ACCOUNTABLE CARE ANALYTICS: DEVELOPING A TRUSTED 360 DEGREE VIEW OF THE PATIENT

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Introduction

Recent federal regulations have been instrumental in reforming the healthcare system in the United States. The Health Information Technology for Economic and Clinical Health (HITECH) Act, enacted as part of the American Recovery and Reinvestment Act of 2009, aimed to improve healthcare delivery and patient care by investing in the adoption and use of health information technology (health IT). HITECH focused primarily on encouraging adoption of electronic health record (EHR) systems among Medicare and Medicaid providers as a means of facilitating care coordination. In 2010, the Patient Protection and Affordable Care Act (ACA) further accelerated the need for health IT by expanding healthcare coverage and implementing new models of care delivery aimed at creating a patient-centric, value-based health system. This white paper explores the need for comprehensive enterprise information management and analytic capabilities to support these initiatives in reducing costs and improving the quality of care.

Need for Data to Achieve Accountable Care Goals

In the traditional fee-for-service reimbursement system, health information is rarely shared across the continuum of care or between disparate healthcare settings. Data that is shared can be lost, late, incomplete, or inaccurate, resulting in an imperfect picture of a patient's condition, medical history, and prior treatment. As a result, providers may deliver inappropriate care, order redundant tests, prescribe contraindicative medications, or give the patient contrasting follow-up care recommendations. These types of medical errors can drain a health provider's resources, have an adverse impact on patient experience, or cause serious harm to the patient.

In an attempt to overcome the adverse effects of siloed care under the fee-for-service reimbursement model, ACA introduced new value-based delivery models such as accountable care organizations (ACOs) to improve quality and contain costs. Broadly defined as a group of providers that are integrated across disparate settings into a unified network, ACOs require vast amounts of data to manage a patient population, coordinate care across the continuum, and take on risk for the beneficiaries that are assigned to them.   In the two years since the Centers for Medicare & Medicaid Services (CMS) rolled out pilot ACO programs, various models of accountable care have proliferated through federal payment mechanisms focused primarily on Medicare populations and within the private sector. However, all accountable care organization models require extensive data to monitor performance and patient outcomes in accordance with the quality standards and evidence-based guidelines associated with reimbursement, accountability, and risk.

Because accountable care models seek to improve the health of entire patient populations, they typically involve a wide range of stakeholders, including hospitals, labs, payers, specialty and primary care providers, home health, and hospice care. Under an accountable care model, these organizations need to act in a coordinated manner with one another to reduce inefficiencies and provide optimal care. Healthcare providers within an ACO need a trusted, data driven 360° view of their patients in order to provide the right care at the right time in the most cost effective setting for each patient. This

perspective requires an integrated view of data that extends beyond the clinical information captured in an EHR. To integrate providers across disparate settings into a unified network ACOs must utilize data from other clinical sources such as imaging systems, lab data systems, and disease registries, as well as claims, financial, and administrative data from various settings along the entire continuum of care. Combined together, these data sources enable ACOs to continuously monitor physician performance and patient outcomes at both the individual and population level. Analytic capabilities are integral to leveraging the data and providing insight for essential activities, such as financial management, population health improvement, and performance measurement.

Financial Management & Resource Utilization

Given the shift from traditional fee-for-service reimbursement to value-based reimbursement, ACOs require a new approach to revenue cycle management. While greater efficiencies in care, reductions in medical errors, and a healthier population requiring fewer medical services may generate revenue, ACOs must also pay close attention to their bottom line. As a result, both ACOs and payers must use detailed cost and performance information for financial management to negotiate more appropriate contracts based on changes in medical service utilization and patient outcomes that are recorded in clinical, administrative, and financial systems.

Through financial arrangements, ACOs can incentivize collaboration among providers across the continuum of care by providing them with the same quality and financial-based standards. To support new reimbursement models, it is important that ACOs have access to administrative data to evaluate resource utilization across their networks. Data analysis can allow ACOs to identify and implement the most cost-effective resources for the delivery of high quality care.

Risk Stratification & Population Health Management

Population health management within an ACO largely depends upon the ability to leverage data for patient identification and risk stratification. Comprehensive data sets and analytic capabilities enable an ACO to identify individual patients who are at high risk for certain medical conditions, non-compliance with treatment plans, admission to the emergency department, readmission to the hospital, and high costs. The ability to use data to identify and stratify high-risk patients allows the ACO to proactively manage each patient's healthcare needs to promote wellness while controlling costs.

To effectively manage the health of a population, it is important that ACOs have the information management capabilities to understand the patients being treated at both an individual and aggregate level. Data at a population level allows ACOs to evaluate their performance in treating patients with a specific disease, condition, risk level or geographic location. For example, ACOs may leverage data from disease surveillance initiatives or registries that list patients with certain chronic conditions to better manage a population's health by sending reminders to physicians at the point of care, and self-management education outreach to patients. Additionally, population health data and trend reporting enables ACOs to identify best practices and develop standardized evidence-based approaches to

prevent, treat and manage common conditions that lead to optimal outcomes with minimal costs. Furthermore, cost and quality data can be used to evaluate and benchmark the performance of specific healthcare providers at managing the health of a population.

Performance Measurement

Data is essential to assess the performance of ACOs at an individual and institutional level. Through their financial and organizational arrangements, ACOs are held accountable to provide care and maintain performance, often based on the achievement of pre-determined quality of care, efficiency and patient experience standards. For example, indicators can be evaluated for clinical quality (e.g. completion of routine screenings), efficiency (e.g. appropriate resource utilization), and patient experience (e.g. patient feedback on their care experience).

In addition to assessing population health, ACOs can use performance measurement data for internal benchmarking and quality improvement efforts. For example, an ACO can analyze a physician's performance by comparing the efficiency and quality of services with other providers within the ACO or with regional, state, or national benchmarks. This information can drive overall improvement by enabling the ACO to intervene and communicate the need for improvements to low-performing providers.

A Trusted Holistic View of the Patient

By connecting providers and institutions across the healthcare system that have traditionally been siloed by fee-for-service reimbursement, ACOs encourage collaboration for better care coordination and quality of care. Central to successful collaboration is the integration of disparate data sources. To provide the most appropriate and cost effective care, providers within an ACO need a trustworthy 360° view of their patients.

Multiple factors are needed to achieve a trusted view of the patient. Demographic and socio-economic data is important to ACOs, as these factors have clinical implications and often play a critical role in a patient's ability to comply with treatment plans and prescriptions. Additionally, access to information about patients' clinical encounters, including patient experience and satisfaction data, is needed to inform providers within the ACO about the care a patient has received from other members of the care team. In order to provide the most appropriate care for a patient, it is important that an ACO has complete medical history information for its patients, including behavioral risk factors, diagnoses and past treatments, clinical outcomes, laboratory and pharmacy information and claims history.

Leveraging Data for Actionable Results

Access to aggregated and trusted data sets supports ACOs in providing the highest quality and most cost-effective care to achieve optimal health outcomes for their populations. Multiple types and sources of data are needed to complete a 360° view of a patient to inform and support clinical decisions, predict patient response to and compliance with treatments, optimize outcomes, and control costs. In order for

data to be relevant and useful to care providers within the ACO, it should be accessible to the care team in a timely manner. Real-time access to data allows patient information to be integrated into administrative and clinical workflows to support clinical decisions at the point of care and improve health outcomes. Incomplete, untimely and inaccurate data can lead to inappropriate and costly medical care, negative patient experience, misdiagnoses, and poor outcomes.

Analytic Capabilities of Data-Driven ACOs

Integrated data is a fundamental resource to a successful ACO. However, data can only achieve its full value through the effective use of analytics. In data-driven ACOs, analytics help to derive actionable information from the integrated financial, administrative, clinical, population health and research data elements that are all needed to measure accountability, performance and quality. ACOs can use analytical tools to sort through data in a timely manner, manage population health, support clinical decision-making, and evaluate provider or patient performance using cost and quality indicators.

Administrative and Financial

ACOs can use analytics to stratify data, helping to prioritize, distribute or monitor intervention activity and results unremittingly. ACO teams can stratify data by demographics, health status, and behavioral or financial risk. As an example, to determine financial risk, ACOs can use predictive modeling to forecast which patients are likely to be the most costly, and identify methods to manage these costs or account for these costs during financial planning. If revenue targets aren't met, an ACO can use analytics to investigate the cause. For instance, data from different departments or care sites can be analyzed to determine where costs are higher than anticipated along the care continuum. Using this intelligence, ACOs can target interventions or improve administrative processes at those sites to reduce costs.

Upon noticing that three percent of its patients account for approximately 80 percent of spending, a large healthcare delivery provider comprised of more than 20 hospitals worked with Informatica to find a solution. To better manage the patient population, the health system focused on creating a longitudinal record for patients that encompasses the entire continuum of care, incorporates all sources of information, and fosters business and IT collaboration. Informatica provided the health system with an end-to-end data integration solution, establishing a unified platform for data integration, governance and management. With its new data capabilities, the health system is now able to analyze and evaluate the true cost of providing care. More importantly, however, the health system has developed a flexible platform built to scale to its users and needs as data management capabilities evolve.

Care Coordination

Coordinated care is a foundational component to successful ACOs which can be supported by analytics to evaluate the effectiveness, efficiency, and workflow of providers and care transitions, as well as identify gaps in patient care. While many ACOs struggle with obtaining a trusted view of information across sources, analytics can be used to help determine the accuracy and reliability of communication among providers, allowing ACOs to identify gaps in data transfer, including lost or inaccurate information, miscommunication, and misaligned information systems.

For example, although a large multi-facility, multi-location health system that provides a variety of services in both urban and distant rural care sites in New England was supported by a sophisticated technology infrastructure, it had no single record of each patient's complete care experience. Instead, clinical encounters with individual providers were being recorded in different ways, resulting in inconsistencies in the data recorded and therefore obfuscating its value. To piece together the fragmented and inconsistent data, the health system needed to better ensure proper and reliable integration of information across the health system in order to achieve a 360° view and coordinated care of its patients.

The health system worked with Edgewater to define a universal Patient Encounter data model and a logical design for data transformation and storage components, encouraging the integration of crucial data from all sources into a unified data exploration environment. Recognizing the benefits of analytics, Edgewater helped the organization to build an integrated database to enable more complex analytics. With its new data and analytics model, the health system is better able to integrate, govern and manage its data and capture a more holistic view of its patients. As a result, the organization realized a number of benefits, including the enhanced ability to examine patient-provider relationships and patient referral patterns, patient compliance, case mix intensiveness per individual providers or practice groups, and geographic distribution of patients.

Treatment and Disease Management

As ACOs work to deliver high quality, cost-effective care that enhances care and optimizes outcomes, it is important that ACOs leverage data to identify standardized approaches and best practices. Analytic techniques enable ACOs to evaluate and compare the effectiveness of new and different treatment options and identify those best practices. ACOs can optimize analytics to examine the cost effectiveness of specific treatments by measuring costs against quality of care measures. As evidence-based practices evolve and new approaches to treatment are developed, ACOs can use analytics to estimate the relative benefits of new medical interventions against the potential costs in terms of altered workflows, costs for purchasing new technologies, administrative changes, and others.

Similarly, analytics can support the management of chronic diseases by analyzing specific clinical pathways to determine which disease management methods optimize patient outcomes. By assessing the value and utility of the care provided to a population, ACOs can implement more effective care protocols and use resources more efficiently to achieve better quality of care, health outcomes, and overall patient experience. Analytics can also help ACOs to identify clusters of high-burden patient populations stratified by condition, geographic location, and demographic information. By identifying at-risk patients, ACOs can proactively educate them about a specific disease or receive targeted intervention.

Challenges and Emerging Opportunities

A number of barriers to data integration, governance and management continue to exist, preventing ACOs and other healthcare providers from realizing the full value of their data. While new reimbursement and delivery models are being tested on a national level, fee-for-service reimbursement,

continues to be the predominant form across the greater healthcare system. Until there is a widespread shift to value-based reimbursement models and accountable care, it will be difficult to encourage and communicate the value of collaboration and data sharing. Data governance and the ownership, access, privacy, and security of patient information can be significant barriers to achieving a trusted 360° view of patients. Additionally, technology barriers such as the lack of data standards and interoperability limit data integration and sharing. However, it is expected that the increased adoption of health IT, innovative analytical methods, and emerging reimbursement and coordinated care delivery models will help to overcome these obstacles.

A trusted 360° view of a patient allows healthcare providers to deliver proactive and individualized care that is cost-effective and high quality. No provider is able to achieve the desired results alone, and collaboration and coordination across the continuum of care, including within and across institutions, is critical to aggregating vital pieces of information and analyzing the data to identify drive actionable decisions. As the healthcare system undergoes its transition to value-based reimbursement, and as more ACOs develop, the pairing of information management with comprehensive analytic capabilities is crucial for a trusted 360° view of patients and delivering high quality care at the most affordable price.