

# OmniMD EHR

## Drowning in Data:

Why Hospitals, Clinics and ACOs Need and Interface Engine

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## Summary:

An interface engine can handle multiple, complex interface between hospitals and labs, clinics, payers, billers, state registries and electronic health records while providing secured and transparent exchange of health information, enhancing patient care.

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## Background:

Mounting evidence that health information technology (HIT) can improve health care quality and patient safety and reduce unnecessary expenditure is spurring a flurry of activity in the public and private sectors, setting the stage for what some describe as a transformation of health care delivery. Increasingly, the focus of these efforts is on health information exchange (HIE). (1)

HIE is the electronic sharing of health related information among organizations. According to healthit.gov, HIE can reduce operational costs by automating many administrative tasks, and can expedite governance and management of the data change process, among other benefits. (2)

Ultimately, HIE should improve patient care by providing patient health information, test result and medical records from multiple sources quickly and securely, so providers and patients can make informed decisions.

HIE is also critical component for success with the American Recovery and Reinvestment Act of 2009 (ARRA), the meaningful use of health IT, and health reform initiatives, according to HIMSS. (3) while many of the meaningful objectives stand on their own without an HIE, future rule marketng around Stages 2 and Stage 3 requirements will include HIE capabilities.

Stage 2 rules are already out, and they include more rigorous interpretability requirements.

Discussion in the final rule clearly indicate that Stage 2 criteria will likely include more rigorous expectations for health information exchange, include more demanding requirements for e-prescribing, incorporation of structured laboratory results and the expectation that providers will electronically transmit patients care summaries to support transitions in care across unaffiliated providers, settings and HER systems. Increasing requirements for health information exchange in stage 2 and stage 3 will support the goal the information follows the patient (reference pre-publication document (PPD) of the rule, page 352). Expectations include not only capturing of data in electronic format but also the exchange (both transmission and receipt) of that data in increasingly structured formats in future stage criteria. (4)

In the summer of 2012, HIMMS interviewed a number of hospital systems, physician practicing group, and IDN about HIE. These provide agreed that the most important reason to implement HIE is to provide better and more efficient patient care. Other business drivers for this initiative include:

- Distribute hospital information to doctors
- Shifting reimbursement models
- Outreach to patients
- Building trust (5)

Additionally, there is evidence that HIE can reduce costs both hospitals and to society. A Vanderbilt University research team studied the financial impact of access to HIE by emergency department (ED) physicians and its effects on hospital admission in 12 major hospitals in the Memphis, TN metropolitan area. The total annual societal saving resulting from the use of HIE were approximately \$1.95 million. Annual operating costs during the study period of approximately \$880,000 reduced the net societal savings to around \$1.07 million.

The researchers believe that such savings will be only a fraction of the economic benefit that will be realized as the connected digital health care delivery system evolves. This study was supported in part by the agency for Healthcare Research and Quality. (6)

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#### Secure Information Exchange for Hospitals, Clinics and ACOs

Hospitals typically use a variety of complex software applications from different vendors. These include software for multiple laboratory information systems (LIS), radiology (RIS), pharmacies, payers, billers, their own electronic health record (HER), their hospital information system (HIS), EHRs of clinics and affiliated physicians, and practice management systems. These numerous applications result in mountain of information for any given patient from multiple sources.

The typical clinical facility or hospital has several HL7 enabled application and devices. HL7 provides the framework for the exchange, sharing and retrieval of electronic health information. To reduce data entry time and increase overall efficiency of the facility, these applications or devices need to communicate with each other, so that when message is sent from one system to another, it can be translated by the receiving system into exactly what was intended by sender. The problem can be even more intense for Accountable Care Organizations (ACOs). Interoperability between all the providers in an ACO is essential for coordination of care and chronic disease management.

Yet each application, legacy system or devices has a different record format and needs its own interface. In addition, the range of communication standards and development technologies is expanding beyond HL7. This clinics, hospitals and ACOs often struggle with obtaining and coordinating patient health information from multiple sources.

There are two basic ways exchange of information can be accomplished:

- Point-to-point where each pair of applications communicates independently of other applications.
- Using an interface engine that is placed between all the applications to aid in information exchange and monitoring.

The wide range of facilities and clinical providers created an extremely complex setting. If each provider had to individually manage the accurate transmission and receipt of hundreds of thousands of messages each day, a system such as HER would require hundreds of interfaces to other systems. This point-to-point transmission of information is possible in a small network of sites; however, maintaining interfaces becomes problematic when upgrades take place and the risk of transmitting inaccurate data increases as the number of interfaces multiplies. (7) Interoperability is difficult both to build and to maintain.

An Interface engine, on the other hand, acts as the hub between numerous legacy information systems using a standard messaging protocol. Today's interface engine:

- Has secured connections
- Captures the information
- Moves the information according to rules defined for each interface
- Monitors the different interfaces and communication interface
- Monitors the different interfaces and communication points
- Provides centralized visibility through a dashboard
  - Display flow of information
  - Permits error correction
  - Delivers alerts when issues arise
  - Presents information to decision makers in a timely fashion

Seamless and secured data exchange is much easier through a single engine than through dozens of individual connections.

Ultimately, a modern interface engine is an integration platform to ease and expedite healthcare decision-making, while requiring fewer and different resources than building point-to-point connections. It is adaptable to changes in data flow and becomes the tool for implementing





