Government Intervention in Health Insurance Markets

1 Overview

• health care - institutional overview
• rise in health spending
• impact of health insurance: spending and benefits
• other health insurance design issues, health care reform

2 Health Spending and Outcomes

• dramatic growth in health spending in the US
  – 2 trillion US$, 16% of GDP, 20% of federal budget (2010)
  – more than tripled as a share of GDP since 1950
  – lower share of GDP in other similarly developed countries (10% in Canada, 9% in Germany)
• dramatic health improvements
  – average decline in mortality about 1.5% per year over 20th century
  – however not so great when comparing to other industrialized countries (see Cutler, JEL 2002, for an international comparison)
• US system private relative to other countries
  – but 40% of spending is by government
  – 1/3 of all hospitals publicly owned
  – UK: fully public system (NHS), Germany: mixed system public/private
• why have government involvement in health insurance?
  – physical externalities (infectious diseases, e.g. mandated vaccines)
- pecuniary externalities (good samaritan’s dilemma)
- paternalism
- adverse selection
- externalities/ spillovers in production of care (insurance → technological progress, even for those without insurance)

2.1 Insurance Coverage

• private insurance
  - 90% is through employer
  - tax subsidy to employer provided health insurance (employer can deduct cost of HI from profits, and employee doesn’t have to pay tax on benefits)
    * distorts compensation from wages to HI
    * benefit is higher to those with higher income tax rate (regressive)
    * should cap or remove tax subsidy to employer-provided health insurance

• publicly provided insurance
  - Medicare (approx. 17% of health spending)
    * nationally uniform program, covers approx. 35 million elderly over 65 and 3.5 million disabled
    * financed by payroll tax
    * very incomplete coverage (about 50% of costs)
    * e.g. 20% copayment for physician visits without limit
    * increasing copayment with time in hospital (no coverage after 150 days)
    * does not cover long term care
    * Medigap = private insurance to complete Medicare (standardized market, covers e.g. Medicare copayments)
  - Medicaid (approx. 16% in health spending)
    * covers low income women and children and poor elderly or disabled
    * very generous, comprehensive coverage
    * no copays, no deductibles, covers long term care
    * but low reimbursement rates to providers
* means-tested (have to be poor), not allowed to top up by private insurance
* organized by states, state variations in coverage

- uninsured (about 15% of US population)
  - many poor, but not all (75% are employed or dependents of employed)

### 2.2 Rise in Health Spending

- what is behind it?

  - general consensus: technological progress (new machines, new drugs, new procedures (human capital))

  - Newhouse (JEP 1992): a residual argument (à la growth accounting). Only 1/4 to 1/2 of rise in spending can be explained by changes in other factors such as
    - aging
    - increased income
    - supplier induced demand
    - increased insurance

- so where does technical change come from?

  - exogenous scientific progress versus demand induced innovation

  - Weisbrod (JEL 1991) hypothesis: insurance induces technical change, which in turn increases insurance demand

  - “health care quadrilemma”:
    - insurance → higher demand → better incentives for innovation
    - technical progress → higher costs, higher spending → more demand for insurance

- little empirical evidence on either of these two channels (see Finkelstein, QJE 2004, for vaccine industry, Acemoglu and Linn, QJE 2004, for pharmaceutical industry, both address only first part of circle)

- is rise in health spending a problem?
– Cutler (book 2004): is it worth it? need assumptions on value of human life, focus on heart attacks, finds affirmative answer

– Hall and Jones (QJE 2005): optimal health share grows with income
  * income elasticity > 1 (health is luxury good)
  * as grow richer, marginal utility from consumption diminishes
  * can escape that by purchasing additional years of life (where start again with high marginal utility of consumption)
  * so growing share of health spending may be optimal (>30% of GDP by 2050)

– evidence on income elasticity of health care demand
  * HIE suggests low income elasticity (at most 0.2), but partial equilibrium
  * cross-country regressions suggest higher elasticity, but poor identification and imprecise (even though comes closer to GE effect)
  * Acemoglu, Finkelstein, Notowidigdo (2012) use oil price shocks interacted with local oil reserves in US to instrument for income, and find income elasticity less than one

3 The Impact of Health Insurance

3.1 Health Insurance and Health Spending

• why do we care?
  – optimal design of health insurance contracts (deductibles, copayments)
  – what is behind the growth in health spending?

• intellectual history
  – literature in 1970s inconclusive
  – cross-sectional estimates (health spending on health insurance) have inference issues (MH vs. AS)
  – null hypothesis: medical spending determined by “needs” not costs
  – → RAND health insurance experiment (HIE) (see Manning et al., AER 1987, for an overview)
• HIE design
  – 1970s
  – randomize approx. 6,000 people from 6 cities all over the US into 14 different insurance plans
  – 3-5 years
  – vary coinsurance from 0 (patient pays nothing) to 95%
  – $1,000 out of pocket maximum per year (or, if less, 5, 10, or 15% of family income)
    * very important in interpreting results, especially for inpatient use
    * variation is not over catastrophic coverage
  – also fee-for-service versus prepaid provider reimbursement

• results: spending
  – key elasticity: response of spending to level of coinsurance (moral hazard)
  – find response to be small but statistically different from zero
  – expenditure in 0 copay 46% higher than in 95% copay plan
  – central elasticity -0.2
  – response for inpatient usage and for children even smaller
  – very modest income elasticity of at most 0.2
  – → Newhouse (JEP 1992): increase in insurance and income can explain only small share of increase in health spending

• health outcome results
  – essentially no health benefits from free care (exceptions: dental care, blood pressure)
  – suggests more targeted programs would be cheaper way of addressing health effects rather than providing free care
  – caveat: experiment was relatively short term
  – even if no health effect, insurance reduces financial risk

• more recently, Oregon HIE (see Finkelstein et al., QJE 2012, for an overview of first results)
– in 2008, Oregon opened waiting list for limited number of spots in its Medicaid program for low-income adults
– program had been previously closed for new enrollment
– state drew names by lottery from the 90,000 people who signed up
– find somewhat bigger effects of expanding Medicaid on utilization, spending, health outcomes and financial stability
– different subpopulation than RAND HIE

• limitations
  – costs to run
  – hawthorne effects, external validity
  – only captures partial equilibrium effect
  – for HI, general equilibrium effects may be larger or smaller than partial equilibrium effects
    * smaller: e.g. income effects on physicians (as they get richer when the demand for health care grows, they may reduce their treatment intensity, reducing per patient spending)
    * larger: increased demand encourages entry in the presence of fixed costs (e.g. new hospitals, new technologies), positive spillovers (on the non-treated) get netted out in experiment

• general equilibrium effects of HI: Finkelstein (QJE 2007)
  – looks at the introduction of Medicare in 1965
  – national program, so hard to get variation, but there is in fact variation
  – percentage of elderly (above 65) with private insurance in 1965 in different regions of the US
  – finds impact of Medicare on health spending over 6 times larger than what RAND HIE would suggest
  – evidence for large GE effects
    * technology adoption, hospital entry
    * suggestive evidence for spillover of effect on the non-elderly
  – but methodology still does not pick up innovation effect (since would be the same across regions)
– also, hard to compare to RAND HIE since elasticity for elderly may just be different than for non-elderly (e.g. increase in health spending shortly before death). Giving a similar amount of additional health insurance to younger individuals may not have these effects.

• issue for moral hazard interpretation: income versus substitution effect of health insurance on health spending (Nyman, JHE 1999). Increased health spending in response to higher insurance coverage results from...
  – the reduced price that the individual faces for the services due to insurance (the substitution or moral hazard effect) and
  – the income transfer that the individual receives from the insurer in case of illness (the income effect, given that medical care is a normal good).

The latter effect does not correspond to a welfare loss.

### 3.2 Benefits from Health Insurance: Health and Financial Security

• measurement issues: focus on mortality (well measured but highly incomplete)

• over time, medical care very important in explaining improvements in mortality (e.g. Cutler and Meara NBER 2001)

• at point in time, medical spending explains little of health differences across people
  – Canada versus US
  – Utah versus Nevada
  – very limited effects of health insurance on health (RAND HIE)

• Gruber and Currie (JPE and QJE 1996)
  – study Medicaid expansions to higher income and age thresholds for children in 1980/90s
  – huge variation in expansions across states
  – find large increase in health care utilization among the treated
  – find some improvements in infant mortality

• Card et al. (NBER 2004)
  – look at impact of Medicare
– RD design: discrete change in insurance coverage at age 65
– identifying assumption: outcomes would evolve smoothly with age in absence of discrete change in insurance coverage at age 65
– results: increase in utilitzation but little health effects
– issues
  * only get short term effects. Does health change discretely with discrete change in insurance coverage? there may be lagged/accumulation effects
  * wouldn’t pick up any GE effects of health insurance on health (spillover effects to non-elderly get netted out by methodology)

• Finkelstein and McKnight (JPubE 2008)
  – study introduction of Medicare in 1965 using similar identification as Finkelstein (2007)
  – find no impact on mortality in first 10 years
  – but evidence of substantial consumption smoothing effects (elderly bear less financial risk, variance of out-of-pocket spending reduced)
  – welfare gains from consumption smoothing may cover 1/2 to 3/4 of costs of Medicare

4 Further Issues

4.1 Provider Reimbursement

• how should health insurers reimburse health care providers?

• key tradeoff: productive efficiency versus selection

• see Newhouse (JEL 1992) for overview

• extreme forms
  – fee-for-service (cost reimbursement): insurer pays the provider his cost, bad incentives for productive efficiency, wasteful medical care
  – prospective payment systems (price cap): insurer pays doctor/hospital fixed amount according to e.g. admission type, provider is residual claimant
• PPS provides much better incentives for productive efficiency, but at the cost of strong incentives for selection. Opposite for fee-for-service.

• selection: try to avoid treating costly high risks (e.g. put doctor’s office in fifth floor with no elevator)

• “Managed Care”, Health Maintenance Organizations (HMOs) – vertical integration of provider and insurer
  - direct control of service provision by insurer
  - much lower costs, but how much of it is due to selection or lower quality care?
  - Cutler et al. (RAND 2000): spending on treatment for heart attack patients in HMOs versus fee-for-service. Cond’l on people who had heart attack, there should be no selection based on severeness of heart attack.
  - costs are 40% lower in HMO, but quality is not worse
  - big expansion in 1990s but less popular than would have thought (patients do not seem to like restricted freedom)

• Medicare switched from fee-for-service to PPS in 1984
  - PPS based on diagnosis related groups (DRGs): fixed payment to hospital according to categories, but partially treatment based (retrospective)
  - incentives for “upcoding,” strategic diagnosis
  - shift was not complete: PPS only w.r.t. operative costs ($L$), capital costs ($K$) were still reimbursed
  - Acemoglu and Finkelstein (JPE 2008): relative price of $L$ rises, $K/L$ should increase (which is what they find)
  - Medicare has removed retrospective treatment of $K$ since then (potential for new paper...)

4.2 Long Term Care

• nursing home and home care for the elderly

• by far largest uninsured risk facing the elderly (not covered by Medicare). Only 10% have private insurance, 1/3 is paid out of pocket

• 1/3 of elderly will have to go to nursing home, large right tail of distribution
• will grow as baby boomers age

• Brown and Finkelstein (AER 2008): Medicaid has very large crowdout effect and very poor consumption smoothing effects

• Medicaid covers nursing home costs (not home care, to reduce moral hazard), but
  – payer of last resort (i.e. only after private insurance has paid)
  – means tested, i.e. pays only once assets decumulated

• in addition, informal (but possibly inefficient) insurance through family (children pay for care or help with home care)

• still, lack of private insurance poorly understood

### 4.3 Insuring Premium/Reclassification Risk

• risk types get revealed over time, insurers can observe much of it (e.g. though history of claims and treatments)

• premiums get adjusted for it (reclassification) = financial risk

• how to insure against premium/reclassification risk?

• no problem if there is full commitment on both the insurer’s and insured’s side, but leads to “lock in”

• if insured can switch insurers, revealed low risks get attracted out over time by cheaper contracts, long-term contract insuring premium risk breaks down

• potential solution: front-load premiums (in most extreme form, let agents pay entire NPV of premiums at the beginning) → no incentive for revealed low risks to switch to “better deals” over time

• this is typically prevented by liquidity/borrowing constraints

• Hendel/Lizzeri (QJE 2004): look at life insurance market and test whether more front loaded contracts (locking in good risks better) have lower NPV of premiums, find affirmative evidence

• big problem in health insurance
4.4 Health Reform

- key: mandate that everyone have health insurance with qualifying coverage
- premium and copay subsidies for low incomes
- many further provisions (expansion of Medicaid, Medicare, regulations in private insurance markets/health exchanges, ...)
- for a summary, see the report of the Kaiser Family Foundation at http://www.kff.org/healthreform/8061.cfm
- Scheuer/Smetters (2014) for design issues for mandate, fines and subsidies in the context of multiple equilibria in the health exchanges