THE ROLE OF HEALTHCARE INFORMATICS
IN ACCOUNTABLE CARE

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Executive Summary

An accountable care organization (ACO) is a group of providers that are collectively responsible for the total cost and quality of care provided to a specific population of patients. Together, the group assumes risk and shares rewards. As with high-performing organizations in other industries, the hallmarks of ACOs are quality measurement and continuous improvement.

Like other care models that are experiencing changing reimbursement structures, ACOs require new competencies to coordinate the delivery of care, and to manage populations, finances and risk. Issues of governance, leadership and health information technology must all be addressed. Systematic IT changes may be required to build upon the implementation of electronic health records (EHR) across the community and ensure integration and interoperability.[1]

To be successful, ACOs must excel in three broad areas where health IT plays a crucial role: clinical integration, analytics and care coordination. Without capabilities in these areas, ACOs will not be able to meet their mandate to provide quality care while controlling costs.

ACOs should carefully evaluate their technology decisions, since such choices have both strategic and tactical implications. It is unlikely that any single application or vendor can meet all of an ACO's needs for managing risk, insurance payments, provider networks, informatics, care coordination and more. Therefore, each ACO should find a vendor that offers a strategic healthcare informatics platform along with a robust partner network that can build and connect the applications it requires. In this way, an ACO can meet its needs in the three core areas of health IT in the short term, as well as gain the flexibility and scalability to face changing accountable care requirements and address long-term strategic objectives.

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[1] "Health Information Technology in the United States: Driving Toward Delivery System Change, 2012," Robert Wood Johnson Foundation.

Accountable Care is Here to Stay

With its inclusion in the Patient Protection and Affordable Care Act, the ACO has been positioned as a major strategic initiative. Now, ACOs and other accountable care models, such as the patient-centered medical home (PCMH), are driven not so much by legislation as by an imperative to better manage costs, measure and improve outcomes, and address growing consumer dissatisfaction with the health-care system.

Changing models of reimbursement are forcing healthcare organizations of all sizes, not just ACOs, to realign operations. Broad-based adoption of EHRs is required, along with the deployment of technology to enable interoperability and analytics that support performance improvement.

Savings and Outcomes Depend on Three Core Competencies

The payment model of an ACO is different from traditional fee-for-service models. ACOs are paid based on the quality of care delivered and patient outcomes, rather than on the amount of care delivered.

Industry research firm Gartner stated that savings and outcomes will depend on the data that is collected, aggregated and acted upon by clinicians operating within the ACO. The amount of data will be substantial, and it will come from various systems.[2] Clinical, administrative and operational systems all will contribute data. Taking advantage of this data to achieve savings and outcomes requires the following:

1. Clinical integration of various systems and workflows, including EHRs, healthcare information systems, departmental systems, claims systems and other applications. Sharing data from disparate systems across the ACO promotes care coordination and a long-term, holistic view of wellness.

2. Analytics that make use of all relevant clinical data—both unstructured data, such as text, and structured data, including financial and operational data—and serve up just the right information at the right point for clinicians and senior managers to make the optimal decision.

3. Care coordination over time and across patient settings, among providers, and with patients themselves participating.

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[2] "The U.S. HIE Market is Not Yet Ready for Accountable Care," Gartner, Nov. 10, 2011.

Working in concert, clinical integration, analytics and care coordination can help an ACO achieve its goals of providing quality care while controlling costs. For example, hospitals, specialists, primary care doctors, and payers can all collaborate and be notified when a patient is readmitted to a hospital for targeted conditions such as congestive heart failure or pneumonia. This is possible because the relevant data across providers is captured, shared, understood, and acted upon.

In addition, an ACO can analyze populations to identify at-risk patients as well as performance issues against previously installed quality metrics. The resulting intelligence is used to analyze workflow and provider behavior. In the case of the patient readmitted to the hospital, the care plan, patient compliance with treatment plans, and readmission rates against benchmarks are all measured and analyzed, leading to modified clinical workflows and better decision-making.

Clinical Integration

Clinical integration allows the organization to migrate from an encounter-based approach to a patient-based approach to care, with all relevant patient data, quality measures and financial benchmarks available to support decisions.

In much the same way that all suppliers in a manufacturing supply chain must be integrated, all participants in an ACO must be integrated, not only on the care side, but also in administration, payment, billing, reporting and analytics. A single vendor application will not enable this integration; however, a healthcare informatics platform that connects applications and assimilates all data will.

Various EMR systems, multiple hospital information systems, departmental applications, and regional or state-level health information exchanges might be deployed within the same ACO. Responsibility for providing data and making clinical decisions is shared among acute care providers, long-term care providers, primary care providers, specialists, home health organizations, social services, and others. Clinical integration allows the organization to migrate from an encounter-based approach to a patient-based approach to care, with all relevant patient data, quality measures and financial benchmarks available to support decisions.

Yet, in the early stages of an ACO, data standards and semantic interoperability among these systems may be primitive or lacking. This creates an immediate need for the ACO to implement a technology platform that can connect disparate systems, support existing and emerging standards, and enable the continuous capture, aggregation and seamless blending of data from multiple clinical and administrative systems. Tools that offer terminology services and inference capabilities on unstructured data can improve data quality and usability. Better data quality can drive more accurate notifications to providers and lead to improved clinical workflows.

Advanced Analytics

A primary purpose of connecting disparate systems and integrating clinical work-flows is to provide clinicians, whose decisions will impact the cost and quality of patient outcomes, with the right data at the right time in order to make the right care decisions.

ACOs require advanced analytics capabilities that continuously collect, aggregate, normalize, and present data in an understandable format to drive informed decisions and improved performance.

ACOs require advanced analytics capabilities that continuously collect, aggregate and normalize data—structured and unstructured data, such as radiology reports, progress notes and physician notes—from multiple applications and from across and beyond the organization. They must then present the data in an understand-able format to drive informed decisions and improved performance. In other words, without analytics, an ACO cannot operate successfully.

Consider this scenario: A population is analyzed to identify at-risk patients who require clinical intervention to improve health status. From an organizational per-spective, these patients represent a financial risk if they don't achieve the expected outcomes. To perform the analysis that determines the impact of care delivery on both clinical and financial outcomes, the organization integrates evidence-based clinical guidelines to assess the population and generate patient-specific care plans and interventions. Patients identified as high-risk trigger care coordination work-flows for follow-up.

In addition, patients need to be segmented into care management groups, such as high-risk asthmatics or diabetics. Utilization is analyzed, and physicians who have opportunities to practice more efficiently are identified and educated. Major cost drivers are measured and managed.

Analytics can also kick off notification services, such as provider-to-provider or provider-to-patient messaging. For example, a primary care provider working within an ACO could automatically be alerted when one of his patients does not appear at a follow-up appointment with a specialist, or if lab results fall within certain ranges, or if a prescription medication is not refilled. Other members of the care team could also be alerted, and a nurse could follow up with a phone call to the patient to ensure proper care.

For this scenario to occur, the following actions must take place in near real-time:

- Data from multiple systems is aggregated and analyzed.

- Providers are alerted, or clinical or operational processes launched, based on rules invoked.

- Decisions are made and recorded in the system, for measuring outcomes.

Care Coordination

With the focus on quality outcomes and cost management in a shared risk and reward model, all participants in an ACO are motivated to work as a team to coordinate patient care.

Successful care coordination requires a platform that conveys "near real-time status and alert information from the analytics system back to operational users of EHRs and other transactional systems."

Care coordination naturally follows the themes associated with clinical integration and advanced analytics. Gartner states that successful care coordination requires a platform that conveys "near real-time status and alert information from the analytics system back to operational users of EHRs and other transactional systems."[3]

In addition, ACOs require IT support for managing transitions of care, with all relevant patient information accompanying that transition. Again, integration and analytics are the key. The ACO technology platform needs to facilitate the sharing of information among applications, such as:

- Discharge planning and management.

- Referral and request tracking.

- Provider-to-provider secure communications.

- Medication reconciliation.

- Case and disease management.

- Team-based care with a multidisciplinary approach.

- A shared care plan that includes clinical and behavioral goals.

Patient engagement is also a necessary component of care coordination, with patients requiring secure access to their personal health information and the ability to participate in their care plans. ACOs need to implement patient portals where consumers can access their personal health records and communicate securely with their care teams.

InterSystems HealthShare™ for Accountable Care

InterSystems HealthShare is a strategic healthcare informatics platform. Using HealthShare, an organization can navigate a rational and forward-looking course through a constantly evolving accountable care environment and to address its population health management needs.

HealthShare enables ACOs to connect systems and to capture, share, understand and act on data across multiple systems and among many clinicians to coordinate care, analyze outcomes and report results.

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[3] "The U.S. HIE Market is Not Yet Ready for Accountable Care," Gartner, Nov. 10, 2011.

HealthShare offers the following key capabilities to support ACOs in their efforts to manage and use healthcare data:

Connect Disparate Systems

HealthShare provides the common workflow engine that enables ACOs to deploy consistent and shared processes such as clinical decision support. ACOs will be able to access and share information across the disparate administrative, financial, and clinical applications deployed by the hospitals, health plans, physicians, and others involved in the ACO initiative.

Foster Health Information Exchange

HealthShare provides the connectivity, data aggregation, data normalization, and data storage capabilities needed to bring all patient information together. It enables bidirectional sharing of patient data between multiple hospital information systems and EHRs. It also provides the standards, support and technology needed for creating clinical document architecture (CDA)-based documents containing patient information, as well as the secure messaging technology for sending them to the appropriate care team members.

Coordinate Care

HealthShare offers Active Analytics technology that mines up-to-date data in EHRs and across the enterprise, sifts out what is unnecessary and focuses on delivering relevant data to the clinical team. Query capabilities allow managers to define their own approach to analyzing population health status, trends and costs. Analytics and triggered notifications help the team, especially primary care physicians, better care for patients in disease management programs, and reduce the costs associated with poor control.

Achieve Bottom-Line Benefits

Ultimately, the success of an ACO will be measured based on whether risks are managed and outcomes are improved. HealthShare delivers benefits that impact risk management and quality of care, such as a reduction in readmission rates and in redundant tests and procedures. Complete patient medical history (including diagnoses, procedures, medications, allergies and labs, among others) and care plans are available to everyone involved in caring for the patient, respecting the various workflows and enabling better decision-making at the point of care.

At the leadership level, HealthShare is a strategic platform, enabling an ACO to become a high-performance provider organization capable of both weathering rapid changes in the healthcare industry and achieving sustainable growth.

HealthShare Components in Detail

HealthShare includes a broad set of capabilities that help ACOs organize all of their systems and data around the single most important point in healthcare—the patient. And it provides Active Analytics to help use that data to optimize care, reduce costs, manage risk, and meet reporting requirements. HealthShare components include the following:

- **An Embedded Database:** Configurable storage and management of all information that passes through HealthShare, making it available for health surveillance, population health management, research and other, secondary uses.

- **An Integration and Workflow Engine:** HealthShare's advanced technology provides robust connectivity and integration with all data sources, along with event processing and workflow capabilities to tailor information delivery to the way each organization operates.

- **Standards/Protocol Support:** Full support for international, national and local standards for information exchange in healthcare, with built-in object-based facilities for extending or constraining those standards to address specific project needs.

- **A Composite Health Record:** Data aggregation and normalization technology for rapidly combining clinical and demographic information from multiple sources. HealthShare supports all major health information exchange standards. Aggregated information is stored using a proven, universal healthcare data model.

- **Clinical Message Delivery:** Infrastructure for secure clinical communication between providers and systems. HealthShare's Clinical Message Delivery capabilities support the Direct Project and the clinical integration requirements of an ACO through both push and pull delivery methods.

- **Patient Index and Provider Registry:** An identification service that locates the correct people (patients, clinicians and users), providers, facilities, documents, and other centrally managed resources. It incorporates sophisticated probabilistic matching technologies that can be used alone or in conjunction with other vendors' indexing and registry systems.

- **A Clinician Viewer:** A browser-based clinician viewer (portal) that allows tailored user interfaces for different facilities, medical specialties or other groups of users.

- **Consent Management:** A flexible consent engine for defining consent policies, capturing patient consent directives, and enforcing privacy policies whenever data is accessed.

- **Terminology:** Terminology management that enables maintenance and use of applicable terminology standards (e.g., LOINC, SNOMED and ICD) or custom code sets as appropriate.

- **Analytics:** HealthShare's Active Analytics, which works with structured and unstructured (free text) data. These capabilities are transparently embedded in the system to provide real-time access to the most current information for alerting, reporting and analysis. When working with unstructured data (in clinical notes, for example), the system can extract meaningful information, such as symptoms, diagnoses, and tests, without requiring keywords or pre-built ontologies.

- **Security:** Technology that authenticates users and systems, encrypts and controls access to data, and audits access to ensure compliance with privacy policies.

Recommendation

The ACO market has momentum, and organizations that are in the process of form-
ing ACOs should identify their required workflow processes, the data needed to
support those workflows, systems capabilities, and performance improvement
targets.

Potential vendors should be evaluated based on how well they understand the
challenges of the ACO environment, how their understanding is reflected in their
current offerings and is shaping their future offerings, and on the extent of their
partner network that can build and connect applications on their platform.

Vendors should be able to match their IT capabilities and platforms to immediate
ACO requirements, as well as offer a vision to accommodate evolving market
needs.

About InterSystems

InterSystems develops advanced data management, strategic interoperability, and analytics platforms that enable clients and partners to make breakthroughs in healthcare, financial services, government, and dozens of other industries. In selected countries, InterSystems also offers unified healthcare applications, based on its core technologies, that deliver breakthroughs across the continuum of care. With a passion for excellence and a focus on client success, InterSystems is a privately held company headquartered in Cambridge, Massachusetts (USA), and its software products are used daily by millions of people in more than 100 countries.

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