Improving Pain Center Processes utilizing a Lean Team Approach

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IDENTIFICATION:

Patient Safety, Staff Safety and Customer (Surgeon and Patient) Satisfaction were being adversely affected by our Pain Center processes. This project dramatically improved our processes, while creating a formidable and ongoing team spirit.

Originally several of our Pain Center surgeons approached management and asked that we improve our Pain Center processes. It turns out that we were scheduling their patients on a 2/hr cadence and they wanted to get to 3/hr. Our first impression was shock – we were already struggling to keep up with 2/hr and a speed up seemed to imply a further risk to patient safety. We had just been exposed to some lean training and were excited about the possibility of utilizing the lean principles to solve this apparent conundrum.

A quick walk of the process with our lean sensei opened our eyes to even more problems. As we spent time just watching our process steps we realized:

1. We had staff safety concerns with moving patients, prepping patients, etc.
2. We had med safety concerns with process steps that lost control of meds.
3. We had workload balance problems with idle workers and overworked workers.
4. We had too many handoffs.
5. We had opportunities for patients to get “lost” in the process.
6. We had inconsistent practices – with lots of variations between employees, physicians and techs.

We thought very little data existed. We knew our daily volumes, we had timestamps of our key process steps, we had our patient schedules, etc.; but it was all buried in layers of detail, with little or no analysis or summary.

PROCESS:

We decided to use the Lean process improvement approach to develop and implement our solutions. A key principle in Lean is the concept of Teamwork, not from a Rah Rah standpoint, but from the point of view that a problem is best solved by utilizing the team members who are closest to the actual process. Toyota sometimes calls it Employee Enthusiasm and Involvement.
Thus we created a team consisting of the actual RN’s, Surgical Technician’s, Radiology Technicians, and Pain Medicine Specialists, who work this process daily.

Our Lean Sensei helped facilitate our work sessions and the team was led, empowered and encouraged by the Nurse Manager for the Pain Center. We met right in the work area at the end of the day’s procedures and posted our work on the walls of the Pain Center where they were constantly visible and allowed opportunity for the staff to study them and post suggestions right on the visual process map during working hours.

Initial reaction from the staff was lukewarm at best as they felt that they did a fine job and perceived this process as being criticized. After several meetings of the team, however, they realized that these process change initiatives were focusing strictly on how to enhance what we already did right. Once their misconceptions about the process were addressed, they became true champions for this process and actually embraced it with pride. The transformation was phenomenal and only after this occurred, did the potential process changes really take shape.

We started off walking the process in detail. Many of us had not realized all of the process steps that were involved. We followed patients from their arrival at our front door, thru registration, prep, procedure, recovery and discharge. We utilized value stream maps to document the process and to help us highlight problems and to develop solutions. A major breakthrough occurred when we allowed ourselves to describe an ultimate process without all of the “baggage” of our current process. We also visited an independent surgery center to view their pain center processes. After distilling all of this down into a solution, we scheduled a dry run of our solution. To protect patient safety, we conducted this after normal business hours with each of the team members representing someone (not themselves) in the process, including patients, staff, family, etc. It was a lot of fun and highlighted several issues that needed to be fine-tuned. Finally after a lot of communication and training, we scheduled the kickoff of the new process.

Some of the key tools used were:

**Standard Work** – we realized the impact of variance on our processes and resolved to identify and eliminate the sources of variance in our process steps.

**Workplace Organization** – we realized that everything needed a place and everything needed to be in its place!

**Flow** – we focused on flowing value to the patient, eliminating non-value added steps wherever possible.

**Employee Involvement** – we realized the importance of involving the entire extended team in this transformation.

**Quality** – every rework, workaround, repeated test, missed call, etc were recognized as costly and time consuming and especially for the risks to patient and staff.
Visual Controls – the team focused on making the patient flow visible via a number of physical and electronic tools.

**SOLUTION:**

Our final solutions fell into 5 categories:

**Streamline the Prep Process**
- eliminating the waste and delays in the assessment and patient prep process

**Streamline the Procedure**
- orchestrate the various team members to minimize the process cycle time while improving pt safety

**Eliminate the Handoffs**
- flow the RN’s from Prep to Procedure to Recovery and then repeat

**Identify and Eliminate the Risks**
- risks of med errors, risks of pt safety, risks of staff safety, HIPPA risks, etc.

**Improved Team Communications**
- elegantly keeping everyone informed of the status of the process

The results were dramatic. We were able to conduct a rough pilot of the process – walking the proposed new process with all of the team members simulating an actual day of procedures. The excitement was high and after some fine-tuning based on the simulation, we implemented the changes. The new process is able to handle a new patient every 20 minutes compared to the previous cadence of one every 30 minutes. This increased our Pain Center capacity by 50%. In addition we improved the safety of our process. We identified several high risk situations that we eliminated thru process or facility changes.
**OUTCOMES:**

Our results were excellent. Here are two of our charts showing the improvements:

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**Pain Center Turnaround Time**

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Not only did the MD's have to schedule less time per case, they all started to zero in on a standard amount of time per case, despite an original huge amount of variation.