



## MEMORANDUM

**DATE:** May 27, 2016

**TO:** Chris Murrell, Medical Programs Manager  
Allison Morfitt, Medical Audit Supervisor

**FROM:** Bryan Null, Sr. Research Analyst

**SUBJECT:** Spinal Cord Stimulator Data Analysis

A spinal cord stimulator is a treatment for pain that uses a mild electric current to block nerve impulses to the spine. The proposed outlook for a SCS procedure is to both decrease back pain and reduce the use of pain medications. The goal in a worker's compensation claim is also to return the injured worker to work in the appropriate capacity when possible.

We reviewed the surgeries for the implant of a spinal cord stimulator in which SAIF made payment on between January 1, 2010 and April 25, 2016. (This study does not include any costs or services prior to 2010.) This produced 70 claims with 118 spinal cord stimulator implant surgeries. In addition to overall cost and timeliness, we reviewed the post-surgery data results in three areas; return-to-work status, utilization of opiates, and the revision or removal of the spinal cord stimulator.

The average cost for each of these 118 surgeries was \$21,031. This cost is based on the allowed amount for all services on the date of the implant. The average cost per injured worker was \$35,452. The average time from date-of-injury to implant was 4,353 days or 11.9 years.

For the claimant's return-to-work status, we reviewed their status at the time of surgery and then one year post surgery for each instance of implant. There was very little overall change. (See Table 1 below.) Three workers moved from either regular or modified release at the time of surgery to not released one year later. There was one worker who moved from not released to modified work and one more from not released to regular work. For an effective procedure measured in terms of return-to-work, we would look for a significant positive net change in order to overcome status quo, but instead overall we are seeing a slightly negative change (2.7%).

Table 1

Return to Work	No Status	Not Released	Released for Modified Work	Released for Regular Work
Status At Surgery	1	66	43	8
Status 1 Year Post Surgery	1	67	43	7

Each injured worker's utilization of opiates was measured in five 90 day segments for percent of the whole that are utilizing opiates, the average service count (prescription fill) per worker and the average cost per worker during each segment. The measurements began 90 days prior to surgery and ended one year post surgery. (See Table 2 below.)

Table 2

Opiates	Prior to Surgery (90 Days)	1- 90 Days Post Surg	91-180 Days Post Surg	181-270 Days Post Surg	271-365 Days Post Surg
Percent Utilizing	80.0%	81.4%	70.0%	65.7%	61.4%
Average Service Count	5.0	4.7	4.4	4.6	5.0
Average Cost	\$423	\$452	\$354	\$319	\$341

In the 90 days prior to surgery 80% of the injured workers were utilizing opiates. Utilization increases slightly in the first 90 days post-surgery to 81.4%, before declining to 61.4% by the end of the first year. This is a 23.2% reduction in utilization from pre-surgery to one year post-surgery. While there are fewer utilizers by years end, there is no change in the average service count per utilizing injured worker (5.0). The average cost per claim for opiates, however, declines 19.4% per utilizer from pre-surgery to one year later.

Nearly half (44.1%) of the spinal cord stimulator surgeries resulted in a revision to the equipment just over one year later, (420 days on average.) These revisions add an average of \$1,435 to the cost of the spinal cord stimulator for these injured workers (See Table 3 below.)

Table 3

Revision/Removal	Percent	Average Days from Implant	Average Cost
Revision	44.1%	420	\$1,435
Removal	5.1%	734	\$919

The spinal cord stimulator is considered a permanent device to reduce the injured worker's pain and decrease the utilization of pain medications. We are not seeing significant positive impact in either of these areas. While there is a reduction in opiate use, 61.4% of injured workers in this study remained on opiates one year post surgery. The minimal and even slightly negative impact of this procedure on return-to-work status would indicate that the impact on pain reduction as an opportunity to return-to-work is equally minimal. While considered a permanent solution to pain management, in this group we are seeing significant revisions at 1.2 years after implant.

Spinal Cord Stimulator Analysis

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Time to Implant	Days*
Average Time to Implant	4,353.4

\*Days are calculated from Date-of-Injury

Cost Per Implant	Cost*
Average Cost Per Implant	\$21,031

\*Cost is based on services on the Date-of-Implant

Criteria and Notes: Payment Year >= 2010  
 Surgery Service Codes: 63650, 63655  
 Accepted Claims  
 Corresponding Service Counts and Costs are for paid services on the same Date-of-Service as the implant surgery.  
 70 Unique Claims

## Spinal Cord Stimulator Analysis

118 Unique Implant Dates

Revision Service Codes: 63660, 63663, 63664, 63685, 63688

Removal Service Codes: 63661, 63662