Using Analytics to Navigate Health Care Reform

Five strategic imperatives for providers facing dramatic transformations in the US health care system – and why analytics is the key to executing them
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Executive Summary

For today’s health care providers, the future is full of change and uncertainty. You have started down the HITECH-driven road toward Meaningful Use of your EHR technology, even though nobody yet knows how long that road is or exactly where it will take you. Your sense is that it’s a road that must be traveled – at least while the economic incentives are favorable.

At the same time, your organization is at the center of the most comprehensive US health care reform – as specified in the Patient Protection and Affordable Care Act of 2010 – since the creation of Medicare in 1965. At a minimum, you know that health care reform will drive unprecedented levels of reimbursement restructuring that has the potential to turn the current hospital-centric delivery model inside out by rewarding value rather than volume, and outcomes rather than activity. This will result in accelerated adoption of accountable care delivery models, episode-based payments, and continued downward pressure on prices across the board.

The profit centers of the late 20th century will become the cost centers of the next decade. And to complicate matters further, you have to manage a smooth transition of your primary diagnostic billing codes from ICD-9 to ICD-10, all the while trying to look deep into the crystal ball to anticipate what scenarios need to be planned for in the light of the turbulent politics surrounding health care reform.

As if responding to these bombshell issues isn’t enough, you’re likely under pressure to connect the various silos of internal and external data needed to provide better, more efficient care – no small task for organizations looking to expand their footprint and establish coordinated care delivery models across organizations. But as explored in this paper, using your existing data is actually the first step in preparing your organization to thrive in the future. To thrive in this changing world and manage profitably and sustainably, you will need a deeper, data-driven understanding of patients, costs, quality, outcomes and more.

Where are you in your journey toward Meaningful Use and the integration of your current clinical and financial data? How are you planning to use data-driven insights to adapt your organization to operate successfully as the US health care industry evolves? What’s required to operate sustainably and profitably under new payment models that reward value, not volume?

To help you answer these questions, SAS conducted research to understand how leading health care executives are preparing their organizations for the future of health care. The five strategic imperatives revealed in this paper are based on key findings from 65 in-depth interviews with C-suite and other senior executives representing 60 leading academic institutions, hospitals, health systems and physician/ambulatory enterprises from across the US. These imperatives are summarized and then considered from an analytics perspective. Addressing each of these imperatives will require investments in advanced analytics, data-driven tactics and strategies that will improve clinical quality, reduce inefficiencies in care delivery, and optimize financial performance – even under the new payment models. SAS believes that adopters of these technologies will be better positioned for future success, but also realize substantial benefits today.
Five Strategic Imperatives for Health Care Organizations

Despite declining reimbursement rates, the predominant payment model for provider organizations is still fee-for-service. But as health care providers respond to pressures from commercial health plans as well as health care reform, more providers are gaining experience with new care delivery models such as accountable care organizations (ACOs), as well as new payment models such as bundled payments. These models, which typically involve risk- and gain-sharing contracts for providing high-quality care at a reduced cost, are being further reinforced by various pilots being conducted by the Centers for Medicare and Medicaid Services (CMS) and its Center for Medicare and Medicaid Innovation (CMMI).

But financial rewards are only half the story. These new reimbursement models also create new risks for health care providers, such as penalizing organizations that fail to meet quality targets. Unlike some of the worst examples of managed care in the late 1990s, which created incentives for some organizations to cut costs even at the expense of care access and quality, the new models demand that health care providers meet high patient care quality standards while simultaneously cutting costs. For example, providers now must eliminate inefficiencies and deliver evidence-based, best practice care that reduce inappropriate levels of variation and associated waste.

So how can health care providers walk the fine line between cost, quality and risk? What can you do to prepare for success as you adopt new reimbursement models?

According to our research, there are five strategic imperatives that leaders in the health care industry have identified as essential to preparing for the future:

1. Simplify data integration across the extended enterprise.
2. Understand and manage financial risks and incentives.
4. Drive greater efficiency of care delivery.
5. Engage patients as unique individuals.

To achieve maximum impact in these areas, you first have to integrate key operational and clinical data from across your extended enterprise – and then use advanced health analytics to turn this data into powerful insights. These insights are what empower providers to operate in ways that boost the quality of care while lowering costs and risk. Health care providers that can walk this thin line have a very bright future.
Strategic Imperative No. 1:
Simplify Data Integration Across the Extended Enterprise

If you are struggling to get a handle on how best to organize your critical operational and clinical data, you’re not alone. Most executives face the same challenge – and they understand the need to tame their enterprise data to deliver comprehensive clinical information at the point of care while presenting timely and useful insights to inform both clinical and financial management.

The data integration challenge only gets harder as your organization grows. Many health care providers striving to become ACOs, for example, are developing strategies to become bigger and better, which has led to a recent feeding frenzy of acquisitions and partnerships. This requires integrating large numbers of currently disconnected systems and their associated data so that the many parts of the extended enterprise can share data as one, unified organization.

Therefore it’s no surprise that the first imperative identified in the research is the need to establish a multiyear data integration strategy to encompass the extended enterprise. Put simply, to operate successfully under emerging reimbursement models, you need greater data transparency across a broader view of your enterprise, and a deep understanding of organizational performance – right down to individual care bundles, care providers and patients. Beginning the journey down this path will allow your organization to gain new levels of insights derived from your enterprisewide data so that you can, for example:

• Enable doctors and nurses to instantly access a comprehensive view of an individual patient’s history, regardless of where they have received care.
• Foster fast, efficient collaboration of care team members regarding patient status and emergent needs.
• Accelerate realization of expected business value from acquisitions and partnerships (for example, economies of scale to spread risk over a larger population of patients, providers and partners) by linking their systems and databases for a single source of enterprise information.
• Have the transparency and insights needed to effectively manage new risk-bearing payment models – but also offer substantial rewards if you can properly balance costs, risks and quality.
• Establish and dissolve partnerships based on data-driven performance standards using hard numbers and metrics that are trusted and understood by all parties.
• Know what’s really going on across your enterprise so that you can truly be “accountable” for patient care quality and costs – and strategically optimize your increasing portfolio of risk-based contracts. This will require aggregating disparate data and sharing it when and where it is needed – for example, at the point of care (including alerts); during budget setting; performance analysis and reporting; projection and cost modeling; risk analysis; and what-if scenario development.

Projected ACO and Bundled Payment Growth - continued

While this structure will still be based around Medicare fee-for-service (FFS) patients, participating organizations will share in the savings or losses experienced by Medicare on a specific set of beneficiaries, based on expenditures relative to a benchmark generated for that population.

The two other variants of Medicare ACOs (shared savings and advance payment models) will also come online in late 2012. Both of these models have lower levels of shared savings and risk than the Pioneer ACO Model.

At the same time, bundled payment pilots will be initiated for 10 medical conditions and will stress four different models that include Medicare Part A and Part B in various combinations. Providers around the country are already in the process of submitting applications to become pilot sites, using data made available from CMS to construct proposed, condition-specific budgets.
Data integration is the foundation upon which you can build an innovative organization that can thrive under a value-driven health care system. Data is what allows you to confidently understand and improve organizational performance – clinically and operationally. And as we’ll see in the following sections of this paper, the more focus you have on enterprise data governance and stewardship, the more prepared you are to deploy advanced health analytics for even greater control over quality, costs and risks.

**Action Takeaway: Enact a multiyear strategy to establish a robust enterprise information and analytics architecture.**

Taming enterprise data is a never-ending journey. The focus should be on just enough integration to get the job done and to continue to build greater capabilities year by year. At the highest level, you’ll need to:

1. **Identify all existing and emerging sources of clinical and operational data, and assess the data quality and value associated with these assets.** Review your existing operational data assets, as well as the various data marts, warehouses and reporting applications that may exist in your enterprise. Create a baseline assessment that can act as input to the development of a blueprint for your future, more scalable enterprise data management needs.

2. **Create an aggressive strategy to break down silos** for a consistent view of this data. This will involve investing in a flexible, scalable data integration platform that can cost-effectively integrate your current data and future data. For example, such a platform will be needed as you bring on new internal IT systems and begin to integrate with other organizations, such as other providers and health plans based on emerging win-win collaborative arrangements to deliver improved cross-continuum care.

3. **Make enterprise data management a competency** by creating an ongoing strategy and governance process for managing data going forward. For example, you’ll need to address data quality issues and put in place specific tools that help to take the headaches out of the ongoing maintenance of your enterprise data repositories.

When evaluating data integration platforms for your organization, keep in mind the following requirements:

- Look for an open platform that is capable of rapidly connecting with common data sources through standards-based interfaces.
- Make sure the platform is designed to work seamlessly with current and emerging national health information exchange (HIE) standards to ensure access to as broad a set of patient data as possible.
- Choose a platform that will support your evolving needs and anticipates that current business intelligence (BI) tools will need to coexist with advanced analytic products.

Remember, you don’t need to boil the entire data ocean on day one. Instead plan on using the data that is essential to your immediate analytic needs, and build from there based on your business priorities.
CASE STUDY: Valence Health

Problem
Valence Health’s aim is to help groups of independent doctors and hospitals take advantage of the economies of scale that come from clinical integration, without the financial and logistical burden of sharing a common health care information platform.

Solution
With SAS® Business Analytics, Valence Health developed a set of analytical and information delivery tools and services that deliver patient-centered, data-focused support – helping doctors and hospitals manage risk, achieve financial success and deliver a higher quality of health care services to the population.

Result
Valence Health is now a turnkey HMO administering the financial, actuarial, data analysis, claims payments, customer service and medical management of many provider-sponsored health plans across the US. Valence also has a clinical integration practice that works with non-risk-assuming groups of doctors and hospitals, giving them the tools to become an integrated system and allowing them to collectively negotiate enhanced reimbursements from health care plans.

Essentially, Valence is providing the benefits of an electronic medical record (EMR), allowing independent practices to see what is happening with a patient across providers. For Valence, that means collecting and cleaning data for approximately 10,000 US doctors – at nearly 4,000 practices each day – to provide information on the day’s patients and measure doctors against 90 caregiving guidelines.

“We know that with the amount and type of data that we have access to, the sky is the limit for predictive modeling, risk adjustment and population-based studies. We are focused on giving doctors access to critical information at the right time.”

Todd Stockard, co-founder, Valence Health
Strategic Imperative No. 2:

Manage the Financial Risks and Incentives of Emerging Reimbursement Models

To make informed contract decisions under emerging value-based payment models such as those associated with ACOs and bundled payments, you’ll need a way to more deeply understand and manage the risks and incentives associated with caring for individual patients and populations under these differing payment models.

Using analytics, you can make informed, data-driven decisions that will help you to better manage financial risks and incentives. For example, you can:

• Develop a detailed, risk-adjusted understanding of your historical performance at the population, physician and individual patient levels to identify levels of inappropriate variation in both quality and utilization.
• Rapidly create and compare the clinical and financial risk associated with multiple, forward-looking scenarios to improve your understanding of various contracting options with payers.

For example, an organization that’s considering taking on bundled payment contracts for knee replacement, including pre-hospital work-up, hospital-based care and 60 days of follow-up services, may see considerable variation across the enterprise, even on a risk-adjusted basis. The ability to evaluate prior performance – against local best practices and national best practices – can help you better understand areas of potentially avoidable costs and assess the extent to which your organization can reduce those costs without compromising quality. Based on a detailed analysis of your organization’s real costs, risks and opportunities, you will be in a much better position to negotiate win-win bundled payment contracts for the next year. You’ll also be able to identify key areas of focus for your emerging ACO to increase the opportunities for gain-sharing revenue.

Action Takeaway: Invest in analytical solutions that can model clinical and financial risk associated with emerging payment models.

Invest in advanced analytics that have the proven capability to group your enterprise data so that you can compare performance against cross-encounter, episode-based and capitated payment models. This is a critical foundation required for you to develop realistic, insight-driven contract terms that reduce your financial risk and optimize your potential upside. Ideally, look for a software solution that can help you:

• Group patient data for analysis in clinically meaningful ways across encounters.
• Risk-adjust your analysis to factor in case mix variation.
• Create baseline assessments of current performance, and model future performance under the new reimbursement structures.
• Proactively assess risk and reward, and identify areas for performance improvement.
• Model risk to various levels of granularity and dimension – for example, by hospital, physician group, physician, condition, procedure and risk-stratified patient subpopulations.
• Run sophisticated analyses to evaluate strategies for operating profitably under current and projected Medicare fee schedules.
• Analyze prior performance across contributing organizations that have not historically shared data for measures related to both cost and quality.

CASE STUDY: Valence Health

Problem:
While evidence-based guidelines are available, the challenge for doctors and hospitals is how to collect data from disparate data sources to measure compliance against those guidelines. The health plans won’t provide it because it would be used to negotiate against them, so Valence Health set out to find a solution.

Solution:
Valence Health developed tools with SAS that sit upon the billing systems in a given medical community, pull the data out and push it to the community on a daily, weekly and monthly basis. Data also comes from labs, hospitals and ancillary providers to create a virtual regional health information organization (RHIO). Valence Health scrubs it, links it and applies guidelines using data management and analytical tools from SAS, then serves it back to the individual doctors through SAS Web Report Studio.

Result:
The ROI for doctors is enormous. As a result of being clinically integrated through their process, physicians have been able to negotiate rate increases of between 15 and 20 percent with health plans. Before, individual doctors had no leverage in negotiations. In one region, doctors were getting 110 percent of Medicare prior to clinical integration. Once they cleared the FTC hurdle and negotiated together, they got 130 percent of Medicare.

“We’re trying to drive 50 percent of total revenue to accountable care in the next three to five years. We expect commercial will be at 60 percent and Medicare will be 100 percent accountable.”

“Clinical integration facilitates the assumption of financial risk, allows doctors to compete for more market share, and also provides patients with better access to more informed care.”

– Todd Stockard, co-founder, Valence Health
Strategic Imperative No. 3:

Proactively Improve Care Quality and Outcomes

By their nature, value-based reimbursement models are designed to encourage health care providers to proactively manage care both within a care setting and across care settings to avoid patient safety issues and other complications before they occur. This is better for the patient and for the bottom line, as hospitals will be financially penalized for hospital-acquired conditions and avoidable readmissions. The key is to predict and qualify individual patient risk as early and as regularly as possible to provide the care team with ample opportunity to intervene and prevent avoidable errors and complications.

To operate sustainably under these models, you need to manage these risks proactively and holistically. You need to take a broad, systemwide perspective to quality improvement that includes traditional types of historical performance and root-cause analysis. However, the methodical adoption of analytical techniques and tools is also required to prospectively keep positive pressure on quality metrics and outcomes at the organizational level.

Health care providers need tools to help them identify the signal from the noise in order to identify those patients who need their attention – based on insights provided from a combination of simple rules and sophisticated, analytics-driven decision support rules.

Action Takeaway: Use analytics to drive improvement in patient outcomes and gain in-depth insight into clinical performance.

Given this context, leading health care providers are looking to supplement point-of-care EMR tools with broader, real-time and near-real-time, performance-related insights that provide patient-specific guidance and notifications at the point of care. For example, many are investing in predictive analytics to proactively identify patients at increased clinical risk, anticipate gaps in care, and identify opportunities to intervene as early as possible to keep patients on track with their individualized plan of care.

These investments need to go beyond the adoption of computerized provider order entry (CPOE) systems with standardized order sets and simple “if-then” type rules. As a health care provider, you need analytical tools that can:

- Develop models that routinely score patient-specific readmission risk to proactively inform the physician and care team members.
- Develop models that proactively identify patients at risk of developing a healthcare associated infection (HAI) or other hospital-acquired condition (HAC).
- Anticipate and track gaps in care and other risk factors before quality is compromised.
- Supplement your existing decision-support strategy with advanced analytics tools that can identify and stratify high-risk patient populations, and generate specific recommendations for both individual patients and groups.
- Track current and projected performance against models that have been risk-adjusted to your local populations.

“We [at WESTMED] do not tell doctors what to do – we show them what they are doing. Analytics is the hallmark of how we manage physicians.”
- Simeon Schwartz, MD, President and CEO, WESTMED Medical Group.

“Physicians need quantifiable data in order to make changes.”
- Lyle Berkowitz, MD, Medical Director of IT and Innovation, Northwestern Memorial Physicians Group.

“It’s about using data to discover problems, analyze solutions, and figure out if we’re making a difference. There is a difference between reporting to the government and creating analytics dashboards that help to discover and solve problems to manage and understand the health of our population.”
- Lyle Berkowitz, MD, Medical Director of IT and Innovation, Northwestern Memorial Physicians Group.
• Generate alerts delivered at the point of decision making that provide useful insights based on an ongoing, comprehensive view of evolving patient needs.

These types of capabilities will become an essential safety net for every health care provider looking to deliver the highest quality care at the lowest appropriate cost.

CASE STUDY: Brigham and Women’s Hospital

Problem:
The hospital has many numbers to track with 46,000 recent inpatient admissions, 3.5 million ambulatory visits, 59,000 ER cases and nearly 8,000 births. This creates a challenge for the institution’s more than 16,000 employees for whom quality and measurement form the fabric of the hospital’s celebrated, and highly regarded, performance management culture.

Solution:
The hospital uses SAS for Performance Management to support a culture of data transparency, increased accountability and improved performance. By integrating, analyzing and distributing information to executive management, physicians and front-line management staff, the hospital is using SAS tools to help employees see how their actions, individually and as a whole, affect patient care, operational performance and the bottom line through a balanced scorecard approach to management. With an executive-level focus on balanced performance in four strategic areas of the hospital, the performance management system comprises 200 scorecards that track hundreds of unique measures, such as length of stay, readmission, mortality rates, patient satisfaction, market share and operating room efficiency.

Result:
The hospital’s regular quality committee meeting agenda is determined by the status of its quality scorecard, which tracks metrics such as mortality rates, surgical site infection rates and medication error rates. The committee has a real-time view of the hospital’s census and occupancy data, which supports capacity management and resource allocation.

“We now embed scorecards, analytics and business intelligence into the fabric of the organization. We’ve increased our operating margins over the past 10 years and improved patient satisfaction scores – moving from the 40th percentile, when we started with the balanced scorecard, to the 90th percentile against academic teaching hospitals nationwide. We’re providing automated information that enables the decisions behind these results.”

– Michael Gustafson, MD, Senior Vice President for Clinical Excellence, Brigham and Women’s Hospital
Strategic Imperative No. 4:

Drive Greater Efficiency of Care Delivery

Health care providers are already struggling to make ends meet due to declining levels of reimbursement, even in today’s fee-for-service payment system. This struggle will only intensify in the coming years. For example:

- The move toward capitated payment models means that the departmental profit centers of the past will now be viewed as expensive cost centers that must be used judiciously and operated at close-to-full capacity to ensure maximum per-unit value is extracted from the investment.
- The continued, downward pressure on Medicare fee schedules, rising levels of uncompensated charity care, and tougher contracts with commercial payers will be increasingly exacerbated by financial penalties for avoidable readmissions and hospital-acquired conditions.
- Payment reform will push provider organizations to take on financial risk more directly through various forms of capitated and bundled payment models.

To maintain operating margins working within emerging payment models, you will need to improve utilization of expensive resources and establish an in-depth understanding of the cost of providing care – not the typical, siloed departmental costing view commonly used today. For example, shared savings and bundled payment models will require new ways of forecasting and measuring financial margins for services delivered over time and by multiple providers in a variety of different facilities. Costs will need to be aggregated across these various settings to provide a comprehensive view of the total cost associated with both an individual episode of care, as well as for care delivered to a person over the duration of a year.

Armed with this insight, you can navigate the narrow path between cost reduction, revenue optimization and quality. For example, you can identify your primary cost drivers and uncover opportunities to deliver care more efficiently and cost-effectively.

Action Takeaway: Use analytics to understand the true cost of care.

Most provider organizations have a very limited understanding of the true cost of delivering care, much less how those costs relate to the patient outcomes achieved. Few cost-accounting systems in place today generate a comprehensive view of case-specific care costs that includes all hospital and ambulatory costs, including professional services provided across a bundled episode of care. Fewer still have an understanding of the ideal or achievable target costs and operating margins, based on building from the ground up against locally approved, evidence-based practice guidelines that have been risk-adjusted to the target patient population. Emerging ACOs typically have created silos of cost estimation at varying levels of sophistication, but they are typically based on service-level costing for individual departments.

To understand the true costs associated with providing care at a very granular, case-based level, you need to invest in revamping your enterprise-based cost accounting and associated activity-based costing (ABC) systems, which can help you model the entire cost of care.
Models must include elements typically not included in most cost analyses today, such as fully burdened professional costs and cross-encounter costs (which will vary across multiple and disparate inpatient and ambulatory settings within an expanded ACO).

To further streamline operations and identify opportunities to trim costs, consider adopting rigorous methodologies, such as Lean and Six Sigma. These focus on the identification and elimination of waste from the health care value chain through the use of data to make decisions about, as one CIO put it, “where to saw limbs, not trim leaves.” Or more ideally, these methodologies show you where to focus to gain greater efficiencies from existing investments in staff and infrastructure.

**CASE STUDY: Blackrock Clinic**

**Problem:**
Blackrock Clinic had increasing amounts of data collected on patients, suppliers, staff, services and financial performance and wanted to realize the efficiencies that the enhanced analysis of its own data would bring to the delivery of its services to patients. The major issue was around Blackrock’s reporting limitations – it could do limited reports at the cost center and company levels, but needed to drill down to any level, including consultant, procedure or theater, to know how much each patient and procedure was costing, and where there were areas for improvement. By improving the time required to process data and gaining greater consistency and coherency in the reporting structure, the management team could make more informed and strategic decisions across the organization.

**Solution:**
With the implementation of the SAS solution, Blackrock has a centrally managed repository that automatically integrates data regardless of source, cleanses it, standardizes it according to clinical data definitions, and stores the data in a way that makes it meaningful and easy to locate by any user.

**Result:**
This centralized control provides a reliable, easy-to-use “single version of the truth” for the entire organization, enabling a structured and coherent approach to data management and patient intelligence. The clinic can now turn raw data into valuable information that is used to effectively manage operational performance, resource utilization, cost-effectiveness, staffing and financial results with greater precision and certainty. In addition to the business insight delivered to management, the clinic has also realized real benefits through reduced time to create reports and analysis. The outcome has given it the power to renegotiate the cost associated with certain procedures with its suppliers.

“I can now track the patient experience – I can tell the cost of each procedure and see the impact on revenue. I can track consultants and see levels of income generation. I have a dashboard that tells me where the issues are, and where I need to focus my attention, making my time a lot more productive.”

– James O’Donoghue, Head of Finance, Blackrock Clinic
Strategic Imperative No. 5:

Engage Patients as Unique Individuals

One of the most persistent and elusive goals for our health care system is how to effectively engage patients to become actively involved in monitoring and managing their own health. There have been numerous attempts over the years by commercial health plans and pharmaceutical companies to increase patient “adherence” to therapies, and to aggressively market disease management and wellness-oriented programs.

As health care providers begin to assume more financial risk, they will become increasingly engaged as key players in the ongoing effort to motivate and support patients between traditional face-to-face visits.

Financial risks are highest for your patients with chronic illnesses. More than 60 percent of all health care costs are attributable to chronic conditions such as diabetes, obesity, hypertension, congestive heart failure and chronic obstructive pulmonary disease. Various studies have shown that a relatively small percentage of all patients account for a very large percentage of the total utilization of health care dollars.

As more and more physicians are adopting some form of a Patient-Centered Medical Home (PCMH) model, it is widely expected that ACOs will sink or swim based on their ability to adopt effective PCMH programs that proactively identify higher-risk patients (and those who are on a trajectory to fall into this category), and engage them in a targeted and supportive manner that tries to reduce avoidable ED visits and hospitalizations.

The good news is that payers, providers, employers and even pharmaceutical companies are now all jointly motivated to wage war on the highly complex and multidimensional issues associated with patient engagement and personal activation. There is no shortage of success stories that show how wellness and disease management programs have made an impact. However, making the breakthrough change we need requires that health care providers partner to leverage ever-larger pools of patient data that can be analyzed to identify and stratify at-risk patients (including their preferences and behavioral patterns).

According to our research, many leading health care providers are beginning to invest in increasingly sophisticated, individualized patient relationship management programs that drive increased use of preventive services and foster greater patient adherence to proven therapies. Some of the more forward-looking organizations are also applying best practices from other industries – like retail and insurance – that have made a science of targeted marketing to drive improved customer engagement. They are using a combination of traditional and novel data that includes a mix of EMR and medical claims as well as other socioeconomic, behavioral and social media sources. This data allows providers to develop a comprehensive view of patient risk, as well as likelihood to respond to specific types of marketing campaigns that may be delivered through a variety of channels (in person, SMS, smartphone apps, email, voice, etc.). The key is to realize that individual risks, preferences and motivations can change over time and there is no “one size fits all” approach that will work for every patient all the time, or even for the same patient every time.
Action Takeaway: Use analytics to gain deeper insights into individual patients and develop targeted patient engagement strategies.

To ensure safe, efficient care transitions – and develop individualized patient relationship management programs that increase use of preventive services and drive adherence to proven therapies – you need a deep understanding of population risk and individual patient preferences.

Thanks to new legislation, health care providers have access to more patient data than ever before – data that can be turned into actionable insight. For example, the HITECH Act continues to drive the adoption of interoperable EMR technology, which in turn creates ever-larger pools of clinical data that can now securely be exchanged at both a local and regional level. Couple this data with newly liberated Medicare claims information as well as other nontraditional data sources (such as income levels, neighborhood demographics, personal buying patterns and information from websites and social media), and your organization can begin to develop deeper levels of understanding of your population’s needs, as well as the likely drivers of individual behaviors.

Sophisticated analytical tools can analyze all this data to uncover patients’ individual preferences – for example, if they like to use mobile apps, or if they prefer email or phone calls for weekly check-ins; you can use these insights to develop tailored engagement programs that have a higher chance of success.
CASE STUDY: HEALTHWAYS

Problem:
Healthways employs thousands of nurses at call centers throughout the country who collect data and provide clinical support to health plan members and their physicians. To empower health plan members to manage their health effectively, it needed to identify and classify members who are at risk; anticipate those at highest risk for specific diseases and complications; and determine which of those are most likely to comply with recommended standards of care. It also wanted to predict its likelihood of success with support programs. By identifying high-risk members and implementing preventative actions against future conditions, it hoped to head off the increased costs of care before they occur.

Solution:
Healthways relied on SAS data mining and a group of robust artificial intelligence neural networks to identify high-risk patients and implement preventative actions. To support predictive analytics, Healthways accesses hundreds of data points involving care for millions of health-plan members and build predictive models that assess risk for certain outcomes and establishes starting points for providing services. Once Healthways loads risk-stratification levels into its own “clinical expert system,” the system evaluates clinical information from hospitals, data that nurses collect by phone, and information that employer groups and health-plan members report. The clinical expert system adjusts the initial risk-stratification levels based on the new inputs and expert clinical judgment. The resulting approach to member stratification is a hybrid solution that incorporates sophisticated artificial intelligence neural network predictive models, clinically relevant rule-based models and expert clinician judgment.

Result:
Healthways has reduced costs and improved member health outcomes by predicting who is at most risk for developing specific health problems. It can now coordinate intervention plans that address care designed to avoid complications down the road. By identifying and delivering new health care resources to the individuals who can most benefit from them to improve outcomes, the ultimate result has been healthier members with reduced total medical costs. The process now identifies the right members for the best care intervention at the right time for significant competitive advantage.

“With Healthways constantly adding new members, we have a rich data set for building artificial intelligence predictive models. SAS simply has the power to accommodate the massive data sets used in our predictive models. With SAS, we can rank-order our massive membership according to risk and prioritize the utilization of our expert clinical resources. Powerful predictive modeling within large populations becomes increasingly valuable given the ability to focus in on the right people at the right time.”

– Adam Hobgood, Manager, Translational Research, Healthways Center for Health Research
Key Takeaways

No. 1: Simplify Data Integration Across the Extended Enterprise
It should be clear by now that data is the essential lifeblood that enables deeper business insights. It is the foundation on which to begin to design and build all subsequent strategies. Today health care data is fragmented and poorly governed, but this trend can, and needs to, change. Collaborative care (delivered and coordinated across organizational boundaries) requires a greater level of data, knowledge and information sharing than ever before.

No. 2: Manage the Financial Risks and Incentives of Emerging Reimbursement Models
As incentives change in the health care industry, so will behavior. The move from pay-for-volume to pay-for-value will require organizations to both predict and measure the value they deliver. Shared risk and shared savings models need total transparency with respect to cash flow, or trust will be eroded and incentives will lose their appeal.

No. 3: Proactively Improve Care Quality and Outcomes
Tracking what happened in the past is no longer good enough. We now need to predict quality issues before they occur so that we can intervene early and effectively. The reduction of hospital-acquired conditions and readmissions will require a proactive approach to reduce risk. Identifying patients at risk is possible, and requires continual and ongoing data analysis.

No. 4: Drive Greater Efficiency of Care Delivery
Inappropriate variation in health care needs to be tracked rigorously if it is to be reduced. Quality improvement techniques such as Lean and Six Sigma thrive on real-time data to identify and predict areas of inefficiency. With the move toward capitated payment models, profit centers of the past will become the cost centers of the future. Deeper understanding of the true cost of care (across episodes and care settings) becomes essential to managing effectively.

No. 5: Engage Patients as Unique Individuals
Patient-centered health care means just that – adapting health care to fit the patient’s needs and lifestyle rather than expecting the patient to adapt to the provider’s needs. Understanding patients requires a deeper understanding of not just their medical history from a single EMR, but also additional information such as other EMR data, claims data and nontraditional data sources (such as socioeconomic, buying patterns, behavioral data, etc.). Identifying risk early and understanding a patient’s preferences and behavioral readiness to change allows for creation, execution and monitoring of the targeted clinical outreach campaigns aimed at reducing individual and population risk.
Conclusion

The most profound driver of the changes described above is the introduction of payment models and associated incentives that reward value over volume. Over the next four to five years, increasing levels of financial risk will shift to health care provider organizations.

Most of the providers interviewed in our research believe that it’s highly likely that they will need to compete effectively within some form of fully capitated payment system, where value-oriented performance metrics are the currency that will determine organizational success or failure.

Health care providers need to redesign their organizations in order to effectively navigate this journey, and leading organizations have already started. They are growing their reach and reinforcing the foundations of their evolving organizations with robust, enterprisewide data platforms in anticipation of the convergence of transactional and analytical decision support. They are gearing up to become data-driven organizations that have a real-time understanding of every aspect of their business, and provide contextually relevant, useful and usable information to the clinical staff at the point of care. They are negotiating the structure of win-win and shared risk partnerships with both traditional and nontraditional partners to increase their likelihood of success and spread risk across the partner network.

In these uncertain times, the one thing that we can be sure of is that a deeper understanding of data is fundamental to the future of health care delivery. The world of traditional business intelligence is evolving, and the world of advanced health care analytics holds the key to achieving the triple aim of better care for individuals, better health for populations and the reduction of per capita costs.
Research Contributors

NewGrowth Consulting


Backed by research, driven by experience, NewGrowth Consulting is an expert provider of worldwide market research, go-to-market strategy and consulting to leading IT and health care IT companies. NewGrowth enables business-critical decision making for its clients by combining solid market research with deep knowledge of IT markets, business strategy and best practices.

Sage Growth Partners


Sage Growth Partners (SGP), a health care strategy, technology and marketing services firm, provides insight, advice and multidisciplined execution to growth-minded health care organizations, including hospitals and health systems, physicians groups, insurers, trade associations and academic institutions. With deep roots in the business of health care, SGP has earned a reputation for delivering results for industry and organizational challenges. Don McDaniel and Dan D’Orazio are executives with Sage Growth Partners and members of the professional faculty of Carey Business School, Johns Hopkins University.

References


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