WHITEPAPER: LEAN SIX SIGMA AND PERFORMANCE IMPROVEMENT IN HEALTHCARE:

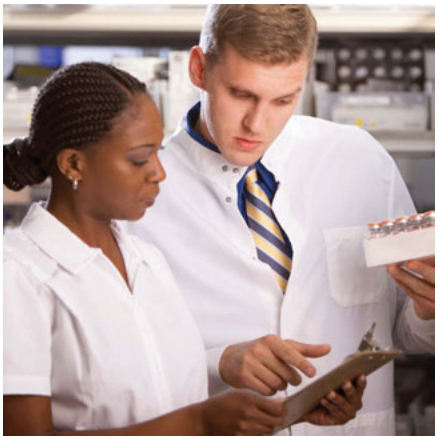
10 Common Mistakes

LESSONS LEARNED AND OBSERVATIONS FROM THE FIELD

NOVACES®
Advancing Process Improvement.

Hospitals today are under more pressure to perform than ever before. Boards of directors, executive management teams and administrators are trying to find ways to cut costs, increase capacity and improve patient outcomes. Many hospitals are turning to professional performance improvement consulting firms such as NOVACES to identify and eliminate the inherent inefficiencies and waste in existing processes and systems. Over the years, NOVACES has helped healthcare organizations across the country improve operational, financial and patient care performance. Through this journey our team documented the 10 most common mistakes our client partners made before engaging a performance improvement expert.

› Mistake #1



Create an inventory of experts.

Before an organization decides to implement Lean Six Sigma, it's important to think about how to make the investment produce real benefits in terms of patient and staff satisfaction, quality of care, patient safety, and dollars. Often the first step is to develop an expert or team of experts in Lean Six Sigma. This is a significant investment and many tools and skills must be mastered. There are several options for training, including open enrollment courses, on-site courses, and virtual courses. Each has its pros and cons. However, don't jump into training too early or design it to be a significant factor in the early stages of the implementation plan.

Another option

An alternative approach enables the hospital to properly test the concept and centers on selecting an important problem that has proven to be notoriously difficult to solve or that has been solved many times but improvements have not been sustained. In this case, it is advantageous to proceed with an internal team working with a healthcare Lean Six Sigma expert to correctly apply the tools and learn how to make Lean Six Sigma work for your organization.

The team will learn many things about performance improvement methods and tools while working hands-on with an expert and the effort will be completed quickly and will return the expected financial and operational benefits. The discoveries made by working with a performance improvement expert can then be communicated back to the leadership team and allow better decisions to be made about which training is right for your organization, who should attend it, and when your organization is ready for it.

› Mistake #2

Focus on quality improvement.

In performance improvement, project selection is a living process. Opportunities are constantly identified and projects and events are completed and removed from the 'to do' list. With limited time and resources to accomplish a myriad of performance improvement objectives, which ones will generate the results you really need now?

To set the gears in motion for performance improvement, your team must know the answers to these questions:

- What is important for the organization as a whole?
- What is the current level of performance?
- Where are the gaps?
- What opportunities are most important to tackle first?
- Who will sponsor each effort?
- What resources are needed to support the priorities?

When sorting through the opportunities, think big – think enterprise. When decisions are made solely on the ***quality axis***, a big piece of what makes performance improvement successful is missing. No question, increasing patient quality and safety is the main goal. However, because the enterprise is a set of interdependent processes, an understanding of how an improvement in quality or safety also impacts the organization in terms of things like capacity, utilization, length of stay, satisfaction, throughput, cost, and so on is vital.

When decisions are made solely on the quality axis, a big piece of what makes performance improvement successful is missing.

Setting priorities

Utilizing an opportunity prioritization matrix is essential to quantifying this impact and understanding possible impact on secondary measures. This prioritization matrix is made up of weighted criteria that are based on business strategy. ***It allows the team to decide in a structured and analytical way which things are most important to work on right now.***

For example, once an organization understands how to measure and document the cost reduction or revenue increase associated with a specific quality improvement effort, new levels of involvement can be realized from the finance department. The chasm between the clinical and financial doesn't need to be so large. Working together to achieve cost reductions and quality improvements simultaneously helps narrow that gap. Further, by establishing standards for documenting cost reductions or revenue increases as a result of performance improvement, it is easier to justify expenditures such as adding FTEs to the program, sending staff for additional training, or purchasing technology. In today's highly cost-conscious healthcare environment, with battle-lines drawn between providers, payors and the government, linking performance improvement with finance is essential to making ends meet.

› Mistake #3

Make sure leadership buys in.

How do you define leadership buy-in? Sometimes this means a simple thumbs-up from senior leadership. But is that enough if we aim to be a high performance organization? It is critical to help organizations move towards leadership engagement because, in the end, it's all about accountability.

Leaders must drive the performance improvement program according to the priorities set by their business strategy. In order to do this effectively, they need to have a window into what's going on and the ability to see that the effort is helping them to accomplish their goals. So while it's good to have leadership buy-in, ***it's essential to have leaders engaged***. There are many different ways to achieve this within the structure of a performance improvement program. It's not easy to obtain buy-in from senior management at the outset of any performance improvement or Lean Six Sigma program. Getting beyond simple buy-in to real engagement is not commonly achieved. But failing to fully and actively engage leadership is a common pitfall for performance improvement programs.

So while it's good to have leadership buy-in, it's essential to have leaders engaged.

We're engaged!

Obtaining leadership engagement means gaining their understanding, commitment and action in support of the program's goals. So what can you do to accomplish this? In the healthcare setting, the senior leadership team has many, sometimes competing objectives that pull the organization in multiple directions. However, it is the proper balance of these objectives that produces a high performance organization. In the end, all share one common goal for success. The individual responsible for a performance improvement program must present a compelling vision of a future that can demonstrate a link between the decision-makers, their collective objectives and the organization's strategy.

It is likely that you have developed your objectives in light of known performance problems or your own research. Unfortunately, decision-makers often don't feel the "pain" of the problem you have identified or don't associate it with their own strategy. The approach that is used must guide the entire leadership team through similar thought processes and engage them actively in decision-making activities.

Bottom-line, leadership engagement can be accomplished by making, and keeping, leaders actively involved and accountable for identifying opportunities, prioritizing them, and then following through and completing the associated projects. The failure to engage leadership is one of the most often cited reasons for problems with the sustainability of improvements and can very easily threaten the long-term viability of the program.

›Mistake #4

Boiling the ocean.

So far, we have explored performance improvement training, the link between quality and finance as well as leadership engagement. If you have those things in place, it means you've done a lot of hard work to get where you are and it is common to try to dive in and solve some of the organization's toughest problems. But, hold on! Tackling problems that are too large or too complex is a common mistake – especially for newer Lean Six Sigma deployments. "Boil the ocean" projects are kicked off with much fanfare, but they have a poor likelihood of success and are rarely completed. With too many of these, leaders simply lose confidence in the program. Here are some ways to get to the important problems while avoiding large and costly disappointments.

Solve one problem at a time

Performance improvement projects are intended to produce incremental changes in perpetuity. Some of these changes do produce huge leaps in performance that can truly be considered breakthrough. Other changes produce good results that, although not considered "breakthrough," move the organization forward. Regardless of how large the impact is, good projects have one thing in common – they set out to solve one problem at a time.

Attempting to solve multiple problems simultaneously causes a lack of focus, increased project span time, unneeded complexity, confusion and difficulties with sustainability. For example, your emergency department may be suffering from long wait times and poor patient satisfaction. However, these are different problems. Yes, satisfaction is driven by wait time, but there are many other drivers of satisfaction. Additionally, wait time in the ED can be a very complicated problem to address, and the team shouldn't be distracted by the need to actively dive into causes for low satisfaction scores. Instead, charter the project with wait time as the primary metric. Then include patient satisfaction as a secondary metric, indicating that changes cannot negatively impact satisfaction. A separate team can explore the satisfaction issue once the changes from the wait time project have been stabilized.

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So, ***define a project that impacts one primary metric*** and decide which methodology can be best used to solve that specific problem. Next, get the right team and resources on board and get the results – quickly! Then you can move on to the next problem and continue to build on your success.

Let's break it down

There is definitely a need to go out and work on your organization's most difficult problems. Some of these challenges are so new as a result of the latest regulations and changes in the healthcare industry that they have yet to be solved by any organization. Many of these problems span across multiple parts of the organization and require subject matter expertise that very few people have. Medication reconciliation comes to mind, as well as the Recovery Audit Contractor (RAC) Program from CMS. These new challenges simply cannot be solved by attempting one large project. There's too much to do, extreme amounts of change, and so many chances to lose momentum. Rather, it is much more advantageous to break these initiatives into smaller, more manageable pieces.

Mistake #4, continued

Find the right pace

There is only so much change that an organization can tolerate at any given time. An organization that is in the midst of a merger, for instance, may already be suffering from change overload. Healthcare is undergoing an enormous transformation right now and leaders must understand how quickly the organization can assimilate the changes by pushing forward at times and then pulling back when there seems to be too much instability. So, it's effective to break down projects into more manageable pieces, but then also determine the right pace at which those individual efforts can proceed.

Don't forget the low-hanging fruit

Lastly, there are so many opportunities for improvement out there. Some of them are easy to achieve with the right improvement methods in place. Does the organization really have the endurance and the resolve to keep fighting the toughest fights without a little room for quick wins and celebration? There is low hanging fruit out there that is easy to reach and can rapidly produce a positive impact on important metrics for your organization.

Remember, one problem at a time, break it down, pace yourself, and generate some quick wins.

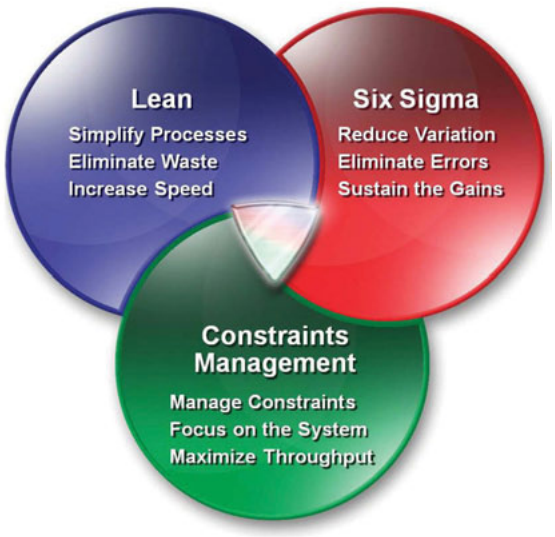
Mistake #5

All that is needed is a hammer.

During the mid-1980s, Lean, Six Sigma and Constraints Management (or Theory of Constraints) emerged as three distinct schools of thought. For more than 10 years, these methodologies were like three different religions—coexisting, but completely independent of each other. However, since not every problem is a nail, a hammer is not appropriate for all problems. Therefore, don't be pressured to select a single methodology that is right for your organization, rather embrace the capabilities in all of these tools and methods.

Let's make a deal: door #1, door #2, or...?

Currently, Lean applications in healthcare appear to be the most popular among US and UK hospitals. Six Sigma applications closely follow. According to an ASQ survey, 53% apply Lean, 42% apply Six Sigma at some level and 37% take the hybrid approach of Lean Six Sigma.



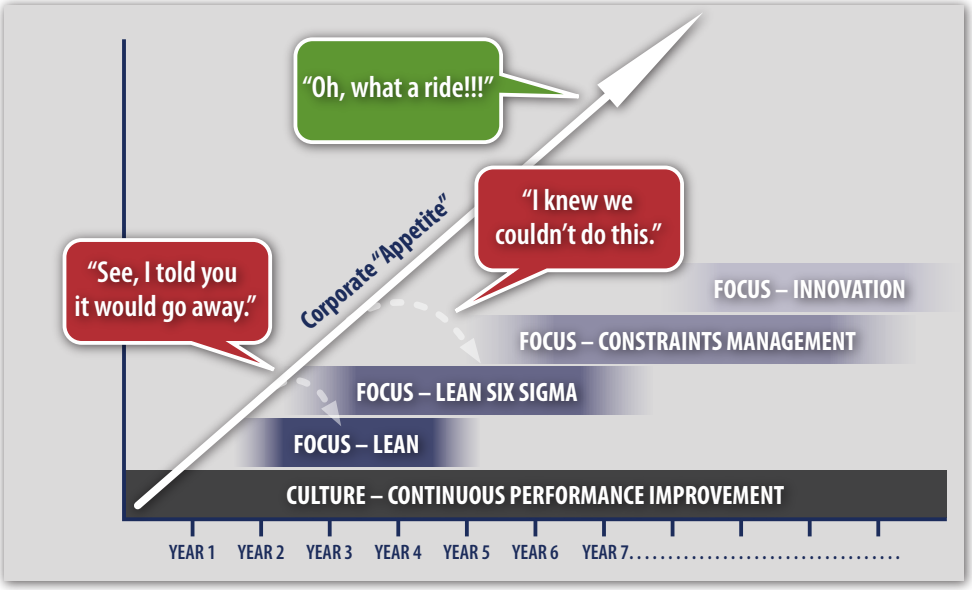
Constraints Management applications in healthcare are at their infancy, but breakthroughs are documented at hospitals in the U.K., Israel, Netherlands, and New Zealand. In fact, according to a 2009 study by Nicola Burgess, PhD one-third of all hospitals in the Netherlands that implemented a performance improvement program chose Constraints Management.

The goal, however, is to improve performance across the organization by maximizing the quality of care and minimizing cost. This is accomplished through the identification of poorly performing processes that have the largest impact on the system's costs and quality – and then fixing them. Unlike a "one size fits all" approach – such as Lean only or Six Sigma only or Constraints Management only – it is more important to ***focus on using the right tool for the right problem at the right time*** to deliver faster results and greater return on investment.

It's not easy!

Certainly the task of building the capabilities to apply all of these tools and methodologies is not an easy one, but with resolve to stay the course and chip away at problems – big and small – comes great reward.

In reality, though, no matter how hard we push or how effectively we lead, there is a limit to the amount of improvement that an organization can absorb over a given period of time. The foundation must be laid for performance improvement first. The strength of that foundation determines how quickly new things can be assimilated into the toolset. The organizational culture must first embrace performance improvement. It should have continuous improvement in its blood.



Once the foundation is laid, your ***corporate appetite for performance requires that it continues to evolve***. If on the other hand, leadership allows the program to look like a methodology graveyard, the organization will experience a deterioration of its culture. This is why integration plays so heavily into the evolution of performance improvement.

As the focus turns to new methodologies and tools, it should be carefully integrated into the existing program and communicated properly throughout the organization. Ultimately, finding the synergies is what produces huge leaps in performance and propels your organization to new levels of excellence.

Keep searching for the golden ticket.

It's uncertain how many Wonka Bars Veruca Salt's army of workers had to open to find her golden ticket to the chocolate factory, but she certainly had many more opportunities than Charlie, whose family only had enough extra money to spare for just one shot at his dream.

No one wants to be like either of these polar opposites. Regardless of how many we start, too many projects are never completed as we search for the golden ticket. If you're Veruca, your organization starts too many projects and finishes too few—aggressively pursuing as many chances at finding that last golden ticket as possible. If your organization is like Charlie, you bank on just a few projects and hope for a winner.

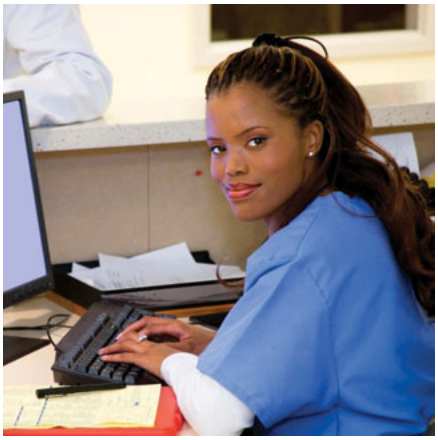
Depending on how your program is designed, the number of projects or workshops that can be finished each year varies. Some organizations choose to have resources work part-time on performance improvement projects; others have set aside full-time positions for this function. There are some baseline expectations an experienced practitioner can complete in a given year.

	Part-Time	Full -Time	Benefits
Lean Expert / Green Belt	2-3	N/A	$100,000 Operational improvements
Black Belt	2	6-8	$250,000+ Operational improvements
Master Black Belt	N/A	3-4 (Critical /Enterprise-wide issues)	$500,000+ Operational improvements

How to Prevent the Golden Ticket Syndrome

- Make finishing projects part of the reward structure. No finish, no bonus!
- Demand results by selecting projects with executive sponsorship and strategy alignment.
- Nurture and grow project management skills to ensure your change agents have the necessary discipline.
- Training participants must arrive with a project in hand. Training candidates must be certified by applying the tools to important projects and producing an ROI.
- Leadership must commit to a set of strategic priorities and stick to them.
- Always maintain a portfolio of strategically important projects.
- Complete improvement projects with urgency. Long term initiatives are okay—long term projects are not. No projects longer than six months unless absolutely necessary.
- Require specific thresholds for project benefits—operational improvements, quality/safety improvements, financial improvements.
- Create a structure that requires individuals to complete a certain number of projects. Certification should not be granted for attending training only.

In summary, create specific expectations for the completion of projects in your organization and actually make it more difficult NOT to finish them. As a result, expect to see a higher number of projects being completed, better benefits, and maybe even a shot at riding the glass elevator with Mr. Wonka.



Report extraordinary savings.

All performance improvement deployments have one factor in common; the expectation of quantifiable, measurable results, often in a very short timeframe. So when a deployment fails to deliver or to document the anticipated results, enthusiasm wanes and practitioners become discouraged and credibility disintegrates.

It is important to realize though that many 'failed' deployments accomplished impressive operational results, but, because they failed to document a ***credible positive impact on the bottom line***, those results did not figure favorably into the "cost:benefit" analysis. Just as detrimental is the inflation, whether intentional or accidental, of project savings and return on investment.

Practitioners may not understand or have access to the data necessary to calculate the cost of implementing improvements.

If we step back, it is easy to see how this can happen. Practitioners do not, generally, have a background in accounting and they are trained to calculate the operational improvements achieved from eliminating waste, managing constraints, and reducing errors. Translating these operational improvements into financial terms is beyond their scope of expertise. Practitioners may not understand or have access to the data necessary to calculate the cost of implementing improvements. These costs may include personnel, software or hardware and capital expenses. Additionally, metrics that link financial returns to practitioner performance may provide incentive for practitioners to over-estimate the financial benefits. For these reasons, ***the role of a financial subject matter expert, sometimes called a "money belt" is essential***.

Those who will function as money belts are trained in performance improvement methods so that they will understand their role and responsibilities. Financial estimation and validation tasks are included as expected and necessary steps in the charter, review, and closure of performance improvement projects and workshops. This discipline will ensure that financial expertise is available when needed and operational improvements will be translated appropriately to financial benefits. Estimates of project and workshop benefits need to be standardized, and financial results should be validated by finance. A significant weight should be placed on evaluating the success of the program in terms of financial return on investment. Leaders will be able to articulate the value of the program to the organization and performance improvement will be recognized as a highly effective means to an end – fiscal viability.

Performance improvement is a part-time job.

One of the most difficult decisions in implementing a focused and structured program for performance improvement seems to be whether or not to dedicate full-time resources as practitioners. And with healthcare organizations operating in a resource constrained environment, there is a natural tendency to expect practitioners to drive improvements in addition to their 'real' job. Unfortunately, this multi-tasking expectation is short-sighted and destined to produce less than optimal results. This is due, in part, to the degree of rigor imbedded in healthcare's modern performance improvement methodologies.

The components that need to be considered prior to making the full-time versus part-time decision include:

- Complexity of tools
- Practitioner development
- Turnover
- Costs

Complexity of Tools

Historically, many healthcare quality improvement tools were largely driven by facilitation skills. The general line of thinking was that anyone with good interpersonal skills could either teach themselves to facilitate or, with minimal training, they could learn the requisite skills. While modern methods require excellent interpersonal skills and knowledge of facilitation techniques, they go far beyond that.

Lean practitioners require specific training in process mapping and value analysis. Additionally, a variety of Lean healthcare solutions require specific training and application experience. While Lean applies specific tools, it is still largely reliant on team facilitation.

Conversely, Six Sigma is much more reliant on tools. Highly proficient Six Sigma practitioners have literally dozens of tools in their toolbox. Many of these tools are complex statistical analysis tools that are commonly taught over entire semesters of college courses. With pressure to get the right answers quickly, these practitioners must be able to reach into that toolbox and grab the right tools and apply it correctly. This level of confidence and competence requires repetition.

Constraints Management experts are trained in concepts that are grounded in systems thinking and consider elements such as materials, information and money flows. It encompasses techniques applicable to operations and logistics, performance measurement, problem solving and planning. The innovative thinking involved requires practice and mentoring to master.

Practitioner Development

While many healthcare organizations realize great success with performance improvement deployments, some fail to attain the anticipated levels of success. Often this shortcoming can be attributed to failure in properly developing practitioners. The Apprentice-Journeyman-Master developmental model for performance improvement practitioners is widely accepted. In the classroom, the subject matter, pace, and timing of the knowledge transfer are largely controlled by the curriculum. How is that transfer controlled during the subsequent learning—the progress into the journeyman and master levels?

Mistake #8, continued

A healthcare corollary to the Apprentice-Journeyman-Master model is the transition from medical student to intern to resident to physician. After the student completes a predetermined amount of didactic learning, the intern begins to practice under the guidance of a mentor; then, based on readiness, the resident begins mentoring less experienced interns; and finally makes the transition to a fully independent practitioner. While not attempting to elevate the complexity or level of knowledge of an advanced performance improvement practitioner with a fully qualified physician, the developmental path is similar.

When related to the decision regarding full- or part-time status for performance improvement practitioners, imagine how long it would take to develop a newly graduated nurse to a fully self-sufficient nurse when they would only apply nursing skills once or twice a week, or even once or twice a month.

Turnover

It is important to recognize that staff turnover among your performance improvement practitioners is inevitable. With the skills and organizational knowledge gained, it is a considerable loss when these valuable resources leave the organization. Career paths should be developed for these practitioners to grow so the organization continues to reap the benefits of this investment.

With ongoing turnover in skilled practitioners, the performance improvement training program must also be ongoing. This requires the development of organic training and mentoring capabilities. Not only must these departing practitioners be replaced, but healthcare organizations must begin developing advanced practitioners capable of guiding and directing others.

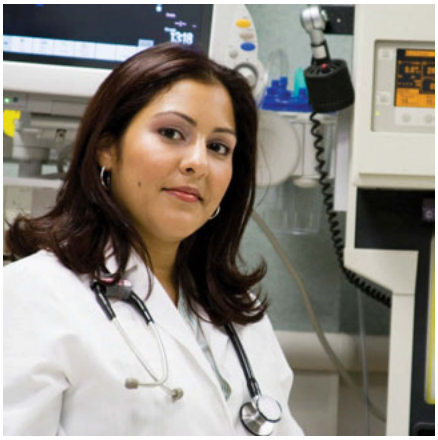
Costs

When viewed purely as a cost, the use of part-time practitioners makes sense. But is the highly-skilled performance improvement program a cost center or is it a profit center? To call performance improvement a profit center seems quite a leap, but ***a properly deployed program should at minimum fund itself.***

So while sustaining itself, the program would demonstrate operational and patient safety improvements. At the extreme end of the spectrum, one healthcare system realized a 30:1 return on investment. Returns in the range of 3:1 to 7:1 range are more common. With returns like this, it must be viewed as a profit center. Increasing effectiveness of profit centers requires investment.

An easy decision

A committed and engaged leadership team will see the benefits of a dedicated cadre of performance improvement practitioners to the organization. While a cadre of staff trained in the application of Lean and Six Sigma tools can and should be dispersed throughout an organization applying those tools as an adjunct to their real job, the decision to create full-time positions for highly trained Lean Six Sigma Black Belts should be an obvious one.



There's never enough data.

Having good data available enables better decision making. But not when the expense of collecting the data is so high that it subtracts from the resources available to fix problems and improve quality. Collecting too much data, more than is absolutely needed, results in a lot of measuring but rarely a chance to make the cut. There is no such thing as 'free' data.

How would you answer the question: Do you believe this organization has too many different measures or too few?

a) We have way too many metrics, but they all provide valuable information
b) We have too many metrics and they don't provide the information we need
c) We have just the right amount of metrics to balance the need for information and action
d) We have too few metrics to adequately measure performance

If you answered "c," you are among those who have implemented a performance management system that truly works for the entire organization.

A balancing act

Embracing a disciplined approach to the design of performance measures ensures that financial results are tracked while simultaneously monitoring the system's capabilities to meet customer needs and achieve against critical success factors. The characteristics of such a performance measurement system are as follows:

Collecting too much data, more than is absolutely needed, results in a lot of measuring but rarely a chance to make the cut.

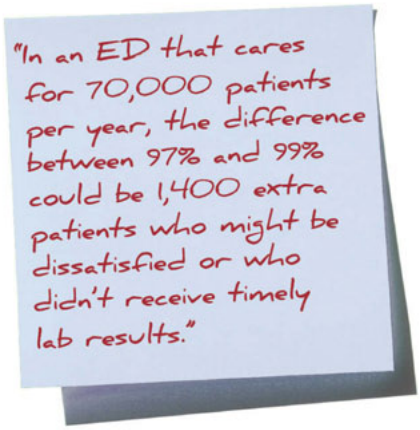
- **Indicators are specific** with a hierarchy of accountability metrics so that staff contribution at every level is measured. There is a clear line of sight from each worker's job to the executive dashboard and from the dashboard down to division and departmental indicators and the specific activities moving the dial.
- **Indicators are logical and based on clear operational definitions** and performance against objectives is quantifiable.
- **Indicators are actionable** and improvements can be linked directly to changes in performance indicators.
- **Indicators are relevant** so that everything that matters is measured and nothing more.
- **Indicators are related to time** so that trending is evident and key processes are measured frequently enough to allow for timely corrective action.

Mistake #9, continued

Given these considerations, many organizations seek to implement the balanced scorecard as a vision and a benchmark for measuring performance.

As the organization moves closer to "answer c," a collaborative effort involving all stakeholders to find the most efficient use of the organization's valuable resources is vital and will serve to separate the "critical few" from the "trivial many."

›Mistake #10



Shortcuts are okay.

Ironically, most healthcare organizations turn to performance improvement initiatives to correct the cumulative effect of shortcuts that have become institutionalized over a long period of time: unpredictable costs, high waste, inefficiency, indecision, frustration and, oftentimes, danger. While any improvement is better than no improvement, the quest should be to improve the process as much as current resources, technology, and organizational culture allows.

At the process level, the most fundamental way to do that is to trust the methodology. Within Six Sigma that methodology is the five-phase DMAIC (Define-Measure-Analyze-Improve-Control) approach to solving problems and improving a process. Within each of these five phases are a set of steps and deliverables.

D **Define the business issue.**
"What's the pain?"

M **Measure the process**
"How bad is the pain?"

A **Analyze the data. Verify root causes of variation.**
"What is the root cause of the pain?"

I **Improve the process.**
"Which solution will eliminate the pain?"

C **Control the process. Sustain improvements.**
"How do we make sure the pain will not return."

Just as with treatment protocols, certain steps are sacrosanct. This rigorous approach ***ensures sustained results that transform culture and maximize financial returns***. It seems counterintuitive that a disciplined approach could, in fact, enhance creative problem solving. But it is true. Having the discipline to guide problem-solving frees up the innovative energy to create solutions.

Within the Define Phase of DMAIC it is an absolute certainty that you must have a charter, a SIPOC diagram, and listen to the Voice of the Customer. Unless you want to, don't skip these steps. Doing so will risk suboptimizing your results. In the Analyze Phase, which tools are needed to verify the root cause of the problem? There are many options ranging from subjective tools such as a fishbone diagram through graphical analysis to sophisticated statistical analysis. The degree of rigor should be based on the amount of risk that the organization is willing to assume. In some scenarios, taking shortcuts on a project can cause poor or even negative results for the organization as a whole. Because of the complexity of healthcare processes, "pulling a lever" in one area may cause unintended results in another.

Mistake #10, continued

Taking shortcuts on a project or failing to recognize the critical steps for deploying methods like Lean, Six Sigma and Constraints Management puts an organization at risk for poor results the same way that failing to follow a treatment protocol puts a patient at risk for poor outcomes.

The deployment roadmap for these methods has evolved and matured significantly over time as it was tested, first in manufacturing organizations and then refined for service organizations such as banks and insurance companies and is now being optimized for healthcare. There is no shortcut. Instead, there is a specific path that is proven to produce a highly effective performance improvement program.

Lessons Learned

Avoid these common mistakes and reduce the risk of poor results from your performance improvement program.

These observations of the ten most common mistakes have been made by master practitioners in Lean, Six Sigma, Constraints Management, and other performance improvement methods over many years. The intent was to identify pitfalls and problems for those considering or undertaking a performance improvement deployment before the consequences of making these common errors are experienced.

Mistake #1: Create an inventory of experts.
Mistake #2: Focus on quality improvement.
Mistake #3: Make sure leadership buys in.
Mistake #4: Boiling the ocean.
Mistake #5: All that is needed is a hammer.
Mistake #6: Keep searching for the golden ticket.
Mistake #7: Report extraordinary savings.
Mistake #8: Performance improvement is a part-time job.
Mistake #9: There's never enough data.
Mistake #10: Short cuts are okay.

One of the most discouraging results of making one or more of these mistakes is reports of 'failed' deployments. These methods are proven, tried and tested in many industries and applicable to every conceivable process or problem. If applied appropriately: with the necessary infrastructure, leadership engagement, and resource allocation invested, you can be certain that breakthrough improvements and a culture of continuous improvement will be result. The initial and ongoing investment will be returned, in financial as well as operational benefits, many times over. We guarantee it. Learn from the mistakes of others, avoid making the same mistakes, and your organization can solve problems once and for all and position itself for whatever new challenge is coming next.

Who We Are

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