



**Benchmarking &
Business Intelligence:
Harnessing the Power of Information**

**White Paper
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Introduction

On its most basic level, benchmarking puts performance in perspective. In a management context, businesses use benchmarking to identify those areas where they are either under-performing or exceeding the performance levels of their peers. With this comparative information organizations are better equipped to make data-based decisions about quality improvement initiatives, while simultaneously uncovering those success stories that can form the basis of marketing campaigns.

In the last few years, benchmarking has become an institutionalized component of home health. As benchmarks have increased in usefulness and popularity, industry watchers have gained a better understanding of the state of affairs and have applied this information to help navigate through the challenging last few years. More importantly, agencies themselves have grown increasingly adept at using benchmark information to guide their agency management strategies.

Benchmarks by their very nature require that we look backward in time at a snapshot of comparative information—This retrospective benchmark information is critical. But, what if we were also able to use benchmark data to forecast the future? What if we could begin by gaining a better understanding of what “has been,” and apply this information to guide us in our future endeavors? What if we could use this historical perspective as a means of understanding what “might be,” given our current progress, and what “could be,” if the right changes were made?

Forecast the Future?

The idea of using data to look to the future is not as strange as it might seem. It is not that agencies can peer into the proverbial crystal ball to see what is coming and quickly find the sure path to success. Rather, it is that agencies can use data on an ongoing basis to formulate a roadmap that will guide them along a path of their choosing—a path that will likely lead to success.

The secret to making informed business decisions lies in the power of the data that is being collected on a daily basis—for a home health agency, that may include financial, clinical, and operational data, to name a few. Other industries, ranging from automobile manufacturing to telecommunications, actively use their own trended and benchmarked data as the foundation for business decisions and growth efforts. The home health industry is moving into an era when the data needed to make similar decisions is available for the first time.

Businesses have commonly used data to guide decisions since the early 1900s. Some organizations study different working environments to determine which settings result in the greatest employee productivity, others trend and forecast supply and demand patterns as a means of setting consumer prices and projecting future revenue. For data to be used to drive decision-making and forecasting in this way, it must provide a perspective of past and current performance that can be applied to the future.

The Application of Data in Home Health

Every part of a home health agency has an associated set of information gathered on a regular basis that can be used to the organization's benefit. Both external benchmarks and internal data analysis can be applied in each segment to direct changes in a specific department or throughout an organization.

As one example, agencies can study and evaluate clinical practices to determine which activities result in the best patient outcomes. Those practices that are identified as the most effective can be applied across the applicable groups of patients to improve the agency's quality of care and/or efficiency. Another opportunity lies in trending patient admissions and the associated PPS case weights in order to project and plan for potential future levels of reimbursement and expenses.

Business Intelligence, Comprehensive and Creative Data Analysis

Individual pieces of business information, independent from one another, are very useful. The greatest value in information, however, lies in combining different types of data, sometimes seemingly unrelated, to gain a more comprehensive understanding of agency performance and opportunities. The key is cross-referencing facts and statistics to form a backbone of knowledge that will support strategic decision-making—a concept that is generally known as “business intelligence.”

While using data to improve practices and profit has been a popular form of business management for a long time, it is only over the past couple of decades that the most progressive and forward-thinking enterprises have taken this process beyond the traditional format, into the realm of business intelligence. The difference between traditional business information and the relatively new concept of business intelligence can be explained most simply as this—deviating from a standard, narrow form of analysis and being creative in data collection and interpretation.

One example: Traditional *business information* in the supermarket industry may involve understanding revenue and operating expenses on a per day or per month basis. *Business intelligence*, on the other hand, may involve cross-referencing item price with shelving placement to better understand the purchase patterns of customers and how each variable can impact revenue and sales volume.

In essence, *business intelligence* is taking five independent sticks, which alone are simply straight lines, and putting them together to form a star.

Home Health Business Intelligence

The concept of business intelligence easily carries over to the home health industry. It is a matter of having a broader perspective—of agency leaders considering, as a practice, how different parts of their operations are interrelated and affect each other. It is using information to understand how modifying one piece of the puzzle can change the entire picture.

While some of these concepts might be relatively new to home health care, many aspects of this practice are already being used as home health management tools. For example, agencies routinely evaluate how changing visit practices will impact not just expenses, but also staffing ratios, outcomes, and patient satisfaction.

The beauty of business intelligence is that it enables organizations to gain better control over their data, while also making it more meaningful and applicable to their organizational practices by allowing agencies to view the relationship between different types of information—most notably, clinical and financial information.

For example, if an executive were to cross-reference knowledge about the agency's strongest clinical programs and the most financially successful programs, she might find a specialty program that achieves success in both areas. By combining this knowledge with an understanding about community and market needs, this executive could make strategic marketing moves designed to increase market share and expand profitable service lines.

In a changing business environment, this approach can be used to plan and prepare for any financial, clinical, and staffing modifications that may be on the horizon. Furthermore, this approach can be used as a framework to help an agency make good decisions about future directions, organizational changes or expansion opportunities.

An example—By forecasting changes in patient demographics or market needs, an agency executive can use business intelligence to anticipate how these changes will impact patient census, revenue and reimbursement, operating expenses, and

staffing requirements. Another example—If an executive were to evaluate all of the financial, clinical and operational aspects of caring for patients of a particular service line in the agency's market environment, that executive could make informed decisions about that service line. The executive could decide whether or not it would be possible to expand the number of patients in that service line and how that expansion would affect the success of the agency.

Home Health Business Intelligence— A Data-Driven Example

In order to more fully illustrate the ways in which business intelligence can be utilized in home health agency management, we offer the following analysis of Congestive Heart Failure (CHF) patients based on a potential real-world scenario. CHF is one of the top ten home health primary diagnoses, representing approximately 6% of patients nationally. Because of the unique characteristics of this subset, many agencies have set up specialty programs designed to serve the needs of CHF patients. This example is based upon a fictitious agency—Home Health Agency—in the community of Anytown. This example is not designed to exhaust all possible approaches to data-based decision making; rather, its purpose is to illustrate the concept.

The hospital that serves the community of Anytown does not have a very developed cardiac department. Patients in Anytown have to travel 50 miles to the next closest hospital to receive any specialized cardiac services. The administrators of Anytown Hospital recognize the need in the community to have an excellent cardiac program close to the homes of the citizens of Anytown. After much

evaluation, they decide to expand the services of the hospital to offer more sophisticated care, including cardiac rehab services, in a new Cardiac Center.

Home Health Agency receives the majority of their inpatient facility referrals from Anytown Hospital. The addition and development of the Cardiac Center will create an influx of referrals of patients with heart conditions, specifically Congestive Heart Failure (CHF). The administrator at Home Health Agency, Karen Timothy, knows that this increase in the population of patients with heart conditions is about 1 year away.

By analyzing benchmark data and comparing the statistics of CHF patients to all patients, Karen can project how the increase in the number of patients in this subset will impact business at Home Health Agency.

	LUPAs as a percent of all episodes	Average Starting Case Weight	Average Approx. Adjusted Case Weight	Approx. Reimbursement per episode	Approx. Total Cost per Episode	Avg. Total Visits per Episode	Avg. LOS
Heart Failure Patients	12%	1.0493	0.9284	\$1,900	\$1,600	17.09	40.07
All Patients	13%	1.2763	1.1463	\$2,300	\$1,800	18.08	36.9

She can forecast that her average per patient reimbursement will decrease based upon statistics showing that CHF patients have a per episode reimbursement that is approximately \$400 less than the average patient episode.

With the anticipated increase in the patient census of Home Health Agency, Karen knows that she will need to increase her clinical staff. By analyzing visit utilization statistics she knows that she will need more skilled nursing resources in proportion to therapists, because CHF patients receive one more skilled nursing visit and two fewer therapy visits per episode than the average patient.

	Avg. Skilled Nursing	Avg. HHA Visits	Avg. Therapy Visits
Heart Failure Patients	9.23	3.27	4.31
All Patients	8.07	3.18	6.59

In addition to revenue, expenses, and staffing needs, Karen can evaluate the types of services that the typical CHF patient will need by taking a look at case mix statistics. She knows, for example, that CHF patients will tend to be older than her typical patient and more likely to be living alone, so she may need to plan on providing more support services.

	Average Age	Percent Medicare Pts.	Percent Medicaid Pts.	Percent Private Insurance Pts.	Percent Good Rehab Prognosis	Percent Living Alone
Heart Failure Patients	79.3	80%	11%	12%	71%	31%
All Patients	73.3	72%	13%	17%	79%	26%

Beyond the impact on Home Health Agency's financials and staffing, Karen will be able to anticipate how this change in her patient population will affect Home Health Agency's outcomes. CHF patients typically have higher rates of hospitalization and are not as likely to improve in functional outcome measures. On the other hand, they typically have higher outcomes in the clinical measures, such as improvement in the status of surgical wounds.

	Admitted to an acute care hospital	Improved in Pain	Improved in Pressure Ulcer	Improved in Surgical Wound	Improved in Confusion Frequency
Heart Failure Patients	34%	60%	83%	85%	46%
All Patients	24%	58%	80%	78%	44%

	Improved in Dressing Upper Body	Improved in Bathing	Improved in Toileting	Improved in Transferring	Improved in Ambulation/ Locomotion	Improved in Management of Oral Meds
Heart Failure Patients	60%	54%	61%	45%	32%	37%
All Patients	64%	60%	63%	51%	36%	38%

The bottom line of this quick statistical review is this—Karen could use benchmark data to prepare her organization to handle the upcoming change in patient

population. More importantly, she could combine this data with more diverse and comprehensive business intelligence to take advantage of the changes ahead of her and use the opportunity to improve Home Health Agency overall. She could experiment with and study the effects of different care practices, or different distributions of the types of services CHF patients receive, in an attempt to improve outcomes and reduce staffing utilization. She may also want to investigate operational or management practices of other home health care organizations in order to shed light on practices that have helped other agencies achieve success with similar programs.

After some investigation, Karen found a collaborative study conducted by the Southside Hospital Home Care Agency and the Long Island Jewish Certified Home Care Agency in conjunction with Stony Brook University, comparing hospitalization rates of CHF patients with and without the utilization of telehealth services. (Note: This was an actual study, the results of which were provided to OCS by Viterion TeleHealth Care, a Bayer-Panasonic company and a telehealth provider). The study determined that rehospitalizations were twice as likely for CHF patients without telehealth as compared to CHF patients with telehealth.

In our fictitious story, Karen did some additional research and analyzed the cost and potential growth in both the CHF patient population and telehealth utilization across all patients. She cross-referenced the results of her research with business intelligence about her own organization, and evaluated what impact the implementation of telehealth, or other practice changes, would have on all aspects

of the agency. With this perspective, Karen was better equipped to make strategic decisions about how to best meet her agency's clinical and financial goals.

Conclusion

Armed with both a vision of the potential future of an organization and the business intelligence to understand how each component of the agency works with and affects each other, executives can provide the leadership required to make that vision a reality. Likewise, by having insight into the barriers that can limit an organization's success, executives can better control for potential problems in the course of executing a business strategy.

By applying the principles of business intelligence, and taking into consideration all the pieces of the puzzle, agencies will be well positioned to make sound business decisions while meeting the needs of their community. Furthermore, by incorporating business intelligence as an instrument to forecast organizational needs or construct potential strategies, agencies lay the groundwork for the future of benchmarking—a future that is right around the corner.

About Outcome Concept Systems

Founded by a team of home care professionals, OCS has been providing home care organizations with performance improvement solutions since 1992. With over 1,200 clients spanning all 50 states, OCS maintains the nation's largest proprietary home health benchmark database comprised of clinical outcome, finance, and resource utilization information. OCS uses this information to provide the industry with education as well as products and services to guide decision-making and improve outcomes. Endorsed by trade associations throughout the country and recommended by major MIS vendors, OCS is the premier quality management vendor for home health, hospice, infusion, DME, and private duty organizations.

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