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WHITE PAPER

ACTIVE ANALYTICS: DRIVING INFORMED DECISIONS LEADING TO BETTER CLINICAL AND FINANCIAL OUTCOMES

An InterSystems White Paper for Healthcare IT Executives

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HEALTHSHARE™

Active Analytics: Driving Informed Decisions Leading to Better Clinical and Financial Outcomes

Overview

Integrated Delivery Networks (IDNs) face complex challenges in getting the right data into the right hands, at the right time, with the goal of more informed decision-making and improved clinical and financial performance.

In many cases today, even with the use of traditional business intelligence tools and an enterprise data warehouse, important data often remains locked up, hard to access, and difficult to aggregate and present to healthcare providers in a useful, unified format. IT executives and their staffs currently devote extensive resources to plugging together multiple disparate systems in use across their network, and still much of the data is inaccessible.

Making these challenges more pressing – and a higher priority to overcome – is the rise of progressive accountable care models such as Patient-Centered Medical Homes and Accountable Care Organizations. These models of care and reimbursement require the sharing of comprehensive patient data among care teams, health plans, and government entities. The operating environment may consist of various EMR systems, a regional health information exchange, and multiple hospital information systems and departmental applications all deployed within the same IDN. Responsibility for providing data and making clinical decisions is shared among acute care providers, long-term care providers, primary care providers, and specialists. Yet these teams may not have the data-sharing and communication tools they need.

An IDN can overcome these challenges and improve clinical and financial performance if it puts in place a unified, strategic healthcare informatics platform that serves as the foundation to efficiently:

- Continuously capture and aggregate data from multiple systems
- Securely share data among users and communities
- Present all data, both structured and unstructured, in an understandable format
- Provide real-time analytics and insight that drive more informed decisions, leading to improved performance

This last point – real-time analytics that drive more informed decisions, leading to improved performance – is the ultimate payoff for implementing a strategic healthcare informatics platform.

In fact, many organizations already understand the value of real-time or near real-time analytics performed in support of decision-making. According to a recent research study by the Aberdeen Group, 91% of best-in-class organizations deliver actionable information to decision makers within their needed window of time for making decisions. Among those organizations, 49% consider it a top priority to connect decision-makers with operational data – both structured and unstructured data – and 67% of best-in-class organizations provide secure exchange of operational data across functions.

Apply these statistics to healthcare organizations and you can conclude that the best-performing IDNs will be those that support and foster decision-making when and where it is needed, at every point of care.

Compelling Reasons for a Strategic Healthcare Informatics Platform

A strategic healthcare informatics platform with real-time analytics offers the following key benefits:

- IDNs no longer need to tie up valuable resources attempting to plug together different application stacks. Applications can contribute data to the new platform, regularly and continuously, to be transformed and used appropriately wherever needed.

- Advanced data processing and analytics features can handle unstructured data such as lab or image reports, progress notes, or other text-based information. The data can be combined with structured data, analyzed, and presented to the decision-maker in a usable and relevant format.

- Real-time analytics can automatically launch processes or deliver rules-based alerts and recommendations that can positively impact clinical and financial outcomes. Compare this approach to traditional business intelligence tools used in many IDNs, which may offer gleaming dashboards but often only a retrospective snapshot of clinical and financial operations. In these cases, the data is often too out of date to drive timely actions or influence immediate care decisions.

HealthShare Active Analytics Supports Timely Decisions

InterSystems HealthShare is a strategic healthcare informatics platform that enables you to take advantage of your existing systems and the vast amounts of untapped patient information contained within them. Active Analytics is HealthShare's real-time analytics component that continuously collects, aggregates, normalizes, and presents data from across and beyond your organization to drive better decision-making, actions, and both financial and clinical outcomes.

What sets Active Analytics apart is that it can deliver notifications or alerts to care providers, or it can launch clinical or operational processes based on rules invoked from a previous analysis of a comprehensive patient data set.

A few examples:

- A primary care provider working within a Patient-Centered Medical Home is automatically alerted when one of their patients does not appear at a follow-up appointment with a specialist or when lab results fall within certain ranges. Other members of the care team are alerted as well and a nurse follows up with a phone call to the patient to ensure proper care.

- A care management program may exist for asthmatics because previous analysis had uncovered that asthmatics who present at emergency departments tend to be non-compliant with their medications. Now, when a patient presents at the emergency room with complications from asthma, the patient is automatically enrolled in the care management program, triggering notifications to a care team and follow-up with the patient. In addition, whenever patients in the program present to caregivers, automatic checks of medication compliance pull data from sources in the information exchange.

- When patients are re-admitted to a hospital within 48 hours of discharge, their chart information, including unstructured data such as physician notes, is automatically fed into an analytical application that may detect trends in the readmission phenomena and lead to better discharge care plans or different approaches to follow-up.

- A patient that presents with a specific history, condition, or set of symptoms is automatically recommended for enrollment in a clinical trial or disease management program the IDN has established.

- Clinicians managing high-risk populations such as patients in a diabetes disease management program are notified when a patient is overdue for having hemoglobin A1C levels checked. Clinicians take appropriate action with the patient. This insight, leading to intervention, would not be possible if the only analytics available were retrospective reports of claims data showing snapshot outcomes or results of the program.

These scenarios have several things in common:

1. The analysis performed is based on a comprehensive patient data set aggregated from multiple sources. There is no lag in data availability. The analysis does not depend on dated claims data.

2. The analysis triggers actions—in the form of processes, alerts, notifications, or recommendations—that can positively impact clinical and financial outcomes. This not only improves operational performance of the IDN, but also its reputation and competitive standing in the market it serves.

3. The opportunities for action and improved performance that Active Analytics presents would be missed if the IDN relied only on retrospective analytics.

4. In accountable care models, where reimbursement is tied to clinical performance, that performance can be positively influenced at the point of care.

A Data Store is at the Core of Active Analytics

The data that underpins HealthShare Active Analytics comes from a variety of sources: hospital information systems, departmental systems, legacy applications, EMR systems, regional health information exchanges, even administrative systems, payer data, and public health registries.

Active Analytics works from a single, centralized data store where the data is continuously collected, aggregated, normalized, and optimized for analysis. Data flows from clinical systems through the HealthShare Composite Health Record which acts as a data collector. Here, the data is transparently repurposed, managed and cached. "Smart" updates will be sent to the centralized HealthShare Active Analytics database. This data is used to drive actions as well as produce reports, dashboards, and ad hoc queries.

Whether or not an IDN has already implemented an enterprise data warehouse, the IDN can use Active Analytics to establish separate data cubes that pull data directly from operational systems at regular intervals—from every five minutes to every day or any other appropriate interval. Data can also be fed into Active Analytics in real time. For organizations without an enterprise data warehouse, HealthShare with Active Analytics can serve that role as well as the role of providing real-time analytics.

For example, Active Analytics can prompt not only the point-of-care action, but also more traditional yet still rich analysis and reporting that can support strategic initiatives of an IDN, including:

- Understanding the depth of your affiliation with any physician group in your network to make informed decisions about your relationship. Transactional data such as lab results, image reports, discharge summaries, referrals, and other patient data can be aggregated and analyzed to produce metrics that drive action such as strengthening a business relationship or acquiring a physician practice.

- Analyzing how electronic sharing of information such as secure clinician-to clinician messaging, results delivery service, or medication reconciliation impacts key metrics such as readmission rates or medication compliance.

- Quickly and adequately meeting regulatory compliance requirements by running necessary reports and driving any process changes required.

- Analyzing patient populations, departmental or clinician performance, success of care management programs, or other relevant data sets.

HealthShare Meets Both Short- and Long-Term Strategic Needs

The value and performance of the HealthShare platform have been proven in some of the world's largest and most demanding healthcare environments.

Most importantly, the platform provides the strategic basis for not only supporting an IDN's immediate and mid-term integration and analytics needs, but also longer-term strategic needs such as care management initiatives and accountable care, where the IDN is responsible for both clinical and financial outcomes. These instances require a more robust infrastructure and may require connecting hospitals, practices, nursing homes, health plans to meet strategic goals and regulatory requirements.

About InterSystems

InterSystems Corporation is a worldwide leader in breakthrough solutions for connected care with headquarters in Cambridge, Massachusetts, and offices in 23 countries. **InterSystems HealthShare™** is a strategic platform for healthcare informatics, and the creation of an Electronic Health Record on a regional or national scale. **InterSystems TrakCare™** is a Web-based unified healthcare information system that rapidly provides the benefits of an Electronic Patient Record (TrakCare is not available in the United States). **InterSystems DeepSee™** is software that makes it possible to embed real-time analytics capabilities in transactional applications. **InterSystems CACHÉ®** is the most widely-used database in clinical applications. **InterSystems Ensemble®** is a seamless platform for integration and the development of connectable applications.

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