Setting the Standard for Patient Care

Overview of the Clinical Standardization Opportunity for Hospital Executives and Board
About the Bundled Payment Series

With the Comprehensive Care for Joint Replacement (CJR) mandatory bundled payment program in place, CMS has laid down a marker for value-based payment. All providers should pay attention to this development. CMS is clearly evaluating CJR with a view to national expansion as well as the potential for similar mandatory bundles for other conditions. Beyond Medicare’s programs, bundled payments also have a wide variety of business implications across Medicaid and commercial payer segments. To assist members through this step into the world of alternative payment, the Advisory Board has compiled a set of resources that will help leaders prepare a path to success.

Setting the Standard for Patient Care

A multitude of hospital business imperatives—succeeding under bundled payments, improving performance under Medicare risk, reducing direct cost per case, raising quality outcomes, and engaging specialists among others—are prompting hospital leaders to reconsider clinical standardization. This study illustrates why and how hospitals must expand their efforts beyond targeting specific cost drivers (e.g., supplies) or physician outliers, tackling instead the larger organizational transformations needed to support holistic, patient-centered, consensus-based clinical standards.

Additional publications in the Bundled Payment Series

How to Build the Hospital-Specialist Partnership for Outcomes

Supporting specialist practice transition toward new market mandates requires overcoming historical relationship disconnects, creating a business case, and supporting specialists operationally. This set of eight imperatives to advance and reward high-value specialty care teaches hospital leaders how to forge no-regrets, mutually beneficial hospital-specialist partnerships—with and without contracts.

Keys to an Efficient Post-Acute Episode

Variation in post-discharge quality and costs, as well as related readmissions, make post-acute care critical to managing an effective episode of care. This briefing outlines how health systems can prepare for an efficient discharge process, while strengthening post-acute provider collaboration and patient management following the hospital stay.

Strategies for Supply Cost Reduction

While supply costs don’t typically impact fee-for-service payments under bundled payment models, a renewed focus on purchasing strategy is essential for maximizing internal cost savings. This briefing outlines strategies for optimizing supply chain purchasing by increasing physician engagement and advancing collaboration with suppliers.
Setting the Standard for Patient Care

Overview of the Clinical Standardization Opportunity for Hospital Executives and Board
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Setting the Standard for Patient Care

The Study in 15 Insights

- **About this research:** This briefing provides a conceptual overview of the challenges and opportunities of clinical standardization at provider organizations.
- **Research scope:** The examples focus on acute care hospitals and health systems but the principles apply beyond hospital walls. The example improvement opportunities are inpatient services and presuppose that the episode is occurring; but, especially for providers that have more population-level risk, greatest long-term opportunities to set a care standard may lie elsewhere (such as in preventing avoidable hospitalizations).
- **Audience:** C-suite executives and board members.

### 15 Insights on Clinical Standardization

#### Adopt a Clinical Standardization Mind-set

1. By focusing primarily on external measurements of quality, and also considering quality performance separately from strategy and margin, senior executives and board members are underestimating the importance and urgency of reducing performance variation within their organizations.

2. All hospitals and health systems, including those that already rate high on quality, have opportunities to improve by increasing consistency across facilities, service lines, and providers.

3. Using one’s own best performers to set an organization-wide performance floor will not only raise absolute performance on conventional quality metrics, but also protect margins and secure market share.

#### Don’t ‘Standardize’—Set a Standard of Care

4. The goal of clinical standardization is not to produce rigid guidelines. It is to establish an evidence- and consensus-based approach that will change and evolve.

5. Nor is the goal to enforce perfect adherence. Providers should be supported in customizing for individual patient needs and innovating in ways that will end up raising the care standard over time.

6. Leaders should be aware that there are two types of variability reduction opportunities: “vertical,” which focuses on the standard of care for a particular clinical condition or patient population, and “horizontal,” which aims to rationalize use of costly resources that cut across conditions and patient types.

7. Rationalizing resource use (horizontally) is challenging because our understanding of value is often limited; also, a cost-focused approach risks alienating physicians.

8. Creating a standard of care by condition or patient population (vertically) is a more effective way to engage clinicians.

9. Unwarranted variability exists in all clinical areas. But within the realm of acute care services, research has identified a short list of high-volume, high-variation conditions—particularly sepsis, heart failure, joint replacement, and labor and delivery (L&D)—that merit particular focus.

#### Learn from Organizations with Strong Clinical “Systemness”

10. Beyond any given clinical area, it is necessary to invest in a strong and credible improvement platform that can accelerate (and keep) gains across clinical areas.

11. Virtually all organizations already have an improvement platform—but few have found a way to ensure that all sites, services, and providers are equally supported (and held to a uniformly high quality standard).

12. The challenge of achieving performance consistency increases with organizational size and complexity—making the multi-facility systems that lead the market on consistency the ones to watch for best practices.

13. Even stand-alone hospitals can learn from the elements of success at highly consistent systems.

14. Replicating best practices from high performers will require rewriting the organization’s DNA. Many diverse organizational components—including strategic goals, leadership structures, and resource allocation—must all be aligned in the same direction to succeed.

15. Only C-suite executives and boards have the power to put in place all the changes needed to set a uniformly high standard of care enterprise-wide.
Next Steps and Resources

Because No Single Study Can Fully Cover All the Topics Within Clinical Standardization

From the Physician Executive Council

- Building the Evidence-Based Organization (study, diagnostic, custom on-site presentation)
- A Systems Approach to Transforming Clinical Culture (study)
- Building the Physician Leadership Team of the Future (study)
- Communicating with 100% of the Medical Staff (executive summary and toolkit)
- The Future of the Medical Staff Organization (study)
- Build a Stronger Hospital-Specialist Partnership (study)

- Ten Imperatives to Reduce Sepsis Mortality (study)
- Reducing Variability In Acute Care of Heart Failure (toolkit)
- Realizing the Full Benefit of Palliative Care (study, toolkit)
- Reducing Readmissions (toolkit)
- Perioperative Surgical Homes (webconference)
- Capturing the Full Value of the Hospitalist Program (study)

From the Health Care Advisory Board

- The Integrated Care Advantage: Securing hospital growth through reliable and efficient episodes of care (study)
- From Contract to Compact: Moving Physician Partnerships Beyond Financial Alignment (study)

- Next-Generation Clinical Integration (study)
- Blueprint for Growth 2020 (study)
- The Care Transformation Business Model (study)
- Competing on Consumer Engagement (study)

Beyond Research and Insights: Hospital Crimson Continuum of Care at a Glance

- Web-based performance measurement tool facilitating rapid opportunity identification, peer cohort benchmarking, physician self-review, and clinical performance improvement
- Transforms siloed data into comprehensive dashboards and performance profiles at service line, specialty, and provider level

- Data-driven root cause analysis, cohort best practice sharing via annual summit, quarterly intensives, webconferences, onsite workshops, and Dedicated Advisor support
- For more information, please contact your Advisory Board representative
Adopting a Clinical Standardization Mind-Set

- How is clinical standardization different from conventional “quality” performance?
- Why is it necessary to prioritize setting a uniformly high standard of patient care organization-wide?
The quality of services provided by U.S. hospitals and health systems has improved in recent years. Thanks in part to robust quality reporting and payment programs from the Centers for Medicare and Medicaid Services (CMS), hospitals have invested in quality improvement, with substantial results to show.

In addition to successful efforts to reduce hospital-acquired conditions (HACs), rates of avoidable in-hospital deaths from conditions like MI, stroke, and pneumonia have also declined.

Hospitals have also made strides in more expansive dimensions of quality, such as improving patient experience.

They have even worked to improve care outside the hospital setting, establishing models of population health management that keep patients with chronic conditions healthier—reducing the rate at which they need hospitalizations at all.

---

**Example: Reducing Hospital-Acquired Conditions (HAC)**

*Results of HAC Reduction Initiatives, 2010-2013*

17%
Reduction in HAC rate, (e.g., fewer adverse drug events, surgical site infections, etc.)

1.3M
Estimated reduction in HAC events, cumulative

50K
Inpatient deaths avoided, cumulative

$12B
Total estimated cost savings

Don’t Declare Victory Too Soon

Hospital quality improvement has so much positive momentum that the greatest obstacle to further improvement may be complacency.

“Quality” generates a lot of noise. At any given hospital, at any given time, hundreds of different quality improvement projects are under way, most of which are capturing improvements and receiving (deserved) celebration.

In addition, quality ranking lists and “top hospital” designations have proliferated, calling out different types of hospital performance—to the point where most hospitals of any size are “top performers” on some dimension of quality on at least one list.

This celebratory environment makes it difficult to assess one’s own organization’s actual, total performance on clinical quality.

In general, leaders tend to overestimate performance—assuming that quality at their own organization is high, regardless of actual performance.

Activity and Noise Surrounding Hospital Quality Enables Performance Complacency

Divergent Methodologies Create Confusion

Boards Struggling to Assess Performance

“Eighty-three hospitals were rated by all four rating systems, with no hospital rated as a high performer by all four. Only three hospitals were rated as high performers by three of the four systems.”

J. Mathew Austin, et al., Health Affairs, 2015

Study in Brief: Hospital Governance and the Quality of Care

- Leading researchers from the Harvard School of Public Health surveyed board chairs of 1,000 U.S. hospitals to understand their expertise, perspectives, and activities in clinical quality
- Findings indicated relatively low board engagement in quality, with boards at the highest-performing hospitals reporting greater focus and training
Total Improvement Opportunity Is Massive

A meta-analysis of total wasted spending in the United States makes two critical points about the total improvement opportunity for providers today.

First, by showing how quality shortfalls still drive many hundreds of billions of dollars in wasted health care spending, the analysis underlines how far the health care delivery system still has to go when it comes to quality.

Second, by tying quality and wasted spending, the analysis confirms that quality improvement should not be considered a separate challenge from cost. Instead, quality improvement is a critical part of reducing cost.

Provider Organizations Plagued by Quality Shortfalls, Overtreatment

Estimated Total Annual Health Care Waste by Category, In Billions
All Payers

42% of wasted spending due to quality shortfalls


- Dr. Don Berwick, formerly of IHI and CMS, and Andrew Hackbarth of RAND examined published estimates of the magnitude of excess spending on health care by source to across six major categories
- Created general estimate of total wasted spending; proposed focusing on “the removal of non–value-added practices in all their forms” to produce a delivery system that is affordable and meets patient needs

<table>
<thead>
<tr>
<th>Category</th>
<th>Amount (billions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Failures of Care Coordination</td>
<td>$35</td>
</tr>
<tr>
<td>Pricing Failures</td>
<td>$131</td>
</tr>
<tr>
<td>Failures of Care Delivery</td>
<td>$128</td>
</tr>
<tr>
<td>Fraud and abuse</td>
<td>$177</td>
</tr>
<tr>
<td>Overtreatment</td>
<td>$192</td>
</tr>
<tr>
<td>Administrative complexity</td>
<td>$248</td>
</tr>
</tbody>
</table>

$177 of wasted spending due to quality shortfalls

$35 of wasted spending due to fraud and abuse

$131 of wasted spending due to administrative complexity

$128 of wasted spending due to failures of care delivery

$192 of wasted spending due to pricing failures

$248 total annual health care waste by category, in billions

All Payers
How Much Could Providers Save By Raising Quality?

Focusing in on provider economics, specifically for hospitals, the opportunity for improvement on cost and quality is also large—as is the potential return on investment for improving.

As understanding of the cost of unwarranted variation improves, executives increasingly cite care redesign or clinical standardization as a top opportunity to reduce direct cost.

As shown by the data presented here, the larger the organization, the more likely its executives are to rate “care redesign” as a top source of cost containment—though note the large remaining contingent of systems and/or leaders that have not yet identified this strategy as important.

As for the size of the opportunity, a 2015 Advisory Board poll of 34 hospital and health system CFOs found that these executives think clinical standardization is the single greatest potential source of total hospital cost containment opportunities.

**Provider Executives Are Ramping Up Their Estimates**

**Hospital Leaders Citing “Care Redesign” as a Top Source of Cost Containment**

*Survey of Health Care Leaders (20% Clinical Executives; 8% finance leaders), 2014 n=792*

- 26% of small systems
- 36% of medium systems
- 55% of large systems

**CFOs’ Estimated Breakdown of Total Hospital Cost Containment Opportunity, by Source of Savings**

*HCAB Meta-analysis of Hospital and System CFOs, 2015 n=45*

- Clinical standardization: 40%
- Labor costs: 20%
- Supply costs: 25%
- Capital expenses: 5%
- Administrative overhead: 10%

Full Cost of Quality Shortfalls Is Flying Under the Radar

The striking part of estimating the margin impact of low quality is how large a piece of that hypothetical pro forma is often missing from our estimates of potential standardization return on investment (ROI).

It is relatively simple to estimate the downside impact of clinical variation on direct cost and revenue integrity (i.e., bonuses and penalties). But focusing solely on direct costs misses significant additional ROI that can stem from quality improvement.

More challenging to measure—but equally real—sources of loss include volume (and revenue) opportunity costs. Low quality is tying up hospital staff and facility capacity in thousands of avoidable days’ worth of LOS. That also means our capacity is not well matched to market demand—and our fixed costs are too high.

Then there are malpractice costs. Quality shortfalls drive up malpractice premiums and payouts.

### Categories of Potential Losses to Hospitals Due to Clinical Variation

| Costs that are relatively feasible to measure; often factored into care standardization ROI estimates |
| Avoidable Direct Costs to Providers |
| Missed Risk-Based Payments, Avoidable Penalties |
| Volume/Revenue Opportunity Cost |
| Inflated Malpractice Payouts and Premiums |

- **Avoidable Direct Costs to Providers**
  - Excess cost/case, days LOS, ICU use sapping margins

- **Missed Risk-Based Payments, Avoidable Penalties**
  - Shortfalls on reported metrics, pay for Performance
  - Penalties on HAC, readmissions

- **Volume/Revenue Opportunity Cost**
  - Excess LOS reduces efficiency of staff and facility capacity use

- **Inflated Malpractice Payouts and Premiums**
  - Unnecessarily high frequency of quality incidents
  - Demonstrable inconsistencies in processes and standards makes suits less defensible

Source: Advisory Board interviews and analysis.
Outcomes Are Increasingly Pivotal to Market Share

In the bigger picture, clinical standardization is not solely a cost imperative. For providers, clinical standardization is also a lever—possibly the most important lever—for capturing and sustaining market share as purchasers move to narrow networks based on performance.

In many competitive markets (especially metropolitan areas), narrow networks with strict inclusion criteria are already a reality. Those networks make conventional quality performance a minimum requirement, but the real differentiating factor is cost.

For providers in less competitive markets, the pressure to compete on outcomes may not be strong today, but odds are that the same market dynamic will register eventually. If the sole community provider is unable to deliver performance on outcomes, payers will steer as many local cases as possible to non-hospital local alternatives (such as retail providers) and out of market.

“High Quality” Necessary—but Not Sufficient—for Competing On Outcomes

Degree of Hospital Exclusion Across Public Exchange Plans

20 Urban Markets, December 2013

Key Factors in Network Inclusion

Per capita cost of care

Efficiency and quality of care

Excludes 30% of 20 largest hospitals

Excludes 70% of 20 largest hospitals

Ultra-Narrow

Narrow

Broad

30%

32%

38%

“Ultra-Narrow”

“Narrow”

Excludes 30% of 20 largest hospitals

“High quality” Necessary—but Not Sufficient—for Competing On Outcomes

“It is not about demonstrating higher quality to justify higher prices. It’s about raising quality to meet market price.”

Christopher Kerns
Managing Director, Health Care Advisory Board

Within Our Own Walls, Missing a Strong Performance Floor

To the extent that we focus improvement efforts on relative performance in rankings or against external benchmarks, we are missing something important. All organizations, even overall high performers on conventional quality measures, have opportunities to improve enterprise-wide performance by focusing on improving their own internal consistency of care.

These inconsistencies exist at every level—among physicians, teams, units, and acute care facilities within multi-facility systems.

For example, consider LOS in knee and hip replacement across the hospitals of the pseudonymed Fairfax Health System. Advisory Board analysis indicates that LOS in total joint is correlated with quality issues (i.e., non present-on-admission complication rate).

The Fairfax hospitals have very different average LOS for these procedures—differences that cannot be explained by severity mix.¹

Until it scales the best practices at hospital B (the 25th percentile performer) to its other hospitals, Fairfax is paying the price in the form of 1,100 patient days each year.

**Case Study: Sizing Knee Replacement LOS Opportunity at Fairfax¹**

**Fairfax Facilities' Knee Replacement ALOS**

<table>
<thead>
<tr>
<th>Facility</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>I</th>
<th>J</th>
<th>K</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALOS</td>
<td>2.3</td>
<td>2.5</td>
<td>2.6</td>
<td>2.9</td>
<td>2.9</td>
<td>2.9</td>
<td>3.2</td>
<td>3.2</td>
<td>3.3</td>
<td>3.4</td>
<td>3.5</td>
</tr>
</tbody>
</table>

**System-wide Avoidable Days if ALOS at all Fairfax Facilities Matched “Best”**

**Knee and hip replacement volume at given facility**

\[
\times
\]

**ALOS difference between 25th percentile and given facility**

\[
=
\]

**Opportunity for facility (to calculate total system opportunity, sum opportunity for each facility)**

1,168 days

Annual avoidable days LOS if all facilities matched system’s own 25th percentile LOS (563.7 knees, 604.7 from hips)

**Case in Brief: Fairfax Health System¹**

- 11-hospital system located in the Midwest
- Represents a typical volume and level of variability in multi-facility health systems analyzed by the Advisory Board’s “Systemness” Model of Clinical Standardization Opportunity³

¹ Pseudonym.
² Analysis showed that severity mix at the hospital level has an overall small impact on joint replacement LOS.
³ See page 35.

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How Can We Set and Deliver on a Consistently High Standard of Care?

In sum, it is time for hospital leaders to move from a conventional “quality improvement” focus to one of clinical standardization as a necessary first (but not last) step in improving patient outcomes.

The priority now for hospital boards and executives should be to identify and reduce unwarranted variability within their own organizations. Leaders must clearly articulate a vision of setting an enterprise-wide performance floor, set at the level of internal better performers.

Reducing variability is a critical part of positioning the hospital organization for success on margin, quality, and market share goals.

### Adopting a Clinical Standardization Mindset

#### Changing the Performance Improvement Model

<table>
<thead>
<tr>
<th>Traditional “Quality”</th>
<th>Clinical Standardization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improve relative performance on reported metrics</td>
<td>Reduce unwarranted internal variability to raise absolute performance on cost and clinical outcomes</td>
</tr>
<tr>
<td>No explicit connection</td>
<td>Cost variability data used to identify and size improvement opportunities, measure performance</td>
</tr>
<tr>
<td>Payers set goals via reporting programs or commercial payer risk contracts</td>
<td>Payer agnostic; providers set goals based on biggest improvement opportunities (including, but not limited to, P4P goals)</td>
</tr>
<tr>
<td>Win bonuses, avoid penalties; demonstrate high relative performance to justify higher prices; market to consumers and physicians</td>
<td>Win share, protect margins by setting and delivering on a uniformly high standard of care</td>
</tr>
</tbody>
</table>

### Strategic Objectives

- **Operational Goal**
- **Connection to Cost**
- **Role of Payers**
- **Strategic Objectives**

---

Source: Advisory Board interviews and analysis.
Getting Up To Speed On Key Concepts

This study aims to inform executives and board on three key knowledge areas necessary to get up to speed on the general terrain of clinical standardization.

Having looked at the question of why organizations should prioritize clinical standardization, the next questions are “Where does a care standard most need to be set?” and “What will we need to do to succeed?”

Subsequent sections of this study cover those two questions.

### Answering Executive and Board Questions on Clinical Standardization

<table>
<thead>
<tr>
<th>Why Prioritize Clinical Standardization?</th>
<th>Where Does a Care Standard Most Need to Be Set?</th>
<th>What Will We Need to Do To Succeed?</th>
</tr>
</thead>
<tbody>
<tr>
<td>• How is clinical standardization different from conventional “quality” performance?</td>
<td>• What kinds of standards are needed?</td>
<td>• What does a platform to support diverse clinical standardization initiatives need to include?</td>
</tr>
<tr>
<td>• Why is it necessary to prioritize setting a uniformly high standard of patient care organization-wide?</td>
<td>• What are the clinical areas with greatest opportunity for improvement?</td>
<td>• What can we learn by looking at highly consistent organizations?</td>
</tr>
</tbody>
</table>

Source: Advisory Board interviews and analysis.
Don’t Standardize—Set a Uniformly High Standard of Care

• What kinds of standards are needed?
• What are the clinical areas with greatest opportunity for improvement?
Point of Clarification: The Goal Is Not Complete Standardization

It is important to clarify that the goal of this work is to set a standard of care and of performance—not to give clinicians uniform rules with no room for deviation.

After all, it is not ideal—or even possible—to fully standardize medicine. Even where a guideline exists, its goal should not generally be 100% adherence. This would stifle innovation and cause potential harm to patients by limiting warranted and beneficial variation.

For example, at Intermountain Healthcare—an industry leader in reducing unwarranted variation—most guideline adherence goals fall in the “innovation-friendly” zone of 70% to 90%. That level of adherence suggests physicians are consistently following best practice standards but have flexibility for improvements and their own discretion.

With adherence in that zone, it becomes possible to track and analyze physician deviations from guidelines to determine whether deviations are yielding better outcomes than standard practice. If they are, the standard can be adjusted to encompass that high-value care approach.

Innovation-Friendly Adherence, Processes for Improving Guidelines

Spectrum of Target Levels for Guideline Adherence

<table>
<thead>
<tr>
<th>No Guideline Use</th>
<th>0%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Innovation-Friendly</td>
<td>70%-90%</td>
</tr>
<tr>
<td>Strict Protocol Adherence</td>
<td></td>
</tr>
</tbody>
</table>

- No defined standard of care—variability likely to yield wide cost and quality variation
- Broad adherence to care standards drives consistency, outcomes improvement
- Allows sufficient flexibility for physicians to improve on existing methods
- No innovation—physicians simply comply with protocol

See Tactic “Leveraging Non-compliance to Drive Guideline Evolution”

- Physician Executive Council study *Building the Evidence-Based Organization* lays out specific leadership practices that foster the uptake of guidelines
- Tactic 4, “Leverage Non-compliance to Drive Guideline Evolution” profiles processes for capturing valuable information from opt-outs and using it to improve guideline accuracy, usability, and applicability
- According to data from the related EBP Leadership Audit tool, most organizations follow this process “sometimes”—the challenge is building this process into all clinical areas and at all sites organization-wide.

Source: Advisory Board Interviews and analysis.
Prioritizing the Work: Two Ways to Group Variation Opportunities

Keeping in mind that the objective is to target only unwarranted variation, the first big operational challenge is opportunity prioritization. It is difficult to systematically reduce unwarranted variability in high-return ways when variability is everywhere.

To get a picture broad enough to support prioritization, start with the idea that there are two basic ways to think about charge variation. They are sometimes called “horizontal” and “vertical.”

- **Vertical** refers to focusing on the reduction of variation in the standard of care for a particular DRG.
- **Horizontal** refers to focusing on the reduction on variation in cost drivers that cut across DRGs, such as ICU, costly drugs, and inpatient imaging.

By Clinical Condition and Cost Driver

Source: Advisory Board interviews and analysis.
For Cost Drivers, The First Step Is Understanding Value

In the area of horizontal costs, the problem is often that we lack the information we need about the value of a particular resource.

Whether a resource is costly, or even whether its use is variable across physicians treating similar patients, does not in itself tell us what we need to do. We need more information about whether these costly resources yield patient benefit, in comparison to other options.

Obtaining more information about resource value is a challenge. Large-scale, diverse-population, real-world studies of comparative effectiveness are few and far between.

Likely Starting Points for Hospital-Led “Horizontal” Analysis

Typical Attributes of Horizontal Variation Opportunities

- Unnecessary utilization suggested by variation data
- An unknown portion of utilization likely defensible—benefits patients
- Impossible to take principled action until value is understood

Source: Advisory Board interviews and analysis.
Today's Example: Assessing The Value of IV Acetaminophen

To take one example, across 2014, the Advisory Board received numerous questions about the use of intravenous acetaminophen, sometimes abbreviated as IV APAP.

IV APAP use across hospitals is sharply up, and its price recently doubled—now set about $38 per dose. On the other hand, theoretically, the drug can be swapped in for opioids in postoperative pain management, which can improve clinical outcomes.

We ran an analysis using Crimson Continuum of Care data to see whether all-payer, real-world utilization patterns in a set of surgical DRGs could answer the question, “Is IV APAP yielding benefits in proportion to its costs?”

The first set of findings underlined the strength of the relationship between higher use of post-operative opioids and both higher complications and lower length of stay. Every “jump down” in opioid use—high to medium, and medium to low—resulted in a 36% decline in complications and a 29% reduction in LOS for those DRGs.

### IV APAP Costly—but Does It Help Reduce Opioid Use?

**IV Acetaminophen Increasing Pharmaceutical Costs**

- **16%**  
  Overall increase in patients receiving IV acetaminophen between 1Q 2012 and 4Q 2013

- **$38**  
  Per-vial cost of IV acetaminophen

### Quality Problems Clearly Linked to Greater Opioid Use

**Complication Rates of Opioid and Non-opioid Use in Postoperative Pain Management**

- Typical High-Dose Opioid Regimen: 7.63%
- Regimen with Moderate Doses of Opioids: 4.87%

Lower-opioid approach reduces complications by 36%

### Study in Brief: Cost and Quality Impacts of Multi-Modal Pain Regimens

**LOS in Cases with Opioid and Non-opioid Use in Postoperative Pain Management**

- Typical High-Dose Opioid Regimen: 3.71 days
- Regimen with Moderate Doses of Opioids: 2.64 days

Lower-opioid approach shortens LOS by 29%

Source: Advisory Board analysis of Crimson Continuum of Care data; Advisory Board interviews and analysis.
Utilization Analysis Shows the Potential Going Unrealized (but Not Why)

The next question was whether IV APAP can help reduce use of opioids in pain management regimens, thus reducing LOS and complications.

The analysis did not fully answer whether the drug could achieve that benefit—but it did show that based on current practice patterns, it has not done so yet.

This graphic shows IV APAP use growing across the top, with opioid use remaining flat along the bottom. Even as IV APAP use has grown, there has been almost no change in opioid use. The total share of patients receiving narcotics at all remains at around 95%; there has been no shift from high doses to lower doses.

The analysis credited use of IV APAP with roughly 19 days avoided LOS per year for a 250-bed hospital. In contrast, backing off opioid use was estimated to that same hospital over 1,200 days LOS per year. The true value is in reducing opioids—whether by use of IV APAP or any other (potentially less expensive) alternative.

Teeing Up the Next Questions
• What does a successful lower-opioid pain regimen look like?
• What are the real-world barriers to scaling that practice pattern?
• What are the most effective (and replicable) solutions for overcoming those barriers?

Source: Advisory Board analysis of Crimson Continuum of Care data; Advisory Board interviews and analysis.
The Difficulty With ‘Horizontal’ Opportunities is Constructing the Full Value Picture

Taking a step back and thinking about all the cost-driver (“horizontal”) opportunities, we found that the essential challenge is needing much more information about their relative value. As in the IV APAP analysis, when we start digging into the use of costly resources, we often uncover next-level questions about what drives practice patterns—and those underlying practice patterns will generate additional questions after that about how to migrate patterns to higher-value approaches.

Aside from those considerations, in a world in which clinician engagement is the rate-limiter for performance improvement, focusing on “how can we use this costly resource less?” is not the ideal place to start. Providers have real issues with the concept of “doing less” (which is implied when we focus on costly resource use).

After all, “doing more,” while it may not be right, is the default behavior for a reason, whether it is ease of ordering or defensive medicine.

And on a more philosophical level, physicians may not see how doing less betters patient care.

Obstacles in Sizing, Capturing Opportunities to Standardize Use of Costly Resources

- **Difficult to Solve for Value**
  Complex quantitative and qualitative analyses required to understand cost versus benefit (or lack) in use of high-cost, high-variability resources

- **Not Much Research on the Shelf**
  Solid comparative effectiveness guidance for any given resource very scarce in health care

- **Too Many Targets**
  Bewildering range of possible resources to analyze

- **Prioritizing Based on Guesswork**
  Normalized cost data across opportunities also scarce, making it virtually impossible to compare across different cost types (e.g., pharmaceuticals versus supplies), or rank opportunities by size

Swimming Upstream Against Factors That Encourage Clinicians to “Do More”

- Advances in technology
- Ease of electronic ordering
- Defensive medicine

“...it is seldom clear to physicians how resources diverted from one patient will help better serve the needs of another. Any savings from ordering a less-expensive test or avoiding a marginally valuable therapy seem to accrue to the profit margins of insurance companies, not necessarily the sick patient down the hall... To complicate matters, few explicit and widely agreed-on guidelines exist on appropriate bedside resource management. The idea of a rogue physician making bedside rationing decisions in an unpredictable manner is rightly disturbing.”

Neel T. Shah, MD, MPP
Founder and Executive Director, Costs of Care

First Things First: Set a Uniformly High (‘Vertical’) Standard of Care

Assess Resource Use Within the Framework of a Defined Care Standard

Rationalizing use of costly resources is important, but the overall most effective way to engage clinicians in care standardization is to put the real problem before them: How to set a uniformly high standard of care.

Using available data, it is not difficult to show that clinically similar patients are receiving different approaches to care and coming out with different outcomes—some of which are demonstrably worse than others.

Highlighting these facts creates a foundation for agreement that the main challenge for any provider organization is actually setting and delivering on a uniformly high standard of care.

Provider organizations need clinicians’ help to ensure that all patients who interact with the organization receive the same high standard of care. Specifically, organizations need clinicians to:

- Help establish the standard
- Abide by the standard when applicable
- Help refine and elevate the standard over time

Source: Advisory Board interviews and analysis

Teeing Up Adversarial Conversations

- “Your costs are much higher than those of your colleagues. How can you reduce cost?”
- “This is a very expensive resource. Can you make a change in your practice?”

Building a Foundation for Clinical Standardization

- “Clinically similar patients are receiving very different treatments across our organization. We need to come to consensus about a general care standard.”

Source: Advisory Board interviews and analysis
Where Is Care Standardization Most Needed Today?

Where to start setting the care standard? This brings us to the “vertical” opportunities—specific hospital DRGs.

Here again we need to prioritize, because every DRG has unwarranted care variation in it. To find the greatest opportunities in this diffuse field, we made a model to produce a “Care Variation Short List”—the DRGs to tackle first for greatest ROI.

First, we looked at pure variability, using a cohort of about 600 hospitals in the Crimson Cohort to analyze which DRGs have the most physician-level variation in charges for like cases within any given hospital. Then we aggregated those findings across hospitals to eliminate sources of noise, such as differences among chargemasters. Then, we did a feasibility analysis, filtering out DRGs that didn’t meet our criteria for being actionable for hospital executives in the real world.

Finally, we looked to see what the improvement playbook could be. What tactics have been found to overcome the known drivers of care variation in each DRG? (We used that information not to cut the list, but rather to build a research agenda.)

Introducing “The Care Variation Short List” Analysis

Assessing ROI Potential
• Which DRGs are the most variable today (adjusted for patient severity and factors such as cross-facility chargemaster noise)?

Determining Feasibility
• What are the drivers of variation within each DRG?
• How likely is it that hospital leaders can inflect these drivers today?

Identifying Solutions
• What tactics and strategies are known to address variation drivers within each clinical area?

Short List Methodology in Brief
• Nationwide all-payer sample of over 600 hospitals; represents nearly 40% of all inpatient admissions
• Compared “like” cases within the same facility to measure variation
• Ranked opportunities by sheer variability, average hospital volume, and feasibility for typical hospital organization to inflect today

Source: Physician Executive Council interviews and analysis.
No Matter How You Slice It, Certain DRGs Always At The Top of the List

Looking at Variability in Two Ways: Reining In Outliers and Shifting the Mean

The “short list” model analyzed variation in two different ways, each yielding slightly different results.

In the first analysis, we measured the opportunity of reducing the number of outlier cases in a specific DRG. Outlier reduction strategies focus on zooming in and changing practice patterns of a smaller group of physicians with practice patterns that fall outside the facility norm. In general, outlier-focused campaigns can and do provide a meaningful “quick win” impact, but the ROI diminishes over time.

In the second analysis, we measured the potential impact of shifting the mean—what would happen if you could get the majority of your physicians to make possibly small, but across-the-board tweaks to their practice patterns. These gradual shifts in practice take longer to achieve, but they offer more consistent, gradual returns over time.

While the two analyses generated a slightly different set of top opportunities, it’s clear there are some conditions that loom large on both lists.

### Average Charge-Reduction Opportunity of Reducing Outliers by Severity-Adjusted DRG

<table>
<thead>
<tr>
<th>DRG Description</th>
<th>Charge Reduction Opportunity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vaginal and Cesarean</td>
<td>$1,168,000</td>
</tr>
<tr>
<td>Dorsal &amp; Lumbar Fusion</td>
<td>$770,100</td>
</tr>
<tr>
<td>Knee Joint Replacement (302)</td>
<td>$756,800</td>
</tr>
<tr>
<td>Sepsis (720)</td>
<td>$455,600</td>
</tr>
<tr>
<td>Hip Joint Replacement (301)</td>
<td>$355,000</td>
</tr>
<tr>
<td>Normal Newborn or Neonate</td>
<td>$333,400</td>
</tr>
<tr>
<td>Heart Failure (194)</td>
<td>$278,200</td>
</tr>
<tr>
<td>Cervical Spinal Fusion (321)</td>
<td>$241,000</td>
</tr>
<tr>
<td>Percutaneous Cardiovascular Procedures</td>
<td>$236,900</td>
</tr>
<tr>
<td>Rehabilitation (860)</td>
<td>$234,900</td>
</tr>
<tr>
<td>Other Pneumonia (139)</td>
<td>$229,100</td>
</tr>
<tr>
<td>COPD (140)</td>
<td>$226,500</td>
</tr>
<tr>
<td>Other Vascular Procedures</td>
<td>$218,500</td>
</tr>
<tr>
<td>Major Small &amp; Large Bowel</td>
<td>$215,600</td>
</tr>
</tbody>
</table>

### Ranking DRGs by Opportunity of Shifting the Mean to the Best Case Average, Considering Both Variability and Volume

- **High opportunity and high volume quadrant**
  - Sepsis
  - Other Pneumonia
  - Renal Failure
  - Vaginal and Cesarean Delivery
  - COPD
  - Percutaneous Cardiovascular Procedures
  - Hip Joint Replacement

1. After aggregating the opportunity across the cohort, we divided by 650, the number of hospitals in the cohort, to estimate the average opportunity for each organization.
2. DRG=Diagnosis Related Group. Our analyses use 3M APR-DRG grouper methodology.
3. Chronic obstructive pulmonary disease.
4. Best Case Average is a facility-specific, DRG severity-adjusted average charge per case at the 25th percentile.

Source: Crimson Continuum of Care data and analysis; Physician Executive Council interviews and analysis.
DRGs with Most Improvement Potential Are the Usual Suspects (Mostly)

Summarizing across the data-driven opportunity analysis and the feasibility analysis that followed (i.e., “Can we do something about the variability drivers here?”), we narrowed in on the Care Variation Short List.

These DRGs—heart failure, sepsis, total joint replacement, and labor and delivery (both vaginal and cesarean delivery)—are the most variable, highest-volume services in most hospitals. The challenges within them are different—each is a complex and distinct mix of clinical and operational challenges. But these are the areas that hospitals should look at first when sizing and prioritizing their “vertical” opportunities to achieve greatest near-term ROI from clinical standardization.

Most hospitals have opportunities to set stronger and higher performance floors in these areas of care.

That being said, patterns do vary by organization. It is important to secure institution-specific analysis of variation to make sure your improvement efforts are targeting your own institution’s greatest opportunities.

### Highest-Volume, Highest-Variability DRGs Where Improvement Is Feasible Today

<table>
<thead>
<tr>
<th>The Care Variation Short List</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Heart Failure</td>
</tr>
<tr>
<td>2. Sepsis</td>
</tr>
<tr>
<td>3. Hip and Knee Replacement</td>
</tr>
<tr>
<td>4. Labor and Delivery</td>
</tr>
</tbody>
</table>

### Conditions That Missed the Cut Are All Very Variable—Just Not as Actionable

- **COPD**: Total volume not as great as other conditions on the list—except in high tobacco-use states
- **Percutaneous vascular procedures**: Total hospital volume not as great as other conditions
- **Psychiatric DRGs**: Improvement lever relates to outpatient infrastructure; difficult for inpatient-based CMOs to inflect in most delivery systems today

Source: Crimson Continuum of Care data and analysis; Physician Executive Council interviews and analysis.
Learn from Organizations with Strong Clinical “Systemness”

- What does a platform to support diverse clinical standardization initiatives need to include?
- What can we learn by looking at highly consistent organizations?
It’s Right, but It’s Not Simple

Challenging as it is to identify, size, and prioritize clinical standardization opportunities, actually capturing them is even harder.

The expansion of the chief medical officer (CMO) role helps paint a picture of the complexity of executing on a clinical standardization ambition.

At the far left of this graph, it almost looks as though CMOs are spending less time on quality than they did historically. But scanning right, it becomes apparent that what’s actually happening is that CMOs are spending time on a more expansive definition of what quality is, and what is required for it to occur.

“A former executive here once said, ‘You can either be high quality or low cost, but you can’t be both.’ My answer is you can, but it’s a lot harder.”

Chief Financial Officer
Hargrove Health

CMOs Identifying Selected Responsibilities as One of Their Most Time Consuming

2012 Physician Executive Survey
n=75

1) Pseudonym.
2) Based on the survey questions, “from the list below, please select the four responsibilities that consumed the largest portion of your time three years ago,” and “from the list below, please select the four responsibilities that you anticipate will consume the largest portion of your time three years from now.”

Source: 2012 Physician Executive Survey of Hospital CMOs; Physician Executive Council interviews and analysis.
Tremendous Gains Possible Through Principled Standardization

Turning our focus to the work plan for capturing improvement in specific high-ROI DRGs, the good news here is that the opportunity for major victories in each are compelling.

Here, a case study of guideline-driven standardization improvement from Baylor Health Care.

An inventory of clinical standards for heart failure care in the hospital revealed that while every part of the system had guidelines, often they were all different. Leaders prioritized harmonizing and optimizing those standards, with dramatic results.

Within 15 months of rolling out the new, harmonized guidelines, Baylor achieved a 73% order set adherence rate across all physicians treating heart failure patients.

In-hospital, risk-adjusted mortality dropped and the cost of treating heart failure patients did too.

Case Study: Single Order Set Greatly Reduces HF Variation at Baylor Health Care

Case in Brief: Baylor Health Care System

- 26-hospital health care system headquartered in Dallas, Texas
- Multidisciplinary Design Team meets semiannually to review new guidelines, incorporating necessary changes into system-wide order sets
- Robust criteria in place to assess areas of greatest potential for improvement through standardized orders
- Greatest return on investment realized by prioritizing EBP that aligns with institutional goals, limits unnecessary resource utilization
- Achieved 73% compliance rate for heart failure order set within 15 months of launch

CHF1 In-Hospital Risk-Adjusted Mortality2,3

<table>
<thead>
<tr>
<th>No Order Set</th>
<th>Baylor CHF Order Set</th>
</tr>
</thead>
<tbody>
<tr>
<td>3%</td>
<td>2%</td>
</tr>
</tbody>
</table>

CHF Initial Admission Direct Cost

<table>
<thead>
<tr>
<th>No Order Set</th>
<th>Baylor CHF Order Set</th>
</tr>
</thead>
<tbody>
<tr>
<td>$6,981</td>
<td>$5,493</td>
</tr>
</tbody>
</table>


1) Congestive heart failure.
2) Rolling 12 months, discharge dates August 2009-July 2010.
3) Covariate adjusted for age, gender, and APR-DRG risk of mortality.
Setting a Standard Not Nearly as Simple as It Sounds

The concept of setting a standard of care is straightforward, but the reality of operationalizing that concept—and achieving those dramatic gains in cost and quality—is very complicated. Many of these high-variability conditions are well known, with years of work invested. The reality of highly variable services is that they are persistently variable for a reason.

Heart failure and sepsis, neither of them new problems, provide good examples of these obstacles that make variability so persistent.

In treating sepsis, guidelines exist, but they are difficult to implement across the organization; guidelines may have poor adherence due to process hurdles.

In treating heart failure, there are a multitude of different clinical and operational problems that need solving. Guidelines adherence requires a highly coordinated, multidisciplinary approach both on the inpatient and outpatient side. Also, gaps in the evidence exist, making it hard to define a complete standard for this condition.

<table>
<thead>
<tr>
<th>Each Clinical Area Has Its Own Unique, Complex Mix of Problems (and Solutions)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>What’s The Problem?</strong></td>
</tr>
<tr>
<td><strong>Sepsis</strong></td>
</tr>
<tr>
<td><strong>Heart Failure</strong></td>
</tr>
</tbody>
</table>

Source: Advisory Board interviews and analysis.
In Need of an Improvement Support Platform

To make progress on such a diffuse challenge, with its broad array of solutions in each clinical area, clinical leaders need help with the problem of scalability.

As one CEO observed, it is not practical to resource and run each initiative separately.

To achieve real progress on their multitude of initiatives, hospitals must invest executive attention and resources into building a platform that engages clinicians and supports their efforts.

Hospitals Must Find a Way to Support Multiple Ongoing Initiatives

Source: Advisory Board interviews and analysis. 1) Catheter-associated urinary tract infection.

Example Components of an Improvement Platform

- Executive leadership
- Representative clinical governance structures
- Physician champions
- Workflow integration
- Data collection, analysis
- Clinical decision-making tools
- Accountability mechanisms
- Education and training
- Clinical knowledge management
- Clinician ownership and engagement

Build a robust quality or clinical standardization infrastructure to facilitate, accelerate, and hardwire gains across all individual improvement initiatives.

1) Source: Advisory Board interviews and analysis.
Best Practices to Support Guideline Uptake Are Currently Used ‘Sometimes’

The Physician Executive Council study Building the Evidence-Based Organization identified a set of 25+ specific leadership practices that have been demonstrated to foster clinician uptake of guidelines. A related survey tool, “The EBP Leadership Audit” gathered responses from clinical executives—predominantly CMOs—assessing their hospital or health system’s current level of adoption of those best practices.

Each leader ranked the frequency with which their organization uses each EBP support tactic along a five-point scale. Across all best practices, the single highest-scoring tactic scored a 3.9, and the lowest scored a 2.0. The average across all tactics equated to the answer “sometimes.”

The fact that most tactics are used at occasionally, but never “always,” highlights the inconsistency problem in hospital systems today. Even in a single stand-alone community hospital, it is common for certain departments, service lines, or subsets of providers to be strong in improvement support, while other parts of the organization may be weak.

Survey Reveals Inconsistencies in Individual Organizations’ Improvement Platforms

<table>
<thead>
<tr>
<th>Rank</th>
<th>Most Underutilized EBP-Support Tactics</th>
<th>Consistency of Use Score (Out of 6)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Shares physician-level data on cost and quality outcomes with individual physicians in a timely manner (within one month)</td>
<td>3.1</td>
</tr>
<tr>
<td>2</td>
<td>Promotes physician adherence through non-financial incentives (e.g., physician compact or linking adherence to privileges)</td>
<td>3.3</td>
</tr>
<tr>
<td>3</td>
<td>Tracks patterns of instances when physicians opt out of clinical guidelines (how often, which guideline, which physicians, etc.)</td>
<td>3.3</td>
</tr>
<tr>
<td>4</td>
<td>Provides physicians access to their individual-level data on clinical guideline adherence in a timely manner (within one month)</td>
<td>3.4</td>
</tr>
<tr>
<td>5</td>
<td>Ensures that any group (specialty groups, departments, etc.) working on evidence-based practice focus most of their time on high-ROI opportunities</td>
<td>3.4</td>
</tr>
</tbody>
</table>

Clinical executives surveyed on their organization’s frequency of use of best practices typically said practices were used “rarely” or “sometimes.”

Study in Brief: Building the Evidence-Based Organization

- Identifies 25+ specific best practices that leaders can use to promote guideline uptake
- Includes detailed case studies on each best practice
- Available on advisory.com

Tool in Brief: EBP Leadership Audit

- Short survey tool assesses how consistently leadership best practices are currently used
- Results show average use of practices is “sometimes”; data can also be cut to show highs and lows of performance across a given organization
- Available on advisory.com
Special Challenge for Systems—Offering Equal Support for All Providers and Sites

For health systems, our EBP Leadership Audit illuminated differences in the strength of the improvement support platforms among one system’s acute care hospitals.

At larger systems, differences in strength of improvement platform were apparent at the regional level.

Of course, multi-facility health systems do have much more complexity to contend with. For that reason, all provider organizations aiming to build a high standard of care into their DNA should take a close look at the health systems that have managed to succeed in this area. Even stand-alone hospitals can learn valuable lessons from the highest performers in clinical “systemness.”

Clinical Leaders Report Highs and Lows in Best Practice Use at St. Lucia

“Do senior physician leaders send messages to the broad medical staff about the importance of EBP adherence?”

<table>
<thead>
<tr>
<th>Region</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>East</td>
<td>4.0</td>
</tr>
<tr>
<td>South</td>
<td>2.3</td>
</tr>
</tbody>
</table>

“Do leaders ensure that all groups (specialty groups, departments, etc.) working on evidence-based practice focus most of their time on high ROI opportunities?”

<table>
<thead>
<tr>
<th>Region</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>East</td>
<td>4.0</td>
</tr>
<tr>
<td>South</td>
<td>2.6</td>
</tr>
</tbody>
</table>

East executives respond that physician leaders “often” communicate the importance of EBP adherence, while South executives considered this behavior “rare.”

East executives report clinical guidelines are “often” filtered through a dedicated group, while South executives view this as a less consistent practice (“rarely” or “sometimes”).

Case in Brief: St. Lucia Health System

- 12-hospital health system
- Despite extensive work in care standardization and EBP activities—especially guideline creation and rollout—system leaders recognize room for improvement system-wide
- System leaders challenged to put fragmented quality and physician leaders from across facilities together into a working team for consistent, organization-wide use of best practices
- EBP Leadership Audit highlighted inconsistencies across the organization; some regions stronger than others at supporting clinical standards

1) Pseudonym.
Multiplying the Clinical Variation Challenge: Multi-Facility Health Systems

It is not surprising that health systems struggle with problems of consistency across their clinical delivery systems.

In recent years, provider organizations have been consolidating at a rapid clip. System leaders strongly defend the possibility that integration can lead to improved clinical quality.

However, a recent Health Care Advisory Board study on M&A indicates that “improving clinical quality” is not a leading business objective of these deals, not a real screening consideration for potential M&A partners, and not on the front burner in the M&A and post-merger integration process. In the post-merger period, financial and support function consolidation are typically the first priorities—not clinical services integration or the setting of a shared clinical performance standard.

And, challenges in delivering on “systemness” in clinical quality are not reserved for newly merged entities. Many long-standing systems currently act as holding companies with regard to the hospitals within the system. Clinical services integration is neither delivered nor even attempted.

### Clinical Services Integration on the Back Burner in M&A

**Sample Tactics to Guide Post-merger Integration**

- Focus integration activities on quick operational and financial wins (e.g., consolidating support functions, renegotiating vendor contracts, restructuring debt)
- Set clear performance goals and targets for integration
- Create clear executive accountability for integration goals by linking them to compensation

**Clinical Services Integration Blind Spots**

- Clinical standardization is typically delayed until years after merger
- Of 40 common integration performance measures, only three loosely relate to clinical quality—most are financial or operational
- CEOs and business development leaders typically have integration-related performance incentives—clinical leaders rarely do

Sizing Opportunities Within Multi-facility Health Systems

To create a snapshot of health systems’ opportunities to improve performance through clinical standardization, we put together an analysis to look at how consistency varied across health systems.

The “Systemness” Model of Clinical Standardization Opportunity aimed to size the opportunities that each individual health system had to improve performance by raising all its own hospitals to the level of its own best.

The analysis again drew on data from the Crimson cohort. This time, we created a cohort of 38 identified health systems and looked at variability within some of the high-volume, high-variability DRGs flagged by the Care Variation Short List.

Methodology in Brief: The “Systemness” Model of Clinical Standardization Opportunity

- Assesses the size of health system’s opportunity for improvement in cost/quality, if they were to raise all hospitals in their system to the level of their own internal better performers (75th percentile to 25th percentile).
- Analyzes data from 38 systems (328 hospitals) in the Advisory Board’s Crimson Continuum of Care cohort
- Assesses internal (intra-system) variability of performance in top areas of care variation, such as the DRGs in the Care Variation Short List; variability within systems measured as the standard deviation of performance
- LOS is one metric it can use to analyze performance variability in both cost and quality; model uses observed versus expected (O/E) LOS to adjust for differences in severity mix at the hospital level
- All systems included in the analysis have 5+ hospitals to ensure sufficient sample size for calculating the standard deviation and minimizing outlier influence
- Extreme outliers are removed: extreme LOS, DRG volume below 15 cases annually

Key Questions

1. How can we measure consistency of quality across acute care hospitals within today’s multi-facility health systems?
2. Are some health systems better than others at delivering a consistently high quality standard?
3. What would health systems stand to gain if they raised internal performance consistency across their hospitals?

Research team included representatives from The Advisory Board Company and Ariadne Labs

Source: Advisory Board analysis of Crimson Continuum of Care data.
Some Health Systems Better Than Others at Achieving Consistency: Total Joint

Although every health system we studied had some opportunity to reduce internal variability, some had much larger opportunities than others.

This chart shows each system's spread of performance on facility-level LOS for each severity level of knee replacement DRGs. The top point is the performance of the single hospital within that system with the longest LOS (probably for its most severe cases). The bottom of each line is the system's single acute care facility with the shortest LOS (probably for its least severe cases).

In total, systems on the left of the graphs have the least internal variability; systems on the right have the most.

The data suggests that some systems actually are able to enforce a performance floor, whereas others are not succeeding.

Health Systems at Left of Range Have Greater Consistency Across Their Hospitals

System-wide LOS Performance by Intra-system Variability Rank: Total Joint

Each system is a min/max/average bar, with lower-variance systems to the left.

Source: Advisory Board analysis of Crimson Continuum of Care data.
Some Health Systems Better Than Others at Achieving Consistency: L&D

Health Systems At Left of Range Have Greater Consistency Across Their Hospitals

System-wide LOS Performance by Intra-system Variability Rank: L&D

Vaginal Delivery

Cesarean Delivery

Each system is a min/max/average bar, with lower-variance systems to the left

Source: Advisory Board analysis of Crimson Continuum of Care data.
Better Consistency Yields Better Performance

As the linear performance line on the previous charts illustrated, the analysis also answered an important question about the legitimacy of ranking systems by internal variability: “Is it possible that some systems are consistent, but at a low performance standard?”—That is: Could some systems just be consistently poor?

The analysis showed otherwise. Looking at quartiles of least to most internal variability, we found that the better a system performed on keeping its own hospitals to a consistent performance level, in general, the better its absolute performance was on LOS.

Within performance quartiles of variability, while all health systems may have room to raise consistency (and thus avoid unnecessary LOS), health systems with the greatest internal variability had the greatest opportunities to improve.

Lower-Variability Systems Perform Better on Total Joint LOS, L&D LOS

Systems’ Average Days LOS by DRG Group and Quartile of Internal Variability

<table>
<thead>
<tr>
<th></th>
<th>First Quartile</th>
<th>Second Quartile</th>
<th>Third Quartile</th>
<th>Fourth Quartile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Knee</td>
<td>3.33</td>
<td>3.51</td>
<td>3.80</td>
<td>3.79</td>
</tr>
<tr>
<td>Total Hip</td>
<td>4.08</td>
<td>4.53</td>
<td>4.90</td>
<td>5.14</td>
</tr>
<tr>
<td>Cesarean Delivery</td>
<td>3.69</td>
<td>4.35</td>
<td>4.39</td>
<td>4.88</td>
</tr>
<tr>
<td>Vaginal Delivery</td>
<td>2.53</td>
<td>2.65</td>
<td>2.98</td>
<td>2.97</td>
</tr>
</tbody>
</table>

Source: Advisory Board analysis of Crimson Continuum of Care data.
Typical Systems Have Big Improvement Opportunities….

Across the systems we studied, the general opportunity to reduce LOS by raising the performance floor within the system was large.

The average internal improvement opportunity ranged from 5% to 11% across total joint and L&D.

Greater Consistency Across System Hospitals Would Save Thousands of Days

Systems’ Average Opportunity to Reduce LOS by Moving All Hospitals To Level of Own Better Performers, by DRG Group

<table>
<thead>
<tr>
<th>DRG Group</th>
<th>Percentage Reduction in LOS</th>
<th>Annual Avoidable Days LOS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Knee</td>
<td>5%</td>
<td>472</td>
</tr>
<tr>
<td>Total Hip</td>
<td>7.3%</td>
<td>618</td>
</tr>
<tr>
<td>Cesarean Delivery</td>
<td>11%</td>
<td>2,342</td>
</tr>
<tr>
<td>Vaginal Delivery</td>
<td>7%</td>
<td>1,621</td>
</tr>
</tbody>
</table>

5,053

Average annual days that systems could save across total joint and L&D by moving all hospitals to performance level of own best

Source: Advisory Board analysis of Crimson Continuum of Care data.
… And Those with Greatest Volume Have Greatest Absolute Opportunity

Looking at systems by volume quartiles (for each type of case), we learned that gross opportunity size varied much more by case volume than it did by the system’s internal variability alone.

This finding makes sense, as even a small amount of variability has a huge effect when the case numbers are large.

Biggest Systems Could Save Nearly 8,000 Days per Year—in These DRGs Alone

Systems’ Opportunity to Reduce LOS by Moving All Hospitals to Level of Own Better Performers, by DRG Group and Volume Quartile

<table>
<thead>
<tr>
<th></th>
<th>Fourth Quartile</th>
<th>Third Quartile</th>
<th>Second Quartile</th>
<th>First Quartile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Knee</td>
<td>201</td>
<td>355</td>
<td>535</td>
<td>850</td>
</tr>
<tr>
<td>Total Hip</td>
<td>304</td>
<td>497</td>
<td>778</td>
<td>813</td>
</tr>
<tr>
<td>Cesarean Delivery</td>
<td>853</td>
<td>2,075</td>
<td>3,271</td>
<td>3,357</td>
</tr>
<tr>
<td>Vaginal Delivery</td>
<td>740</td>
<td>1,165</td>
<td>1,908</td>
<td>2,778</td>
</tr>
</tbody>
</table>

Source: Advisory Board analysis of Crimson Continuum of Care data.

2,098
Annual avoidable days in total joint and L&D for lowest-volume systems

7,798
Annual avoidable days in total joint and L&D for highest-volume systems
What Does It Take To Achieve ‘Systemness’ in Clinical Services?

To better understand the challenges and the potential solutions in the terrain of clinical quality and systemness, we conducted a series of interviews with system-level CMOs and surgery leaders from multi-facility hospital systems nationwide. We also convened an in-person meeting to share case studies and establish some consensus around common practices and attributes of a high-performing health system.

The interviews and discussion focused on challenges in scaling best practices in surgery quality and safety, but the insights gained were applicable to many, if not all, service lines provided by a health system.

Qualitative Research Interviews: Where Are You On This Challenge?

• Interviewed physician executives at multi-facility systems across the country and convened in-person summit to look at case studies
• Open-ended questions explored:
  – Current state of “systemness” in surgical quality across hospitals within the system
  – Major challenges in achieving greater consistency of quality
  – Perceived lessons learned and success factors at high-performing systems
• All participants acknowledged that the intersection of quality and systemness is a major challenge

Research team includes representatives from The Advisory Board Company and Ariadne Labs

Broad Spectrum of Systems Interviewed

Systems ranged in degree of integration and standardization across sites, from very mature, centrally managed systems to holding companies in which quality is managed at the facility level

Diverse types of hospitals were included across systems—large AMCs, community hospitals, children’s hospitals, critical access hospitals, specialty hospitals, and more

Systems were based in markets with different degrees (and models) of risk-based payment represented; most systems spanned multiple markets

Source: Health Care Advisory Board and Physician Executive Council Interviews and analysis.
What High-Performing Systems Tend to Have in Common

Across all the conversations with health system leaders, we found a set of common attributes of high-performing systems.

System-level clinical executives pointed to these features of health systems as difference-makers in setting, upholding, and improving upon a uniformly high standard of clinical care across hospitals within a health system.

### Example Attributes of Health Systems Delivering High Quality Across Sites

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Leadership</th>
<th>Operations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delivering on a uniformly high standard of clinical quality across the system is the parent organization’s first priority</td>
<td>• Board, CEO, and facility leaders all communicate commitment to a “system way” of clinical practice—reinforced with consonant decisions and resourcing</td>
<td>• Quality functions are intentionally and consistently centralized/decentralized across sites</td>
</tr>
<tr>
<td>• A board committee on quality exists and takes a lead role in setting and achieving system-wide quality goals</td>
<td>• System and facility leaders are incentivized on shared system-wide quality and financial goals—not just local site goals</td>
<td>• System tracks, and all facilities report on, a consistent set of clearly defined performance measures that relate to system quality goals</td>
</tr>
<tr>
<td>• A system-level, system-wide clinical leadership structure oversees quality and safety</td>
<td>• A system-level, system-wide clinical leadership structure oversees quality and safety&lt;br&gt;– Leaders have full authority to convene stakeholders, develop and roll out system-wide clinical standards&lt;br&gt;– Working groups are multidisciplinary and represent all system entities&lt;br&gt;– Work is fully resourced and supported to facilitate the development and implementation of care standards (e.g., budget exists to support enough clinical champions, project management and process engineering staff)</td>
<td>• Performance data flows from a “single source of truth” of normalized data</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• All physicians held accountable to similarly high standard of quality via consistent OPPE, peer review, and credentialing/privileging standards</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• All staff across all sites receive consistent types and amount of quality and safety training</td>
</tr>
</tbody>
</table>

Source: Health Care Advisory Board and Physician Executive Council interviews and analysis.
Case Study: Banner Health

Multiple Advisory Board studies on clinical standardization and high-performing systems have identified Banner Health as having made major strides on creating enterprise-wide “systemness” in clinical services delivery.

Banner is a 23-hospital system with facilities across seven Western states. It has a medical staff of 8,000 physicians, 1,000 of whom are employed—i.e., most physicians are independent.

Collectively, Banner’s executives and clinicians have built a foundation for setting and delivering on a consistently high standard of quality across the entire system.

Banner Built a Clinical Services Structure That Supports the Whole Enterprise

Case in Brief: Banner Health

- 23-hospital, not-for-profit system headquartered in Phoenix, Arizona, with facilities in Arizona, Alaska, California, Colorado, Nevada, Nebraska, and Wyoming
- Approximately 1,000 employed and 7,000 affiliated physicians system-wide
- Banner Health was created in 1999; in the early 2000s Banner committed to system-wide clinical standardization as a means to improve quality and reduce unnecessary care utilization
- To support this endeavor, Banner built “Care Management,” an infrastructure with strong clinical leadership committed to developing and implementing system-wide standards of care
- This approach has contributed to improved quality outcomes and financial growth (from $2B to $5B in annual revenue) over the past 15 years

Source: Advisory Board interviews and analysis; see also “Banner At a Glance,” Banner Web Site, accessed June, 2015, available at: https://www.bannerhealth.com/About+Us/Banner+At+A+Glance.html.
Banner’s Commitment to Reducing Variation Yields Returns

Banner’s absolute performance on system-wide quality is strong. Seventeen of its hospitals have achieved Stage 7 EMR Adoption, and the system delivered over $13 million in shared savings as a Medicare Pioneer ACO.

On the financial side, they’ve grown from $2 billion in annual revenue to $5B over the past 15 years, while simultaneously working to take excess costs out of the system.

The outcomes are important, but what is really striking is how the clinical engine that drives these outcomes has matured over time.

Banner’s transformation has required a 15-year journey, starting in 1999 when Banner was formed through a merger. Shortly after, the CEO set the organization on a path to become a “clinical quality” company. The system CMO took this idea and ran with it, adopting clinical standardization as a central tenet, focusing first on inpatient cardiovascular care and expanding from there.

In 1999, the system had three full-time physician leaders and a CMO at only one of their facilities. Today, the system has 28 full-time physician leaders and a CMO at every hospital.

Measures of Success for Banner’s Efforts

Clinical Achievements
• As of 2012, 17 of 25 hospitals achieved Stage 7 EMR Adoption (HIMSS Analytics)
• Delivered over $13M in shared savings in the first year of Medicare’s Pioneer ACO program

Financial Growth
• Increased revenue from $2B in 1999 to $5B in 2014
• 2013: $13.7M reduction in supply costs from strategic initiative

Hallmarks of a Maturing Delivery System

Growth of Physician Leadership Team
• 1999: Three FTE physician leaders, 1 facility with a CMO
• 2013: 28 FTE physician leaders, 23 facilities with CMOs

Increased Reliability of Care
• System has matured to support monthly rollouts of multiple system-wide clinical standards (e.g., six in September 2014)

A Quick Look at the Banner Model

Banner’s approach is multifaceted, but one critical component to its success is its robust, representative, and well-resourced clinical governance structure.

Shown here is an overview of the care management structure, including the clinical consensus groups (CCGs). There are currently 17 CCGs, each dedicated to a single clinical area, such as critical care, orthopedics, or oncology. They’re entirely clinician-led; each has a physician and a clinical leader, usually a nurse. Members are physicians and multidisciplinary staff pulled from across the system. The groups meet monthly to look at the evidence and define what Banner’s practice standard should be in a given area. It’s a very inclusive process, with every CCG member providing “boots on the ground” perspective from a different Banner facility.

The CCGs are overseen by the Care Management Council. Led by the system CMO, it includes all the facility CMOs, CNOs, and CCG leaders. Senior leadership participation signals that clinical standardization is a top organizational priority.

Clinical Governance Structure Is the Key

Care Management Council consists of clinical executives and retains oversight of all care standard creation and deployment

Clinical Consensus Groups include multidisciplinary participants who develop system-wide care standards within a given clinical area

All 25 facilities “go live” with new care standards on the same day, with the help of system implementation experts

Source: Advisory Board interviews and analysis.
The full case study of Banner’s work on establishing a uniformly high standard of quality system-wide covers in detail some of the core components of the system’s transformation.

Keystone components include setting a strategic vision that revolved around high quality and high reliability, building the platform to engage and support clinicians’ work, and ensuring that the medical staff management approach aligned with the same principles.

**Elements of Transformation at Banner Health**

<table>
<thead>
<tr>
<th>Adopting Care Reliability as the Central Clinical Strategy</th>
<th>Building a Clinician-Centered Infrastructure</th>
<th>Aligning Medical Staff Management</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. A Defined Vision of Reliable Care</td>
<td>3. Clinician Defined System-wide Standards of Care</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5. Cultural Fit Assessment</td>
<td></td>
</tr>
<tr>
<td></td>
<td>6. Physician Leader Pipeline Development</td>
<td></td>
</tr>
<tr>
<td></td>
<td>7. Accountability for Clinical Standard Adoption</td>
<td></td>
</tr>
</tbody>
</table>

For more detail on Banner’s work in clinical standardization and ‘systemness,’ please see the Physician Executive Council study “Realizing System-wide Clinical Integration.” and the Health Care Advisory Board study “The System Blueprint for Clinical Standardization.”

Source: Advisory Board interviews and analysis
Start at the Top: Championing Quality Will Make the Difference

If other organizations wish to replicate the attributes of demonstrated high performers, it is important to flag the fact that leadership here must flow from the top of the organization.

Every hospital and health system CEO and board in the nation will cite high quality as a top priority. But the reality on the ground is different. Not all leaders of all provider organizations prioritize quality to the same extent—and the difference shows in outcomes.

The charts on this page return to the study of hospital board chairs cited earlier. High-performing hospitals were much more likely to have board chairs that cited quality as one of the board’s top two priorities; at low-performing hospitals, most board chairs said quality was not a top two priority.

Board and CEO leadership makes a tremendous difference in setting—and raising—a performance floor across the organization. Only the board and CEO have the power to make changes such as establishing enterprise-wide clinical governance structures or investing in enterprise-wide clinical IT.

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Don’t Leave CMOs, Quality Executives, and CFOs to “Lead from the Middle”

**Percentage of Hospital Board Chairs Ranking Quality as One of the Board’s Top Two Priorities**

<table>
<thead>
<tr>
<th></th>
<th>High-Performing Hospitals</th>
<th>Low-Performing Hospitals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percentage</td>
<td>72%</td>
<td>32%</td>
</tr>
</tbody>
</table>


**Study in Brief: Hospital Governance and the Quality of Care**

- Leading researchers from the Harvard School of Public Health surveyed board chairs of 1,000 U.S. hospitals to understand their expertise, perspectives, and activities in clinical quality
- Findings indicated relatively low board engagement in quality, with boards at the higher-performing hospitals reporting greater focus and training
Your Opportunities Are Easier to See in the Negative

As a final caveat, since all leaders believe quality is an important priority—and also they tend to think that high quality already exists—it’s important to flag opportunities for improvement rather than focus on successes that may appear to be already in place.

With that in mind, this page provides a red flags diagnostic for system-level leaders to consider.

A “no” answer to any of these questions indicates an area in need of attention.

15 Red Flags for “Systemness” in Clinical Standardization

Strategy
- When assessing the system’s current quality, do board and leaders focus on “the weakest links in the chain”?
- Does the system’s strategic plan identify raising enterprise-wide performance consistency as a lever to secure margin and grow share?
- Are clinical services integration and clinical standardization top priorities in M&A?

Leadership
- Does the momentum for clinical standardization flow from the system CEO and board (versus clinical executives such as CMOs trying to “lead from the middle”)?
- Are enough system-level clinical executive leadership roles (with enough bandwidth) in place to complete all the work needed for system-wide standardization?
- Are facility-level leaders, especially hospital presidents, incentivized substantially enough on system-wide outcomes that they will prioritize those goals over facility-level P&L?

Operations
- Is there a system-wide clinical leadership structure with enough authority and resourcing to create a unified standard of practice across all sites?
- Are medical staff bylaws unified, standardized, or at least harmonized to minimize disconnects across sites?
- Are persistently low-performing clinicians quickly and reliably removed from the organization?
- Do all facilities (even smaller hospitals) provide to their clinicians with equal levels of safety training and QI support?
- Is there a common IT platform and/or a single source of normalized data to measure progress against common goals system-wide?

Culture
- Do leaders of all hospitals, especially flagships, promote the value of unifying and harmonizing clinical standards system-wide?
- Are all system-wide clinical standards developed to represent and be applicable at all facilities (versus smaller facilities being pressured to simply adopt the flagships’ “way”)? As new facilities join the system, are these standards revisited to ensure fit with new system members?
- Do leaders of all acute care facilities view themselves as being part of the same team?
- Do clinical staff at non-hospital entities (e.g., owned medical groups, network) view themselves as part of the same team as hospital-based clinical leaders?

Source: Advisory Board interviews and analysis.
Next Steps and Resources

From the Physician Executive Council

- Building the Evidence-Based Organization (study, diagnostic, custom on-site presentation)
- A Systems Approach to Transforming Clinical Culture (study)
- Building the Physician Leadership Team of the Future (study)
- Communicating with 100% of the Medical Staff (executive summary and toolkit)
- The Future of the Medical Staff Organization (study)
- Build a Stronger Hospital-Specialist Partnership (study)

- Ten Imperatives to Reduce Sepsis Mortality (study)
- Reducing Variability In Acute Care of Heart Failure (toolkit)
- Realizing the Full Benefit of Palliative Care (study, toolkit)
- Reducing Readmissions (toolkit)
- Perioperative Surgical Homes (webconference)
- Capturing the Full Value of the Hospitalist Program (study)

From the Health Care Advisory Board

- The Integrated Care Advantage: Securing hospital growth through reliable and efficient episodes of care (study)
- From Contract to Compact: Moving Physician Partnerships Beyond Financial Alignment (study)

- Next-Generation Clinical Integration (study)
- Blueprint for Growth 2020 (study)
- The Care Transformation Business Model (study)
- Competing on Consumer Engagement (study)

Beyond Research and Insights: Hospital Crimson Continuum of Care at a Glance

- Web-based performance measurement tool facilitating rapid opportunity identification, peer cohort benchmarking, physician self-review, and clinical performance improvement
- Transforms siloed data into comprehensive dashboards and performance profiles at service line, specialty, and provider level

- Data-driven root cause analysis, cohort best practice sharing via annual summit, quarterly intensives, webconferences, onsite workshops, and Dedicated Advisor support
- For more information, please contact your Advisory Board representative
About the Bundled Payment Series

With its Comprehensive Care for Joint Replacement (CJR) mandatory bundled payment program, CMS has laid down a marker for value-based payment. All providers should pay attention to this development; CMS is clearly evaluating CJR with view to national expansion as well as the potential for similar mandatory bundles for other conditions. Beyond Medicare’s programs, bundled payments also have a wide variety of business implications across Medicaid and commercial payer segments.

To assist members through this step into the world of alternative payment, the Advisory Board has compiled a set of resources that will help leaders prepare a path to success.

 variation in post-discharge quality and costs, as well as related readmissions, makes post-acute care critical to managing an effective episode of care. This briefing outlines how health systems can improve performance under Medicare risk, reduce direct cost per case, raise quality outcomes, and engage specialists among others—are prompting hospital leaders to reconsider clinical standardization. This study illustrates why and how hospitals must expand their efforts beyond targeting specific cost drivers (e.g., supplies) or physician outliers, tackling instead the larger organizational transformations needed to support holistic, patient-centered, consensus-based clinical standards.

10 KEYS TO AN EFFICIENT POST-ACUTE EPISODE

Variation in post-discharge quality and costs, as well as related readmissions, makes post-acute care critical to managing an effective episode of care. This briefing outlines how health systems can prepare for an efficient discharge process, while strengthening post-acute provider collaboration and patient management following the hospital stay.

12 STRATEGIES FOR SUPPLY COST REDUCTION

While supply costs don’t typically impact fee-for-service payments under bundled payment models, a renewed focus on purchasing strategies is essential for maximizing internal cost savings. This briefing outlines strategies for optimizing supply chain purchasing by increasing physician engagement and advancing collaboration with suppliers.

Additional publications in the Bundled Payment Series
BUNDLED PAYMENT SERIES

Setting the Standard for Patient Care

Overview of the Clinical Standardization Opportunity for Hospital Executives and Board