

The Effect of a Multidisciplinary Spine Clinic on Treatment Rates and Lead Times to Care

Authors : Ishan Naidu, Jessica Ryvlin, Devin Videlefsky

Abstract : Introduction: Back pain is a leading cause of years lived with disability and economic burden, exceeding over \$20 billion in healthcare costs not including indirect costs such as absence from work and caregiving. The multifactorial nature of back pain leads to treatment modalities administered by a variety of specialists, which are often disjointed. Multiple studies have found that patients receiving delayed physical therapy for lower back pain had higher medical-related costs from increased health service utilization as well as a reduced improvement in pain severity compared to early management. Uncoordinated health care delivery can exacerbate the physical and economic toll of the chronic condition, thus improvements in interdisciplinary, shared decision-making may improve outcomes. Objective: To assess whether a multidisciplinary spine clinic (MSC), consisting of orthopedic surgery, neurosurgery, pain medicine, and physiatry, alters interventional and non-interventional planning and treatment compared to a traditional unidisciplinary spine clinic (USC) including only orthopedic surgery. Methods: We conducted a retrospective cohort study with patients initially presenting for spine care to orthopedic surgeons between July 1, 2018 to June 30, 2019. Time to treatment recommendation, time to treatment and rates of treatment recommendations were assessed, including physical therapy, injections and surgery. Treatment rates were compared between MSC and USC using Pearson's chi-square test logistic regression. Time to treatment recommendation and time to treatment were compared using log-rank test and Cox proportional hazard regression. All analyses were repeated for the propensity score (PS) matched subsample. Results: This study included 1,764 patients, with 692 at MSC and 1,072 at USC. Patients in MSC were more likely to be recommended injection when compared to USC (8.5% vs. 5.4%, $p=0.01$). When adjusted for confounders, the likelihood of injection recommendation remained greater in MSC than USC (Odds ratio [OR]=2.22, 95% CI: (1.39, 3.53), $p=0.001$). MSC was also associated with a shorter time to receiving injection recommendation versus USC (median: 21 vs. 32 days, log-rank: $p<0.001$; hazard ratio [HR]=1.90, 95% CI: (1.25, 2.90), $p=0.003$). MSC was associated with a higher likelihood of injection treatment (OR=2.27, 95% CI: (1.39, 3.73), $p=0.001$) and shorter lead time (HR=1.98, 95% CI: (1.27, 3.09), $p=0.003$). PS-matched analyses yielded similar conclusions. Conclusions: Care delivered at a multidisciplinary spine clinic was associated with a higher likelihood of recommending injection and a shorter lead time to injection administration when compared to a traditional unidisciplinary spine surgery clinic. Multidisciplinary clinics may facilitate coordinated care amongst different specialties resulting in increased utilization of less invasive treatment modalities while also improving care efficiency. The multidisciplinary clinic model is an important advancement in care delivery and communication, which can be used as a powerful method of improving patient outcomes as treatment guidelines evolve.

Keywords : coordinated care, epidural steroid injection, multi-disciplinary, non-invasive

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