With accountable care models becoming more prevalent across the country, many newly emerging provider networks are unclear about what technologies are needed and how to start planning their IT road maps. Designing IT solutions for a particular accountable care program can be challenging because programs are highly individualized in their organizational structure, financial risk arrangements, and clinical requirements. As a result, organizations often struggle to determine which IT systems are necessary and how they should be implemented to support specific clinical and financial goals. Here we clarify key IT considerations and requirements for accountable care programs.

**What are the core IT requirements?**

In addition to performing the functions needed to support fee-for-service (FFS) care delivery, IT infrastructure for accountable care must also assist in the exchange of information between providers; enable quality and performance analytics; allow providers to deliver standardized, high-quality care; and track financial and clinical outcomes. While each accountable care program is different, there are common IT systems found in almost all of them: electronic health records (EHRs), health information exchanges (HIEs), care management systems, and analytics and reporting systems. However, the capabilities of these systems vary between organizations, and they can be used alone or in combination to meet the objectives of the programs in a variety of ways, as seen in Table 1.
These core systems offer value in the delivery of accountable care, but how they are used depends on specific organizational and environmental considerations. When assembling the appropriate IT system portfolio to support an accountable care program, organizations must carefully conduct an assessment of their current core systems. By addressing specific considerations for accountable care, it is easier to understand the capabilities of IT systems and design a plan that meets program objectives in an efficient and scalable way. Assessing current systems can often result in using them in new ways, which helps to minimize additional investments in new technology. With that in mind, let’s dig a little deeper into each of these core IT systems.

1. **Electronic Health Records**

Without EHR use, it is unlikely that a provider would be able to effectively participate in an accountable care program, because electronic storage of clinical data is the foundation for exchanging information between providers and analyzing data. EHRs are used not only for basic clinical documentation, but often in expanded ways to help providers and care teams document health risk assessments and care plans, adhere to quality standards when treating patients, monitor health outcomes, standardize care, and perform basic analytics.

**FIGURE 1. How EHRs Support Accountable Care**

<table>
<thead>
<tr>
<th>GOALS</th>
<th>EHR</th>
<th>HIE</th>
<th>CARE MANAGEMENT SYSTEM</th>
<th>ANALYTICS AND REPORTING SYSTEMS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coordinate care across providers and care settings.</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Identify specific patients and cohorts.</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Manage patient care and engage with patients.</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Standardize and improve quality of care.</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Monitor financial performance.</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Exchange information between providers.</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Drive performance improvement.</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
</tbody>
</table>

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An organization’s EHR can impact many of its other accountable care IT strategies. EHR solutions that are interoperable across organizations can significantly reduce the cost and complication of IT infrastructure by creating full EHR visibility between providers. This shared visibility reduces or eliminates the need to participate in HIEs or invest in solutions to integrate data across different EHR platforms. Many EHRs also can serve as a program’s care management system, eliminating the need for a separate system to document care management efforts and help care teams engage with patients. However, when EHRs are not interoperable and do not have these abilities, IT portfolios for accountable care programs can quickly become complex and siloed. While having disparate EHRs across a network complicates the IT infrastructure, it is becoming easier to address this problem as solutions for data integration across organizations improve and become more affordable.

2. Health Information Exchanges

Without EHR use, it is unlikely that a provider would be able to effectively participate in an accountable care program, because electronic storage of clinical data is the foundation for exchanging information between providers and analyzing data. EHRs are used not only for basic clinical documentation, but often in expanded ways to help providers and care teams document health risk assessments and care plans, adhere to quality standards when treating patients, monitor health outcomes, standardize care, and perform basic analytics.

Beyond the type of exchange, there are several considerations of HIE functionality that can help with other program requirements supported by IT. HIEs are designed to exchange specific information sets; however, many organizations may find value in expanding the standard information set with additional clinical data (for example, giving providers access to all lab results or care plans). An HIE can be structured to store clinical data exchanged between providers in order to meet the analytical needs of the program; they also can import data from other sources to serve as a data warehouse for a variety of analytics.
3. Care Management Systems

Care management systems have their roots in the disease and utilization management functions of insurance companies and provide important functionality as providers take on the role of a health plan. Care management systems are used to support the activity of care managers and document their interactions with patients in ways that EHRs cannot support because the activities are not typically conducted in clinical settings. This includes tracking outreach and engagement activity, storing information gathered from health risk screenings or other types of telephonic interaction with patients, and providing work flow support to identify patients needing specific care coordination or interventions.

The value of a stand-alone care management system depends largely on what can be accomplished via EHR with respect to care coordination work flow and documentation. The organizational structure and staffing strategies for care coordinators may also impact their ability to access and use an EHR for these purposes.

“Care management systems provide critical functionality as providers take on the role of a health plan.”
4. Analytics and Reporting Systems

The transition to accountable care delivery relies heavily on the reporting and analysis of financial and clinical outcomes to demonstrate an increase in the value and quality of care provided to patients. Several sources of information are available for analytics. Traditional claims-based reporting systems can be used to:

- Observe financial trends
- Demonstrate savings in the delivery of care to a population
- Stratify patients by risk
- Monitor network utilization
- Measure quality and evidence-based guidelines

EHR reporting tools are now commonly used for clinical analytics because they are more accurate and timely than claims data. In programs where care management systems are used, those systems may also house important information needed to analyze the clinical or financial impact of outreach and care coordination. Analytic requirements in accountable care programs are generally basic at first but grow to tremendous complexity as organizations mature and assume higher levels of financial risk, requiring data integration across EHRs, claims, and care management systems from multiple organizations.

FIGURE 4.
How Analytics and Reporting Systems Support Accountable Care
When considering the sophistication of accountable care analytics, most organizations can foresee a need to aggregate several types of data from multiple provider systems and organizations, which can be incredibly complicated to integrate. In some cases, the solution may be a data warehouse that slowly builds to integrate more data and support more advanced analytics. Alternatively, several vendors are working to build products designed to integrate claims data with data from various core IT systems, which will provide the analytics that tie quality measurement and care management to the provider and patient engagement functionality required for accountable care programs. These population health systems ultimately serve the same data integration needs, though they can also be used to achieve many of the same objectives of HIEs and care management systems. While the market for these systems is young and volatile, the systems may be very helpful for different networks with diverse IT portfolios. Investments in these technologies are often significant but may produce huge functional payoffs for large networks that include multiple diverse health systems and disparate EHRs.

Data integration is inevitable for most accountable care programs with a long-term vision. Organizations struggle to determine when to begin integrating data from core IT systems into a single data repository supporting the program. Financial risk is the best proxy for determining the timing of this transition because the integration of financial and clinical data supporting advanced analytics can best support the achievement of savings and determination of program value. As seen in Table 2, basic technology required to initiate a program can be achieved without integrated data, but as an organization assumes more risk tied to population health management, integration becomes more critical.

### TABLE 2. ACCOUNTABLE CARE STAGES OF MATURATION

<table>
<thead>
<tr>
<th>FFS, With PCMH Characteristics Moving to Shared Savings</th>
<th>Shared Savings and Partial Risk</th>
<th>Shared Risk to Full Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>TRANSACTION</strong></td>
<td><strong>INTERACTION</strong></td>
<td><strong>INTEGRATION</strong></td>
</tr>
<tr>
<td>IT supports individual providers in delivering care and measuring outcomes.</td>
<td>Basic care coordination capabilities emerge with initial population-based metrics.</td>
<td>Care coordination capabilities improve, and health status measurement is possible.</td>
</tr>
</tbody>
</table>

- Secure messaging via HIE
- EHR use enabling disease management protocols
- Claims-based analytics for some quality measures; basic cost and utilization reporting
- Health risk stratification using claims data or EHR data separately
- Push and pull of clinical data via HIE
- Claims-based analytics for some quality measures; basic cost and utilization reporting
- Basic population health analytics using EHR and claims data separately
- Use of patient engagement tools
- Health risk stratification using both claims data and EHR data separately
- Push and pull of clinical information via HIE, supporting all transitions of care
- Integrated claims and EHR data for analytics to support quality measurement, provider performance, health risk stratification, care gap analytics, network utilization, and financial and clinical outcomes.
- Advanced monitoring of patient activity across the network and notifications of certain care events, such as ED visits
- Patient outreach campaigns to close care gaps
Aligning Investments and Rightsizing Infrastructure

The systems and functions needed for accountable care vary based on the requirements of the care model, network size, existing IT systems, population served, and geography. Many IT requirements for the development of accountable care programs will likely add to the already long list of IT priorities for health systems. However, proper planning helps create synergies between IT used for accountable care and for other programs, including meaningful use and the Affordable Care Act’s accountability agenda, particularly when programs are first initiated and core IT systems can meet the majority of requirements. As organizations mature across the accountability continuum, greater data integration and more complex IT functionality will be required, but most organizations can begin an accountable care program using the functionality of core IT systems. Organizations should properly plan for how to meet their current program requirements and evolve their IT infrastructure to support future requirements at the appropriate scale to avoid unnecessary over investment.

Start Small, Be Flexible

Many organizations find it difficult to determine what components are needed for their IT infrastructure and when to invest in new data integration technologies to enhance outreach capabilities, quality reporting, or patient engagement. However, understanding the core IT systems for accountable care presented here is a critical first step. While designing an IT infrastructure may necessitate certain assumptions about timing and required functionality, the planning process does not have to rely on guesswork. Instead, evaluate current capabilities against program requirements and be prepared to adapt as the program evolves. The IT infrastructure designed for an accountable care program should start small and focus on how existing IT systems can be used for new goals. Additionally, it is important that a program’s IT infrastructure is sturdy enough to support the accountable care program, yet flexible enough to evolve with the ever-changing needs of the organization and patient population.
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