



Accelerated Healthcare Transformation Clinical Utilization

Accelerate Improvement through Clinician Engagement

By Gary M. Auton

Across the country, health care systems are scrambling to prepare for the expected financial impact of accountable care and the effects of health reform. Many are preparing a 3-4 year scenario where reimbursement rates will approximate current Medicare levels. For most organizations, this could mean a potential financial hit of 10% - 20% in total revenues.

It will be difficult to close this gap simply through growth. Traditional operational improvements are necessary but even those alone won't be enough to close the revenue gap. Increasingly, improvements in clinical utilization and clinical quality will be a key driver of performance improvement.

Understanding the Context

The advent of population health and accountable care models are forcing hospitals to improve acute care cost performance. While many healthcare organizations team with medical staffs and clinicians to identify and pursue clinical utilization improvement opportunities, these initiatives frequently fall short of producing tangible results.

There are six dimensions critical to clinical performance. Each competency has a primary role in producing results, growing revenues or assuring financial margin and has a direct bearing on the organization's ability to drive improvement:

1. **Physician Alignment:** Healthcare organizations must have the support and active involvement of physicians in leading clinical improvement initiatives. As changes are identified, the organization needs support from clinicians to insure successful implementation and adoption.
2. **Access & Capacity Management:** Frequently, utilization improvement opportunities, such as excess length-of-stay, are an artifact of access and capacity management issues. Organizations need effective processes and systems to manage patient access and throughput as part of their utilization management strategy.
3. **Productivity:** High inpatient costs per case can often reflect inefficient staffing models that drive high labor costs per patient day. Health systems need effective productivity systems to effectively manage labor expenses.
4. **Supply Chain:** For some clinical categories, supplies represent a sizeable percentage of the total cost of care. Implants, for example, can represent 40% - 60% of the total cost of joint replacement surgery. It is critical for health systems to control costs associated with implants and consumable supplies.
5. **Quality & Safety:** Adverse quality and safety events add considerable costs to cases. Organizations need effective surveillance systems to monitor quality and safety performance, by case and by physician. As off-quality events occur, the organization must have effective protocols for engaging physicians and improving performance.

Executive Worksheet

Common hurdles to implementing successful clinical utilization initiatives:

- Time required to evaluate and identify specific improvement interventions
- Opportunities are often spread across numerous service lines and most DRGs
- High cost and practice variation among practitioners for the same DRG
- Length-of-stay is not always an effective improvement strategy
- Lack of physician alignment required for buy-in and support

6. **Portfolio Management:** Healthcare organizations must have effective systems to manage their diverse portfolio of services. It is critical to have a continuous, intentional process in place to determine which services require investment, which should be improved, and which should be divested or outsourced. Clinical utilization initiatives should be assigned based, in part, on the priorities established by the portfolio strategy.

It is important to evaluate the organization's competencies in these areas before launching large-scale clinical utilization initiatives. Understanding areas of weakness will enable the organization to preemptively address competency gaps that, left unaddressed, can greatly limit success.

Benchmarking to Drive Performance

As part of an initial assessment, hospitals must possess the ability to measure direct costs per case and have the resources to compare performance to industry benchmarks. Ideally, organizations should institute micro-cost accounting systems that accurately measure the direct expenses associated with each case. Absent a detailed costing system, organizations can also use a ratio of cost-to-charges (RCC) methodology which provides a reliable estimate of costs.

As the industry moves toward a more value-based environment, it is critical that hospitals and health systems benchmark their clinical utilization performance against peer organizations. Comparative analytics enables hospitals to compare their direct costs by DRG to hospitals operating at the 65th percentile. "Excess" variances can then be summed by DRG and summarized across defined service lines. It can also be useful to view data by attending physician to understand how costs and utilization vary by practitioner. Additionally, information on the frequency and costs associated with "off-quality" events. This provides the informational foundation for pursuing utilization improvements through reductions in events such as deep vein thrombosis (DVT), post-operative respiratory failure, and pressure ulcers.

DRG	DRG Description	Cases for Period	Nursing Services			Ancillary Services										TOTAL	LOS Opportunity (Days above Geo Mean) for Period	Internal Variation
			Routine	Interm.	Critical Care	Cardiac Svc	On Rel	Emerg Dept	Lab	Surgery	On Ancll	Pharmac y	Resp Th	Rehab				
232	CORONARY BYPASS W/PTCA W/O	1	\$0	\$3,554	\$4,859	\$3,685	\$227	\$124	\$1,732	\$2,899	\$0	\$2,399	\$445	\$920	\$30,212	4.7		
233	CORONARY BYPASS W/ CARDIAC	7	\$9,321	\$4,314	\$39,215	\$1,985	\$777	\$85	\$6,734	\$2,235	\$3,331	\$13,029	\$1,231	\$1,521	\$99,897	13.1	High	
234	CATH W/ D NICE	18	\$0	\$2,072	\$4,172	\$1,797	\$342	\$99	\$2,332	\$2,070	\$0	\$2,772	\$481	\$391	\$24,488	40.9		
235	CORONARY BYPASS W/ D CARDIAC	8	\$21	\$2,532	\$6,613	\$0	\$347	\$0	\$4,387	\$2,199	\$24	\$9,538	\$754	\$634	\$31,120	41.9		
236	CATH W/ D NICE	25	\$0	\$1,334	\$9,228	\$70	\$297	\$6	\$1,541	\$2,199	\$0	\$1,894	\$395	\$374	\$20,125	31.9		

Represents components that exceed benchmark cost per case

Figure 1 – A component level analysis of costs is vital to the success of any clinical utilization improvement initiative.

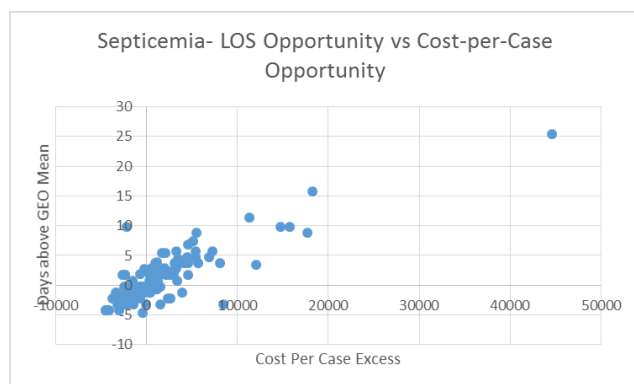


Figure 2 – An illustration of how length of stay can drive improvement opportunity for Septicemia cases.

Also critical to identifying utilization improvement opportunities is a component level analysis of costs. **FIGURE 1** is an example of DRGs associated with Coronary Arterial Bypass Grafting (CABG). The systems provides a cost per case breakout of the key components of care, including nursing, cardiac services, surgery, pharmacy, and laboratory. With additional analysis, the organization can identify which components (shown in Gold) are higher than others in the peer group. This analysis is a critical component of the information used to facilitate the improvement team. When necessary, the information can be cross-referenced to the functional component to see which opportunities are a result of functional inefficiencies. For example, a high nursing cost-per case could be an artifact of the organization's

unit staffing model. This cross-referencing is valuable in discerning organizational-driven opportunities from physician-driven opportunities.

The assessment should also include an analysis of length-of-stay (LOS). Typically the LOS is compared by case and by DRG to the Medicare geometric mean length of stay and a total “excess days” count is determined by diagnosis and service line.

The analysis is useful in identifying services where LOS reduction can be employed as one of the primary improvement strategies. **FIGURE 2** shows an example of how length-of-stay drives improvement opportunity for Septicemia cases. Additionally, it is useful to identify outlier cases where some of the opportunity is imbedded.

Each dot on the graph represents a septicemia case for a large hospital. The x-axis represents the amount of costs that exceeds the benchmark cost per case. The y-axis is the number of days that exceed the Medicare geometric mean LOS. The positive correlation between the two axes demonstrates that LOS is a key driver of cost. This tends to hold true for septicemia and similar medical diagnoses with longer lengths-of-stay.

Our experience working with hospitals and health systems across the country has identified 15 diagnostic categories that typically drive most of the utilization opportunity. These are diagnoses that are high volume, high complexity and high variation. These categories represent clusters of DRGs that make up key medical and surgical service areas.

Galloway has developed a series of high performing clinical and operational practices (HPPs) that are specific to each of the categories. Before convening improvement teams, we recommend assessing the organization using the HPPs to identify areas of practice opportunities. This enables the team leaders to develop a point of view on improvement opportunities in advance of the team meetings. For example, we know from experience that CABG improvement opportunities reside primarily in:

- Nursing critical care utilization
- Blood Conservation
- Surgery case length
- Stent utilization
- Laboratory test utilization
- Pharmacy utilization

Frequently, these hypotheses can be tested and brought to the first team meeting for immediate discussion.

Top 15 Clinical Improvement Areas

1. Cardiology: Cardiac Valve Replacement
2. Cardiology: Heart Failure
3. Cardiology: Cardiac Stents
4. Cardiology: Cardiac Pacemaker
5. Cardiology: AMI
6. Orthopedics: Joint Replacement
7. Neonatology: Neonate with Major Problem
8. General Medicine: Septicemia
9. General Medicine: Pneumonia
10. General Medicine: Infectious Disease with OR
11. Neurosurgery: Craniotomy
12. Neurosurgery: Spinal Fusion
13. General Surgery: Small & Large Bowel Procedures
14. Gastroenterology: Esophagitis
15. Dermatology: Cellulitis

The Process

Armed with benchmark data and pre-measured improvement opportunities, a hospital can use multi-disciplinary collaborative teams to quickly evaluate hypotheses, identify solutions and develop implementation strategies. Teams are usually formed around clinical service lines. A cardiac team, for example could be assigned responsibilities for AMI, CABG, pacemakers, and cardiac stents. Most clinical teams include physicians and representatives from nursing, pharmacy, imaging, laboratory, rehab services, surgery, and case management.

Employing Lean Kaizan design principals, Galloway works with focused improvement teams to move quickly through the design process. Most teams are completed in as few as three, two-hour meetings. At the conclusion, the teams develop recommendations that focus on:

- Reducing the cost per case
 - Supply savings
 - Aligning physicians by reducing individual variance
 - Labor savings
- Improving throughput & Length-of-Stay
 - Removing delays from the system, queuing theory
 - Aligning physicians by reducing individual variance
 - Evaluating and improving nursing home and rehab resources
- Reducing the cost of off -quality
 - Aligning physicians by reducing individual variance
 - Focus on highly variant outliers
 - Specialty specific focus when group's performance is below expectation

Additionally, a team may also identify ways to improve net revenue per case as part of a portfolio improvement strategy.

Opportunities should be quantified in terms of the expected annual savings. Each idea should then be risk-rated based on the level of difficulty anticipated during implementation and presented to the steering leadership team assigned to oversee the clinical teams. Once the steering team approves the recommendations, the team develops a detailed implementation plan to assign responsibilities and timing.

Success Story

The Challenge: Galloway recently worked with a large Midwestern healthcare system to develop a multi-year plan to prepare for the expected economic impact of health reform.

The Solution: Galloway worked with the client to forecast the expected gap in net revenues (based on future revenues approximating Medicare rates). The result of this analysis showed that the system's total revenues would drop by approximately 8%, or \$160 million, in 3 years. Next, Galloway applied iVantage's web-based **INDICATOR Performance Manager™** solution to benchmark and determine cost improvement opportunities by improvement "lever" that could close the financial shortfall as well as restore positive operating margins. Each lever is forecasted across the four years based on the expected timing of implementation. The clinical utilization lever, for example, was forecasted to take longer to implement; therefore, most savings were projected for years 3 and 4.



Clinical utilization improvements represent an important component of the gap closure plan and are vital to achieving savings in the latter years. As a result, the system, with support from Galloway, launched clinical collaborative teams at the three largest hospitals in the system.

Sub Service Line	Annualized Utilization Opportunity	Low	High	Low	High
Neonate with Major Probl	\$10,060,496	10%	15%	\$1,006,050	\$1,509,074
Tracheostomy	\$8,466,758	10%	15%	\$846,676	\$1,270,014
Cardiac Surgery	\$4,652,638	15%	20%	\$697,896	\$930,528
Infectious Disease	\$4,353,539	10%	15%	\$435,354	\$653,031
Pulmonology	\$3,757,594	10%	15%	\$375,759	\$563,639
Other General Surgery	\$3,740,361	10%	15%	\$374,036	\$561,054
Gastroenterology	\$3,464,509	10%	15%	\$346,451	\$519,676
Fusion	\$2,890,208	15%	20%	\$433,531	\$578,042
Brain	\$2,870,245	10%	15%	\$287,024	\$430,537
Delivery	\$2,673,120	10%	15%	\$267,312	\$400,968

Figure 3 – A multi-disciplinary team identified nearly \$7.5 million in potential inpatient clinical utilization savings.

At the largest hospital, a multi-disciplinary team of physicians and clinicians were charged with identifying \$5 M - \$7.5M in inpatient clinical utilization savings. Most of the opportunity was found to reside in 10 primary sub-service lines (see **FIGURE 3**). The team, under the executive leadership of the Chief Nursing Officer and the Chief Medical Officer, met over a 6-week period. Galloway facilitated the meetings and provided most of the analytic support.

The Results: At the conclusion of the 6 weeks, the team identified \$5.1 M in risk-rated annual opportunity. This represented an improvement of 12% - 20% of the expense base, depending on the service line. The team also developed an implementation plan to assign responsibilities and identify key tasks required to achieve the savings.

Meet our Expert

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Gary Auton is a Senior Director with Galloway Consulting, based in Atlanta, Georgia. In this role, he leads large-scale organizational transformation initiatives for health systems and other clients. These projects typically involve multiple improvement initiatives focused on labor and supply expense reduction, service portfolio performance improvement, revenue cycle improvement and clinical transformation.

Gary has a Green Belt Lean Six-Sigma certification with the University of Michigan and is a former Examiner with the Baldrige National Quality Program. He will be publishing a book on his work improving performance in health systems later in 2017.