EVIDENCE-BASED-MANAGEMENT in Healthcare

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Abstract Summary - Evidence Based Management (EBM) is about removing emotion, opinion, bias and personal experience from decision-making. Evidence Based Management is a business model whereby facts, data and verification are the only tools considered.

For healthcare, the original “assured-payment” model of Medicare created generations of managers who did not need any essential business skills. Now, US healthcare has 5,000 hospitals filled with clinical managers who lack sophisticated business skills. As a nation we do not have the proper skill-mix for the task at hand. The task is to lower costs, increase outcomes and improve the public perception of our care. This article offers a quick and simple solution illustrating Evidence Based Management. ¹

What is Evidence Based Management? It will be easier to describe what Evidence Based Management is NOT, with these two illustrations.

I asked my sister why the turkey was missing one leg. She said that’s how our mom taught her how to roast a turkey. So I called my mom to ask why she cut the turkey’s leg off. “That’s how Nana taught me,” she answered. So I found my grandmother and asked her the same. “Because my roasting pan was too small,” she declared.

I started a new job in a lovely hospital, where there was a refrigerator in the staff lounge. A temperature daily log was attached to the front of it. After several weeks of ignoring it, I was approached by the Infection Control nurse who reminded me I had to log the daily temperature of the refrigerator. I told her I was not familiar with the regulation

¹ The authors of this article are currently applying for the CMS Innovation Challenge grant to bring Evidence-Based-Management to all USA hospitals in order to create national operational benchmarks.
which mandated monitoring refrigerators which stored employee lunches. She said she’d send it to me. The next day, I received a copy of the internal policy regarding monitoring staff refrigerators, which was in practice for 20 years. I asked to see the regulatory agency standard for monitoring employee refrigerators. After searching several, she could not locate one. Healthcare has been operating in silos for so long we have many practices which were created because the roasting pan was too small. Before you cut off the turkey leg, insist on reviewing the evidence.

At this point in time, we have too many Policy and Procedure manuals which are full of opinions based on personal experience, training (no matter how many years ago it was), and outdated research. Coincidentally, these are the exact same reasons Evidence Based Medicine has received so much attention. Actually, why don’t we have one standardized Policy and Procedure manual for all USA hospitals?

Evidence Based Management is a movement to improve outcomes by explicitly using evidence, which is found by doing research and mining data. For years, healthcare relied on the “expert” in that area - such as relying on the Pharmacy Director to be the subject matter expert on all-things-Pharmacy. Evidence Based Management provides standardization, is a repeatable model, and provides rapid measurable improvements.

In their book, Hard Facts, Dangerous Half-Truths and Total Nonsense – Profiting from Evidence Based Management, Jeffrey Pfeffer and Robert I. Sutton state, “The best organizations have the best talent. . . Financial incentives drive company performance. . . Firms must change or die. Popular axioms like these drive business decisions every day. Yet too much common management "wisdom" isn't wise at all - but instead, flawed knowledge
based on "best practices" that are actually poor, incomplete, or outright obsolete. Worse, legions of managers use this dubious knowledge to make decisions that are hazardous to organizational health. (Pfeffer)

**How does this relate to Evidence-Based Medicine?** This is an excerpt taken from the Undersea and Hyperbaric Medical Society. “Evidence-based medicine (EBM) as a process by which to practice has only been possible since the development of electronic libraries and search engines. For the first time, rapid access to the vast medical literature published each year is possible, and EBM tools are designed to take advantage of this opportunity. EBM has been defined as "the conscientious, explicit, and judicious use of the current best evidence in making decisions about the care of individual patients.” Despite recent enthusiasm expressed for the concept, many health care professionals have been critical. Some practitioners feel the reference to evidence erodes clinical freedom and is designed by bean counters to control medical expenditure. There are fears that EBM is 'cookbook' medicine-requiring all individuals to receive the same diagnostic and therapeutic measures, regardless of individual needs. This is an unfortunate misconception. While health care providers often attempt to misuse the term ‘EBM' to control expenditure, EBM is actually designed for the use of practitioners. It requires the synthesis of best evidence and clinical expertise/experience in order to arrive at the best diagnostic and therapeutic approaches for each individual under treatment. (UHMS.org)

**Management Standards** – The business of healthcare includes five domains of management: Human Resources, Technology, Finance, Operations and Compliance. Rarely do we find one manager with subject matter expertise in all five domains.
For example, a hospital may employ a Pharmacy Director whose expertise is Finance. The Pharmacist with the Finance expertise knows the current coding practices, is up-to-date on reimbursements, is a skilled negotiator and maximizes reimbursement. This Pharmacy Director brings substantial revenue to the hospital when most Pharmacies barely break-even. However, when the Dept. of Health survey team arrives, the Pharmacy Director with the Finance expertise may fail miserably. Unfortunately, when it comes to Compliance, they are at best mediocre and hope for the best. Most of today’s healthcare managers hope for the best in multiple domains. That is not good enough. Gone are the days when personal experience is enough to keep a hospital solvent.

**Where did Evidence Based Management come from?** Merriam Webster defined “standard” as something set up and established as a rule for the measure of quantity, weight, extent, value or quality. The Industrial Revolution began in the 18th century where major changes in agriculture, manufacturing, mining, transportation, and technology had a profound effect on the social, economic and cultural conditions of the times. In 1901, the National Institute of Standards and Technology (NIST), an agency of the U.S. Department of Commerce set up industrial standards. When the internet gained public attention in the 1980s, a “standards” committee was set up to establish rules for quantity, weight, extent, value and quality. For over 100 years, the USA has had a practice of establishing standards for all industries from farming to the internet. Evidence-based management is used in manufacturing, government policy makers, academics, library sciences, and software engineering. How did the medical industry escape being standardized?
Evidence based management is everywhere. Lord William Kelvin, the celebrated physicist, was born in Belfast in 1824. He said, “Until you can measure something and express it in numbers, you have only the beginning of understanding.” Literally, every decision is aided by EBM. Suppose we capture our child’s grades for the 12 years of primary school, then graph and trend them. The college major which they will succeed at becomes crystal clear. In management, anything that can be counted should be counted.

What is EBM exactly? EBM will change how managers think and act. It is a way of seeing things differently, to manage in “reality” without emotion or bias. EBM uses better, deeper logic which permit leaders to do jobs more effectively. EBM uses hard facts, discards opinions and rejects total nonsense. There is no room for dictatorial, opinionated, or discriminate thinkers who feel they already know the answer. Many senior executives like to “talk” through the issue. They seek opportunities to share their knowledge with large groups of employees to offer advice. However, it is the reading, writing and arithmetic which provide the evidence to resolve and then prevent issues from re-appearing.

EBM in real-life action. Purchasing a hospital which had been bankrupt twice in 5 years is a challenge under any circumstances. But purchasing a hospital when you never owned one before, and purchasing an American hospital when you are a foreigner is even harder, to say the least. This is what four foreign investors did at Meadowlands Hospital Medical Center (MHMC) in NJ. They were smart enough to adopt EBM in eery department of the hospital. Templates for Staffing Plans, Job Descriptions, Performance Evaluations, Attendance and Tardiness monitors, Goals, Compliance and Financial indicators were some
of the standardized forms which were mandated to use. Continued instructional workshops were scheduled to teach all managers about EBM. Eventually, all departments were submitting their summary dashboards every month. Eventually, all managers were managing the exact same way.

After only a few months of trending data, variance and outliers surfaced. For example, one nursing department was on course to spend 18% in overtime. Abruptly another department’s charges plunged. Attendance was excessive in one department yet the manager wasn’t counseling the employees. Unexplainable staffing plan variations were corrected. As the first year ended, MHMC celebrated their exceedingly low 1.7% sick time, their identification and reduction of 30 FTEs of unnecessary per diem hours, and their less than 2% of overtime. They particularly celebrated managers being held accountable for holding their staff accountable.

How many times does a non-EBM, traditional healthcare manager justify their decision by stating, “I’ve been doing this for 20 years,”? The USA has 5000 hospitals, meaning every healthcare manager is only 1 of 5000. They represent 1 of 5000 or .02%, which is nowhere near statistically significant. “Doing it this way for 20 years” is a red flag to do the opposite.

EBM produced summary dashboards which the new owners used to assess the profit/loss status of each cost center, as well as the inspection-readiness/compliance status of each department. EBM is especially useful to clinical managers who may be weaker in business expertise while stronger in clinical skills. Meadowlands Hospital had been a twice
bankrupt, non-profitable entity for the two prior years and is now being run as a successful for-profit entity within one year of EBM transition.

EBM is especially helpful to inexperienced managers. This illustration demonstrates how quickly EBM resolves any issue permanently. Within the first few months, the Department of Health found several deficiencies within the Department of Surgery. Upon investigation, the biggest problem was improper use of medications in the Pyxis machines. Without any surgical knowledge or experience, an outside manager relied on Evidence Based Management to decipher what was going on.

The Pyxis machine produced a daily Discrepancy Report. The reports were collected but not trended nor mined. A non-surgical manager converted the 9” dusty pile of Discrepancy Reports into an Excel spreadsheet. The collected data was categorized into date, drug, user and machine. Next the data was sorted. When it was sorted by Pyxis machine, nothing significant was uncovered. When the data was sorted by date, again nothing significant was found. But when the data was sorted by drug, 50% of the discrepancies were the drug Propofol. And when the data was sorted by user, 50% of the discrepancies were caused by two anesthesiologists.

The data was shared with the anesthesia group. The two discrepant anesthesiologists were told the expectations and the consequences of not complying. They were also informed we would continue to monitor this. After four consecutive weeks of non-compliant follow-up, the anesthesiology group was terminated.
This example demonstrates two critical elements of EBM. 1- One does not need prior related experience to successfully manage using EBM. 2- EBM will expose a variance but it will not resolve it. Actionable follow-up is critical.

**Standardization** - In 1911, two teams raced for the south pole of Antartica. The British team led by Robert Scott, advanced as much as they could when weather was good, sometimes advancing 35 miles. On bad days, they advanced sometimes only 3 miles. The Norwegian group led by Roald Amundsen, advanced 20 miles each and every day, good or bad weather. Amundsen’s strategy was consistency. On sunny days when his men felt they could advance more, he held them back, reserving their energy consistently the same way every day.

When Scott’s team arrived, they learned Amundsen’s team had arrived 33 days earlier. Tragically, Scott’s team never made the return trip. All team members perished on the return trip.

Like Amundsen, Evidence Based Management is consistent each and every time. EBM never waffles, or fabricates. The answer is always found in the data, never in our bias.

**Using EBM is Harder.** At one hospital, the same Radiology Administrator who had worked there for 20 years was retiring. Managing by observation and relying on personal experience was her management style for 20 years. The expenses averaged $283,000/month. Revenues averaged $366,333/month. Radiology contributed $1 million/year to the hospital’s bottom line. $1million was contributed to the hospital’s
bottom line every year for the past 20 years. The CEO and COO said the new manager would have “big shoes to fill.”

Using EBM, the new Radiology Director immediately discovered many variances. Expenses reduced from $283,000 to $230,000/month. Revenues increased from $366,000 to $400,000/month. That year, Radiology contributed $2 million/year to the hospital’s bottom line. This meant that over the last non-EBM Director’s reign, $20 million was left on the floor. Evidence based management is exact. It is simple but it takes more work. It takes reading, writing, and arithmetic. Unfortunately, many managers just want to do the talking. Most healthcare managers today manage observationally, anecdotally and reactively.

**EBM and the healthcare vision** - The Hawthorne Effect is named after the most famous experiments in industrial history. These occurred at Western Electric’s factory in Hawthorne, a suburb of Chicago, in the late 1920s and early 1930s. Any time the employee working conditions were changed, productivity improved, whether the change was good or bad. The Hawthorne Effect states improvement occurs by virtue of what is being counted. Weight Watchers is based on the Hawthorne Effect. When we collect healthcare data routinely, conditions improve. An added plus is clinical managers learn the “business” of healthcare; they manage according to their 1-expenses 2-revenues and 3-volumes.

At a 200-bed hospital, interventional imaging was billing $150K/month. At a 1000-bed hospital, interventional billing was the same. Fortunately, there was a new EB-Manager who immediately recognized the variance. It was corrected and the revenues were recaptured.
At a 1000-bed hospital, film costs were $300K/year. At a 200-bed hospital, films costs were the same. Again, because the new manager used Evidence-Based-Management, she immediately recognized the discrepancy. In this case, film was being stolen from the 200-bed facility for many years, unbeknownst to anyone until EBM was utilized.

Healthcare reform has created very murky waters for all hospitals. There will be reductions in reimbursements yet again. Medicare leaders are convinced high quality care and lower costs are not mutually exclusive. 53% of hospital CEOs feel evidence-based-medicine will have the greatest impact on reducing healthcare costs. Evidence-based-medicine needs evidence-based-management as its foundation.

**Data Overload** - There is a very old psychology principle which says humans can only process a limited amount of information. With today’s technology, there is way too much data for humans to process efficiently. The Washington Advisory Board published a collection of 88 dashboards. Many dashboards were monitoring greater than 100 indicators. If we drill down to the base indicators, there are just three - 1-expenses, 2-revenue and 3-quality. By starting with a small number of over-arching umbrella indicators, Evidence Based Management points us in the right direction to begin data-mining and drilling down.

**Attribution Bias Theory.** Decades of research on attribution bias show humans have a difficult time coming to unbiased conclusions. Research findings also report good management is not being found in the workplace. Managers, even well-educated MBA managers, continue to rely on personal experience rather than evidence. Some employees are disciplined for every tardy minute. Yet we still have some managers who have never
counseled even one employee in their entire career. So for right now, in healthcare in this country, Evidence-Based Management is not widespread. Not yet.

**Let’s look backwards to look forward.** Medicine was actually the first success story to embrace evidence-based practices. In 1847, Dr. Semmelweiss told physicians they were the cause of infection when they moved between patients without washing their hands. Even 100 years after Germ Theory was accepted, basic hand-washing practices are still not consistently performed. Building a culture of “learning to learn” from evidence is critical. It wasn’t until 1990 that evidence-based clinical care mandated hand-washing practices. So then, what was going on between 1847 and 1990? Pretty much the same thing managers are doing now. Some are washing their hands, others not so much.

**Evidence-Based Medicine.** In simplest form, healthcare professionals should provide care that is based on evidence which has been well-researched and proven to be effective. This is easier said than done. We have the research, the evidence, but not the consensus about which care is best. Take prostate cancer for example. Depending which type physician is sought for advice, a patient may end up having surgery, brachytherapy, radiation therapy or nothing at all. There is an urgent need for our physicians to bring consensus into healthcare.

**Evidence-based Management.** In simplest form, EBM is learning through the research rather than by personal experiences. It is a culture of data collection and data mining. It is disallowing “observation” and “gut reactions” to make decisions. It is using metrics on a daily basis. Many researchers say the “joy is in the findings”. In graduate school, this author
collected anonymous data from 200 hospitals. Her hypothesis was that large facilities operated more efficiently than smaller facilities. As the data was analyzed, it became clear that her hypothesis would not be defended. Surprisingly, there was no relation between size of facility and operating efficiencies. What became abundantly clear was that there were extreme spending variations in operations of all facilities, no matter how large or how small.

Evidence Based Management requires enhanced competencies. Healthcare managers need real learning tools, not fads or false conclusions. Data-mining and critical thinking is essential. Advanced Excel, mathematics and accounting principles are necessary. Once learned, these competencies will be repeatable.

**Pfeffer and Sutton on EBM.** In “Hard Facts, Dangerous Half Truths & Total Nonsense”, Harvard’s textbook on Evidence Based Management, Pfeffer and Sutton write, “Turning evidence-based management from a practice of a prophetic few, into the mainstream requires champions – credible people to advertise its value. We need networks of individuals excited by what EBM makes possible.” Pfeffer and Sutton encourage healthcare managers to forget going with their gut. Doctors rely on their clinical experience, their training (no matter how many years ago it was), and many times research which is outdated. Evidence-based-medicine has become more and more main stream recently and needs better integration of the most current research folded into everyday medicine. Evidence-based-Medicine needs Evidence-Based-Management to succeed. The promises of EBM are manifold. Managers who use EBM will define and drive their hospitals forward.
Define your Organization. QWERTY keyboards were a success for manual typewriters, but inefficient for word processing, yet somehow they still survive. Management-as-usual, like QWERTY keyboards will survive, but not for long. Failing to evolve to EBM is costlier, inefficient and just plum lazy. Healthcare managers must become the maverick, the salmon swimming upstream, the rogue. Evidence-based-managers will drive your hospital to success. Managers may be entitled to their own opinions, but not to their own facts.

Future – What does the future hold? If any healthcare expert tells you they know where healthcare is headed, demand the evidence. The truth is, even with 30 years of healthcare experience, we are all amateurs again. Demand Evidence Based Management from your managers, from yourself and throughout your organization, especially with the uncertainty ahead, and even if it takes more work, because it is the right thing to do. Maybe if we had been exercising EBM all along, we wouldn’t be facing the dysfunctional healthcare system we have today.
References


