Achieving Triple Aim using analytics
With the advent of new reforms, providers have to modify their strategies to shift from a fee-for-service model to value-based care. Many healthcare providers struggle with optimizing quality of care, reducing costs and improving patient experiences. These three essential goals have been classified as the Triple Aim.

The concept of the Triple Aim was first introduced by the Institute for Healthcare Improvement (IHI) in 2007. The IHI developed a framework focused on improving patient care experiences, health outcomes, and per capita cost reductions. It was believed that these would bind together the fragmented healthcare system and encourage collaborative effort for overall health improvements. These objectives are also reflected in the Value-Based Purchasing Program, requiring providers to make substantial progress on the Triple Aim’s dimensions.

Value-Based Purchasing and Triple Aim

The Hospital Value-Based Purchasing (VBP) program is a key driver for healthcare providers to adopt Triple Aim strategies. This program is funded by a 1.75% reduction from participating hospitals’ base operating diagnosis-related group payments. Medicare reimbursement is also directly related to a provider’s performance in each of these segments, making accomplishing the Triple Aim objectives essential in order to maximize revenue.
c) Experience of care
Patient experience of care comprises of 25% of VBP measurements. The Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) survey is used to evaluate providers on this parameter.

b) Quality improvement
Clinical process of care makes up 10% of VBP evaluations, while outcome constitutes of 40%. These cover major quality and outcome areas including hospital acquired infections, safety indicators, 30-day mortality rates and immunization.

Why is it necessary to focus on Triple Aim?
Accountable care organizations, bundle payment methodology, and projects like Pay-for-Performance emphasize on quality improvement. If the quality of care is compromised, the results can impact federal reimbursement. Additionally, hospital acquired infections, avoidable events, and hospital readmissions are tied to penalties in order to drive providers to work on quality improvement.
Apart from financial impact, public reporting has created transparency in healthcare. Due to increased consumerism, patients have taken charge of their health and have become key decision makers. Patients can easily access the publicly reported hospital performance scores, which inform their decisions when choosing a healthcare provider. Maintaining good patient satisfaction scores is now crucial for providers.

The interrelated dimensions
The three dimensions of cost reduction, quality improvement, and patient experience are interrelated. Improvements in one area will impact the others. However, it is not feasible to focus on only one dimension while ignoring the others. The efforts must be carried out in conjunction for a stable and efficient output. If the focus is solely on improving quality and outcomes, this can lead to increased diagnosis and unnecessary tests which can trigger higher costs. Likewise, unmindfully reducing costs to achieve cost reduction targets will adversely impact quality of care. Optimization is the key to this challenge. Analytics can easily tackle the obstacle of reducing cost without impacting quality.

Low quality care and failures in effective outcomes will lead to low patient satisfaction. But high quality results may not guarantee high patient experience scores. Most providers assume that delivering high quality care will automatically lead to high patient satisfaction. There are additional factors that come into play while evaluating patient satisfaction scores, and a provider has to put efforts into each of these to attain high patient satisfaction.

Taking into account the inter-dependency of cost, quality, and experience, simultaneous efforts on these three pillars of health improvement will reap great rewards.

Analytic can easily tackle the obstacle of reducing cost without impacting quality.
The role of analytics in achieving the Triple Aim

Most health systems have a strong data foundation and integrated data platforms to enable information access. However, analytics goes beyond data aggregation. Information is of little use if it is not transformed into insights and results. Analytics can convert strategic ideas into action, generate insightful results and guide decision making to achieve the Triple Aim’s objectives. Analytics can highlight relevant trends, find improvement opportunities, benchmark metrics with peers and monitor performance to achieve desired results.

I. Cost reduction

Accurately measuring costs is the first step for cost reduction. Understanding the drivers that trigger cost can aid in identifying cost reduction opportunities. With the help of analytics, providers can define cost measurement metrics, accurately measure cost, track cost trends and identify cost reduction opportunities.

Benchmarking cost across a unit or department is a common practice, but benchmarking on a procedural level is often more beneficial. Using analytics, the cost for specific procedures across different facilities can be compared. For example, comparing the cost of knee surgeries across different locations can easily identify cost outliers. Facilities with high quality outcome and lower cost can be benchmarked for individual procedures, and those best practices can be replicated across elsewhere.
Cost variations in procedures are generally due to differences in equipment and supplies. It is possible to have the same equipment from the same manufacturer at a higher price due to varied purchasing contracts with different vendors. With the help of analytics, vendor management and price optimization can be carried out. Re-evaluation of purchasing contracts, standardization of practices across the organization and tracking improvement across time are the key essentials for making substantial progress on the path of cost reduction. Analytics can enable reduced waste by monitoring unnecessary procedures and tests, errors in care and valueless services.

Analytic predictions can also be utilized for appointment scheduling. The high percentage of cancellations and no-show visits in primary care leads to wasted time and resources. Every year, hospitals lose a large chunk of revenue due to these missed visits. An analytical prediction model can provide the likelihood of a no-show visit and this information can be embedded in the scheduling system. This allows scheduling appointments in a manner that leads to the optimization of time and resources, improving cost reduction and minimizing the effects of missed visits.
II. Quality and outcome

Improving quality of care and managing overall population health are areas of importance for any provider. Risk stratification and segmentation are common analytical practices used for care management initiatives. Risk attribution can be done based on age, gender, past disease history and secondary factors like lifestyle, obesity and behavioral issues. Risk identification helps in identifying individuals who need care, and directing appropriate interventions in a timely manner to reduce disease aggravation. Comorbidities are common for patients with chronic illness. The likelihood of a comorbid disease can be predicted with analytics, and efforts can be augmented with preventive care activities.

To manage care at a patient level, a 360-degree patient view is necessary. Using analytics, a patient portal can provide information access to physicians, nurses and those they serve. Patients could access the portal to track their health progress. This portal can inform the physicians about comorbid diseases, stage of disease and precautionary measures taken for each patient. This level of managed care can prevent emergency department visits and preventable readmissions. The creation of a comprehensive patient information portal can be accomplished with analytical platforms. Finding the root cause of a problem and taking corrective action is the essence of analytics capabilities.

Along with population health, tracking and managing treatment outcomes and quality are equally necessary. VBP and CMS public reporting take into account multiple outcome metrics including hospital acquired infections, avoidable conditions, mortality rates and safety measures. Each provider has to track these metrics, and for high performance appropriate improvement strategies are to be implemented. The major infections that constitute the quality evaluation are Central Line Associated Blood Stream Infection (CLABSI), Catheter Associated Urinary Tract Infection (CAUTI), Surgical Site Infection - Colon, Surgical Site Infection - Abdominal Hysterectomy, Methicillin-resistant Staphylococcus aureus and Clostridium Difficile Infection.
Analytics can fuel infection prevention initiatives and help providers accomplish their quality goals. Apart from monitoring infection events, analytics capabilities include optimization strategies to prevent infection proliferation within a facility.

Some avoidable events like pressure ulcers, unassisted falls, injuries, and venous thromboembolism (VTE) are also monitored for public reporting. Other metrics to measure quality of care include PQI safety measures, readmissions, and mortality rate. Analytical dashboards enable tracking each of these metrics, observing their relevant trends and finding root causes.

III. Experience of care

Patient satisfaction has become a key challenge for healthcare providers. Attaining a good patient satisfaction score is essential for the growth of the organization. Due to increasing consumerism, patients have taken control of their health and evaluate the performance of a hospital before choosing their provider. A good patient satisfaction score boosts the credibility of the hospital as well as acts as a marketing tool in itself. With a low patient satisfaction score, acquisition of new patients can become tricky.

Patient satisfaction is measured through HCAHPS survey. HCAHPS (the Hospital Consumer Assessment of Healthcare Providers and Systems) is a patient satisfaction survey required by CMS (the Centers for Medicare and Medicaid Services) for all hospitals in the United States. The survey is for adult inpatients, excluding psychiatric patients.
The intent of this survey is to measure the patient’s perspective on hospital care and to enable relevant comparisons across all hospitals. The results are reported on the hospital compare website and can be used to monitor quality of each hospital. Apart from hospital level scores, state, and national aggregated scores are also available which can be used for benchmark and comparison.

The patient experience metric has a domain weight of 25% in the VBP until 2018.

The major components covered by the HCAHPS survey are communication with doctors, communication with nurses, responsiveness of hospital staff, pain management, communication about medicines, discharge information, cleanliness of the hospital environment, quietness of the hospital environment, and transition of care. The survey includes screener questions and demographic items, which are used for adjusting the mix of patients across hospitals and for analytical purposes.

For a provider, it is imperative to focus on each of the components of patient survey to perform higher on the satisfaction scale. Focusing on every aspect of the survey can be tedious, though analytics can make this less time consuming. All the components of HCAHPS survey can be grouped into following categories and can be addressed accordingly:

a. Communication

This category encompasses communication with doctors, communication with nurses, and responsiveness of hospital staff. Hospitals scoring low on this metric must perform a root-cause analysis in order to understand the underlying challenges that lead to ineffective responses by the hospital staff.

Poor communication by the staff can be attributed to a low job satisfaction and lack of enthusiasm to engage actively with the patients. To keep the staff motivated and track their job satisfaction, providers should conduct physician and staff surveys. Patient satisfaction is directly proportional
to physician satisfaction. With the help of analytics, staff survey results can be consolidated and analyzed. Analytics can also provide physician engagement scorecards that monitor their performance and engagement level.

Another reason for low responsiveness is a high hospital workload. Due to lack of time, physicians and nurses are often unable to dedicate sufficient attention to the patients, which can cause resentment among patients. To tackle this issue, providers need time and resource optimization. Analytics can help predict the workload on any particular day, enabling the staff to be prepared in advance. With this information, auxiliary staff can be provided in advance to manage the predicted workload.

b. Information transition
This category includes communication about medicines, discharge information and transition of care. It is important that patients have access and understand the information pertaining to their health. Although nurses and physicians explain this information clearly, patients who forget these explanations tend to give a low score in this category. With the help of a patient portal, this can be easily managed. The information can be uploaded to the patient’s profile, and patient can get detailed information anytime. This ease of accessibility makes it less likely that patients will forget critical medicine schedules, due tests and
upcoming appointments. The portal can embed reminders and track the medicine adherence of the patient.

This portal leads to information transparency for physicians as well. If physicians have additional details about the patient such as overdue tests, medicine adherence or lifestyle habits, they can individualize the care a patient receives. Enhanced personal attention towards patients leads to higher patient satisfaction.

c. Additional factors
Pain management is critical to keep the patient comfortable during the hospital stay and can be controlled through proper medication and patient education. While it is an important area to focus, there are concerns regarding opioid usage. CMS has given specific guidelines to prevent opioid misuse.

Cleanliness and quietness of a hospital are considered a simple issue but many hospitals get a low score even in this. While cleanliness can be easily monitored, quietness has to be embedded in the hospital culture.

Apart from the areas directly monitored in the survey, there are other extraneous factors that can indirectly affect the patient satisfaction. These include bed comfort, room size, convenience of access, wait times, mismanagement in transition, surgical errors and other components. With the aid of analytics, the impact of each of these factors can be easily monitored.
Conclusion and next steps

Analytics can deliver value to the healthcare industry and has the power to bring transformation. Each stride on the path of improvement will lead to substantial progress and reliable results. Effectively transitioning to the Value-Based Program and successfully achieving the Triple Aim can become a reality.

Based on their analytics maturity, different providers have different needs. Instead of getting overwhelmed with the myriad of offerings and an unclear direction for their analytics initiatives, providers can follow the following specific steps to embed analytics in their system and bring relevant change.

› Create a consumable, intelligent patient data asset leveraging a broad variety of data sets to ensure a deep understanding of each element

› Clearly identify and prioritize actions to achieve desired outcomes with optimized effort

› Install self-service analytical dashboards for ongoing performance monitoring for each of the Triple Aim dimensions

› Create an advanced patient portal enabling information access to physicians as well as patients

› Implement the relevant insights and embed them in the workflow by making structural changes in the system.

References

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