

Achieving Data Integration

Taming the Interoperability Beast

(Without Breaking the Bank)

Interoperability—making disparate information systems communicate with each other—represents a tremendous undertaking for every 21st century healthcare provider. At the same time, it is a business essential. Who's got the right strategy? Check out some options.

“Disconnected systems cost money,” says Dick Taylor, MD, CMIO for Providence Health & Services Oregon Region in Portland. Costs associated with disconnected systems include clinicians' time, duplicate data entry and inefficiency among clinical and administrative staff. Taylor ups the ante, explaining that interoperability is key to remaining highly competitive, and it can optimize the patient experience. Factor in patient safety, and the case for tight interoperability among information systems seems clear.

Interoperability hinges on interfaces, which can be expensive, time-consuming and, sometimes, difficult to construct. Interface engines provide a different model that slashes costs and streamlines IS resources. Take for example Riverview Hospital in Noblesville, Ind. Clinical Operations Director Joy Barrett estimates the hospital has saved hundreds of thousands of dollars in interface costs since deploying Corepoint Health Integration Engine three years ago. On the macro level, other sites point to optimal, accelerated IS deployments. Interface engines also help leverage medical expertise. Medical Imaging Northwest in Tacoma, Wash., utilizes a single worklist that allows load-leveling

and virtual subspecialty reads by radiologists scattered across 12 locations via Compressus MEDxConnect. There's a strong strategic case for interoperability, too. Providence Health & Services Project Connect leveraged Healthcare Information Technology Standards Panel (HITSP) standards to develop a sophisticated connectivity platform that undergirds its commitment to connected patient care. These pioneers share their strategies for interoperability success.

The nature of the beast

Every hospital and clinic is a hornet's nest of information systems with the largest housing hundreds of different systems representing scores of vendors. In 2008, El Centro Regional Medical Center in El Centro, Calif., took an umbrella approach to its hornet's nest and deployed Corepoint Health Integration Engine. All systems are tied together via a high-level HL7 interface, and a physician web portal allows real-time queries and calls to seven clinical databases with a single log-in. It's a best-of-both worlds model. The center stays true to its best-of-breed systems strategy, and physicians across the

enterprise relish streamlined access to the complete patient record.

Similarly, Riverview Hospital uses the Corepoint data integration engine as a data hub for its 26 different information systems. Data from various systems including patient finance and registration, laboratory information systems, CVIS and the EMR, are sent to Corepoint. The system stores the data and sends them to other systems as needed.

Interface engines can be an economic lifeline for cash-strapped healthcare enterprises. A typical interface costs between \$10,000 and \$25,000, and each instance requires an inbound and outbound interface. An engine consolidates the process, dropping the interface price tag to a single annual maintenance fee of a few hundred dollars. What's more, staff time is slashed. Without an interface engine, it can take six weeks or longer to build an interface. With an engine, the process takes about 10 minutes with a week or two of adjustments between the IS department and system vendors. "We don't lose months on deployments, so we accelerate go-lives and ROI," sums John Gaede, director of IS at El Centro Regional Medical Center.

Next-generation interoperability

Providence Health & Services lives on the cutting edge of IT. It stands on nearly 20 years of EMR and health IT experience, and Providence Portland Medical Center has reached stage six of HIMSS Analytics' seven-stage EMR adoption model. Its interoperability challenges are significant. The enterprise includes eight hospitals, 50 clinics, thousands of medical staff and 180 clinical information systems. Although it seems like a land mine of information systems, interoperability pressures are strategic not technical, says Taylor. That is, patients expect a "connected experience of care."

In a connected experience, data are shared digitally, so data transfer is seamless among systems and departments. IT, specifically interfaces, facilitates the connected care model. Patients appreciate it because they aren't asked the same questions at every step of the care process.

In 2008, Providence Health & Services launched its project with a central health information exchange, or repository, to collect data from various systems. The prototype focused on a unified medication list. The prototype publishes and shares all medication updates between hospitals and ambulatory care clinics, notifying clinicians about changes when they log onto connected clinical systems. Initial Continuity of Care Documents (CCDs) will focus on problems, medications and allergies because the need for the data is universal among systems.

Interoperability and digital imaging

Medical Imaging Northwest is a typical mid-sized radiology group. It employs 20 radiologists at 12 locations and serves two hospitals and multiple outpatient clinics. Its radiologists are forced to interact with

multiple PACS and RIS. The result reading station sandwiches the physician between three radiology workstations and multiple PCs and microphones. It's a hefty workflow and ergonomic burden. Plus, the multi-system model is not a clinical or business winner. "Radiologists are challenged by daily communication among multiple systems," shares Andrew Levine, MD, chairman of the executive committee. For most disconnected practices, it is difficult to efficiently allocate sub-specialty resources and effectively distribute work over multiple sites.

November 2008 brought a new model. The practice deployed Compressus MEDxConnect software to integrate the various radiology information systems (RIS) and PACS and thus index, integrate and route all relevant patient medical information in real time. The deployment is a work in progress, but when it is complete, all radiologists will share a common worklist. They will be able to view any image on any PACS in the system—regardless of which workstation they use. The practice can load-level across locations, so if one location is overwhelmed, radiologists at other locations can assist. And

sub-specialists can review images across the system to better meet clinicians' and patients' needs.

The multi-workstation review station will be replaced with a streamlined desktop: one workstation and two monitors.

Still, Levine says, interoperability transcends ergonomics and efficiency. Instead, interoperability software is an investment in the practice's future. "We will make strategic business decisions [such as implementing tele-radiology services] based on this software," predicts Levine.

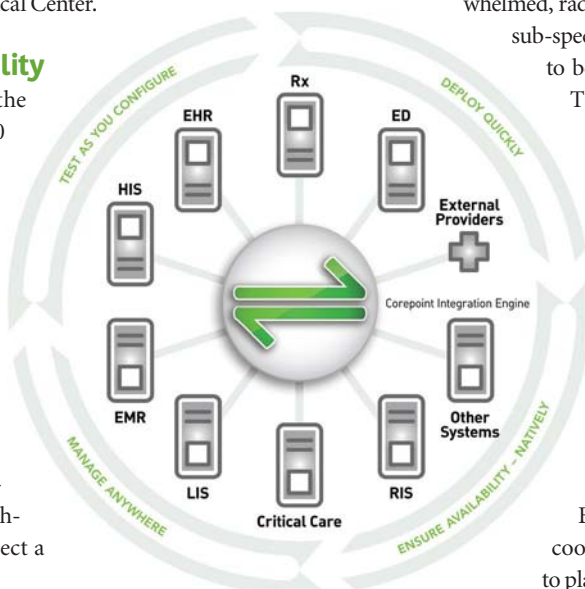
Lessons from the field

Every interoperability insider agrees—cooperation is critical. Vendors have to agree to play together, says Levine. One early adopter minimized vendor foot-dragging by setting an interoperability deadline. Those that didn't comply would be replaced; to date, all vendors are on board. Now, the team is moving toward a partnership model.

In addition to motivating vendors, hospitals also need to engage clinical staff. "It's not just a technical effort," says Taylor, "Internal marketing is essential." Some facilities find that it works better to start small and build momentum. With successful pilot projects, clinicians gain an understanding of the project benefits and help move it forward.

It's important to stay focused on interoperability in terms of strategic goals. "Don't compromise functionality or clinical medicine principles for interoperability," shares Gaede.

Finally, says Levine, tie interoperability to strategic goals to build the business. It sets the stage for a healthy marriage between clinical medicine and good business and also enables efficient, high-quality patient-centered care. And consequently, the beast is tamed and the economic model remains solid. **CMIO**



[Implementing the Corepoint data integration engine at Riverview Hospital in Noblesville, Ind., allowed administration to avoid hundreds of thousands of dollars in interface costs while uniting data from 26 different clinical information systems to allow access to data across the facility.]