

The Impact of Community Care on Spine Surgical Complexity and Outcomes in the Veterans Health Administration

Kristina Smith, MSW, VA Boston Healthcare System
Senior Policy Analyst, PEPReC

Allison Dorneo, BA, VA Boston Healthcare System
Research Analyst, PEPReC

Yi-Jung Shen, MS, VA Boston Healthcare System
Data Analyst, PEPReC

Steven D. Pizer, PhD, VA Boston Healthcare System
Chief Economist, PEPReC

Bottom Line Up Front

Lumbar spinal stenosis (LSS) and back pain is prevalent among the Veteran population, and enrollees are increasingly using the Veterans Health Administration's (VHA) Community Care (CC) program to treat their symptoms. However, little is known about how CC compares to VHA direct care in terms of the quality and cost of treatment. To explore this, the Partnered Evidence-Based Policy Resource Center (PEPRc) analyzed spine surgeries across both settings and found that, while outcomes were similar, Veterans in CC were more likely to receive complex and costly procedures without added benefit. This suggests a need to reassess referral practices and resource use in community-based spine care.

Introduction

Lumbar spinal stenosis (LSS) is a chronic, degenerative condition affecting over 200,000 people in the United States (US).¹ Among Veterans, LSS and chronic back pain are leading causes of disability and often coexist with mental health conditions like depression, PTSD, and substance use disorder.^{2,3}

Treatment ranges from non-surgical methods to simple decompression surgery or complex instrumented fusion surgery. Despite higher costs, complex surgeries have not shown better outcomes than simpler ones in reoperation rates, disability, or pain relief.⁴⁻⁸ In general, surgery may help some patients, but others see no improvement or worse symptoms, with about 20% needing reoperation within 10 years.⁹

The Veterans Health Administration's (VHA) Community Care (CC) program, expanded by the 2019 MISSION Act, offers Veterans care options outside VHA facilities.¹⁰ While VHA guidelines recommend conservative treatment first and require neurosurgical consultation prior to surgery, they don't specify which surgery is best.¹¹ With limited data comparing CC to direct care, the Partnered Evidence-Based Policy Resource Center (PEPRc) investigated how CC affects surgical complexity and outcomes for Veterans with LSS.¹²

Methods

Data Sources and Sample

Data on VHA direct care and CC was extracted from the VHA Corporate Data Warehouse and the VHA Office of Integrated Veteran Care's Consolidated Data Sets. These sources included information on patients' LSS diagnoses, health conditions, surgeries, and provider referrals. Patient and facility addresses were obtained from geocoded enrollee files provided by the Planning Systems Support Group. To identify VHA facilities eligible to perform spine surgery, investigators used surgical complexity level ratings from the VHA National Surgery Office. The final sample included Veterans with LSS who lived within 80 miles of a VHA facility that performed at least one spine surgery between January 1, 2019, and December 31, 2022.

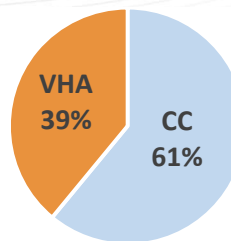
Analysis

Evaluators used a two-stage instrumental variable approach to examine Veterans with LSS who received spine surgery either in VHA direct care or through CC. They first used adjusted logistic regression models to estimate the impact of CC on the likelihood of receiving a complex surgery, as well as 30-day readmissions, complications, and 1-year reoperations. Then, they applied a two-stage model that accounted for selection bias, using primary care providers' historical CC referral and imaging rates as instruments, along with a Newey correction for more accurate estimates. This approach allowed evaluators to control for unobservable factors associated with 1) patients receiving spine surgery at all, and 2) patients receiving spine surgery in the community.

Results

Among 41,726 Veterans diagnosed with LSS, 7,496 (about 5.6%) had spine surgery within one year of their diagnosis. Of those patients, 61% received surgery in CC and 39% received surgery in VHA direct care. The evaluation found **no** major differences in post-surgical outcomes between Veterans treated in VHA facilities and those treated in the community, aligning with previous research.

When comparing settings, Veterans treated in CC were **significantly more likely** to receive complex surgeries involving decompression with instrumented fusion—36.5 percentage points higher than those treated in VHA.



% of Veterans Receiving Any Spine Surgery (by care setting)

Limitations

This evaluation has several limitations. First, relying solely on administrative data without chart review limited the ability to confirm whether complications and readmissions were directly related to surgical quality.¹³ Some surgeries may have been missed if Veterans used other insurance, such as Medicare, for care outside the VHA. Although the analysis adjusted for factors like distance to VHA facilities, patient characteristics, and used two instrumental variables to reduce selection bias, unmeasured confounding may still exist. Finally, the findings may not generalize to Veterans without access to both VHA and CC options.

Policy Implications & Relevance

The higher volume of spine surgeries performed in CC compared to VHA direct care—and the greater likelihood that these surgeries are complex and costly—raises significant resource and budget concerns for the VHA and US healthcare payers. Policymakers and VHA leaders need to investigate the reasons behind this pattern, including whether financial incentives in the community or capacity limitations within direct care influence surgical complexity. Since complex surgeries are considerably more expensive and may not offer additional postoperative benefits compared to simpler laminectomies, VHA leadership and policymakers should carefully reevaluate guidelines for spine surgery referrals in the CC setting.

The strong link between CC settings and the use of complex spine surgeries involving instrumented fusion highlights the impact of payment structures. Medicare fee-for-service rates paid to private CC providers may encourage more expensive and resource-intensive procedures compared to the salaried VHA physician model. This calls for a closer review of how payment models shape care decisions in CC. With CC accounting for over 20% of VHA medical spending in 2021, it is critical to evaluate and monitor the quality of care and resource utilization in CC relative to direct care facilities.¹⁴ Understanding the factors behind differences in surgical outcomes will support informed decision-making to improve the value, efficiency, and quality of care provided to Veterans.

References

1. Lurie J, Tomkins-Lane C. Management of lumbar spinal stenosis. *BMJ*. 2016;352:h6234. doi:10.1136/bmj.h6234
2. Kalichman L, Cole R, Kim DH, et al. Spinal stenosis prevalence and association with symptoms: the Framingham Study. *Spine J*. 2009;9(7):545-550. doi:10.1016/j.spinee.2009.03.005
3. Sinnott P, Dally SK, Avoundjian T, Trafton J, Wagner T. HSR&D Spotlight on Pain Management: Neck and Back Pain in VA Incidence and Prevalence in VA Users. Presented at: 2013.
4. Chou R, Baisden J, Carragee EJ, Resnick DK, Shaffer WO, Loeser JD. Surgery for Low Back Pain: A Review of the Evidence for an American Pain Society Clinical Practice Guideline. *Spine*. 2009;34(10):1094. doi:10.1097/BRS.0b013e3181a105fc
5. Chou R, Loeser JD, Owens DK, et al. Interventional therapies, surgery, and interdisciplinary rehabilitation for low back pain: an evidence-based clinical practice guideline from the American Pain Society. *Spine (Phila Pa 1976)*. 2009;34(10):1066-1077. doi:10.1097/BRS.0b013e3181a1390d
6. Cherkin DC, Sherman KJ, Balderson BH, et al. Comparison of complementary and alternative medicine with conventional mind-body therapies for chronic back pain: protocol for the Mind-body Approaches to Pain (MAP) randomized controlled trial. *Trials*. 2014;15:211. doi:10.1186/1745-6215-15-211
7. Delitto A, Piva SR, Moore CG, et al. Surgery versus Nonsurgical Treatment for Lumbar Spinal Stenosis: A Comparative Effectiveness Randomized Trial with 2-Year Follow-up. *Annals of internal medicine*. 2015;162(7):465. doi:10.7326/M14-1420
8. Malmivaara A, Slätis P, Heliövaara M, et al. Surgical or nonoperative treatment for lumbar spinal stenosis? A randomized controlled trial. *Spine (Phila Pa 1976)*. 2007;32(1):1-8. doi:10.1097/01.brs.0000251014.81875.6d
9. Martin BI, Tosteson ANA, Lurie JD, et al. Variation in the Care of Surgical Conditions: Spinal Stenosis: A Dartmouth Atlas of Health Care Series. The Dartmouth Institute for Health Policy and Clinical Practice; 2014. Accessed November 13, 2024. <http://www.ncbi.nlm.nih.gov/books/NBK586767/>
10. Kelley AT, Greenstone CL, Kirsh SR. Defining Access and the Role of Community Care in the Veterans Health Administration. *Journal of General Internal Medicine*. 2019;35(5):1584. doi:10.1007/s11606-019-05358-z
11. Macedo F, Annaswamy T, Collier R, et al. Diagnosis and Treatment of Low Back Pain: Synopsis of the 2021 US Department of Veterans Affairs and US Department of Defense Clinical Practice Guideline. *Am J Phys Med Rehabil*. 2024;103(4):350-355. doi:10.1097/PHM.0000000000002356
12. Dorneo A, Shen, Y, Pizer, S. et. al. The Impact of Community Care on Spine Surgical Complexity and Outcomes in the Veterans Health Administration. *Health Services Research*. doi: [10.1111/1475-6773.70057](https://doi.org/10.1111/1475-6773.70057)
13. Dresser MV, Feingold L, Rosenkranz SL, Coltin KL. Clinical quality measurement. Comparing chart review and automated methodologies. *Med Care*. 1997;35(6):539-552. doi:10.1097/00005650-199706000-00001
14. Currie J, Zhang J. Doing More with Less: Predicting Primary Care Provider Effectiveness. *The Review of Economics and Statistics*. 2025;107(2):289-305. doi:10.1162/rest_a_01290

ABOUT PEPRcC POLICY BRIEFS

This evidence-based policy brief is written by Partnered Evidence-based Policy Resource Center (PEPRcC) staff to inform policymakers and Veterans Health Administration (VHA) managers about the evidence regarding important developments in the broader health system and economy. PEPRcC is a Quality Enhancement Research Initiative-funded resource center that collaborates with operational partners to design and execute randomized evaluations of VHA initiatives, develops and refines performance metrics, and writes evidence-based policy briefs. *The views expressed in this article are those of the authors and do not necessarily reflect the position or policy of the Department of Veterans Affairs or the United States government.*

VA



U.S. Department of Veterans Affairs
Veterans Health Administration
Health Services Research & Development Service

PEPRcC

Partnered Evidence-based Policy Resource Center
A VA QUERI Center



VA Quality Enhancement Research Initiative
EVIDENCE INTO PRACTICE