

The Academic Mission in a Complex Health System

Ralph W. Muller
Chief Executive Officer
University of Pennsylvania Health System

ITMAT International Symposium
October 26, 2010

11/17/10 15:39



AMC (Teaching Hospital and Medical School) mission and impact

Patient Care



Research



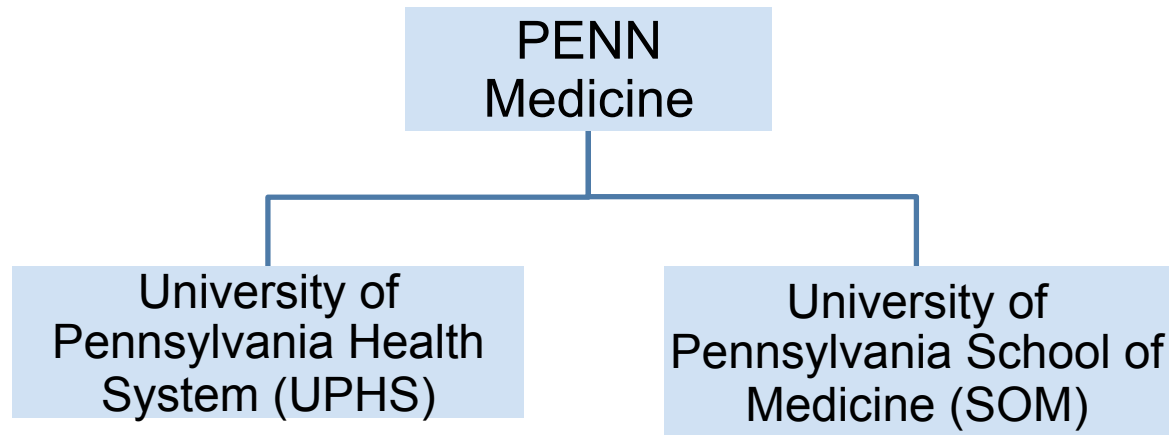
Education



Community Service



Introduction to PENN Medicine



- \$4 billion annual operating budget.
- 80,000+ inpatient admissions at 3 hospitals – including the nation’s first hospital (Pennsylvania Hospital) and first teaching hospital (Hospital of the University of Pennsylvania).
- School of Medicine founded in 1765 as the nation’s first; top recipient of NIH funding, \$400+ million in FY10, strong success with “stimulus” grants; highly competitive medical school and residency programs.
- 1800+ full time faculty, 750 medical students, 1200+ residents and fellows, 17,000+ employees.



AMCs in major metropolitan areas


- | | |
|------------------|---|
| New York | <ul style="list-style-type: none">• New York-Presbyterian, NYU, Mt. Sinai |
| Boston | <ul style="list-style-type: none">• Mass General, Brigham and Women's |
| Baltimore | <ul style="list-style-type: none">• Johns Hopkins |
| Chicago | <ul style="list-style-type: none">• University of Chicago, Northwestern |
| St. Louis | <ul style="list-style-type: none">• BJC HealthCare |
| Houston | <ul style="list-style-type: none">• MD Anderson, Methodist |
| Bay Area | <ul style="list-style-type: none">• UCSF, Stanford |
| LA | <ul style="list-style-type: none">• UCLA |
| Seattle | <ul style="list-style-type: none">• University of Washington |



Most “Honor Roll” hospitals are AMCs



US News & World Report 2010 “Honor Roll” Hospitals

1	Johns Hopkins Hospital	Baltimore, MD
2	Mayo Clinic	Rochester, MN
3	Massachusetts General Hospital	Boston, MA
4	Cleveland Clinic	Cleveland, OH
5	Ronald Reagan UCLA Medical Center	Los Angeles, CA
6	New York-Presbyterian University Hospital of Columbia and Cornell	New York, NY
7	UCSF Medical Center	San Francisco, CA
8	Barnes-Jewish Hospital/Washington University	St. Louis, OH
 9	Hospital of the University of Pennsylvania	Philadelphia, PA
10	Duke University Medical Center	Durham, NC
11	Brigham and Women's Hospital	Boston, MA
12	University of Washington Medical Center	Seattle, WA
13	UPMC-University of Pittsburgh Medical Center	Pittsburgh, PA
14	University of Michigan Hospitals and Health Centers	Ann Arbor, MI



AMCs often among largest local employers



Mass General/Brigham and Women's

- More than 23,000 employees, ranked #1 employer in Boston.



U Texas/MD Anderson Cancer Center

- More than 17,000 employees, top 5 employer in Houston.



University of Pennsylvania Health System

- 19,000¹ employees, ranked #1 employer in Philadelphia.



New York-Presbyterian Health System (Columbia, Weill-Cornell)

- 17,000 employees, ranked #1 employer in New York City.



Barnes-Jewish Hospital

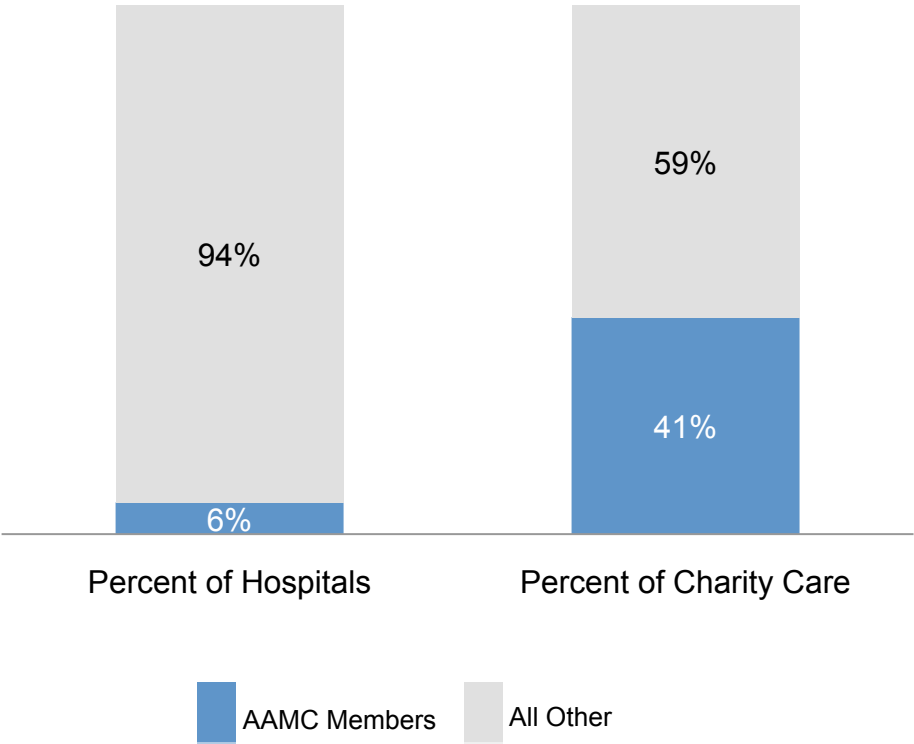
- 26,000 employees, ranked #1 employer in St. Louis.



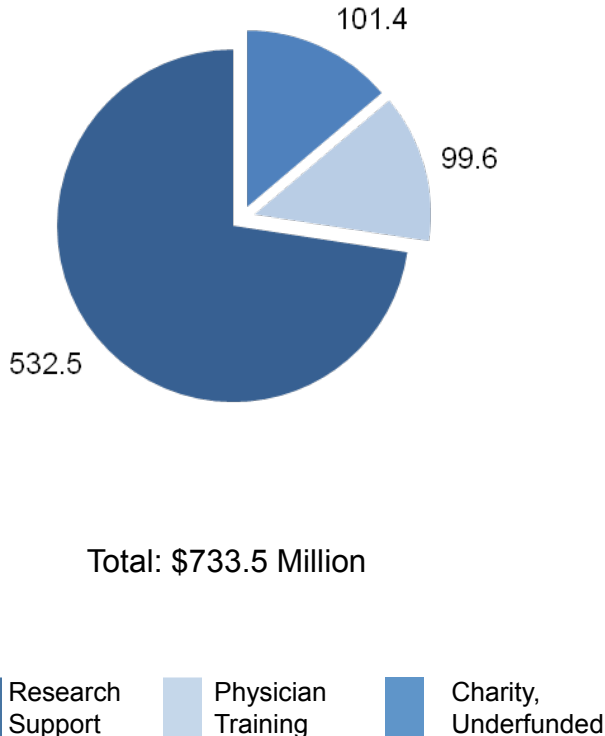
1. Includes employees and faculty, but not residents or medical students.
Sources: Annual reports, news articles

AMCs provide significant community benefits

Charity Care Provided by AAMC Members¹



UPHS Community Support² (FY09, Millions)



1 - AAMC Analysis of 2007 AHA Survey Data
 2- UPHS, "Simply Because, A Community Benefit Report", 2009

Benefits and challenges of being an AMC

Hospitals are “the most complex human organization ever devised.”¹

...and that is BEFORE adding in the teaching and research elements of an AMC.

Benefits

- **Reputation**
- **Dominance in specialized services**
- **Consumer preference**
- **Payment for mission**

Challenges

- **Higher cost structure**
- **High uncompensated care**
- **Faculty role across missions**
- **Heavy reliance on government funding increases regulatory risk**



AMC business model

- Deep experience in complex and life-threatening conditions.
- Motivate patients to bypass their local hospital, seek advanced care.
- High acuity patients provide “margin” that offsets the costs of meeting mission goals.



UPHS strategy: “Complex Care”

Complex diagnostics, therapeutics and procedures:

- Leverage core competencies.
- Hard to duplicate.
- Societal preference.



WE ARE DRIVEN.

WE ARE RELENTLESS.
We are surgeons and nurses, researchers and care givers. We are three hospitals and countless regional medical centers. We are 17,000 strong, each and every one of us relentlessly committed to advancing medicine. *We are the first place you should turn to for answers.*

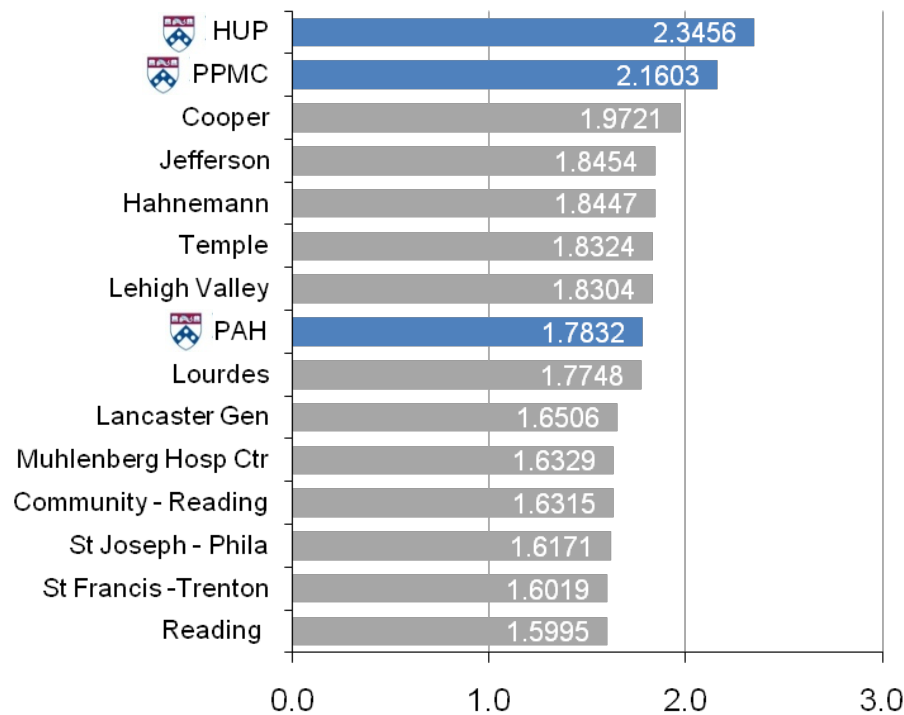
WE ARE MEDICINE.

UNIVERSITY OF PENNSYLVANIA HEALTH SYSTEM
Hospital of the University of Pennsylvania
Penn Presbyterian Medical Center
Pennsylvania Hospital
800.789.PENN | pennhealth.com

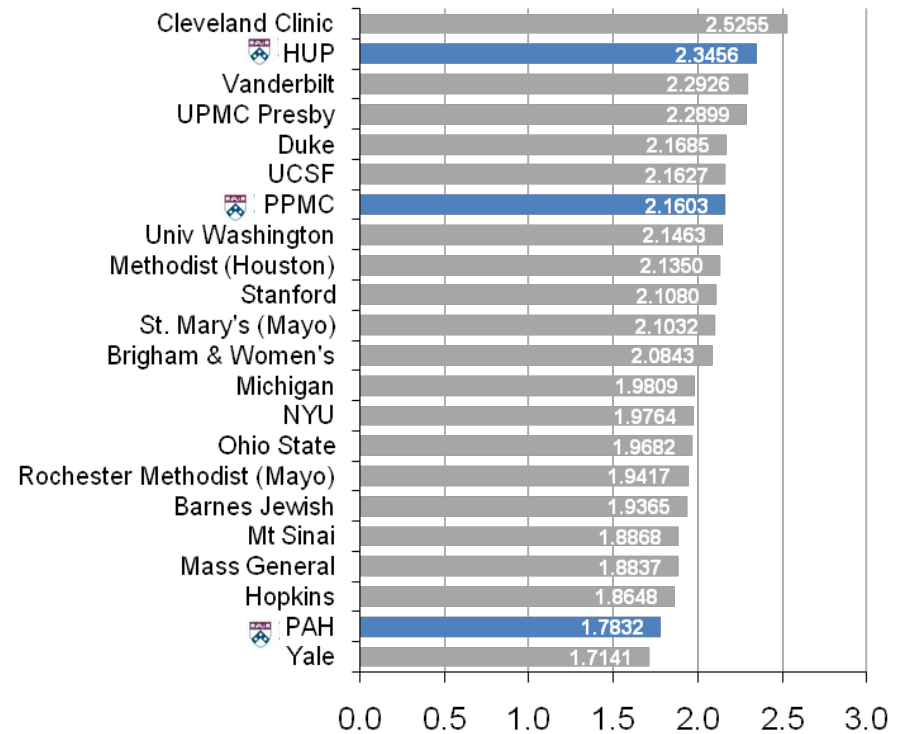


UPHS has high case-mix index (CMI) scores

Top 15 Hospitals in the Philadelphia Region for Highest Medicare CMI (excludes specialty hospitals)

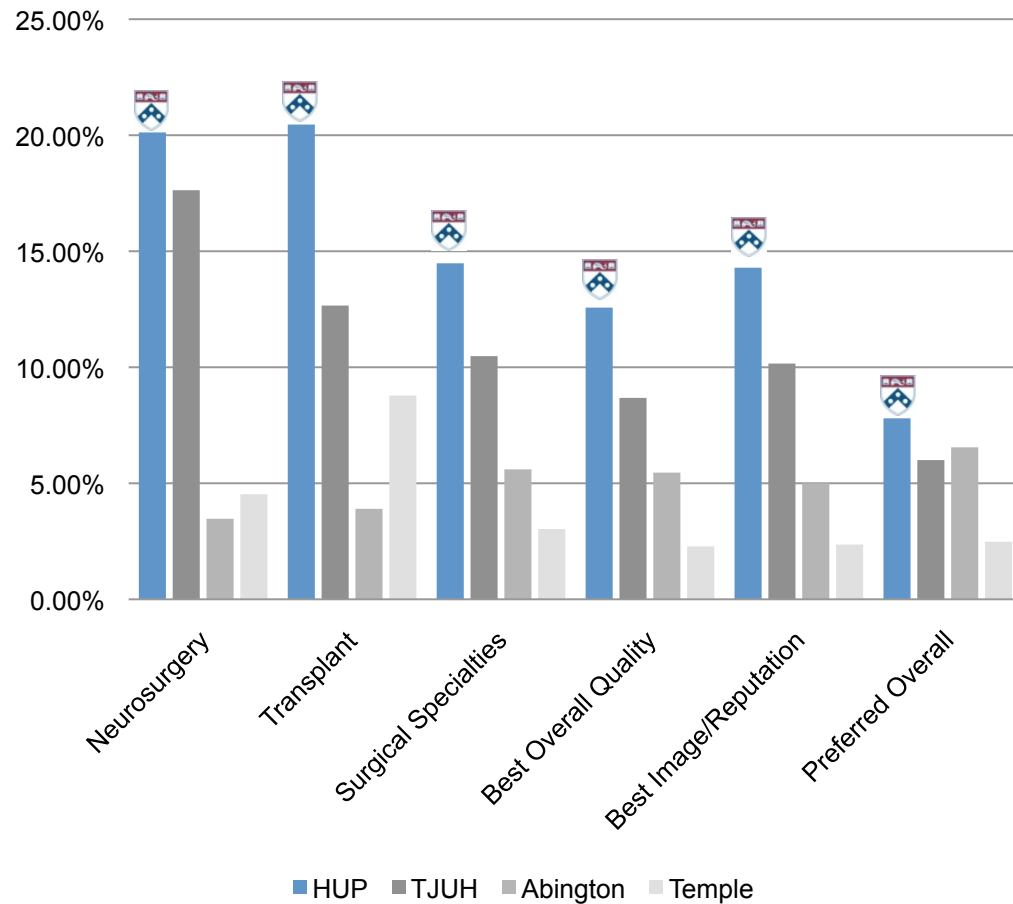


UPHS Hospitals Compared to US News Honor Roll Hospitals

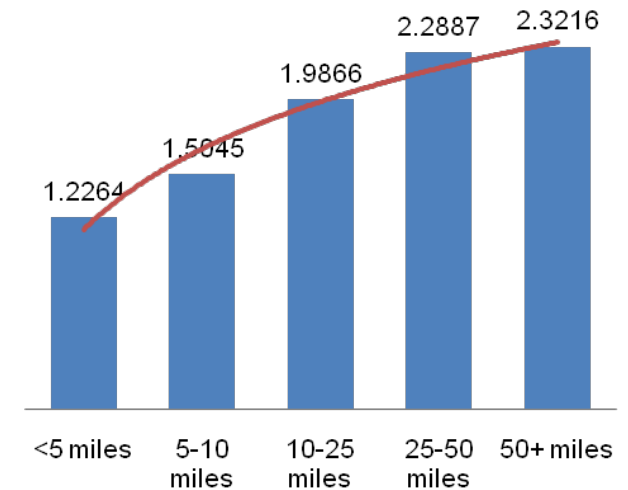


Patients are willing to travel for complex care

Preferred Hospital Overall, and for Advanced Care



Average CMI for UPHS Discharges, by Distance From Hospitals



Places like Penn are the “leading” hospitals

Why?



Features of AMCs: Science ↔ Patient care ↔ Education

- Advanced care
- Translational medicine
- Interplay of science, education, and care improves each mission separately, and collectively.

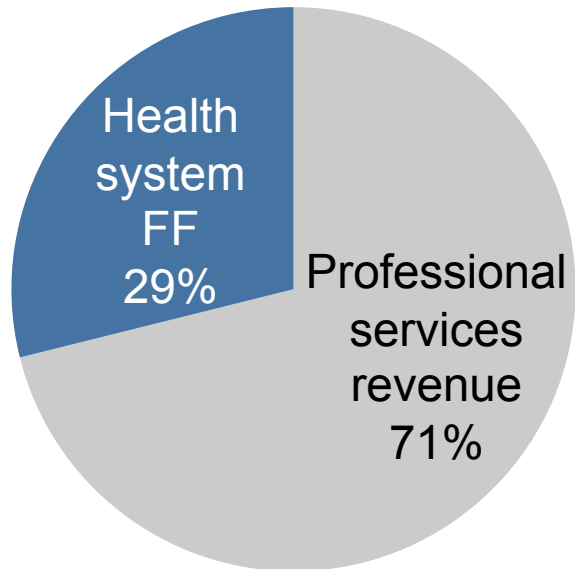
Leveraging investments to improve the academic mission

- In 2006, Penn Medicine developed a “funds flow” system.
- Formal mechanism for reinvesting clinical “earnings” in patient care, research, and education.

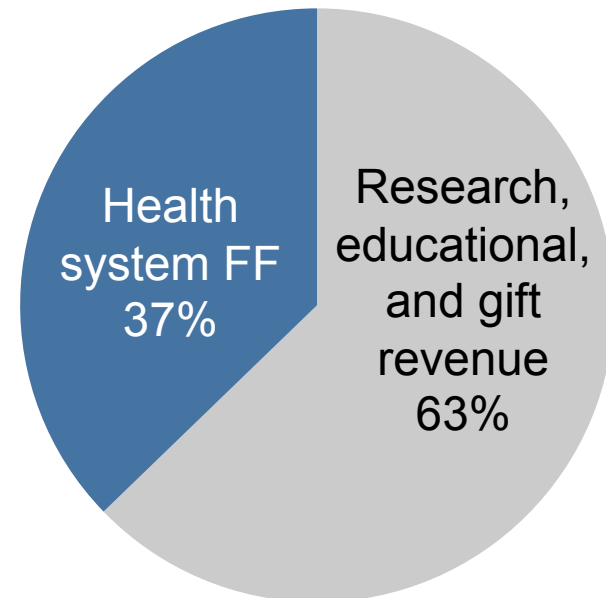


Funds flow support to all missions

Clinical Departments:
Practice Plan (CPUP)
Operating Budget



School of Medicine
Operating Budget



How does Penn support its multiple missions?

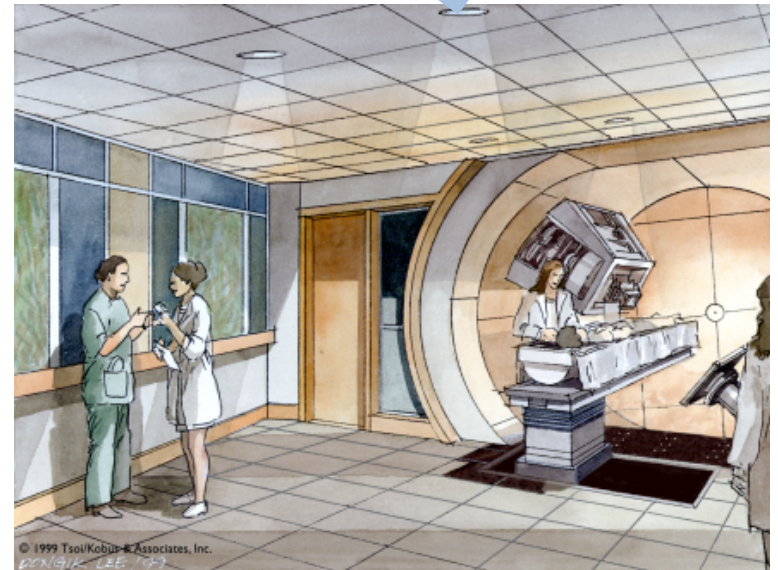
- Facilities
- Programs
- Development of the next generation

Facilities: Integration of Patient Care and Translational Medicine

- Perelman Center for Advanced Medicine

- Roberts Proton Therapy Center

- Translational Research Center



“Venture funding” for new Institutes and Centers that cross “boundaries”

- Translational Medicine and Therapeutics
- 2005
- Cardiovascular
 - Diabetes, Obesity, Metabolism
- 2007
- Neuroscience



Develop next generation of physicians and scientists

- Recruit leaders as Chairs and Directors.
- Support training program directors.
- Invest in “protected time.”
- Formal leadership programs (e.g. “Academy”)



“Return on investments

- ITMAT → CTSA
- Cancer core grant and gift → Proton therapy
- Cardiovascular Institute → Leader in clinical trials



Medical technology and medical advances

- AMCs like Penn rely on advanced medicine and “technology” as a competitive advantage.
- Medically advanced technology is a key driver of increasing health care costs (and benefits) and, as such, is a frequent target of policy discussions.
- AMCs can aggregate talented faculty and staff, not just advanced technology.
- Use “evidence-based medicine” to improve care.



Cost inflation driven primarily by technology, income

Relative Contribution to Health Care Inflation Academic studies from 1995-2009

	Smith, Newhouse and Freeland (2009)	Smith, Heffler and Freeland (2000)	Cutler (1995)	Newhouse (1992)
Aging of Population	7	2	2	2
Changes in Third-Party Payment	11	10	13	10
Personal Income Growth	28-43	11-18	5	<23
Prices in the Health Care Sector	5-19	11-22	19	Not Estimated
Administrative Costs	Not Estimated	3-10	13-Jan	Not Estimated
Defensive Medicine and Supplier-Induced Demand	Not Estimated	0	Not Estimated	0
Technology-Related Changes in Medical Practice	27-48	38-62	49	>65



How does translational medicine drive, and renew, the capabilities of AMCs?

- New medical and surgical procedures (e.g., valve replacement, cardiac assist devices).
- Drugs (e.g., biological agents, personalized medicine).
- Medical devices (e.g., PET/MRI, proton therapy, simulators).
- New support systems (electronic medical records, imaging at molecular level).



How does technology affect costs?

- New treatments for previously untreatable terminal conditions save lives.
- Clinical ability to treat acute conditions.
- New procedures for discovering and treating secondary diseases within a disease.
- Indication expansion over time.
- Incremental improvements, which may improve quality but almost always adds cost.

Heart disease and the impact of technology

Heart disease is the leading cause of death in the US and a good example of how technology has changed the treatment and prevention of disease over time.

1970s

- Cardiac care units introduced.
- Lidocaine used for irregular heartbeat.
- Beta blockers used in first 3 hours after heart attack.
- Clot buster drugs entered wide use.
- Coronary artery bypass grafting (CABG) became prevalent.

1980s

- Blood thinning agents used to prevent recurrence.
- Beta blocker therapy evolved for maintenance therapy.
- Angioplasty became prevalent.

1990s

- More effective drugs to inhibit clot formation.
- Angioplasty with first stents.
- Cardiac rehab used sooner.
- Implantable defibrillators.

2000s

- Better tests to diagnose heart attack.
- Drug-eluting stents.
- New drug strategies for long term patient management.



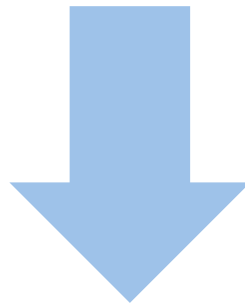
From 1980 – 2000, the overall mortality rate from heart attack fell by almost half, from 345.2 to 186.0 per 100,000 persons.



Do Investments Yield Value?

Between 1980 & 2000, per capita U.S. health care expenses rose \$2,254 (inflation adjusted to 2000 US \$), but:

- Overall death rate is down by 16%.
- Life expectancy from birth is up by 3.2 years.
- Disability rates are down 25% for people over 65*.
- 56% fewer days are spent in the hospital.



One study has valued health gains in common diseases (Heart attack, type 2 diabetes, stroke, and breast cancer) at \$2.40 - \$3.00 per dollar invested.¹



Convergence of information technology (IT) and evidence-based medicine

- Geographic variation (e.g. Dartmouth Atlas).
- CPOE (1998-2010) creates “real time” information.
- Electronic Health Records (EHR).
- Databases, “benchmarking,” quantitative methodology used to evaluate and modify care (e.g. CMS, TJC, NQF, NCQA).
- Focus on systemic improvement.
- Financial incentives misaligned.



Health Reform Shifts Accountability for “Managing Care”

- Notably different from previous health reform efforts, the current reform attempts to shift the accountability for “managing appropriate care” from managed care companies to hospitals and physicians.

