

INSIDE EDGE

Finding and Paying for Interoperability

EXECUTIVE SUMMARY

Healthcare is like the estuary that mixes water from multiple sources, some fresh, some salty and some brackishly inbetween. Healthcare information, like different species that only thrive in separate streams, is accessible and useful in certain IT environments but not all. Interoperability is the stream in which all the different kinds of information “fish” thrive together. Sadly, this stream is still a figment of the imagination in healthcare.

But we’re trying, and it’s a measure of the importance of interoperability in healthcare that there are so many paths to it. An industry has arisen around interface engines alone, which like electronic bandaids address a hospital’s or health system’s immediate need for system integration within their own walls. Then there are the major HIT vendors who claim they have de facto interoperability solutions in the form of their own single platforms. Other vendors offer virtual interoperability using middleware or web-services layers that, in a kind of digital gymnastics called context management, link disparate software applications into a single display for the user. RHIOs are the latest attempt to do that on a community and regional level.

No surprise, the issue always comes down to money. A costly tangle of technical spaghetti, interface engines have always been a temporary solution. We all know how expensive and lengthy-to-install single vendor solutions are and, while they provide extended

interoperability throughout much of the enterprise, those same vendors acknowledge they rarely cover it all. And of course the virtual connectivity of most RHIOs is still awaiting a model of financial sustainability.

Virtually there

If there’s anyone who has witnessed the evolution of interoperability in healthcare, it’s Oscar Diaz. The founder and Chief Software Architect of Scottsdale-based Carefx, Diaz’s resume reads like a roadmap of healthcare IT from the 1970s to today. He started out working on ICU data management with HP, then founded the IEEE P1073 MIB standards effort, and went on to co-found with Stan Huff of IHC the IEEE MEDEX standard, a pre-HL7 Standards effort. In the early 1980s, he participated in the formation of the initial versions of HL7. He then launched EMTEK which was then sold to Motorola in 1985, who in turn sold it to Eclipsys in 1998.



Oscar Diaz, founder & Chief Software Architect, CareFx, Scottsdale, Ariz.



During the EMTEK days, Allina had an installation of Medicalogic in the ambulatory setting and EMTEK in a number of acute care hospitals. The integration of the two desktops became the genesis for the interoperable desktop requirement which served to launch the Clinical Context Object Working group (CCOW) later renamed HL7 Context

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Management Architecture (CMA). CMA is an HL7 protocol that allows users to synchronize disparate applications on a desktop. That initial effort got him involved in integrating CCOW into what became the Carefx framework. “We created the mess and now we are trying to fix it,” Diaz jokes.

Diaz continues his interoperability journey at Carefx, a Service Oriented Architecture (SOA) and web-services-based information aggregator for healthcare. Originally using the web to integrate imaging applications with applications like surgical planning, the company married web services with context management. The context management capability virtually links disparate applications around a patient or a clinical encounter in a way that makes them seem like they’re all part of a seamless application. The technique has caught the attention of IBM, who has partnered with Carefx to develop a context-enabled portal and “portlet-based data access.” This open systems architecture front-ends and integrates applications into a common intuitive browser-based display.

Diaz asserts this kind of interoperability addresses another major barrier to physician adoption of CPOE, clinical systems and the EHR. “Everybody talks about CPOE, but CPOE has a very poor adoption rate, which by most studies is less than 10% worldwide. Physicians essentially need to review data quickly, add to that data and then take an action that corresponds to the changes in a patient’s condition. In today’s systems, reviewing the data typically requires logging in and out of five to seven different software applications. Multiply that by the number of hospitals that a physician may be affiliated with and this results in as many

as 15 different log-ins....all with different passwords and password expirations.” Carefx provides a single login that is federated across multiple enterprises and eliminates one of the largest barriers to system access.

The Carefx framework relies on SOA-based web services. For instance, a census can be extracted in real-time from a Meditech system. In addition, multiple queries are simultaneously executed to other vendor systems for data on that same patient. These views are then contextually integrated into a single composite display. “It’s a great model for RHIOs, where the barrier to establishing governance is ‘who owns the data,’ says Diaz. “The web-services model goes directly against the source system and thereby avoids the knotty problems of centralized data repositories. This federated real-time model solves synchronization and update issues of a central repository model. The real-time federated model is also part of the integral workflow of the clinician because the data is accurate and the source system is the source of truth and is responsible for maintaining the integrity of the data as part of the clinical workflow,” he says.

Conclusion

While it may sound like an IT issue that could be resolved but only for the self interest of HIT vendors, many astute observers, including providers, view interoperability as a much larger issue that stands or falls on the reimbursement system in healthcare. Sounds like a familiar theme. This being a presidential election year, healthcare has at least become part of the national discussion again—and brought interoperability along with it.

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