

What Drives Scalable Innovation in Healthcare? Hint: It's Not Cost Savings, Outcomes, or Technology

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In the avalanche of media coverage, conference sessions, and social media posts around why the \$2.7 trillion healthcare industry is one of the slowest to adopt widespread innovation, there's plenty about the barriers to change, but not a lot of what truly drives the few widespread changes that actually have happened. We understand that the third party payer system distorts business models, the practice of medicine is an art as much as a science, fee for service rewards process, not outcomes, and that even an industry consuming almost 20% of the GDP is so fragmented by disparate players that it keeps the actual business of healthcare local.

Given all this, which has been exhaustively covered in the lay press and [academic journals](#), we can wrap our minds around why one of the best hospitals in the U.S. uses cutting-edge proton beam lasers for neurosurgery, but a fax machine to submit claims. Other industries have modernized business processes as the technology became available to do so: SKUs to track inventory in retail, online banking in finance, distribution via internet streaming in media. Any of these technologies would modernize the millions of daily healthcare business transactions, but change at scale must be catalyzed by a change in reimbursement policy first.

An example: Preventable readmissions, generally defined as

readmission for a patient for an avoidable illness or injury acquired during the initial hospital stay, are a serious clinical and economic issue. In 2010, a [National Quality Forum \(NQF\) report](#) found that there were 836,000 preventable admissions annually, accounting for \$12 billion in wasted spending and untold human suffering. Hospitals had been making good faith efforts to eliminate infection and injuries for decades, but had no financial incentive to prevent these readmissions – in fact, hospitals were reimbursed for them at the same rate as any other readmission under CMS' inpatient prospective payment system (IPPS). The scale of the issue had been extensively covered in 1999's Institute of Medicine "To Err is Human" report, and there is little reason to believe there was significant change in the 11 years before the subsequent 2010 NQF report, which reported readmissions hovering around 19%..

Technologies to prevent these readmissions had existed for decades – in fact, the first barcoded surgical instruments came on the market in the 1980s, and computerized physician order entry (CPOE) systems, [which can prevent hospital drug errors by 55%](#), were available in the 1990s. These technologies only became cheaper as microchip storage capacity increased and telecommunications costs decreased. Despite the availability of these systems, and their clear benefits to the patient, these technologies were not adopted widely by most hospitals. Despite technological advancement, the preventable readmissions rate remained steady.

Meaningful change in the preventable readmissions rate only began to occur after CMS instituted a reimbursement change under provisions of the Affordable Care Act (ACA.) CMS announced that starting in 2012, it would reduce the IPPS base payment to hospitals with excess preventable readmissions by up to 1%, then up to 2% the second year, then up to 3% each year thereafter. In

just a few years after the announcement, and one year after the actual reimbursement change, CMS reported to Congress in February 2013 that the all-cause Medicare readmission rate had dropped to 17.8% in the last quarter of 2012, down from the historical 19%. MedPAC reported in June 2013 that the reduction in readmission rates impacted by this reimbursement policy was greater than the reduction in readmission rates for all causes, suggesting the reimbursement policy is the driver of change.

Similarly, technologies generating significant economic benefit that would be rapidly scaled in other industries can remain artificially stymied by the lack of reimbursement change. Telemedicine, the delivery of care remotely via phone, video, or other technology-enabled modalities, saves providers and patients time and money while generating similar outcomes to an in-person visit. Proponents claim that telehealth [lowers the cost of care](#), enables more effective and frequent management for patients with chronic disease, and generates significant secondary economic benefits such as employee productivity (less time away from work waiting at doctors' offices), decreased wasteful care (access to telemedicine keeps people out of costly emergency rooms), and lessens the impact of the primary care provider shortage, improving access to care for many. With the rise of smartphones and access to providers in networks like Teladoc and AmericanWell, care delivery for certain conditions can be immediate, continuously available, and inexpensive compared to an in-person visit. Despite the evidence of clear cost savings, and despite consumers consuming almost everything else via phone or internet, the vast majority of care today is delivered face-to-face.

Concerned about a potential explosion of "induced utilization," the overuse of the technology to bill a sharp increase in visits and a tidal wave of additional cost, CMS has rejected reimbursement for telemedicine until very recently, making just

a narrowly defined visit for chronic care management reimbursable when delivered remotely. Technology exists today to assess all major vital signs in real-time, visually see and assess the patient through high-res cameras, and order diagnostic tests, labs, and prescriptions remotely. The impact of transitioning to this type of care for the majority of routine visits is significant, particularly in the booming aging-in-place population. However, until reimbursement policy changes, these technologies will not be widely adopted, despite their impact on cost and convenience.

Observing power of government reimbursement policy to drive modernizing changes in an entire industry, independent of technology or cost advantage, gives an ironic twist to the notion of the U.S. healthcare system being described as “private” rather than public. However, single drivers of change have an upside: there is opportunity to achieve significant quality, safety, and health outcomes through well-reasoned CMS action.

One side note: occasionally the federal government will simply pay healthcare players outright to modernize, with mixed results, as in 2009’s American Recovery and Reinvestment Act (ARRA)’s Health Information Technology for Economic and Clinical Health (HITECH) Act, which paid doctors up to \$44,000 each for adopting electronic health records (EHRs) and using them according to certain guidelines. HITECH was successful at driving widespread adoption of EHRs, with [more than half of U.S. physicians using EHRs within 4 years of the Act](#). However, because HITECH directly incentivized individual physicians and hospitals, and provided no similar incentives to the EHR vendors to standardize, different EHR systems remained non-interoperable to retain competitive advantage, inhibiting the widespread data exchange needed to modernize transactions like referrals, care coordination, or insurance eligibility and authorizations. In

2017 the cash EHR incentives are replaced by a penalty of 3% cut to Medicare reimbursement, and it will be interesting to see if greater changes occur then.