Thanks Randy! First of all, I am humbled and honored to be in front of this group today. Before I get started on the presentation, I would like to thank all of this year's committee members and chairs, as well as the executive committee. I would especially like to thank Marc Vanefsky, who has put up with a lot of nagging from me this year. Andrew Little has done an outstanding job as Program Chair. I also want to thank Marco Lee for continuing to work as membership Chair this year. He has done an outstanding job at attracting new candidates. Randy Smith and his communications committee have continued to improve our ability to stay in touch with members, candidates and our exhibitors.

I want to formally recognize and thank Emily Schile for her diligent support of the Western. Please take a moment to thank her during the meeting.

Our foray into Center of Excellence care working directly with purchasers of health care has been rewarding and also at times a bit frustrating. Overall it has been a positive endeavor for our patients, group of neurosurgeons and the organization. Before we discuss the particulars of our program, some overview of circumstances that lead to the development of this care model is in order.

It is well established that there are large variations in the utilization of spinal operations for degenerative disease. For lumbar fusion surgery the variation can be as much as a factor of 20. There are also well documented huge variations in the costs of lumbar spine surgical care and probably also in terms of quality. Underlying these variations is a growing concern that a significant amount of lumbar surgery for degenerative changes may be unnecessary or simply inappropriate.

These issues have caused growing scrutiny by purchasers of health care that spend large amounts on benefits for their employees with no assurance of quality, appropriateness or consistency. Almost any other "production expense" is managed in terms of these variables. Imagine for example if Walmart had an arrangement with a supplier with no guarantee of quality or price, or if Boeing did not demand high quality and consistency from a component supplier. Up until recently health care had been largely outsourced, with no quality expectation of any sort. Large corporations are beginning to realize that there is a lot of waste in the way health care is provided for their employees and families. Additionally some of this care may be worse than "low value" care. It may be no value or even negative value care in terms of cost and outcomes. This has led to some companies taking more of a supply chain approach to the purchasing of health care, just like other production inputs. The current fee for service model for reimbursement encourages over utilization of medical procedures and testing. Concurrently, there is little assurance of quality or appropriateness.

Our center of excellence work started with Walmart in 2013. Initially the program was based around patients that had received a recommendation from a local surgical consultant to have a lumbar fusion. The goal was for patients to receive care at a high volume facility with demonstrated low cost and complication rates. Virginia Mason and the other participating facilities quickly discovered that 60% or more of the patients who

had been recommended a fusion locally did not meet our criteria for surgery or could consider a simpler decompression instead. The program has now been expanded to where patients can be seen through the program on referral from their primary care physician. It now includes patients who may be candidates for "simple" non-fusion surgery as well as scoliosis procedures.

The process begins with a referral. Our office staff then collects the imaging and records from local physicians. The information is then reviewed by a surgeon who either recommends surgery, further nonsurgical evaluation, or for more nebulous situations an initial visit only. Our office staff then coordinates the scheduling of the surgery and/or evaluations (PM&R, pain psychology, anesthesia pain EMG, etc). A third party administrator takes care of all the travel and lodging arrangements.

Patients are highly incentivized to have an evaluation and their surgery if recommended at a participating center. All travel expenses for the patient and a caregiver are included at no expense. Additionally the patients have a navigator that is available to help them with meals, getting around our facility, etc. Patients have very high deductibles if they choose to seek care at home. The surgical bundle price includes the preoperative evaluations, procedure, implants, and inpatient care, as well as local outpatient follow up before being cleared to return home. If the patient is readmitted to the hospital within 30 days that expense becomes the hospital's liability. Patients who do not get surgery have their consults and other testing paid for at a contracted rate with no deductible.

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Patients then make the trip for their consults and surgery if recommended. All nonsurgical patients have a consult with a surgeon. There is also a warm hand off conversation between the surgeon and the consulting physiatrist. For patients who are felt to be nonsurgical, they are sent back to their community with a detailed plan for therapy, medical management, etc. The plan is also communicated to the referring physician prior to the patient returning home. Nonsurgical patients also have a wrap up meeting with a nurse to review treatment plans, and the rationale for the recommendation against surgery. The postoperative patients are seen in the office prior to being cleared to fly home. Follow up instructions are also communicated to the patient's home physician prior to the patient leaving. Routine outpatient care for the postoperative patient is provided typically by the primary care physician, with any needed postoperative imaging sent to us for review.

As mentioned previously, initially the goal of the program was to provide patients with cost efficient surgical treatment with low complications rate. What we have found in addition is that up to 60% of the spinal patients we see through the program do not meet our criteria for surgery. (Present two examples here) This led to the program being expanded from potential lumbar fusion procedures to include possible simple and reconstructive evaluations. A fringe benefit of this outcome for Virginia Mason has been expansion of our PM&R department, and an even more collaborative relationship with them, including a "tumor board" approach to reviewing potential cases.

Externally, the program has expanded to include Jet Blue, as well as Lowe's for spinal evaluations. Patients can now also be referred by their primary care doctor without having seen a surgical consultant first. Our orthopedic colleagues also now have a similar arrangement with the state of Washington for joint replacement.

Overall, our center of excellence experience thus far has been highly positive for our group and Virginia Mason. This arrangement has over the last four years resulted in giving us increasing volumes from a completely different "reservoir" than our practice previously did not have access to. With the volumes of nonsurgical patients we have been evaluating, we are now enlarging our Physiatry group. We have been able to develop a conference for both degenerative and scoliosis prospective case reviews. This increased collaboration and coordination of care has been of benefit for our "regular" patients. The presence of a caregiver during the consults and surgery has been helpful for making sure our recommendations and care instructions are understood. The patient navigator also is greatly helpful in making the visit to a completely different facility as pleasant as possible.

What I have found personally to be most revealing (and perhaps depressing) about these referrals is that there are a lot of at the very least aggressive recommendations for surgery. As mentioned previously, most of the patients we evaluate wind up not being candidates for surgery, or could consider a less invasive and less costly procedure. The nonsurgical patients often take more time in clinic to give them the clear explanation that they deserve regarding why not to have a procedure a local doctor they trust has already recommended. This places an even greater burden on the consultant who disagrees with the local surgeon's recommendations. On a personal level, I think working with these patients has improved my communication skills substantially. Most of the patients I see who do not meet our criteria for surgery are quite relieved by that recommendation.

Current improvements that are in process include possibly allowing patients who do not have local access to coordinated nonsurgical care in their community being allowed to start nonsurgical care at our facility. The majority of the patients we see are from non-urban areas, often with fewer specialty options. We can also proceed with a consult only initial visit for more complicated situations where the pressure to adhere to a schedule that culminates in an operation may not be what is best for the patient.

Given that we are only a couple of years into a meaningful patient volume, we do not have a lot of data on our results or patient satisfaction, but these variables are being tracked. Costs and complications are also being monitored. Aggregate outcomes for the facilities involved in spinal surgery for the last 9 months of 2016 include a 1.8% wound infection rate for lumbar procedures, no hardware failures, no repeat surgeries, no mortality, no pulmonary emboli, no myocardial infarctions and no reported pneumonias.

In conclusion our center of excellence/bundled care work has been very gratifying to the organization as well as for me personally. This program does not mean an immediate quick increase in surgical volume, and have yields that are similar to our typical patient sources. This type of care paradigm is not a very realistic approach for a single specialty

private practice to consider. These patients require extra time from support staff in terms of scheduling, and also having the navigator help while the patient is in town. It has been very disheartening to see the high percentage of patients who do not need surgery. The patients seen through this program are obviously "more work" than the typical patient, but is has been very rewarding taking care of a more diverse population many of who may be on the verge of having a procedure that is only vaguely indicated, or not indicated at all. Virginia Mason has also used this experience to offer similar programs to other purchasers of health care, leading to dramatic volume increases, especially for our orthopedic joint replacement colleagues.

Finally I would add that the bundled payment model should not be a race to the bottom in terms of pricing. Ideally, it rewards facilities and physicians that practice cost effectively, appropriately and safely. Whether the bundled payment approach will gather momentum nationally remains to be seen, however the purchasers we have been working with have already seen a significant cost savings with high patient satisfaction rates.