A Quadruple Win through Data and Analytics: Achieving Rapid Results in Lowering Unwarranted Variation in Clinical Care

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Is your board focused on a Triple Aim and/or the "Quadruple Win?" The latter recognizes that an engaged clinician workforce is essential to achieving the three national health goals of higher quality, more affordable care, and better health for the populations served. It adds the fourth dimension of improved clinician experience.

Parallel Goals and Challenges

The current environment presents significant challenges for healthcare clinicians and organizations. With expectations of an increasingly constrained payment environment and lower utilization trends, healthcare directors and executive teams of hospitals and health systems nationwide are experiencing a "big squeeze" to transform care delivery in order to achieve Triple Aim goals. But at the heart of what both clinicians and hospitals seek is to do what's best for the patient, as desired by the patient, through high-quality care that achieves best-possible outcomes.

Boards increasingly are aware that, for most hospitals and health systems, unwarranted variation in care is a significant source of suboptimal patient outcomes and unnecessarily high costs.[1] Tracked by the Dartmouth Institute for Health Policy and Clinical Practice for more than a decade, such variation is present in clinical practice in all types of healthcare organizations when there is a gap between the desired "best practice" and current practice.

Nationwide, the gap is large. The Dartmouth Atlas estimates that 30 percent of total U.S. healthcare spending is unnecessary.[2] Causes of inappropriate spending typically include:

- Suboptimal clinical practices
- Overuse and inappropriate use of specialists
- Misuse of preference-sensitive care (such as high-cost orthopedic prosthesis, when a lower-cost one would provide equal clinical benefit)
- Underuse of proven effective care
- Provision of services or procedures that are not clinically indicated (e.g., unnecessary diagnostic testing)

Significant improvement in healthcare delivery to reduce unwarranted care variation can be achieved through hospital–clinician collaboration now and into the future. Partnerships create a quadruple-win situation for physicians and other clinicians, hospital leadership teams, payers, and most importantly, patients and their families.

Board oversight of the development and use of a multipronged approach that uses the three strategies described here is critical to clinical improvement going forward.

Key Board Takeaways

Unwarranted variation in care is a significant source of suboptimal patient outcomes and unnecessarily high costs. Significant improvement to reduce such variation can be achieved through hospital–clinician collaboration. Partnerships create a "quadruple win" for physicians and other clinicians, hospital leadership teams, payers, and most importantly, patients and their families. Three strategies can help to reduce unwarranted care variation:

1. Use an interdisciplinary team of key stakeholders with leadership skills, expertise that spans patient care processes (e.g., pre-admission, admission, diagnostics, treatment, discharge, and post-discharge), and credibility.
2. Establish a trustworthy data foundation and use it to engage physicians.
3. Build a sustainable program by using evidence-based, standardized practices that are clinically appropriate.

Use an Interdisciplinary Team

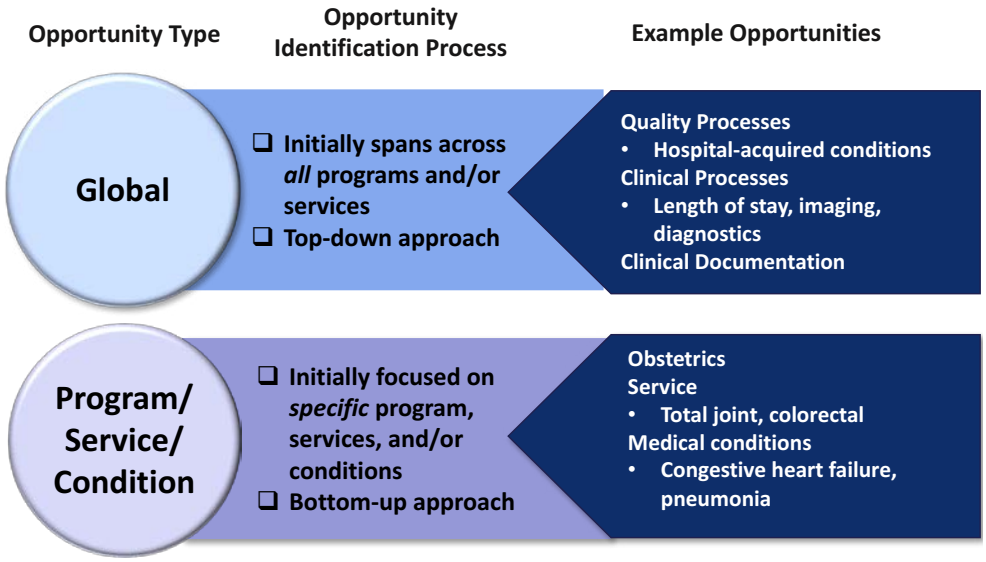
Clinical variation reduction starts with commitment to a team structure. An interdisciplinary team, with representation of key stakeholders, can accomplish the following:

- Identify, assess, and synthesize performance-improvement opportunities into a coordinated and coherent program
- Identify elements of clinical redesign needed to yield improvement
- Ensure that solutions are applicable to the local environment
- Increase buy-in for implementation and ongoing success in areas such as adherence to protocols and utilization reduction

Team members will vary by organization based on whether the organization is tackling the clinical variation problem at a global level across all

1 W.W. Morrissey, R.W. Pryor, and A. Krishnaswamy, "Using Data and Analytics to Improve Clinical and Financial Performance," *Leadership*, November 17, 2016.
2 The Dartmouth Atlas of Health Care, "Reflections on Variations" (available at www.dartmouthatlas.org/keyissues/issue.aspx?con=1338).

Exhibit 1: Approach to Identifying Unwarranted Clinical Variation



Source: Kaufman, Hall & Associates, LLC

programs and services, or at a specific program, service, or condition level (see **Exhibit 1**). Either means is appropriate; both are recommended.

For example, at the *global* level, an organization might be targeting improvement in:

- *Quality processes* through reduction in hospital-acquired conditions and readmissions
- *Clinical processes* through reduction in length of stay, imaging, and diagnostics to levels appropriate to the patient's clinical needs
- *Clinical documentation* through improved systems and processes

At the *program or condition* level, an organization might be targeting reduced clinical variation in:

- Specific procedures, such as total joint replacement or coronary artery bypass grafting
- Specific programs, such as cardiac surgery or obstetrics
- Specific conditions, such as sepsis, heart failure, or pneumonia

Healthcare directors should ask their medical and executive leadership about the composition of clinical improvement teams. An effective team focused on reducing length of stay organization-wide might include the chief medical and nursing officers as executive sponsors, quality management leaders, hospitalist medical directors, care management directors, finance staff, and IT staff. Or a team targeting improvement in a specific program or service (for example, obstetrics) might be led by the medical and nursing directors of obstetrics, and include key obstetricians employed by or affiliated with the hospital, nurses, anesthesiologists, quality management staff, and medical coders.

The key point is that success with performance improvement is a team sport. Teams must include members with leadership skills, expertise spanning patient care processes (e.g., pre-admission, admission, diagnostics, treatment, discharge, and post-discharge), and credibility. Team member selection should be thoughtfully considered by senior executives and clinician leaders to ensure a combined effort that will result in optimized patient care along every step in the process. Then leaders must empower teams to make decisions. When they do so, the synergy created by the whole will be "greater than the sum of its parts."

Establish a Credible Data Foundation and Use It to Engage Physicians

A data-grounded approach to improvement will successfully engage physicians in reducing care variation.[3] Physicians are trained in the principles of science and evidence-based medicine. The credibility of data is essential to driving their behavioral change. Physicians who receive reliable data with evidence of unwarranted variation in their own care—whether related to quality, outcomes, or cost—typically need no further inducement to bring their practices in line with their colleagues.

Organization-wide, the alignment of quality and finance data better provides "one source of truth." It ensures that the finance staff is looking at more than cost data and analytics, while the quality and clinical staffs are looking at more than quality data and analytics. Boards can and should ask questions if the data reported to them lack one or the other.

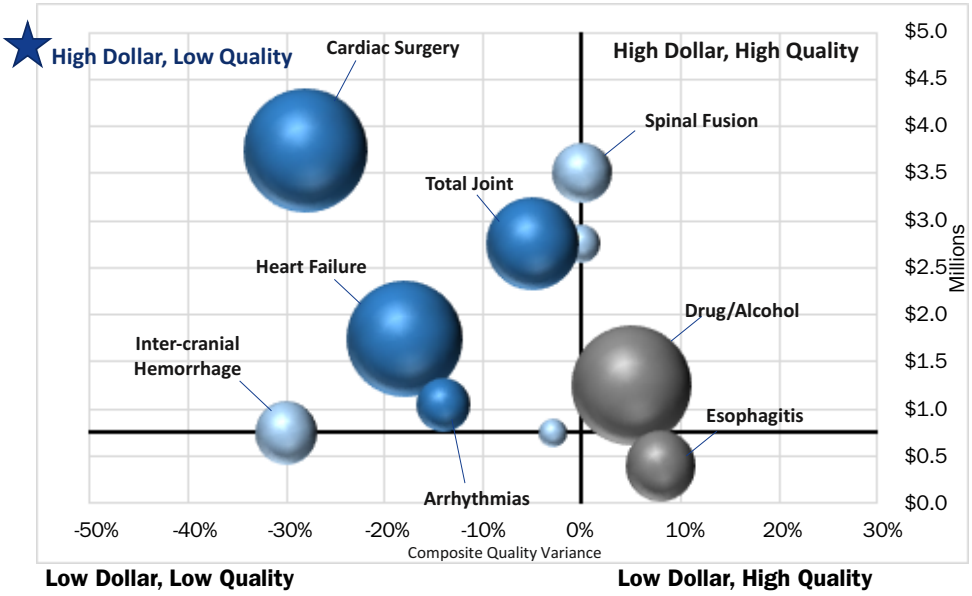
For example, if a team wants to identify best- and lowest-performing physicians for an overall condition, such as heart failure, quality/outcomes data would include: patient cohort demographics, inpatient average length of stay (LOS), severity-adjusted clinical outcomes of complications, mortality rate, and 30-day readmission rate. Finance data would include overall adjusted direct cost, which could be comprised of the following:

1. Medical/surgical supplies: physician preference items often have high cost differentials
2. Pharmacy: brand versus generic drugs and drugs for certain therapies have

3 R.W. Pryor, "Data Can Engage Physicians in Value," *Trustee,* April 10, 2017.

Exhibit 2: Identifying High-Opportunity Areas through Use of a Quality, Volume, and Cost Matrix

Detailed Example: Opportunity v. Quality



Source: Kaufman, Hall & Associates, LLC.
Note: Size of the bubbles represent number of cases.

high cost differentials, at times without effectiveness differentials

3. Laboratory and pathology: standing orders for daily tests, for example, may or may not be needed/appropriate
4. Imaging: the physician's choice of imaging options, including MRI, CT, ultrasound, and X-ray, has a large impact on cost

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As an example, one performance improvement team at a 14-hospital system in the Midwest looked closely at the risk-adjusted data by physician, excluding physicians with low volume, for the treatment of patients with heart failure as identified by DRG codes. The team found some dramatic variances:

- The best performers had a 0.0 percent mortality rate for heart failure patients, compared to 5.5 percent among the lowest performers.
- For average LOS, there was a two-day difference between best performers and lowest performers (3.1 days compared to 5.1 days).
- The 30-day readmission rates of the best performers was 42 percent lower than lowest performers (17.8 percent compared to 30.5 percent).
- Overall average adjusted direct costs were 26 percent lower for the best performers ($3,725 compared to $4,957).

To learn more about the cost variation, staff drilled further into specific physician orders through an analysis that compared best-physician performance against the average for all physicians. When costs of three items were considered across all 4,996 patient cases for two years, the best-performing physician spent $654,609 less than average-performing physicians on care of patients with heart failure.

Such analyses make data accessible to decision makers at all levels, and translate data into meaningful information for improvement. Data should prompt team discussion that results in a collective rather than prescriptive solution to reducing inappropriate variation.

In all organizations, high-volume, high-cost, and low-quality cases make the best candidates for clinical improvement initiatives. **Exhibit 2** illustrates how hospitals can use quality, cost, and volume indicators to identify the conditions or services with greatest potential, namely those in the upper left quadrant.

A recent study in *Health Affairs*[4] proposes another way for providers to identify areas of focus for reducing unnecessary spending without "disappointing patients, disrupting practice norms, or reducing the quality of or access to care." The approach involves looking at low-cost, high-volume services associated with low-value care.

Using 44 clinical services determined to be of low value by the ABIM Foundation's Choosing Wisely Campaign, Medicare's Healthcare Effectiveness Data and Information Set criteria, and other expert sources, the authors created a "waste calculator" to identify particularly low-value, high-volume services that organizations could reduce or eliminate.

The top low-value-ranked service by use/volume is baseline lab tests for low-risk patients having low-risk surgery, with a waste index (WI) of 78.6 percent. Other services on the 10 most costly low-value list include: EKGs, chest X-rays, or pulmonary function tests in low-risk patients having low-risk surgery (WI 97.5 percent); routine head CT scans for ED visits for severe dizziness (WI 52.7 percent); and imaging for low-back pain within the first six weeks of

4 J.N. Mafi et al., "Low-Cost, High-Volume Health Services Contribute the Most to Unnecessary Health Spending," *Health Affairs,* Vol. 36, No. 10, October 2017.

Exhibit 3: Clinical Variation Assessment

Source: Kaufman, Hall & Associates, LLC

symptom onset, in absence of red flags (WI 86.2 percent).

The authors conclude that this approach might be "a more strategic way to catalyze the movement to tackle the problem of low-value care," and that "aggregate, minor actions by all clinicians can have a sizable impact on reducing unnecessary healthcare spending." Discussions in boardrooms can focus on whether this could be a reality in their organizations.

Build a Sustainable Program

A program to reduce inappropriate clinical variation should have as its fundamental goal the increased use of evidence-based, standardized practices that are clinically appropriate and within the organization's current infrastructure and capabilities. The program should target untoward outcomes that occur as a result of failure to follow established protocols and guidelines.

Optimizing care through reduction of care variation *does not* remove "the art of medicine," but instead ensures that all patients with a similar clinical condition have their care rooted in evidence-based principles. Use of external benchmarks and internal comparisons will enable teams to identify best practices, and drive change to improve quality and outcomes while reducing costs.

The essential steps of program development involve building a credible data foundation, as described earlier, identifying treatment or diagnostic areas of variation that have the most significant impact on cost and quality, and pinpointing and addressing significant drivers or levers of variation.

Identification and pursuit of the most promising areas of opportunity for a variation-reduction program can occur through an assessment process illustrated in **Exhibit 3**. The assessment includes:

- Preliminary identification of opportunities across the organization, with detailed identification of opportunities specific to a team's unique clinical environment
- In-depth review of performance related to key clinical conditions (for example, total joint replacement and sepsis)
- Comparative performance review by physician for select clinical conditions
- Prioritization of opportunities

The interdisciplinary team develops a "future state vision" for the improvement opportunity and the plan to move from current to desired state. The plan should guide decisions related to people, process, technology, and resources required to sustain change.

IT changes related to the electronic health record (EHR) and development or acquisition of data and analytic tools should be considered. Care redesign based on evidence-based medicine requires use of EHR-enabled order sets, clinical pathways, protocols, practice guidelines, and point-of-care alerts. Operational issues may need to be addressed before clinical processes can be changed—for example, gaining department or organizational approval for changes to formal protocols and/or order sets prior to implementation.

A phased approach to plan development and implementation is recommended. An assessment/data analysis stage can be accomplished in about two months, program design in about four months, and program infrastructure implementation (occurring concurrently) in about four months.

Benefits Going Forward

An interdisciplinary approach to the identification and design of initiatives to reduce inappropriate care variation based on a credible data and analytic framework provides winning results for all stakeholders. This collaborative approach, as approved and monitored by the board and executive team, strengthens physician relationships within all types of organizations. While the primary focus of the improvement programs is quality, its successful implementation reduces unnecessary spending and care variation, resulting in improved quality, outcomes, and cost-optimization—all to the benefit of patients (first and foremost), clinicians, payers, and hospitals.

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