AHRQ Patient Safety Metrics	Q1	Q2	Q3	Comment
Failure to Rescue				At Benchmark, continuing to investigate10%
Infection Due to Medical Care				Strong Performance
Post Operative Hip Fracture				Zero events this quarter
Postop Hemorrhage or Hematoma				New anticoagulation protocol in place
Postoperative PE or DVT				Investigating possible improvement
OB Trauma - C Section				Investigating possible improvement

Benchmarking Basics

A RESOURCE GUIDE FOR HEALTHCARE MANAGERS

91%
92%
100%

Leapfrog	Q1
CPOE	
ICU	
Volume	
Patient Safety Practices	

Medicare	Q1	Q2	Q3	Comment
Heart Failure				Strong Performance, not in
Acute Myocardial Infarction				Met top 10% this quarter
Pneumonia				Improving
Surgical Infection Prevention				New Measure, at benchmark

Cynthia Barnard, MBA, MSJS, CPHQ

71%
82%
100%

Best Practice
Above Benchmark
At the Benchmark
Below the Benchmark

Table of Contents

Table of contents

Figures

The basics

What is benchmarking?

"Benchmark" is a term originally introduced into the English language in the 19th century to refer to a technique used by land surveyors to ensure that each time they measured they would do so reliably, based on the same reference point—the "benchmark."

So one meaning of "benchmark" is *"to measure consistently, with the same methodology."* This traditional meaning is still tremendously important today, and failure to recognize this is one of the great pitfalls in benchmarking.

A second meaning of "benchmark" focuses on the reference point. It can be a verb, meaning *"to compare to the best"* or a noun, meaning *"to be the best."* For example, many people may agree that The Ritz Hotel is the pinnacle of service, the benchmark to which other services may be compared.

However, in common usage, "benchmarking" often also means simply *"to compare to the performance of a relevant group."* It is frequently the case that we do not have access to specific process and outcome data from a "best"

performer, but we may have data on overall performance (average, median, etc.) of a group that we consider a reasonable comparison.

An important third meaning of "benchmark," which is often overlooked, is ***"to compare the steps or processes by which an outcome is achieved."*** All too often, we seek to benchmark to a result, and do not realize that a detailed understanding of the process that produces that result is vital to make effective use of any data on results.

So, benchmarking means

MEASURE: Measuring consistently, with the same methodology,

COMPARE: Using a "best performer" or performance of a relevant group as a comparison,

ANALYZE PROCESS: Focusing on understanding the relationship of process to results so we will know how to improve. (See Figure 1.1.)

Figure 1.1 | **Measure, compare, analyze**

Measure consistently

Fall rate

Numerator = Number of patients who fall*
Denominator = Number of patient days according to census

**_* Fall = unplanned descent to the floor, with or without staff
present/assisting (always use consistent definitions)_**

Compare to best performer

Net operating income

Top performer in our market area = 7.2%
Our performance = 3.1%

Analyze process to achieve results

**Key process insight for process to assure smoking cessation
counseling is provided**

 * Pop-up in electronic medical record at admission in Nursing Assessment
 * MD must also confirm during H&P
 * Automatically generate consult to smoking cessation counselor

Quality in healthcare is generally described in terms of structure, process, and outcome.[1] Any of these three dimensions may be evaluated through benchmarking. However, these measures can be complex to obtain and use reliably.

Structure is measured by counting or describing the environment in which a process occurs. "How many?" is a common question in the structure domain. How many beds, machines, people, square feet?

Process is measured by defining the policies, steps, or rules to accomplish a goal. "What happens?" is the question here. What happens to a specimen, medication, or patient moving through the system? Who performs which role, and when?

Outcome is measured using clear definitions of "what was produced" at the conclusion of some process steps. Outcome can be life or death, timely access, accurate information, completion of an activity without an undesirable complication or error, or improved patient function. Sometimes it is not possible to draw a bright line directly from process to outcome, as with mortality; other times it is quite easy, as with the outcome "correct medication delivered to correct patient."

Sometimes these need to be considered together. For example, it often makes no sense to compare outcomes without some attention to structure—you would not compare "mortality rate" between a pediatric community hospital and a hospice.

You can benchmark internally as well. If you have two medicine nursing units with similar types of patients, you might compare length of stay, clinical outcomes, and nurse staffing between them. If your multispecialty group practice

has several pediatrics offices, you might evaluate productivity, patient/family satisfaction, wait times, and immunization rates in the offices to determine which office is the leader. It is important to note, however, that these internal comparisons will not tell you whether the "best" performer in your organization is actually doing well compared to *potential* performance as evidenced by others in the community.

Similarly, you might try to benchmark an appropriate supply of computed tomography (CT) scanners for a hospital (a measure of structure). You could simply count the CT scanners at each hospital in town, but at the end of that effort you still would not know the "right" or "best" supply number for your hospital. You would probably want to know more about the outcomes that hospital achieves, e.g., "days to next available appointment for a CT scan," or "minutes of productive use of each scanner per day" and "throughput of number of patients per scanner."

In other words, the choice of what and how to benchmark depends on the question you are asking. ***Most often, effective benchmarking requires attention to all three dimensions of structure, process, and outcome.*** One of the key pitfalls in the use of benchmarking information is a failure to recognize the importance of this insight. As you work through the chapters in this book, you will see consistent attention to all three.

What structures, processes, and outcomes should I consider benchmarking?

As with any measurement related to performance improvement, the most important step is in selecting your area of focus.[2] Time and energy are among your most precious and scarce resources, and allocating them unwisely is a waste. In Chapter 2, we will present a step-by-step approach to thinking about benchmarking as a tool to accomplish your organization's goals.

It is essential to benchmark quality measures that are published and available to your consumers or patients, and those that are likely to be published in the future. The source of these metrics may be Medicare, JCAHO, your state department of health or other state agency, or a high-volume payor. It is usually important to benchmark customer or patient satisfaction.

The next tier of measures to consider is those endorsed by high-profile quality and patient safety organizations such as the Institute for Healthcare Improvement, the Leapfrog Group, and the National Quality Forum. Beyond these, you may want to consider benchmark measures specific to a particular improvement collaborative, consortium, or other effort related to one patient population or process.

Finally, you will identify specific problem areas in your organization for which you need to go out and seek data for benchmarking. These topics are addressed in more detail in Chapters 2 and 3.

> *High*
> *strategic*
> *priority*
>
> ↕
>
> Medicare, JCAHO, state mandates, high-volume payors
> Patient/customer satisfaction
> High-profile quality and patient safety advocacy organizations
> Private subscription membership data systems
> Specific collaboratives and consortium efforts
> Operational problem areas requiring research and investigation
>
> High
> *operational*
> *priority*

What's the difference between benchmarking and evidence-based practice?

Benchmarking is the process of gathering information about processes and performance levels at comparable organizations, and carrying out a thoughtful analysis to determine how that information can support improvement in your organization.

Evidence-based practice is the process of learning what clinical or operational methods have been demonstrated to be associated with optimal outcomes, and establishing procedures to see that those methods are used consistently and appropriately in your organization. (See Figure 1.2.)

Figure 1.2	Benchmarking vs. evidence-based practice

	Benchmarking	Evidence-based practice
Question	**How do others do this?**	**What is the proven best process?**
Type of study	**Exploratory, operationally focused, sometimes anecdotal**	**Research-based, rigorous standard of proof**
What is compared	**Emphasis on similarity of organizations**	**Emphasis on similarity of clinical populations or operational situations**
How goals are set	**May set target for performance at the median, best practice, or some other level**	**Typically seek to achieve consistent practice for all at-risk populations**
How it is done	**Public data, collaborative, or survey**	**Clinical research, controlled trials**
Data produced	**Averages, percentiles, best demonstrated practice; inferences that a given process is associated with a given result are permitted**	**Rigorous statistical analysis limits outcome to proven associations**

 Benchmarking Basics: A Resource Guide for Healthcare Managers

Benchmarking and evidence-based practice can work very well together. For example, there is evidence demonstrating improved clinical outcomes for intensive-care-unit patients if glucose levels are tightly controlled. However, such evidence does not tell us **how** successful organizations have been able to implement daily monitoring, orders, and protocols to achieve good control.

A benchmarking project can be the ideal way to find out how to build a successful operational system to ensure that evidence-based practice is routinely provided for all appropriate patients. We will see many examples of this throughout this book.

Who does benchmarking? What do I need to get started?

Benchmarking is usually carried out by the organizational departments that are most familiar with quantitative and analytic work. These departments might include the quality or management/industrial engineering functions in a healthcare organization. Effective, reliable benchmarking requires attention to quantitative methods, data limitations, and process tools such as flowcharting—and these skills tend to be found in such staff departments.

However, many effective operational managers have learned to engage in solid benchmarking work with excellent results. The process can be relatively low cost, because more and more data can be found publicly, through literature and by networking. Of course, it is a good idea to identify technical resources to support you if your background in statistics, data analysis and presentation, spreadsheet software, or process mapping is a little weak.

Conversely, it is impossible for any quality or engineering department to perform useful benchmarking without a profound commitment from the operational areas involved in the process under study. The best technical work is useless if the organization is not committed to the project and convinced of the credibility and usefulness of the benchmark data and process.

Overview of the benchmarking process

Benchmarking is one way to implement a quality-improvement process. Thus, it follows the same steps that any other QI process follows. If you use a Plan-Do-Study (or Check)-Act cycle, you can apply this to benchmarking as well.

In this text, we use the JCAHO's Plan-Design-Measure-Assess-Improve cycle. You can easily adapt this to the methodology in use in your organization.

The steps that are unique to benchmarking include the selection process for the benchmarking group and metrics, and the specific analytic methods you will apply to make effective use of the findings. These are addressed throughout this book. Briefly, they include:

- Establish the strategy, priority, and leadership team

- Select the benchmarking group and

- Select the benchmarking metric(s) (these two steps are performed in tandem)

- Confirm that you have appropriate resources for the effort

- Define the data collection plan

- Collect the data and resolve problems

- Analyze the data with specific attention to the nature of the benchmarking group and metrics

- Design and implement improvement and repeat measurement efforts

At each phase, you are focusing on specific questions you expect to answer (see Figure 1.3):

- *What do we want to learn?*

- *What exactly will we compare to others?*

- *What is going on in our own organization?*

- *How good do we want to be? How good can we be?*

- *How do **they** do it?*

- *How will we perform better? How will we know we are doing better?*

Figure 1.3 **The benchmarking process**

Strategy, Priority, and Leadership

PLAN

- Area of focus
- Peer group
- Type of metric
- "What do we want to learn?"

DESIGN

CRITICAL PHASE
- Group
- Metrics
- Resources
- "What will we compare?"

MEASURE

- Rigorous
- Limited by benchmark group
- "What is going on *here*?"

ANALYZE

- Sensitive to limitations
- "How good do we want to be/ *can* we be?"
- "How do *they* do it?"

IMPROVE

- Repeat measures
- Learn from others' process
- "How will we perform better? How will we know?"

How benchmarking fits with JCAHO, CMS, and other organizations' expectations

Benchmarking is implicitly required under current JCAHO and CMS standards. Both agencies publish quality data about providers, which permits the public to compare providers. Both of them indicate in their comparisons whether an organization is performing "as expected," better, or worse, implicitly assuming that the industry will respond by seeking to improve performance.

JCAHO standards require that leaders evaluate performance in important processes and outcomes, including internal comparisons over time and external comparisons with other sources of information when available. When comparative data are available, they are used to determine if there is excessive variability or unacceptable levels of performance. (Standard PI.2.10, *CAMH* 2006).[3] Furthermore, JCAHO notes that good process design reflects the use of currently accepted practices and incorporates current safety information and knowledge such as sentinel event data and National Patient Safety Goals, and incorporates relevant performance improvement results."[4] All of these require comparison or benchmark data to be meaningful.

The JCAHO also requires that accredited organizations in some programs (e.g., hospitals) contract with a performance measurement system for "core" and other measures as defined by the Joint Commision. The system must be able to generate, over time, internal comparisons of organization performance and external performance comparsions among participating organizations at comparable times, and data must be submitted quarterly to the JCAHO. Some of these data are published publicly as part of the Quality Check reports on the JCAHO Web site. The data are also used by the JCAHO, along with other sources of information, to define priority focus areas to guide

surveyors to areas of strength and potential need for improvement when they conduct a survey.

The JCAHO standards related to patient safety all clearly assume that the provider is paying attention to both conceptual information and detailed data regarding what is known about patient safety risks nationally. The JCAHO sentinel event alerts frequently include references to literature describing the evidence to support a particular recommended best practice.[5]

The Medicare Conditions of Participation are concise and less prescriptive, noting (for hospitals) that "the [QI] program must incorporate quality indicator data including patient care data, and other relevant data, for example, information submitted to, or received from, the hospital's Quality Improvement Organization." As most hospitals are accredited by JCAHO or another body, Medicare "deems" selected accreditations with their unique requirements to be equivalent to Medicare certification, and merely conducts spot checks to ensure that accreditation is fulfilling the minimum Medicare standards as well. (For home health agencies, the OASIS data set and, for nursing homes, the minimum data sets are mandated through the Medicare Conditions of Participation.)

Summary

Benchmarking refers to measurement, comparison, and process understanding to achieve an improved or even "best" (optimal) level of performance in a structure, process, or outcome for your organization. It is implicitly required by JCAHO and CMS and is likely to be demanded by sophisticated leadership within your organization. In a competitive environment, benchmarking is essential to ensure that your organization delivers healthcare services that are efficient, effective, patient-centered, timely, safe, and equitable.[6] In order to be meaningful and helpful, benchmarking must be performed with sensitivity to the important goals in your organization, and through effective and accurate selection of comparisons and metrics.

Endnotes

1. A. Donabedian, "Evaluating the Quality of Medical Care," *Milbank Memorial Fund Quarterly: Health and Society* 44, no. 3; pt. 2 (1966):166–203.

2. See C. Barnard and J. Eisenberg, *Performance Improvement: Winning Strategies for Quality and JCAHO Compliance*, 3rd ed. (Marblehead, MA: HCPro, Inc., 2004).

3. Joint Commission on Accreditation of Healthcare Organizations' *Comprehensive Accreditation Manual for Hospitals.* (Oakbrook Terrace, IL: JCR, Inc., 2006).

4. Ibid.

5. *www.jointcommission.org/SentinelEvents/SentinelEventAlert/*

6. The six domains of quality defined by the Institute of Medicine in its report *Crossing the Quality Chasm: A New Health System for the 21st Century.* (Washington, DC: National Academy Press, 2001).

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