Profiling Success:

Managing Emergency Services in the Largest Health Systems

The Health Management Academy Benchmarking Series

A White Paper

Reporting on the Emergency Department Services Benchmarking Study

Conducted by The Health Management Academy with sponsorship from Picis, Inc.

PICIS

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Study Director

- **Paul Alexander Clark, DrPH (cand.), MPA, FACHE**
  Sr. Director, Research & Programming
  The Health Management Academy

Study Funding

- **LYNX Medical Systems, a Picis company,**
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Executive Summary

The Health Management Academy (The Academy) conducted a benchmarking study of 46 of the largest United States (U.S.) health systems during 2008. The resulting best practices data form a guide for senior executives to achieve clinical and financial success in operating Emergency Department (ED) Services. Organizations in this study realize an average annual net patient revenue of $2.0 billion, and handle a total of 14.9 million annual ED visits, which represent 12.5% of all annual ED visits in the U.S. (119 million). Study respondents were recruited from The Academy membership, which includes executives from approximately 90 health systems that account for 50% of the hospital net patient revenue in the country and represent 53% of the nation's hospitals of 100 beds or larger.

This study found:

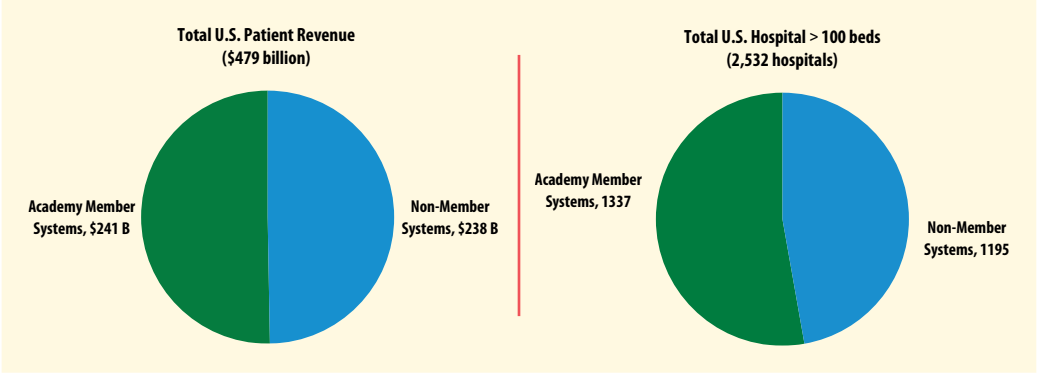
- Health system executives universally recognize ED Services as critical to the success of their health system's overall strategic objectives;
- System-level management infrastructure for ED Services remains under-developed in most health systems;
- A profile of successful ED Services in large health systems emerged. All organizations in the *Top 10%* boasted AA bond ratings and ranked within the top quartile of ED-related Centers for Medicare & Medicaid Services CMS core measure performance. These health systems exhibited discernible best practices in managing ED Services, including greater system-level management and greater utilization of information technology solutions.

Scope of The Academy and The Study

The Health Management Academy (The Academy) membership represents the largest health systems in America and, therefore, a significant portion of the healthcare delivered in the United States. The Academy membership includes:

- 70% of the 50 largest U.S. health systems;
- 50% of total net patient revenue for all U.S. hospitals;
- 53% of all hospitals above 100 beds.

This study represents the largest single study documenting the state of the art of the management practices and policies of ED services in the United States and execution of these practices. The participating healthcare institutions account for 12.5% of all ED visits in the United States. The homogenous nature of the health systems in this sample allows the study results to be considered representative of The Academy membership as a whole.



Best Practices of High Performing Systems

The Academy conducted a comprehensive, systematic literature review to identify best practices in managing ED Services for improved financial or clinical outcomes. The Academy surveyed health systems to determine the adoption of these best practices and then tie the utilization of these practices directly to organizational performance. A cohort of high-performing health systems was determined—the "*Top 10%*"—which boasted AA bond ratings and ranked within the top quartile of ED-related CMS core measure performance (Figure 1). The following best practices were utilized by the *Top 10%* performers more than other organizations:

- System-level management of ED Services, with an ED Services executive in place for at least two years;
- Strategic planning and decision-making for ED Services at the system level;
- Higher utilization of financial incentives and tied to balanced scorecard performance;
- Higher utilization of ED-specific quality and financial performance measures;
- Higher utilization of IT system solutions, including
  - High interoperability of clinical documentation systems;
  - Software to facilitate proper patient disposition;
- Better reported success of process improvement solutions; and
- Higher utilization of balanced scorecard focused on quality and financial performance measures.

This "*Top 10%*" profile was validated through multivariate regression analysis with aggregate ED-related CMS core measure performance as the dependent variable and the adoption of best practices as the independent variable. Out of the 35 different best practices, the aforementioned model accounted for more variability than any other variable sets (r^2=0.38, p = 0.04). The Academy "*Bottom 10%*" also reported higher performance than the National Average in the HospitalCompare® database (April 2007 to March 2008).

Health systems in our study universally place a high priority on solving the challenges of managing ED Services and the solutions deployed by most organizations are focused on process improvement, staffing, and expansion of ED facilities. The largest opportunity for making significant gains by applying new solutions to the ED problems lies in information technology where only 55% of health systems have deployed these evidence-based best practices (Figure 2).

Figure 1. Comparing the *Top 10%* in ED Services Performance

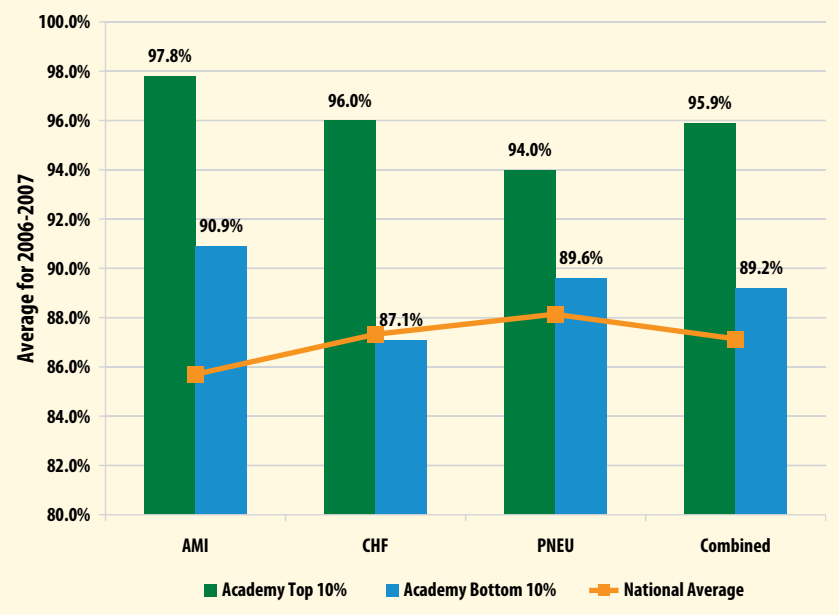
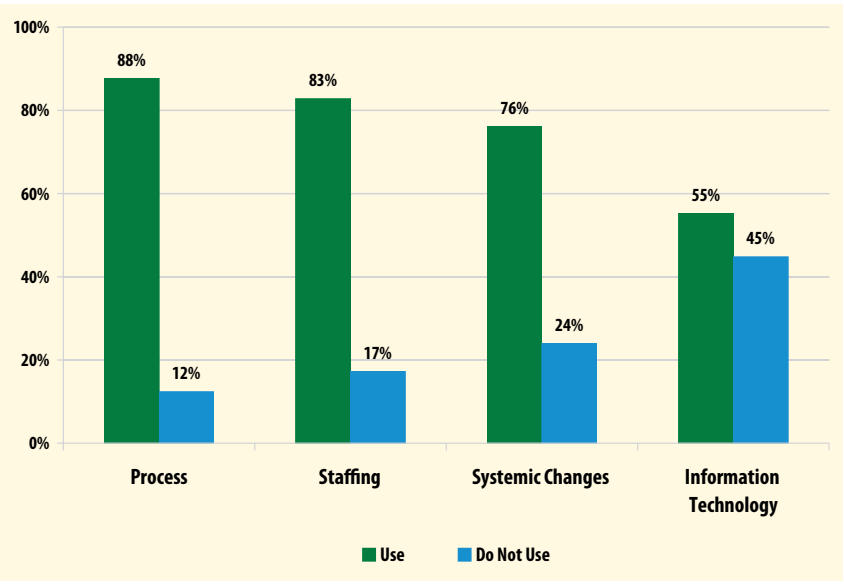


Figure 2. Deployment of Best Practices in ED Services Management



Background

Evolution of the ED Service Line

As one of the youngest clinical specialties, Emergency Medicine and the supporting health services management infrastructure are rapidly evolving in response to growing strategic importance. Remarkable market forces are converging to draw the attention of health system C-suite executives to the ED:

- Ever-increasing patient volumes in the ED strain staff and facility capacity;
- Growing proportion of inpatients admitted through the ED truly make it the "front door" to the hospital — more hospitals report at least 50% of medical patients admitted through the ED;
- Uninsured, under-insured, and Medicaid patients exert extraordinary financial pressures;
- New payer requirements necessitate the evaluation of patients to determine whether non-reimbursable hospital-acquired conditions are present on admission (POA); and
- Expansion of Medicare's Recovery Audit Commission (RAC) activities and other regulatory challenges.

These market forces, combined with the dramatic economic downturn, are accelerating the transformation of the ED from just another outpatient setting to an integral influencer of downstream clinical and financial hospital and health system results.

The Study

Purpose and Design

This national study represents the first attempt to document the state of ED Services management and tie proven practices to financial and clinical outcomes at the health system level. Additionally, the study sought to determine a profile for effective management of ED Services. The Academy convened an Advisory Committee of preeminent healthcare experts in Emergency Medicine and health system management to guide the design and analysis of the study.

Determining the *Top 10%* Profile

Using the methodology outlined by Hines and Joshi (2008), hospital performance in each measure was aggregated to the health system level, categorized into mean scores for each clinical condition, and rank-ordered according to overall average mean scores. To be included in the *Top 10%* profile, health systems had to score in the top quartile of ED-related CMS Process of Care Measures (Table 1) for the past two HospitalCompare® data collection periods and boast a bond rating of "AA" (as an indicator of high performance in multiple financial measures). This yielded eight health systems with quality and financial performance superlative to other health systems. The final systems in the cohort were determined by the ranking of ED-related CMS core measure performance. Similarly, the *Bottom 10%* was selected using the same criteria and rank-ordering performance in each of the areas. For more details, see the Methodology section.

*Hines S, Joshi MS. Variation in quality of care within health systems. Jt Comm J Qual Patient Saf. 2008 Jun;34(6):326-32.

Table 1. ED-Related CMS Process of Care Measures

Acute Myocardial Infarction (AMI) Measures
Heart Attack Patients Given ACE Inhibitor or ARB for Left Ventricular Systolic Dysfunction (LVSD)
Heart Attack Patients Given Aspirin at Arrival
Heart Attack Patients Given Beta Blocker at Arrival
Heart Attack Patients Given PCI within 90 Minutes of Arrival

Coronary Heart Failure (CHF) Measures
Heart Failure Patients Given ACE Inhibitor or ARB for Left Ventricular Systolic Dysfunction (LVSD)
Heart Failure Patients Given an Evaluation of Left Ventricular Systolic (LVS) Function

Pneumonia (PNEU) Measures
Pneumonia Patients Assessed and Given Influenza Vaccination
Pneumonia Patients Assessed and Given Pneumococcal Vaccination
Pneumonia Patients Given Initial Antibiotic(s) within 6 Hours after Arrival
Pneumonia Patients Given Oxygenation Assessment
Pneumonia Patients Given the Most Appropriate Initial Antibiotic(s)
Pneumonia Patients Whose Initial Emergency Room Blood Culture was Performed Prior to the Administration of the First Hospital Dose of Antibiotics

Comparing the *Top 10%* and *Bottom 10%* Profiles

This study systematically examined more than 150 variables representing numerous health system demographics, ED Services organizational structures, best practices for quality improvement in EDs, technologies, and financial performance metrics to determine which practices differentiated the *Top 10%* performers from the sample. Concrete themes emerged among the set of variables that demonstrate the greatest differences:

- **Corporate Approach to ED Services Management** – All *Top 10%* performers had a corporate executive in place responsible for ED performance across the health system for at least two years (Table 2). Nearly all systems developed an ED strategy at the system level, measured ED-specific case mix and mortality, and tied financial incentives to their ED balanced scorecard.
- **Application of Information Technology Solutions** – Overall, considering all 35 best practices examined in this study, information technology solutions were the least frequently implemented. This pattern was magnified between the *Top 10%* and *Bottom 10%* (Table 3). Top performers were more likely to house highly interoperable ED information systems (EDIS), software facilitating patient disposition, and simulation modeling to predict peak patient flow and adjust staffing.
- **Reported Success of Process Improvement Solutions** – The *Top 10%* and *Bottom 10%* reported similarly extensive implementations of process improvement solutions (e.g., continuous quality improvement, LEAN, fast track), but the *Top 10%* reported significantly higher success rates with the same solutions (Table 4).

Multivariate regression analysis validated these observations. This set of variables explains system performance in the aggregated ED-related CMS core measures more than any other set of variables ($r2=0.38$, $p = 0.04$). Many other cohorts were tested, but none showed statistically significant differences (see Methodology). Because correlation does not equal causation, an absolute causal chain cannot be specified in this study. However, it is clear that health systems with clinical and financial success also experience success in process improvement solutions and are more likely to apply a corporate management approach and leverage information technology solutions in the ED setting. These interrelated factors are outlined in Tables 2-4.

Table 2. Corporate Approach to ED Services Management

	Top 10%	*Bottom 10%*
System-wide ED Services executive in place >2 years	100%	0%
Strategic planning and decision-making made at system level	80%	20%
Utilization of financial incentives tied to ED balanced scorecard performance	80%	20%
ED Case-Mix Index and ED Adjusted Mortality measured regularly	80%	0%

Table 3. Information Technology Solutions Applied to ED Services

	Top 10%	*Bottom 10%*
High interoperability of clinical documentation systems in the ED with the information systems for the hospital and health system.	80%	20%
Software to facilitate proper disposition	80%	0%
Computer modeling to predict peak flow and optimize staffing	80%	20%

Table 4. Reported Success of Process Improvement Solutions Applied to ED Services

	Top 10%	*Bottom 10%*
"Highly Effective"	67%	10%
"Effective"	33%	24%
"Slightly" or "Somewhat Effective"	0%	58%
"Not Effective"	0%	8%

☑ KEY FINDING #1

Three Factors Correlate Highly with High Performance in Quality and Finance

Health systems among the *Top 10%* performers were more likely to apply a corporate approach to managing ED Services across the health system and apply information technology solutions to the ED. These health systems were also more likely to experience success in the process improvement initiatives they undertook. It is likely that these factors are interrelated, working in concert to support the organization's quality and financial performance.

Strategic Issues Facing Health Systems' ED Services

Understanding health systems' approach to managing ED Services begins with understanding the forces that affect their institutions and drive their management strategies. Health systems are buffeted by external forces – such as market demand for services. The strategic response to external forces is affected by internal forces, such as an organization's prioritization of quality improvement. The Academy assessed three factors:

1. **External forces** affecting ED strategy;
2. **Internal forces** affecting ED strategy;
3. **ED strategies** that the health system plans to deploy for ED services.

Across all areas – internal forces, external forces, and strategies – four categories materialized:

- Capacity;
- Quality;
- Market;
- Revenue / Reimbursement.

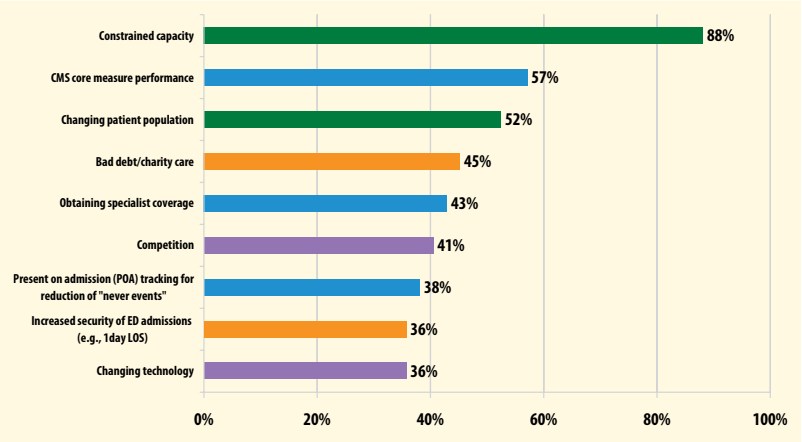
And across all these areas, **constrained capacity** dominated the major internal and external forces and dictated the primary ED strategic response – **capacity expansion**. For those involved in Emergency Medicine, these results are not surprising. The major issues facing Emergency Services – overcrowding and resulting constrained capacity – have not changed in the past decade. The typical strategic response – expanding ED capacity – has not solved the problem. Similar to building more highways to solve traffic congestion, continuous expansion is not sustainable.

Figure 3 displays the primary forces affecting health systems' ED Services strategy. Nearly all systems (88%) report that constrained capacity was a primary force affecting their strategy. Changing patient population influences capacity through regional population growth, changes in payer status/mix, and the relationship between the local economy, employment, and private health insurance.

Figure 4 displays the assessment of internal forces affecting ED strategy. The question forced executives to rank-order their ED's top priorities. Two priorities emerged, both focused on coping with capacity constraints:

- Improving efficiency and productivity; and
- Managing capacity and volume growth.

Figure 3. External Forces Affecting Health Systems' Emergency Department Services Strategy

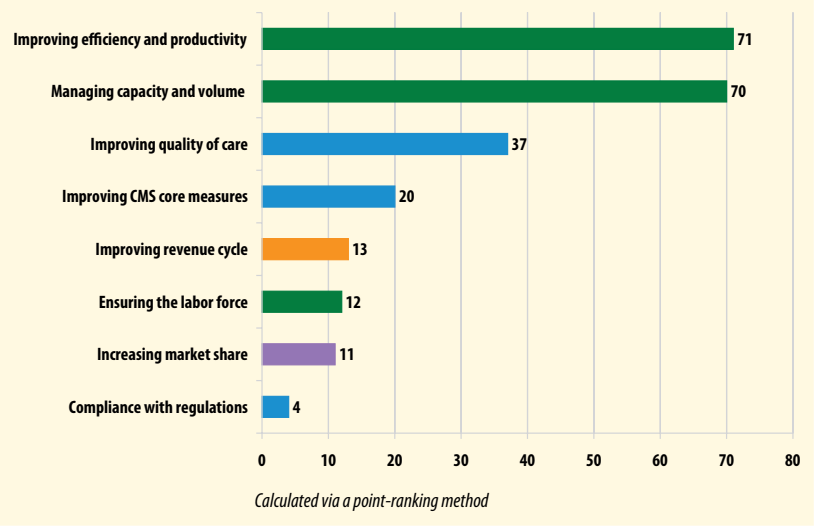


☑ KEY FINDING #2

Capacity Drives Strategy

The primary internal and external forces affecting health systems' ED Services strategy remains capacity. Continuous expansion of ED capacity has not kept pace with ever-rising patient demand. Solving the capacity challenge will likely require approaches beyond expansion of current facilities.

Figure 4. Internal Forces Affecting Health Systems' Emergency Department Services Strategy



"The major issues facing Emergency Services – overcrowding and resulting constrained capacity – have not changed in the past decade. The typical strategic response – expanding ED capacity – has not solved the problem. Similar to building more highways to solve traffic congestion, continuous expansion is not sustainable."

—Gary Bisbee, Ph.D., Chairman and CEO, The Health Management Academy

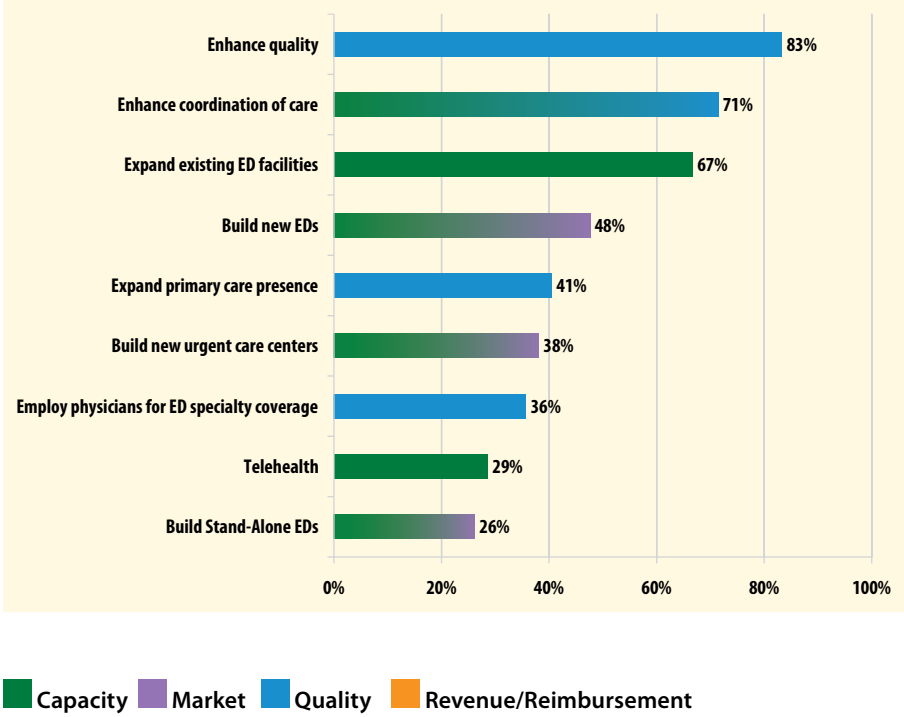
Figure 5 displays the strategies health systems currently deploy to guide their ED Services. The dominant strategies – improving quality and expanding ED capacity – match the internal and external forces pressuring health systems.

Several progressive health systems expanded their strategic purview beyond the walls of the ED to address the root causes of patient demand. These strategies included:

- Primary care presence expansion (e.g., increasing primary care sites, extending hours, and improving outreach and access);
- Building new urgent care centers (e.g., attached to the ED and/or separate locations).

Health systems deploying these strategies typically reported that the initiatives were profitable, but significantly underestimated the patient demand for these convenient, low-acuity services. Clinic or urgent care hours were almost always filled, but had little measurable impact on ED volumes.

Figure 5. Top ED Services Strategies Deployed by Health Systems



The Strategic Importance of Emergency Services

As arguably one of the most complex organizations in history, healthcare delivery systems face myriad strategic issues to prioritize. Understanding where ED Services ranks relative to other strategic imperatives helps evaluate the current state of ED Services management versus the desired state.

According to 90% of large health system C-suite executives, successful execution of the system's strategy is either **impossible without success in ED services** or heavily influenced by ED Services (Figure 6). What makes this response so powerful is that the question was specifically constructed to minimize socially desirable response bias – in other words, the result likely underestimates the true importance of ED Services.

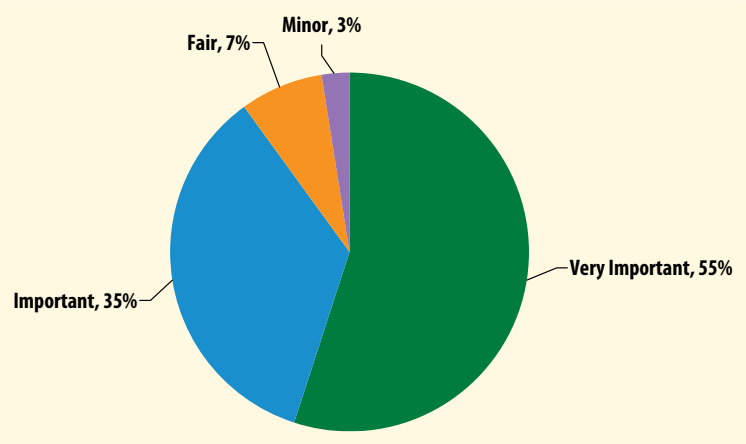
Ideally, this prioritization should be reflected in the management infrastructure and approach to managing ED Services.

☑ KEY FINDING #3

ED Services Critical to Success of Health Systems' Strategies

Health system executives consider the successful execution of their health system's strategy either impossible without success in ED Services or heavily influenced by performance of ED Services.

Figure 6. Importance of ED Services to Health Systems' Strategic Success



Response Options
Very Important – Successful execution of our strategy is **impossible** without success in ED Services
Important – Successful execution of our strategy is **heavily influenced** by ED Services
Fair Importance – The ED is neither more nor less important than most other areas.
Minor Importance – ED performance is important, but not critical to our health system's strategy
No Importance – ED performance can drift without affecting the system

Corporate Approach to Health System Management

As health systems have grown over the last 15 years, governance and management approaches have evolved to mirror the operating model of corporate America. This approach is characterized by centralization of management into a system-level corporate office, business unit / service line operational management and strategic planning, and performance measurement and financial incentives via balanced scorecards. As health systems have organized service lines for other clinical specialties (e.g., orthopedics, oncology, cardiovascular), the corporate approach is characterized by the following features:

- System-level executive responsible for the service line;
- Strategic plan for the service line that ties into the system-wide strategic plan;
- Balanced scorecard of performance measures to operationalize the organization's values and strategic plan; and
- Financial incentives tied to the performance goals outlined in the balanced scored and strategic plan.

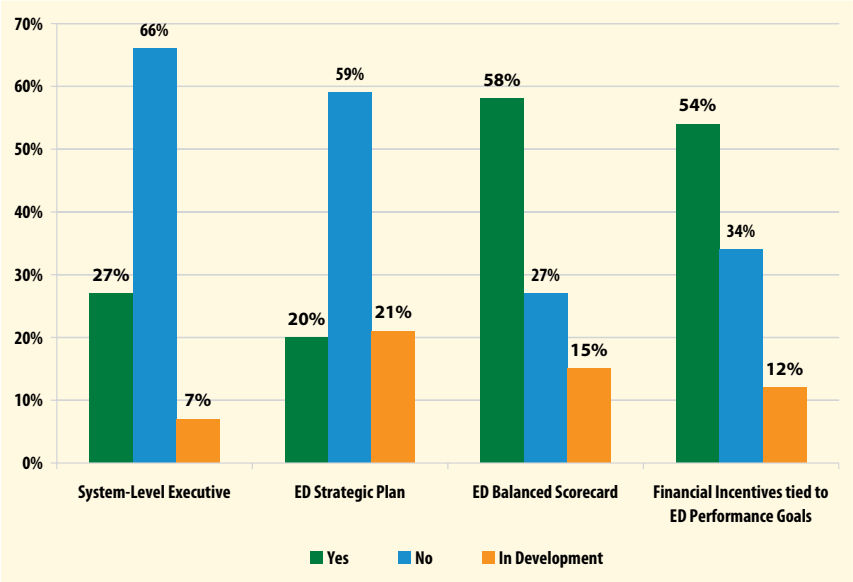
Figure 7 illustrates that most health systems have yet to fully develop the management infrastructure to operationalize a corporate approach to managing ED Services across their health system.

☑ KEY FINDING #4

ED Services Management Infrastructure Undergoing Development

Health systems' management of ED Services is moving towards a structured corporate model. The implementation of a system-level executive organization, balanced scorecard, financial incentives, and a strategic plan has begun to reflect the rising importance of ED Services to the health system.

Figure 7. ED Services Management Infrastructure



The System-Level ED Services Executive

Systems with an ED Services Executive

As health systems realize the strategic importance of ED Services and the downstream implications on financial and clinical results, organizations are beginning to designate a single person at the corporate office to be exclusively responsible for the operations of ED Services. Nearly one-third of health systems reported having a system-level ED Services executive either in place or in development (Figure 7). The position is relatively new, with most (73%) created in the last five years (Figure 8).

As characterized by a developing executive role, no consensus exists regarding reporting relationships at the corporate level (Figure 9). On the other hand, the reporting relationships under the purview of the ED Services Executive have reached a certain consensus. Figure 10 shows that most have the ED department directors reporting directly to them and approximately half also have emergency nursing directors reporting to them (in at least a matrix structure). Several also have ancillary services aligned within their position's reporting scope, such as EMS, Trauma, Laboratory Administrators, and Urgent Care.

The health systems reporting that a system-level ED Services Executive was *"in development"* structured a hybrid position to begin as a liaison, developing the strategic relationship between the local EDs and the health system corporate office. For example, one large urban academic health system had an "ED Service Line Administrative Director with no budgetary authority for EDs, but responsible for cross-campus initiatives, liaising between EDs and Hospital Senior Management, and working closely with ED physicians and nurse leaders."

Health systems without a system-level ED Services Executive reported a decidedly more varied management structure for ED Services (Figure 11). Nearly every system (86%) reported multiple executives with responsibility for the ED, resulting in diffused focus and ambiguous lines of authority. Several systems (24%) had no system-level executive designated

Figure 8. New System Executive Role: When was the ED Executive Position Created?

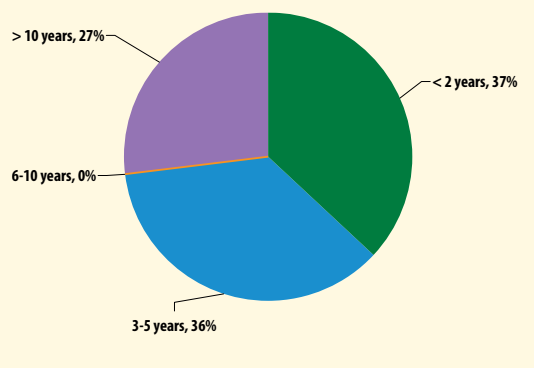


Figure 9. Diverse Reporting Relationships

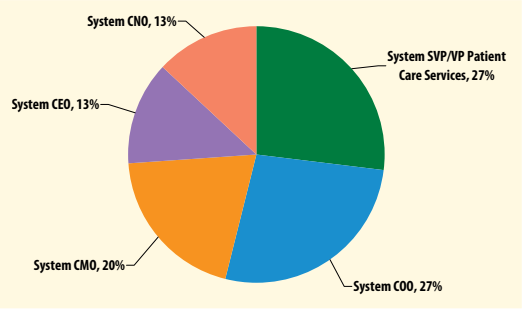
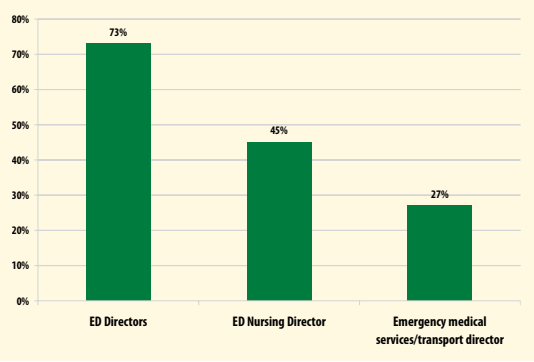


Figure 10. Positions Reporting to ED Services Exec Contributes to Organizational Alignment



as responsible for ED performance. If there is a system executive with ED performance among their responsibilities (e.g., CNO, CMO or COO), the prioritization of the ED is diluted by the sheer scope of their other corporate responsibilities.

Responsibilities of the System-Level ED Services Executive

A corporate ED Services Executive with system-wide responsibility appears to hold two distinct advantages:

(1) clear and direct lines of responsibility and accountability, and (2) structural alignment with the key cross-functional areas that influence ED performance.

Figures 11 and 12 illustrate the dramatic difference in corporate focus between systems with and without a system-level ED Services Executive. System-wide responsibility for ED clinical and financial performance represents the principal responsibility of the ED Services Executive. This responsibility falls below many other duties if assigned to another corporate role such as a CNO—who will be more focused on nursing; or COO—who will be more focused on overall strategy execution, operational efficiency and infrastructure. This structure provides a clear and direct line of responsibility and accountability for ED performance up to the system corporate office with unfettered focus.

Several systems also reported a second advantage—the ability to drive coordination of care and aligned ED improvement initiatives by having the various ancillary services report into a corporate ED Services Executive. Even if the relationship is matrixed, it still provided a structure for a corporate alignment of all the factors influencing the effectiveness of the Emergency Departments.

☑ KEY FINDING #5

Evolution of a System-Level ED Services Executive

A small but growing number of health systems have fully implemented a health system-level executive role for ED Services. Those systems with a system-level executive benefit from a single "point" person responsible for ED clinical and financial performance. Systems without an ED service line executive report an organizational model with responsibilities diffused across many roles.

"Emergency Services Department Chairman and Chief Administrative Officer have staff direct reports from system hospitals. Each hospital has an ED Director reporting to the system Chairman/CAO and an Administrator reporting to the CAO."

— A Top 10% system describing their organizational structure

Figure 11. Responsibility for ED Clinical and Financial Performance – Systems Without ED Services Executive

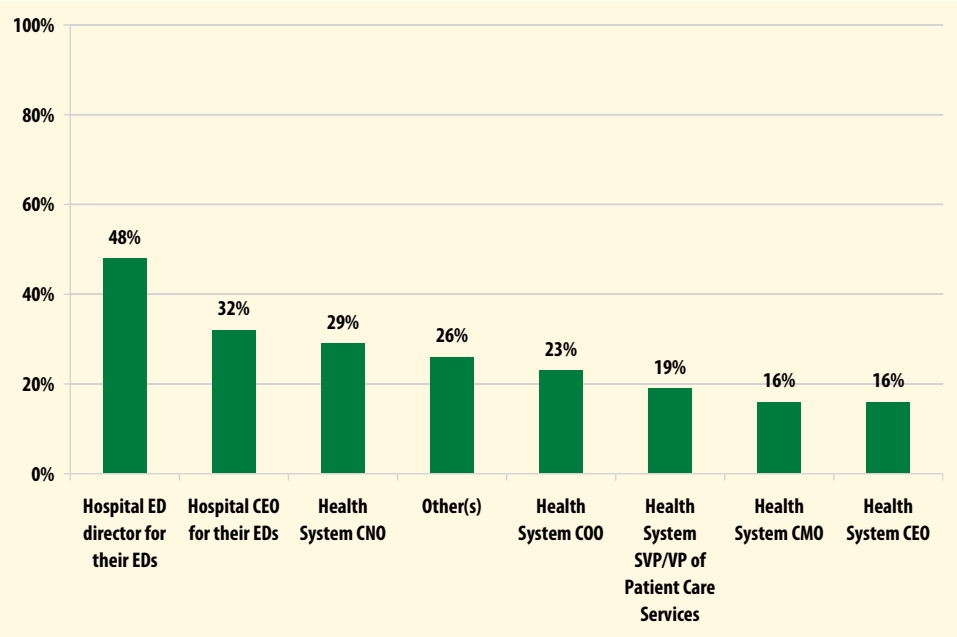
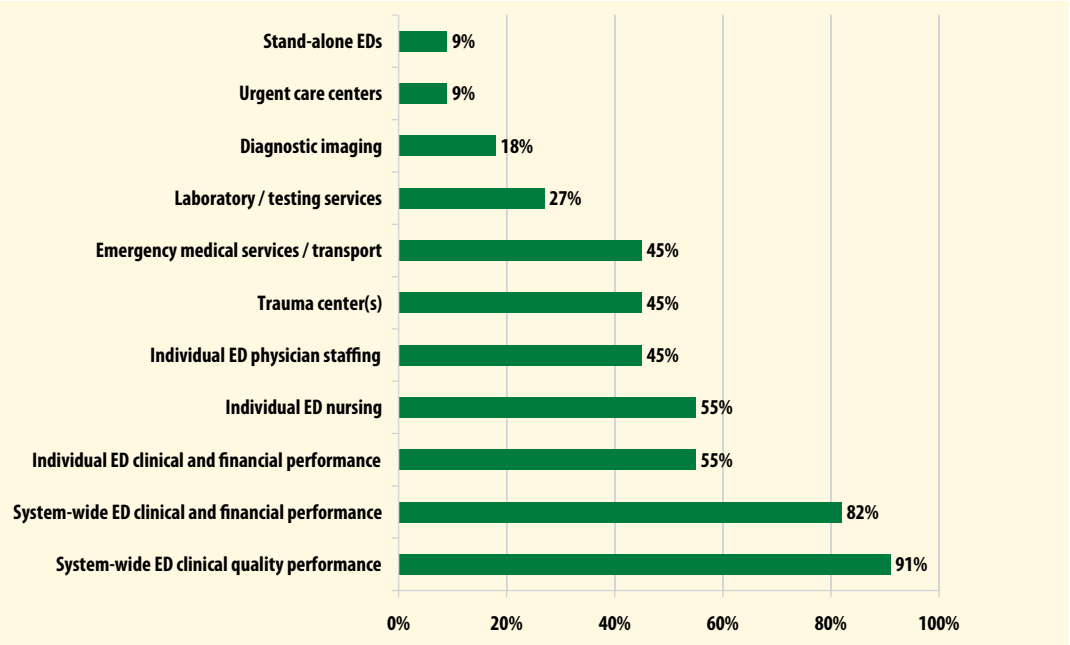


Figure 12. Responsibilities of the ED Services Executive



Balanced Scorecard Metrics: Still Evolving

Measurement matters. "What gets measured gets improved." The state of management metrics in ED Services sheds light on the relative alignment between health systems' expressed strategic priorities and the operationalization of that strategy. Figure 13 displays the measures utilized in ED balanced scorecards, categorized by color according to financial, operational, clinical quality, employee and customer. The percents do not include the 42% of health systems that did not have an ED balanced scorecard (BSC).

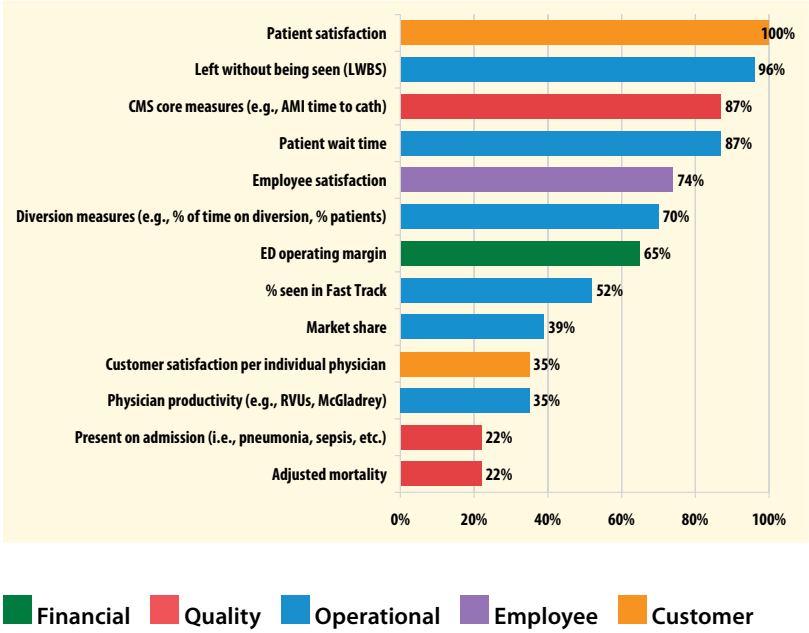
Although health systems professed quality improvement as their top strategy currently deployed in their EDs, the measures deployed focus almost exclusively on operational factors as represented in Figure 13 with blue bars far outweighing red. Very few health systems adjusted mortality in their Emergency Department (6 of 48 systems) and fewer yet (5 of 48) measure an ED-specific case mix.

The Emergency Departments' struggles with quality and financial performance are understandable considering the lack of performance measurement infrastructure focused on quality and financial performance. The presence of these measures among the Top 10% confirms the importance of an ED-specific management infrastructure (Table 5, page 24).

"We have designed a balanced scorecard for each ED with merit increases based on goal attainment."

— A Top 10% system describing their balanced scorecard approach

Figure 13. ED Balanced Scorecard Metric Utilization (among health systems with an ED Balanced Scorecard)



Goals and Incentives: Not Yet in Place

Measurement is the first step in performance improvement. The establishment of goals and appropriate incentives to propel organizational effort towards meeting those goals are also necessary. Optimally, a hospital / health system will utilize the balanced scorecard as a platform for strategic alignment from top to bottom – cascading measures, goals, and incentives to every level. Among those health systems with a balanced scorecard in place, tying of measurable goals to specific people in organizational roles is another opportunity to improve the management infrastructure in ED Services. Even when health systems have an ED balanced scorecard in place, it is typically not cascaded down to all levels in the organization. This is shown in Figure 14 where there is a gradual decline in goals and incentives before reaching front-line staff. What's more, financial incentives are rarely tied to the measures in the scorecard (Figure 14). Again, as we see in Table 5 (pg. 24), financial incentives matter in the *Top 10%*.

Figure 14. Health Systems' Application of the ED Balanced Scorecard, Goals, and Financial Incentives Throughout the Organization.

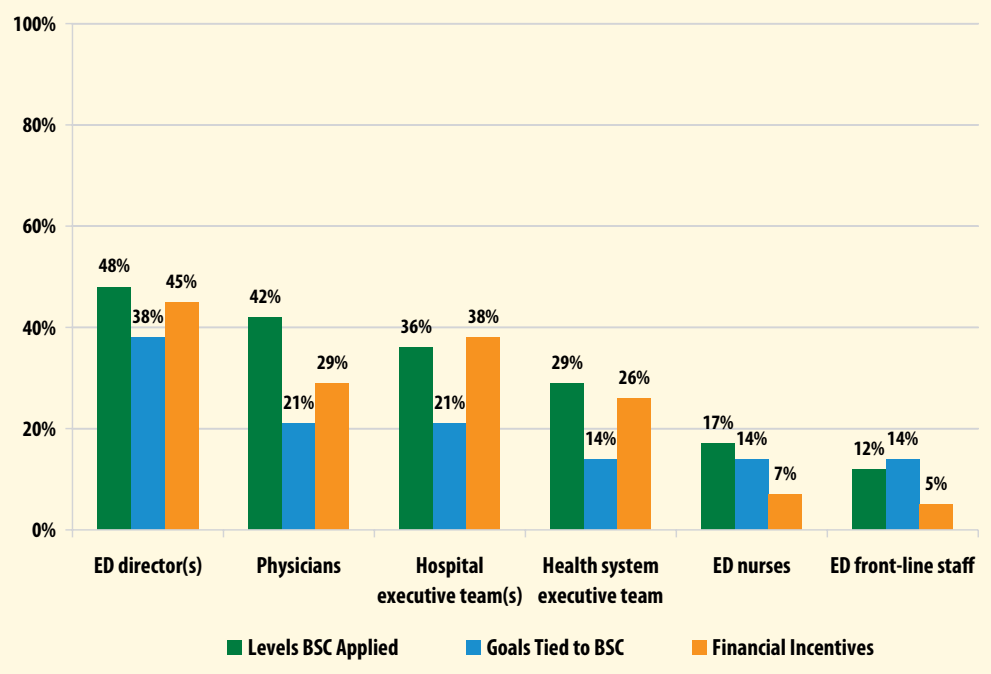


Table 5. Corporate Approach to ED Services Management

	Top 10%	*Bottom 10%*
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Strategic planning and decision-making made at system-level	80%	20%
Utilization of financial incentives tied to ED balanced scorecard performance	80%	20%
ED Case-Mix Index and ED Adjusted Mortality measured regularly	80%	0%

Best Practice Adoption: Information Technology Remains Biggest Opportunity

This study queried all health systems regarding the extent of their adoption of best practices and the success that they've experienced with those practices. To be included, the best practice was required to have a minimum established level of evidence in the peer-reviewed literature directly linking utilization of the practice to statistically significant improvement in clinical quality, productivity, efficiency, or financial outcomes in the Emergency Medicine setting. Multiple structured queries of major medical literature databases were used to identify these practices. The practices were grouped into four distinct categories based upon the nature of their improvement methodology – staffing, process solutions, systemic change, and information technology (Table 6). The effect of capacity expansion on performance was also considered in the analysis. Specific capacity management tactics are also listed in Table 6.

Aggregating the average adoption rate for each category illustrates the dominant approaches to quality improvement in Emergency Medicine (Figure 15). Health systems are pressing forward heavily on nearly every process improvement, staffing, and systemic change solution possible. Information technology lags behind and remains an untapped reserve for significant performance improvement gains. The imperative to close this gap is illustrated by the performance difference in the Top 10% which utilized the IT best practices at a much greater rate than the population at large (Table 7).

Although nearly all organizations reported adopting nearly all process improvement solutions, their success in executing process improvements varied significantly. Health systems in the *Top 10%* who had well-structured system-level management for ED Services and higher utilization of information technology solutions also reported *significantly greater success with process improvement solutions* (Table 8). This speaks to the necessity of coordinating improvement across a system of integrated care delivery. Inpatient, critical care, outpatient, home health, and primary / urgent care will all play a substantial role in the efficiency of emergency care. Constraining attempts at process improvement to within the walls of the ED may severely limit their potential effectiveness.

☑ KEY FINDING #6

Untapped Potential for Improvement in Leveraging Information Technology

Most health systems have fully deployed the validated best practices for quality and productivity improvement in the areas of process change, systemic change and staffing solutions. IT solutions remain the area of greatest opportunity for future quality and financial improvement.

"Montefiore is one of the five largest EDs in the nation. Our location in the Bronx limits our ability to simply expand ED capacity by adding space. We've been able to gain substantial capacity by coordinating improvements across the entire system of care. Working with inpatient, intensive care, and all the other downstream components that influence patient flow is absolutely necessary for clinical and financial success in emergency medicine."

— Jeff Weiss, M.D., Medical Director, Montefiore Medical Center and Academy GE Fellow

Table 6. Best Practices Validated for Improving Quality, Efficiency, or Profitability in the ED

Information Technology

- Bed management / patient tracking software
- RFID Patient and/or Bed Tracking System
- Enterprise information system and/or EMR
- Computer modeling (e.g.,time series, monte carlo) to predict peak flow and optimize staffing
- Using software or other tools in the ED to facilitate proper disposition (e.g., observation vs. inpatient vs. SNF)

Process Solutions

- Bedside registration
- Immediate bedding (i.e., bypassing the waiting room)
- Dedicated fast track
- Clinical pathways/protocols for common conditions (e.g., stroke)
- Full / Surge capacity protocols
- Process mapping and/or redesign
- Direct admit patients processed outside of ED
- Six Sigma / LEAN initiative(s)
- CQI improvement team(s)
- Case management or utilization review in the ED

Staffing

- Cross-training staff to perform multiple functions
- Patient Flow Manager or Bed Czar (e.g., monitors and facilitates throughput)
- Zone collocation of nurses and residents
- Increased nurse staffing
- Increased physician staffing

Systemic Change

- Complex case meetings or rounds – identify patients with complex post-acute care needs.
- Collaboration with post-acute care providers (e.g., nursing homes, home health, etc.)
- Collaboration with EMS / Transport providers
- Coordination with other departments to improve turnaround times for lab, diagnostics, inpatient beds
- Coordinated and on-time surgery schedule(s)
- Reduce inpatient length of stay
- Improve physician productivity
- Improve nurse productivity
- Universal discharge time or scheduled discharges for inpatients
- Collaborative plan for regional patient flow with other local provider organizations
- Handoff from ED to Inpatient Physicians

Capacity

- Waiting room and ED architectural redesign or renovation
- Adding or expanding observation units
- Expanding # of critical care beds
- Adding or expanding admission/discharge units

Table 7. Information Technology Solutions Applied to ED Services

	Top 10%	*Bottom 10%*
High interoperability of clinical documentation systems in the ED with the information systems for the hospital and health system	80%	20%
Software to facilitate proper disposition	80%	0%
Computer modeling to predict peak flow and optimize staffing	80%	20%

Table 8. Reported Success of Process Improvement Solutions Applied to ED Services

	Top 10%	*Bottom 10%*
"Highly Effective"	67%	10%
"Effective"	33%	24%
"Slightly" or "Somewhat Effective"	0%	58%
"Not Effective"	0%	8%

Best Practice Adoption: Individual Practice Utilization

Considering ED management from a global perspective, it's critical for ED managers to go beyond simply knowing that a certain practice has demonstrated proven effectiveness, but to also understand the extent to which a practice has been implemented. If nearly every ED has already adopted a best practice, it can be considered standard operating procedure and the prospective opportunity for incremental improvement via that method will be relatively limited. Although execution plays a role in effectiveness, the greater opportunities for advancing the quality and efficiency of emergency care across the nation will lie mostly in the least-implemented best practices.

Figures 15 to 18 report the utilization of each validated best practice by the four categories: Information Technology, Process Improvement, Staffing, and Systemic Change. For comparative purposes, this section also includes recent capacity expansions and their reported effectiveness. Collectively, these figures represent the first national study to document the diffusion of approaches to management, innovation, and quality improvement within U.S. Emergency Departments.

Many best practices have exceptionally high adoption rates, including:

- Clinical pathways/protocols (98%);
- Bedside registration (97%);
- Coordinating across departments and services to reduce turnaround times (97%);
- Collaborating with EMS and Patient Transport (95%);
- Dedicated fast track (95%);
- Reducing inpatient length of stay (92%);
- Improving handoff from ED to Inpatient (92%);
- Process mapping (92%); and
- Increasing nurse staffing (90%).

Conversely, the least adopted best practices represent the greatest opportunities for improvement on a national scale:

- RFID for patient or bed tracking (33%);
- Collaborative plan for regional patient flow (39%);
- Software to facilitate proper patient disposition (48%);
- Universal discharge time or scheduled discharges (49%);

- Computer modeling of patient flow (52%); and
- ED enterprise information system (57%).

Several patterns emerge when comparing the adoption levels of these best practices. The most heavily adopted practices tended to:

- Emphasize the most established practices (few recent innovations);
- Favor human capital investment over capital investments in infrastructure; and
- Simultaneously fulfill government regulations or accrediting organization requirements (e.g., clinical pathways, nurse staffing, process mapping).

☑ KEY FINDING #7

Actionable Opportunities

Although many organizations may feel like they have tried "everything" to address the issues challenging Emergency Departments, a significant opportunity remains to apply innovative information technology practices and build an infrastructure to support the delivery and improvement of care.

"We implemented a Split Flow Model that moves sick patients right to an ED bed; non-urgent patients do not "own" a room, instead they move from station to station."

— Janne Taubman
System Director Emergency Services
Emergency Management
Banner Health (Phoenix, AZ)

Utilization of Best Practices

Figure 15. Deployment of Best Practices in ED Services Management

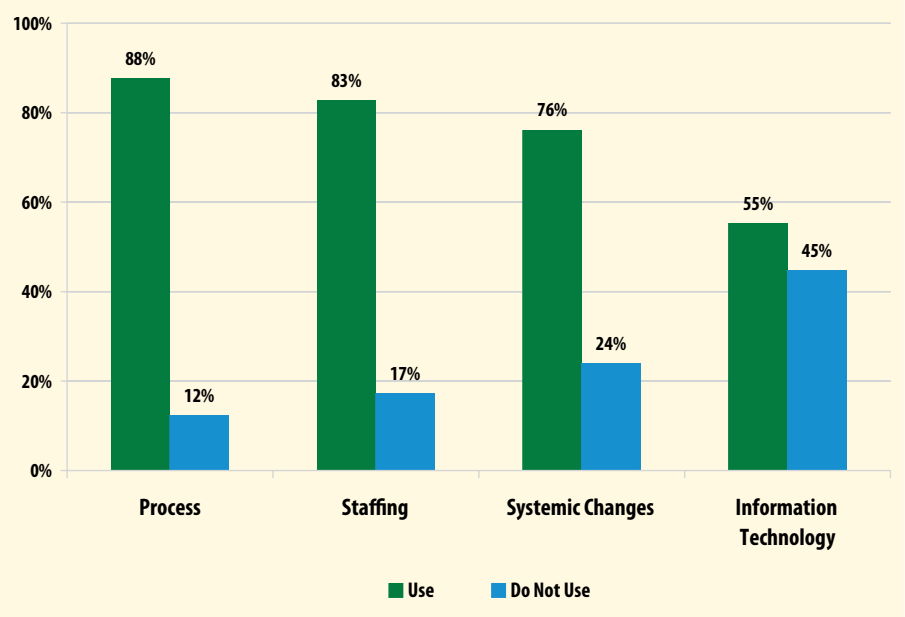


Figure 16. Information Technology Solutions Utilization

Percent of health systems reporting that the majority of EDs utilize the best practice as an improvement tactic

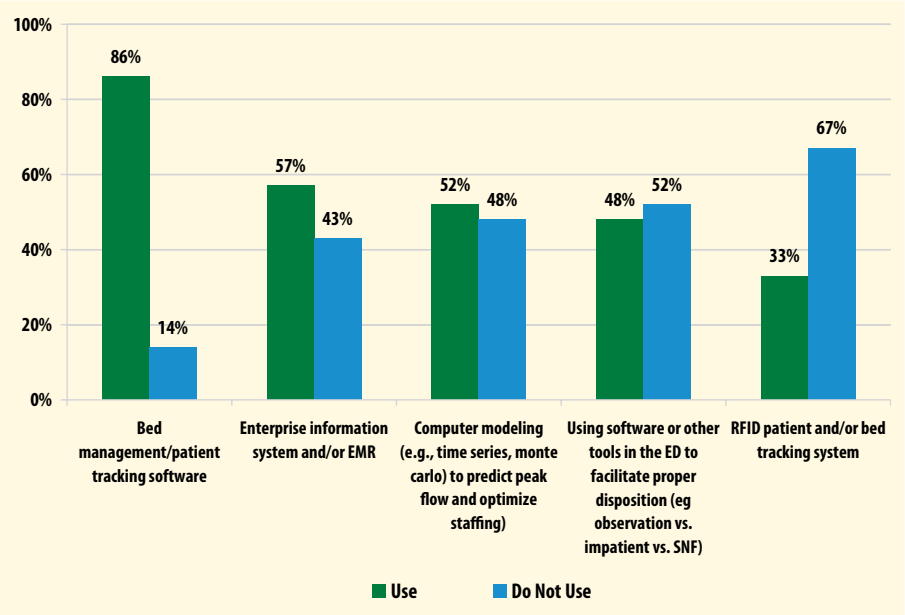


Figure 17 (a). Process Solutions Utilization

Percent of health systems reporting that the majority of EDs utilize the best practice as an improvement tactic

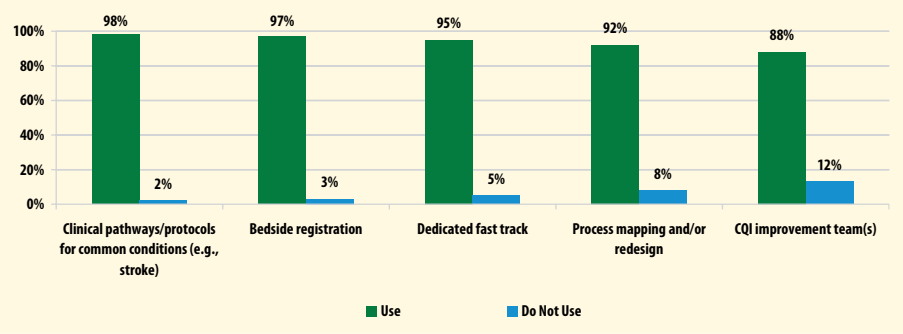


Figure 17 (b). Process Solutions Utilization

Percent of health systems reporting that the majority of EDs utilize the best practice as an improvement tactic

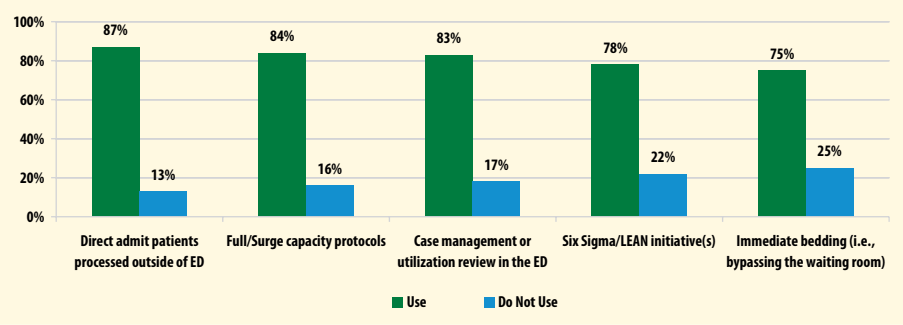


Figure 18. Staffing Solutions Utilization

Percent of health systems reporting that the majority of EDs utilize the best practice as an improvement tactic

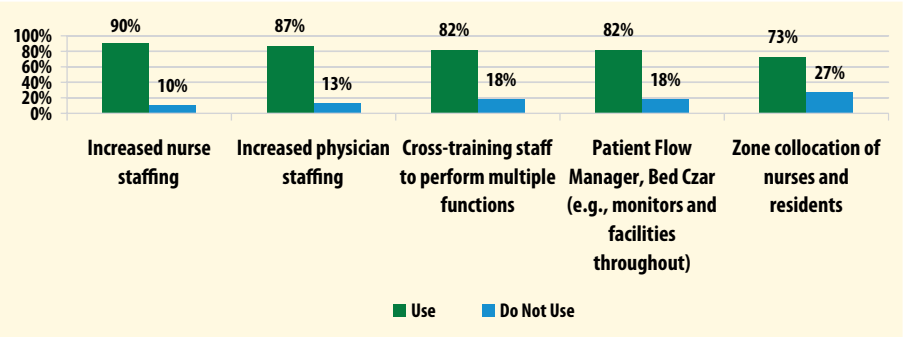


Figure 19 (a). Systemic Solutions Utilization

Percent of health systems reporting that the majority of EDs utilize the best practice as an improvement tactic

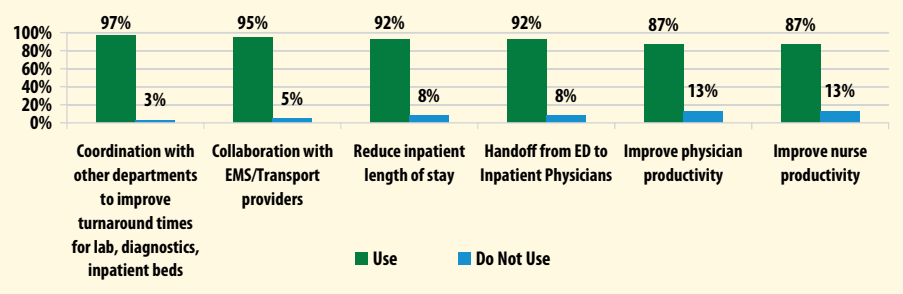


Figure 19 (b). Systemic Solutions Utilization

Percent of health systems reporting that the majority of EDs utilize the best practice as an improvement tactic

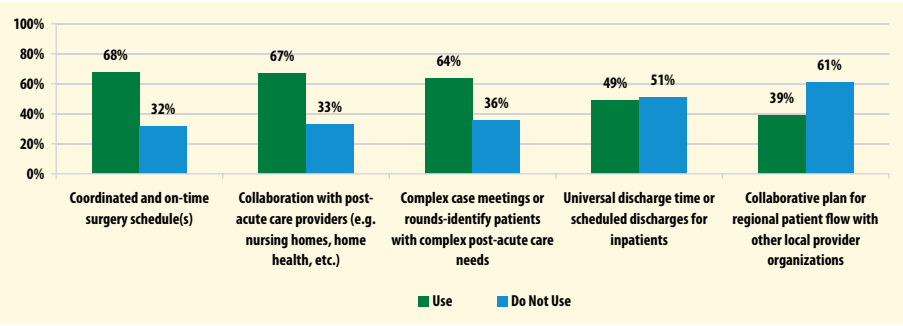
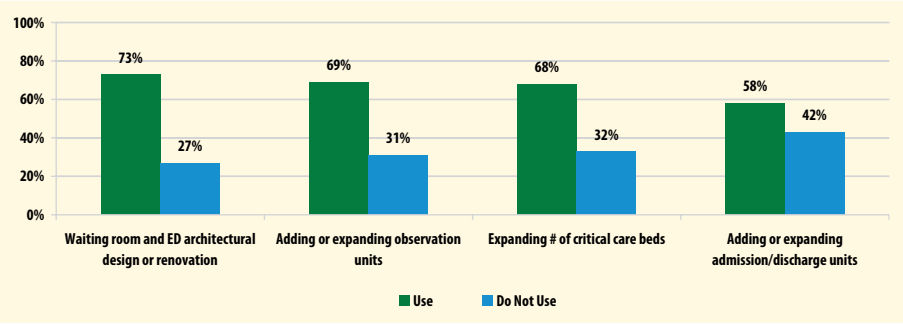


Figure 20. Recent Capacity Expansions to EDs

Percent of health systems reporting that the majority of EDs utilize the best practice as an improvement tactic



Effectiveness of Best Practices

Studies reporting the adoption and evaluation of a management intervention in healthcare are typically individual case studies or, at best, randomized controlled trials. While such studies are beneficial for judging the efficacy of the practice on a particular outcome, such studies tend to be inherently limited to the unique institutional setting and organizational parameters in which the practice was evaluated. The national scale of this study provides a broader perspective and paints a picture of the feasibility and likely effectiveness when deployed across multiple institutions.

Figures 21 to 25 rank the individual best practices by their effectiveness within each of the four categories: Information Technology, Process Improvement, Staffing, and Systemic Change, as well as the capacity expansion tactics that health systems reported undertaking recently. To derive the greatest variability and use the highest standard possible, only the top two ratings ("Effective" or "Highly Effective") constitute the effectiveness statistic. For information on the effectiveness ratings, see the Methodology. Only ten practices were considered effective by more than 50% of the health system organizations:

- Dedicated fast track (70.3%)
- Coordination with other departments to improve turnaround times (e.g., lab, radiology) (62.2%)
- Clinical pathways/protocols for common conditions (60.0%)
- Expanding number of critical care beds (59.3%)
- Bedside registration (56.8%)
- Immediate bedding (i.e., bypassing the waiting room) (56.7%)
- Six Sigma / LEAN initiative(s) (53.1%)
- Zone collocation of nurses and residents (51.7%)
- Increased physician staffing (50.0%)

Figure 21. Effectiveness of Information Technology Solutions

Percent of EDs Using the Best Practices Rated "Effective" or "Very Effective"

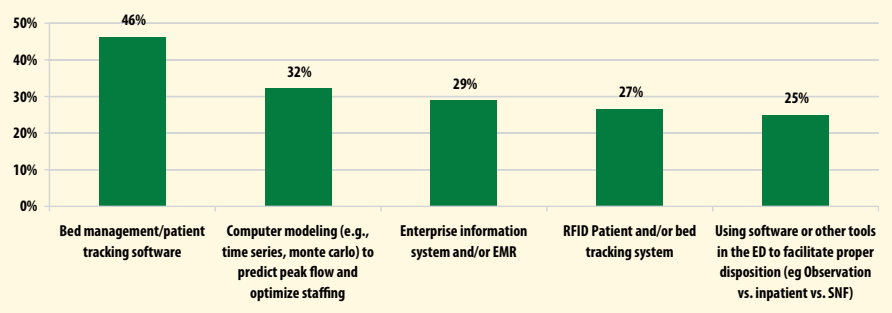


Figure 22 (a). Effectiveness of Process Solutions

Percent of EDs Using the Best Practices Rated "Effective" or "Very Effective"

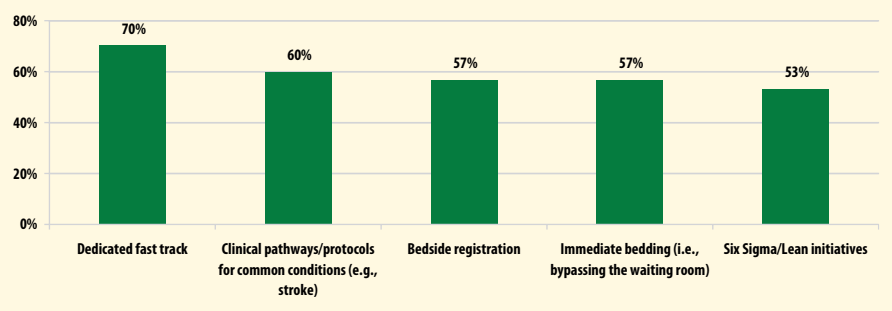


Figure 22(b). Effectiveness of Process Solutions

Percent of EDs Using the Best Practices Rated "Effective" or "Very Effective"

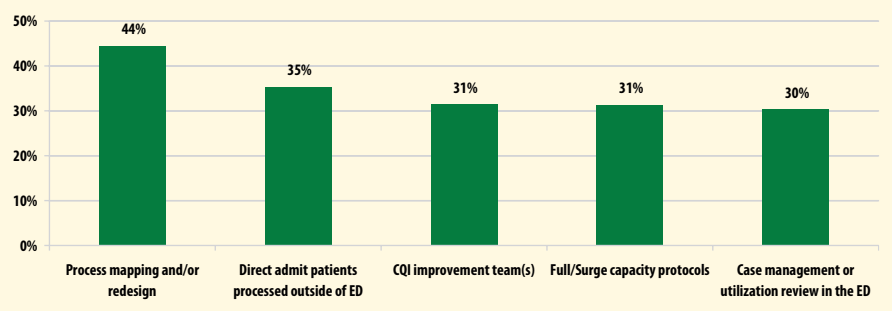


Figure 23. Effectiveness of Staffing Solutions

Percent of EDs Using the Best Practices Rated "Effective" or "Very Effective"

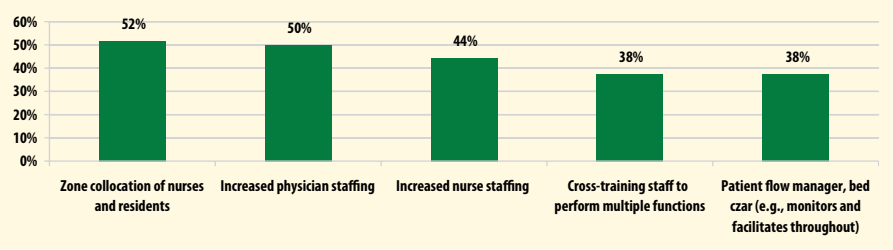


Figure 24(a). Effectiveness of Systemic Solutions

Percent of EDs Using the Best Practices Rated "Effective" or "Very Effective"

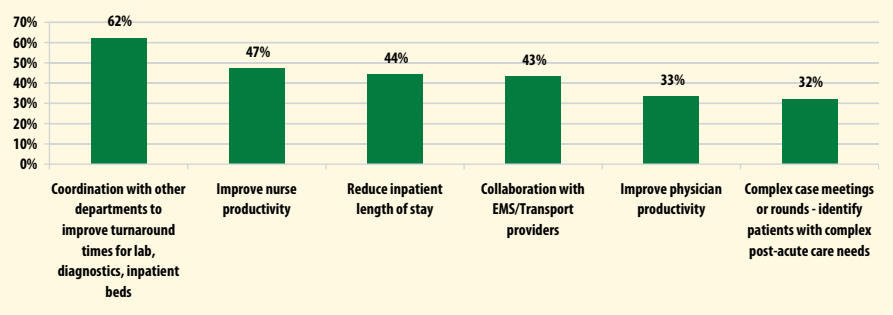


Figure 24(b). Effectiveness of Systemic Solutions

Percent of EDs Using the Best Practices Rated "Effective" or "Very Effective"

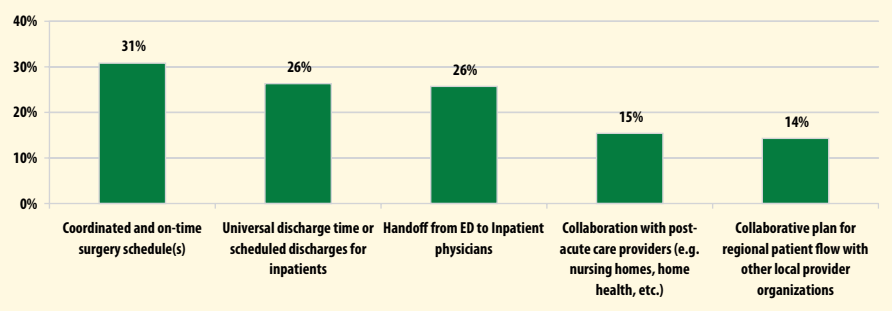
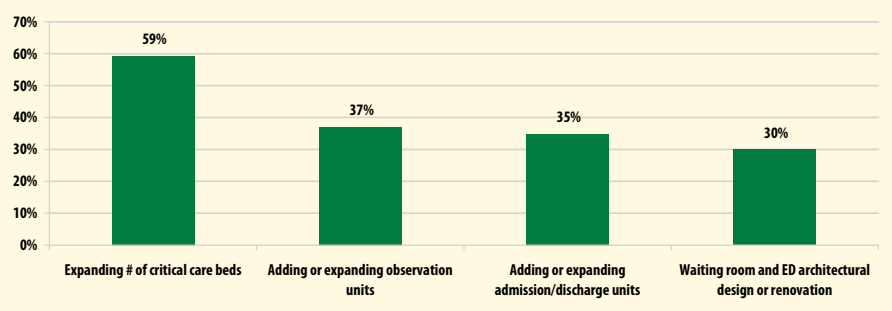


Figure 25. Effectiveness of Capacity Solutions

Percent of EDs Using the Best Practices Rated "Effective" or "Very Effective"

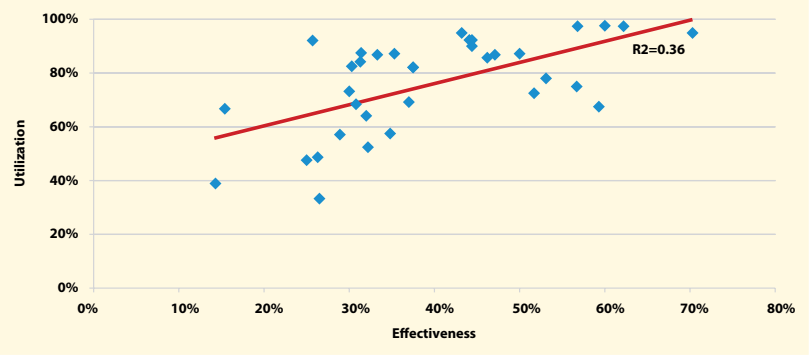


The effectiveness of the best practices was correlated ($r2 = 0.36$, $p < 0.01$) with the extent of their adoption by health systems (Figure 26). Several theories could account for this relationship:

- More effective practices are more likely to be adopted;
- Highly utilized practices will generate more information regarding key success factors; and/or
- Recently adopted practices and new innovations will have lower effectiveness ratings as the complete cycle of implementation, optimization, and ongoing organizational learning has yet to leverage a full return on investment.

Figure 26. Relationship Between Effectiveness and Utilization

Percent of EDs Using the Best Practices Rated "Effective" or "Very Effective"



The results also indicate that certain organizations may experience greater success in executing the same best practices as other organizations. Table 8 (pg. 28) shows that the *Top 10%* reported higher effectiveness for process improvement solutions than the *Bottom 10%*.

☑ KEY FINDING #8

Achieving Effectiveness Is Difficult

Reported effectiveness may equally depend on the organization executing the initiative and the actual practice. Established practices that organizations have utilized and continuously improved over several years are more likely to demonstrate value than a recent innovation. Notwithstanding, only a small set of practices were considered effective by a majority of the health systems that had implemented them in their EDs.

Clinical Documentation Systems

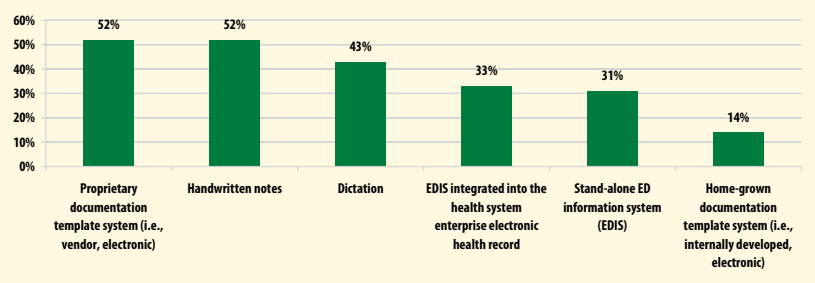
The existing clinical documentation systems and practices can significantly help or hinder the adoption and execution of best practices for quality improvement. Figure 27 shows the reported methods of clinical documentation used in the EDs in this sample. All health systems reported utilizing several methods for clinical documentation. Overall, 65% of health systems had an electronic ED information system (EDIS). Nevertheless, more than half of the EDs still rely on handwritten notes in addition to any other system.

With one exception, the same health systems that have an EDIS also utilize their electronic medical record (EMR) system to communicate patient records to primary care physicians. Figure 28 illustrates the other methods utilized.

"For many patients, the emergency department is their point of entry to the hospital and where the documentation of critical information begins. Complete and accurate records are essential in supporting the quality and safety of inpatient care as well as outpatient follow-up and billing."

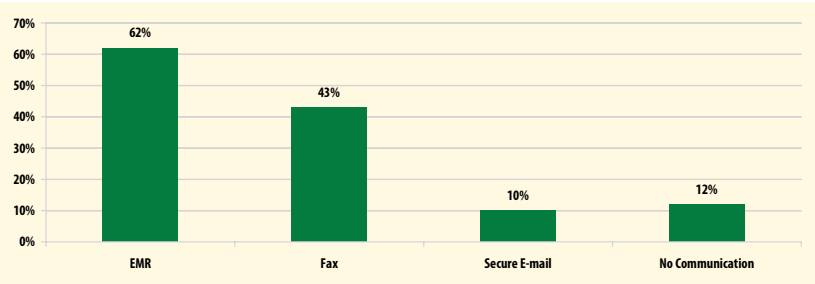
— Drew Swiss
Vice President of Finance
Montefiore Medical Center (Bronx, NY)

Figure 27. Clinical Documentation Methods in the ED



Does not add up to 100%; Multiple selections allowed to account for variation across different EDs in a system.

Figure 28. Methods for Communicating Patient Records to Primary Care



Does not add up to 100%; Multiple selections allowed to account for variation across different EDs in a system.

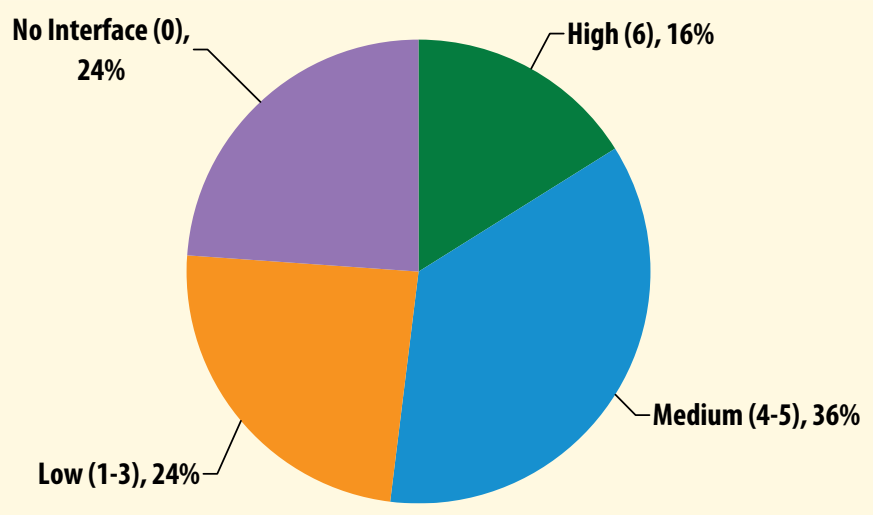
Most salient to the ED's own demands for efficiency and responsiveness is the ability for an EDIS to interface with the hospital and health system's other information systems. Figure 29 displays the relative interoperability of health systems' EDIS based upon the report of whether the EDIS(s) connected to any of the following: Laboratory, Radiology, Pharmacy, CPOE, Hospital MIS, and a Health System MIS. Nearly half reported low to no interfaces (connections with 3 or less). The most frequently reported interfaces were with Laboratory and Radiology (74%).

"The link between effective communication with primary care providers after a patient is discharged and the EDIS is very important."

— Mimi Novello, M.D.
Associate Chairman
Department of Emergency Medicine
MedStar Health (Columbia, MD), and
Academy GE Fellow

Figure 29. Clinical Documentation System Interface with other Information Systems

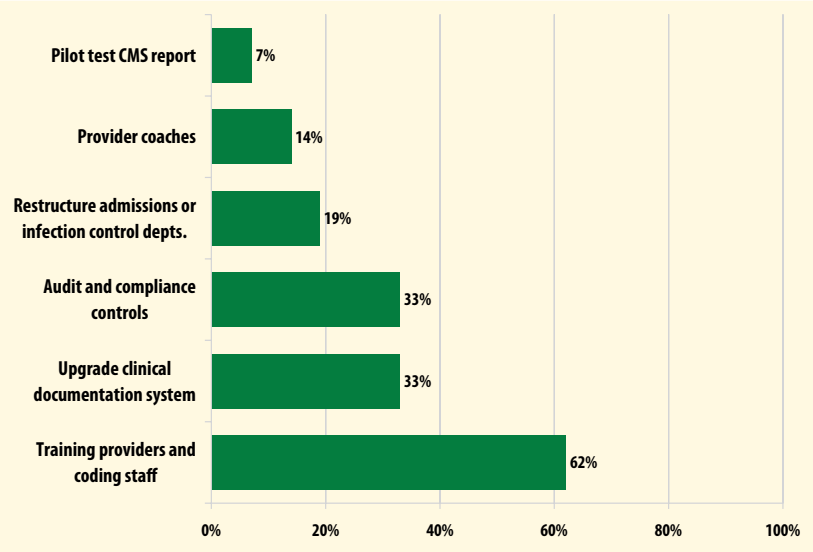
Segmentation based upon the number of ED clinical documentation system interfaces with the following: Laboratory, Radiology, Pharmacy, CPOE, Hospital MIS, and Health System MIS



Two final questions were fielded to better understand how health systems are preparing their EDs for significant immediate challenges – the new CMS requirements to document whether certain non-reimbursable conditions were present-on-admission (POA). Figure 30 illustrates that most have taken basic steps to train their staff and providers, but little system infrastructure has been dedicated to program these tasks out of doctors' hands.

Current Challenges: Present-on-Admission

Figure 30. Steps Health Systems are taking to Prepare EDs for POA Requirements



"We've included triggers in nurse assessment documentation and alerts that pass through to physician documentation."

— A Top 10% system describing their preparation for POA

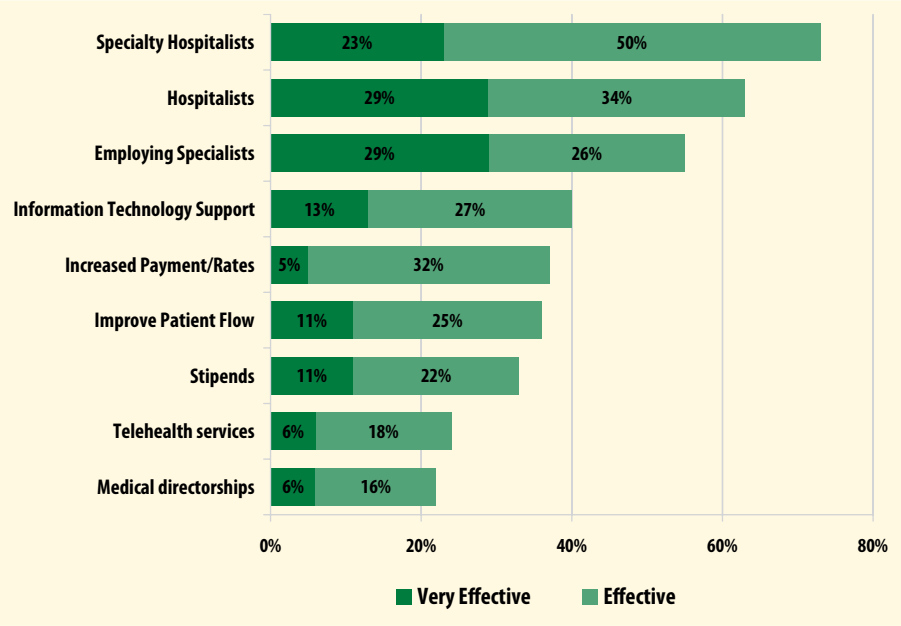
Current Challenges: ED Physician Call Coverage

Finally, in a method similar to the best practices effectiveness analysis, we queried all health systems on the best practices for meeting ED Call Coverage needs (Figure 31). The top three most frequently cited tactics as "effective" or "very effective'" all build on the growing trend towards physician employment:

- Employing Specialty Hospitalists
- Employing Hospitalists
- Employing Specialists

Information technology support followed as the first non-employment method to help resolve ED coverage issues.

Figure 31. ED Call Coverage – Rating of Most Effective Tactics



Conclusion: Opportunities and Implications

This is the first national study to document the current state of management practices for emergency services in the largest health systems. The examination of the adoption of best practices across EDs yielded the identification of many opportunities.

Overall, health systems with better ED performance exhibited the following characteristics:

- System-wide approach to ED management and leadership;
- Strong strategic planning and management infrastructure; and
- Greater utilization of information technology solutions.

The implications of this research involve several key stakeholders in U.S. emergency care – health system executives, hospital and ED administrators, and emergency physicians.

Health System Executives

The study reinforces the value of size and scale in managing health services delivery. The economic and financial environment challenges healthcare provider organizations to emphasize leveraging operational improvements to drive gains in quality and efficiency of care. This study shows that leadership and management infrastructure makes a difference.

Traditionally, health system executives focused on areas where cross-organizational centralization and consolidation of management function were relatively straightforward, such as financial management and purchasing. This study illustrates the opportunities available from coordinating operations in an outpatient setting across multiple institutions. Management can operationalize this in many ways, such as:

- regional patient placement strategies;
- systematic best practice sharing and knowledge transfer;
- rolling up quality, financial and patient satisfaction data for internal and external benchmarking;
- door to discharge strategies and patient flow / throughput initiatives;
- unnecessary ED utilization; and
- coordinated market development to meet patient demand for care utilizing a variety of settings and modalities (e.g., primary care, urgent care, or integrated networks).

Although the organizational effort will initially be more challenging than previous "systemness" attempts (e.g., centralizing a billing office), the potential payoff is significant.

The organizational and management infrastructure necessary to make this happen is not independent from the utilization of information technology solutions. A management and clinical documentation infrastructure that not only effectively achieves the intra-ED objectives of clinical transformation, but also accounts for and rolls up clinical and management data to the system-level will provide the next step for health system executives.

Hospital and ED Administrators

The trends towards consolidation and corporatization of healthcare delivery are clear. Eventually, it will no longer be acceptable to simply run an isolated organizational entity with little accountability to a parent organization or without collaboration with peers in the same system. The potential gains from system-wide coordination are simply too large. Meeting the burgeoning patient demand will require regional market strategies that cross organizational and care setting boundaries. Developing the leadership and management skills to operate in this matrix environment will become critical for hospital and ED administrators of the future. Implementing information systems that tie into the system management information systems as well as the clinical systems in other care settings will provide the necessary infrastructure to make future quality and efficiency improvements a reality.

ED Physicians

The world of the emergency physician can be very comfortable in its unrelenting focus on care delivery in the face of urgent needs and unrelenting patient demand. However, physicians' strong stake in the care environment and the quality of care delivered necessitates taking the time and effort to become involved in the organization of ED care. Most saliently, ED physicians need to understand and play a role in the design of the care environment. Similar to understanding the performance characteristics of an automobile and the dashboard display guiding the vehicle's driver, ED physicians need to understand the IT infrastructure supporting their clinical practice and play a role in ensuring that the systems not only meet their utility needs, , but add value to their patients. This goes beyond simply demanding amenable interfaces to understanding the interconnectedness and ultimate functionality of the system. Ultimately, there is no role with better insight and understanding into the delivery of care than the physician.

Next Steps: Practices of the Top 10%

The following practices of the Top 10% serve as a road map for health system executives organizing and improving their Emergency Services service line.

Corporate Approach to ED Services Management

- System-wide ED Services executive in place for at least 2 years
- Strategic planning and decision-making made at system level
- Utilization of financial incentives tied to ED balanced scorecard performance
- ED Case-Mix Index and ED Adjusted Mortality measured regularly

Information Technology Solutions Applied to ED Services

- High interoperability of clinical documentation systems in the ED with the information systems for the hospital and health systems
- Software to facilitate proper disposition
- Computer modeling to predict peak flow and optimize staffing

Survey Methodology

Survey Design

The Health Management Academy developed an Advisory Committee representing each major health system C-suite perspective (see pg 2). A comprehensive literature review was conducted using multiple structured searches of the major healthcare management and business literature databases. The results of the review and interaction with the Advisory Committee bore the conceptual development of the survey. Construction of the survey items, survey validation and testing was conducted by The Academy under the guidance of the Advisory Committee. The survey was designed for Internet response mode. Vovici® hosted the survey.

Sample Selection

All Academy health systems with a clinical or operational oriented executive member, excluding Veterans Health Administration (VHA) and military health services, were eligible for participation. The Academy members are among the largest health systems in the United States and account for approximately 50% of the net patient revenue in the United States. A single member in each health system was selected to receive the survey invitation via e-mail using the following precedence: CMO, CNO, and COO. This hierarchy was selected in order to deliver the survey to the person in the health system responsible for its Emergency Department Services.

Data Collection

The study utilized data from three sources: an electronic survey of health system executives, health system financial and demographic data, and national HospitalCompare® data.

Survey Data Collection

The survey was launched August 18, 2008 and closed November 20, 2008. Four waves of e-mail invitations were sent to 60 health system executives followed by select phone calls to encourage response. The e-mails specifically requested that the health system executive forward the invitation to the "person responsible for your health system's Emergency Department Services." Forty-eight of sixty eligible health systems completed the survey for an 80.0% response rate. Responding health systems were representative of The Academy's overall membership.

Organizational and Demographic Data

Additional data from The Academy databases supplemented these responses. Demographic and organizational characteristics for health systems included profit status, academic status, geographic region, and geographic position / population type/density. Two interpretations of Academic Status were tested:

1. The traditional definition – organizational membership in the Council of Teaching Hospitals (CoTH);
2. A definition that allows for greater variability by using three categories:
    a. Major Academic Systems – requires CoTH membership, a direct university relationship, and few facilities beyond the major teaching hospital (e.g., Vanderbilt, Yale, Johns Hopkins).

    b. Community System with a CoTH – requires CoTH membership, but has no university relationship beyond residency affiliations and derives significantly more revenue from the non-CoTH facilities (e.g., Fairview, Beaumont Hospitals).

    c. Community System – No CoTH membership. (e.g., Memorial Health Services, ProMedica Health System).

The Academy maintains this database based upon information derived directly from its member executives and updated or validated at least twice annually.

The Academy also maintains a database of health system financial information updated annually based upon submissions from members' CFO offices. This database includes variables such as bond rating, net patient revenue, expenses, capital expenditures, debt ratios, FTEs, and other indicators of financial health and expenditure patterns. Financial data represented the most recent fiscal year (FY 2007).

The Academy obtained data from the American Hospital Association aggregated to the health system level for the following organizational data for the calendar year 2007: Total Adjusted Admissions, Adjusted patient days, Total ED visits, Total outpatient visits, number of emergency departments in the health system, number of freestanding or satellite emergency departments in the health system, certified trauma center(s), and the reported physician relationship/practice models.

HospitalCompare® Data

The CMS HospitalCompare® database was downloaded on two occasions: November 21, 2008 (Sept. 08 release) and January 2, 2009 (Dec. 08 release). The former covers Process of Care Measures and HCAHPS Patient Survey Data collected January 2007 to December 2007; the latter contained the same measures collected April 2007 to March 2008. The Academy conducted the analysis described below on the first dataset and then replicated the analysis on the second, more recent dataset. Both analyses yielded similar results, providing a robust validation of the findings. The data presented in this paper refers only to the second, final analysis because it covers the most recent time series and is the larger, more complete dataset.

HospitalCompare® presents process of care measures for four clinical conditions: pneumonia (PNEU), surgical site infections (SSI), congestive heart failure (CHF), and acute myocardial infarction (AMI) for every participating hospital in the United States. These measures serve as indicators of quality of care as each measure assesses the presence or delivery of a particular clinical action that substantial evidence demonstrates will result in better outcomes for patients receiving the intervention than those without. This study only included those measures which were delivered typically in the Emergency Department setting or significantly influenced by Emergency Department operations (Table 1).

Data Analysis

The Academy conducted all data analysis utilizing Microsoft Excel® and SPSS®. Following the procedure established by Hines and Joshi (2008), individual hospitals' CMS Process of Care Measures were aggregated to the health system level to obtain a single mean score for each measure in every participating health system.* For a hospital's performance in a particular measure to be included in the health system mean score, the hospital had to have at least 75 cases. Rather than using a random sample of hospitals, all hospitals within the system were eligible for inclusion. The census approach provided a more robust dataset and greater statistical power. After aggregation and determination of a mean score for each measure for each health system, a mean score for each clinical condition was determined through a simple harmonic mean of the measures within that category (i.e., AMI, PNEU, and CHF). Finally, a combined overall health system mean score was determined by a mean score of those three clinical condition categories.

* Hines S, Joshi MS. Variation in quality of care within health systems. Jt Comm J Qual Patient Saf. 2008 Jun;34(6):326-32.

Determining the Top 10%

We determined the Top 10% Performer Decile by ranking health systems by their overall combined mean score for the aforementioned aggregated ED-related CMS Core Measure performance. This methodology had several advantages:

- Using objective measures eliminated the potential biases inherent in soliciting subjective self-evaluations of relative success;
- The CMS measures have undergone repeated, rigorous validation processes to ensure a strong evidence base linking the indicator of quality to actual quality outcomes; and
- The aggregation of different hospitals "smoothed" the typical influence of institutional demographic variables, such as payer mix, illness severity, academic status, and geography. This allows for a clean comparison without statistical adjustments.

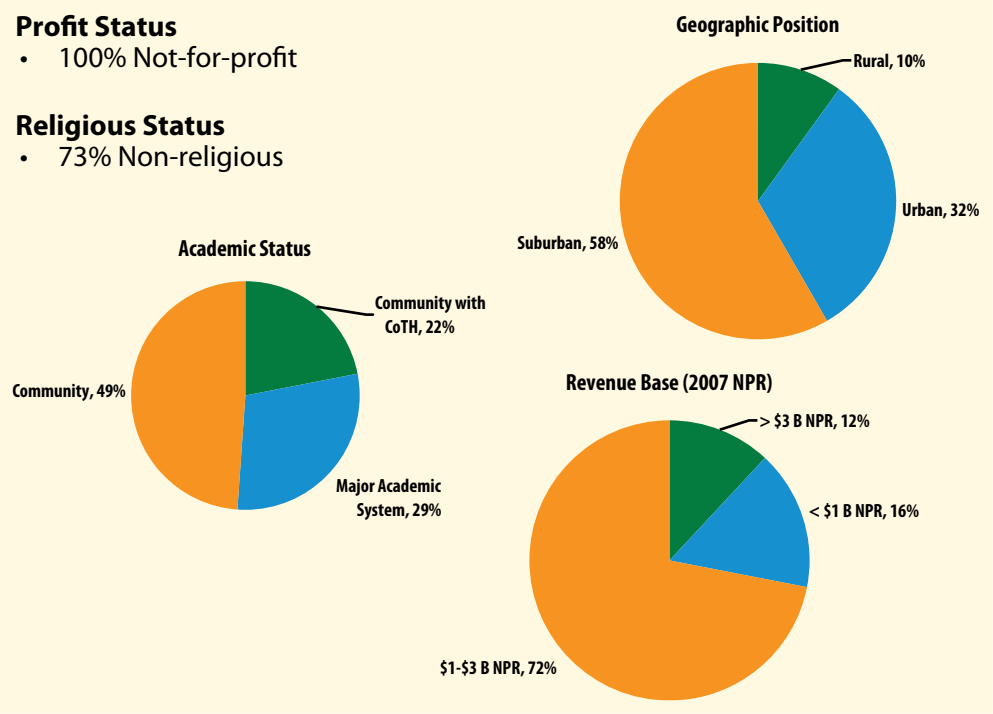
Sample Demographics

Figure 32 displays the sample demographics. Average net patient revenue (NPR) was $2.0 billion – significantly larger than most healthcare provider organizations and mirroring The Academy membership. Compared to the national population, The Academy membership has a stronger representation of academic and larger health systems. Religious and profit status approximately match the national population.

To determine the influence of demographic variables, uni-variate ANOVAs were conducted utilizing the clinical condition mean scores and overall combined mean score as the independent variables. None of these health system characteristics or demographic variables exhibited any statistical relationships to the results.

Additionally, a cohort analysis was conducted to compare three archetypes of health systems commonly believed to have underlying characteristics that heavily influence operational performance. Group 1 was Major Academic Systems in Urban Settings and Group 2 was Suburban, Community Hospital-focused health systems. Finally, the third group were the remaining health systems – various combinations of suburban and rural with possibly also having a CoTH member facility. This comparison yielded no statistically significant differences across these measures.

Figure 32. Sample Demographics



Respondents

Respondents were system-level executives, reporting to or members of the system C-suite, with responsibility for ED Services across the health system – whether that responsibility was direct or responsible for among many other duties (See pg. 51 for a complete list of the respondents' titles).

Titles of Survey Respondents

- Administrative Director of Emergency Services
- Administrative Director, Emergency Department
- Administrative Director, Emergency Medicine Service Line
- Administrative Fellow, Emergency Medicine
- Chairman and System Chief of Emergency Medicine
- Chief Administrative Officer, Department of Emergency Medicine
- Chief Medical Officer
- Chief Medical Officer and Chair of the Emergency Department
- Chief Nursing Officer
- Chief Nursing Officer / Chief Operating Officer
- Chief / Director of Professional Services
- Corporate Director of Emergency Services
- Department Chair, Emergency Medicine
- Director of Emergency Services
- Director, Emergency Services
- Director, Emergency Services
- Director, Emergency Services and Cardiology Services.
- Executive Director, Emergency Services
- Operations Director, Intensive Medicine Clinical Program
- President
- Senior Vice President and Chief Quality Officer
- Senior Vice President and System Chief Nursing Officer
- System Director Emergency Services/Emergency Management
- System Director, Quality and Clinical Operations
- System Medical Director of Emergency Services
- Treasurer and Chief Financial Officer
- Vice President, Clinical Services
- Vice President, Emergency Services
- Vice President, Operations
- Vice President, Patient Care Services
- Vice President, Emergency, Trauma and Aeromedical Services

About The Academy

The Health Management Academy (The Academy) provides an open environment for the senior executives of the country's largest health systems and corporations to exchange best practices and benchmarking data, focused on increasing the quality, appropriateness and efficiency of care. Our membership includes executives from approximately 90 health systems that account for 50% of the hospital net patient revenue in the country and represent 50% of the nation's hospitals of 100 beds or larger. Forum membership also includes senior executives from more than 60 major corporations, which represent approximately 50% of the *Fortune 100* companies with health businesses.

By virtue of the size and position of their healthcare systems and corporations, The Academy members have similar opportunities and challenges. They view The Academy as a knowledge source for identifying and monitoring tactical and emerging strategic issues. The Academy was formed in 1998, the same decade many of the largest health systems were created. The Academy's model of educational programming creates Forums of health system executives with similar roles, assesses the top priorities of its members, monitors the organization and development of large health system executive teams and facilitates structured interaction among its members.