**VIR PROCESS VARIATION IMPROVEMENT**  
Greenbelt Project

**Project Information and Background**

VIR workflow in the Department of Radiology is not efficient which contributes to employee dissatisfaction. The current process does not properly utilize resources to maximize efficiency and throughput. This causes uneven workflow with high and low peaks that result in unmanageable volumes and poorly utilized resources.

<table>
<thead>
<tr>
<th>DMAIC</th>
<th>Project Key Points</th>
<th>Project Work</th>
</tr>
</thead>
</table>
| Define      | Project purpose and scope, Obtain Info about process and customers, Statement of the problem  
**Subjective:** What does the patient state is the issue? | This project started because we had dissatisfied employee who felt their day was chaotic especially at certain points in the day. We used these tools to refine our problem statement and better understand where to look |
| Measure     | Situation, Determine process performance vs. requirements, Summarize data regarding current process  
**Objective:** What information has been gathered through patient assessment? | The current state showed that:  
- Although the staff felt they were functioning at their limit, the procedure room utilization only ranged from 46% to 75%.  
- Add-ons were significantly higher on Mondays & Fridays but schedule did not adjust for this variation  
- Patients were spending a lot of non-value added time in Pre  
- Sequential procedure prep lead to extended procedure times |
| Analyze     | Determine potential root causes, Confirm root causes with data, Provide focused problem statement  
**Assess:** State assessment of patient condition | The root-causes identified for variation & chaos in processes were:  
- Variation in how providers complete pre work up (how & where)  
- Lack of real-time communication  
- Inefficient scheduling method  
- Lack of standardization for procedure prep & room turnover |
| Improve     | Develop potential solutions, Test solutions, Develop future state, Actions eliminate or reduce impact of the identified root cause(s)  
**Plan/Implement:** Action Plan to address patient issue | These were the interventions we selected to address the root-causes. We then carried out a pilot to understand the effect they had on the process.  
- Reduced variation in provider Pre work up & about 5 minutes saved per patient  
- Average of 8 minutes saved in procedure prep per patient  
- Variation in unutilized procedure room time reduced by 71% |
| Control     | Maintain gains by standardizing process, Create feedback systems, Monitor system/control Plan  
**Evaluate:** Did the change in plan of care improve patient condition? | During the Control Phase we will do periodic audits to check if the process is working and ensure that we sustain the gains. The elements of this include: training, monitoring and audits |

**Team Members**

Julie Pelton; Jerry Seams;  
Brendan Hickey; Bruce Adams;  
Jason Spaulding; Karen Burgess

Six Sigma is “a business philosophy of focusing on continuous improvement by understanding customer’s needs, analyzing business process, and instituting proper measurement methods.” (Brassard et al, 2002, p.1) This philosophy uses five steps to improve and maintain the improvement of current processes. The five steps are Define, Measure, Analyze, Improve, and Control. These steps are very similar to the way clinicians often approach, analyze, and document patient care issues: SOAPIE (Subjective, Objective, Analyze, Plan, Improve, and Evaluate). The DMAIC process was used throughout this Process Improvement Project.