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Bringing Metrics to the Table: Advancing the Metrics Trend to Planning, Design, and Construction

Abstract | **Article**

In the field of healthcare operations, the use of benchmarking is commonplace. Hospitals measure benchmarks such as patient satisfaction, patient length of stay, and staff retention. They interpret the results and take action accordingly. The information drives decision making and progress on a daily, weekly, and monthly basis.

Our clients have mastered the art of measuring for results. Has the healthcare planning and design industry done the same?

In the complex field of planning, design, and construction for healthcare facilities, this progressive approach is a welcome addition to the process. Whereas benchmarking involves operational and dynamic data (e.g., nursing ratios, cost per patient, patient transfers, and satisfaction rates), metrics are largely made up of fixed, static data. These are the data that architects and planners can use to help measure results for clients.

Data collected during planning—from square footage comparisons to construction dollars—can be used in many ways. In addition to looking at projects with similar scopes, the project team can review data that illustrate trends and statistics of the facility, helping them understand the project and make well-informed decisions. Facts and figures can serve as visual comparisons to illustrate points and project credibility to decision makers. Metrics could even be compared to operational benchmarks to see whether related corollaries, patterns, or stories exist. For example, does room square footage drive patient satisfaction?

The evidence-based design approach explores and documents the connection between design and operational and healing outcomes, and metrics provide a foundation for quantifiable results. As evidence-based design becomes integral, metrics will provide a valuable tool to create optimally operational and effective facilities.

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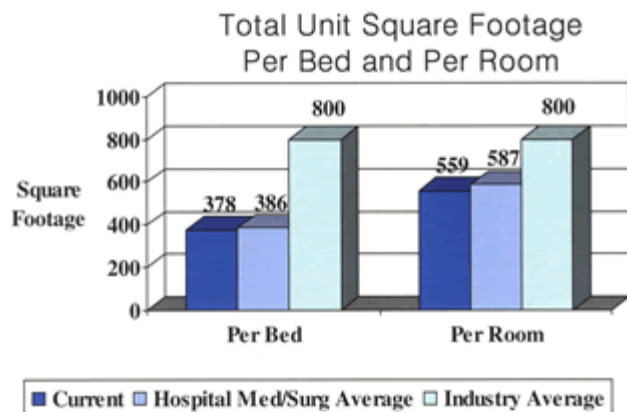
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Categories of Metrics

By working with large medical centers in the Midwest, Southeast, and Great Plains, facility planners at BSA LifeStructures have developed metrics for a variety of healthcare facilities. Their initial conclusion is that metrics can be developed for two major categories, each of which allows various comparisons.



1. ***Metrics focusing on one hospital***
 - a. ***Comparisons of department to department***
 - b. ***Comparisons of department to hospital average***
2. ***Metrics focusing on hospitals with similar characteristics***
 - a. ***Comparisons by function (e.g., of all cardiology centers or all cancer centers, which can be further broken down into units such as surgery, interventional, and patient rooms)***
 - b. ***Comparisons by region and similar size.***

Metrics can then be collected for specific elements, including cost, travel distance in nursing units, size, square footage allocation, percentage of support space, and so on.

Benefits of Metrics

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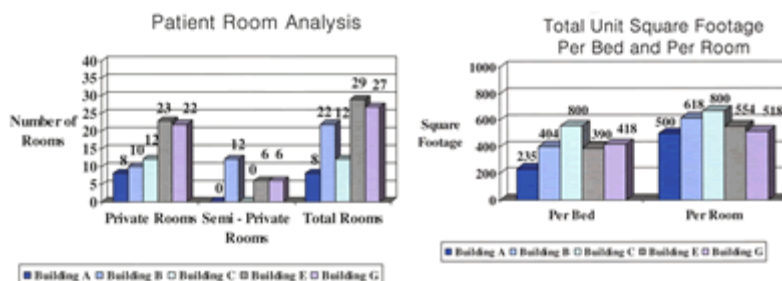
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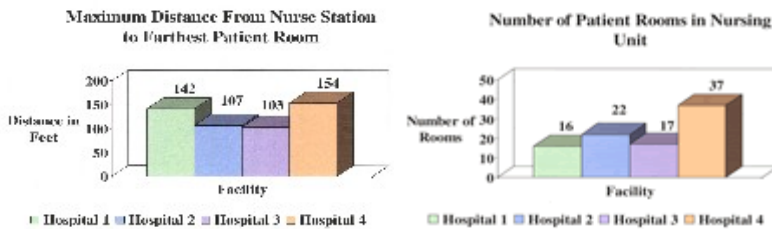
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Metrics provide several benefits to healthcare organizations according to the type of information collected.

- 1. Justifying projects.** Metrics provide a way to quantify something that is subjective. Facts and figures can serve as visual comparisons to help illustrate points and project credibility to decision makers. Data can be brought to the board room to easily demonstrate that changes to a facility are not only desired but also needed.
- 2. Justifying investments.** Metrics can help determine an appropriate project budget and can help “right-size” a facility. For example, the process can help justify spending more money on systems engineering if a return is realized from increasing the energy efficiency per square foot.
- 3. Making well-informed project decisions based on trends.** In addition to looking at what was done on a previous project with a similar scope, the project team can review comprehensive data that illustrate trends and statistics of the specific facility, helping them further understand the project and make well-informed decisions.



- 4. Building better business.** A healthcare organization can see how it compares to its competition. For example, if a healthcare organization wants to build a new cancer center, metrics can illustrate the sizes and costs of other comparable facilities. Metrics can help open the eyes of an organization and illustrate nationwide trends.
- 5. Saving money and increasing patient satisfaction.** Information on unit size and travel distances can be layered and compared to operational benchmarks such as nurse retention, efficiency, and satisfaction to see whether there are any related corollaries, patterns, or stories. For example, metrics that collect staff travel times can shed light on the opportunity to save costs and steps by reducing travel time. The size of a patient room can be correlated to the satisfaction of the patient, family, and caregivers.



6. ***Developing consistency among different hospitals within healthcare systems. Healthcare systems can look at data from several of their facilities and see whether consistencies or inconsistencies exist. They can then determine whether anything needs to be altered and why.***

Challenges and Critical Components

Studying and using metrics offers many challenges because of the nature of the data and the evolving field of healthcare. Here are a few things to keep in mind

1. ***Sweat the details. Even though healthcare facilities may be similar in some ways, there are always differences that need to be considered. Data should be revisited and refined often, and differences in the facilities must be noted along with the data. For example, a unit with a centralized nursing station might be compared to a unit with both centralized nursing stations and stations in each patient room. For the data to be accurate and to eliminate any false conclusions, it is necessary to document the differences.***

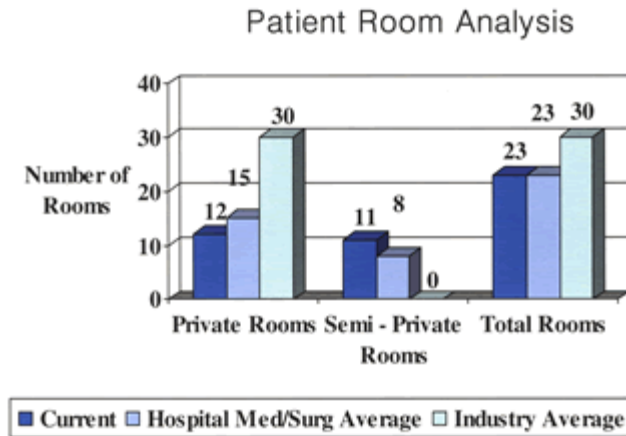
Another example relates to oncology centers, which can offer a variety of services that affect the metrics. A cancer center could be all radiation oncology, all medical oncology, or both. That distinction drives how the metrics are grouped and categorized.

2. ***Consider the generation gap. Facilities designed in the 1970s differ greatly from facilities built in the 1990s. The differences in older facilities must be carefully considered when collecting metrics. Sometimes additional metrics, such as industry averages from those timeframes, will be necessary to make sure the data are as accurate as possible.***
3. ***Look at the results overall. Since every facility offers its own distinct functions and services, it is important to keep in mind that the comparisons are general, overall comparisons. Metrics are not developed for one to look at the results and make grand assumptions based solely on the data. The anomalies and unique characteristics of the facilities should be noted and considered when reviewing the data.***
4. ***Maintain professional conduct regarding confidentiality. Professionals have a responsibility to keep facility's specific information confidential. While some information is public knowledge, some is not. It***

is essential to find the balance between useful information that can be shared and information that should not be disclosed.

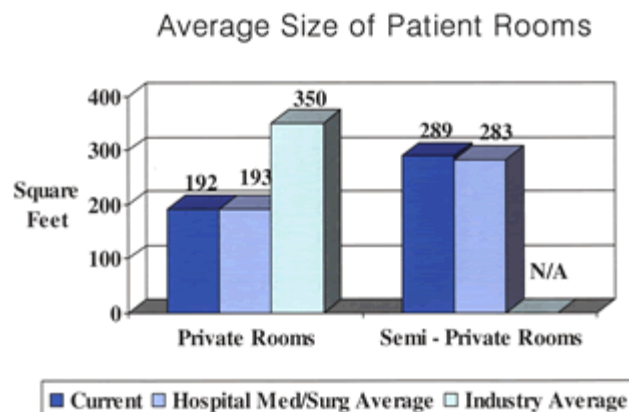
5. **Communicate the benefits of metrics to all hospital team members. It is important to demonstrate the benefits of metrics to members of the facility management team so that**

metrics are not perceived as a waste of time and resources. This relates to the benefit of building better business. For example, metrics could demonstrate that ICUs are generally not semiprivate anymore. It helps to show data illustrating this to an institution with semiprivate rooms to show the facility personnel that the paradigm has shifted and changes need to be made.



6. **Realize the importance of resourcefulness. Even though some firms have performed hundreds of projects for healthcare organizations, sometimes it is necessary to obtain information from facilities they did not design. That is when the firm needs to be resourceful. Projects featured in publications can provide a wealth of information on square footage, number of beds, and cost. However, figures should be looked at with caution. The project cost could include equipment or it might include only construction cost. Square footage could be net, not gross. Another option to obtaining information is to contact the owner of the facility and offer to share the information. However, as mentioned previously, it is essential to be cautious regarding confidentiality.**

7. **Combine fresh eyes with seasoned**



professionals. Working with metrics takes both new perspectives and experienced insight. It requires a

team approach for consistency. A planner who does not have a connection to the project can see things without bias and may see additional relationships. At the same time, it takes an experienced person with an in-depth understanding of the thought behind the design to provide input on the specifics, explain anomalies, and provide insight on space allocation. Both of these resources are essential to validate and add value to the process.

The Link to Evidence-Based Design

Metrics are an essential part of evidence-based design, which has become integral to the design process. More and more hospitals and architects and planners across the country are embracing the evidence-based design approach by exploring and documenting the connection between design decisions and operational and healing outcomes.

Metrics provide a foundation for the quantifiable results needed by evidence-based design. The cornerstone of evidence-based design is data that goes beyond the information typically gathered during hospital design programming. It focuses on operational issues such as understanding the current caregiving environment from a functional point of view and learning how the hospital or specific department wants to function in the future. It also calls for an intense look at issues such as throughput, functional adjacencies, location of support space in relation to patient areas, technology, staffing levels, and care procedures. This approach can help identify where the non-value-added steps exist in the care-delivery process and where bottlenecks occur. Results on elements such as patient falls, patient transfers, retention, and productivity can be compared to the metrics, and this information can also serve as a basis for design decisions.

An evidence-based design approach has special relevance in healthcare architecture, where both operations and design must work together to meet healthcare delivery objectives in a dynamic environment. Metrics are one more tool that healthcare planning and design firms should use to drive results through the architectural and planning design process.

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