Quality Matters: Solutions for a Safe and Efficient Emergency Department

By Shari J. Welch, M.D.

Foreword by Nichloas Jouiles, M.D., F.A.C.E.P.
From commonplace chart audits looking for missing signatures to full-blown data-driven projects, the former quality assurance (QA) process has given way to something different and infinitely more useful. Reports that were once performed for health care leaders are now generated to meet the goals of performance and process improvement deemed important by frontline workers. The challenges have changed.

Most emergency department (ED) physicians may not be aware of this, but QI concepts have a science and methodology behind them that has been used by service industries for more than 50 years. Making departmental changes using intuition is no longer appropriate; by using tools developed by other service industries, ED leadership can improve the odds that an improvement project will succeed and yield successful results.

The Development of Emergency Department Quality Improvement (QI) Programs

Physicians with a bit of gray hair will recall the early days when hospital administrators began requesting QA reports. Overwhelmed with problems related to the Consolidated Omnibus Budget Reconciliation Act law and indigent care population strains on the ED, the 1980s brought about administrative mandates to provide reports showing how we were improving patient care in EDs. The name has changed, according to industry trends, and QA was transformed into total quality management, continuous quality improvement, process improvement, and performance improvement. Whatever the name, the concept has been the same: Use departmental data to track performance and demonstrate improvement. Reluctant ED directors were frequently browbeaten into participation by commissioned patient satisfaction surveys that always showed the ED to be lacking by some measure.

Early QI programs were very basic and generally consisted of chart audits (looking for documentation deficiencies), focused audits (on chest pain, for example), and tracking of a few metrics, such as patients leaving against medical advice (AMA) or the overall turnaround time (TAT) or length of stay (LOS) for the ED. Although these crude audits and measures were just a start, physicians involved in these types of QI activities discovered something surprising: Whatever they focused on would inevitably show improvement, and the culture of their ED would change. EDs with
robust QI programs frequently fostered a culture focused on patient satisfaction. Surveys that had bedeviled physicians subsequently showed improvement. Similarly, an ED that was constantly adjusting and changing its processes to improve efficiency also fostered a climate of innovation. Ideas published about customer service in the ED, bedside registration, team triage, discharge teams, and other best-practice ideas have originated in EDs with strong QI ideologies and programs.1-3

The QI movement brought about the realization that data talk. It is one thing to complain about bed waits for admitted patients, and it is another to audit and show administration that it takes two hours to get an inpatient bed. Shrewd QI directors discovered that data could be used to support requests for staffing, to support the purchase of new equipment, and to promote public relations.

When an intubation audit in the ED at LDS Hospital in Salt Lake City revealed that in 100 consecutive emergency intubations, anesthesia was never called, and a surgical airway was never required, the ED physicians made certain this good news was widely circulated at their organization. The data about their emergent airway expertise helped enhance the reputation of these physicians throughout the organization.

A single QI project might also lead to equipment innovations. For example, data from the LDS Hospital audit led to the development of intubation pouches, an innovation that saved time and steps during crash intubations. The intubation pouch contained all the drugs used for crash intubations, their diluents, syringes, and dosing cards. This obviated the need to run to a refrigerator for succinylcholine, to the automated pharmacy for sedative drugs, to the medication room for syringes, and so forth. This innovation is so popular that it has become part of the vernacular. If a physician calls out, “I need a red pouch in room one,” the staff in the ED know that a crash intubation is occurring; respiratory therapy is to be paged, and appropriate staff set up for the procedure.

The benefits of a robust QI program to an ED are broad and comprehensive. First, QI improves operations and the work environment for staff while also conferring improvements in customer service and patient satisfaction.

Data from a QI program can be used as a public relations tool, as in the case of the strong intubation data mentioned earlier. Such data can also be used to support capital budget requests from an ED. For example, the same group that performed so well on intubations was not consistently documenting end tidal CO2 measurements on intubated patients. This was thought to be due to the fact that there was only one end tidal CO2 monitor in the department, and it could not always be found in the acute setting of a crash intubation. The data were used to support a capital budget request for a second end tidal CO2 monitor that was approved. Now there are two monitors for the department—one situated in the trauma bays and one in the resuscitation rooms.

Data can be used to improve internal operations and at interfaces throughout the organization. For example, one health care organization was engaged in a heated discussion involving the critical care director regarding septic shock order bundles.

The Benefits of a Robust Quality Improvement Program

Here's What Data Can Do for You:

- Serve as a powerful public relations tool
- Support improvements to physical plant or equipment purchases
- Improve emergency department operations and patient flow for staff
- Improve quality of service for patients
- Improve clinical outcomes
- Reduce costs
- Target benchmarks to gauge compared to other organizations
- Lead to innovation
The critical care director made the sweeping statement “The ED is missing three to four cases of septic shock a day.” No data could be found to support this chafing claim, and the ED director was able to point this out and hold the critical care director accountable for his statements. The two then crafted some processes to improve the care of septic shock patients, beginning in the ED. Similarly, a radiology chairman complained, “The ED orders too many tests.” In fact, data showed that the radiographic imaging ordered from the ED was in line with what is experienced around the country, according to Centers for Disease Control and Prevention data (see Sidebar 1-1, right). (As an aside, CT and MRI imaging are on the rise, and with the aging of the population who require increasingly complex medical care, this is expected to continue.)

Although outcome data in medicine are often hard to come by, QI data have been shown to improve outcomes in acute myocardial infarction, pneumonia, and septic shock, to name a few clinical entities. Costs can also be reduced when data suggest that the best way to manage care is through standardization.

Further, benchmarking against other similar organizations can lead to improvements, and physicians who are averse to this type of competition may be forced into making adjustments by regulatory agencies such as The Joint Commission and payers such as the Centers for Medicare & Medicaid Services (CMS).

Perhaps the best side effect of a robust QI program is the climate of innovation that can result and improve processes, operations, and patient flow—to everyone’s gain.

**An Introduction to Benchmarking Concepts**

Benchmarking has become an important part of QI in the ED. EDs that began using ED metrics soon found themselves looking for standards with which to compare their data. One difficulty has been in the terminology. For example, a frequently used metric abbreviation is AMA. However, many EDs find it difficult to separate AMA from left without being seen (LWBS) or left before treatment complete (LBTC), which are all used as quality markers in the literature. Many organizations have begun using the term walkaways to capture all patients who leave after being recognized as ED encounters but before being discharged by a physician. Similarly, TAT has been used alongside LOS and throughput time. If a hospital does not have bedside registration, does the clock start in the waiting room? When the patient has been placed in a treatment room? When the physician
sees the patient? Clear definitions of these metric terms and consistent utilization are imperative if departments are to benchmark against one another.

As we identify and lay out benchmarks and best practices in emergency medicine in the coming decade, we may be able to identify optimum ED volumes for efficiency and subsequently design ED pods or zones with ideal staffing for operational efficiency.

In 2006, a summit was held in Atlanta, involving leaders from national organizations and health care organizations interested in benchmarking ED performance. The summit resulted in a document that standardizes definitions, terminology, and performance measures and that suggests a comparison scheme for EDs. (See the Additional Resources section at the end of this chapter, page 17.) This summit was convened to standardize for the first time the metrics used to measure performance and operations in the ED. The definitions of terms such as pediatric patient and length of stay are now standardized for uniform application in health care. The document provides definitions, time measures, and proportion measures. CMS has accepted these definitions in its work on performance measures for the ED, as have the Agency for Healthcare Research and Quality, the Emergency Nurses Association, the Robert Wood Johnson Foundation, and a growing number of other benchmarking organizations.

In addition, operational benchmarks such as TAT for x-ray or lab, door-to-physician times, decision to admit times, and so forth are now being developed. Operational benchmarks are expected to become increasingly granular as all the subcycles of an ED visit are studied (see Chapter 4 for more details).

Also, the Emergency Department Benchmarking Alliance (EDBA), created for ED leaders who are interested in the application of ED management and service concepts, is identifying benchmarking trends. The group is composed of approximately 30 of the largest EDs in the country and their lower-census sister organizations, and it now includes 143 hospitals throughout the United States. The EDBA annually performs a benchmarking survey to understand changes in census utilization and performance across the EDs in the United States. EDBA has uncovered best-practice trends that reflect the differences in processes and performance of various ED cohorts. The EDBA has identified the following benchmarking trend studies:

- ED Death Rates Study
- ED Administrative Physician Commitment Study
- Radiology Turnaround Time and Utilization Study
- Wait to Be Seen by Physician in ED Study
- Left Without Being Seen Study
- ED Staffing Study
- Patients per Hour Study

Recently, Press Ganey Associates, Inc., documented the relationship between census and length of stay and the relationship between length of stay and patient satisfaction. In the report Emergency Department Pulse Report 2008: Patient Perspectives on American Health Care, across varying demographics, ED sizes, and geography, patient satisfaction correlates inversely with the time spent in the ED. Figures 1-1 and 1-2 (see page 13) from the Press Ganey report reveal this irrefutable relationship. Note in Figure 1-2 that one factor that can mitigate the effect of long waits on patient satisfaction is the regular sharing of information with patients and their families about their progress through the ED.

**Current Challenges**

The wholesale sharing of census data, demographic data, and operational data by benchmarking hospitals might better enable organizations to predict which patients will come to their ED, when they will arrive, and what services will be required. For example, community hospitals with a large senior citizen population base often see a late evening surge in census, at about 8:00 PM. This is thought to be due to family members paying after-dinner visits to elderly parents or grandparents and discovering them to be unwell. These EDs need capacity for CT scanning, plenty of monitored beds, and a social worker to aid in nursing home placement or home health services. Census and utilization data on individual EDs and on cohort
FIGURE 1-1

Trend in Emergency Department Satisfaction


FIGURE 1-2

Patient Satisfaction by Time Spent in the Emergency Department

Represents the experiences of 1,524,726 patients treated at 1,656 EDs nationwide between January 1 and December 31, 2007

groups can help us to better understand such trends. For example, is the radiology department staffed to maximally meet the ED needs for x-ray studies during the 24-hour ED cycle? Do the schedules of a psychiatric social worker and case manager parallel the need for those services in the ED? Most EDs do not have a handle on these kinds of data, but we can envision a time when such data from large cohorts of hospitals will allow for the establishment of such guidelines.

Defining benchmarks for different subsets of hospitals is a challenge for the coming decade. Jim Augustine, M.D., secretary and treasurer of the EDBA and the architect of a comprehensive database that encompasses more than 5 million ED visits annually, likes to point out that the United States has approximately the same number of weather stations as EDs. While there is constant data sharing by the former to better predict coming weather patterns, historically there has been little data sharing by the latter. This is to everyone's loss. Had the nation's EDs been sharing census, demographic, utilization, and performance data for the past decade, we would be better able to predict trends and identify best practices.

The advent of computerized tracking systems has had a huge impact on QI efforts around the country, and according to Voluntary Hospitals of America (VHA), 44% of EDs have tracking systems (electronic whiteboards that allow ED staff to follow a patient's progression through the ED).5 Most tracking systems have a data repository of some sort that allows the ED to collect data on arrivals, length of stay, utilization, and so forth. Fifty-six percent of EDs have comprehensive information systems.6 No longer must the administrator hand-audit to track data on departmental operations. These hand-audits are giving way to stock monthly reports with census data, time interval data, and, often, resource utilization data, ready for retrospective review. These large data-mining efforts are leading to a better understanding of ED patient flow and operations and are making their way into the literature. Many EDs can get data based on chief complaint. Some EDs with sophisticated tracking systems get reports on patient volumes and TAT, by chief complaint.

A word about information technology (IT) support for ED workflow—with the advent of comprehensive electronic medical records on the horizon, most EDs will see the wholesale revamping of their information technology (IT) support for the ED in the next few years, and we can all expect systems that are fully integrated and user friendly, with increasing ability to cue and provide physician decision support. Physicians will need to be vigilant as new tracking systems are introduced into their work domains to be sure that these systems truly support ED work flow. Ultimately, the complexity of patients and the sheer volume of information required to be managed during an ED visit will mandate systems in which users in different geographic locations will be able to access data from different sites, and data about a patient will be transferred seamlessly and without interrupting work flow.

Another big challenge for ED QI work is devising a standard chief complaint scheme. This is a critical task if we are to flush out best practices for the ED. For example, does chest pain include chest pressure, chest heaviness, and chest tightness? What about stabbing chest pain or pain when breathing? Once again, for adequate benchmarking and the development of best practices, ED leaders and physicians need to define terms and standardize the way different subsets of patients are tracked. In the future, we may have chief complaint-based benchmarks for TAT for chest pain, abdominal pain, toothache, and so on.

Another innovation has been the establishment of ED data repositories. Intermountain Healthcare has a repository called the ED Data Mart that collects data from individual hospital sites and clinics as well as aggregate data for the entire system. The operational data from many tracking systems are stored in a data warehouse for subsequent data mining. Many EDs are in the process of performing analyses on these data and anticipate reporting time and volume data by chief complaint, disposition, resources used, and age, and they expect to be able to cross-reference these data. In addition, attempts at forecasting models using such data are under way. These types of operational data, particularly as they become
available to large hospital cohorts, should enable us to predict with great specificity what our patients will need from us and when they will need it. In addition, we will be able to establish benchmarks and best-practice guidelines for these services and operations.

A number of tasks will catapult EDs forward in the realm of process improvement, including the following:

- Standardization of metric terms and performance measurement
- Standardization of triage chief complaint systems
- Development of a stratification scheme for grouping similar EDs
- Tracking and data mining of operational data with increased granularity
- Development of industry benchmarks using data

When such tasks are accomplished, the opportunities for benchmarking performance will be limitless.

The expected gains in ED QI, operations engineering, and process improvement in the coming decade, as we fully utilize available IT, could be staggering. Whether in an ED with modest IT support or at a cutting-edge ED, everyone will have the ability to see that data management and QI efforts can positively affect patient care. Every ED should be able to measure performance and devise operational improvements based on data. While we may have started in the “QA business” to keep hospital administrators informed, the past two decades have demonstrated that QI programs and performance measures can enhance our ability to care for patients and improve operational efficiency. Remember: Data talk. Are we listening?
References


5. Thompson C., Humphreys K. Nov. 8, 2006, VHA National Meeting, Tucson, AZ.

Additional Resources

General Definitions and Concepts for Emergency Department Performance
These definitions of common emergency department (ED) performance terms have been grouped into four categories: time (points in time), time interval (turnaround time), process, and space.

Time (Points in Time)

- **Arrival time:** The time that the patient first is recognized and recorded by the ED system as requesting services in the department
- **MD contact time:** The time of first contact of the physician (or licensed independent practitioner [LIP]) with the patient to initiate the medical screening exam
- **Decision to admit time:** The time at which the physician or LIP makes the decision to admit the patient (time of bed request may be used as a proxy)
- **Conversion time:** The time at which the disposition is made for a patient to be admitted to the hospital as an inpatient or observation patient, or at which a patient is designated for observation within a clinical-decision area of the ED
- **Discharge time:** The time of physical departure of a discharged patient from the ED treatment area
- **Decision to transfer time:** The time at which the physician or LIP makes the decision to transfer the patient to another facility (time of transfer request may be used as a proxy)
- **Transfer accepted time:** The time at which the patient is accepted for transfer by the receiving facility
- **Left ED time:** The time at which an admitted or transferred patient physically leaves the ED treatment area

**Time Interval (Turnaround Time [TAT])**

- **Door-to-doctor turnaround time:** Arrival time until physician contact time
- **Doctor-to-disposition TAT:** The time from physician notification (generally an emergency physician, but may be the medical staff physicians responsible for patients in the ED) that all pertinent test results are available, until disposition time
- **ED length of stay (LOS) or TAT:** The patient time in the ED, with the following markers:
  - **Admitted patients:** arrival time to conversion time
  - **Discharged patients:** arrival time to discharge time
  - **Transferred patients:** arrival time to transfer conversion time
- **Radiology TAT:** The time from placement of an order for a radiographic test until the time that the results are returned (there will be operational variation here based on institutional processes; real-time radiology and ED wet reads are considered best practices but are not available everywhere; the time from when a radiographic study is ordered until a result is available [that is, used to make decisions about patients] is what is to be measured here)
- **Laboratory TAT:** The time from the placement of an order for laboratory testing until the time that the results have returned

Process

- **Active acuity level:** The Emergency Severity Index (ESI), used for analysis of severity level of patients in the ED, averaged over the department at a point in time or over a time interval (the index would be applied to all patients in the department [because they are utilizing ED resources] even if they technically are admitted and are boarding)
• **Boarding:** The process of holding in the ED for extended periods of time patients who have been directed for admission by a physician with admitting privileges (this process then has certain elements of the admission process and ongoing patient care provided by ED staff members)

• **Boarded patient:** An admitted patient for whom the time interval between decision to admit and physical departure of the patient from the ED treatment area (decision to left ED time) exceeds 120 minutes

• **Daily boarding hours:** The sum of boarded patient minutes in a 24-hour period (divide total minutes by 60 to get hours of care provided by ED)

• **ED boarding load:** A snapshot of the boarded patient load being cared for in an ED, an indirect marker for the complexity and severity of patients being held in the ED (calculated as [number of admitted patients + observation patients + transferred patients]/total ED patient care spaces; it can be calculated at any time and can be reported as a daily maximum value for a period of time)

• **Pediatric patients:** Age cutoff for performance measures to describe and monitor this population needs to be tied to the resources required to manage these patients. However, we recommend that key performance indicators be specific for the pediatric population in the following two age ranges: (1) age 0 to the day before 2nd birthday and (2) age 2 (2nd birthday) to the day before 18th birthday.

**Space**

• **Emergency department:** A 24-hour location serving an unscheduled patient population with anticipated needs for emergency medical care (this definition is provided by the Centers for Medicare & Medicaid Services on an ongoing basis)

• **Psychiatric ED:** An ED developed and held out to the community as one that serves the unscheduled needs of patients with mental health conditions

• **Pediatric EDs:** EDs that are designed to serve the needs of a pediatric patient group (should be defined as those EDs that see a patient population younger than 18 years of age, for more than 80% of the total volume; this designation also should be applied to portions of a multifunction ED that serve this targeted population)

• **ED patient service areas:** Designated “complete patient care service care areas (CPCSAs),” defined as areas in which complete health services can be delivered to patients and families for a specific period of time (does not include hall areas, parking spaces, holding areas)
Quality improvement (QI) work makes sense to physicians and administrators involved with emergency medicine on a number of fronts. Cases can be made for financial advantages, customer service advantages, and regulatory and administrative advantages. There are many reasons to develop and maintain a robust QI program in every emergency department (ED) in the country. It is also worth noting that approximately two-thirds of admitted patients pass through the ED (see Figure 2-1, page 20). The ED is a "good customer" of the hospital and is, in fact, one of the front doors to care.

**Quality in Medicine Defined**
What do we mean by quality in health care, particularly in the ED? Louis Graff and colleagues talk about the triad of quality (see Figure 2-2, page 20).

For ED care, *quality* may have a variety of meanings in the triad shown in Figure 2-2. For example, *service quality* might be reflected by how quickly a patient is seen by a physician, how quickly pain is addressed, and how often information is given about care. *Clinical quality* might be reflected by how quickly a patient is taken to the cardiac catheterization lab during an acute myocardial infarction or how reliable the ED is with getting antibiotics on board in less than four hours for a patient with pneumonia. *Financial quality* would be evidenced by shorter inpatient length of stay (LOS) and, therefore, reduced costs for certain tracked and defined diagnoses. While the broad brushstrokes of what quality in ED care means have been accepted, details of what and how to measure it are still a work in progress.

**Quality Indicators**
The Joint Commission, the Centers for Medicare & Medicaid Services (CMS), and other regulatory and quality organizations are looking for measures of quality in the ED. These organizations seek to mirror what CMS considers quality measures to limit the amount of data tracking required of hospitals. The process is long and complex, with numerous quality organizations making recommendations to CMS regarding performance measures for the ED.

The need for such measures should be appreciated and understood. There are significant lapses and deficiencies in care rendered in the ED. *Sentinel events* (defined by The Joint Commission as "unexpected occurrences involving death or serious physical or psychological injury, or the risk thereof") and other medical errors are overrepresented in the ED. There are astounding regional variations in utilization, and there is a wholesale disconnect between performance and payment. Hospitals can actually receive higher
FIGURE 2-1

Adult Admissions Through the Emergency Department

<table>
<thead>
<tr>
<th>Year</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1983</td>
<td>32%</td>
</tr>
<tr>
<td>1993</td>
<td>53%</td>
</tr>
<tr>
<td>2003</td>
<td>59%</td>
</tr>
</tbody>
</table>


FIGURE 2-2

Triad of Quality

THE TRIAD:

COST EFFICIENCY

SERVICE QUALITY

CLINICAL QUALITY

payments for substandard care and complications. Finally, there is the issue of cost. At the current rate and with current trending, the CMS budget in 2030 will consume an estimated 50% of the entire U.S. budget. Consequently, the move to hold EDs accountable for the care they give by crafting performance measures is reasonable in its inception.

**Existing Indicators**
Initially, The Joint Commission crafted its core measures by using data on morbidity, mortality, and disease impact, choosing clinical guidelines that were well founded in the literature, and choosing areas where lack of adherence to well-accepted clinical guidelines were illustrated. The Joint Commission developed measures for acute myocardial infarction (AMI), pneumonia, and congestive heart failure (CHF). Performance on these core measures (though voluntary) is becoming uniform and is reported for public access on the Hospital Compare Web site, at http://www.cms.hhs.gov/HospitalQualityInitiatives/11_HospitalCompare.asp. This was the earliest venture into the development of performance measures for the ED. Table 2-1, below, lists the core measures currently being tracked and reported by The Joint Commission.

**Potential Future Indicators**
The process of crafting a set of clinical and operational performance measures for the ED for use by CMS is ongoing and involves input from a number of quality organizations and laypeople. This collaboration has included input from The Joint Commission, CMS, the Iowa Foundation for Medical Care, and the Oklahoma Quality Improvement Organization (which organized for CMS a technical expert panel that included physicians and patients). These groups crafted parameters as possible measures of quality in the ED that are both clinical and service quality measures. These measures were joined to work completed by the Physician Quality Reporting Initiative on Clinical Quality Measures, along with input from the Leapfrog Group, the Hospital Quality Alliance, the American Medical Association, the Ambulatory Care Quality Alliance, and the National Committee for Quality Assurance. All recommendations were subsequently sent to the National Quality Forum (NQF), which acted as a clearinghouse for these recommendations, where a final set of endorsed quality and performance measures is found.

<table>
<thead>
<tr>
<th>Measure</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMI 1</td>
<td>Aspirin at arrival</td>
</tr>
<tr>
<td>AMI 6</td>
<td>Beta-blocker at arrival</td>
</tr>
<tr>
<td>AMI 7</td>
<td>Fibrinolytic within 30 minutes of arrival</td>
</tr>
<tr>
<td>AMI 8</td>
<td>PCI within 90 minutes of arrival</td>
</tr>
<tr>
<td>PN 1</td>
<td>Oxygenation assessment within 24 hours</td>
</tr>
<tr>
<td>PN 3b</td>
<td>Blood culture before antibiotic administration when drawn in ED (performance of the culture is optional)</td>
</tr>
<tr>
<td>PN 5</td>
<td>First antibiotic dose within 6 hours</td>
</tr>
<tr>
<td>PN 6</td>
<td>Empiric antibiotic consistent with guidelines</td>
</tr>
</tbody>
</table>

### Table 2-2

**Quality Measures Endorsed by the National Quality Forum**

<table>
<thead>
<tr>
<th>Measure Title</th>
<th>Measure Description</th>
<th>IP Owner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Median Time from ED Arrival to ED Departure for Admitted ED Patients</td>
<td>Median time from ED arrival to time of departure from the ED for patients admitted to the facility from the ED</td>
<td>Centers for Medicare &amp; Medicaid Services</td>
</tr>
<tr>
<td>Median Time from ED Arrival to ED Departure for Discharged ED Patients</td>
<td>Median time from ED arrival to time of departure from ED for patients discharged from the ED</td>
<td>Centers for Medicare &amp; Medicaid Services</td>
</tr>
<tr>
<td>Admit Decision Time to ED Departure Time for Admitted Patients</td>
<td>Median time from admit decision time to time of departure from the ED for ED patients admitted to inpatient status</td>
<td>Centers for Medicare &amp; Medicaid Services</td>
</tr>
<tr>
<td>Door to Provider</td>
<td>Time of first contact in the ED to the time when the patient sees the physician (provider) for the first time</td>
<td>Louisiana State University Health Services Division</td>
</tr>
<tr>
<td>Left Without Being Seen</td>
<td>Percentage of patients leaving without being seen by a physician</td>
<td>Louisiana State University Health Services Division</td>
</tr>
<tr>
<td>Severe Sepsis and Septic Shock: Management Bundle</td>
<td>Initial steps in the management of a patient presenting with infection (severe sepsis or septic shock)</td>
<td>Henry Ford Hospital</td>
</tr>
<tr>
<td>Confirmation of Endotracheal Tube Placement</td>
<td>Confirmation any time an endotracheal tube is placed into an airway in the ED or an endotracheal tube is placed by an outside provider and that patient arrives already intubated (EMS or hospital transfer) or when an airway is placed after a patient arrives at the ED</td>
<td>Cleveland Clinic Foundation</td>
</tr>
</tbody>
</table>

(Continued on next page)

In October 2008, the NQF released five clinical and five operational measures (Table 2-2 above). It is expected that these measures will be compiled into a number of regulatory schemes, including a pay-for-performance scheme being crafted by CMS. Physician leaders and administrators will need to prepare for this type of data reporting, and your QI program will serve you well in the future should you be prepared to track such indicators. At the time of this writing, the 10 measures listed in Table 2-2 have been endorsed by NQF.

The three measures listed in Table 2-3, page 24, were submitted and endorsed by NQF as global LOS measures.
TABLE 2-2 (Continued)

<table>
<thead>
<tr>
<th>Measure Title</th>
<th>Measure Description</th>
<th>IP Owner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pregnancy Test for Female Abdominal Pain Patients</td>
<td>Percentage of women, ages 14–50 years, who present to the ED with a chief complaint of abdominal pain who have a pregnancy test (urine or serum) ordered in the ED</td>
<td>American College of Emergency Physicians</td>
</tr>
<tr>
<td>Anticoagulation for Acute Pulmonary Embolus Patients</td>
<td>Percentage of patients newly diagnosed with a pulmonary embolus in the ED or referred to the ED with a new diagnosis of pulmonary embolus who have orders for anticoagulation (heparin or low-molecular-weight heparin) for pulmonary embolus while in the ED</td>
<td>American College of Emergency Physicians</td>
</tr>
<tr>
<td>Pediatric Weight in Kilograms</td>
<td>Percentage of ED patients &lt; 13 years with a current weight in kilograms documented in the ED record</td>
<td>American Academy of Pediatrics</td>
</tr>
</tbody>
</table>


The Financial Case for Quality

Health care is a service industry and can be expected to become increasingly competitive in the coming decades. Baby boomers will utilize health care services in unprecedented numbers, and most will be insured and have discretion in terms of where they go for services. In addition, as patients age, the complexity of their health care increases. This means that in the ED, we do more to and for aging patients. For example, the Emergency Department Benchmarking Alliance found through an unpublished audit of its members that the number of computed tomography scans of the abdomen increased by 250% over a five-year period, and the number of magnetic resonance imaging scans increased by 400% for some of its tertiary care members between 2000 and 2005.

Complex patients require workups that are more complex and higher utilization of imaging and other hospital resources. Only organizations that are mindful of such trending will be able to efficiently manage the care of these patients.

The average ED in the U.S. now sees 40,000 visits a year and has a 3% walkaway rate.¹ By improving patient flow through quality initiatives, the walkaway rate typically falls (see more about this relationship in Chapter 5). In addition, the average ED admits 13% of patients, which generates on average $7,500 of profit for the hospital. The average charge per ED visit is $500. If an ED reduces its walkaway rates to 2%, increases in revenue can be expected (see Figure 2-3 on page 24).
### TABLE 2-3

**Three Measures Submitted by CMS to NQF for Endorsement**

<table>
<thead>
<tr>
<th>Measure</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ED-001-08 Inpatient</td>
<td>Median time from ED arrival to ED departure for admitted patients</td>
</tr>
<tr>
<td>ED-003-08 Inpatient</td>
<td>Median time from admit decision time to ED departure for admitted patients</td>
</tr>
<tr>
<td>ED-002-08 Outpatient</td>
<td>Median time from ED arrival to ED departure for discharged patients</td>
</tr>
</tbody>
</table>

All three measures have been endorsed by NQF.

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**The Customer Service Case for Quality**

From a customer service perspective, quality initiatives afford advantages in many arenas. Departments with strong traditions of QI work frequently implement standardized processes and protocols. The standardization is typically evidence-based, which can be expected to result in better efficiency and improved clinical outcomes. With data transparency, consumers are increasingly aware of the performance of hospitals on standardized initiatives. With national databases posting performance and the publication of the Institute of Medicine’s 1999 report *To Err Is Human,* the public awareness of quality issues in health care has been heightened, and the bar has been raised.

Particularly, EDs with strong QI cultures are ever mindful of time measures of performance. Nothing reflects this mindfulness better than the time it takes for patients to see physicians (that is, the door-to-physician time). When the departmental culture drives the staff to use every means possible...
to see patients in a timely fashion, all kinds of good things happen to patients and to the department. Patients are more satisfied, and when they are more satisfied, they are more likely to be compliant with medical instruction. When the door-to-physician time is short, patients are less likely to leave without being seen by the physician. When the intake process is smooth and efficient, time-dependent clinical goals such as door-to-catheter time for acute cardiac patients and door-to-antibiotics time for pneumonia patients are easier to meet.

System fixes and standardization help improve both the quality of patient care and the reliability and safety of health care. (This issue will be discussed more in Chapter 10.) Currently, health care is not a high-reliability industry. In fact, it is currently more dangerous to check into a hospital for routine surgery than to go bungee jumping or mountain climbing. However, this book demonstrates that the road to quality, reliability, and safety is a three-lane highway, with all three lanes headed in the same direction.

In short, the case for QI in the ED is an easy case to make. From patient satisfaction, administrative, financial, and patient safety perspectives, it makes sense. It also makes sense to ED staff.
References


