

# Description of Real-World Healthcare Resource Utilization and Costs Among Patients Receiving Long-Term Peripheral Nerve Stimulation Therapy From a micro-IPG System.

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## Introduction

There is a paucity of Health Care Resource Utilization (HCRU) evidence related to the current peripheral nerve stimulation (PNS) device which has hindered patient access to appropriate long-term treatment of chronic pain.

A real-world study was undertaken to characterize healthcare resource utilization (HCRU) and healthcare costs among those who received PNS therapy by a micro-Implantable Pulse Generator (micro-IPG) system (Nalu Medical, Carlsbad, CA).

## Methods

This was a retrospective observational cohort study of patients who received the micro-IPG between September 2019 through 2023. Patients included were between 18 and 80 years of age and had medical claims data for the 12 months before and after micro-IPG implant. Patients with cancer, stroke or myocardial infarction were excluded. The research database included linked data from the manufacturer's patient database and a large (>300 million patient lives) real-world multi-source healthcare data base (OM1, Boston, MA). HCRU and cost estimates (proxied by charge amounts) were estimated in US Dollars.

## Results

Data was available on 122 PNS patients (mean age = 68 years; females = 61%). The mean of total outpatient costs declined from \$18,837 pre to \$7379 post (-61%). The mean of additional services costs declined from \$8,049 pre to \$5,020. The mean of total medical costs also decreased from \$27,493 pre to \$13,717 (-50%). While not the main focus of this study, patients using opioids decreased by 31%.

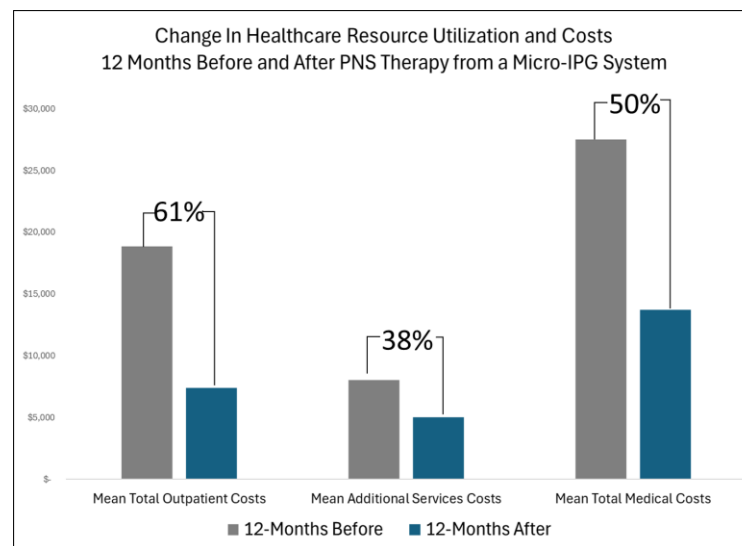


Figure 1: Percent changes in HCRU before and after PNS therapy using the micro-IPG system

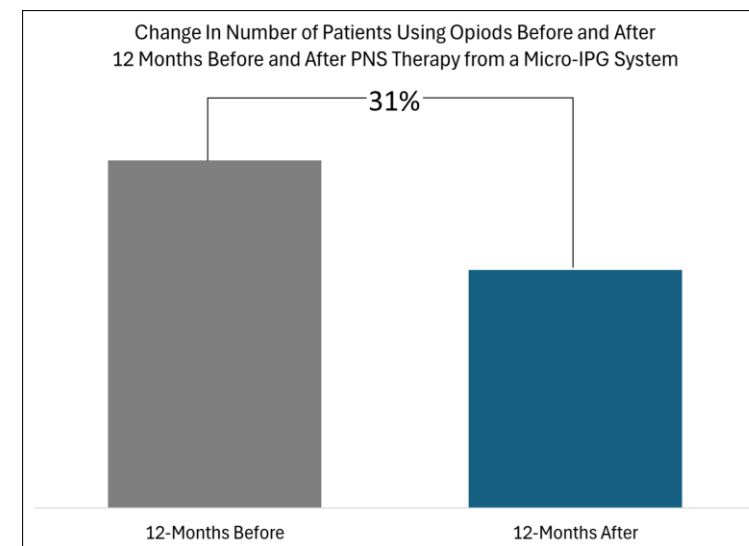


Figure 2: Percent change in the number of patients using opioids before and after PNS therapy using the micro-IPG system

## Conclusions

This was the one of the first and the largest studies describing HCRU and costs associated with long-term PNS therapy. These data show a reduction in health care utilization and costs between the 12-months prior compared to the 12-months post implant of the micro-IPG. The study findings align directionally with prior research on neuromodulation <sup>1,2</sup>. These positive findings warrant further investigation.

<sup>1</sup> Rajkumar, S., et al, Health Care Resource Utilization of High-Frequency Spinal Cord Stimulation for Treatment of Chronic Refractory Low Back Pain. *Neuromodulation*, 2023

<sup>2</sup> Taylor, R. S., et al, Health care resource utilization and costs in patients with painful diabetic neuropathy treated with 10 kHz spinal cord stimulation therapy. *Journal of Managed Care & Specialty Pharmacy*, 2023.