Leveraging Integration Engines for Strategic Data Sharing under Value-Based Care

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The need to share information is becoming a top capability for healthcare organizations as the industry shifts to value-based care. The new payment model rewards providers based on quality outcomes, not on the volume of services rendered. As a result, healthcare organizations need to deliver coordinated care, which requires data sharing both within and across facilities.

More specifically, to succeed under these value-based models, organizations need to track and document all patient interactions in real-time; collect all patient data across the continuum of care; facilitate coordination and collaboration across the circle of care; proactively identify at-risk patients and deliver comprehensive intervention and ongoing care; prompt caregivers with trusted, actionable information when they need it; and continuously gather and learn from data to improve the quality and efficiency of care, while decreasing duplication and unnecessary costs.

The technical and organizational challenges of sharing data to meet these goals are daunting. One of the most complex but critical aspects of building the foundation for success under various risk-sharing models involves developing an IT infrastructure that will enable clinicians and administrators to access and share clinical and financial information, while streamlining and automating processes to ensure efficient workflows.

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Department IT manager
State public health department
in the Southwest

Ultimately, what's needed is high-level interoperability that enables two or more IT systems to exchange, interpret and share data that is understandable and actionable at the point of care. Responding to the call for data sharing, some IT vendors are offering systems that bring together disparate clinical and financial information, consolidating the data into one interoperable database. But a burning need still exists to integrate even more data – via interface engines – to reach the highest level of interoperability.

"There are some very large systems that incorporate 80 percent of care and even bring financial information into the same database," said a CMIO who works for a large, private health system. "But there are still significant areas of care that have not been integrated yet. We still need to have ancillary systems that bring data in, such as documentation from the cardiac cath lab and blood banking systems. So, for the foreseeable future, there are going to be niche systems that have data that we still need to integrate. And that is just within our health system. When we consider the work that we do with our partners out in the community, whether it is the physician offices, ambulatory surgical centers or other hospitals that use different systems, we realize that there is significant need for interface engines."

With these frontline challenges, HIMSS Analytics conducted a survey, which included responses from 162 healthcare IT executives, and two focus groups comprising a small group of these professionals, to arrive at a better understanding of where the industry stands in terms of interoperability trends, challenges and solutions. The leaders, who represent hospitals ranging in size from under 200 to more than 500

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CIO of a New Jersey-based organization

beds, focused on the value of interface engines, zeroing in on how such technology can help advance interoperability efforts by sharing data and, thus, supporting key business processes and improving workflow.

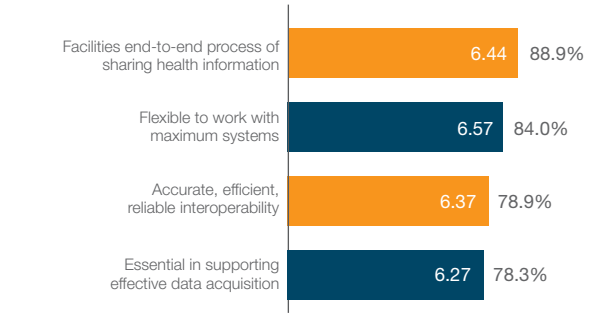
Supporting business processes with data sharing

As healthcare organizations move to value-based care models, more business processes – not surprisingly – include a data-sharing component. According to survey results, interface engines support a variety of key data-sharing processes. In fact, 89 percent of the respondents strongly agreed that interface engines facilitate the end-to-end process of sharing health information; 84 percent indicated that interface engines provide the flexibility to work with multiple systems; 79 percent cited accurate, efficient, reliable interoperability as a benefit; and 79 percent said interface engines are essential in supporting effective data acquisition (Figure 1).

A health system in Texas, for example, is leveraging its interface engine to integrate care across the community.

Figure 1

Interface engines are critical for supporting key business processes



N=162 Respondents identifying 6 or 7 shown in percent above.

"When we work with our partners who use different systems, we need to make our systems interoperable," said the system's CMIO. "So, when someone who had a complete cardiac catheterization workup at the county hospital comes to our private hospital with chest pains, our ED physicians have access to the information and we don't have to spend another quarter of a million dollars on another workup."

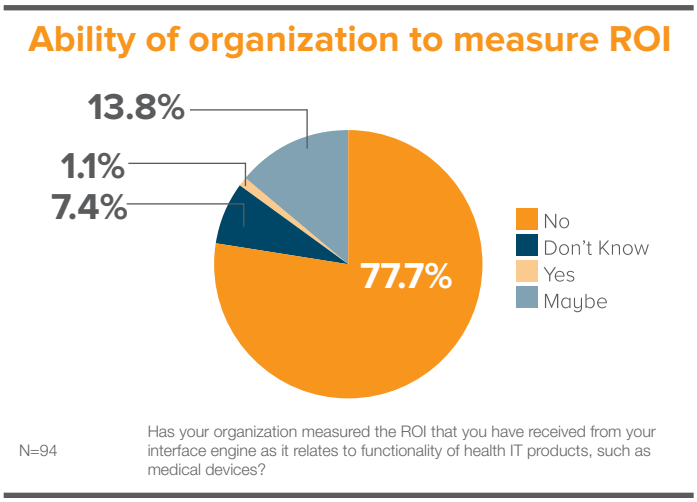
Similarly, a state public health department in the Southwest is relying on the Orion Health Rhapsody Integration Engine to share information among various organizations. "Currently our immunization program and our syndromic surveillance program receive data real-time. So, as the immunizations occur, they're posted," said the department's IT manager. "It's a huge advantage to be able to give providers and hospitals the ability to do data exchange in multiple formats."

Improving workflow

With greater data sharing comes improved workflow, according to survey results. Indeed, when asked what benefits interface engines bring to IT functionality, nearly eight in 10 respondents cited the fact that interface engines can help improve workflow (Figure 2). For example, a multi-facility health system in Hawaii routinely leverages an interface engine to send discharge instructions and other key critical information from the hospital's electronic health record (EHR) directly into the community-based primary care physicians' systems.

"For the rural community that we live in, the interface engine saves a tremendous amount of time for the private physician as well as for the hospital staff," said the system's CIO, adding that the engine enables the hospital to send

Figure 2



data to 10 to 15 different EHRs and practice managements systems at various providers throughout the community.

In South Carolina, an interface engine is being used to create a regional health information exchange in order to bring patient data to the point of care in emergency departments. "When a patient presents at any one of the 11 emergency departments in our region, the attending physician can use a record locator to see if the patient has received care at any of the other organizations," said the CIO at one of the participating hospitals. "If so, it brings back meds, vitals, notes and diagnosis. It really helps the attending ED physician provide care in a more timely manner." The CIO noted that workflow improves as there is no need to laboriously collect data or repeat various tests.

Such enhanced workflow also can lead to staffing advantages. According to survey respondents, 55 percent of healthcare organizations have realized non-IT staffing benefits as a result of interface engine utilization. At an East Coast hospital system, nurses formerly would enter data about patients into cardiac monitoring software and then enter the results from these cardiac monitors back into a clinical repository. In the intensive care unit, these nurses repeated this process when they took vitals every 15 to 20 minutes. Nurses spent almost five hours per day entering data into the cardiac monitoring system, according to a time study conducted at the hospital. With an interface connecting the cardiac system to the clinical repository, however, nurses have now recouped all five hours.

"With the interfaces, we have not only eliminated the data-entry tasks for the nurses, we have eliminated the risk of error associated with manual entry. The data coming off the monitors is accurately and directly fed into the repository," said the CIO of the New Jersey-based organization. "Best of all, this frees up the nurses to do the things they need to be doing at the patient bedside."

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>
> CIO of a four-hospital
> East Coast system

Building a more powerful system

Interface engines also help organizations build their computing portfolios more effectively. According to the survey results, nearly 75 percent of respondents said that interface engines offer the ability to add new IT projects and the ability to develop and expand network opportunities (Figure 3). Certainly, interface engines eliminate the need to assign IT staff members to the tedious creation of point-to-

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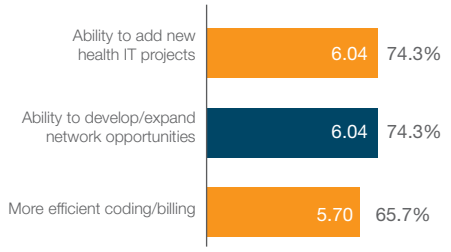
Director of technical services at a Midwest hospital

point interfaces. "We don't have interface teams at all of our hospitals anymore. Instead, we have one centralized interface team for the seven hospitals," said the New Jersey CIO. "Overall, we are decreasing the number of FTEs because every hospital had its own team at one time."

Just as important, the interface engine is enabling this team to expand the organization's technology portfolio. "No matter what we do, everybody wants the data. Whether it is data in systems or whether it is feeding data to medical equipment, like cardiac monitors," the CIO said. "So, our interface team is getting bombarded all the time with requests to integrate more and more systems." Fortunately, the interface engine has helped the health system build a far-reaching network of connected systems. "When I try to explain the value of the interface engines, I do a spider-web drawing with the interfaces up there, just to show the number of systems we have out there that talk to each other through an interface engine," the CIO noted.

Figure 3

Interface engines allow organizations to add new IT projects and develop new network opportunities



N=70

Please estimate how the use of an interface engine has enhanced your organization's overall financial health, using a 1-to-7 scale, where 1 is "no benefit" and 7 is "high degree of benefit."

Measuring the return

Business processes, workflow, staffing and IT development benefits are all top of mind when healthcare leaders consider the value of interface engines. According to the survey results, leaders also balance these benefits against considerations such as the cost to maintain the interface solution (76 percent), the interface software purchase costs (70 percent) and interface software installation costs (62 percent).

But although executives consider these costs when making decisions on interface engines, they don't necessarily plug these costs into a formal return-on-investment equation. Instead, many consider interface engines as a necessary component of their growth strategy – as a cost of doing business. "Our goal is one of positioning our organization for population health and regulatory compliance, rather than a more classic return on investment from a traditional business sense," said the CIO of a four-hospital East Coast system. "We really are looking at the big data side and focusing on using interface engines to get data that will position our organizations to succeed with population health and ICD-10."

The vice president of IT at another health system also refrains from launching into a formal ROI exercise, but instead recognizes interface engines as a vital component of the organization's continued growth strategy. "We look at the interface engine as a necessary tool to get the information to the places where we need to get it," he said. "For example, the interface engine has helped us grow our outpatient lab business. We now have physicians who send us lab business because we are able to connect directly to their EHRs and put the results in their EHRs. And, that has driven some lab business, which has been very profitable."

The CMIO at a Texas hospital agreed. “We’ve traditionally viewed the integration engine software as a cost of doing business, much like telecom and networks,” he said.

The director of technical services at a Midwest hospital says that her organization conducts formal ROI analyses when considering the addition of interface engines – but the equation plugs strategic benefits into the denominator. “We look at the business need of the exchange of that information and how does that assist us in either meeting meaningful use or meeting bundled payments or patient-centered medical home certification. We have to recognize that the technology aligns with our strategic objectives,” she stressed.

Strategic thinking

Although leaders consider interface engines as a cost of doing business, they must evaluate interface engines with an eye on strategic goals. For example, to succeed under value-based care and population health management programs, organizations need to leverage interface engines in light of the strategic need to acquire all of the relevant historic and timely data from constituent facilities and systems; aggregate that data; find actionable insights; get information and recommendations to caregivers, administrators and patients; and track ongoing implementation of those recommendations. As such, healthcare organizations can leverage their IT network to acquire, aggregate, access, adopt and analyze data and then, most importantly, turn the data into actionable information – all important steps in the quest to succeed under population health management and value-based care initiatives.

Many organizations are apt to find that they need to migrate to a new interface engine in order to support this more strategic IT platform. When adopting a new technology such as the Orion Health Rhapsody Integration Engine, these organizations can go beyond using interface engines as a necessary component of their business and move toward fully leveraging interface engines to support the robust data-sharing networks that will ultimately help them become value-based care models.