Sex, lies, tobacco taxes, and other public health research

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Saving lives, hundreds at a time

- Many ways to influence medicine without practicing medicine.
- Health Services Research
- Health Economics
- Epidemiology

Gap between medicine and practice

- Medical errors: kill 100k/year.
- Quality of Care problems
  - Treatment not following evidence-based guidelines
  - Lack of screening
- Disparities: minorities have less access, worse care, worse outcomes compared with similar income.
  - More uninsured, less likely to have regular provider.
  - Diagnosed at later stage cancer.
  - Higher mortality at **every income level**.

Lethality of war wounds for US soldiers

	# wounded/killed	Lethality, %
Revolutionary 1775–1783	10,623	42
War of 1812, 1812–1815	6765	33
Mexican war, 1846–1848	5885	29
Civil war (Union), 1861-1865	422,295	33
Spanish American, 1898	2047	19
WWI, 1917-1918	257,404	21
WWII, 1941–1945	963,403	30
Vietnam, 1961–1973	200,727	24
Persian gulf war, 1990-1991	614	24
Iraq/Afghanistan, 2001–[2004]	10,369	10

Gawande, NEJM 2004, 351:2471-2475

Improvements in care

- Surgeons tend to hold onto patients rather than sending them through system.
- Multi-level medical system makes clinicians part of larger system:
  - Forward surgical teams of 20 that follow troops carrying hospitals that assemble in 60 minutes.
  - Combat Support Hospital: 4 in Iraq with 248 beds for stays < 3 days. (Assemble in 24-48 hrs.)
  - Level IV hospital: Germany, Kuwait, Spain for < 30 days
  - US: Walter Reed or Brooke for > 30 days
- Battlefield to US: $<$4 days; earlier: 8 days; Vietnam: 45 days.

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Cheap, easy medicine isn't used

Heart attack (AMI) quality measures

- Aspirin reduces mortality by 23% in short term.
  - Within 24 hours of presentation, at discharge: 60–90% without contraindications received
- Beta blockers reduce m/m by up to 25%
  - 20–78% without contraindications received (mostly in range 20–45%)
- Thrombolytics reduce mortality by up to 25%
  - 40–70% without contraindications received

Adverse selection

- Harvard has about 6 employee health plans: vary in restrictiveness of doctor choice.
- Sick employees preferred least restrictive, most generous plans.
- Plan premiums related to claim level. Employees pay fixed share of premiums.
- Adverse selection spiral: healthiest sick select out of most expensive; premium increases
- Solution: subsidize most generous programs to stop spiral.

Other issues

- Cost-effectiveness of prevention
  - Budget constraints are politically difficult to discuss.
  - It's often said that spending more can save money in the long run.
  - It's true at the micro level, but is it true at the macro level?
- Can Medicaid become more generous without causing currently-insured people to change to Medicaid?
- Impact of malpractice on health care costs.

Some epidemiological issues

- Disease outbreaks (SARS, online games)
- Potential causes of rare diseases: case-control studies
- Potential causes of common diseases: e.g., nurses study
- Potential causes of other morbidity/mortality: cell phones and driving, drug laws, food environment, ...
- Which risks are worth avoiding, and what are the trade-offs? E.g., pesticides vs. organic; fish.

Training

- Arts and Sciences PhD
  - Economics
  - Psychology
  - Sociology
- Business/management
- Public policy
- Public health schools
  - MD MPH
  - PhD

Books

- Health Services: Atul Gawande, *Complications*, *Better*
- Paul Starr, Social transformation of American Medicine
- Uninsured: Kathy Swartz, *Reinsuring Health*
- Health care costs: David Cutler, *Your Money or Your Life*
- George Gray, David Ropeik, *Risk: A Practical Guide for Deciding What's Really Safe and What's Really Dangerous in the World Around You*

Websites

- Kaiser Family Foundation: kff.org
- Robert Wood Johnson: rwjf.org
- Institute of Medicine: iom.edu