

## Physical Therapy Utilization Following Single Level Posterior Lumbar Fusion

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**Disclosures:** Jonathan N. Grauer: Editor in chief – NASSJ/Board of Directors - NASS

**INTRODUCTION:** Posterior lumbar fusion (PLF) is a common procedure that is increasing in frequency. Following such surgeries, physical therapy (PT) may be considered to facilitate mobilization and return to activities. However, the usage of such therapy has not been well-characterized in the literature.

**METHODS:** Patients undergoing single-level PLF were identified from the 2010 – 2021 PearlDiver M157 administrative database. These patients were stratified based on usage of therapy, home versus outpatient therapy, and timing of such therapy within the 90 days following surgery. To determine predictors of therapy, patient characteristics were determined and multivariate regressions were performed.

**RESULTS SECTION:** A total of 213,240 patients undergoing single-level PLF were identified, of which therapy was done in the 90-days following surgery for 63,231 (29.0%, of which home therapy visits were done for 10,461[16.5%]). Of those that utilized PT, the average +/- standard deviation number of sessions was 10.6 +/- 10.7. Nearly half of all PT visits happened in the first two months: home PT peaked during the second week following surgery and outpatient PT peaked 10 weeks after surgery. Figure 1 shows relative monthly timing of PT utilization for Home and outpatient PT.

Factors that were associated with and form of postoperative PT usage in decreasing odds ratio (OR) order were: having commercial insurance (OR: 1.68), being from the Northeast (OR: 1.42), female sex (OR: 1.09), ECI (OR: 1.04 per point), and age (OR: 1.03 per decade) ( $p < 0.001$  for all). Home PT utilization was most strongly associated with being from the Northeast (OR: 2.53), Medicaid insurance (OR: 1.52), female sex (OR: 1.39), and age (OR: 1.15 per decade increase) ( $p < 0.001$  for all).

**DISCUSSION:** In the 90 days following PLF, less than a third of patients received PT (of which only 16.5% was home therapy) and there was large variation in number of sessions. With the use of therapy and home versus outpatient being predicted by nonclinical drivers (insurance and geography), there is clearly room for developing more clinically-based protocols. This study is limited by the retrospective nature of the administrative dataset which could not determine patient-level decisions.

**SIGNIFICANCE/CLINICAL RELEVANCE:** These findings help define current practices/variability for the usage of PT following single-level PLF and suggest the need for more uniform practices and care algorithm to ensure patients' PT usage corresponds appropriately with their clinical need.

**ACKNOWLEDGEMENTS:** This publication was made possible by James G. Hirsch Medical Student Fellowship at Yale University School of Medicine.

### IMAGES AND TABLES:

Figure 1:

