EDITORIAL AND COMMENT

Connecting Patients, Providers, and Payers Improves Quality, Safety and Efficiency

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J Gen Intern Med 28(2):167-8

DOI: 10.1007/s11606-012-2295-y

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In his 2007 Institute for Healthcare Improvement keynote, Don Berwick¹ examined the role of clinical trial evidence and the need for improving healthcare with process change that seems intuitively beneficial. I attended the event and would summarize his remarks as, “you do not need a clinical trial to prove that parachutes are effective against gravity”.

Health Information Exchange can be a noun (a company or infrastructure which moves data among organizations) or a verb (the act of sharing data). To me, it seems obvious that Healthcare Information Exchange which fosters communication among patients, providers, and payers should reduce cost and improve quality.

How could care coordination be bad? How could a reduction in redundant testing increase costs? How could error reduction through information transparency cause harm? Surprisingly, the literature about the impact of Health Information Exchange on outcomes, value, and the patient experience is scant. For this reason, the article by Bailey et al. in this issue of *JGIM* (“Does Health Information Exchange Reduce Unnecessary Neuroimaging and Improve Quality of Headache Care in the Emergency Department?”)² is an important contribution to the literature.

Bailey et al. examined the frequency of imaging studies and variations in care among headache patients with multiple Emergency Department visits; they found that a form of Health Information Exchange reduced test ordering and improved adherence with guidelines, protecting patients from unnecessary radiation exposure and potentially harmful side effects, such as allergic reactions to IV contrast dye. In this study, as with other early studies on Healthcare Information Exchange, there was not a measurable overall reduction in costs. Bailey attributes this to increased magnetic resonance imaging (MRI) testing for complicated headache patients with negative head computed tomographies (CTs).

What have other studies shown us to date about Healthcare Information Exchange, quality and cost? The first study (2002) about the impact of Healthcare Information

Exchange on cost and quality documented a trend toward cost savings at one of two hospitals, but no significant differences in the quality measures studied.³ A 2009 Texas A&M Health Science Center School of Rural Public Health study illustrated that a higher level of Healthcare Information Exchange was significantly associated with increased counts of all encounter types.⁴ Costs increased with Healthcare Information Exchange because more care was delivered. A 2010 Medical College of Wisconsin⁵ study illustrated that use of Healthcare Information Exchange resulted in better care coordination and reduced time searching for patient information. The most complete study to date by Frisse et al.⁶ illustrated that access to additional clinical data through Healthcare Information Exchange in emergency department settings reduced total costs.

The implications of the Bailey data are significant. The study is among the first to demonstrate that Healthcare Information Exchange reduces potentially avoidable neuroimaging, improves adherence with guidelines, and protects patients from harm. The one previous randomized Healthcare Information Exchange trial³ did not assess use of diagnostic tests.

Experts in Massachusetts have estimated that 10 % of diagnostic tests are redundant or unnecessary.⁷ Given the intuitive benefit of Healthcare Information Exchange and Bailey’s results documenting increased quality, why has adoption of Healthcare Information Exchange been slow and the literature about results been so limited?

The answer is multi-factorial.

In Don Berwick’s parting interview with the press when he left his role as Administrator of the Centers for Medicare and Medicaid Services, he noted that 20 % to 30 % of health spending is “waste” that yields no benefit to patients.⁸ Berwick listed five reasons for the enormous waste in health spending:

- Patients are overtreated
- There is not enough coordination of care
- US health care is burdened with an excessively complex administrative system
- The enormous burden of rules
- Fraud

In a fee for service world, the quantity of care, and not the quality of wellness, results in more income. Redundant and unnecessary testing is a profit center.

Imagine the following conversation between a healthcare IT policymaker and a hospital CEO.

Policymaker: “We’re going to implement Healthcare Information Exchange to eliminate the 10 % of hospital labs and radiology procedures that are redundant and unnecessary. You’ll need to install new software and purchase new services to facilitate data exchange among patients, providers, and payers. ”

CEO: “Just to confirm, the hospital will pay hundreds of thousands of dollars to fund software, labor, and service fees so that our diagnostic test income can be reduced by 10 %?”

Clearly incentives are not aligned, but there is still hope for Healthcare Information Exchange.

Accountable Care Organizations, as described in the Patient Protection and Affordable Care Act (PPACA), will receive global capitated payments for keeping patients well. Unnecessary testing will become a cost rather than an income stream. Healthcare Information Exchange will become a business necessity for survival in risk contracts. Incentives for reduction of testing and adherence to guidelines will become aligned with payment processes.

But there is a concern. There are few successful examples of sustainable Public Health Information Exchanges. Massachusetts and Indiana have unique local characteristics that have resulted in decades of successful data sharing.⁹ Although Public Healthcare Information Exchanges are still in their infancy, there has been a rise in Private Healthcare Information Exchange to link various inpatient and ambulatory locations within an organized healthcare arrangement or Accountable Care organization (Ashish Jha, personal communication).

Meaningful Use Stage 2, the stimulus for adoption and use of electronic health records, provides a path forward. Stage 1 (2011) required only a single demonstration of Healthcare Information Exchange. Stage 2 (2014) requires that 10 % of transitions of care and referrals be accompanied by an electronic summary of care. The Standards and Certification final rule¹⁰ includes all the necessary data and transport standards that vendors need to create products that support Healthcare Information Exchange. These products are likely to enter the marketplace in Spring 2013. The

policy requirement and technology specifications in Stage 2 are likely to significantly accelerate Healthcare Information Exchange by the end of 2014.

Thus, in the next 2 years, we will have achieved conditions for broader sharing of healthcare data among patients, providers and payers. Accountable Care Organization formation, healthcare reform, and risk arrangements will motivate organizations to invest in Healthcare Information Exchange. Meaningful Use Stage 2 will provide incentives for success and penalties for failure to implement Healthcare Information Exchange. The standards-based products will be available.

By identifying the potential for improvements in quality and patient experience as a result of Health Information Exchange, the article by Bailey et al. provides further compelling reasons to move forward. The study underscores the opportunities that await us as incentives are aligned to make Health Information Exchange (both noun and verb) a reality.

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REFERENCES

1. <http://www.ihl.org/offering/VirtualPrograms/OnDemand/SoupwithFork/Pages/default.aspx> accessed on November 11, 2012
2. Bailey JE, Wan JY, Mabry LM, Landy SH, Pope RA, Waters TM, Frisse ME. J Gen Intern Med. 2012. J Gen Intern Med. 2013; doi:10.1007/s11606-012-2092-7
3. Overhage JM, Dexter PR, Perkins SM, Cordell WH, McGoff J, McGrath R, McDonald CJ. A randomized, controlled trial of clinical information shared from another institution. Ann Emerg Med. 2002;39(1):14–23.
4. Vest JR. Health information exchange and healthcare utilization. J Med Syst. 2009;33(3):223–31.
5. Anonymous M. Information exchange yields better decisions. ED Manag. 2010;22(9):103–4. PMID: 20853581.
6. Frisse ME, Johnson KB, Nian H, Davison CL, Gadd CS, Unertl KM, Turri PA, Chen G. The financial impact of health information exchange on emergency department care. J Am Med Inform Assoc. 2012;19(3):328–33. Epub 2011 Nov 4. PMID: 22058169.
7. Bates DW, Boyle DL, Rittenberg E, Kuperman GJ, Ma’Luf N, Menkin V, Winkelman JW, Tanasijevic MJ. “What proportion of common diagnostic tests appear redundant?”. Am J Med. 1998;104(4):361–8.
8. <http://geekdoctor.blogspot.com/2011/12/promise-of-electronic-healthcare.html> accessed on November 11, 2012
9. Halamka J, Aranow M, Ascenzo C, Bates D, Debor G, Glaser J, Goroll A, Stowe J, Tripathi M, Vineyard G. Health care IT collaboration in Massachusetts: the experience of creating regional connectivity. J Am Med Inform Assoc. 2005;12(6):596–601.
10. http://healthit.hhs.gov/portal/server.pt/community/healthit_hhs_gov_standards_ifr/1195 accessed 11/11/2012