

Exchange

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Is IT the best Rx for patients?

By now, regardless of political inclination, most people can agree: America's got one big healthcare system. That system is unwieldy and, in many cases, inefficient. So it's with great excitement that academics, practitioners, insurers, and politicians have looked to information technology systems (IT) to try to create a process with better patient outcomes and lower price tags. New legislation aims to incentivize the adoption of IT ranging from Computerized Physician Order Entry (CPOE) systems to Electronic Medical Records (EMRs), all hoped to coordinate patient care across providers, streamline the payment process, and create a healthier healthcare climate.

"Much of the policy debate has focused on implementing automated treatment guidelines and decision support tools...but our work suggests we should target the care coordination aspects of health IT for those unusual cases that require extensive, cross-specialty coordination and communication."

Jeffrey McCullough, a professor in the University of Minnesota's School of Public Health, has teamed up with MILI's own director Stephen Parente and Robert Town of the University of Pennsylvania's Wharton School and the National Bureau of Economic Research (NBER) on new work examining one of these promised results: better patient outcomes. "The new policies are largely motivated by the experiences of leading academic medical centers," McCullough says. "We wanted to get a better understanding of how health IT will work on a national scale, whether the experience of these institutions can translate to the average provider." That is, will the good results seen at large university hospitals be replicated when IT is implemented in other settings?

In their forthcoming NBER working paper "Health Information Technology and Patient Outcomes: The Role of Organizational and Informational Complementarities," McCullough, Parente, and Town use Medicare fee-for-service admissions alongside data on hospital IT adoption over a five-year period to try to isolate whether the tech really does lead to better outcomes. From 2002-2007, a time of rapid IT adoption, millions of patients received care through the Medicare program. This robust data set allows for an in-depth look at results that have, thus far, eluded other researchers.

In a system and dataset with so much complexity, it was interesting that McCullough was able to tell MILI what he and his coauthors found very succinctly: "As it turns out, health IT does very little to improve quality for the average patient. IT can, however, have large benefits for the most complex cases—patients being treated by multiple specialists or those who require substantial monitoring and testing."

It's not that healthcare IT will in any way *damage* patient outcomes, it's just not a cure-all for every aspect of a sprawling medical field. IT will continue to improve financial systems, make billing and insurance payments more uniform, and perform many other useful functions, but when it comes to the average patient, an EMR won't lead to shorter hospital stays or a longer lifespan. Those special cases, however? Things are looking good.

"Our research," McCullough says, "suggests that the benefits from health IT investments will be concentrated in hospitals that serve this high-severity population." It remains, then, in the best interests of policy-makers, insurers, providers, and high-risk patients to incentivize IT adoption, so long as it's carefully targeted to those institutions whose patients will most directly benefit. "Much of the policy debate has focused on implementing automated treatment guidelines and decision support tools—standardizing common aspects of care—but our work suggests we should target the care coordination aspects of health IT for those unusual cases that require

About

Exchange, a publication from the Medical Industry Leadership Institute, features dialogue on medical industry research and application. The content is a summary of research from both academia and the medical industry, followed by commentary on the importance of the research and its application. Topics highlighted in *Exchange* span all sectors of the medical industry and include commentary from leaders in the field as well as researchers from the University of Minnesota and other academic institutions.

extensive, cross-specialty coordination and communication."

By allowing many specialists, whether in one facility or many, the chance to easily exchange information on one particularly vexing case, health IT is a great help. As the authors put it in their paper, "...the relatively large... effect may be due to the increased role of medical (as opposed to surgical) treatment and the important role played by lab result monitoring and nutrition coordination for high-risk patients." They go on to say that the average effect of health IT adoption, even for high-risk cases, is small, but when it's extended out over all of the patients served at a given hospital across a whole year, IT adoption "may avert as many as eight deaths [per facility] per year." Further, the "benefits are most notable for pneumonia and CHF [congestive heart failure]... these diagnoses are frequent, high-risk, and sensitive to health IT adoption." So, if health legislation aims to encourage those health providers who see the most difficult and complex cases to adopt IT, it'll be a smart strategy for reducing mortality and readmission rates.




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Commentary

by *Tim Peterson, Executive Vice President and Chief Information Officer, Wellmark*



Certainly, the healthcare system is highly fragmented and suffers from a lack of connectivity and transparency. The role technology can play in filling these gaps and improving care coordination is tremendous, but we need to focus on business processes and workflows in addition to the technology.

Many existing care coordination models center around primary care and place a heavy emphasis on the use of HIT and clinical data, which includes data coming from Electronic Medical Records (EMRs), Health Information Exchanges (HIEs), and Computerized Physician Order Entry systems (CPOEs). The idea is that, by making this information more readily available and integrated into the workflow of the primary care physicians (PCPs), we can build the foundation for a complete, longitudinal view of the patient. This would allow healthcare professionals to serve as more efficient “conductors” as patients traverse the healthcare system. Care coordination should also lead to lower costs by reducing the waste or redundancy in the system (e.g., re-ordering the same test).

However, as McCullough, Parente and Town point out, the data is not supporting this promise. They suggest that you can achieve clearer, measurable outcomes if you focus on the most complex situations, in which you have patients visiting multiple specialists in different settings. These cases clearly require greater collaboration and transparency. Still, as we think broadly about our health management strategy, it is important to also consider engaging those who are less frequent or low impact users of the healthcare system. They, too, have unique needs and preferences, and we must work to meet them on their terms (as so often comes to light in care management and wellness programs).

Unfortunately, traditional methods of engagement in these areas have fallen short. They are often bound or sub-optimized by legacy processes and “the usual way of doing things” in our industry. Technology assets go under-utilized and we see low engagement rates. To use technology to its fullest potential, we need to design care experiences that are truly consumer- (not just healthcare-) driven and make more effective use of existing strategies, such as incentives and rewards, and newer approaches, such as gamification and social technologies. By taking a holistic and innovative approach, we can build lasting connections and relationships across the board. If these low-impact users later develop complex conditions, the stage is already set to effectively engage them and influence their behavior to achieve better outcomes. In a sense, using technology in our care of all patients is an investment in the future: as individuals age, most become more active, higher-impact users of the healthcare system.

The key enabler in all of this is data. Clinical data (coming from EMRs, HIEs, CPOEs), as referenced in the article, has been an emerging data domain in the world of healthcare analytics—a world that has traditionally focused on analyzing administrative data (claims, membership), which is usually days or months old. The industry has discovered that these data domains alone are not sufficient. By bringing this data together, we can glean more intelligence and tailor care.

At the same time, other data domains are now emerging that will be key in healthcare analytics. These include genomic, lifestyle, and social data. When all of this information is integrated, it becomes an extremely powerful healthcare tool that will lead to a greater understanding of the consumer or patient. The current and coming explosion in the volume and complexity of data is significant, and it demonstrates the broader opportunity of “Big Data” within healthcare. ■