**BACKGROUND**

- Experts estimate that 80% of people experience acute back pain at some point in their lives. This condition can be characterized by a dull ache, shooting pain or a burning sensation. This malady is the second most common reason people visit the doctor’s office. It is also the leading cause of disability worldwide.
- Back pain and spine injuries are a significant economic burden for the United States. Health care costs compose 18% of the nation’s gross domestic product. About 10% of those funds are allocated to spine and back-related treatment.
- Often the best way a patient can judge the effectiveness of treatment is by a change in their symptoms. Completing Patient Reported Outcome Questionnaires (PRO-Qs) gives the patient and provider a common language to discuss current symptoms and functionality.
- Advances in electronic communication between patient and provider and increased sophistication in EMR systems makes the use of PRO-Qs more feasible and appealing.
- The additional cost of this implementation (Quality team, EMR build, Spine team workload, and additional equipment) was deemed necessary to optimize whole person care, patient-centered goals and shared decision making collaboration between patient and provider.

**PROJECT SCOPE AND AIM**

- Increase patient reported outcome questionnaire (PRO-Q) completion rates to 20% within a period of first 3 months.
- Increase patient reported outcome questionnaire (PRO-Q) completion rates to 30% within a period of first 12 months.
- Decrease leg pain by 1.6 points measured by visual analog scale (VAS) in patients who underwent treatment in the Spine Clinic who were diagnosed with lumbar radiculopathy within 6 months of their treatment. We base this off of the nationally accepted minimal clinically important difference (MCID).

**IMPROVEMENT PROCESS**

Six Sigma’s DMAIC cycle served as the framework for rapid cycle improvement. The project was divided into five distinct phases.

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<td>Define project scope – Spine Center Opened October 3, 2016</td>
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<td>Created standardized workflow strategies</td>
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<td>Current processes established in the new integrated center</td>
<td>Data Collection tools built in EMR</td>
<td>Created standardized workflow strategies</td>
<td>Engage with clinic leadership monthly utilizing a Plan Do Study Act (PDSA) cycle</td>
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**PRO-Q IMPROVEMENT PRELIMINARY RESULTS**

To date, we have over 7,000 unique patients in the Spine Clinical Outcomes Registry. Since that time, we have created 5 Best Practice Advisories (BPAs) to improve clinic registry enrollment. The clinic also purchased 8 tablets to use for questionnaire completion while patients are waiting for their appointments.

The graph below shows our treatment outcomes of lumbar radiculopathy over a six-month period of time. We have further broken this down into the surgical treatment of radiculopathy (via discectomy) and the non-surgical treatment of radiculopathy (epidural injections). The average pain score prior to discectomy was 5.86 and post-operatively was 2.93, with a mean difference of 2.83. The average pain score prior to injection was 6.19 and post-injection was 4.25, with a mean difference of 1.94. We met our goal by decreasing leg pain by greater than the national average of 1.6 points.

**REMAINING OPPORTUNITIES**

Analysis of current defects indicates the following challenges influencing incomplete PRO-Qs:
1. Patient arrives late to appointment and does not have time to complete the questionnaire in the waiting room.
2. Spine Team availability - Some patients require help from clinic team to sign up for the portal and navigate use of the tablet or computer.
3. Availability of tablets – We are exploring use of patient personal devices to access portal and supplement the tablets in the waiting room.
4. Availability of tablets – Recurring lock out or other IR issues with tablets forced us to consider a stand-alone computer in the waiting room or having the medical office assistant administer the survey during the rooming process.
5. Rooming time is insufficient to complete patient portal enrollment and questionnaire completion prior to provider entering the room.