
Successful Database Benchmarking: What Do We Need?

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ABSTRACT

As the technology of on-line healthcare information advances, hospitals and data vendors are faced with a variety of challenges. What are the accepted standard fields? What kind of DSS system should we use? Which system will give us the information we need? Does the server have enough space to handle increased business? Healthcare organizations are now looking at comparative information through the Internet instead of buying data and loading it onto their own servers. They are asking: Are servers necessary now? Is the software user-friendly? How current and accurate is the information being offered? How secure is the Web site it is on? Data vendors are asking: Is our server large enough to handle the volume of data we now have and as the company grows? How do we make sure the data are accurate? How do we keep the data secure? This article educates and informs healthcare facilities about the factors that should be considered when comparing their own data with those of other hospitals in an on-line benchmarking database warehouse.

KEYWORDS

- Benchmarking
- Decision support system (DSS)
- Data security
- Data integrity

Data mining, benchmarking, peer comparison, and relational comparison are just some of the many definitions of the term *comparing data*. Many phrases have been coined to define analyzing hospital data internally and analyzing one hospital's data against those of its peers. The phrase used is unimportant, but the technique is. Because of the privacy requirements of medical information, open use of benchmarking in the healthcare industry has been slower than in other industries. Healthcare facilities are hesitant with their data when they border

with government regulations. Now, however, healthcare facilities must do something to give them the niche they need to stay ahead financially and competitively. Successful database benchmarking now becomes relevant to the stability of the organization. After the decision to benchmark has been overcome, the goal of accomplishing the function begins.

What Do We Need?

What do we need? is probably the most difficult question facing a healthcare facility that is entering the benchmarking arena. This single question can, and sometimes does, go partly or even completely unanswered for weeks, months, even years. No one answer applies to all facilities, but some simple steps, if followed completely, will make this monster of a question a little more tame.

The first step is to make a list containing, in detail, everything you will ever want to look at to help your hospital succeed. Polling all of the department managers on what information they would want or need to look at within their own department is a good place to start. You also want to make sure that you have accounted for your facility's need for analyses in the future. After you have all of the information in a list, prioritize it by what you feel are the most important elements—the different tasks or information that you will want analyzed. The list may contain financial, clinical, and even operational information that will need to be compared against. You may be surprised to find out what is at or near the top and bottom of your list. The list size will vary by the size of the facility or health system; the larger the system, the longer the list. Review the list carefully because this will be the base for deciding what system will be a good fit for your facility.

You should refer to this list each time you are considering the purchase of benchmarking software or rights to a data warehouse. This is not to say that your list will remain stagnant but that you should always have the list readily available for review. The tool you purchase should fall in line with your priorities. If, for example, your top priority is to lower your costs for procedures in your cardiac department, you will want a benchmarking database that shows you costs at the “procedure” and “charge code” level of detail. If your priority is to reduce the length of stay after orthopedic surgeries, you will want to look at a benchmarking database that compares resource consumption by each day of stay in detail, compared to your hospital. You may want both of these options and more when deciding on a vendor. The point is to make sure you have a clear understanding of what your needs are.

Do We Need a Server?

You should also consider whether you want to purchase data and then go through the process of loading them onto your own server time after time or whether you want to use an on-line database warehouse to do your analysis. A server-based system is hardware that you own or lease and have at your

facility. An on-line database only requires that you have access to the Internet and the correct Web browser. On-line databases are becoming more and more popular because of the convenience they offer and the lower overhead costs associated with using them. Growing numbers of vendors are moving toward making the on-line database option available to healthcare facilities. Picking the right vendor can be difficult. Research the vendor fully that you are considering; request a demonstration of the product to ensure that it has the ability to perform the analysis you are looking for. Also make sure to check for ease of use. Reading an analysis system should not require an advance degree.

Which Data Vendor Will Give Us the Information We Need?

After you have decided on the benchmarking functionality you are looking for, the task of finding the vendor that offers these capabilities begins. Many healthcare benchmarking data vendors are available, but finding the best vendor for your facility is important; doing thorough research is the best way to maximize your chances of doing so.

You can purchase suites, modules, bundles, or all-inclusive packages, whichever suits your needs best. Generally, there are three types of data to analyze: clinical, financial, and operational. Choose a vendor that offers the types of analysis you wish to perform in both the short and long term. Searching on the Internet, reading advertisements in healthcare magazines, speaking with your current vendors, and inquiring with other facilities at trade shows and seminars are great ways to start. Research on the Internet will unveil dozens of vendors offering a wide range of functionality. Some have a narrow scope of products offering only a clinical or operational type of comparison; others, like Premier Healthcare Informatics, offer an entire range of benchmark comparison packages. The point is that comparing what a vendor has to offer with what your needs are now and in the future is one of the most important steps in determining who is the best for your facility. This will narrow the list of vendors to review for the capabilities you seek.

Keep in mind when reviewing potential vendors that their service can only be as good as your data. If you do not have a DSS system, or if you store only certain information in your system, you should not expect analysis beyond what you can do now. A misconception is that you will now be able to benchmark against a world of data with a new vendor. The truth is that you will, as long as your own data include the world. If your data are not accurate or if information is missing, you will not be able to perform complete, detailed analyses.

What Kind of DSS System Do We Have—or Need?

If you are a decision maker, knowing what you currently have or what you should purchase is as important as knowing what you want to benchmark against. Many times decision makers are not fully informed about what they

may already have available to them. It has been my experience that healthcare facilities purchase software or data rights and then never move forward with implementing what they have. These projects never get off the ground or stall out during implementation for many reasons. Budgets are cut, priorities are changed, the facility is purchased; or something as simple as a staff change can devastate a project quickly. Taking an inventory of what you have and what your system can do may help more than you think.

A DSS system can and does help you organize your data. Many DSS systems are fully functional, housing detailed patient-level information, payment and general ledger information, and operational (employee-type) information. Of course the system is only as good as the information in it. Make sure that you have or get a DSS system that will contain the information you want to benchmark against. For example, if you want to benchmark against cost per case, you should make sure you have the ability to include cost data in your system. The statement, "This system is better than that one," can only be made by the facility conducting the review. Varied functionality between systems will determine which DSS is best for your facility.

What Are the Accepted Standard Fields?

Standard fields are the required pieces of information or fields needed in order for your facility to use an on-line database. Every hospital has to submit these required fields to the vendor; they are what you will be comparing against in an analysis. For example, patient John Doe's record has his medical record number, insurance company name and number, charge codes, diagnosis codes, sex, date of birth, and so on. These and many other fields are used to benchmark against other facilities in determining a course of action. So what are acceptable standard fields? A good way of looking at what your facility would consider acceptable standard fields is to consider whether you will ever want to look at that information comparatively. You may not consider some of the standards relevant as of yet, but do not be too quick to discount them. A standard field like "sex" may not be of interest to you today, but tomorrow you may want to compare the length of stay for men or women for a given procedure. Comparing your priority list to the standard fields you are being asked to submit to a vendor is a good place to start considering what you will need.

Does My Server Have Enough Space?

If you decide to purchase benchmark data to load internally on your own server, one of the most important questions to ask yourself (and your IS department) is whether your hardware or server can handle the continuous addition of external data over an extended period of time. If the answer you receive is not clear, you may want to consider an on-line database. An on-line database uses the vendor's server and other hardware instead of yours; an

advantage is that you will not have the added overhead expense for hardware and maintenance for that hardware. Many vendor warehouses only require that you have an Internet connection and a standard Web browser. In considering an on-line database, you need to think about where technology is headed and whether or not you want to keep up with it.

Is the Software User-Friendly?

Assuming you go with an on-line database, you need to make sure that the vendor Web site is user-friendly. Even though many vendors only require that you have an Internet connection and a Web browser, you will still need to learn how to use the site and run reports from it. And knowing how to use a Web browser is not sufficient. You still need to use the program or software on the vendor's Web site. Demonstrations of the software's capabilities can help determine its ease of use. Check with the vendor you are considering to find out the particulars such as whether a pre-purchase or free demonstration is available.

The speed and functionality of the site should also be considered when determining user-friendliness. Will I have to run ten reports to get what I want, or will I be able to run one report and drill down, across, or up to get what I want? This is an important question when reviewing vendors and the software they offer. *Drill* is becoming a popular term in the industry; it means getting to more detail. By drilling in a report you may get a little or a lot more information. For example, a cost analysis report by payer could be drilled down to look at the patient types within a payer category.

How Current and Accurate Is the Information Being Offered?

The currency of the information you are comparing to may be important to you. Do you want the data to be no more than a month, a quarter, a year, or two years old? When answering this question, keep in mind that your own data must be ready to analyze for the same time frame. If you want to look at data that are only one quarter old, then you need to make sure that your data are also ready within that time frame.

The accuracy of the data you are looking at is also important. Ask the vendors you are considering what steps they take to ensure that the data are accurate and clean. Find out how many different checks are made to ensure data integrity. Ask for specific examples of data that did not pass an integrity check. Making sure of the accuracy of the data can be very important when deciding on a vendor.

You must also understand that your own database may not be as clean as you had originally thought; minor changes may be needed in order to meet the requirements for data quality before entering a vendor database. For

example, if a required field such as date of birth is left blank in a patient's file that you send to a vendor, the vendor would ask you to supply the missing information as one of the data integrity checks. This may sound like an inconvenience, but you have to consider that the vendor is asking the same of all facilities submitting data that go into that benchmark database. Data integrity checks by a vendor may also help your organization find any potential problem areas with your own internal data.

How Secure Is the Web Site the Data Reside On?

Patient confidentiality is of great importance to healthcare facilities, so security on the Internet needs to be evaluated and reviewed. You want to make sure to have 128-bit encryption on your browser. You also want to ask the vendor you are considering how access is gained. Ask whether an ID and password will be created for you or whether you simply sign up to gain access to the database. This is the type of information you will need.

Data security should be a concern, but researching your vendor and asking detailed questions should ease your mind. No system is completely safe, but you will want to ask what types of safeguards are used to protect your data. Ask the vendor whether a firewall or possibly multiple firewalls would be used. Ask how difficult it is for a nonuser to log in.

So What Do We Need?

What you need depends on what you want. What you need to do, however, is thoroughly research what is available through various vendors, what their plans for growth are in the future, what enhancements they are considering, and what the cost benefit will be. Deciding on a benchmarking vendor should not be taken lightly. You want to make sure that the data going into the on-line database are clean and accurate. You want to make sure the product has the functionality you are looking for now and in the future. You want to make sure your data are safe. You want to make sure that what you are purchasing falls in line with your facility's priorities. In other words, look at your list and compare it to the product you are considering. With all the data vendors available in today's market, you will most likely find one that is a fit for your facility.

About the Author

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