



# Spine surgeon ownership of ambulatory surgery centers

Andre M. Samuel, Mark T. Langhans, Sravisht Iyer

Department of Orthopedic Surgery, Hospital for Special Surgery, New York, NY, USA

Correspondence to: Sravisht Iyer, MD. Assistant Attending Orthopedic Surgeon, Hospital for Special Surgery, 535 E 70th St., New York, NY 10021, USA. Email: IyerS@hss.edu.

Submitted May 24, 2019. Accepted for publication May 31, 2019.

doi: 10.21037/atm.2019.05.89

View this article at: <http://dx.doi.org/10.21037/atm.2019.05.89>

## Introduction and trends

With higher healthcare costs compared to other similarly developed countries, US regulations are increasingly shifting away from fee-for-service based reimbursement and more towards bundled reimbursements for episodic care. This effectively transfers costs to providers and hospitals. As these regulations take effect, hospitals and providers are seeking out more efficient means of providing care. An example of this phenomenon in surgical care is the emergence of ambulatory surgery, which forgoes the costs of postoperative inpatient hospitalization. Between 1982 and 2008, over 4,700 new ambulatory surgery centers (ASC) were opened in the United States (1), delivering surgical care at stand-alone centers without planned postoperative inpatient admission. This trend continues to grow with the ASC market in the US expected to exceed \$92 billion dollar by 2024 (2).

In spine surgery specifically, there has been a significant increase in both hospital-based and ASC-based outpatient surgery over the last decade (3). Lumbar laminotomies, previously performed in the inpatient setting in 81% of cases, is now performed in an outpatient hospital setting in 68% of cases, and in an ASC in 10% of cases. Similarly, posterior cervical laminotomies were previously performed in the inpatient setting in 76% of cases in 2003, are now performed in outpatient-based hospital settings in 50% of cases and in ASCs in 23% of cases as of 2014. A survey of 57 US-based spine surgeons performed in 2012 found that 84% were performing ambulatory spine surgery, either in a hospital-based setting or at an ASC (4).

With ASCs potentially providing a more efficient means of providing surgical care, there has also been an increasing trend towards surgeon leadership in and ownership of ASCs. A recent survey of academic spine surgeons found

that 49% currently had investments in free standing surgery centers (4). This is only expected to increase—between 2017 and 2024 the surgeon-owned segment of the ASC market is expected to grow at an annual compound growth rate of 4.9% (2). This is in contrast to surgeon ownership and management of hospitals or hospital organizations, which may be understandably more complex and removed from surgical practice. While physician ownership of both hospitals and ASCs have increased since the Affordable Care Act (ACA) (5), the operations of an ASC may better utilize the expertise of surgeons, including the current necessities and inefficiencies for surgical care and know how to optimize both patient care and cost savings. The current editorial discusses several aspects of this new trend towards increased spine surgeon ownership of ASCs, including ownership models, costs, safety, and conflicts of interest.

## Ownership models

Surgeon ownership of ASC can be classified into two different models: independent surgeon ownership and joint surgeon-hospital ventures. Independent surgeon ownership of ASCs offer several advantages as a practice model (6). First, independent ownership of the ASC gives the surgeon access to reimbursed facility fees in addition to professional fees for surgery. This accounts for a significant increase in the total reimbursement to a surgeon for an individual procedure. However, aside from just financial benefit, ASC ownership also allows for increased control over the operations and staff of the center. This includes surgical scheduling and selection of focused operating room staff, both of which may improve the efficiency of a surgical practice.

There are also drawbacks to independent surgeon-

ownership of an ASC that must be considered (1). To begin, achieving primary stake in an ASC enterprise requires significant capital investment on the part of the surgeon. This may need to be financed using debt and ultimately expose the individual surgeon to a significant amount of personal financial risk. In addition, the regulatory process of having a new ASC licensed to do business and perform surgical procedures may be difficult for an individual surgeon to navigate. Independent surgeons and even small surgeon groups are advised to seek out specialized legal counsel with specific expertise in the local and federal regulation of ASCs. In addition, open dialog with regulators can often provide insight into potential issues with approval or licensing. Finally, it can be difficult for an independent surgeon to develop patient referral networks and to negotiate insurance contracts. Due to competition from larger hospital systems and large physician groups, independent ASCs are disadvantaged without the same negotiating power with insurance companies or affiliated networks of primary care physicians who can refer surgical patients.

The alternative ownership model to an independent physician-owned ASC is a joint physician-hospital venture. This type of organization defrays many of the weakness of having an independent ASC (6). Namely, by entering into a joint venture with a larger hospital organization, the ASC now shares some of the financial risk of the ASC, protecting the individual surgeon. A joint venture ASC also has access to the more extensive referral networks and insurance contracts of the hospital. The increased negotiating power and market share of the associated hospital organization is also advantageous when renegotiating contracts with insurance companies, medical suppliers, and service contractors. Hospitals also have access to legal counsel, education and training departments, and regulatory compliance teams, which would otherwise be costly or administratively cumbersome for the independent ASC.

However, these benefits come at the cost of diluted ownership and revenue from the ASC. If the surgeon owner is not the managing partner of the joint venture, they also give up ability to control staffing, scheduling, and capital investment decisions. It is also important to consider that the hospital system may preferentially contribute less profitable referrals to the ASC. This maximizes profitability at the inpatient hospital, which is ultimately the primary focus of the hospital system, but comes at a expense to the independent surgeon owners. While there are benefits

and weaknesses to each ownership model any surgeon entering into one of these business arrangements should fully understand the terms and implications. Personal legal counsel that is specialized in healthcare organizations is often recommended, at least during the initial phase of starting at ASC.

### **Lower reimbursement and lower costs**

The lower costs of outpatient surgical care are the primary driver of the rapid emergence of ASCs nationwide. As a means to control rising healthcare costs, public and private reimbursement of spine surgery procedures has decreased over the last decade, with reimbursement for anterior cervical discectomy and fusion (ACDF) surgery dropping nearly 33% between 2007 and 2014 (7). Medicare reimbursement for surgical procedures performed in the hospital setting has historically been higher than reimbursement for the same procedures in the outpatient setting. For example, average 90-day reimbursement for all tests and procedures associated with an ACDF in 2007 was \$51,080 for inpatient cases and \$43,664 for outpatient cases. However, this difference has narrowed over time with greater decreases in reimbursement seen in the inpatient setting. In 2014, 90-day reimbursement for ACDF surgery was \$33,980 in the inpatient setting and \$30,146 in the outpatient setting. In 2018, the Medicare reimbursement for an isolated ACDF procedure alone is \$8,783 in an outpatient hospital setting versus \$5,870 in an ASC according to one report (8).

Numerous studies have demonstrated lower costs associated with outpatient surgical care. In one study an almost \$8,000 cost differential was noted between inpatient and outpatient ACDF surgery over 90-day postoperatively (7). However, this study also noted that patients receiving outpatient surgery were on average younger and healthier. Another study similarly noted a large difference in 90-day costs after outpatient versus inpatient ACDF at \$33,000 versus \$74,000 (9). However, high medical comorbidities and readmission rates were again noted in inpatients.

A large study out of France demonstrated almost 50% reduction in initial costs with outpatient lumbar discectomy compared to inpatient surgery (10). Finally a large study of almost 150,000 patient undergoing lumbar discectomy in 4 US states found greater than 50% reduction in charges for outpatient surgery versus inpatient surgery (\$11,339 versus \$24,273), but also younger age, lower comorbidity, and fewer readmissions (11).

However, any analysis of healthcare cost must carefully define the methods of cost accounting, ensuring that both inpatient and outpatient costs are included over similar time periods. Interestingly, one study of lumbar interspinous process spacer device placement found similar total costs between spine surgery performed in the inpatient and outpatient setting, with higher hospitalization costs with inpatient surgery being defrayed by higher costs for outpatient services after ambulatory surgery (12). Therefore, further understanding of ongoing outpatient costs after surgery is necessary.

### Quality and safety of spine surgery at ASCs

While proponents of spine surgery at ASCs primarily cite lower costs for care as the main advantage, opponents of ASCs argue that the quality and safety of surgery may be compromised in this setting. Spine surgery remains a technically demanding and invasive surgical procedure, that carries significant risk for medical or neurological complications even when performed safely. Recently, a number of studies have been performed demonstrating the overall safety of certain spine procedures in the outpatient setting with low complications and good efficacy. One retrospective study of 299 3- and 4-level ACDF surgeries found a low readmission rate of 1% in the outpatient setting (13). Another study of hospital- versus ASC-based ACDF found greater postoperative narcotic usage after hospital-based procedures (14). Finally a study of over 500 patient undergoing cervical disc arthroplasty either at ASC or in a hospital inpatient or outpatient setting faster operative time, lower blood loss, and fewer postoperative complications were noted with ASC cases. In addition, no ASC cases required postoperative admission (15).

While several studies show similarly low complications and readmission after outpatient spine surgery, the quality of these studies has been called into question. One systematic review of 39 studies of spine surgery in the ASC-setting which found only lower quality, level 3 or 4, evidence supporting safety and efficacy (16). In addition, another systemic review of 6 studies of cervical spine surgery in the outpatient setting found that assessment of postoperative complications was inconsistent and at times inadequate during the outpatient period, and many studies had very evident conflicts of interest related to ASC ownership (17). In conclusion, further higher quality, controlled investigation is warranted prior to the implementation of any major shifts in care models.

### Concerns for physician conflicts of interest

There remain concerns that physician-ownership of ASCs may become a source for conflicts of interest; with financial gains potentially influencing the clinical decision-making of surgeons. Some evidence for this has been shown in existing literature. Market-based research has demonstrated increased rates of complex spine surgery with increased in physician-owned hospitals, as compared to states without physician ownership (18). Another study also found that patients evaluated by a physician owner of an ASC had a higher adjusted likelihood of undergoing elective carpal tunnel or rotator cuff surgery versus those seen by non-owners (19). Non-spine surgeon case volume has also been shown to increase amongst owners versus non-owners after opening of a new ASC (20). Finally, ASC owners are more likely to refer privately insured patients to their ASC and Medicaid patients to an inpatient hospital (21). However, this evidence largely comes from the healthcare policy and economics literature and is based on non-spine practices.

Spine surgery does inherently have high surgical risks involved, which require exhaustion of preoperative conservative measures before surgical treatment. In three parallel studies by one academic spine surgery group, limited deviation from previous clinical practices was demonstrated after introduction of a new physician owned specialty hospital and ASC. The preoperative treatment algorithm prior to ACDF surgery was found to be no different between patients who underwent surgery at the physician owned hospital versus the tertiary hospital, including a similar duration of symptoms and trial of nonoperative measures including physical therapy (22). In a 1:2 case-control study of patients treated at the physician-owned or tertiary hospital, the patients at the physician-owned hospital actually had longer duration of symptoms and were more likely to attempt nonoperative measures (23). Finally, over a 2-year period the academic spine surgery practice purchased stake in 3 ASCs and one specialty hospital. Over this period there was actually a minimal decrease (not statistically significant) in the number of cases performed per surgeon per month (24). Clearly the presence and impact of conflicts of interest must be assessed on a case-by-case basis. As some practices may feel more financial pressure to increase volume than others, safeguards against biased practice can be beneficial, such as standardized treatment algorithms, public reporting of conflicts, and patient counseling on nonsurgical options.

## Outlook and future direction

It is very likely that we will continue to see increased usage of surgeon-owned ASCs in the future. While the growth of ASCs will largely be dependent on US healthcare policies, the continued decreases in reimbursements for surgery in 2019 and beyond will continue to pressure providers to find more cost efficient means to deliver surgical care (25). While there has already been significant investigation on the safety, efficacy, and cost effectiveness of spine surgery at ASCs, the quality of these studies is limited. As this practice model continues to grow, further higher-quality research is warranted. Given the complexities and rapidly changing nature of the reimbursement and utilization related to ASCs, independent physician ownership ASCs remains a risky, but potentially profitable business model for physicians. Joint surgeon-hospital ventures offer mitigation of these risks, but the specifics of the arrangement with regard to reimbursement, ownership, and management can dramatically affect the worthwhileness of such an arrangement.

## Acknowledgments

None.

## Footnote

*Conflicts of Interest:* The authors have no conflicts of interest to declare.

## References

- Buehler DA, Mattison TR, Mayberry DE. Developing an orthopedic ambulatory surgery center. *Orthop Clin North Am* 2008;39:17-25, v-vi.
- Garrity M. ASC Market to Exceed 92B by 2024. *Becker's ASC Review*. 2018. Available online: <https://www.beckersasc.com/outpatient-spine/asc-market-to-exceed-92b-by-2024-3-details.html>. Accessed May 17, 2019.
- Idowu OA, Boyajian HH, Ramos E, et al. Trend of Spine Surgeries in the Outpatient Hospital Setting Versus Ambulatory Surgical Center. *Spine (Phila Pa 1976)* 2017;42:E1429-36.
- Baird EO, Brietzke SC, Weinberg AD, et al. Ambulatory spine surgery: a survey study. *Global Spine J* 2014;4:157-60.
- Plummer E, Wempe W. The Affordable Care Act's Effects On The Formation, Expansion, And Operation Of Physician-Owned Hospitals. *Health Aff (Millwood)* 2016;35:1452-60.
- Giannini D. Pros and cons of the ambulatory surgery center joint venture. *Orthop Clin North Am* 2008;39:11-5, v.
- Martin CT, D'Oro A, Buser Z, et al. Trends and Costs of Anterior Cervical Discectomy and Fusion: a Comparison of Inpatient And Outpatient Procedures. *Iowa Orthop J* 2018;38:167-76.
- Popa R. Here's what CMS pays for 6 orthopedic procedures for ASCs vs. HOPDs. *Becker's ASC Review*. 2018. Available online: <https://www.beckersasc.com/orthopedics-tjr/here-s-what-cms-pays-for-6-orthopedic-procedures-for-asc-vs-hopds.html>. Accessed May 17, 2019.
- Purger DA, Pendharkar AV, Ho AL, et al. Outpatient vs Inpatient Anterior Cervical Discectomy and Fusion: A Population-Level Analysis of Outcomes and Cost. *Neurosurgery* 2018;82:454-64.
- Debono B, Sabatier P, Garnault V, et al. Outpatient Lumbar Microdiscectomy in France: From an Economic Imperative to a Clinical Standard-An Observational Study of 201 Cases. *World Neurosurg* 2017;106:891-7.
- Bekelis K, Missios S, Kakoulides G, et al. Selection of patients for ambulatory lumbar discectomy: results from four US states. *Spine J* 2014;14:1944-50.
- Ortega A, Sarmiento JM, Patil C, et al. Comparative Analysis of Inpatient and Outpatient Interspinous Process Device Placement for Lumbar Spinal Stenosis. *J Neurol Surg A Cent Eur Neurosurg* 2015;76:443-50.
- Khalid SI, Kelly R, Carlton A, et al. Outpatient and inpatient readmission rates of 3- and 4-level anterior cervical discectomy and fusion surgeries. *J Neurosurg Spine* 2019:1-6.
- Massel DH, Narain AS, Hijji FY, et al. A Comparison of Narcotic Consumption Between Hospital and Ambulatory-Based Surgery Centers Following Anterior Cervical Discectomy and Fusion. *Int J Spine Surg* 2018;12:595-602.
- Gornet MF, Buttermann GR, Wohns R, et al. Safety and Efficiency of Cervical Disc Arthroplasty in Ambulatory Surgery Centers vs. Hospital Settings. *Int J Spine Surg* 2018;12:557-64.
- Sivaganesan A, Hirsch B, Phillips FM, et al. Spine Surgery in the Ambulatory Surgery Center Setting: Value-Based Advancement or Safety Liability? *Neurosurgery* 2018;83:159-65.
- Epstein NE. Cervical spine surgery performed in

- ambulatory surgical centers: Are patients being put at increased risk? *Surg Neurol Int* 2016;7:S686-91.
18. Mitchell JM. Utilization changes following market entry by physician-owned specialty hospitals. *Med Care Res Rev* 2007;64:395-415.
  19. Mitchell JM. Effect of physician ownership of specialty hospitals and ambulatory surgery centers on frequency of use of outpatient orthopedic surgery. *Arch Surg* 2010;145:732-8.
  20. Hollingsworth JM, Ye Z, Strobe SA, et al. Physician-ownership of ambulatory surgery centers linked to higher volume of surgeries. *Health Aff (Millwood)* 2010;29:683-9.
  21. Gabel JR, Fahlman C, Kang R, et al. Where do I send thee? Does physician-ownership affect referral patterns to ambulatory surgery centers? *Health Aff (Millwood)* 2008;27:w165-74.
  22. Schroeder GD, Kurd MF, Kepler CK, et al. Are Patients Undergoing an Anterior Cervical Discectomy and Fusion Treated Differently at a Physician-owned Hospital? *Clin Spine Surg* 2018;31:211-5.
  23. Schroeder GD, Kurd MF, Kepler CK, et al. Comparing the Treatment Algorithm and Complications for Patients Undergoing an Anterior Cervical Discectomy and Fusion at a Physician-Owned Specialty Hospital and a University-Owned Tertiary Care Hospital. *Am J Med Qual* 2017;32:208-14.
  24. Schroeder GD, Kurd MF, Kepler CK, et al. The Effect of Hospital Ownership on Health Care Utilization in Orthopedic Surgery. *Clin Spine Surg* 2018;31:73-9.
  25. Manchikanti L, Singh V, Benyamin RM, et al. Reframing Medicare Physician Payment Policy for 2019: A Look at Proposed Policy. *Pain Physician* 2018;21:415-32.

**Cite this article as:** Samuel AM, Langhans MT, Iyer S. Spine surgeon ownership of ambulatory surgery centers. *Ann Transl Med* 2019;7(Suppl 5):S161. doi: 10.21037/atm.2019.05.89