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Interoperability and Meaningful Use—Where Do We Really Stand?



By JOHN W. LOONSK

There is considerable churning inside the Washington beltway about health information technology interoperability. Interoperability, the ability of software systems to work with each other, is recognized as being critical for, among other things, health information exchange. And exchange is thought to be necessary for both health reform and for achieving the promise of electronic health records (EHRs).

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Congress has now raised questions several times about "Meaningful Use," the stimulus-funded program that has, to date, paid hospitals and health care providers about \$15 billion to implement EHRs. To receive these funds, the hospitals and providers need to implement EHRs to meet the In the latest round of congressional interest, a report was issued suggesting that the administration needed to pause and "reboot" the Meaningful Use program because, in part, there is not a clear path to interoperability.

In fact, the new Stage 2 Meaningful Use requirements have more interoperability elements than Stage 1. There are expectations for sharing referrals and care summaries, receiving lab results, and transmitting immunization and some surveillance data to public health agencies, and more. But there are relatively few requirements for interoperability in Stage 1.

Some of what is in Stage 1 is not always specified with enough detail. The detail is needed to provide the kind of conformance rigor that can significantly advance the interoperability dial. And now, Stage 2's more significant foray into interoperability is coming at a time when there is stiffening resistance to Meaningful Use in general.

Diminishing Leverage

Meaningful Use is somewhat of a study in the diminishing leverage that even a “new money” federal program can have as the funds become an expectation over time. In this case, a great deal of the original Meaningful Use leverage was spent on quality reporting, not interoperability.

Other ongoing Meaningful Use leverage continues to be used on new business expectations for providers—like the recording of family histories, rapidly providing data directly to patients, and using secure email messaging to communicate with patients. These may all be good things, but they are additional burdens, as well, and the push back they generate does not differentiate between them and needed interoperability advancement.

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The latest news comes from a study in the *Annals of Internal Medicine* that shows that although \$15 billion has now been spent for EHR incentives, only about 10 percent of providers have systems that can meet the Stage 2 Meaningful Use requirements.

In fact, some providers, congressmen, and even administration personnel who are not intimately involved in the health IT esoterica are surprised there are more stages of criteria coming at all. The fact that there may be providers who have just installed EHRs and now need to upgrade or change their systems to meet Stage 2 criteria has contributed significantly to the current churning.

And, now, in the face of the increasing resistance, the administration is seeking to develop Stage 3 of the Meaningful Use program and needs to tackle the many interoperability challenges that remain.

There are other considerations for health care interoperability as well. “Policy and business” interoperability speak to non-technical considerations that describe how supportive the health milieu is in which information exchange and the technical interoperability must operate.

Barriers to Information Exchange

The Office of the National Coordinator for Health IT (ONC) effort to advance nationwide regulation of health information exchange was stopped by public feedback that said it was untimely and overly regulative. Ongoing barriers to information exchange that prevent the alignment of business needs and interoperability include the practice of hospitals and health systems to negotiate point-to-point data use agreements before exchange can occur. This, of course, includes proprietary health business interests.

ONC is counting on the “pushing” of data in its DIRECT project to enable near term, data use agreement-

free, exchange. The now private sector HealtheWay networking effort uses a shared Data Use and Reciprocal Support Agreement (DURSA) as a single, multi-participant data sharing agreement. With new Stage 2 requirements to do one and/or the other, it remains to be seen whether these efforts will provide “network effects” that will draw others into “me too” electronic exchange of data.

All of these questions come at a time when the information technology needs of health reform in the form of the Affordable Care Act (ACA) are beginning to take form. The HITECH investment in EHRs was sold as necessary for health reform, but because interoperability has been so historically rudimentary in health care information systems, the more demanding interoperability needs suggested by the “new health care” of medical homes (to maintain an electronic manifestation of most of a patient’s data in one place), of care provided by teams of providers (whose different members all need to access current patient data but may be from different roles and care organizations), and of accountable care organizations (ACOs) (to analyze clinical care operations data in combination with payment data in order to manage cost and efficiency) have barely even been considered by the national processes.

“Private” health information exchange (HIE), the exchange of information between the component providers and organizations of a health system or ACO, is the one HIE area that seems reasonably aligned with business needs and is flourishing. It may help drive some degree of better interoperability by itself if the other complicating factors can be mitigated.

Intensely Complicated Program

HITECH’s Meaningful Use program is an intensely complicated program that has been sold as necessary to support an equally complicated and politically challenging health reform law that is being applied to the highly complicated health care sector.

By the time the technically complex and jargon-filled area of health information technology interoperability is layered in, there are very few people who can, or want to, understand the intersection of all these domains. What makes addressing interoperability even harder is that there is not even good consensus around its definition. Even more significant is that good data on the status health interoperability, however it is defined, is very hard to find.

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Health care information technology interoperability has historically been an issue at all levels of the health system. It has been an issue in the connection of machinery in an ICU or a hospital room and in the broader

connection of hospital systems that support radiology, laboratories, emergency rooms, hospital admissions, and now EHRs. It has been an issue exchanging data among hospitals and between hospitals and community providers. It has been an issue in health systems, local, state, and nationwide data exchange efforts and connecting government agencies and ancillary health systems.

When interoperability is currently defined, it is frequently done in association with the electronic exchange of health information between two information technology systems in a hospital or between two different health care organizations. These exchanges can come in different forms including, minimally, sharing images of documents that can only be read by the receiving system. Or, they can come as information that can be recorded and processed in the receiving system. Or, better still, they can come as sharing data that are so comparable that received data can be analyzed as if they were originated in the receiving system.

Even this description hides much of the underlying technical complexity of the different kinds of health information exchange that need to occur inside and outside of health care settings. What is more, the description does not address the supporting infrastructure needed for health information exchange and interoperability.

Supporting Needs

Supporting needs include metadata (data that describe other data) and technology to index information so that it can be found and retrieved. There are also electronic consent needs, provider and patient directory information to support reliable identity matching, and security technology to ensure that sensitive information is protected.

As complex as the consideration of information exchange is, and as often as it is the area brought to mind in interoperability discussions, interoperability is actually broader and more complex. Consistent information exchange is just one desirable interoperability outcome. It is also desirable to reduce the costs involved in making systems connect.

Interoperability also includes enabling providers to move data to a new vendor's system when they are no longer happy with the one they have. It is also desirable for systems to interoperate so as to support functions that span a single software system or organization. And, interoperability is needed to share technical infrastructure for different uses so as to minimize the burden that each one must support (think about each government program that needs to connect to each provider organization).

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But, interoperability is also critical to engineering the new functions and roles in health care that the technol-

ogy facilitates. Indeed, as in other industries, when first becoming electronic, the industry focuses on doing what it was doing before but with the technology. With time, the workflow and roles become more technologically optimized and the real benefits of becoming electronic begin to materialize.

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In some other industries, commercial incentives have aligned well with interoperability and foster common industry standards driven by mutually shared interests. In the complex information domain of health, however, business competition, legal conservatism, competing technology approaches, and slow-moving regulations have conspired to make progress slow.

Clear Path to Interoperability

With all of this said, there is a clear and generally accepted path to forcing interoperability in an industry. The steps include advancing financial incentives or regulations to encourage interoperability in areas of need, specifying the business needs in detail. They also include identifying the specific terminologies to be used, the packages of data or messages that will be exchanged, the technical transactions that need to be accomplished, and the security approaches necessary to protect sensitive data.

The breadth of focus, the specificity of the testing, and the limited health participants to which the testing is being applied (just EHR vendors and providers) are all compromises that will have uncertain impact on the pace and trajectory of health interoperability.

The process involves doing all of this with exacting specificity that can be repeatedly tested by independent third-party organizations and providing all the tools and instructions software developers need to make their systems compliant and testing all of the participants in the system. This process has been accomplished for the payment side of health care and, indeed, has been applied to the new production aspects of electronic prescribing.

The Meaningful Use rule from the Centers for Medicare & Medicaid Services (CMS) and the companion EHR and certification criteria rule from ONC have advanced aspects of this process.

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At a time when Stage 2 is beginning to crank up the interoperability pressure, and with clear needs for more

pressure to come, there is now less tolerance for the pain the pressure creates. There are many more health interoperability areas and organizations on which to focus. There are more transactions that need to be accomplished, and there is increasing specificity needed in areas that have barely been touched.

While ACA may enable better business alignment for some interoperability, there is already significant discussion of reducing the pain in Stage 3 of the Meaningful Use program by actually decreasing specificity and

deeming organizations as compliant because they have achieved business, though not necessarily interoperability, outcomes.

The penalty phase of the Meaningful Use program is set to begin in 2015 and could reduce payments to non-compliant hospitals and providers. It is unclear whether the current churning and future push-back will prevent this lever from being used to further address interoperability issues.