

What is health economics?

ECON 40565
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Fall 2007

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Two major themes in this class

- What are the economic aspects of key health issues?
- What can economists add to the discussion of health issues?

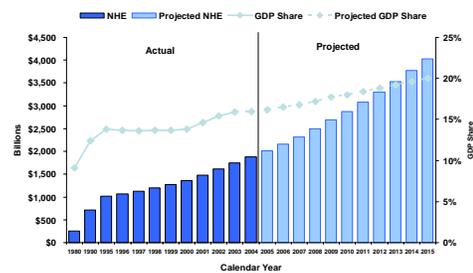
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Both of these themes are easy to motivate

- Health care sector is one of the largest in the economy
 - \$2 trillion in spending in 2005
 - \$6,000/person
 - 16% of gross domestic product
 - 45% expenses covered by governments
- Costs are expected to continue to rise

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Table 1.1
National Health Expenditures and Their Share of Gross Domestic Product (GDP), 1980-2015
National health spending is projected to continue to increase as a share of GDP over the next decade.

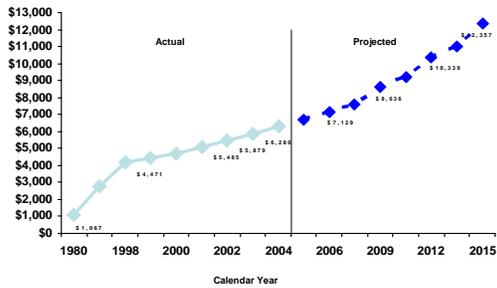


Source: CMS, Office of the Actuary, National Health Statistics Group.

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**Table 1.2
National Health Expenditures Per Capita, 1980-2015**

National health spending per capita is projected to increase rapidly over the next decade.



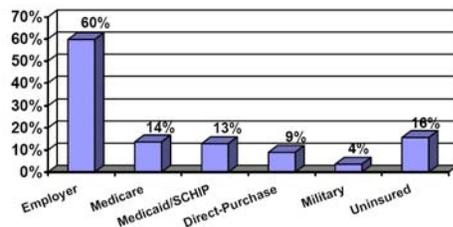
Source: CMS, Office of the Actuary, National Health Statistics Group.

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- Even with these costs, massive problems in the sector
- 15% or 45 million people are without basic health insurance
- US fare poorly compared to other countries in some health indicators

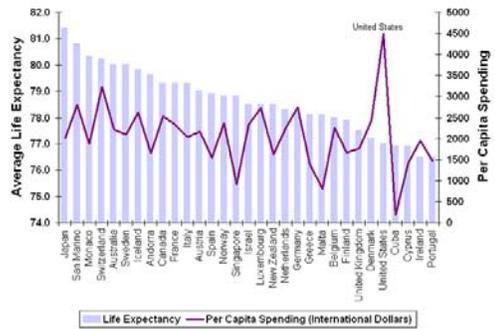
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Figure 1. Sources of Insurance Coverage in 2004²

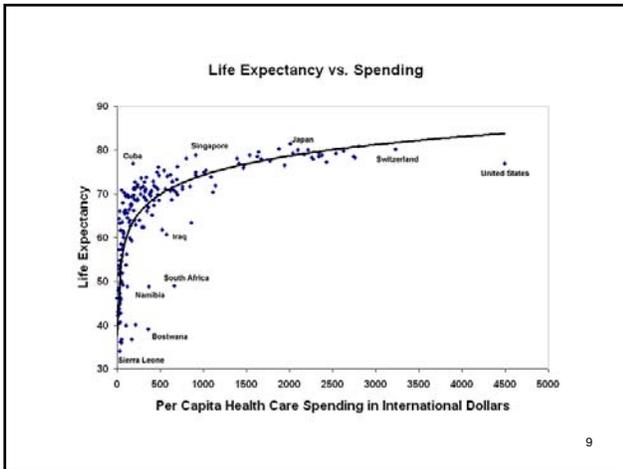


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The Cost of a Long Life



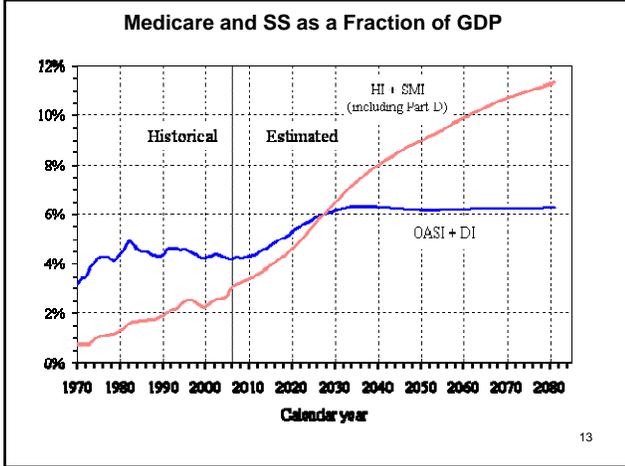
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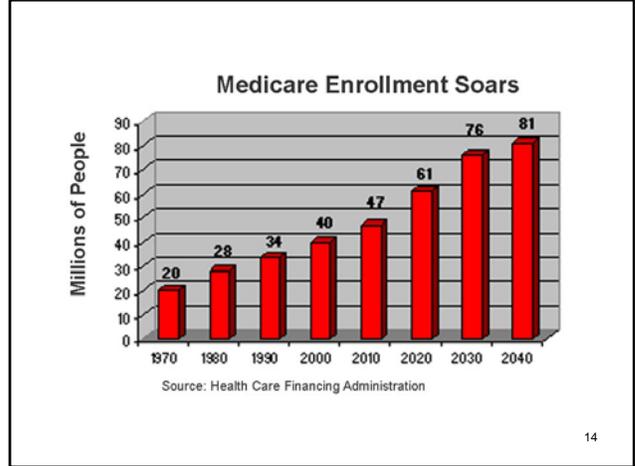
- Fiscal concerns as well: Medicare**
- **Started in 1965**
 - **Federal health insurance program for**
 - Those 65 and older
 - Disabled
 - End-stage renal disease
 - **Components**
 - Part A: Hospitalization (mandatory)
 - Part B: Ambulatory care (voluntary)
 - Part D: Prescription drugs (voluntary)
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- Medicare Statistics**
- **41 million recipients in 2003**
 - 35 million disabled
 - 6 million elderly
 - **Costs in 2006**
 - \$342 billion
 - Almost 13% of Federal expenditures
 - **Financing**
 - Part A financed by payroll tax (2.9%)
 - Part B/D financed by premiums (25%) and general revenues (75%)
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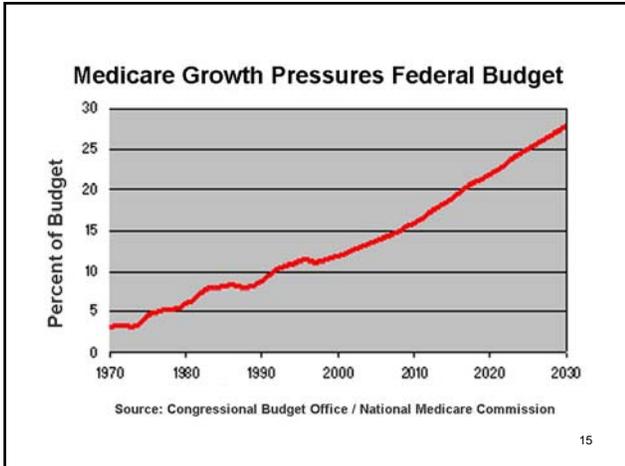
- Future problems**
- **Costs of program are expected to escalate between now and 2030**
 - **Higher costs due to**
 - Higher fraction aged
 - Increased longevity
 - General rise in costs of medical care
 - **At the same time, revenues decline because of fewer workers**
 - **Predicted insolvency by 2019**
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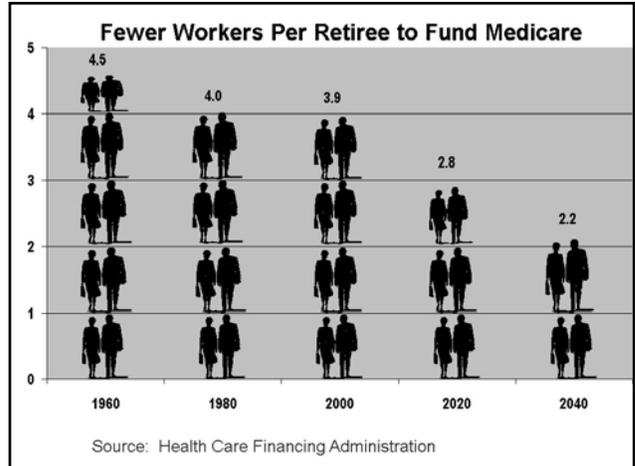
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Questions?

- How to finance Medicare in the future?
- What will additional taxes do to the labor market?
- What will cuts in benefits do to the health of beneficiaries?
- Will reductions in spending discourage innovation?

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What is economics?

- Behavioral science
- Develop models that can
 - Predict/explain behavioral patterns
 - Can be falsified with data/experimentation
- Starting point – actors are purposeful
 - Firms seek to maximize profits
 - People want to maximize utility
- What separates us from other social sciences

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- Textbook answer -- *Study of decisions in the face of constraints*
 - How do firms make decision given market conditions?
 - How do people make decisions given limited resources?
- Important characteristics of economics is its predictive nature – given a change in constraints – how will people respond?

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What can economics add to the study of health?

- Theoretical – modeling the role of incentives
- Empirical – detecting whether distortions occur and measuring the price response

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What is the primary lesson of economics?

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- **Economics is at its best when it demonstrates that incentives matter in seemingly uneconomic settings**
- **Applied to many non-business settings**
 - Families
 - Crime
 - Governments
 - Addictive substances
 - Health care

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Economics in health

- **Economists have been successful in demonstrating that incentives matter a great deal in the health environment**
- **Has altered**
 - The way people think about problems
 - The structure of the industry
 - Policy response to certain circumstances
- **The problem: May not like what the economists has to say**

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Example 1: Small Group Reform

- **Most insurance is provided by employers**
- **Large firms are “self-insured”**
- **Smaller firms must purchase insurance for their workers**
- **Small groups tend to have**
 - Higher prices
 - Prices that are volatile
- **In small group market, prices vary considerably based on the people in your group**

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- Higher priced groups are women, older workers, minorities
- Concern: prices for some groups too high
- Solution: Reform the small group market by eliminating pricing based on sex/race/age
- Goal: reduce prices and therefore enhance ability to pay for insurance
- Nearly all states have adopted some version of small group reform

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What is the economist's prediction

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-
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Example 2: An Economic Look at Obesity

- Rapid increase in obesity since 1970
 - In 1970, 14% of the population was obese
 - Today, rates are around 30%
- Differs from long-term increase in weight since the turn of the century
- Increase in obesity is broad based – all groups have been impacted

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Obesity Rates Over Time

Group	Obesity		Overweight	
	1971/74	1999/00	1971/74	1999/00
All	14.6	30.9	47.7	64.5
Males	12.2	27.7	54.7	67.0
Females	16.8	34.0	41.1	62.0
Black F.	29.7	50.8	60.5	78.0

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- **A rise in obesity is caused by**
 - Reduction in energy expended
 - Increase in calories consumed
- **What are some candidate reasons for the rise in obesity**
 -
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What does a theory about the rise in obesity have to explain?

- [Redacted]
- [Redacted]
- [Redacted]

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An economic model

- [Redacted]
- [Redacted]
- [Redacted]

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One economic interpretation – technological change

- Major advances in food preparation such as vacuum packing, microwaves, freezing, preservatives, etc.
- Technology has reduced the time and direct cost of food preparation
- Evidence: time spent on food preparation among non-working mothers has fallen 50% in past 25 years

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How will technological change alter calories?

- Greater variety of food (e.g. junk food now much more prevalent –reduced cost)
- More calories/dollar
- More meals (almost all of the increase in calories has been an increase in calories between meals, not calories within meals).

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Relative Price Changes for Certain Foods, 1/1980 – 11/2003

- All consumer prices 137%
- Fresh fruit 276%
- Fresh vegetables 252%
- Dairy products 96%
- Frozen food 83%
- Frozen potatoes 93%
- Potato chips 77%
- Ground beef 90%
- Soda 53%

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Example 3: Should we raise taxes on smokers?

- What fraction of the adult population smokes?
- State with lowest rate:
- State with the highest rate:
- Down from a historic high of around in early 1950s
- Estimated to cause 440,000 deaths/year in the US (1/5th of all deaths)
- Generate \$80 billion in lower productivity, \$100 billion in additional medical care

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Pigouvian tax

- Can use taxes to reduce costs of externality
 - What is externality?
- Classic example: pollution
- Poor health is no exception: can tax any behavior that causes harm to others (junk food, alcohol, cigarettes)
- Question: what is the appropriate tax?

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Cigarettes

- Taxed at the local/state/federal level
- Excise tax – per pack
 - 39 cents/pack Federal
 - 107 cents/pack average across all states
 - High:
 - Low:
- Tobacco taxes raise \$21 billion at the state/federal level

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- 440K deaths, \$100 billion in health care, \$80 billion in lost productivity and only \$21 billion in revenues
- Clearly cigarette taxes are too low?
- Smoking does not only generate costs to nonsmokers – there are some benefits as well

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Viscusi (1995) Costs of smoking

- External insurance costs per pack (1993\$)
- Medical care \$0.388
- Sick leave \$0.016
- Group life insurance \$0.072
- Fires \$0.092



- Total \$0.238

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5 important characteristics of health care markets

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1. Presence of Uncertainty

- In health shocks, in treatment, in success of investment in technology, in impact of poor health on outcomes
- How do people make decisions under uncertainty?

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2. Prominence of Insurance

- We will show that people shed risk by purchasing insurance
- Much of the structure of health care sector driven by the nature of insurance
- We will look at
 - How insurance changes incentives?
 - What are the welfare implications of this?
- But insurance is not universal
 - What are the benefits/costs of various proposals to increase access

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3. Asymmetric information

- One party have better access to information than another
- Especially true in health care
 - Patients knows their health state better than an insurance company
 - Doctor knows how to treat a condition, patient may not
- How does asymmetric information change markets
- How do we restructure markets in the face of AI

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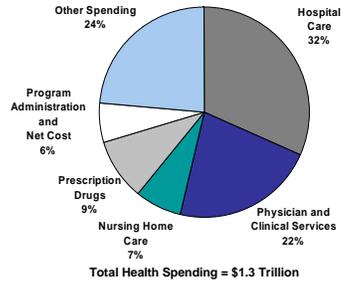
4. Large role of nonprofit sector

- Single largest expense are hospitals
 - 32% of health care dollars
- Nonprofits have large roll in this sector
 - 5800 hospitals
 - 3000 are not for profit
 - 1400 are gov't owned
 - Only 790 are for profit
- Most of our models of supply assume profit maximizing firm. How do they change with a non-profit sector?

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The Nation's Health Dollar, CY 2000

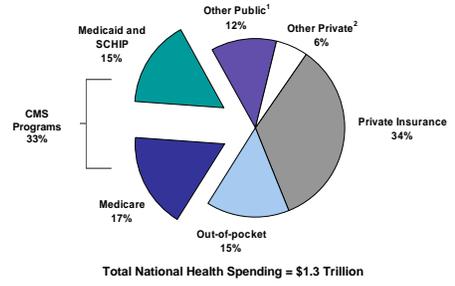
Hospital and physician spending accounts for more than half of all health spending.



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5. Large role of the government The Nation's Health Dollar, CY 2000

Medicare, Medicaid, and SCHIP account for one-third of national health spending.



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