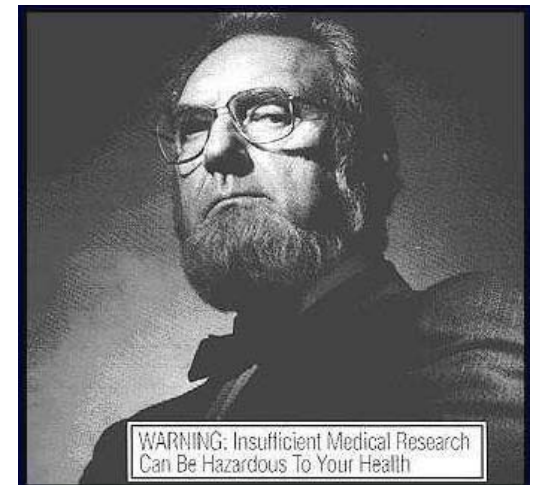


Biomedical Engineering for Global Health

Lecture Six



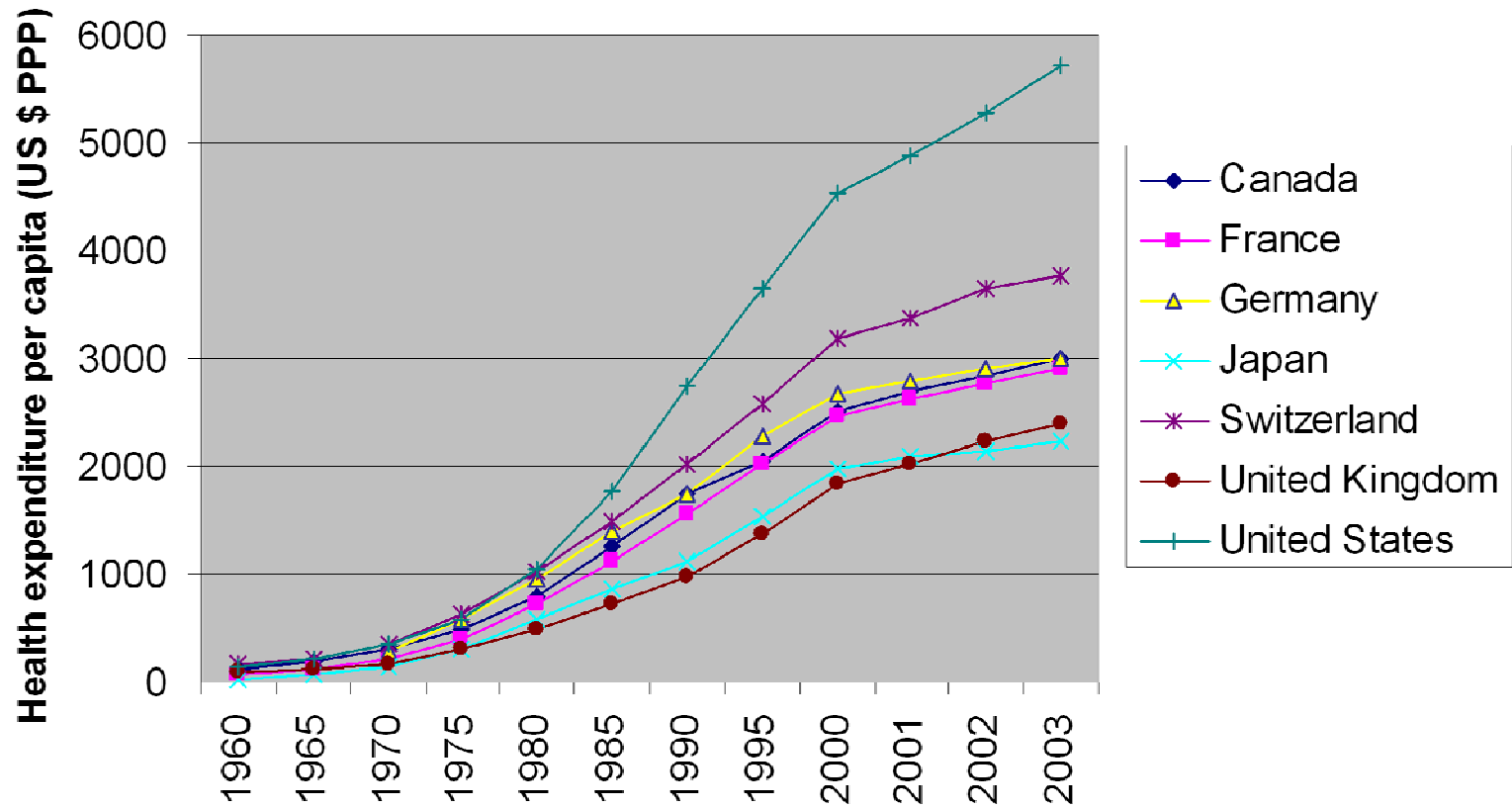
Review of Lecture 5

- Health Systems
 - What is a health system?
 - Goals of a health system
 - Functions of a health system
- Types of health systems
- Performance of Health Systems
- Examples of health systems
 - Entrepreneurial
 - Welfare-Oriented
 - Comprehensive
 - Socialist

Overview of Lecture 6

- How have health care costs changed over time?
- What drives increases in health care costs?
- Health Care Reform in the US

Cost Escalation in Health: 1960-2003



What Drives Increases Costs?

■ Administrative Costs

- US spends 25-30% of health care budget on administrative overhead
- 27% of US health care workers do “mostly paperwork”
- Canada spends only 10-15%

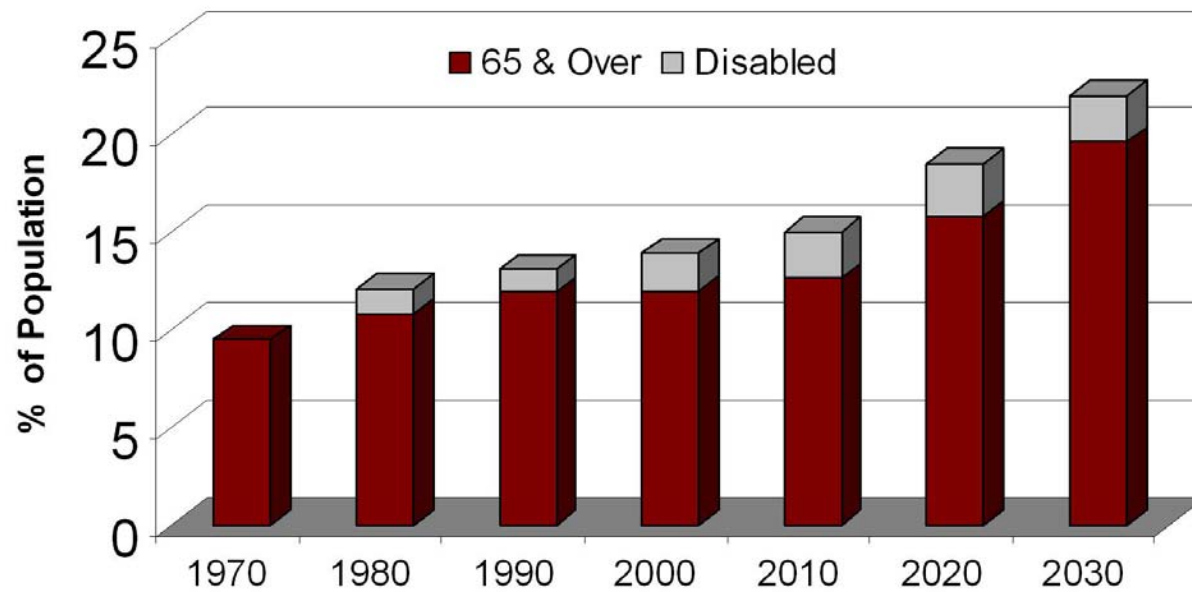
What Drives Increases Costs?

■ Aging Population

- “Baby boomers” will strain health care system
- Felt most in 2011-2030
- Greatest single demand country has ever faced for long term care
- Elderly account for much of health care spending
 - 40% of short term hospital stays
 - 25% of prescription drug use
 - 58% of all health expenditures

Percentage of US population eligible for Medicare, 1970-2030

The number of people Medicare serves will nearly double by 2030.



What Drives Increases Costs?

■ Technology

- New technology can increase/reduce health care costs
- From 2001-2002, new technology was responsible for 22% of increase
- Growth in radiology
 - \$175,000 x-ray machines replaced with CT machines (>\$1M)
- Increased utilization of technology increases costs
 - 4X more PTCAs in pts aged 65-74 from 1990-1998
 - Direct marketing of high-tech procedures
<http://www.ew1.org/>

What Drives Increases Costs?

■ Prescription Drugs

- Fastest growing category of health spending
- Some reasons:
 - Direct marketing of drugs to the general population (increased costs, increased usage)
 - Drug company profits

Back to Oregon

- How did Oregon state respond to the rise in health care costs?
 - Coby Howard's death: widespread media coverage
 - John Kitzhaber
 - Former ER physician
 - State senator
 - Governor of Oregon
 - Oregon cannot afford to pay for every medical service for every person
 - Oregon could expand insurance to cover all IF it was willing to ration care

Health Care Reform in Oregon

- 1989 – Goal of Universal Coverage
 - At that time only 42% of low-income Americans were covered by Medicaid
 - Bill passed:
 - Mandated private employers provide insurance for employees (never received federal waiver necessary for implementation)
 - Expanded Medicaid to provide coverage for all people in state below federal poverty line
 - Would expand Medicaid coverage by rationing care

Health Care Reform in Oregon

- How were services ranked?
 - Appointed Health Services Commission
 - List of 709 condition/treatment pairs
 - First try at ranking
 - 1600 health services
 - Ranked according to cost-effectiveness

$$\text{priorityrating} = \frac{\text{CostofTreatment}}{\text{NetExpectedBenefit} \times \text{DurationofBenefit}}$$

- Resulted in counter-intuitive ranking
- Negative public reaction

Results of First Ranking

Treatment	Benefit	Duration	Cost	Ranking
Tooth Capping	.08	4 years	\$38	371
Ectopic Pregnancy	.71	48 years	\$4,000	371
Splints for TMJ	.16	5 years	\$98	376
Appendectomy	.97	48 years	\$5700	377

Some life saving procedures ranked below minor interventions!!

Health Care Reform in Oregon

- Back to the drawing board
 - Divided 709 condition/treatment pairs into 17 categories
 - Ranked categories according to net benefit
 - 1 – Treatment of acute life-threatening conditions where treatment prevents imminent death with a full recovery and return to previous health state
 - 14 – Repeated treatment of nonfatal chronic conditions with improvement in quality of well-being with short term benefit
 - Assigned condition/treatments to categories and ranked within category

Health Care Reform in Oregon

- How were services rationed?
 - Each session legislature would decide how much \$\$ to allocate to OHP. Draw line –
 - Cover all services above the line
 - Cover no services below the line

Where do they draw the line?

Oregon Health Plan, 1999

Rank	Diagnosis	Treatment
570	Contact dermatitis and atopic dermatitis	Medical therapy
571	Symptomatic urticaria	Medical therapy
572	Internal derangement of knee	Repair/Medical therapy
573	Dysfunction of nasolacrimal system	Medical/surgical treatment
574	Venereal warts, excluding cervical condylomata	Medical therapy
575	Chronic anal fissure	Medical therapy
576	Dental services (eg broken appliances)	Complex prosthetics
577	Impulse disorders	Medical/psychotherapy
578	Sexual dysfunction	Medical/surgical therapy
579	Sexual dysfunction	Psychotherapy

Did it Work?

- *No widespread rationing*
 - Number of services excluded is small and their medical value is marginal
 - Benefit package is now more generous than state's old Medicaid system
 - Coverage for transplants is now more generous

Did it Work?

- **Line is rather fuzzy**
 - Plan pays for all diagnostic visits even if Rx is not covered
 - Physicians use this as a loophole
- **Has not produced significant savings**
 - During first 5 years of operation, saved 2% compared to what would have been spent on old program

Did it Work?

- Coverage was significantly expanded
 - 600,000 previously uninsured were covered
 - State's uninsured rate dropped from:
 - 17% (1992)
 - 11% (1997)
 - Number of uninsured children dropped from 21% to 8%
 - Reduced # of ER visits
 - Reduced # of low birth-weight infants
- How did they pay for this?
 - Not from savings from rationing
 - Raising revenues through cigarette tax
 - Moving Medicaid recipients into managed care plans

Political Paradox of Rationing

The more public the decisions about
priority setting and rationing,

The harder it is to ration services to
control costs.

Oregon Today

- Oregon economy is weak
- Oregon Senate Special Committee on OHP
 - People qualified for plan would be ranked
 - 1st: Poor pregnant women, children under 6 in families with incomes less than twice federal poverty level
 - 2nd: Adults at 50% of federal poverty line
 - 3rd: Adults at 50-75% of federal poverty line
 - 4th: Adults at 75-100% of federal poverty line
 - 5th: Medically needy (limited income, high medical expenses)
 - Those highest on list would be first to get services
 - Those at the bottom of the list would be first cut
 - <http://www.npr.org/news/specials/medicaid/index.html>

Overview of Lecture 6

- How have health care costs changed over time?
- What drives increases in health care costs?
- Health care reform – back to Oregon