Is the health care cost curve permanently bent?

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Global Health
“If something cannot go on forever, it will stop.

- Herbert Stein

Former chairman of the Council of Economic Advisers, Presidents Nixon and Ford
Healthcare Cost Trends and the Role of Technology

1. Is the trend real or just an artifact of the recession?
2. Will the curve remain bent for the long term?
3. What role does technology play in the short and long run?
4. What are the implications for long-term curve bending for technology? For public policy?
Rate of Healthcare Spending Growth at an All-Time Low

Source: Martin A B et al. Health Affairs January 2014
Spending for the Insured Declined More than Average

Health Spending Growth – Per Capita and Per Enrollee

At this pace, public sector spending will be $770 B less than projected by 2022

Source: Ryu, AJ. et al. Health Affairs May 2013; Cutler, DM. Sanhi, NR. Health Affairs, May 2013
Recession Explains Only One-Third of Slow Down

A recent study attributes the cause of slowed spending; the recession accounts for just 37%

Changing payer mix and Medicare payment reform combine to account for 8%

Select ‘Other’ factors include:

- New technology
- Patient cost sharing
- Provider efficiency

Source: Cutler DM, Sahni RS, Health Affairs, May 2013
Healthcare Spending Increases were Primarily Price Related

Factors Accounting For Growth In Per Capita National Health Expenditures, 2004-2013.

Source: Hartman M et al. Health Affairs 2015
High U.S. Spending Is Not Due Primarily to Over Use of Services

U.S. hospital costs are 70% higher but utilization is 30% lower than other developed countries

<table>
<thead>
<tr>
<th></th>
<th>Percent of GDP</th>
<th>Real Annual Avg Growth Rates (%) 1970-2005</th>
<th>Inpatient Spending per Capita (U.S. $ PPP)</th>
<th>Inpatient Acute Care Days per Capita</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S.</td>
<td>15.3</td>
<td>4.4</td>
<td>$1526</td>
<td>0.7</td>
</tr>
<tr>
<td>OECD Median</td>
<td>9.1</td>
<td>4.1 (2.3-6.8)</td>
<td>$904</td>
<td>1.0 (0.4-2.1)</td>
</tr>
</tbody>
</table>

Source: Anderson, GF. Frogner, BK. Health Affairs, November 2008
# Utilization Rates in US are not Necessarily Higher

<table>
<thead>
<tr>
<th>Services Utilization</th>
<th>US</th>
<th>France</th>
<th>Non US OECD</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Higher</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cardiac Catheterization / 100,000 persons</td>
<td>357.8</td>
<td>NA</td>
<td>171.75</td>
</tr>
<tr>
<td>Hip Replacement / 100,000 persons &gt;65 years</td>
<td>14.4</td>
<td>13.7</td>
<td>11.7</td>
</tr>
<tr>
<td>MRI Scan / 1000 persons</td>
<td>91.2</td>
<td>55.2</td>
<td>25</td>
</tr>
<tr>
<td><strong>Lower</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hospital Discharge / 100,000 persons</td>
<td>13,086</td>
<td>26,251</td>
<td>16,234</td>
</tr>
<tr>
<td>Physicians Visit / capita</td>
<td>3.9</td>
<td>6.9</td>
<td>6.5</td>
</tr>
<tr>
<td>Pacemaker Insertions / 100,000</td>
<td>56.3</td>
<td>NA</td>
<td>61.4</td>
</tr>
<tr>
<td>Transurethral Prostatectomy / 100,000 men</td>
<td>43.4</td>
<td>186.7</td>
<td>114.15</td>
</tr>
</tbody>
</table>

Source: Topher, S. Annals of Internal Medicine October 2012
Price of US Services are Considerably Higher

<table>
<thead>
<tr>
<th>Price of Services (in US Dollars)</th>
<th>US</th>
<th>France</th>
<th>Switzerland</th>
</tr>
</thead>
<tbody>
<tr>
<td>Routine Office Visit</td>
<td>89</td>
<td>23</td>
<td>64</td>
</tr>
<tr>
<td>Cost per hospital stay</td>
<td>15,734</td>
<td>3,396</td>
<td>4,566</td>
</tr>
<tr>
<td>Hip replacement surgery (hospital and physician)</td>
<td>38,017</td>
<td>11,353</td>
<td>17,521</td>
</tr>
<tr>
<td>Coronary Artery Bypass graft (hospital and physician)</td>
<td>67,583</td>
<td>16,140</td>
<td>25,486</td>
</tr>
</tbody>
</table>

Average US generalist, income = 5x average US worker.
Average US specialist, income = 10x average US worker.
Average OECD generalist, income = 2x average OECD worker.
Average OECD specialist, income = 2.7x average OECD worker.

Source: Topher, S. Annals of Internal Medicine October 2012
Non-Clinical Sources of “Waste” Exceed Clinical Sources

US National Health Care Expenditures, By Year as % of GDP

“Business as usual” national health care expenditures
- Failures of care delivery
- Failures of care coordination
- Overtreatment
- Administrative complexity
- Pricing failures
- Fraud and abuse

Growth in national health care expenditures matches GDP growth


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Healthcare Cost Trends Decelerating Globally

US rate of healthcare expense change tracks with OECD average and has been declining for a decade

Source: OECD.org
Without Innovation, the Unit Cost of Care will Grow Faster than US GDP Due to Its Reliance on Expert Labor

Conceptual Rate of Cost Increases: Low vs. High Innovation

Source: Baumol WJ, The Cost Disease, Yale Univ. Press 2012
Top-Performing Hospitals Collect More and Spend Less Per Discharge

Operating Income

• Top 20% >12%
• Bottom 20% <(-4.0)%

Financial Advantage

• Revenue $854 higher
• Expenses $316 lower

No Impact

• Occupancy
• Case mix
• Area wage
• Size
• Payer mix

Based on operating income by quintile for U.S. hospitals between 2006 and 2008
Source: Thomson Reuters ACTION O-I Comparative Database
Top Performers Spend More on Drugs and Supplies


Cost per discharge for highest vs. lowest quintile hospital by operating income adjusted for each mix and area wage
Source: Thomson Reuters ACTION O-I Comparative Database;
## Labor Expense Advantage is Not from Salaries or Staffing Levels

<table>
<thead>
<tr>
<th></th>
<th>Highest Income</th>
<th>Lowest Income</th>
</tr>
</thead>
<tbody>
<tr>
<td>Salary and benefit per FTE</td>
<td>$66,719</td>
<td>$62,627</td>
</tr>
<tr>
<td>Staff hours per patient per day</td>
<td>20.89</td>
<td>20.35</td>
</tr>
</tbody>
</table>

Based on operating income by quintile for U.S. hospitals between 2006 and 2008  
Source: Thomson Reuters ACTION O-I Comparative Database
Labor Advantage Due to 10% Shorter Length-of-Stay

Average Length-of-Stay by Operating Income Quintile (2006 – 2008)

Performance based on operating income quintiles

Source: Thomson Reuters ACTION O-I Comparative Database
Our View

Technology Will Lower Unit Labor Costs and Increase Benefits of Care

1. Healthcare cost long-term trend is dependent on labor costs

2. Sustaining long-term reductions in the cost of producing a unit of care will rely more on productivity gains rather than efficiency

3. Labor-oriented productivity strategies will require using lower skilled labor where possible, shifting work to customers or replacing labor with technology

4. Communication and information technologies can have a role in all three strategies either as an enabler or end application

5. The same technologies can be used to raise the benefits of care through personalization, transparency, self service and other mechanisms
For Most Patients “Value” is Neither Outcomes nor Cost

“In your own words, how would you define “value” in healthcare? Please be specific.” (unaided response)

What About Better?

Getting your money’s worth...

\[ f(x) = \frac{(relative) \ Benefit}{(total) \ Cost} \quad \text{OR} \quad \frac{(absolute) \ Benefit}{(price \ paid) \ Cost} \]

Value constructs as proposed by Ron Adner “The Wide Lens” in
Advanced Telehealth Benefits the Already Served, Not Just the Underserved

• As good as face-to-face care
• One patient, many doctors
• Patient group visits
• Physician collaboration
• Enhanced patient experience (augmented reality)
• Some segments prefer virtual
Social Software Will Deliver Healthcare While Increasing Self Care and Self Service

- Business-class social networks
- Self-service platform
- Community created content
- Gaming

Source: [www.bigwhitewall.com](http://www.bigwhitewall.com); Wicks, P. et al. Nature biotechnology May 2011
Curve had been dented not permanently bent yet

• The curve has been changed by more than just the recession

• The baseline will be permanently reset due to unit price compression, administrative simplification, increase patient cost-sharing and reduction in unexplained variation in practice patterns

• The long trend line for growth will exceed GDP subject to two “X” factors – medical technology and labor costs

• Without changing productivity the long term curve will return to GDP “plus”

• The key policy problem is long-term public spending not overall healthcare spending

• Digital Technology holds promise to radically impact medical costs and utilization
“That it will ever come into general use, notwithstanding its value, is extremely doubtful because its beneficial application requires much time and gives a good bit of trouble, both to the patient and to the practitioner because its hue and character are foreign and opposed to all our habits and associations.”

- *The London Times* 1834
“The future ain’t what it used to be.”

- Yogi Berra
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