

SEMINAR ON HEALTH CARE SYSTEMS INNOVATION

ESD.69
HST.926

PERFORMANCE MEASURES IN HEALTH CARE

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Fall, 2010



Agenda

- Discuss performance measures in various aspects of health care (*some overlap*).
 - Health care system (*population level*)
 - Providers, institutions and health plans
 - “Process”
 - Product or practice
- Outside the scope of this discussion:
“Pure” finance performance measures,
e.g., “Did someone or some organization make a lot of money?”
or “How much does something cost?”
- End by discussing, “What is Quality?” in health care.

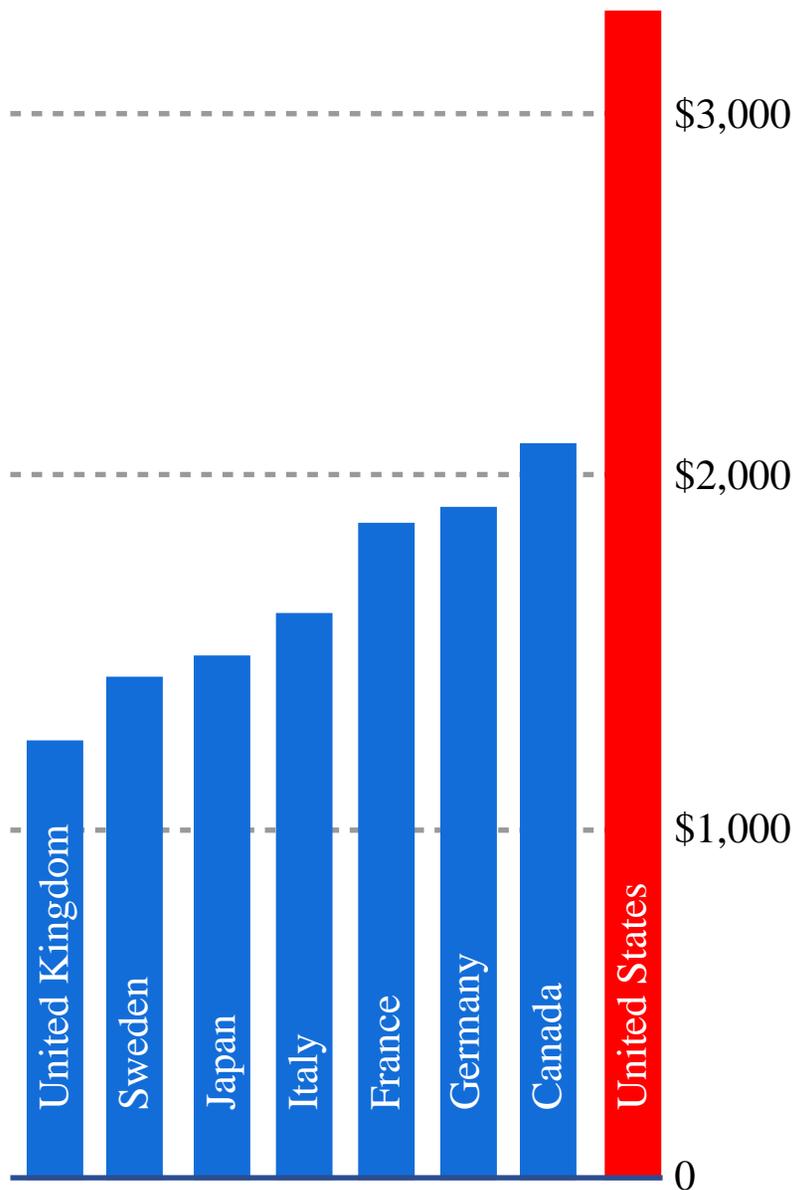
Performance of the Overall “Health Care System”

“ . . . Here in the U.S., we spend more on health care than any other industrialized country, our drug prices are higher, our population doesn’t live as long, and virtually no one is satisfied with our system of delivering health care . . . ”

occasionally seen and heard on C-SPAN, spoken by Members of Congress.

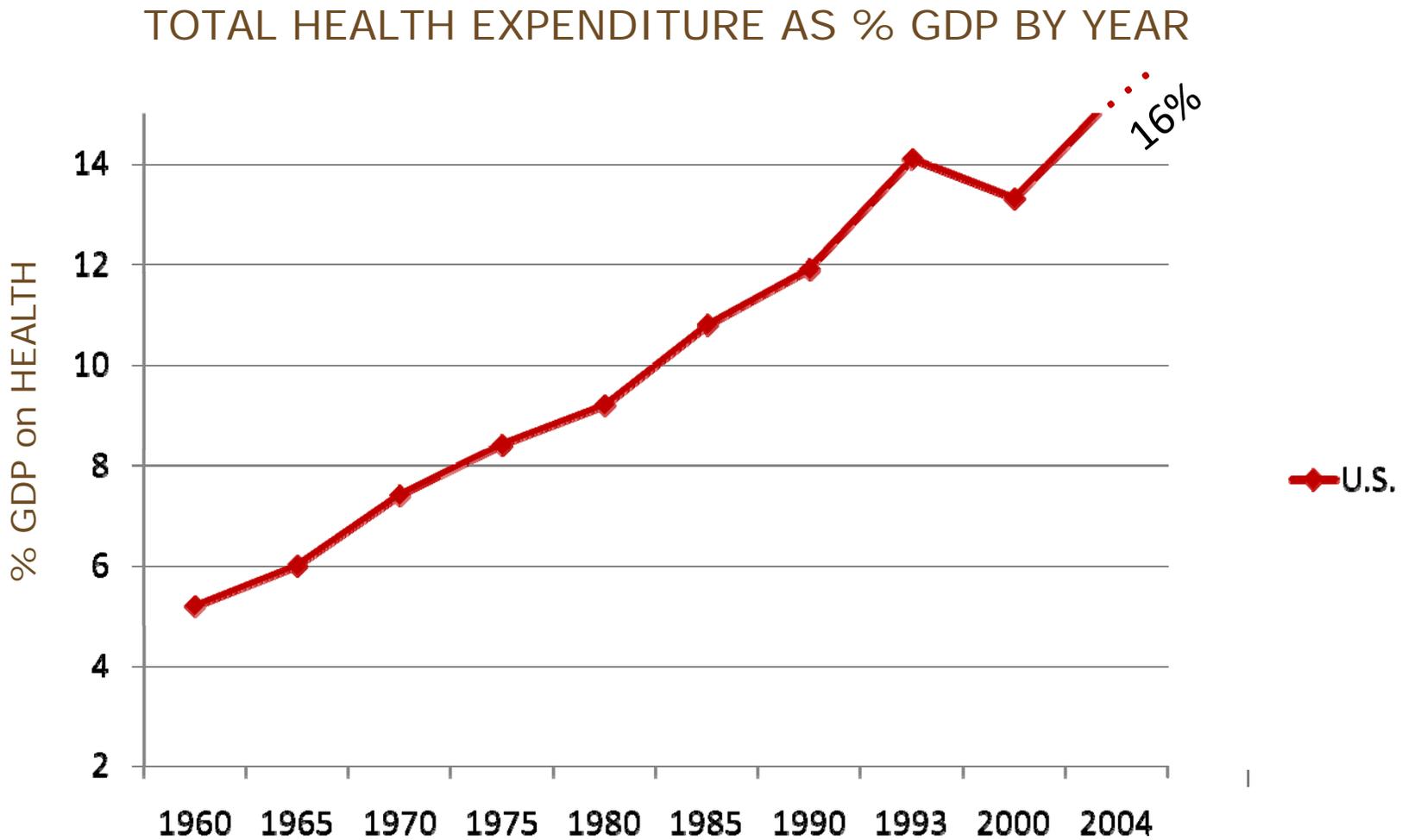
Higher Spending Doesn't Guarantee Better Health for Americans

Per capita spending, 1992



Among the OECD countries in this graph, the U.S. ranks lowest in men's and women's life expectancy at birth, and the highest in infant mortality (deaths per thousand live births). Figure by MIT OpenCourseWare. Source: Schieber, G.J., J.P. Poullier, and L.M. Greenwald. "Health system performance in OECD countries, 1980-1992. Organization for Economic Cooperation and Development." Health Affairs 13, no. 4 (1994).

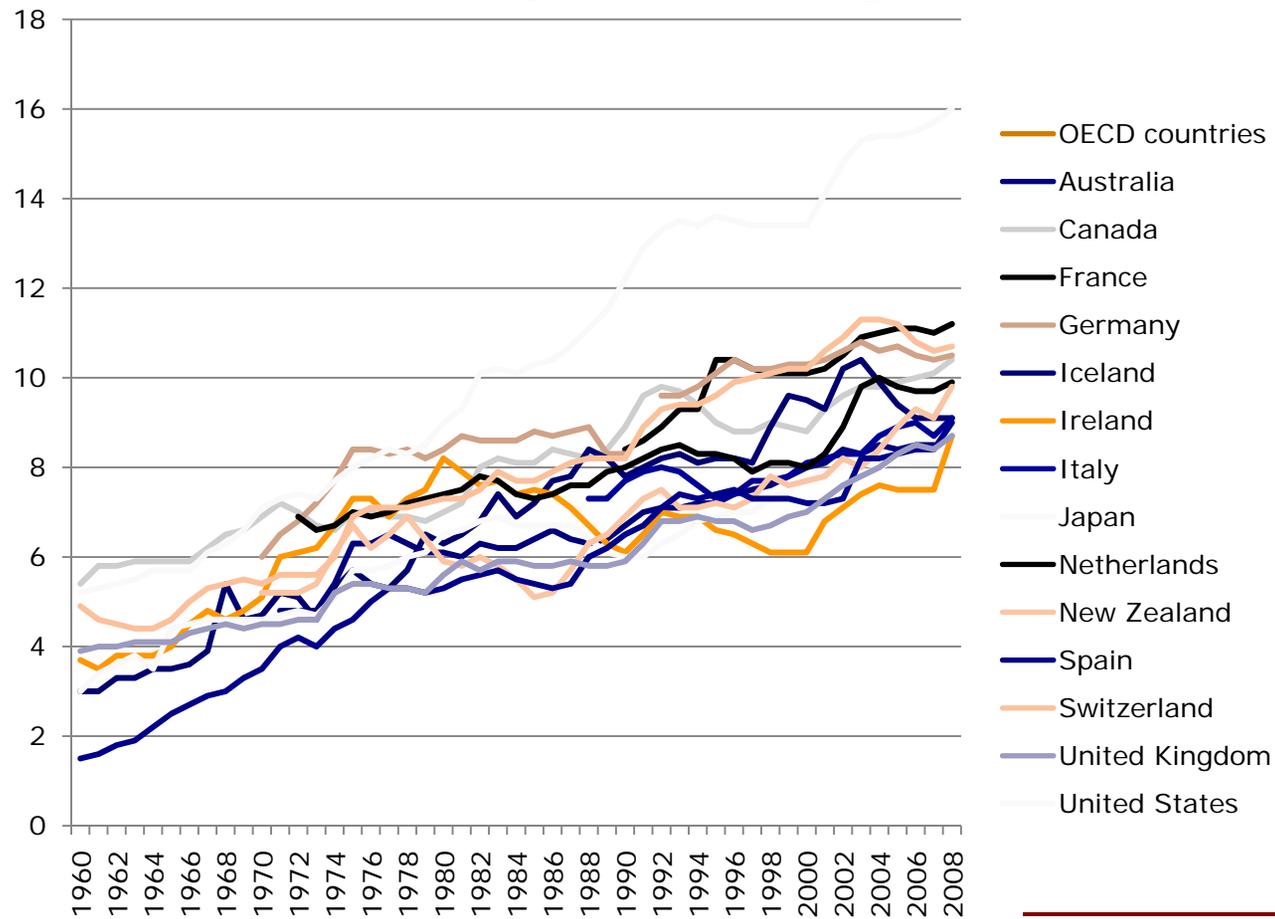
When National Health Care Spending Was Half of Current Rates, Many Called its Growth, "Unsustainable"



SOURCE: WHO and OECD Data

OECD Health Care Expenditure

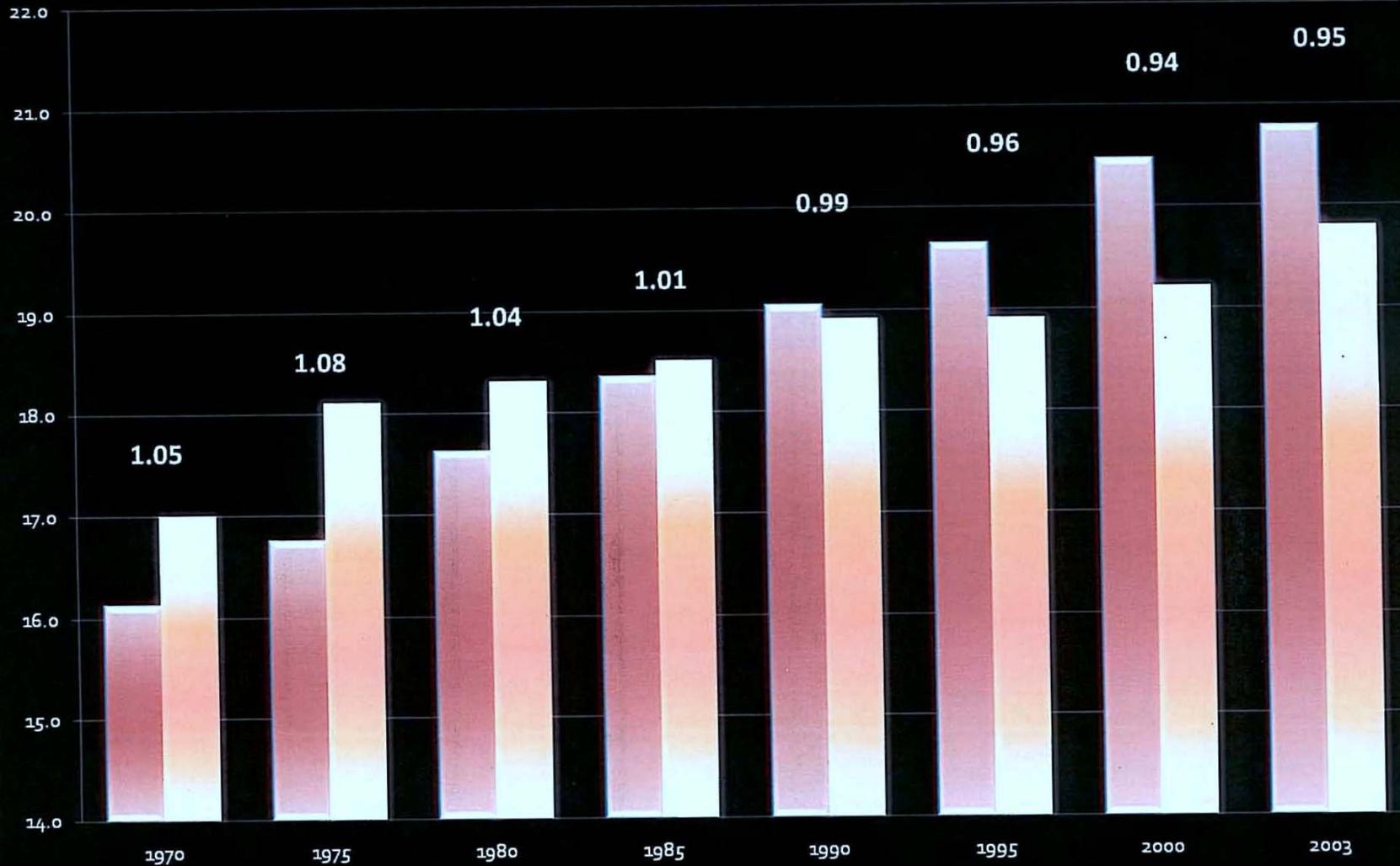
• Growth as percentage of GDP



Female Life Expectancy at 65

Peer Country Average United States

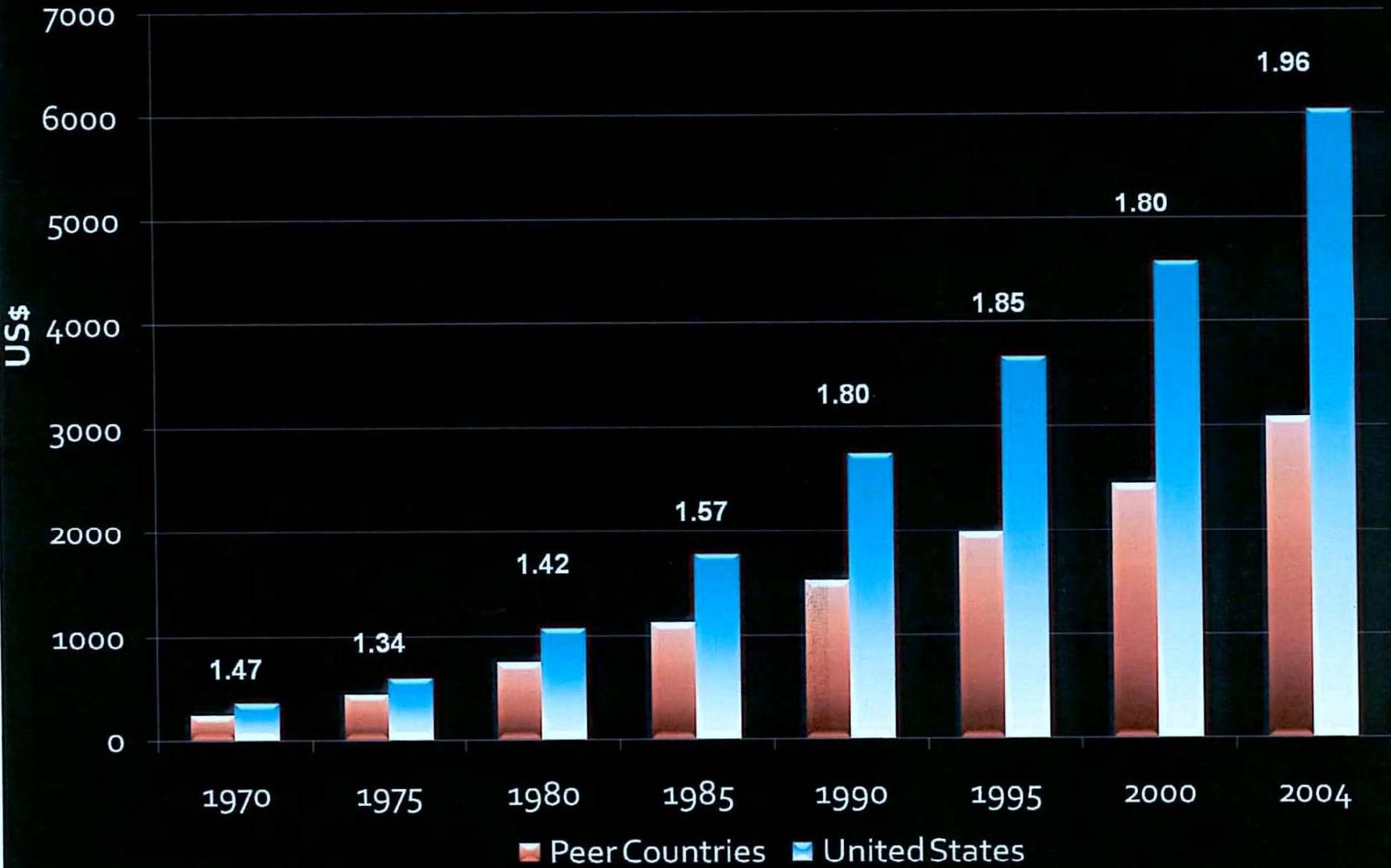
Peer Countries: Canada, France, Germany, Japan, UK



Source: Alan Garber, Stanford University



Per Capita Health Care Spending



Source: Alan Garber, Stanford University



Courtesy Alan Garber. Used with permission. Source: OECD data.

Performance of the Overall “Health Care System”

- How not to measure it?
- How to measure it?

Performance of the Overall “Health Care System”

A Tale of Two States

In the western United States, there are two contiguous states that enjoy about the same levels of income and medical care and are alike in many other respects, but their levels of health differ enormously. The inhabitants of Utah are among the healthiest individuals in the United States, while the residents of Nevada are the opposite end of the spectrum. Comparing death rates of white residents in the two states, for example, we find that infant mortality is about 40 percent higher¹ in Nevada. Lest the reader think that the higher rate in Nevada is attributable to the “sinful” atmosphere of Reno and Las Vegas, we should note that infant mortality in the rest of the state is almost exactly the same as it is in these two cities.

Rather, as was argued earlier in this chapter, infant death rates depend critically upon the physical and emotional condition of the mother.

Performance of the Overall "Health Care System"

A Tale of Two States *(continued)* . . .

The excess mortality in Nevada drops appreciably for children because, as shall be argued in the next page, differences in life style account for differences in death rates and these do not fully emerge until the adult year. As the following figures indicates, the differential for adult men and women is in the range of 40 to 50 percent until old age, at which point the differential naturally decreases.

Performance of the Overall "Health Care System"

A Tale of Two States *(continued)* . . .

*Excess of Death Rates in Nevada
compared with Utah. Average for 1959 - 1961 and 1966 - 1968*

AGE GROUP	MALES	FEMALES
< 1	42%	35%
1 - 19	16%	26%
20 - 29	44%	42%
30 - 39	37%	42%
40 - 49	54%	69%
50 - 59	38%	28%
60 - 69	26%	17%
70 - 79	20%	6%

Performance of the Overall “Health Care System”

A Tale of Two States (*continued*) . . .

The two states are very much alike with respect to income, schooling, degree of urbanization, climate, and many other variables that are frequently thought to be the cause of variations in mortality. (In fact, the average family income is actually higher¹ in Nevada than¹ in Utah). The number of physicians and of hospital beds per capita are also similar in the two states.

What, then, explains these huge differences in death rates? The answer almost surely lies in the different life-styles of the residents of the two states. Utah is inhabited primarily by Mormons, whose influence is strong throughout the state. Devout Mormons do not use tobacco or alcohol and in general lead stable, quiet lives. Nevada, on the other hand, is a state with high rates of cigarette and alcohol consumption and very high indexes of marital and geographically instability. The contrast with Utah in these respects is extraordinary.

Performance of the Overall “Health Care System”

A Tale of Two States *(continued)* . . .

In 1970, 63 percent of Utah’s residents 20 years of age and over had been born in the state; in Nevada the comparable figure was only 10 percent; for persons 35 - 64, the figures were 64 percent in Utah and 8 percent in Nevada. Not only were more than nine out of ten Nevadans of middle age born elsewhere, more than 60 percent were not even born in the West.

The contrast in stability is also evident in response to the 1970 census question about changes in residence. In Nevada, only 36 percent of persons 5 years of age and over were then living in the same residence as they had been in 1965; in Utah comparable figure was 54 percent.

Performance of the Overall “Health Care System”

A Tale of Two States (*continued*) . . .

The differences in marital status between the two states are also significant in view of the association between marital status and mortality discussed in the previous section. More than 20 percent percent of Nevada’s males ages 35 - 64 are single, widowed, divorced, or not living with their spouses. Of those who are married with spouse present, more than one-third had been previously widowed or divorced. In Utah, the comparable figures are only half as large.

The impact of alcohol and tobacco can be readily seen in the following comparison of death rates from cirrhosis of the liver and malignant neoplasms of the respiratory system. For both sexes, the excess of death rates from these causes in Nevada is very large.

Performance of the Overall “Health Care System”

A Tale of Two States *(continued)* . . .

The populations of these states are, to a considerable extent, self selected extremes from the continuum of life-styles found in the United States.

Nevadans, as has been shown, are predominantly recent immigrants from other areas, many of whom were attracted to by the state’s permissive mores. The inhabitants of Utah, on the other hand, are evidently willing to remain in a more restricted society. Persons born in Utah who do not find these restrictions acceptable tend to move out of the state.

Performance of the Overall "Health Care System"

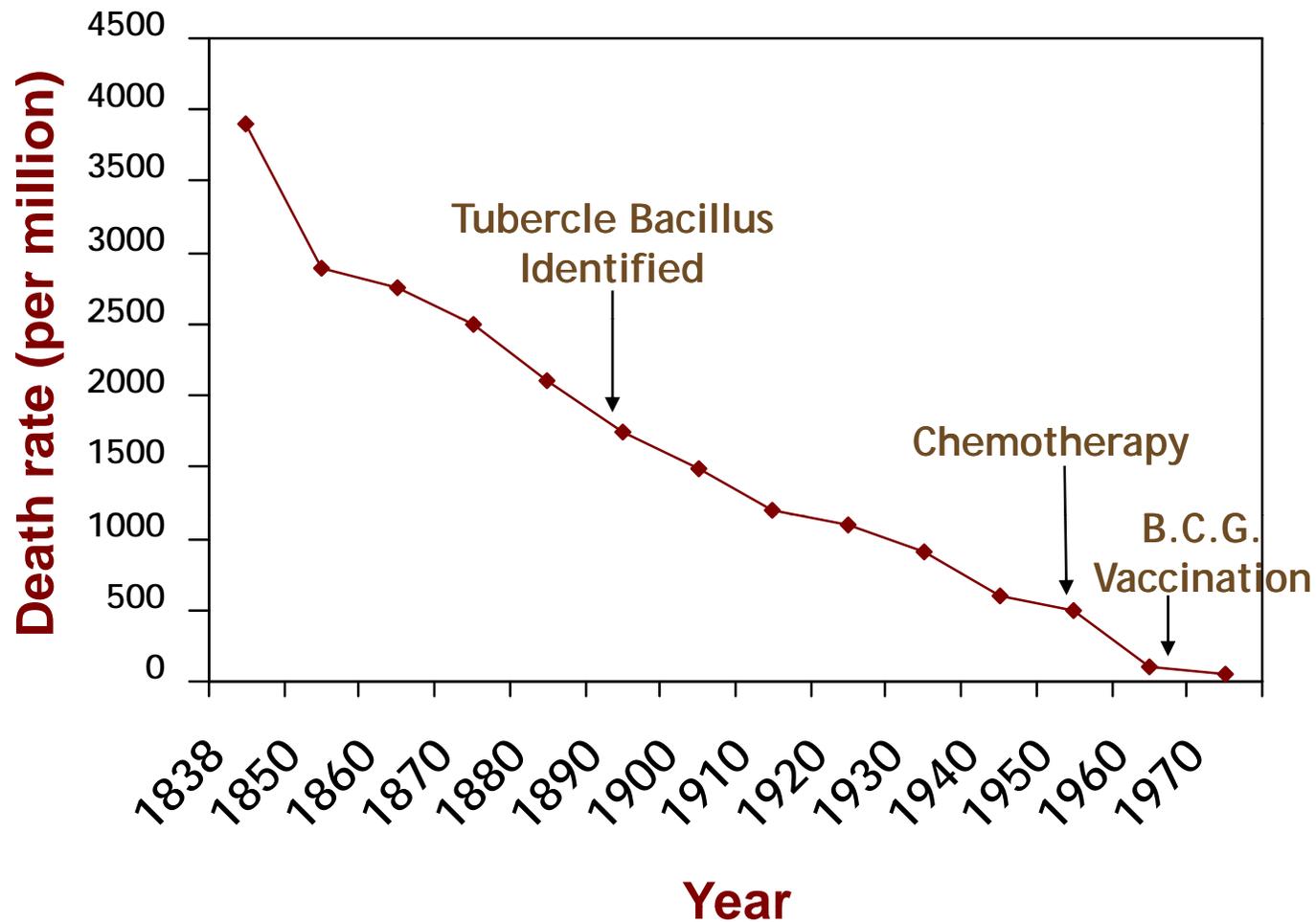
A Tale of Two States *(continued)* . . .

*Excess of Death Rates in Nevada
compared with Utah for Cirrhosis of the Liver
and Malignant Neoplasms of the Respiratory System,
Average for 1966 - 1968*

AGE GROUP	MALES	FEMALES
30 - 39	590%	443%
40 - 49	111%	296%
50 - 59	206%	205%
60 - 69	117%	227%

Excerpted from V.R. Fuchs, Who Shall Live, 1974

Performance of the Overall "Health Care System"



Respiratory tuberculosis - mean annual death rate: England and Wales

Performance of the Overall “Health Care System”

Donabedian Class Exercise (Circa, 1975)

“ The Government of a state has one “Health Improvement” grant to award and two of its cities are the major contenders. The grant is to be giving to the city with the greater “Health Need” .

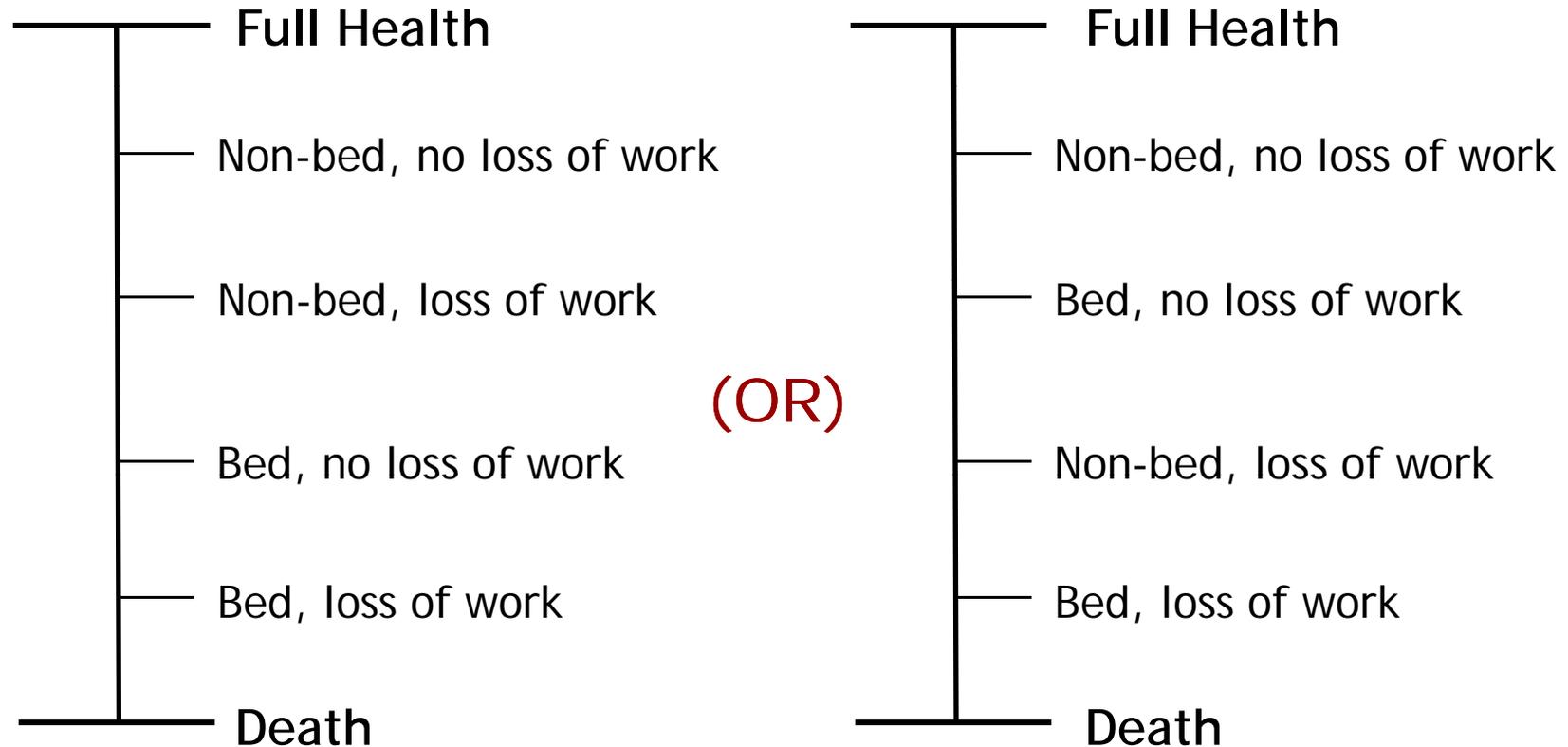
Assignment: Devise a defensible strategy to compare the “Health Needs” of the two cities.

Performance of the Overall “Health Care System”

Donabedian “Solution” - A “Health Status Index”

- Identify a set of “Health States” .
(Alphabetical Order)
 - Bed disability, loss of work
 - Bed disability, no loss of work
 - Death
 - Full health
 - Non-bed disability, loss of work
 - Non-bed disability, no loss of work
- Create a scale, assign numerical values to health states *(could be linear or non-linear)*.
- Assign population numbers to each health state *(could be reduced from Donabedian’s problem statement)*.
- Calculate the “Health Status Index” .

Performance of the Overall "Health Care System"



Concept of "Health Status Index" underlies Quality Adjusted Life Year (QALY), Disability Adjusted Life Year (DALY) Measures

Performance of the Overall "Health Care System"

Rand Health Insurance Experiment

- A large scale, randomized experiment, conducted 1972-82.
- Free care vs. "Cost Sharing" (*HMO Membership*).
- Government financed study, total cost over \$100 million.
- Key issues of comparison.
 - Use of Health Services
 - "Appropriateness and Quality of Care"
 - Impact on Health

Performance of the Overall “Health Care System”

Rand Health Insurance Experiment

Key Findings

- Free care led to greater use of health services.
- Types of health services used roughly comparable across comparator groups
- Free care led to greater health improvement in:
 - Hypertension
 - Dental Health
 - Vision
 - “Selected Serious Symptoms”
- But not in:
 - Mortality / Life Expectancy
 - Occurrence / Death Rates for Major Diseases

(See *Joseph P. Newhouse, Free for All, Lessons from the RAND Health Insurance Experiment, Harvard University Press, 1993*).

Performance of Providers, Institutions and Health Plans

A family friend asks you to recommend someone as a personal physician:

- Primary Care Practitioner
- Oncologist
- Heart Surgeon

What criteria will you use to arrive at the recommendation?

Performance of Providers, Institutions and Health Plans

Herb Denenberg, “Folk Hero”

- Retired Professor of Finance, Wharton School.
- 1972 - Appointed by Governor to be Pennsylvania State Insurance Commissioner.
- Consumer Advocate.
- Addressed health care with publications including:
 - - “Fourteen rules to help you avoid unnecessary surgery”
 - “How to identify the incompetent physician”
- Strong pushback from medical organizations.
- Now writes a blog (www.thedenenbergreport.org)

Performance of Providers, Institutions and Health Plans

Doctors' Report Cards

Coronary Artery Bypass Surgery in New York State, 1992 - 1994.

- 1994: 18,051 CABG procedures performed at 31 hospitals.
- Mortality rates calculated for each institution and individual surgeon.
 - *Observed Mortality Rate*: Observed deaths/number of patients.
 - *Expected Mortality Rate*: Statistical model, varied case mix, held "Performance" constant.
 - *Risk Adjusted Mortality Rate ("Doctor Rating")*: Statistical model estimated performance of individual centers and surgeons based on a "standardized" case mix.
- Overall observed mortality rate was 2.49%; ranged from 0.69% to 6.45%.
- One center (Bellevue Hospital 7.05) and some individual surgeons had disproportionately high risk adjusted mortality rates.

Performance of Providers, Institutions and Health Plans

HEDIS Data Set

Health Effectiveness Data and Information Set.

(Formerly Health Plan Employer Data and Information Set)

- Product of “National Committee on Quality Assurance” (NCQA) - A non-profit organization that “accredits” health plans.
- Originally used by employers (who purchase health insurance for their employees) in negotiating health insurance contracts.
- Now widely used as a basis for report cards of health plans and doctor group practices.

Report Cards for
Doctors and Group
Practices

published
in *The*
Boston
Globe (2/3/05)

Source: The
Massachusetts Health
Quality Partners
Report

Image of Boston Globe article removed due to copyright restrictions.
See Allen, Scott. "[Mass. doctor networks rated high in quality-of-care study.](#)"
Boston Globe, February 3, 2005. (accessed January 19, 2011).



Performance of Providers, Institutions and Health Plans

Report Cards for Doctors and Group Practices

Massachusetts Health Quality Partners (MHQP)
(www.mhqp.org)

Performance of Providers, Institutions and Health Plans

Hospital Report Cards

Massachusetts Hospital Association Website
(www.patientsfirstma.org)

Performance of the Overall “Health Care System”

Other Initiatives

- Adherence to Guidelines
- “Evidence Based Medicine”
- Linking Payment to “Performance”
- Comparative Effectiveness

Performance of Providers, Institutions and Health Plans

Linking Payment to “Performance”

- Utilization review.
- “Pay for Performance”
 - Various arrangements (withhold, bonus, tiered, etc.)
 - Does it change behavior?
- Recent development: Medicare (and other payors) are refusing to pay for costs due to “Medical Errors”. (“Never Events”)

Major Target Areas in Pay For Performance Contracting in Massachusetts

Hospitals

- Hospital use (and type)
- Radiology
- Computer order entry
- JCAHO cardiac quality measures

Physicians

- Hospital use
- Pharmacy
- Radiology
- Electronic record adoption
- Diabetes/Asthma/Chlamydia screening

Comparative Effectiveness

Rationale

- U.S. health care costs-- \$2.3 trillion annually, 16%+ GDP and rising.
- Large body of research over three decades shows great variation in medical and surgical management of illness (Wennberg; many others).
- Few differences in clinical outcomes, despite great variation in care.
- “Comparative Effectiveness” information largely unavailable.
- If available, should lead to “better” decisions (i.e., those with less intensive resource use).

What Comparative Effectiveness Research Is

“ The conduct and synthesis of research comparing the benefits and harms of different interventions and strategies to prevent, diagnose, treat and monitor health conditions in ‘real world’ settings” .

Federal Coordinating Council on Comparative Effectiveness Research

Source: Alan Garber, Stanford University

Comparative Effectiveness

Background

- 1970s/80s: New practices and technologies called “...culprit behind rising health care costs” .
- Call for formation of “center” to conduct comparative “Technology Assessments” to be funded from mix of government and private insurance company money.
- ~1981: National Center for Health Care Technology (NCHCT) founded as a federal government agency.
- NCHCT→ AHCPR→ AHRQ.
- Never well-funded-- Current budget ~ \$30 million (NIH budget is ~\$30 billion).
- ~1988: Prohibited from issuing “guidelines” on medical practices.

Comparative Effectiveness

Background *(continued)*

- Successes of other countries that founded agencies with resources and authority.
 - UK: NICE
 - Canada: Ontario
 - Australia
- 2005 → Renewed discussion in US at many conferences.
- 2008 (July)-- Legislation introduced in US Senate.
- 2009 (February)-- American Recovery and Reinvestment Act (stimulus package) gives \$1.1 billion for comparative effectiveness research and panels to oversee use of funding.
- 2009 (May)-- Similar legislation introduced in House of Representatives.

“Comparative Effectiveness Research Act of 2008”

Senate Bill S.3408 (Introduced July 31, 2008)

- Creates a “Health Care Comparative Effectiveness Research Institute” .
- Non-profit organization with ties to the Congress (through the Government Accountability Office) and to the Executive Branch (through Department of Health and Human Services).
- Funding in “Steady State”: \$75 million from federal government + \$1 (tax) on each privately insured individual (paid by the insurers) to estimated annual funding -- \$200 million.
- In-house and contracted “Comparative Effectiveness” research.

“Comparative Effectiveness Research Act of 2008” *(continued)*

Senate Bill S.3408 (Introduced July 31, 2008)

- Prohibited from conducting cost effectiveness research.
- Prohibited from developing and releasing clinical “guidelines”.
- Appoints advisory panels.
- Governed by 21-member Board of Governors-- specific public and private sector representation.
- Strict conflict of interest rules.

Comparative Effectiveness Institute

Will the Legislation be Enacted?

- Obama's plan (during the 2008 election campaign) states:

“The US provides some of the best health care and most sophisticated medical technologies in the world, but at a cost that is making the effort to expand access to care ever more difficult. In order to be able to provide health care coverage for all, we need to deliver the same quality of care at much lower cost. This is possible because there is considerable waste in our health care system and, at the same time, we are failing to provide highly effective services to patients who should have them....”

Comparative Effectiveness Institute

Will the Legislation be Enacted?

(continued)

- Obama's plan *(continued)*:

"...One of the keys to eliminating waste and missed opportunities is to increase our investment in comparative effectiveness reviews and research. Comparative effectiveness studies provide crucial information about which drugs, devices and procedures are the best diagnostic and treatment options for individual patients. This information is developed by reviewing existing literature, analyzing electronic health care data, and conducting simple, real world studies of new technologies. Barack Obama and Joe Biden will establish an independent institute to guide reviews and research on comparative effectiveness, so that Americans and their doctors will have accurate and objective information to make the best decisions for the health and well-being."

“ Giving Government exclusion control over electronic health information and reporting is a step toward “comparative effectiveness” research. That, in turn, will be used to impose price controls and deny some types of medical treatment and drugs. And because Government is able to skew the whole health system through Medicare and Medicaid, comparative effectiveness could end up micromanaging the practice of medicine” .

Wall Street Journal editorial

Source: Alan Garber, Stanford University

Comparative Effectiveness Institute

Senate Bill - Projection of Impact

- Impact on US health care costs

Estimates by Congressional Budget Office

- Cost of Comparative Effectiveness Institute (2008-17): \$2.9 billion.
- Reduction in health care costs (2008-17): \$6.0 billion.
- Interpreted to be small benefit (compared to \$2+ trillion in total health care costs).

Potential Savings from CER

- Lewin Group: \$18 billion first year, \$368 billion over 10 years.
- CBO: examined HR3162. 10 years to break even, only \$1 billion or so annual savings to fed government
assumed that CER would not be used to change coverage or reimbursement policy under Medicare or Medicaid.

Source: Alan Garber, Stanford University

What it Means to Apply CER Findings

Shift from more to less expensive procedures of comparable effectiveness.

Source: Alan Garber, Stanford University

What it Means to Apply CER Findings

- Identify interventions that cost more, but are no more effective.
- Select the remaining intervention with the greatest health impact that has an acceptable (incremental) cost-effectiveness ratio.

Source: Alan Garber, Stanford University

Comparative Effectiveness Institute

Senate Bill - Projection of Impact *(continued)*

- “Commitments” to make use of Comparative Effectiveness research findings.
 - AARP.
 - Consumer’s Union (publisher of Consumer Reports magazine).
 - Others (insurers, professional societies).
 - Many will adopt “wait and see” approach.

Some Concerns

- Funding, but little power?
- Conflicts of interest? (will board members be able to step out of their regular roles and do what is best for the country?)
- Institute may become politicized.
- Management of this enterprise will be complex.

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