G. The Role of Government

G0. Distribution of Government Funds

G1. Law and Order (access)

G2. Public Goods (research, information)

G3. Externalities (transmitted diseases)

G4. Monopoly

G5. Incomplete markets (health insurance)

G6. Equity: Redistribute income (Medicaid)

G7. Other: (paternalism, war)

G8. Medicare (social insurance) and Medicaid

Bhattacharya, Hyde and Tu Chapter 20: The Economics of Health Externalities

G0. Government Involvement in U.S. Health Care

In 2019 total of $1,980 billion (Source: NHE 2019)

• Medicare	40%	
• Medicaid	31%	incl. general assistance
• Veterans / DOD	6%	
• Workers Comp	2%	
• CHIP	1%	
• Public Health	5%	
• Research	3%	
• Construction	7%	
• Other	4%	

- Additionally: much **regulation**, e.g. licensing, and favored **tax treatment** of health.

G0. Government Involvement in U.S. (cont.)

- Default: market with no government intervention is best.
- Assuming perfect competition:
  1. Efficiency: market yields a Pareto efficient outcome.
  2. Equity: can reach any PE outcome by change endowments
- But there are many deviations from perfect competition, especially in health care. We go through these here.
- And Theorem of the Second Best says that if there is more than one departure from perfect competition then fixing one problem in isolation may lead to even worse outcome.
- E.g. licensing leads to monopoly. But eliminating licensing means consumers are less informed about doctor quality (departure from perfect information).
- Government is very involved in health in U.S.
  Even more in other OECD countries.

G1. Law and Order

- Taken for granted.
- Needed for medical markets to exist.
- Access to health care for all encourages law and order.

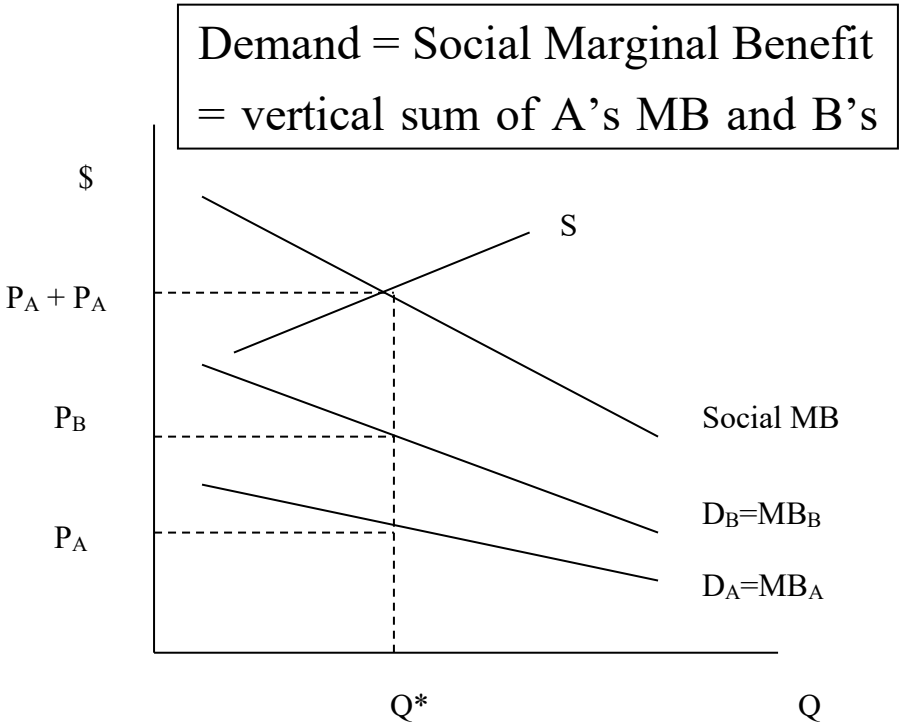
G2. Public Goods

- A public good is not the same thing as a publicly-provided good.
- A **pure public good** is
- Nonrival in consumption (or inexhaustible)
  - MC of another person's consuming good = 0
- Nonexcludable
  - Cannot stop people from consuming.

  A good example is **national defense**.
- In practice
  - public goods may not be entirely nonrival in consumption, e.g. traffic jams on highway
  - and may be excludable, e.g. highway toll.

G2. Public Goods (continued)

1. Demand = **vertical** sum of individual demands.



2. Optimal Q* is where Social MB = Supply.

G2. Public Goods (continued)

3. Public good is under-provided privately (due to **free-riders)**
   - This leads to a **welfare loss** (as then $Q < Q^*$)

4. Optimal Q^* requires knowing demand
   - This is difficult to determine since no market.
   - Surveys are conducted to estimate **willingness to pay**
     e.g. WTP to save the whales.

G2. Public Goods (continued)

Solutions to ensure provision of public good

1. **Privatize** public good to make excludable.
e.g. patent law for prescription drugs

2. **Government provision**.
Should be justified on cost-benefit grounds.

- Research to develop new medical goods
  $51 billion in 2019 and 1%-2% of health
  National Institutes of Health (NIH) estab. 1952

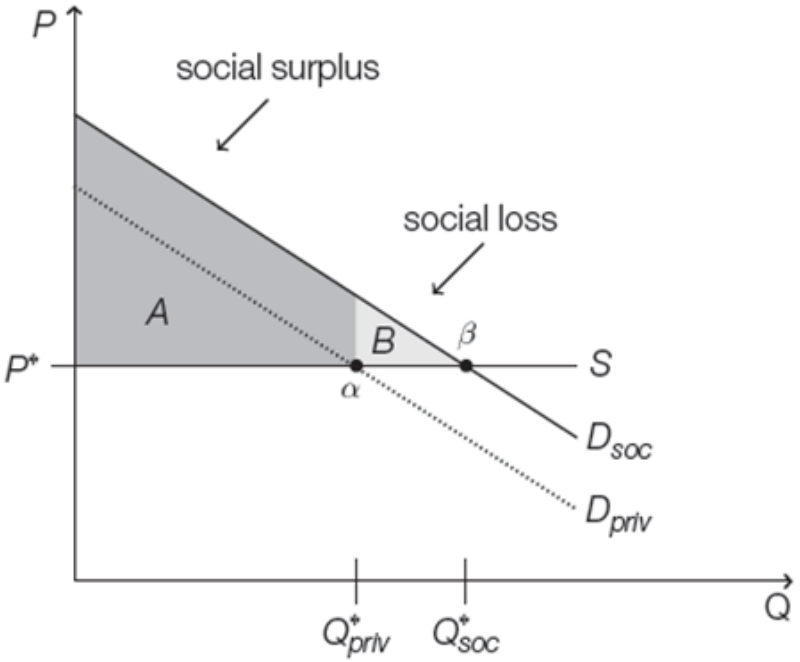
- Information (obtain and disseminate)
  National Center for Health statistics (NCHS)
  Food and Drug Administration (FDA) estab. 1931
  Environmental Protection Agency (EPA) 1970
  Occupational Safety & Health Administration
  (OSHA) estab. 1970

G3. Externalities

- An **externality** arises when the actions of one individual (person or firm) has a direct effect on another individual in a way that is not transmitted by market prices.
- e.g. infectious diseases, vaccination, cigarette smoke, use of antibiotics leading to drug-resistance, ….
- An externality can be
  - in production or in consumption
  - positive or negative.
- Without intervention society produces a suboptimal amount, leading to welfare loss.

G3. Externalities (continued)

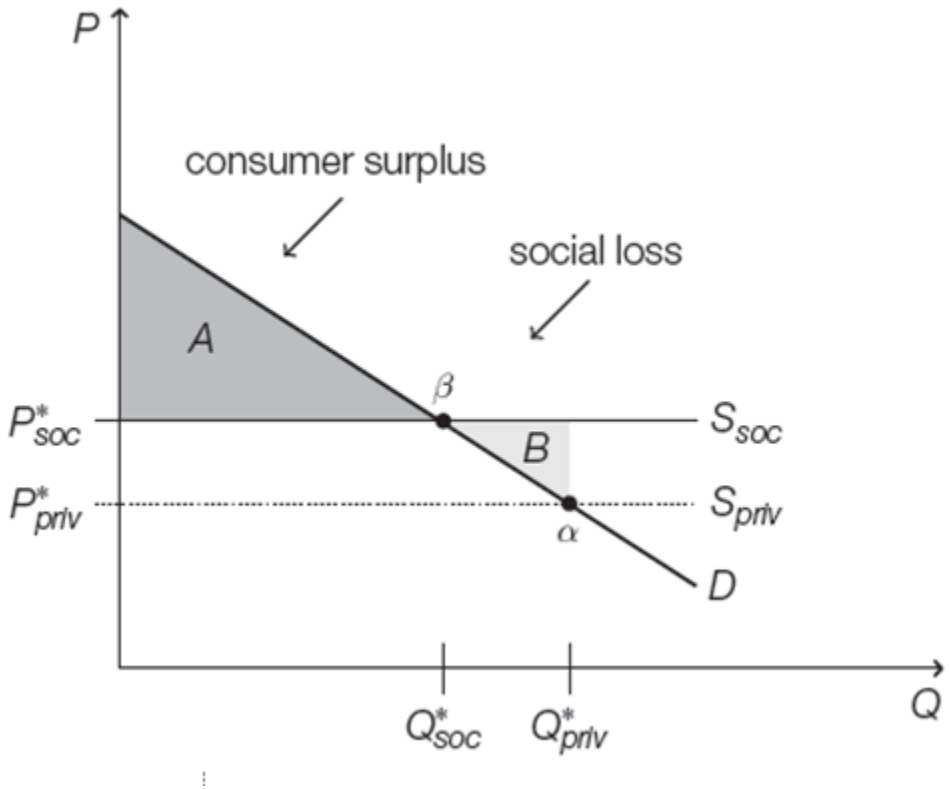
- Example: Immunization or vaccination.
  When individuals are vaccinated the unvaccinated also benefit.
  This additional benefit called herd immunity leads to a positive externality in consumption.



- Here private Q is too low and we have social loss.

G3. Externalities (continued)

- Example: Antibiotic resistance to antibiotics such as penicillin. When individuals use penicillin, bacteria develop resistance to penicillin. This leads to a negative externality in production.



- Here private Q is too high and we have social loss.

• G3. Externalities (continued)

Solutions to ensure correct provision when externality present:

1. **Pigouvian** subsidy or tax
- for vaccination have subsidy to increase Q from Q_{priv} to Q_{soc} .
- for antibiotic resistance have tax = $p_{soc} - p_{priv}$.
- Problem: hard to know optimal subsidy or tax.

2. **Government regulation**
- e.g. Smoker can't smoke e.g. children must be vaccinated.

2. **Define property rights**
- e.g. individual has right to smoke-free air and smoker can then compensate the non-smoker.
- Coase Theorem says it does not matter which party has the property rights provided transaction costs are sufficiently low.
- Problem: transaction costs / bargaining costs can be high.

G3. Externalities (continued)

Infectious Diseases:

- Big area of government involvement.
  Major reason for increased life spans.
- Epidemics historically handled by quarantine
  - Black death in the Middle Ages
  - Tuberculosis, syphilis, flu (e.g. 1918 pandemic)
  - Leprosy (Hansen's disease – virus kills nerves)
  - AIDS
- Sanitary revolution of the 1800's greatly reduced them.
- Sexually transmitted diseases
  (U.S. Public Health Service).
- Covid-19 and other coronviruses (SARS, MERS)
- Public health in 2019 is $85 billion.

G3. Externalities (continued)

Economic Epidemiology:

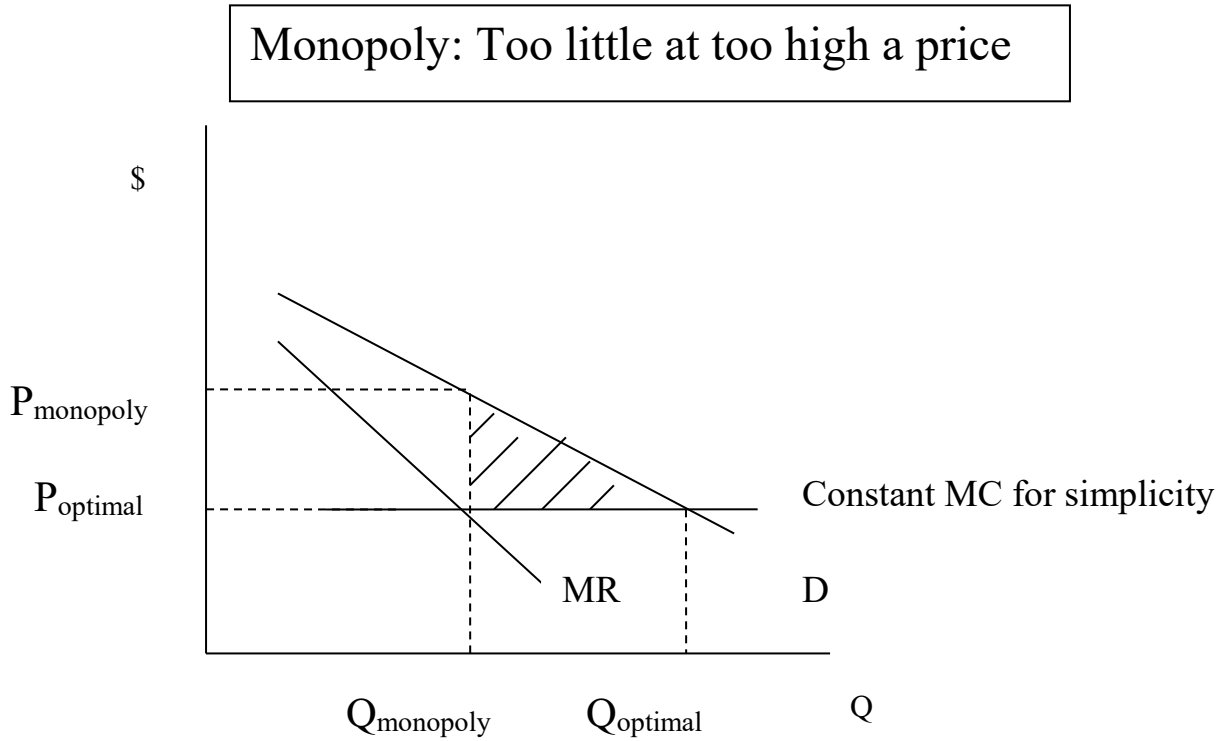
- Economic epidemiology studies the pattern of disease spread.
- The total economic cost of a disease
  = epidemiological cost (the direct cost)
  + excess burden (costs of efforts to avoid disease).
- So there is a tradeoff
  - it may not be optimal to completely eliminate a disease
  - though due to herd immunity we do not need 100% vaccination to eradicate a disease.
- A standard model of infectious disease is the SIR model.
  - population split into susceptible, infected and recovered
  - progression depends on vaccination rates and infection rates.

G4. Monopoly

- Pure monopoly is only one seller of good.
- Arises due to:
  1. Natural monopoly (decreasing long-run AC)
     e.g. a regional hospital.
  2. Government created
     - patent on pharmaceutical drugs
     - licensing e.g. physicians, certificate of need
- **Monopoly power** exists whenever firm output impacts market price.
  e.g. Only a few hospitals or specialists in region.

G4. Monopoly (continued)

- **Monopoly** leads to underproduction and high price.
- Leads to welfare loss given by shaded triangle.



G4. Monopoly (continued)

Solutions to monopoly are:

1. **Regulate** private monopoly
   - **rate regulation** e.g. per-diem, per patient, per admission
     - cost-plus encourages inefficiency
     - prospective payment system is better
   - **utilization review:** are monopoly services needed?
   - **certificate of need**: are hospitals and/or capital needed?
2. **Provide publicly**
   - e.g. regional hospital is not for profit
3. **Permit** unregulated private monopoly as other favorable effects (Theory of the Second Best)
   e.g. patent monopoly encourages innovation.

Prospective payment systems (yardstick competition) and resource-based relative value scales are attempts to regulate rates and encourage lower costs.

G5. Incomplete markets

- Leading example is inability to get health insurance if pre-existing conditions such as cancer, AIDS.

1. **Government regulation** to require insure such people
   e.g. Health Insurance Portability and Accountability Act (HIPPA 1996)
   - group health plan cannot determine eligibility or premiums based on health status, medical history, genetic information, disability (private plan can)
   - pre-existing conditions not covered for at most 18 months.
2. **Government provision** of insurance
   e.g. Medicare for >65 and end-stage renal disease.
3. **Obamacare** with health insurance exchanges
   - preexisting conditions covered, community rating, mandatory to enroll if no other form of insurance.

G6. Equity

- Society tries to help poor.
- Debate about **appropriate level**
  - Minimal level? An adequate level.
  - Maximal level? To get max possible health improvement.
  - Rawlsian minimax?
    Maximize the position of the worst off
    (the level preferred under veil of ignorance)
- **Cash assistance**
  - Economists prefer as consumer knows best
  - Temporary assistance to needy families (TANF)
- **In-kind assistance**
  - Medicaid.

G7. Other Reasons for government intervention

- **Paternalism**
  - Government over-rides individual desires
  - Often for those deemed incompetent
    Children, addicts, mentally ill, …
  - Also for entire population
    Abortion, smoking, sexual activities, drug use
- **War**
  - Remarkable impact on medical knowledge
  - Crimean War (1860's): Florence Nightingale
  - Spanish-American War: Treatment of malaria
  - World War I (1910's): First census of U.S. health showed one-quarter of young males ineligible for army
  - Korean/Vietnam/Iraq Wars (1950-60's): Trauma
- **Capture by private interest**
  - e.g. Pharmaceutical lobby

G8. GOVERNMENT: MEDICARE AND MEDICAID

MEDICARE

- For those aged over 65 + disabled + end-point renal disease.
- Established in 1965 (parts A & B)
- Federal program partly financed by 1.45% + 1.45% payroll tax + 0.9% extra tax for high earners
Part A (Hospital)	free (if contribute to soc sec > 10 years)
+ Part B (Physician & Outpatient)	premium is heavily subsidized
+ Part C (Medicare Advantage)	optional HMO plan replaces A and B
+ Part D (Prescription Drugs)	premia heavily subsidized (start 2006).
- Part A reimburses hospitals for diagnosis related group (DRG)
  - a fixed sum paid for the problem e.g. tonsillectomy
  - incentive for hospital to monitor costs
- Part B Traditional Medicare reimburses by prices Medicare sets by relative value scales (otherwise Medicare Advantage).
- Parts C, D & Medigap are run by private insurance companies.

Medicare Advantage

- Traditional Medicare (Parts A and B)is fee-for-service
  - Part B coinsurance is 20% with no maximum out-of-pocket (unless one has a Medigap Policy such as Plan G) (or qualify for a low-income Medicare Beneficiary program)
  - https://www.healthline.com/health/medicare/medicare-out-of-pocket-maximum#medicare-out-of-pocket-costs
  - since 2020 there has been some preauthorization
  - www.cms.gov/research-statistics-data-systems/medicare-fee-service-compliance-programs/prior-authorization-and-pre-claim-review-initiatives
- Medicare Advantage (Part C) is managed care
  - run by private insurance companies
  - substitutes for Part A and B plus may cover Part D and extras such as dental
  - 43% in Medicare Advantage in 2022
  - has $8,300 maximum out-of-pocket in 2023 for in-network
  - for most people it is cheaper than traditional Medicare.

Medicare Advantage (continued)

- Medicare Advantage is mostly HMO and PPO.
- Insurance companies are paid per person covered directly by government
  - initial benchmark is a percentage of traditional Medicare spending in a county
  - there is then some risk adjustment and quality adjustment.
- In 2019 Medicare Advantage cost government 4% more than traditional Medicare (after controlling for risk adjustment)
  - so is not chealer than FFS even though FFS has overservicing.
- Good reference:
  https://www.commonwealthfund.org/publications/explainer/2022/may/medicare-advantage-policy-primer

Medicare (continued)

- In 2021 or 2022 (MedicareMedicaidSummaries2022.pdf):
  - $648 billion budget (Parts A: 324; B: 400; D: 104, Admin 10)
  - 65 million beneficiaries who are:
    55 million over 65
    10 million permanently disabled
    0.3 million with end-stage renal disease
  - 46% in Medicare Advantage MCO's (rest are FFS) .
- Changes in recent years
  - Balanced Budget Act (1997)
  - Unsuccessful attempt to increase Part B premia
  - Managed care brought in as option for Part C
  - Medicare Prescription Drug, Improvement and Modernization Act (MMA) (2003).
  - Prescription drugs included as benefit from 2006 (Part D)
- Concern about Medicare trust fund running out.

MEDICAID

- For those indigent (poor) + low income since ACA introduced
- Established in 1965 (Social Security Act Title XIX)
- Federal / state program financed out of general revenue
- Great variation from state to state (Medical in California) in state contribution (50%-80%), eligibility and benefits.
- Includes nursing home for low income elderly.
- Big change is ACA which relaxed income restrictions.
- Half the costs are for disabled and old even though most people in Medicaid are young.
- Future:
  - Big problem financially, especially for state governments
  - Medicaid patients receive inferior service due to low payments to providers.

Medicaid (continued)

- In Fiscal Year 2021 (MedicareMedicaidSummaries2022.pdf):
  - $725 billion budget (including state share)
  - 74 million people covered (vs 28 mill. in 1993)

- 32 million children	$4,200 ave.
- 34 million nondisabled adults	$6,700 ave.
- 11 million disabled	$23,000 ave.
- 6 million 65 years +	$15,700 ave.

- Spending is mainly on disabled and elderly (not welfare):
  - 19% children
  - 32% nondisabled adults
  - 36% disabled
  - 13% 65 years +

- $55 billion on nursing facility; $44 billion on home health.

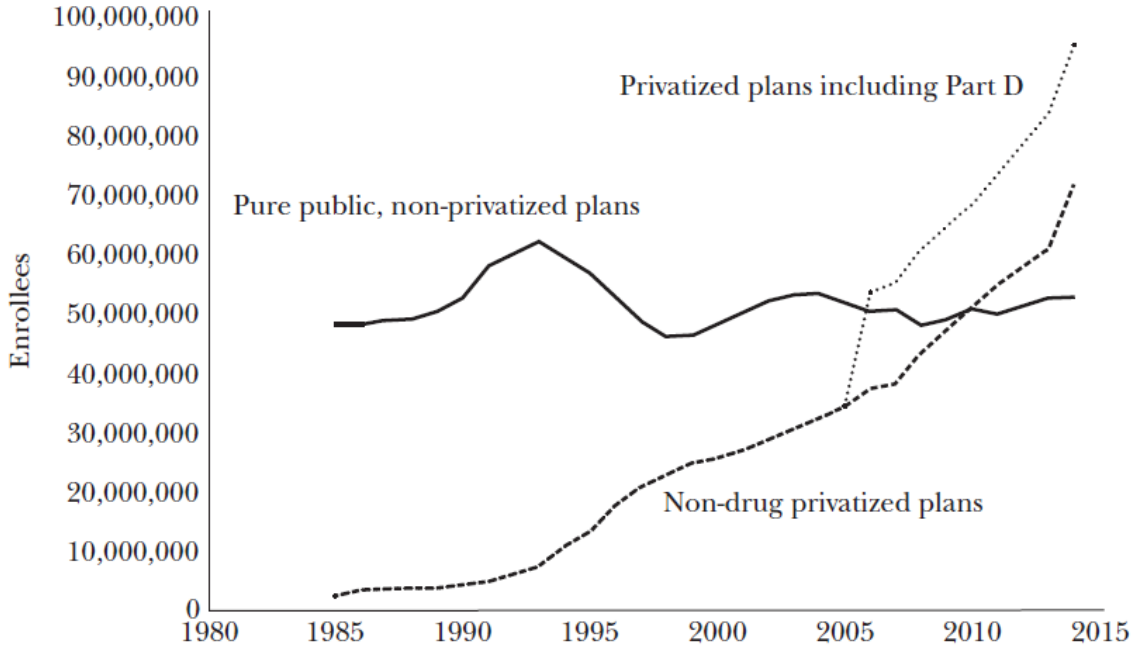
Medicare now 43% in private Managed Care Organizations (Medicare Advantage)

Medicaid now >75% in private Managed Care Organizations

Figure from Jonathan Gruber (2017), J. Econ Perspectives, 31(4), 3-32

Figure 1

Medicare and Medicaid Enrollment: Public versus Privatized



Note: This figure contrasts enrollment in pure public versus privately delivered insurance. The line that starts highest shows enrollment in "single payer only" government insurance since the mid-1980s, excluding enrollment in private plans for Medicare and Medicaid enrollees. The lower line shows enrollment in publicly financed private plans through Medicare and Medicaid, while the additional line starting in 2006 includes enrollment for prescription drug coverage only through private Medicare Part D plans.