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Healthcare analytics that level the playing field

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For many patients, an encounter with the healthcare system starts at the hospital. After the initial hospital stay, care might continue at a skilled nursing facility (SNF). From there, the patient's goal might be to return home (with or without home health services) and eventually regain his or her prior level of self-care.

Throughout this process, healthcare organizations capture and analyze data to produce improved patient outcomes. This information is helpful for real-time diagnostics and short-term treatment planning for both immediate and post-acute care.

From subsequent analyses, we can project a patient's future care at the micro (personal) level and the macro (system) level. Based on aggregated data derived from previous patients' records and outcomes, providers and investors can make healthcare and business decisions. The quality of decisions, however, is predicated on the quality of the data. That is, good data lead to good decisions while bad data lead to bad decisions.

The National Imperative

For decades, this basic level of healthcare analytics changed how providers, payers, patients, and investors approached healthcare services. Finding a low-cost method to deliver quality health care is a national imperative. Recently, a *predictive approach* to healthcare analytics, or the power to harness historical and real-time data to deliver actionable recommendations, enables stakeholders to compare apples to apples (e.g., SNF1 to SNF2) by leveling the playing field.

The nonprofit Healthcare Information and Management Systems Society (HIMSS®) Business Intelligence Committee found in its April 2016 analysis that predictive healthcare analytics offer the best-practice methods to:

- Improve care delivery
- Contain costs
- Reduce preventable re-hospitalizations[1]

Yet, achieving reliable predictive analytics is as challenging as it is critical because of data complexity, the need to change ingrained habits along the care continuum, and resistance to sharing data with outside entities.

All healthcare stakeholders need to have the means to measure performance at all levels of patient care, from intake to treatment and through short- and long-term post-acute care, to effectively compare one provider to another. The difficulty is that just because a system *can* collect data does not mean that it is correctly done or appropriate data are gathered.

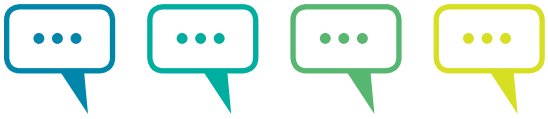
A predictive approach requires more than just collecting data. It provides the structure and metrics for tying together patients' healthcare outcomes to measure the performance of SNFs. Policies can then be enacted based on these findings to drive appropriate healthcare processes. Through predictive analytics, an SNF's re-hospitalization rate is risk-adjusted to predict patients' risk of being re-hospitalized. This is factored into the performance of the SNF.

Best Practices

The federally mandated Long-Term Care Minimum Data Set (MDS) assessment is conducted at the SNF level. Through proper application of the MDS and vigilance in adhering to best practices, facilities provide the best patient care based on an individual assessment, with the result of positive patient outcomes and low cost. A predictive approach allows providers to compare facilities for best outcomes and contributes to an improved overall healthcare delivery system for consumers.

With the proliferation of electronic health records (EHRs) and healthcare analytics, quality outcomes take center stage. At each step in a patient's treatment, the identifiable data file is the building block that determines the patient's next step, the appropriate facility for the patient, and the viability of that component in the healthcare system.[2] These components include accountable care organizations (ACOs), health maintenance organizations (HMOs), SNFs, and other medical organizations. The goal is to provide the right care, at the best cost, with the least risk of re-hospitalization in less than 30 days.

Ultimately, the only way forward is through the people who use the systems. The best hope for quality health care hinges on the fortitude of the people in the trenches, those on the front lines who understand and use best practices that:



A Level Playing Field

Relevant data, including MDS, lab results, and other clinical data, are standardized and structured. This means the playing field is level for all SNFs:

- **Patient care records generate MDS using a structured list of individual data items.**
- **Each item has a clear label, definition, and set of permissible values, codes, and classifications.**
- **SNFs are compared using common data elements that enable risk-adjusted measurement of performance—one that accounts for SNF differences, such as patient volume.**

- **Define and understand relevant data.** Know where the data come from, how old the data are, and what they measure.

  Some publicly available data, such as that from the Centers for Medicare & Medicaid Services' (CMS') Five-Star Quality Rating System, are used to compare SNFs. However, CMS' re-hospitalization metric is based on hospital claims data, not SNF data (see "A Level Playing Field").

- **Insist on data quality.** Data quality is important in predictive data analytics.

  Five-Star Quality Rating System data sources are often two or more years old. Additionally, because they are based on hospital claims data, they may not be clinically accurate. Often, a hospital billing department adjusts codes on a claim to ensure reimbursement from a payer. As a result, codes may not accurately reflect the full complexity of the patient's clinical diagnosis.

- **Focus on actionable areas.** Focus on areas that achieve change within care facilities.

  Emphasize the clinically specific data related to re-hospitalization rates when determining which data to use in the predictive approach.

- **Communicate findings using transparent data sources.** Share data with each provider, whether an ACO, HMO, or SNF.

  Collaboration with various care providers is necessary to deliver quality health care and implement integrated care. Transparency of the data source is instrumental when it comes to effective collaboration.

A predictive approach requires more than just collecting data. It provides the structure and metrics for tying together patients' healthcare outcomes to measure the performance of SNFs. Policies can then be enacted based on these findings to drive appropriate healthcare processes.

While these are best practices, some care providers and SNFs may be reluctant to share facility-level data, especially in today's competitive marketplace. Some may be reluctant to compare patient outcome data and participate in total transparency with other organizations. Yet, when silos break down between care settings and a high degree of coordination takes place, the result is improved patient outcomes.

Culture of Due Diligence

The entire healthcare system suffers from long-term and post-acute care challenges, including an aging populace, a shortage of primary care physicians, and difficulty in knowing how to plan for the system's future. ACOs and HMOs emphasize value-based reimbursement to assist in delivering an efficient Medicare system. Big data and data analytics are designed to meet these challenges, but all data are not uniform, nor are they transparent or trustworthy.

Consistent, comprehensive assessment of each patient is essential to person-centered care. The MDS does this, but information must be accurate to be effective. In the best cases, the SNF's MDS coordinator and interdisciplinary team collaborate on frequent reviews of relevant, actionable MDS assessment data.

SNFs may be technically compliant in their MDS regulatory requirements, but to have a true culture of due diligence, all staff must insist on providing high-quality data. This is accomplished by embedding a process of self-auditing and submission compliance. An additional component is communicating findings using transparent data sources that caregivers and staff understand. In this way, the process provides a true picture of the SNF's performance.

Quality, affordable health care is a vast issue that requires everyone's attention and participation to create viable solutions. A level playing field will only come from a standard set of information generated from patient assessment and care records. Using predictive data analytics derived from standardized data is a part of the answer. Transparent and free data-source sharing provides a risk-adjusted measurement of performance for comparing SNFs and making care coordination decisions beyond the raw re-hospitalization rate and Five-Star Quality Rating System. In due course, this will provide high-quality health care, reduce costs, and minimize re-hospitalization rates. GPJ

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