Value-Based Care Maturity Model: Data Aggregation
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Atos has developed a maturity model to assist organizations in understanding their progress through the challenges of population health management and value-based care. The model is represented by five domains.

Organizations that progress through each domain in a thoughtful and aligned manner will gain the capabilities to leverage digital technologies and data to succeed in value-based care.

The value-based care domains establish a critical foundation to assess progress. Organizations can then begin to evaluate their maturity within each domain. This strategic view often results in new operating models and elucidates new ideas, innovative approaches, and ultimately better outcomes for consumers – inside and outside of the healthcare system.

**Defining data aggregation**

Data aggregation is defined as the compilation of disparate clinical, financial, social, supply chain, administrative, public, and consumer data to support clinical and business decisions. This dimension poses many challenges to an organization. For example, when compiling data within an organization and/or sharing data with outside entities, data security and privacy must be maintained. Since data is often isolated, disconnected and unshared, the main challenge is the lack of interoperability among departments and with outside entities. An example of the desired end-state of data aggregation is demonstrated in the diagram below:

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Value-Based Care Maturity Model: Data Aggregation

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Data aggregation challenges

Over the past 30 years, the healthcare industry has undergone a technical revolution. It began with financial, revenue cycle and supply chain applications. Then it moved to ancillary departmental applications (i.e. lab, radiology and pharmacy) and, with Meaningful Use, electronic medical records (EMR). Most recently organizations have added population health, care management and analytics tools to their technology portfolios. This fragmented approach has created a tremendous challenge when users are looking for a single, trusted source of truth to understand performance, quality and costs.

To gain the most value from their investment in tools and technologies, such as integrating available clinical and financial data, leaders must understand and resolve the dilemmas associated with identifier management, enterprise data warehouse management and data management.

Identifier management

With the growing portfolio of applications, organizations remain challenged to fulfill a basic requirement, that of confidently identifying patients and providers across the organization. Once identifier management tools and processes are in place, organizations must consider an approach that brings all available data together to apply analytics and move from data to information.

Enterprise data warehouse

To realize the value of data for quality improvement and innovation, organizations must leverage all data from all systems and sources, internal and external. This is a necessary investment of time and resources to become a high-performing organization in the world of value-based care. Having an enterprise data warehouse can ensure that there is a single source of truth.

A data warehouse strategy and plan should reflect the organization’s confidence in data as well as its clinical and business needs. There are many models for organizations to consider. However, from a value-based care perspective, organizations should consider ensuring that claims systems and electronic medical records “from all involved business partners” be included early in the process. Consider that value-based care contracts may incorporate providers internal to the organization as well as external, through clinically integrated network (CIN) and/or accountable care organization (ACO) contracts.

Data management

Value-based care escalates the need for actionable data to support contract performance metrics based on improving outcomes and reducing costs of care. These performance metrics address closing gaps in care and reducing unnecessary utilization of ED and hospital services, for example. These performance metrics require that providers and caregivers have access to current, accurate and actionable data that is often not presented through traditional EMRs.

With data being at the core of clinical decision making, it is imperative that there is confidence in the data. Accurate data must be provided on a timely basis, period. One of the biggest challenges organizations face is the lack of data structures and supporting data governance processes that ensure that data can be shared across applications in a scalable and consistent manner.

How data can help

Aggregating data via an enterprise data warehouse should be done with an eye toward prioritized use cases that will leverage available data and drive value. Use cases should consider the following attributes:

1. Readiness of end-users to use data in delivering and measuring value-based care
2. Confidence in the quality of the data being used in data analytics and population health management activities
3. Effort to realize the use of the data in workflow
4. Ability to capture documentation related to response data and affect quality and costs

Beyond use case design, as with any implementation, organizations must consider impact on workflow, training implications, communication plans, implementation support, and post-implementation performance measurement. Value-based care use cases could align with priority clinical areas that reflect market strengths, high-volume patient types, and/or areas of poor performance that are placing the organization at risk of contract penalties. Use case design should be considered a performance indicator of a successful data governance strategy.
Questions to ask

- Has the organization committed to a data aggregation strategy that is based on the data analytics priorities of providers and clinicians operating under value-based care contracts?
- Has a data governance and management process been created that supports value-based care use-case development?
- How is the organization’s IT leadership preparing to support and lead future data aggregation and analytics needs to support the shift to value-based care reimbursement models?

Data aggregation maturity progression

Aggregating clinical and financial data from entities within the organization but also from outside entities such as health information exchanges (HIE), referring providers, benchmark organizations and external registries for the purpose of managing population health and delivering value-based care is a progressive effort.

The following six levels of data aggregation progression align with the progressive data analytics and business intelligence capabilities that could be realized.

Organizational leaders responsible for data aggregation should be proactive in preparing for future analytics needs. Avoid being a roadblock to progress but instead look at being a promoter of capabilities that create a high-performing value-based care organization.

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<thead>
<tr>
<th>Level 1:</th>
<th>Level 2:</th>
<th>Level 3:</th>
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<tbody>
<tr>
<td>• Electronic health record systems with supporting ADT and claims systems in place, all systems may not be integrated&lt;br&gt;• Patient and provider identifiers are not fully integrated</td>
<td>• Integrated, reliable and valid patient and provider identifier management across all organizational entities&lt;br&gt;• Contributing and utilizing HIE data</td>
<td>• Longitudinal data across the organization, creating single, unified customer service support&lt;br&gt;• 360-degree view of consumer connecting to systems of record/source of truth&lt;br&gt;• Payor data incorporated</td>
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<th>Level 4:</th>
<th>Level 5:</th>
<th>Level 6:</th>
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<tr>
<td>• Data quality and master data management tools and processes in place&lt;br&gt;• Inclusion of social determinants of health (SDOH) and other external data into available data&lt;br&gt;• Data aggregation from outside of the organization, community entities and/or patient-generated data</td>
<td>• Data governance in place&lt;br&gt;• Organization is competent in data&lt;br&gt;• Ability to utilize data in a manner that enables modeling and artificial intelligence to be leveraged in analytics process&lt;br&gt;• Including genomics and implantable devices in available data sets to inform the care process</td>
<td>• Leveraging innovations in data obtained through machine learning and artificial intelligence to inform care decisions, improve quality and reduce costs</td>
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What can Atos do to promote strategy and execution of this dimension?

The Atos Digital Health Solutions Consulting team can help your organization with data aggregation around value-based care and population health management priorities.

Atos’ proven clinical transformation methodology includes performing a physician practice transformation and analytic that is focused on: performance measure improvement, education and understanding value-based care, interoperability, compilation of disparate data, the ability to use data analytics for informed decisions, selection of models of care and connection and engagement between the organization and consumers.

Atos will help your organization move toward level six of data aggregation by focusing on the following key items:

- IT strategy and application rationalization
- Data governance strategy
- MPI strategy and implementation, duplicate record clean-up
- Data aggregation and integration strategy and consolidation

In addition to our consulting services, Atos offers the following:

- Atos Prescriptive Security to help with identity and access management issues. Atos is an innovative player in secure communications solutions, with offerings in encryption, secure infrastructures and highly secured terminals.
- Private, Public or Hybrid Cloud Services. From cloud storage to virtualization, Atos Cloud incorporates world leaders in cloud computing, EMC and VMware. This alliance combines the expertise of four technologies as one seamless cloud computing service resulting in total cost flexibility, world-class security, and business agility with legacy systems.
- Codex analytics and reporting platform and services that incorporate all available data for a comprehensive understanding of clinical and business operations.
- Managed Services, powered by SyntBots, provides a holistic solution that enables healthcare enterprises to thrive in the digital economy. SyntBots is a next-generation automation platform that utilizes intelligent automation to transform IT operations, DevOps, and processes across the entire enterprise.

About the author

Mary Lawrence Sirois is responsible for developing and delivering Atos consulting practices related to value-based care, population health, strategic programs and project management. In this capacity, she helps organizations improve care quality and reduce care costs.

She has more than 25 years of healthcare experience in operational and strategic planning for healthcare delivery systems and innovative care environments. Her expertise and leadership span organizational governance and change management, regulatory compliance readiness, and strategic and operational planning to transform and improve quality across the continuum of care.

Mary Sirois
Vice President of Atos Digital Health Solutions Consulting, Member of Atos Scientific Community

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Talk to Atos about your journey to value-based care. Contact us at info.na@atos.net
About Atos

Atos is a global leader in digital transformation with over 110,000 employees in 73 countries and annual revenue of over € 11 billion.

European number one in Cloud, Cybersecurity and High-Performance Computing, the Group provides end-to-end Orchestration and Hybrid Cloud, Big Data, Business Applications and Digital Workplace solutions. The group is the Worldwide Information Technology Partner for the Olympic & Paralympic Games and operates under the brands Atos, Atos Syntel, and Unify. Atos is a SE (Societas Europaea), listed on the CAC40 Paris stock index.

The purpose of Atos is to help design the future of the information technology space. Its expertise and services support the development of knowledge, education as well as multicultural and pluralistic approaches to research that contribute to scientific and technological excellence. Across the world, the group enables its customers, employees and collaborators, and members of societies at large to live, work and develop sustainably and confidently in the information technology space.

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Let’s start a discussion together

About Atos Digital Health Solutions

Atos Digital Health Solutions helps healthcare organizations clarify business objectives while pursuing safer, more effective healthcare that manages costs and engagement across the care continuum. Our leadership team, consultants, and certified project and program managers bring years of practical and operational hospital experience to each engagement. Together, we’ll work closely with you to deliver meaningful outcomes that support your organization’s goals. Our team works shoulder-to-shoulder with your staff, sharing what we know openly. The knowledge transfer throughout the process improves skills and expertise among your team as well as ours. We support a full spectrum of products and services across the healthcare enterprise including Population Health, Value-Based Care, Security and Enterprise Business Strategy Advisory Services, Revenue Cycle Expertise, Adoption and Simulation Programs, ERP and Workforce Management, Go-Live Solutions, EHR Application Expertise, as well as Legacy and Technical Expertise. Atos is a proud sponsor of Healthcare Scene.

For more information info.na@atos.net

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