

Characterizing Differential Patterns of Referral to Spine Surgery: An Assessment of Surgical Conversion Among New Patients

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INTRODUCTION: Rising healthcare expenditure and resource limitation continue to pose a challenge on the United States healthcare system. While high referral rates encourage collaboration, surgical consultations appointments are limited. The high demand for a limited supply of appointments may result in delayed access to surgical care. This study aimed to investigate the one-year surgical conversion rate of various medical providers referring patients to the orthopaedic spine surgery service.

METHODS: A retrospective epidemiological study was performed. All new patients seen in clinic by six spine surgeons at a single institution between January 2022, and December 2023, were queried. Demographics and referral characteristics were collected, including age, sex, race, as well as level of training and specialty of the referring provider. One-way analysis of variance for continuous variables and chi-square tests for categorical variables were used to ascertain differences. Multivariable logistic regressions were run to assess demographic and referral variables associated with undergoing surgery.

RESULTS: Of the 2680 referrals, 1310 (48.9%) were from physicians, 999 (37.2%) from physician assistants, and 371 were nurse practitioners (13.8%). The majority of referrals to spine surgeons originated from family medicine providers (49.3%). These referrals resulted in an overall surgical conversion rate within one year for the surgeon group of 10.3% with 12.3% of referrals being recommended to receive steroid injections and 25.4% for physical therapy after initial spine surgery consultation. Independent variables associated with patients undergoing surgery included being referred by an interventional pain management provider (OR: 2.646, 95% CI [1.559-4.388]) or a physical medicine and rehabilitation provider (OR: 2.857, 95% CI [1.747-4.607]).

DISCUSSION AND CONCLUSION: Patients referred to surgeons by interventional pain and physical medicine and rehabilitation providers were more likely to undergo surgery. This may be due to increased knowledge of nonemergent causes of spine pathology. While level of training did not have an impact on the conversion rate, our low surgical conversion rate highlights the value of protocols to minimize the non-surgical patients from delaying access to care for surgical candidates.