

Harnessing Technology in Health Care



David M. Cutler
Department of Economics
Harvard University



They Give Academy Awards for Million Dollar Babies?



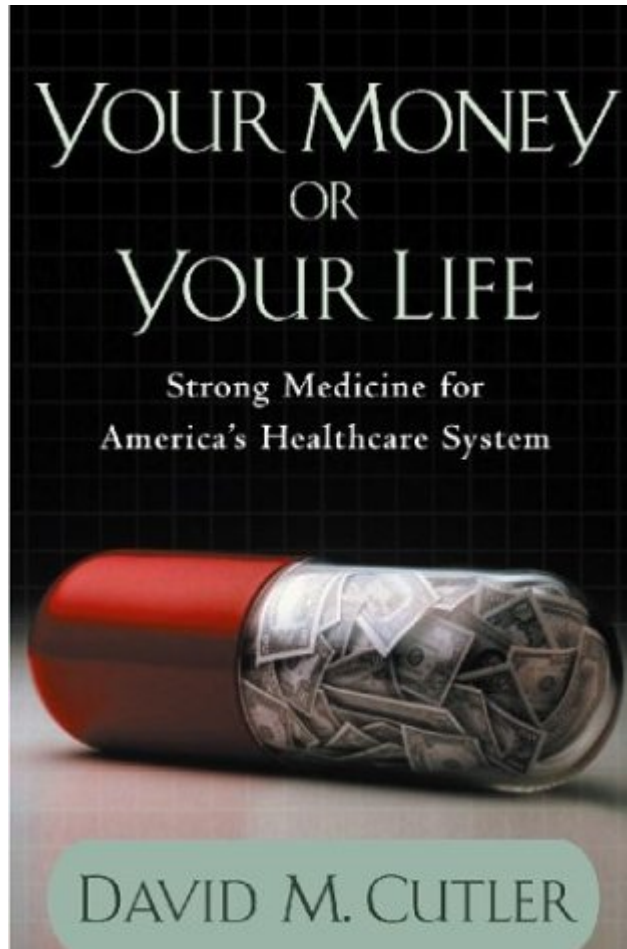
Just Wait Until NICUs get even more advanced...



Common Views About Medicine

- High-tech innovation adds to medical spending, and that is bad.
- Technology is the cure for most economic problems.
- The Medicare Drug Benefit sure was a great piece of legislation.

The Full-Length Version



- This talk is based on my research over the past decade, which I have written a book about.

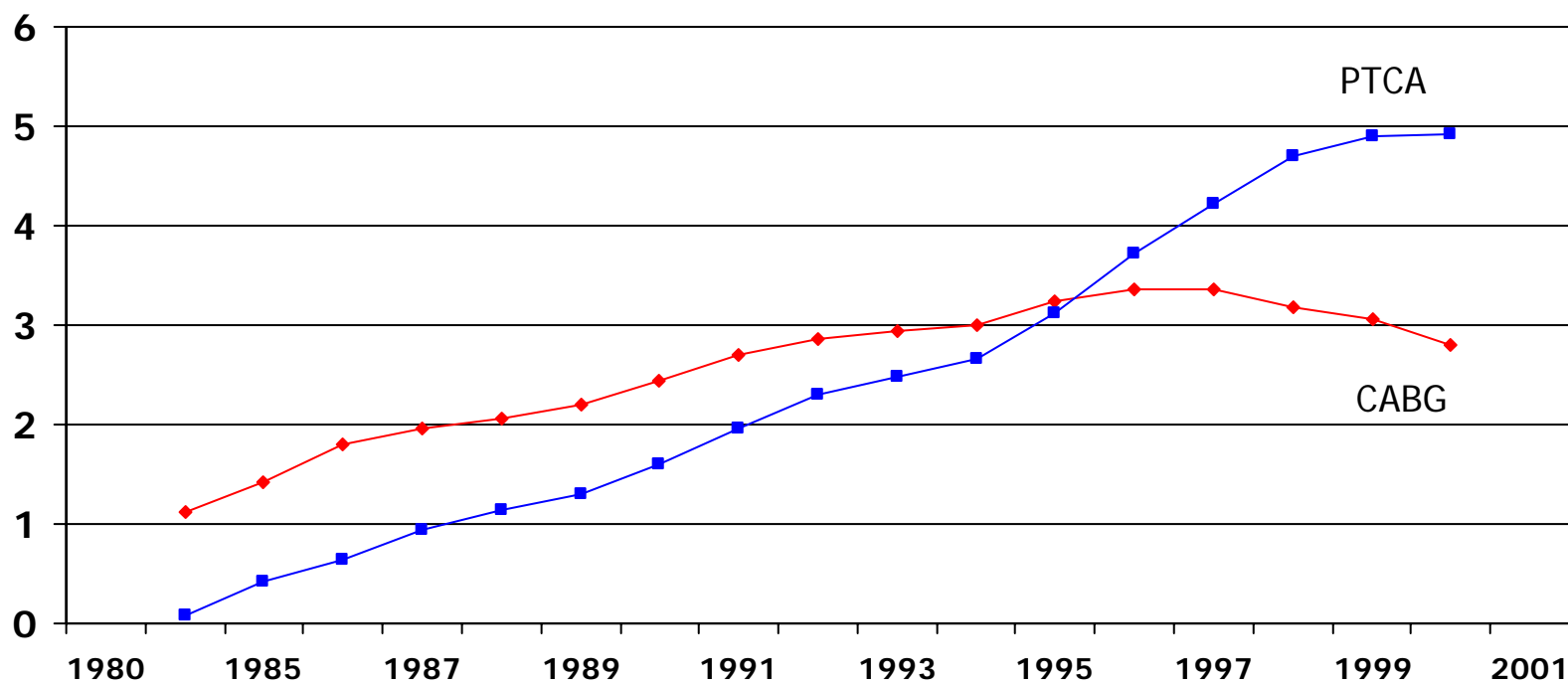


Two Types of Medical Innovation

- High-tech care for cardiovascular disease
 - CABG; angioplasty with stent
- Diabetes disease management
 - Medical and non-medical management of chronic disease

Use of Angioplasty and CABG in New York State

Procedures per 100,000 aged 45+

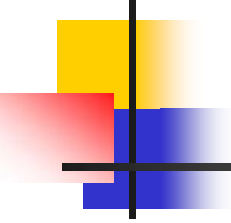


Source: Cutler and Huckman, *JHE*, 2002.



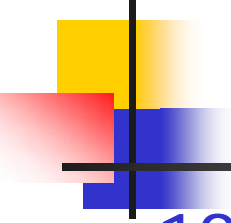
Issues in High-Tech Care

- It's very expensive
 - Cost of CABG is about \$30,000, and cost of PTCA is about \$20,000.
 - Medical management costs about \$10,000.
- Is it effective?
 - People live a lot longer than they used to.
 - But a lot of use is in patients where clinical trials have not been performed.



Why do we spend more on medical care?

- Because we can do more.
 - Price increases are a small part of the story
 - Quantity and quality increases are the bulk of the action
- Example
 - Cardiovascular disease



Changes in Medical Care for Severe Heart Disease (MI)

■ 1950 Standard

- Bed rest (6 mos +)

- Cost = \$0

■ Today's Standard

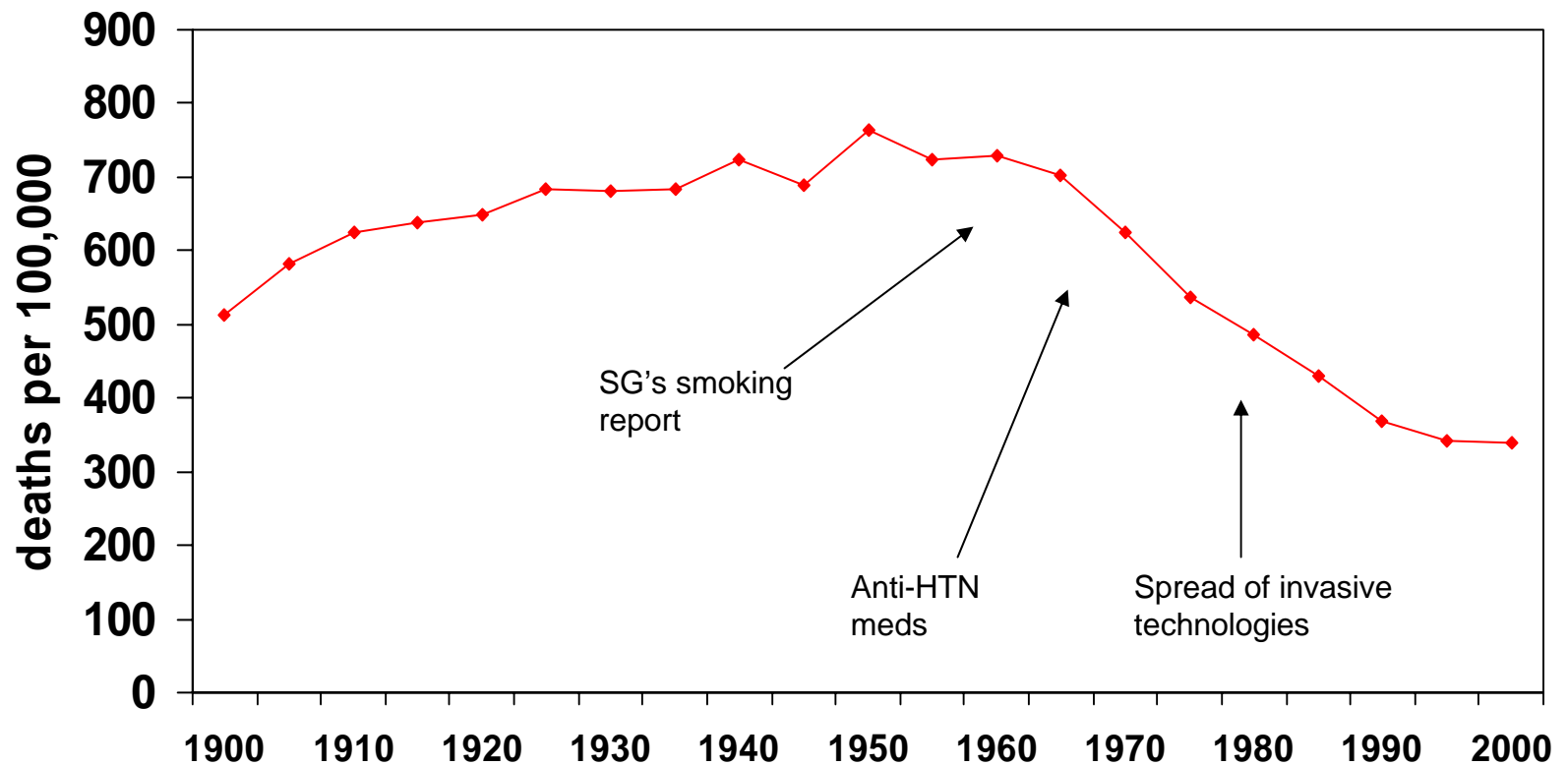
- Pharmaceuticals to restore blood flow;
- Intensive diagnostic therapies
- Invasive revascularization
- Cost = \$30,000 in present value at age 45



Is It Worth It?

- Mortality
- Quality of life

The Single Biggest Factor in Reduced Mortality -- Cardiovascular Disease



Life expectancy at age 45 has increased by 4½ years.



Matching Benefits and Costs -- Cardiovascular Disease

■ Benefits

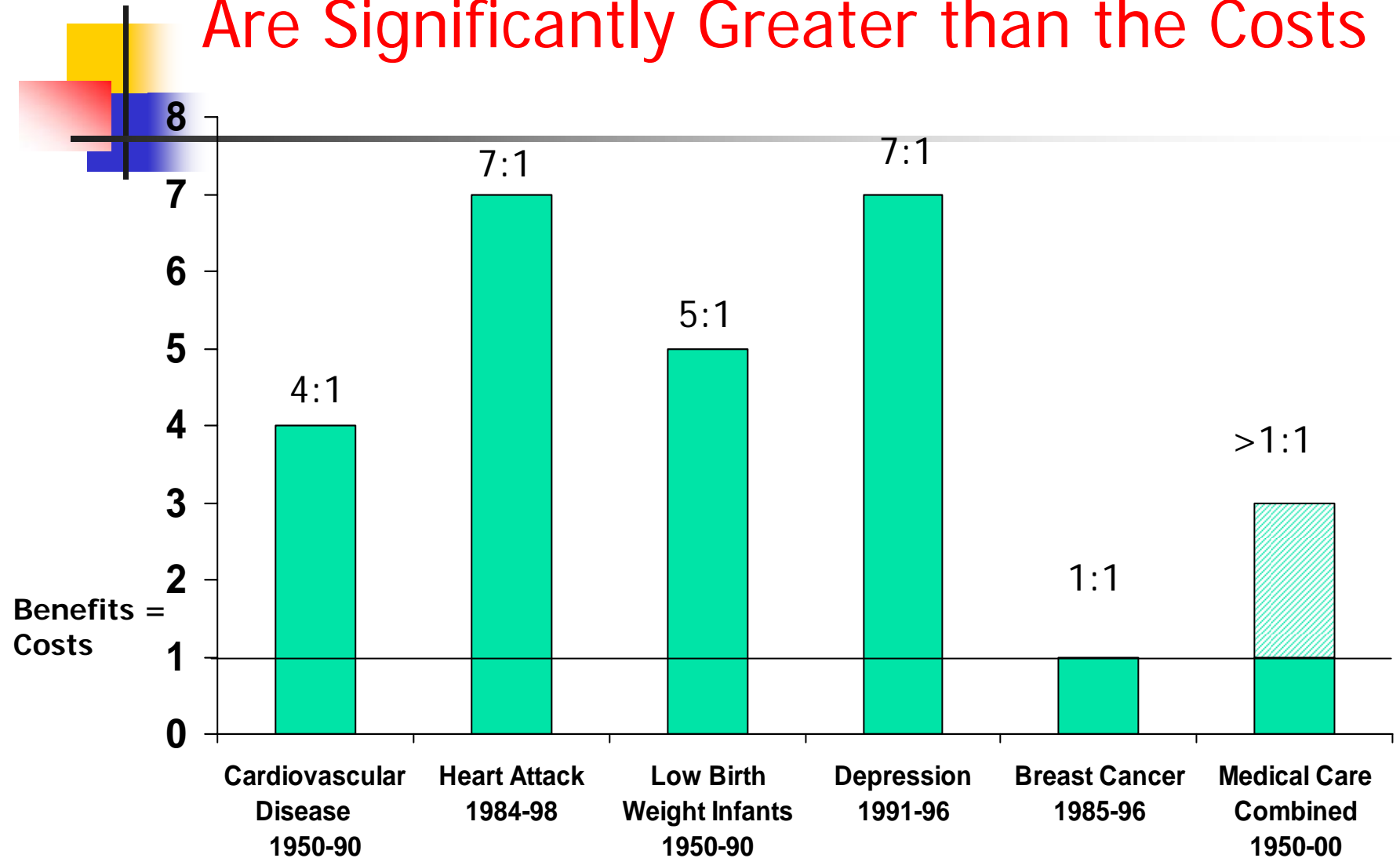
- About **3 years** of longer life (4½ in total for CVD) is a result of medical advance.

■ Costs

- Spending on CVD is about **\$30,000** in present value from age 45 on.

Is it worth it (\$10,000 for a year of life)? Almost certainly, yes.

The Mortality Benefits of Medical Advance Are Significantly Greater than the Costs





Conclusions About High-Tech Care

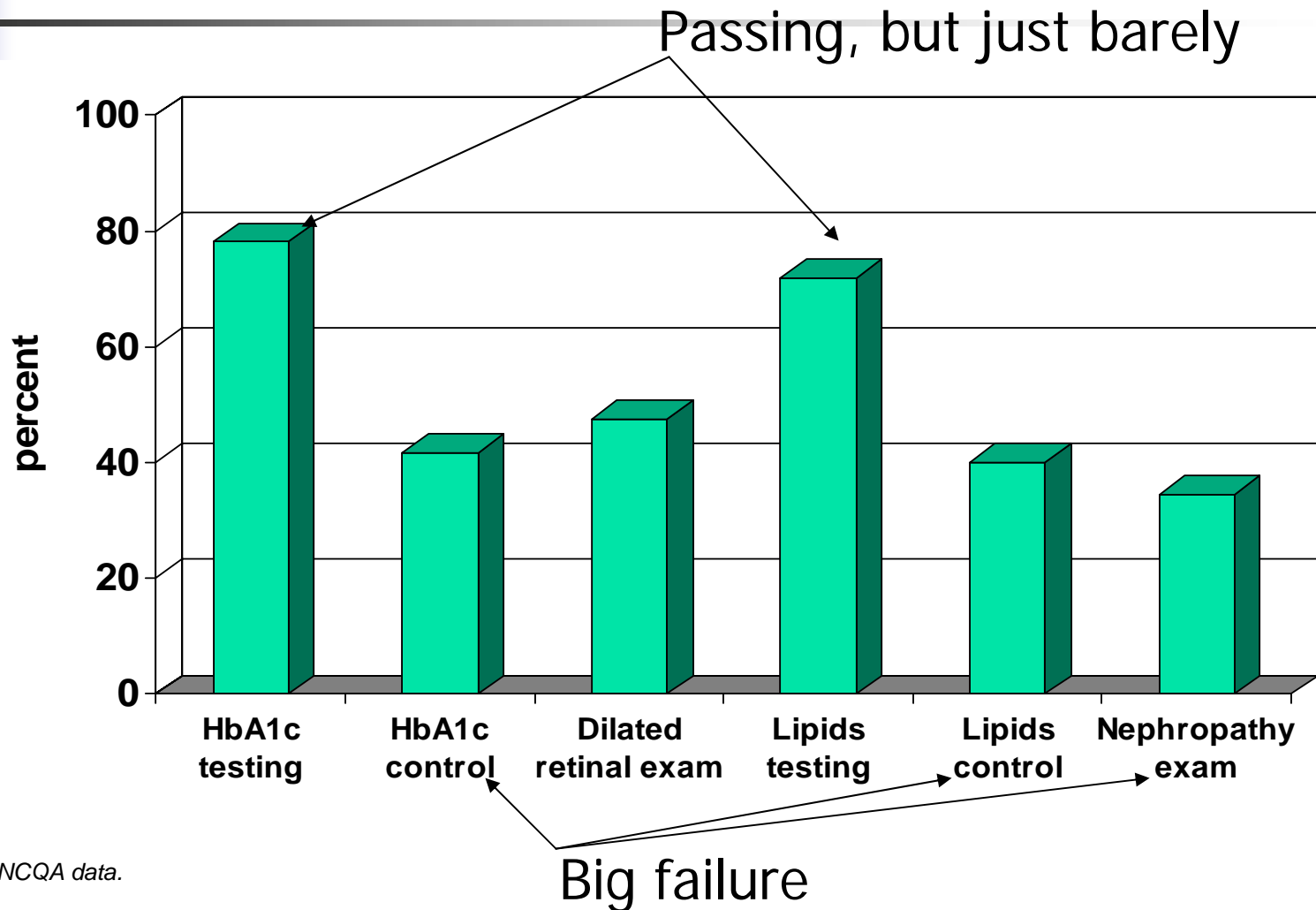
- We spend more, but it's worth it.
- That's not to say there is no waste.



Chronic Care

- Process and outcomes for diabetics
 - Test for and control blood hemoglobin
 - Regular eye, kidney, extremity exams
 - Test for and control cholesterol

Care Management for Diabetics



Source: NCQA data.



We Know We Can Do Better

- Study of HealthPartners, an HMO in Minneapolis, MN
 - Largely group model
 - Implemented diabetes improvement program in the mid-1990s (starting in 1994)

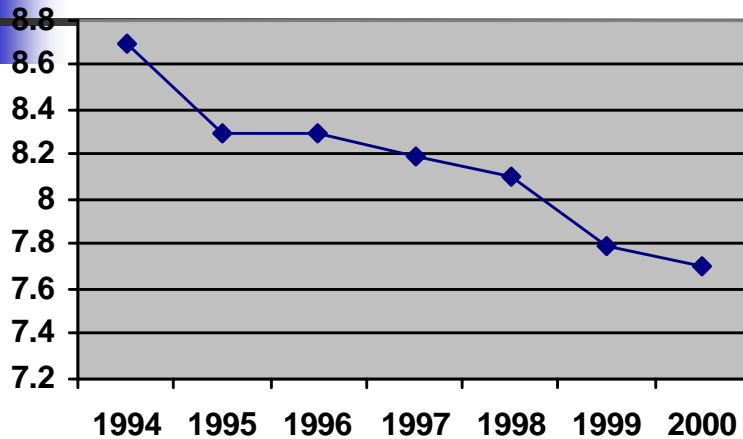


HP Program

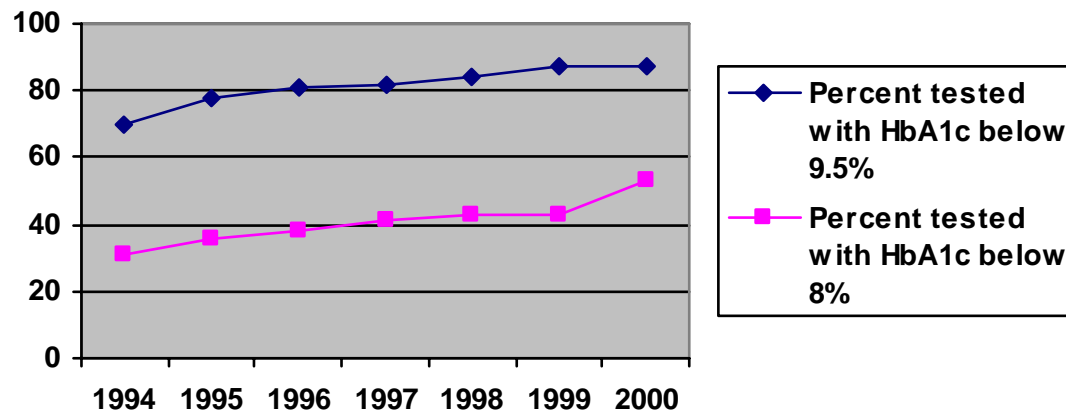
Primary Components of Diabetes DM Programs:

- * Dissemination of guidelines
- * Provider education
- * Member education
- * Screening programs
- * Performance feedback to physicians
- * Patient reminders
- * Case management
- * At-risk lists

The Impact of Organizational Innovation



Mean HbA1c levels and percent of tests for diabetic patients, HealthPartners





The public debate

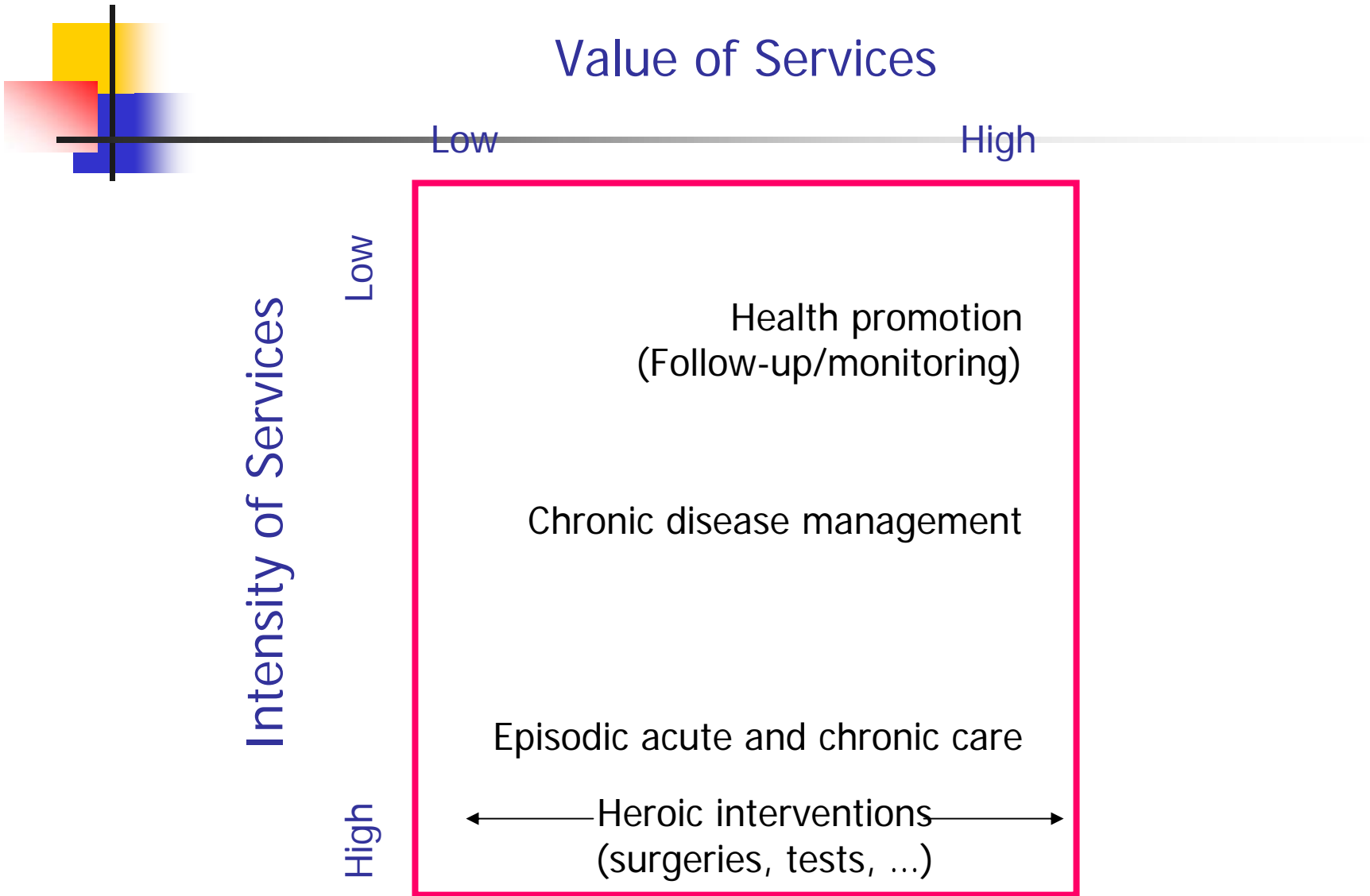
- Does disease management save money?

“According to CBO's analysis, there is insufficient evidence to conclude that disease management programs can generally reduce overall health spending.”

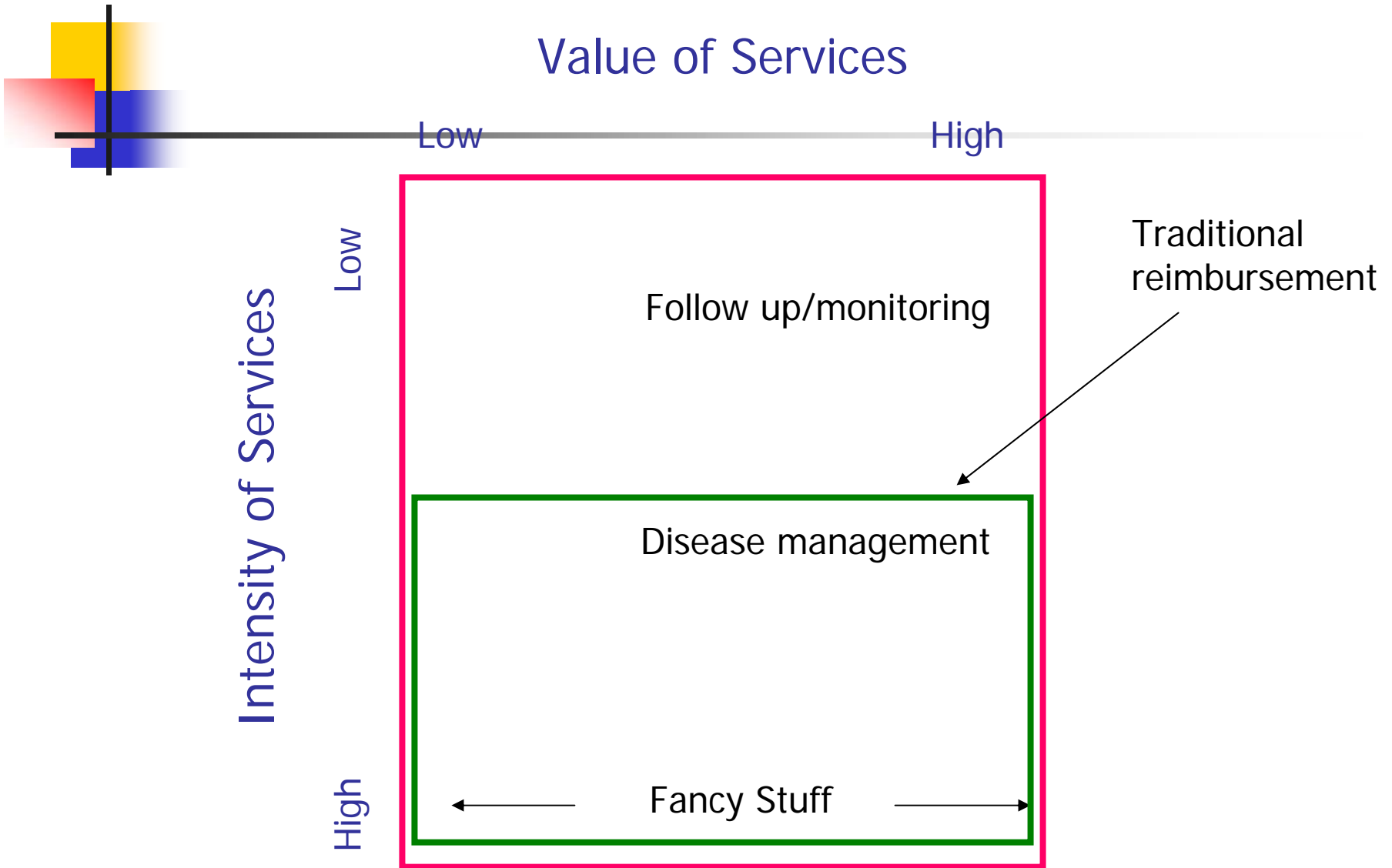
- October 13, 2004.

- Why the differing standards?

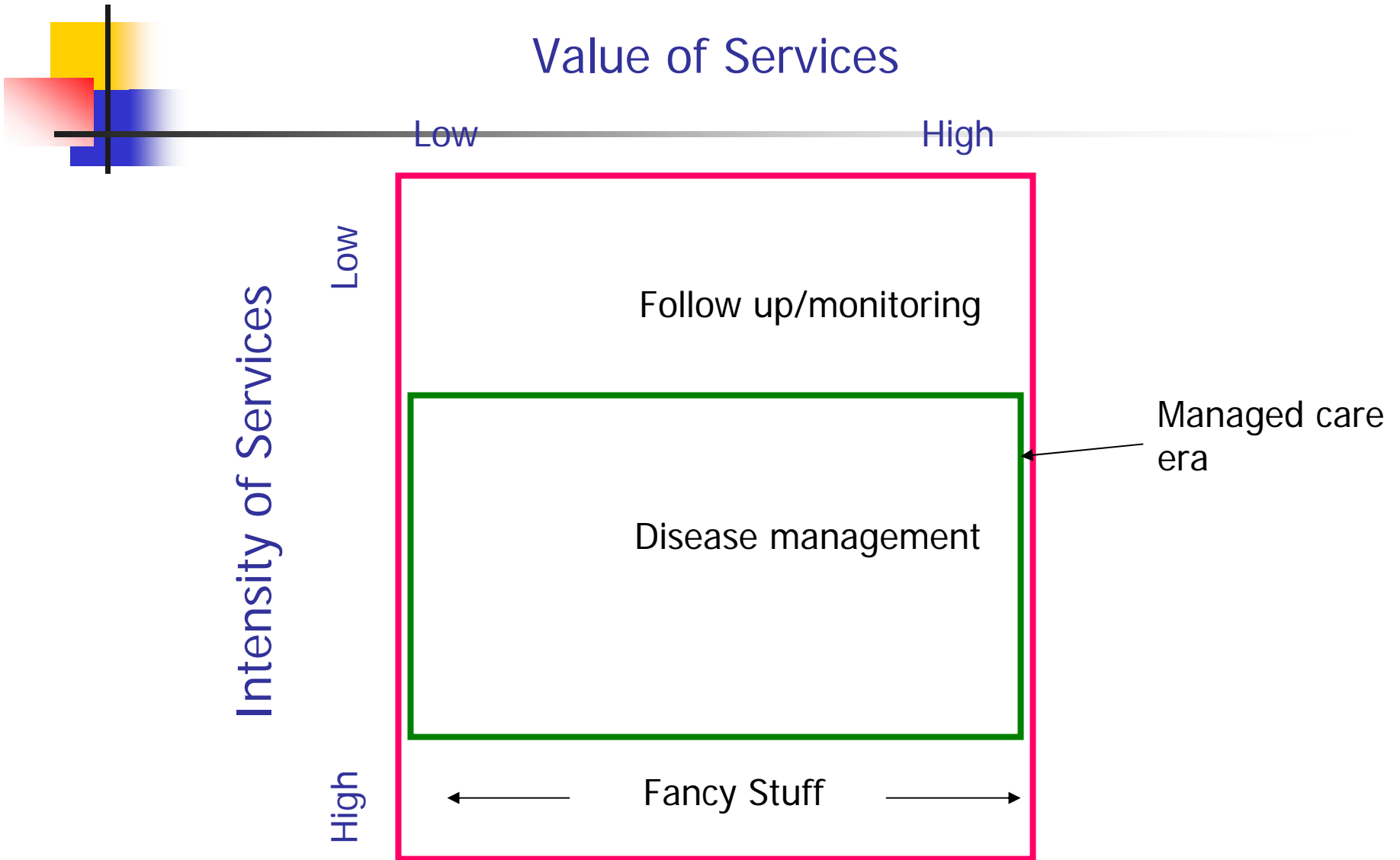
Waste and Value



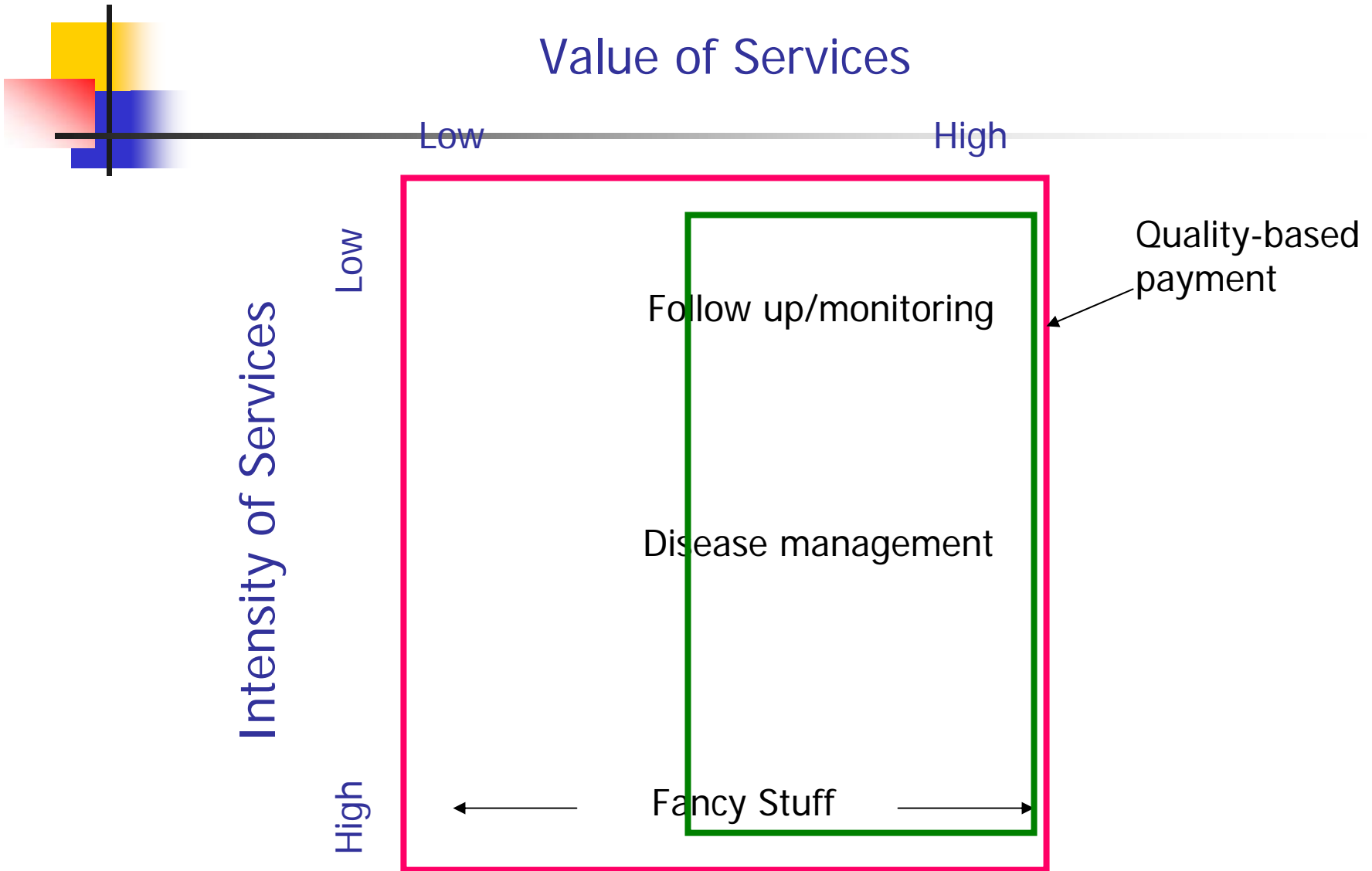
Waste and Value



Waste and Value



Waste and Value





What's Needed

1. An evidence base that supports good care.
 - Profiling of: individual MDs; groups of physicians; hospitals; insurance companies



What's Needed

1. An evidence base that supports good care.
2. A system that admits and learns from mistakes
 - Malpractice reform
 - CQI



What's Needed

1. An evidence base that supports good care.
2. A system that admits and learns from mistakes
3. A payment system that rewards quality.
 - Provider reimbursement
 - Assign points for meeting quality standards and take away points for missing them, with funds awarded based on annual points.
 - Measures of quality: Process, Outcomes, Satisfaction
 - Lower patient cost sharing for effective care.



What's Needed

1. An evidence base that supports good care.
2. A system that admits and learns from mistakes
3. A payment system that rewards quality.
4. A system that covers everyone.



If we fail...

“Speaking for myself, I too believe that humanity will win in the long run. I am only afraid that at the same time the world will have turned into one huge hospital.”

- Goethe, May 1787 letter



If We Do It Right...

