HRS | HEALTH AND RETIREMENT STUDY
A Longitudinal Study of Health, Retirement, and Aging
Sponsored by the National Institute on Aging

Should Medicare Reform Target Incentives to Providers or to Patients?

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- The US Health and Retirement Study, and the international network of studies that followed, have a particular relevance to policy.
- Other longitudinal studies of aging also address health and some fundamental science of aging processes
- Only the HRS family of studies also include detailed economic and other measures critical to policy

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Aging is the Policy Challenge of the 21st Century

- Everywhere, aging populations create fiscal pressures as commitments to retirees exceed current taxes from workers
- In US, this has been postponed until now by the baby boom and will be less severe than elsewhere even post-baby-boom
- Nevertheless, current impasse over debt limit is essentially the result of aging

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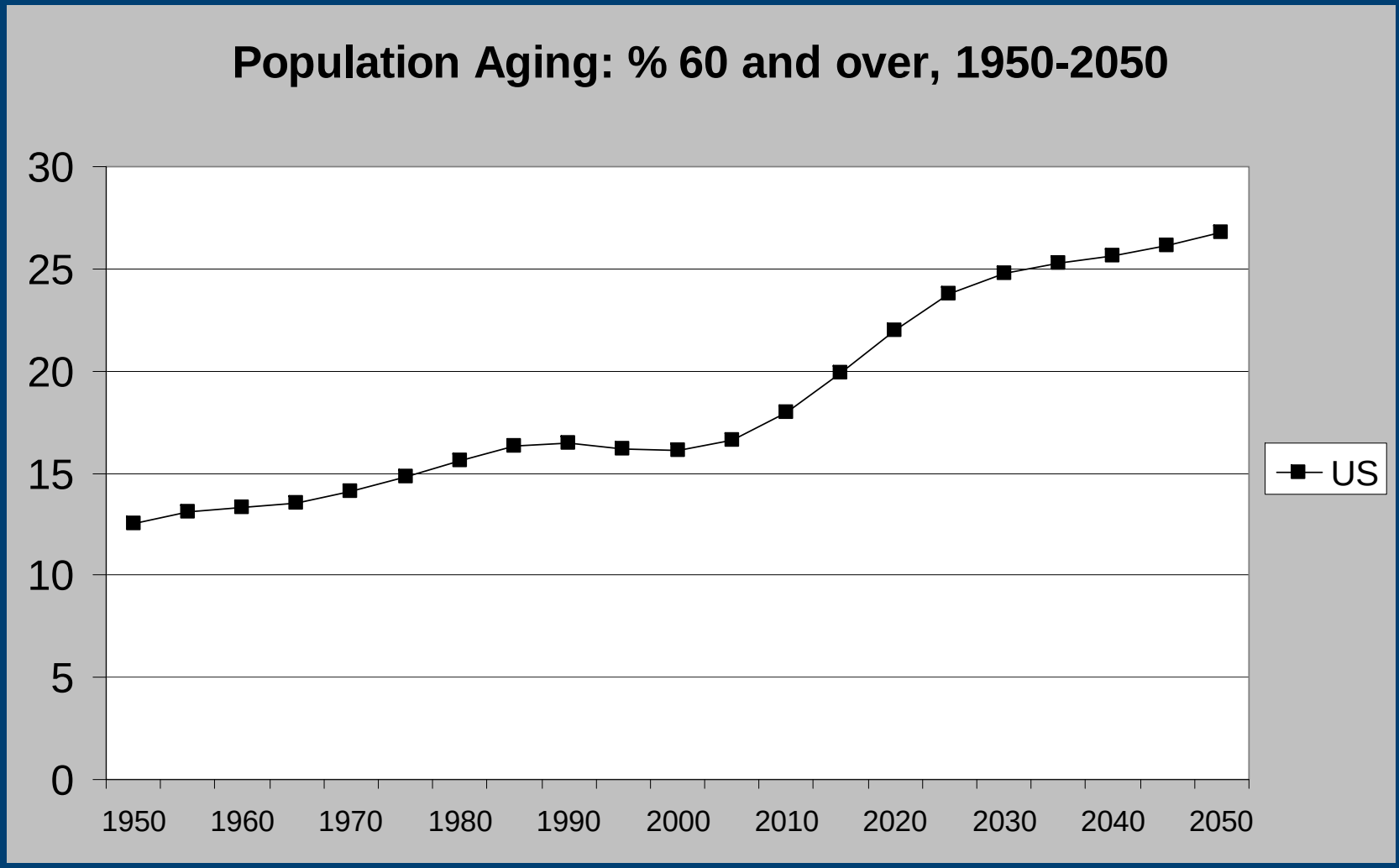
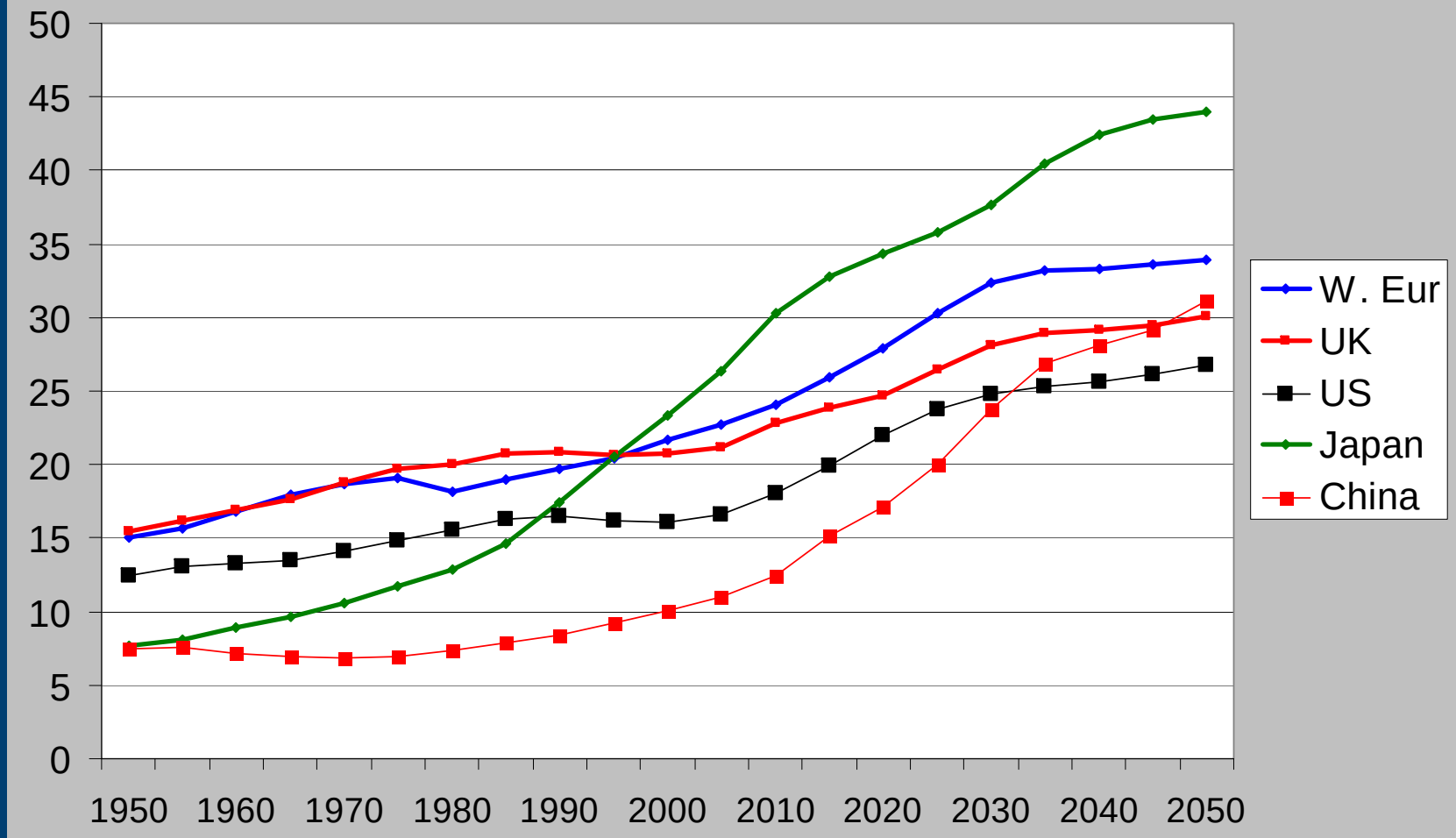


Source: United Nations, World Population (2006)

Population Aging: % 60 and over, 1950-2050



Source: United Nations, World Population (2006)

US Policies for Older Americans

- Social Security
  - Pension system
  - Current tax and benefit schedules are inconsistent with current survival rates and slow population growth
  - Highly predictable and easily fixed
- Medicare
  - Health care/insurance system
  - Affected by aging but also by unpredictable and currently uncontrolled growth in health care utilization and cost
  - Unfunded liability larger than Social Security

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Unfunded Liability

- Present value of promised benefits minus present value of scheduled tax revenue
- Estimated at 41 trillion for Medicare
- Less than half that for Social Security

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How to Contain Medicare Spending?

- Best policies would limit spending on treatments that provide little or no benefit
- The US pays much more than other countries for health care, but is less healthy and has lower life expectancy than most other leading economies.

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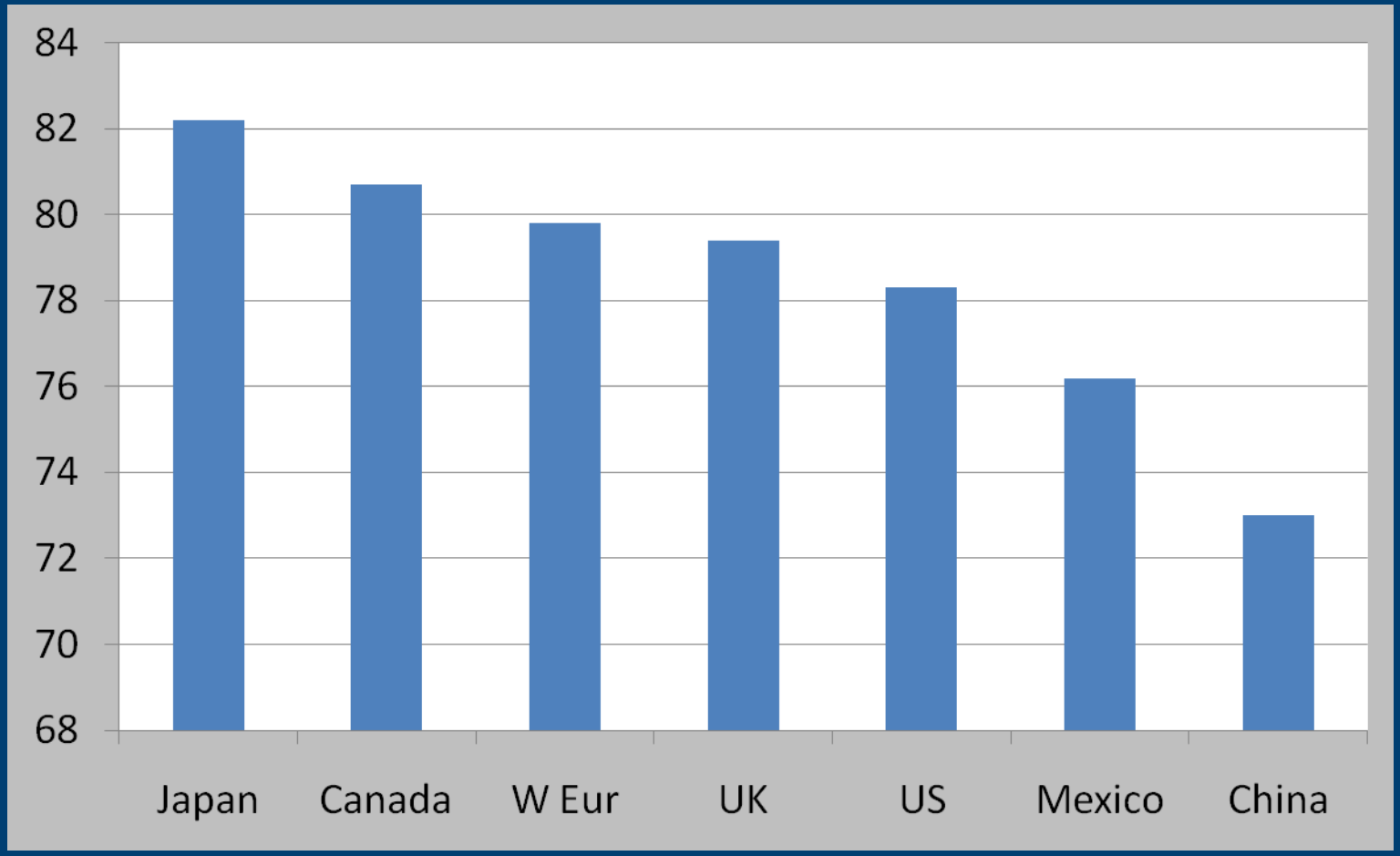
Life Expectancy at Birth, International Comparisons



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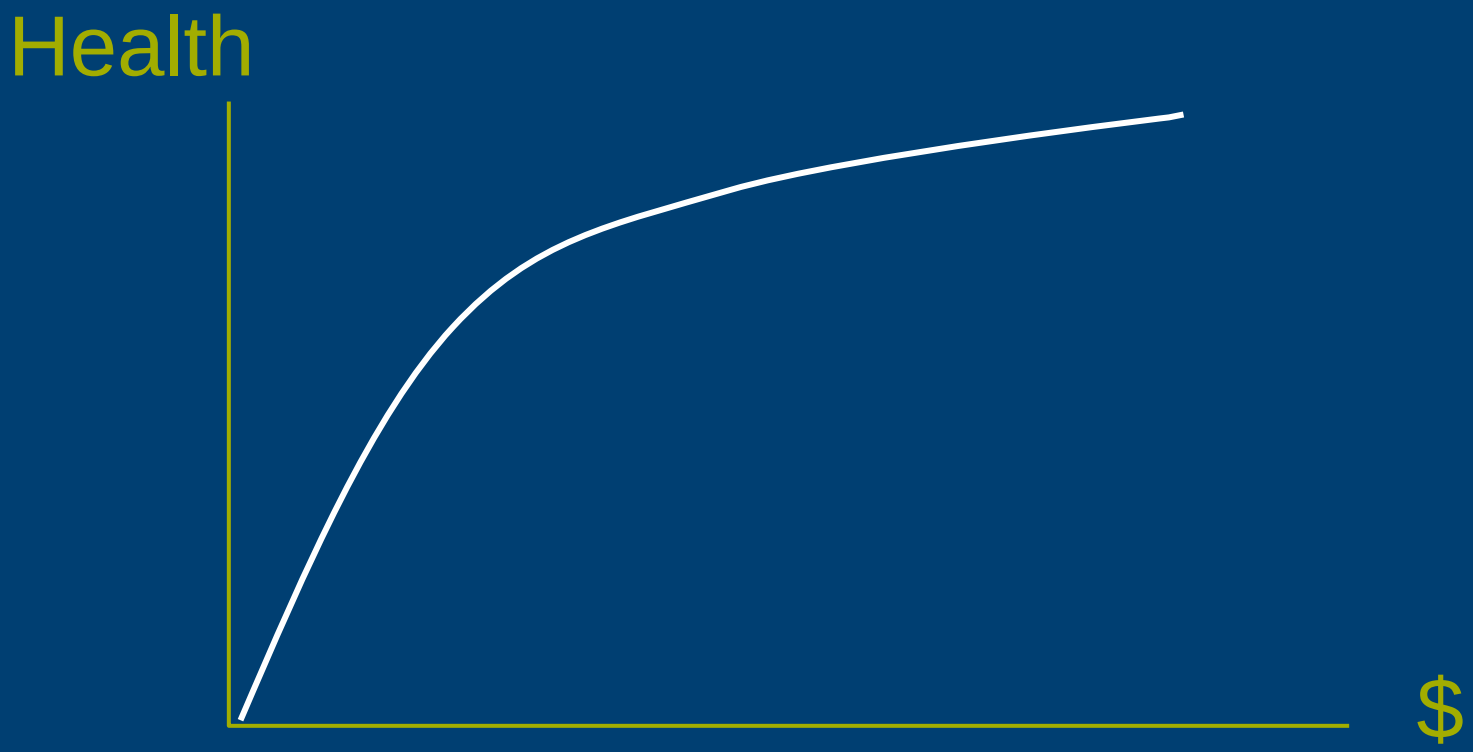
Society health production function



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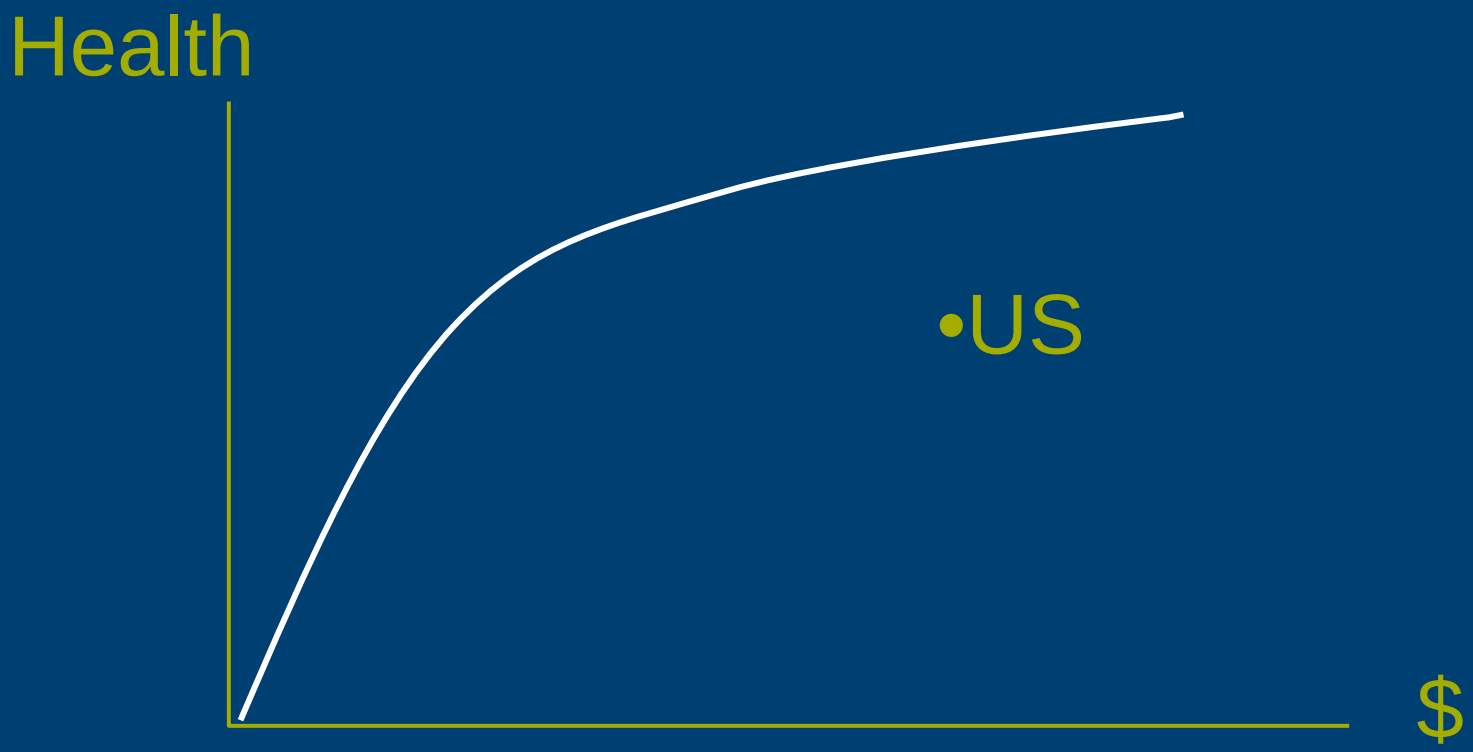
Society health production function



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Emphasis on Regional Variation

- Consistent with the international comparisons that suggest some US spending is unproductive, there are similar findings across regions within the US
- “Dartmouth atlas” work of John Wennberg on regional practice variations
- Doctors in local areas practice in particular ways. Some are more expensive than others.

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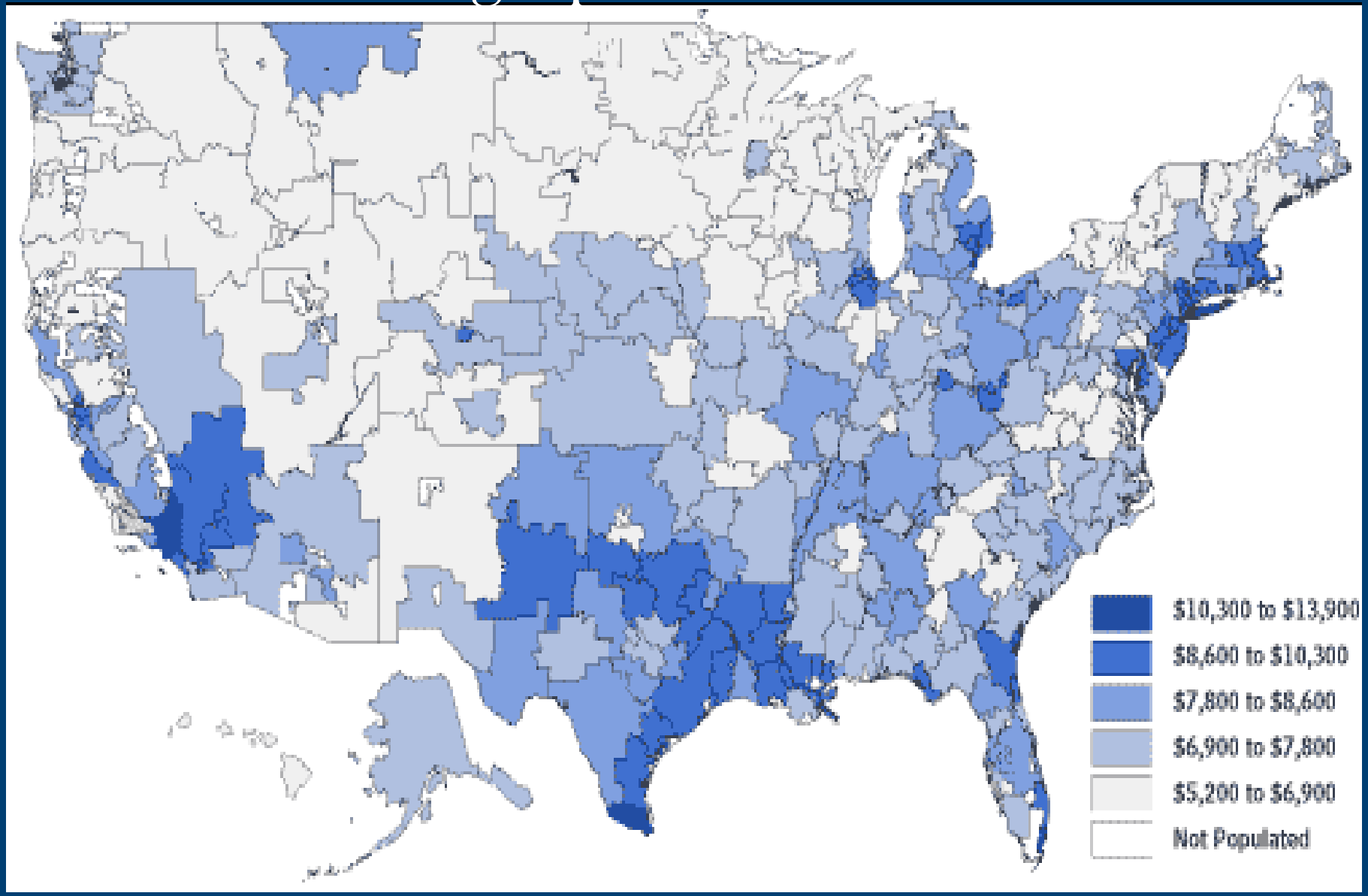
Geographic Variation



Source: Congressional Budget Office

Health economists

- Jon Skinner, Amitabh Chandra, Douglas Staiger, and others show that regions that practice “high-cost” medicine do not have generally better outcomes than those that practice lower-cost medicine
- ➔ Incentivizing providers in high-cost areas to practice what low-cost regions do would save money, and not harm health.

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Is health policy too focused on regions (and doctors)?

- What about individuals?
- Do some consume more health care than others, without benefit?
- Is the potential gain from reducing this variation as great or greater than that from reducing regional variation in medical practice?

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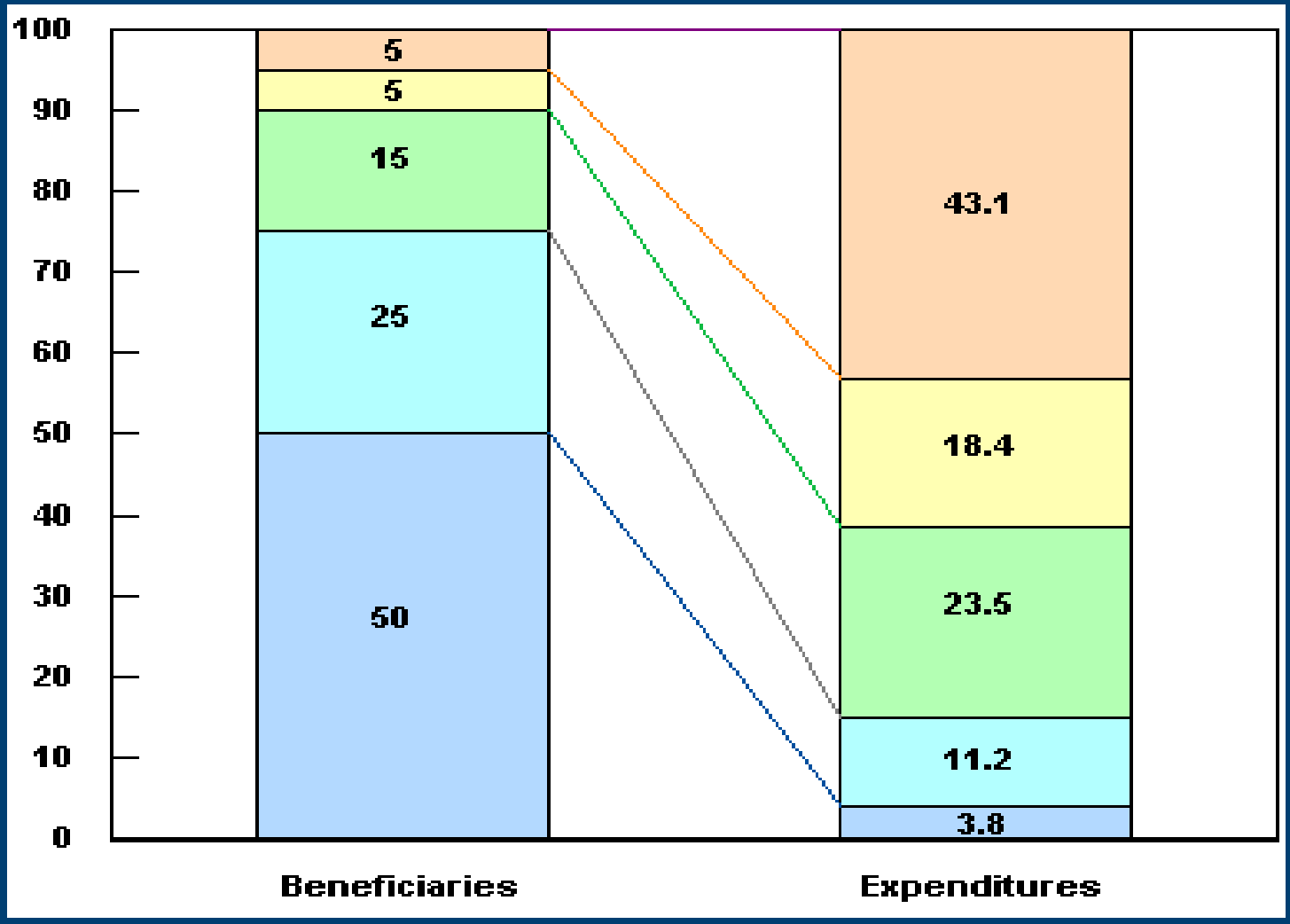
Distribution of Annual Medicare Expenditures Across Individuals



Source: Congressional Budget Office

Annual distribution greatly exaggerates effect of patient preferences

- One-time costly events
- End of life
- Even using longer time periods those with more severe health problems will have higher spending
- We want to know if some people persistently spend more than others in the same health condition

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HRS is particularly valuable for studying entitlement program policies

- Linkages to administrative records of
  - Social Security (since 1992 but going back to 1951)
  - And Medicare (since 2008 but going back to 1987)
- Enormously valuable for policy research

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HRS and Medicare

- Already a very active research community
- Most use Medicare claims to define a health event and use HRS to follow up consequences
- Takes medical research beyond narrow focus on short-term mortality or re-hospitalization

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Examples

- Iwashyna, et al. JAMA 2010
  - Sepsis (infection) episodes lead to more rapid cognitive and functional decline
- McWilliams,et al. NEJM 2009
  - Lack of health insurance before age 65 raises Medicare spending
- McWilliams, et al, JAMA 2011
  - Part D (drug coverage) led to lower non-drug spending among those with poor coverage before Part D

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Can we say whether regional provider variation or individual spending variation is the more promising target for intervention?

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Providers or Patients?

- A full answer requires a lot of work, including
  - Studies of behavioral response to incentives
  - Studies of health outcomes of induced changes in provider or patient behavior
- Here, we start with a more basic question: which source exhibits greater "idiosyncratic" variance, i.e., which has greater potential for savings

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Model Medicare Spending Using Survey Data and Claims Data: Data

- HRS interviews are typically two years apart
- Observe Medicare spending in claims data for time periods between HRS interviews
- Annualize and convert to constant 2006 dollars
- Restrict to periods in the fee-for-service program and ending in interview (not death) N~30,000
- Restrict to persons with at least three such periods of observation N~7500

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Model Medicare Spending Using Survey Data and Claims Data: Estimation

- Regress spending in a period on variables observed at the start of that period
- Age, sex
- From HRS survey prior to spending period:
  - SES: education, income, and wealth
  - Self-reported (8) chronic conditions and BMI
  - Self-reported health status
- From Medicare claims
  - (21) Chronic Condition Warehouse diagnoses

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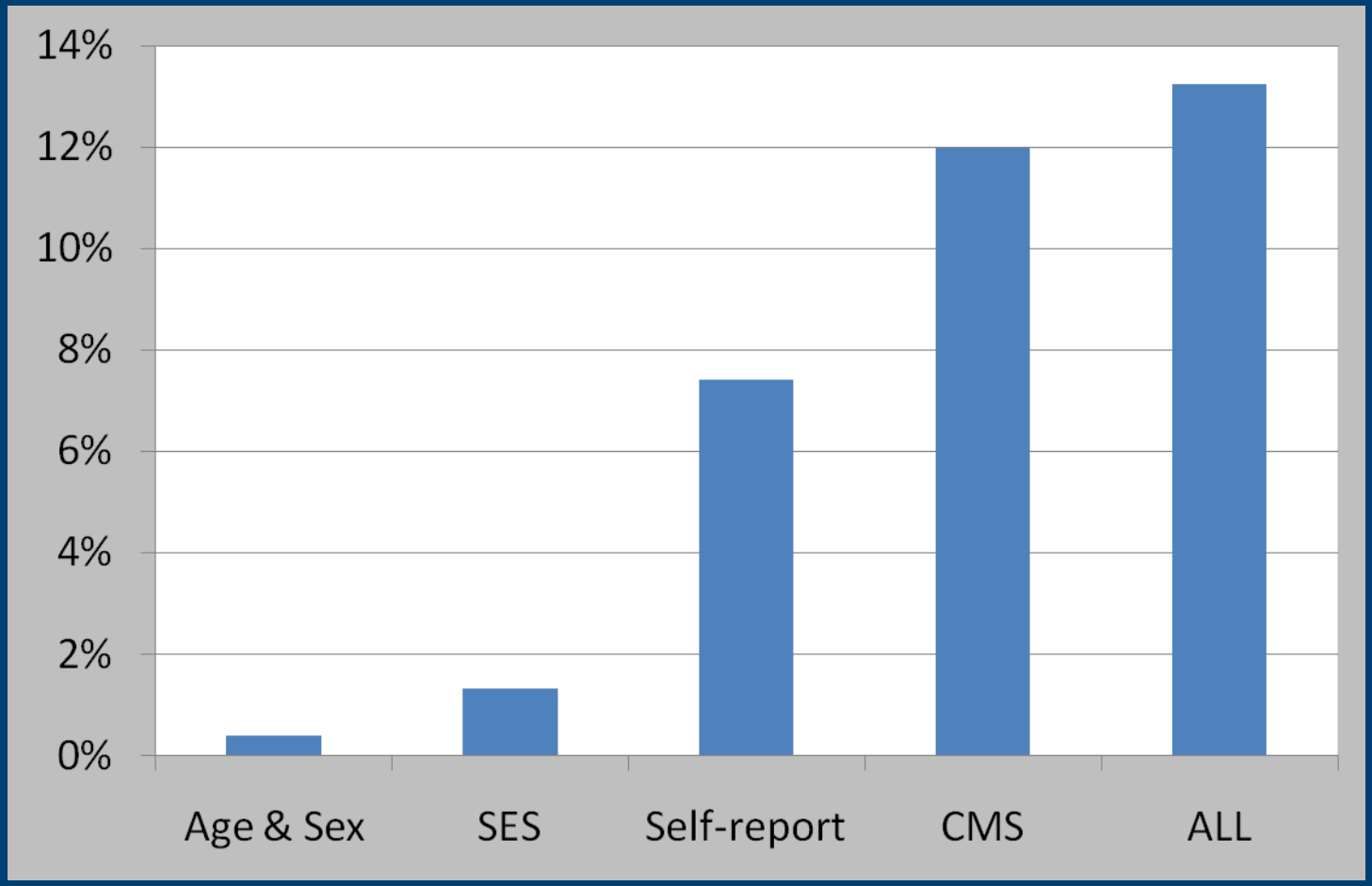
Percentage of Individual Variance in Medicare Spending Explained by Different Sources



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Using the Model Results

- The model accounts for influence of health and economic characteristics on Medicare spending
- The residual (actual minus predicted spending) reflects unobserved health and the behavior of providers and patients
- We can assess how much of the residual is persistent across providers or patients

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Regional Provider Effect

- How much of residual variance not explained by individual health is shared across persons within a region?
- Health Referral Region (HRR)
- 263 in our sample
- Explain 2% of residual variance ($p<.001$)

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Patient Effect

- How much of residual variance is shared over time for the same individual?
- 8% of residual variance is explained by individual effect
- ➔ Incentivizing individuals to limit unproductive spending should be a target for policy

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Caveats

- Method understates provider influence because it aggregates over all spending while regions may be, e.g., high on cardiovascular but low on cancer spending
- Method overstates influence of patient preferences because of unobserved health characteristics

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