Lean Six Sigma - Parcial 1 - Caso AMH.

David Corzo - 20190432

1. **What is the issue now confronting McCrea and the foundations team? What critical opportunities should the team consider at this stage of the project?**

Issue: After correctly implementing the Six sigma methodology, using the DMAIC steps as instructed, measuring and using statistical tools to verify and control, the project's main stakeholders are facing some critical challenges which make it impossible to implement Six Sigma in the rest of the AMH institution. Primarily this problem arises from the fact that the physicians that work in the hospital don't really believe in the six sigma methodology.

Dr. Elridge and McCrea, project champion and black belt of the project respectively, are worried about this fact, the patient waiting time has drastically reduced and statistically studies have shown improvement. This was not enough evidence for the doctors to want to use six sigma in their work flow, in fact the majority of doctors refused to even 'give it the old college try'. Even the project sponsor Dr. Hamilton had lost sight of the use and perks of having implemented a six sigma process, at times avoiding calls and emails. McCrea was faced with a challenge of how to communicate and explain to doctors the potentiality of the six sigma methodology, the critical problem here was that the stakeholders involved in the project (with the exception of the advocates) were clearly disinterested in six sigma.

The six sigma equation Q x A = E, where Q is quality, A is acceptance and E is effectiveness, we can clearly see that the proportion of acceptance by stockholders directly affects quality, communication of the benefits and potential agility of the use of this framework to the stockholders is indispensable. In general the implementation is being compromised by the lack of commitment of the stakeholders.

Since neither McCrea nor Dr. Elbridge can force them to use six sigma, they resort to a kind of evangelization of the methodology.

Critical opportunities: The main issue in the implementation of six sigma in this institution is mainly the lack of acceptance it has amongst the stakeholders, for this a critical opportunity can surely by communicating the benefits and perks of the methodology, making statistical results easy and intuitive to understand hence some people have a difficult time with statistical data. In some sense the lack of belief in the methodology stems from the lack of results, accusations of bias, and other equally inconvenient scrutony. Delivering results that are sure not to contain bias demonstrating clear and continuous improvement will surely change everybody's mind. Nothing speaks louder than results.

2. **Assess the pilot result in terms of the statistical significance of the improvements seen via the implemented changes. What should the teams say to project sponsor Dr. Hamilton and to project champion Dr. Elbridge, about the results?**

The implementation of the changes are somewhat effective on lowering patient wait time in general. Although statistics are coming out biased, physicians either approve or hate the new changes, this means the implemented changes are being effective for some and ineffective or maybe even harmful to others. The target objective of the implementation of six sigma was to lower patient lobby wait time from 31.2 to 16.1 mean time, and even reduced the standard deviation, which is key in six sigma in order to reduce variation (variation is the enemy) from 26.65 to 18.70, these compelling results were very similar among every study, unfortunately the Hawthorne effect affected all studies, the second study (according to McCrea) was the most biased and thus the most controversial.

In essence you can't say anything about the implemented changes because the statistics and metrics are all biased and thus useless. In order to really apply six sigma the studies must be done correctly, by competent people and be used to measure real change instead of presenting wasteful and biased statistical results of no real impact to anyone. They should say to the project sponsor that they did their job badly and must repeat the statistics because they are all biased and thus of no statistical significance, they are not applying six sigma correctly if statistical metrics are coming out biased and thus useless.

3. **What is the current environment at AMH? What are the obstacles to AMH adopting Six Sigma?**

Mainly the obstacles are, as mentioned in question one, the reluctance to adopt the methodology and the lack of respectable statistical results. In spite of doctors having the best intentions 'There's no doubt that our ED physicians want to do the right thing, which is to see emergency patients as quickly as possible, but they need to be the source of the solutions.' It is still the minority that is willing to try Six Sigma, or even to understand it, AMH has a culture problem, the culture problem must be solved first, then implement Six Sigma at a macro-level. With this lack of commitment from virtually all of the critical employees at the hospital, I'm afraid McCrea and the foundation team are going to experience major setbacks and obstacles but they need to try to work through it and continue their fight for using the six sigma methodology.

On the other hand the Hawthorne effect is affecting negatively in the statistics and providing, as McCrea points out, biased and ineffective results. The foundation and whole point of implementing six sigma is to base your actions and implement betterment based on the conclusions drawn from the statistical analysis and results. In my opinion they are not going to

be able to convince anyone if the statistical results continue to come out with bias and inaccuracies such as the ones mentioned in the reading. Subjects must know nothing about the study if they are being studied, otherwise the Hawthorne effect will kickin and ruin the statistic.

4. **Was the foundation team effective, why?**

The whole point of using six sigma process is basing decisions on statistical data, the foundations team proved themselves incompetent of providing reliable statiscs and this affected the whole implementation. Even if the statistics show improvement, the statistics are useless because they are biased. I really don't see how the foundation team has done their job well, in my opinion the foundation team has been ineffective and has compromised all the six sigma projects by their ineffective statistics.

Additionally, not even the project sponsor believes in six sigma anymore thanks to the bad statistics and inconclusive evidence of ‘improvements’. The process has been completely compromised and the situation is as is in part thanks to the foundation team. Also, I don’t really get why the hospital calls someone to implement a six sigma process and then they don’t give them the appropriate support, it seems wasteful.

5. **Based upon what you know of the project result, limitations, and key stakeholders, what would you recommend as the next step for McCrea in her role as black belt of the ED Wait Time Project? What strategies would you offer to ensure her success as a black belt?**

The root problem, is in a sense, that statistical results are coming out biased, thus no reasonable conclusion can be drawn from results as badly made as them. What I would recommend is that McCrea ensures statistical analysis made well and deduce reasonable and knowledge based conclusions from the analysis instead of blindly believing that six sigma is a magical fairy that solves all your problems (its not). Six sigma is only effective if you have reliable metrics, there is a sort of blind faith McCrea has in the process and this is affecting the conclusions drawn from the statistical analysis.

My primary recommendation is to fix the statistical process of collecting data, if data is not biased the conclusions drawn will also not be biased, if data is biased the conclusion is biased as well. Personally I think McCrea is not applying six sigma correctly if she is not relieving on metrics that are reliable. This would be the base case for the next step, the next step will become ever so easier, with better statistical data the implementations will solve the root problems and this will allow to see results. Nothing speaks louder that results, upon seeing this skeptic physicians will start to believe in the process and implementing six sigma at a macro level will be easier because everybody sees is effective, but until you can reliably prove with

statistics that implementations of six sigma are effective, physicians will not believe the process. Solving the problem of biased statistics is the literal problem, solving this will enable to solve all the other problems coming after it.