Why Not Better and Cheaper?

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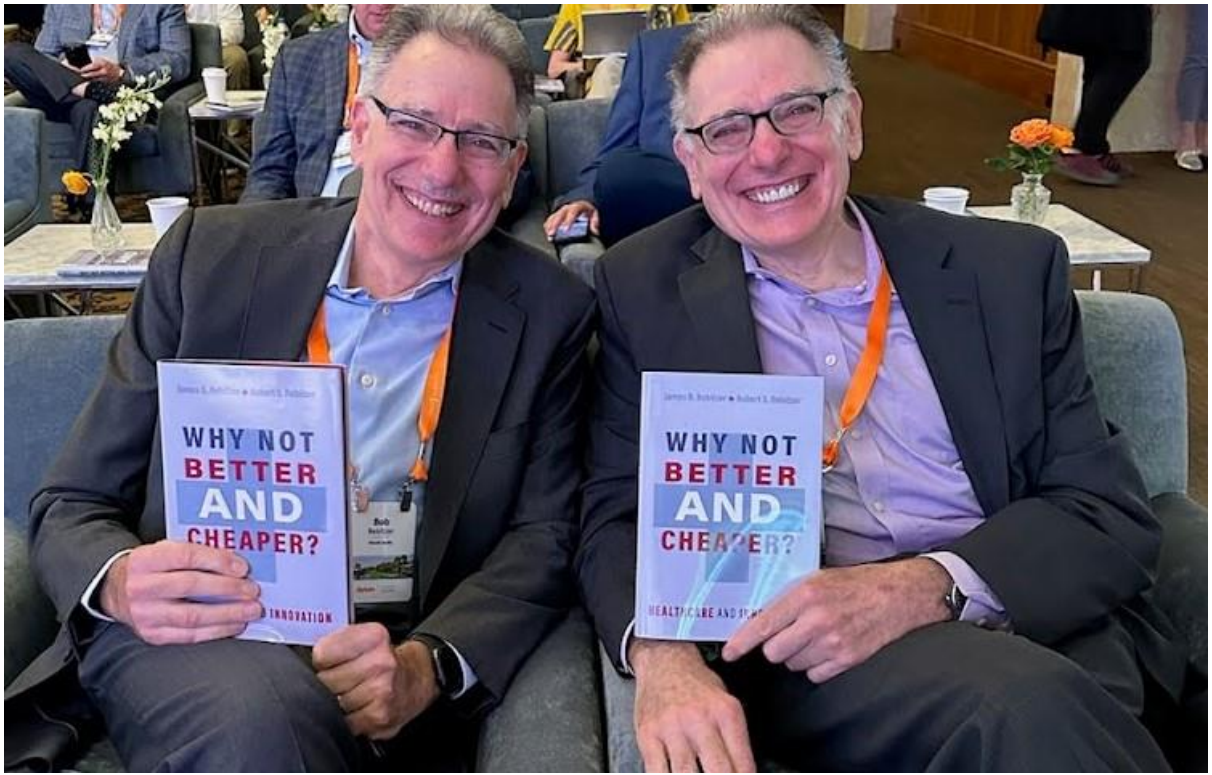
WHY NOT
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Ask Yourself a Question.

- Why doesn't healthcare get better and cheaper the way that that our cell phones do?
  - It's too easy to make money from low value innovations.
  - It's too hard to make money from innovations that reduce costs.
- Why Does Healthcare Work This Way?
  - Incentives
  - Norms and narratives
  - Switchover disruptions and adoption of transformative innovation
- Key Takeaway
  - Most discussions of the health sector focus on 3 vital signs: cost, quality, and access.
  - We want to persuade you to consider a 4th vital sign- innovation.
  - A healthy health sector should produce innovations that increase the value of care and reduce costs.

Our Agenda for Today

- Incentives in the Patent System
- Incentives for Non-patented Innovations
- Adoption of Transformative Innovations
- What to Do?

Incentives in the Patent System: New Antibiotics.

Plant toxin hailed as 'new weapon' in antibiotic war against bacteria

Scientists say albicidin has allowed them to take a giant step forward to creating a powerful new range of antibacterial drugs

Albicidin, a potent plant toxin with a unique way of killing harmful bacteria, has emerged as one of the strongest antibiotic candidates in decades. Photograph: David Davies/PA

Incentives in the Patent System: New Antibiotics.

- Patent system
  - Grants time limited monopoly to innovations in exchange for making the innovation public.
  - Includes a powerful market test:
    - The value of the prize for innovating depends on demand for the product.
    - If you patent something nobody is willing to pay for, you don't make money.
- Consider the case of new antibiotics
  - Antibiotics are central to the practice of modern medicine - no chemo, limited surgery, without antibiotics
  - The bacteria are always evolving ways to escape the antibiotics.
  - The patent market test ought to reward invention of new antibiotics
  - Instead, they are a money loser.
- What's the problem?
  - Wise stewardship of new antibiotics requires withholding use
  - New antibiotics are more expensive.
  - A better market test for antibiotics would decouple revenues from sales.
    - Think of a subscription model, like Netflix.
    - Payer pays for the availability of antibiotic not its use.

Incentives in the Patent System

- Are antibiotics an unusual edge case?
- The patent market test too often rewards wasteful or mediocre innovation or increases in pharma market power.
  - Killer Acquisitions
  - Favoring treatment over prevention for reasons of pricing power
  - Early stage vs late stage cancer
  - Evergreening and patent thickets

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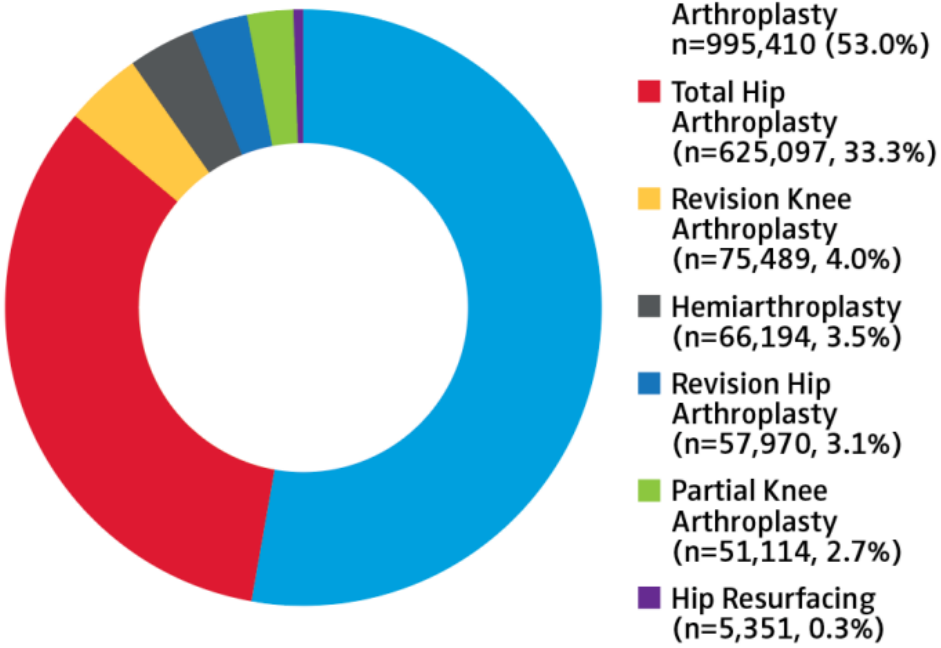
Incentives for Non-Patented Innovation

- Payers have great interest in better, cheaper treatments.
- Getting others on board requires shared savings incentives.
- Shared savings incentives in healthcare face headwinds.
  - Time horizon (knees)
  - Common agency (hospital-at-home)
  - Noisy and imperfect quality measures (nursing homes and PE).

Incentives For Improved Treatments: Knees

Figure 1.2 Distribution of Arthroplasty Procedures, 2012-2019 (N=1,825,551)



Knee arthroplasty surgery

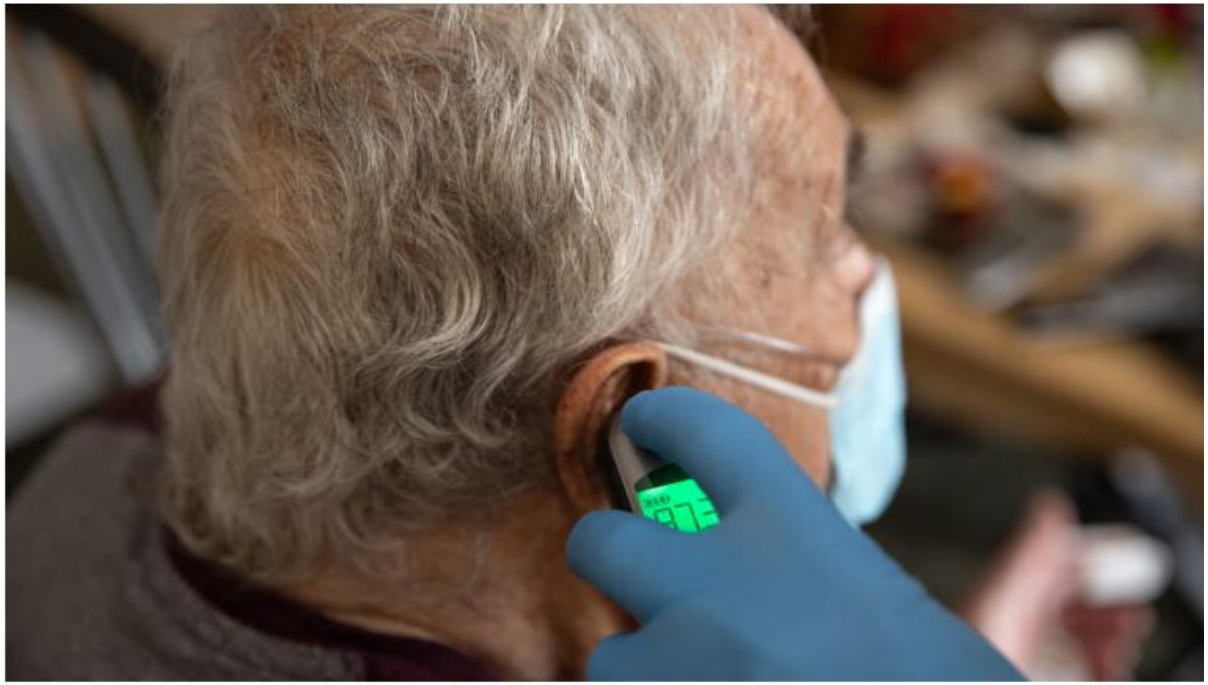
Incentives for Non-Patented Innovation: Knees

- Occasionally the Stanford High Impact Tech. Fund asks my brother's opinion about a healthcare innovation.
- A brilliant engineer presented a concept: teach people to change their gait, reduce knee pressure, reduce demand for knee surgery.
- The fund asked, if this idea works, is there a business in it?
- Bob's answer: who is the customer?

Incentives for Non-Patented Innovation: Knees

- Orthopedic surgeons?
  - Their business is running high throughput surgical practices.
- Health Systems?
  - Joint replacement is a profitable line of business.
- Patients?
  - Maybe, but they listen to providers (see orthopods above)
- Payers?
  - They are very interested but they don't buy devices or tell physicians how to practice.
- Economist's solution: payers share savings with providers
  - Shared savings incentives are very hard to implement in healthcare.
  - One reason, time horizon.
    - US payment system is fragmented with lots of churn.
    - Imagine that investing in new gait today saves treatment costs in 15 years.
      - How can current payer capture these savings to then share them?
      - This problem bedevils all sorts of behavioral treatments for chronic conditions.

Incentives for Non-Patented Innovation: Hospital-at-Home



A community paramedic takes the temperature of an 88-year-old patient during a home wellness check in Hawthorne, N.Y.

JOHN MOORE/GETTY IMAGES

Incentives for Non-Patented Innovation: Hospital at Home

- Hospital-at-home (H-at-H)
  - Delivers acute hospital care to patients in their own homes
  - It has been studied since the 1970s. No randomized trials but
    - Some evidence that H-at-H associated with lower mortality + costs
    - Patients like it.
    - Likely to economize on building expensive new hospital capacity.
- Neither payers nor health systems were willing to invest in H-at-H until CMS allowed Medicare to reimburse during Covid 19 crisis.
- Why did *private* payers wait for the slow-moving CMS bureaucracy?

Incentives for Non-Patented Innovation: Hospital at Home

- H-at-H requires upfront investments in processes, technologies, personnel.
- These upfront costs create a strategic dilemma
  - An individual payer would have to cover all the hospital's upfront costs for H-at-H.
  - If *many* payers agreed to pay, smaller payments could cover hospital's investment.
  - Without coordination, a payer's best move is to not reimburse H-at-H
  - Result: the supposedly nimble private payers drag their feet.
- The Common Agency Problem.
  - When multiple payers reimburse a hospital, they may not reimburse for improved treatments without some coordination among all payers.
  - CMS' Acute Hospital Care at Home Waiver solved the common-agency problem.
    - Medicare commits to reimbursement - covering a big share of upfront investment
    - Medicare's "jumpstart" gets private payers to stop dragging their feet.

Incentives for Non-Patented Innovation: Private Equity and Nursing Homes

Incentives for Non-Patented Innovation: Private Equity

- PE firms supercharge incentives to reduce costs
- A recent study examining PE ownership of nursing homes found
  - Mortality rates increased by 10% over a base of 17 percent
  - 20K additional deaths over the 12 years of the study.
- How could such a degradation of quality go unnoticed for so long?
  - Typical nursing home admits ~200 patients per year.
  - Mortality is influenced by lots of different things (is noisy).
  - 20 years of data at a facility needed to detect a 10% increase in mortality.
- Takeaway:
  - Incentives for cost-cutting incentives are dangerous without good quality measures.
  - Noisy quality measures limit the benefits of cost-reducing incentives.

Incentives for Non-Patented Innovation

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Adoption of Transformative Innovations

- Consider two earlier transformative technologies
  - Electronic Health Records (EHRs)
  - Minimally invasive gallbladder surgery.
- EHRs
  - In 1991 The Institute of Medicine identified EHRs as essential new tech,
  - By 2007 only 4% of physicians and 2% of hospitals had a fully functional EHRs
  - EHRs didn't take off until the Obama administration subsidies in the 2009 stimulus.
- Minimally invasive removal of gallbladder
  - Transformed one of the most common surgical procedures.
  - It took only a few years from its first use in 1988 to nearly complete adoption.
- What explains the different rates of adoption?
  - Switchover disruptions:
    - The costly phase-in period for new technologies that can upend previously profitable operations.
    - Switchover disruptions can dissuade firms from adopting valuable innovations.

Adoption of Transformative Innovations.

- Switchover disruptions to put EHRs to good use were substantial
  - Employees trained in new roles, workflows redesigned, new software + hardware to install and maintain.
  - Some physicians saw EHRs as turning them into data entry clerks.
- Switchover disruptions were small for gallbladder surgery
  - Surgeons and hospitals were already in the business of removing gallbladders
  - Changes were limited to the surgical suite.
  - Innovations helped providers deliver superior care- consistent with professional norms.
- When thinking about AI and other transformative technologies,
  - Switchover disruptions for transformative technologies are most costly for well entrenched, profitable, incumbents.
  - Switchovers are also costly when they prevent providers from delivering care consistent with the highest values of their profession.

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What to Do? Suggestions for policymakers

- Improve incentives for value creation in patents.
- Make it easier to adopt cost-reducing innovations.
- Mobilize non-financial incentives
- Train providers to:
  - participate in innovation process
  - value stewardship of scarce social resources

What to Do? Suggestions for health system leaders

- Appreciate miraculous new technologies,
  - but don’t lose sight of incentives, norms, and switchover disruptions that drive adoption.
  - Use technology to help providers deliver care consistent with highest values of their profession.

Summing Up

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