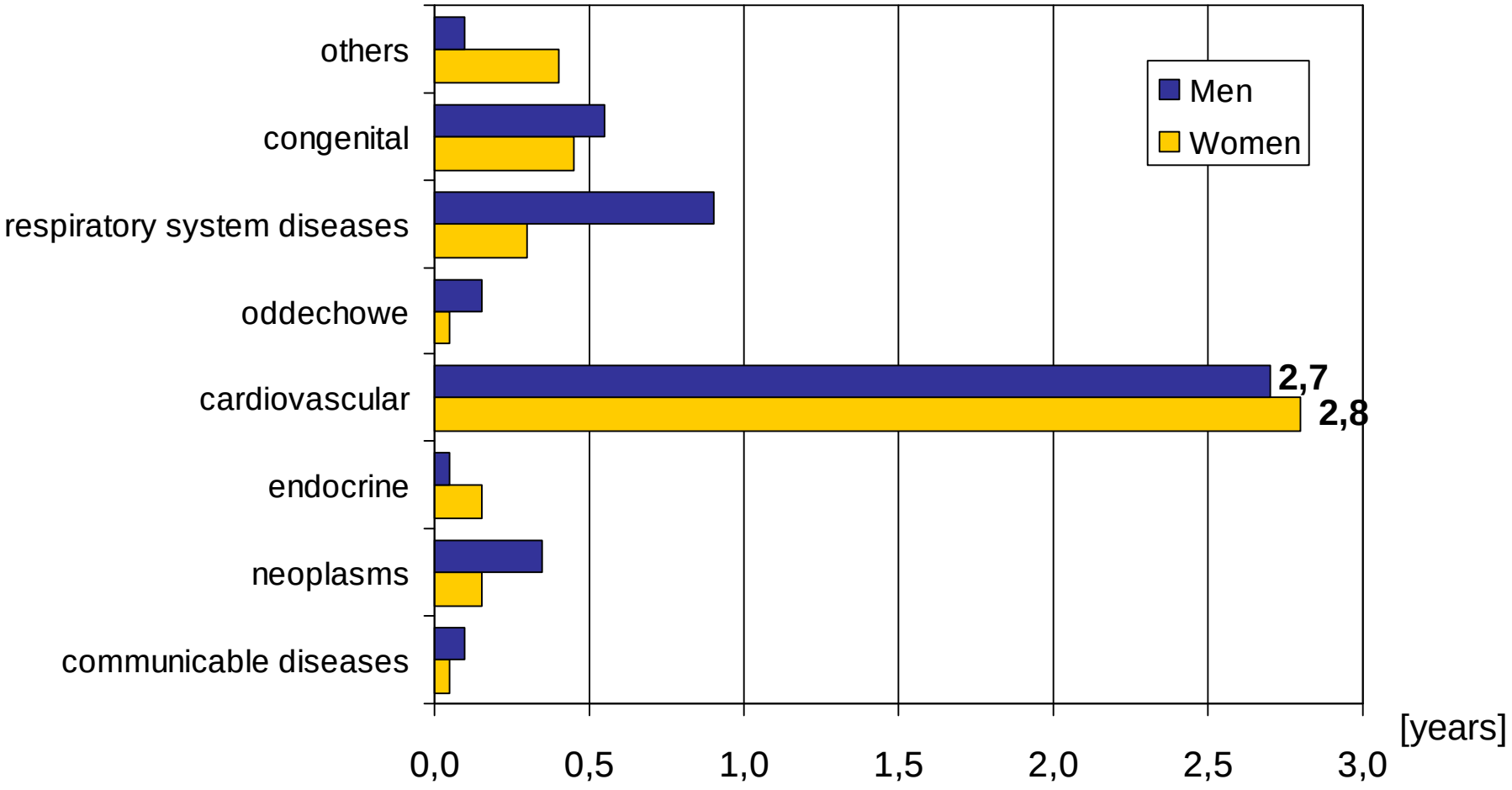
AMI treatment	-8%
Secondary prevention	-11%
Heart failure	-12%
Angina: CABG & PTCA	-4%
Angina: Aspirin etc.	-5%
Pharmacol. AH treatment	-3%

Unal, Critchley & Capewell Circulation 2004 109(9) 1101

Life expectancy at age 15 in Poland in 1950-2008. Observed values and trendline.



Contribution of specific death causes to increasing life expectancy in Poland in 1991-2007

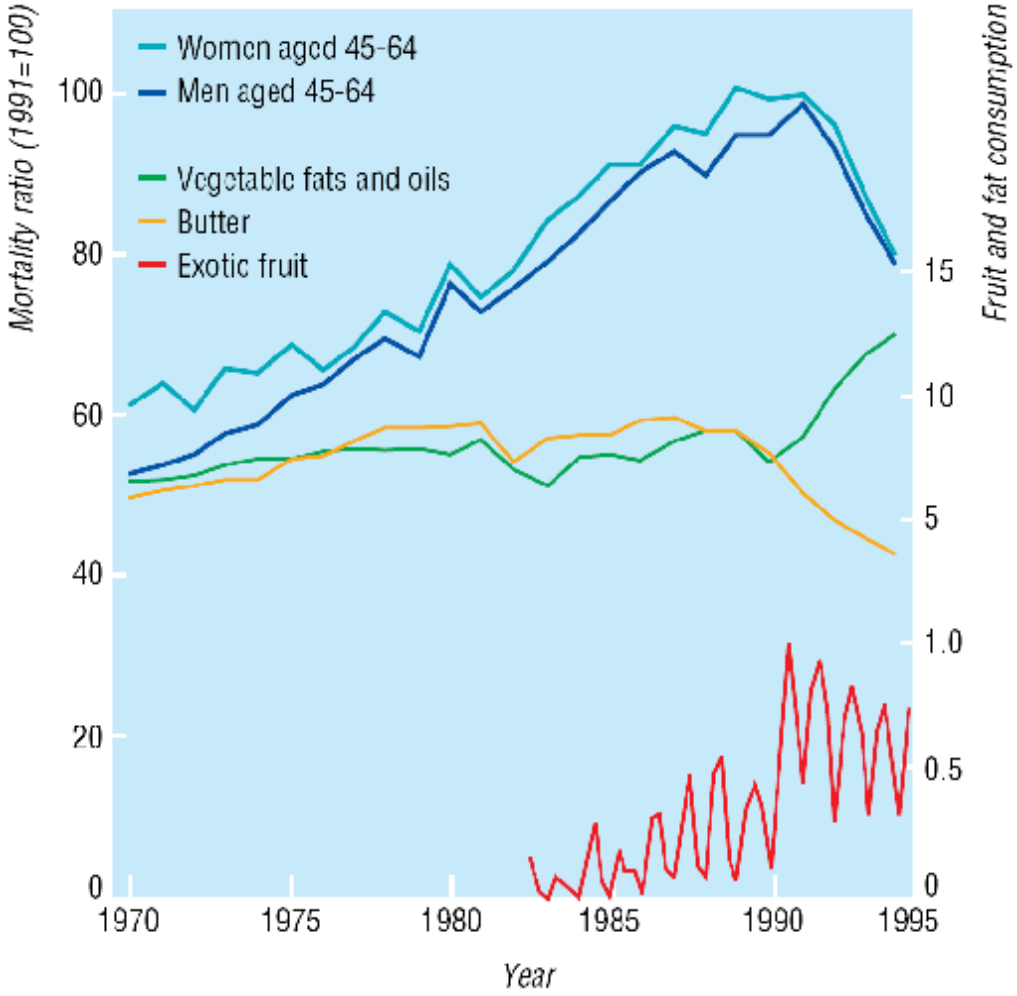


Source: Wojtyniak B. i wsp., Sytuacja zdrowotna ludności Polski, NIZP-PZH, Warszawa 2009

BMJ 1998

Ecological study of reasons for sharp decline in mortality from ischaemic heart disease in Poland since 1991

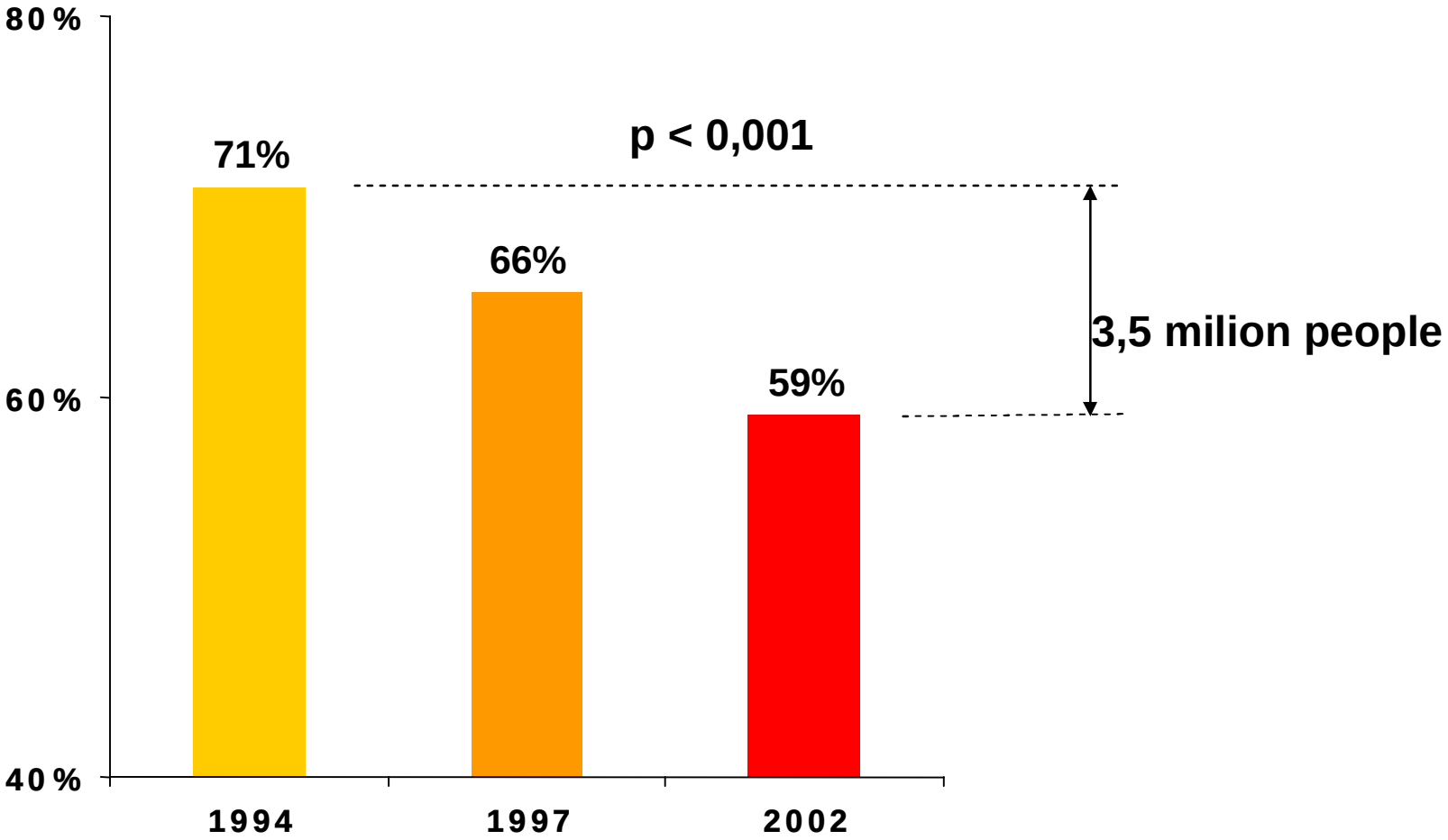
Witold A Zatonski, Anthony J McMichael, John W Powles



- 1991-1994
- Main issues:
  - Change in fraction of consumed polyunsaturated fat to saturated one.
  - Increase of fruits and vegetables consumption
  - Great decrease in butter consumption

Awareness of one's own blood pressure values 1994-2002

NAT POL PLUS 2002



Zdrojewski T. i wsp. J Human Hypertens 2004,18,557-62

Correspondence

Journal of Hypertension 2004, 22:1–2

Socio-economic factors in the management of hypertension: the Polish experience

Barbara Krupa-Wojciechowska and Tomasz Zdrojewski

Department of Hypertension and Diabetology, Medical University in Gdańsk, Poland.

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Tel: +48 58 349 25 38; fax: +48 58 349 25 38; e-mail: tzdroj@amg.gda.pl

two recently published sets
, namely those prepared by
Hypertension together with
Cardiology [1,2] and those
onal Committee in the USA

mulated some reflection on
, Poland, and other countries
parts of Europe that under-
ic transformation in the last
ng special problems in the
sion. Since 1994, we have
s, together with sociologists, and we believe that the problems faced by our country may be interesting for the readers of the *Journal of Hypertension*.

In the post-war years, our country was managed under a state-run economy system. The doctrine was that all medical services had to be free of charge. Drugs were almost exclusively generics. Within the Eastern Block market, Poland's tasks were to manufacture and export drugs mainly to the USSR and other countries in the Communist block. There was also an artificial gap, created by politicians and not by the market, between the actual cost of drug manufacturing and the price paid by the patient. For example, prices to the patient of diuretics and available angiotensin-converting enzyme-inhibitors (ACEIs) were very low and almost identical. This was quite different from what occurred in the economically developed countries.

Since Poland introduced the market economy system, the whole situation has changed radically, and Poland has become an importer of drugs. The country has also been opened for marketing actions of multinational pharmaceutical corporations, often quite aggressive, and for which we were unprepared. In the 1980s, cheap diuretics were taken by 45–78% of patients receiving antihypertensive treatment whereas, in 2002, the corresponding rate was below 25%. Currently, the drugs most often used are ACEIs (used by 58% of patients with hypertension). This is a different proportion to that found, for example, in England or other countries with more affluent economies.

As far as the cost of individual treatment is concerned, there are wide disparities. Diuretics and other generics manufactured in Poland (e.g. enalapril) are still inexpensive. However, 'free market' laws reign and have resulted in a wider supply and choice of agents, which benefit the better-off patients. Due to the privatization of pharmacies and the entry of Western pharmaceutical companies into the market, the selection of drugs available in Poland now matches that in richer European countries.

However, there is concern about the purchase of prescribed drugs. Many patients with hypertension are elderly. According to recent studies, almost one-half of patients do not purchase the prescribed drugs at all, or purchase only some of them, because health insurance only partly covers their cost and the patients cannot afford to pay the rest. Physicians who are constantly made aware, and who are fascinated with, the latest advances in world science do not tell their patients about the price of the drugs often enough.

At the same time, many positive developments have taken place over the past 15 years. The Polish Society of Hypertension was created in 1989 and its growth has been quite dynamic. Among its many initiatives, there are prevention and awareness campaigns run on a national scale. In the years 1996–97 alone, in a street campaign under the slogan 'Test Your Blood Pressure Once a year' ('Mierz ciśnienie raz w roku'), medical students measured blood pressure in almost one million people and, consequently, a proper database was established [4].

DOI: 10.1097/01.hjh.0000098210.37783.ae

Poland: 1991-2005

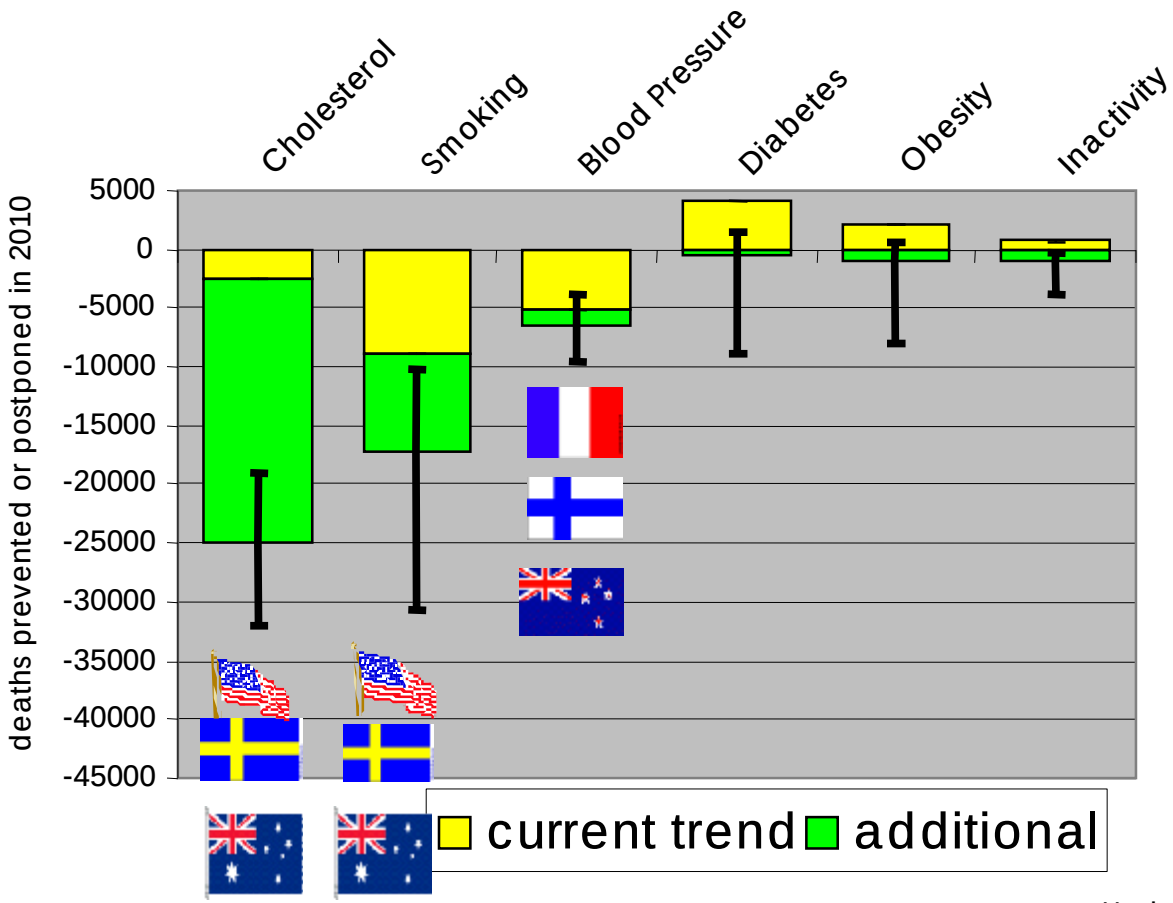
(risk factors only)

Risk factor	Risk factor changes		Deaths prevented or postponed	
	Absolute	Relative (%)	Point estimate	Contribution to total mortality change
Smoking prevalence (%)	-3.4	-10.9	2 749	7.8
Diabetes prevalence (%)	0.7	15.7	-1 281	-3.6
Physical activity (%)	-24.4	-36.5	3 512	10.0
Systolic blood pressure (mmHg)	-3.1	-2.0	-1 896	-5.4
Total cholesterol (mmol/l)	-0.39	7.0	10 642	30.3
BMI (kg/m^2)	0.82	3.2	-1 718	-4.9
Total risk factors (net effect)			12 008	34.1

Bandosz P., Drygas W., O'Flaherty M., Capewell S., Wyrzykowski B., Zdrojewski T., abstr. 2009

Potential changes in CHD mortality in England & Wales between 2000 and 2010 IF risk factors

a) continue recent trends
b) additional reductions already achieved elsewhere



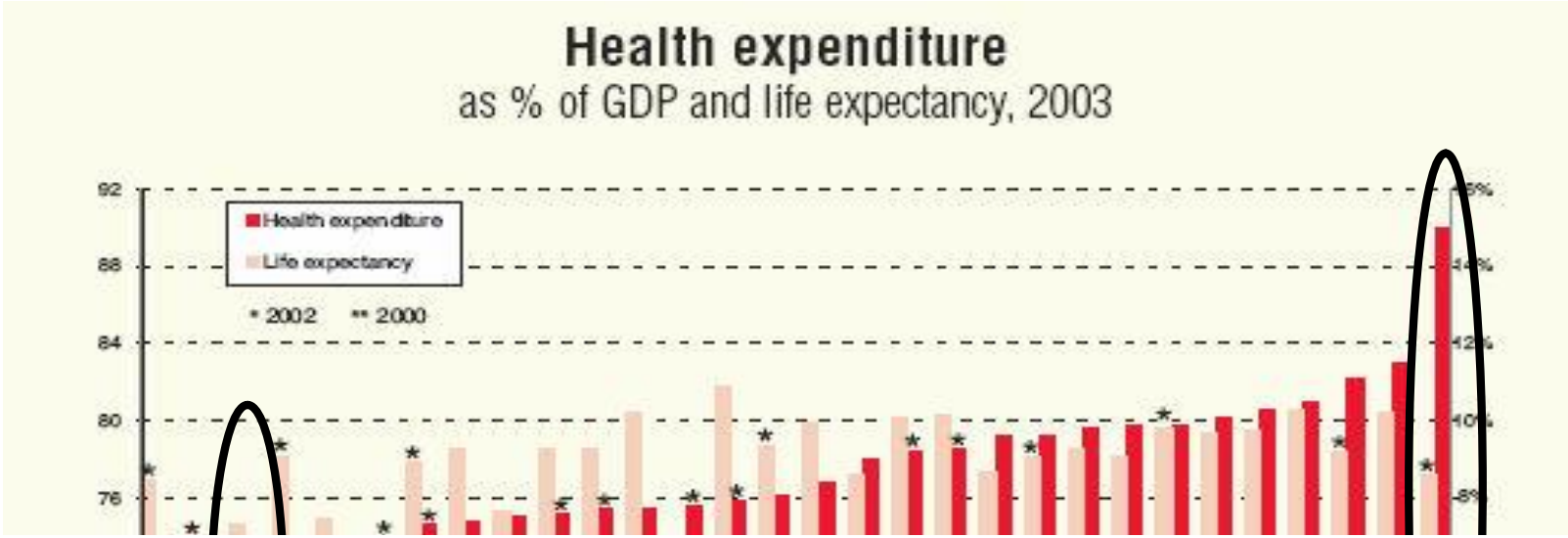
Unal et al, J Clin Epid 2005, (58) s.733

Potential changes in CHD mortality in the USA between 2000 and 2010, IF risk factors

a) continued recent trends
b) reached Healthy People 2010 Targets
c) reached low-risk cohort values

Change in number of CHD deaths

WHO Bulletin 2009, in press

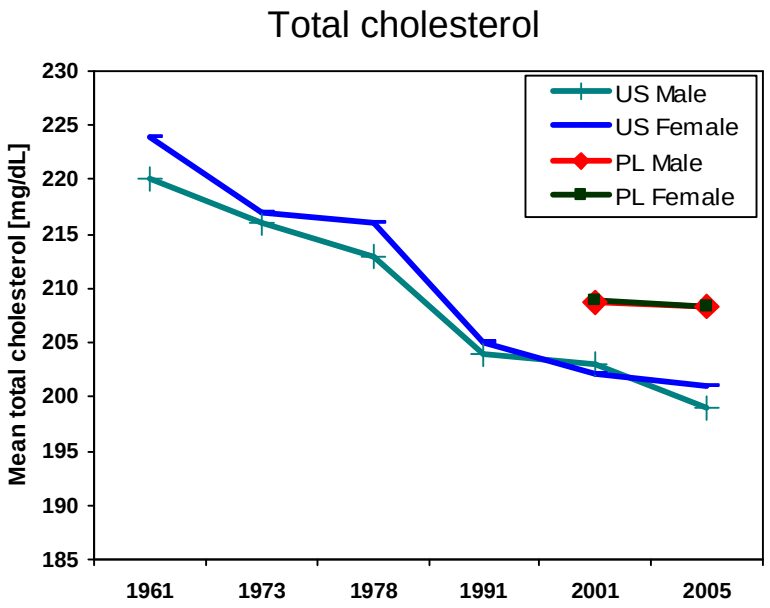


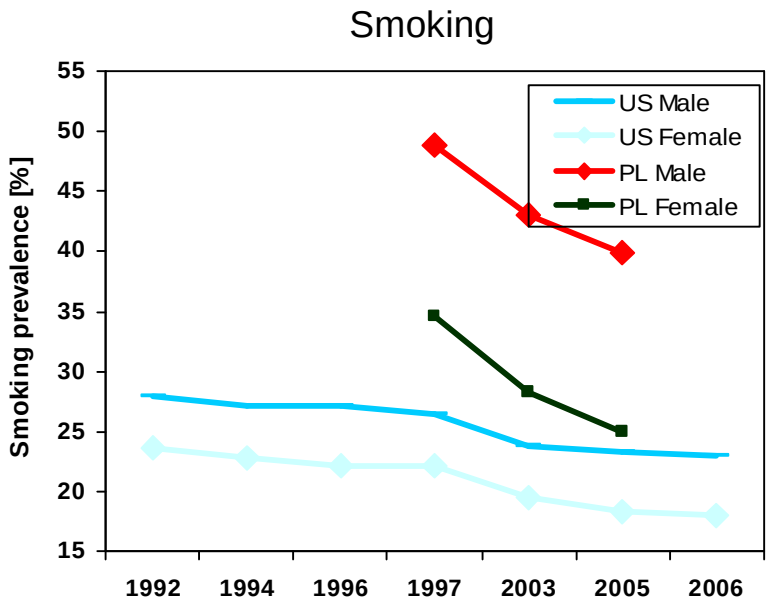
to be continued …

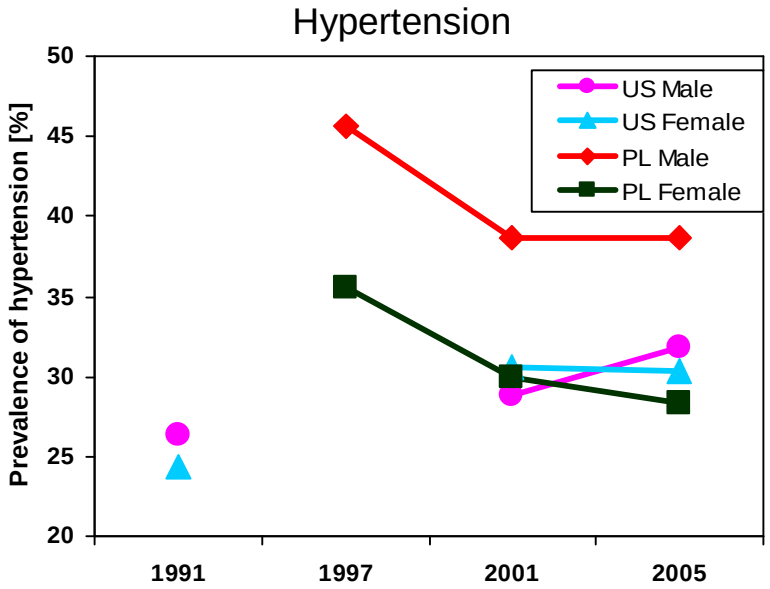
IMPACT Model & CER

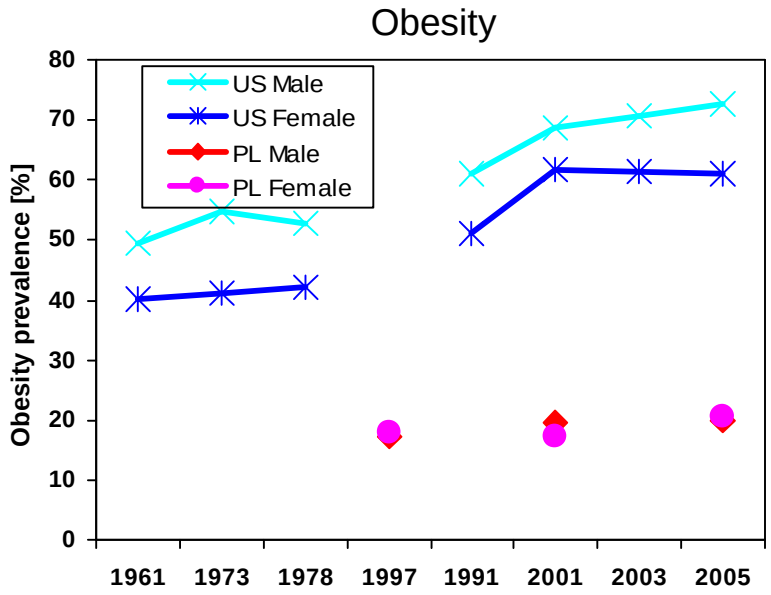
Poland & US

Risk factors trends in USA and Poland. Age range 20+.









Negatywizm poglądów na świat:

„polska kultura narzekania”