



# **Clinical Performance Improvement Webinar:** *Reducing Overutilization of Spinal Fusion and Artificial Disc Implants*

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# Speaker Introductions

## *Moderator*

Ann Correa, RN, OCN

- AllMed Healthcare Management

## *Presenter*

Dr. Dennis Szymanski

- Board-Certified Neurosurgeon

# Low Back Pain (LBP) in the United States

- Affects about 90% of the population at some point in their lives
- 12% to 15% of population visits physician with complaint of back pain
  - Rate has been steadily increasing in recent years, likely a result of aging baby boomers and increasing prevalence of obesity

AAOS. *The Burden of Musculoskeletal Disorders in the United States*. 2008.

# Spinal Surgeries in the United States

- Spinal fusion operations
  - Annual number of spinal fusion operations increased >75% between 1996 and 2001
  - Accounted for >\$16 billion in hospital charges (excluding physicians' fees) for >300,000 operations in 2004
- Laminectomy and excision of intervertebral discs
  - \$5 billion in hospital fees
  - 242,000 inpatient procedures

Deyo et al. *N Engl J Med.* 2004;350:722-726.

Deyo et al. *N Engl J Med.* 2007;356:2239-2243.

# Factors Driving Increased Use of Spinal Fusions

- Aging population
- Improved axial imaging technology
- Technological improvements in spinal fixation devices
- Refinements in spinal surgical procedures
- Financial incentives for device manufacturers and neurosurgeons

# Quality Improvement in Treating Patients with LBP

- Reducing the number of unnecessary/invasive surgeries will allow hospitals to:
  - Improve the efficacy of spinal fusion and artificial disc implants
  - Prevent the significant potential risks and complications associated with spinal surgeries

# The Challenge: Lack of Consensus Regarding Use of Spinal Surgeries

- Increased use of spinal fusion has led to inconsistency in the use of the procedures
- Medical community has not reached a consensus about the conditions for which spinal surgeries are most effective

# What Is Guiding Clinical Practice?

- An understanding of the principles of spinal biomechanics
- Knowledge of the generally accepted indications, contraindications, and controversies regarding spinal surgeries
- Other factors
  - Patient history
  - Physical exam
  - Response to conservative measures
  - Psychosocial profile
  - Diagnostic test results
  - Physician's expertise

# Neurosurgeon Privileges Removed for Performing Unnecessary Spinal Fusions

- Under investigation by the Oregon Medical Board after performing multiple spinal fusions on individual patients
  - Rate was nearly 10 times the national average
- Recent information has also emerged highlighting the physician's relationship with the medical-device distributor that supplied him with spinal implants
- A malpractice lawsuit filed against the physician in April 2011 was the ninth in <7 years

Carreyrou et al. *The Wall Street Journal*. April 13, 2011.

# Measuring Performance in Managing LBP

- Compliance With Evidence-Based Guidelines
- Proper Documentation
- Measuring Patient Outcomes
- Physician Privileging

# Compliance With Evidence-Based Guidelines

- Insurance companies often base coverage decisions on the Milliman Care or Interqual Guidelines
  - These guidelines are often more conservative than standards of care developed by medical societies
  - Helps insurance companies manage their risk

# Milliman Care Guidelines for Lumbar Fusion

- Spinal fracture and spinal instability or neural compression
- Spinal repair in operations for dislocation, abscess, or tumors
- Spinal tuberculosis
- Degenerative scoliosis
  - Deformity >50 degrees with loss of function
  - Persistent significant radicular pain or weakness
  - Persistent neurogenic claudication unresponsive to conservative care
- Stenosis and spondylolysis
  - Specific requirements before surgery is recommended

# Proper Documentation

- Thorough physician documentation is critical for reimbursement of spinal surgeries
  - Office notes, including medical history and physical exam findings
  - Extent and response to conservative therapy
  - Radiology reports for any imaging studies
- Incomplete documentation can also affect patient outcomes and may increase risk of liability and malpractice claims

# Measuring Patient Outcomes: Factors for Assessing Efficacy and Safety of Care

- Length of stay (LOS) for spinal surgeries
  - Shorter average LOS may indicate patients are recovering more quickly and experiencing fewer complications
  - Must also take into account nature and extent of surgery being performed
- Complications arising from surgery
- Unplanned re-operations and re-admissions

# Physician Privileging: Recognizes Physician Qualifications and Competency

- Defines a physician's scope of practice and the clinical services he or she may provide
- Based on demonstrated competence
- A data-driven process

# Physician Privileging: Determining Physician Qualifications

- Involves gathering information with which to decide the types of care, treatment, and services or procedures that a practitioner will be authorized to perform in a specific setting
- Factors to consider
  - Setting-specific characteristics (e.g., adequacy of the facilities, equipment, and number and type of qualified support personnel and resources)
  - Physician's education, training (residency and/or fellowship), and clinical experience (number of procedures performed with satisfactory outcomes)

# Optimizing the Physician Privileging Process

- Requires qualified and objective physician-controlled peer review, with decisions that are:
  - Fair and without conflicts of interest
  - Based on dated, detailed documentation
  - Confidential and protected
- Documented physician performance should be measured against criteria that are:
  - Directly related to quality of patient care
  - Established through common legal, professional, and administrative practices
  - Endorsed by a formal consensus process
  - Publicly available

# Surgical Treatment Options for LBP

- **Discectomy:** Surgical removal of herniated disc material that presses on a nerve root or the spinal cord
- **Laminectomy (spinal decompression):** An open surgical procedure in which a small portion of bone in the spine (lamina) is removed in order to alleviate pressure on spinal nerves
- **Spinal fusion:** Joins two bones (vertebrae) in the spinal column together to eliminate pain caused by movement
- **Artificial disc replacement:** An alternative to spinal fusion when the cause of injury is a degenerated disc; an artificial disc replaces the damaged disc

# Risks Associated With Spinal Fusion

- Infection
- Urinary problems
- Blood clots
- Pseudoarthrosis
  - Bone graft site causes pain
  - Can lead to a fusion that does not heal
- Adjacent segment disease (ASD)
  - Spinal discs either above or below the fusion wear out and become extremely painful
  - Requires re-fusion of the spine to include the newly affected areas
  - Incidence can be as high as 40%

# Artificial Disc Replacement

- FDA approved for single-level disc replacement (lumbar)
  - May be appropriate for only a very limited group of patients
- 5- to 7-year post-procedure review of safety and efficacy required for FDA approval of these devices
  - Long-term studies not yet completed
- Present use of devices remains experimental in nature
- Potential complications include death, major bleedings, severe nerve injury

# Case Study

- **The Patient**

- 72-year-old female with a history of hypertension and obesity

- **Background**

- History of prior laminectomy
- Presented with back pain and lower extremity pain
- Back pain was previously helped by physical therapy, but leg pain worsened

# Case Study

- **Examination**

- Bilateral mild weakness
- Reflexes checked
- No sensory exam was noted in the record

- **Treatment**

- Admitted for an anterior lumbar interbody fusion (ALIF), the first stage of a planned two-stage spinal procedure
- The second stage, a posterior spinal fusion (PLIF), was planned for the following Monday

# Case Study

- **Post-Operative Notes**

- Pulmonary Medicine was consulted after a pneumothorax was revealed and a chest tube was placed at the time of the laparotomy.
- Taken back to surgery for perforated bowel on post-op #3 and underwent a loop ileostomy.
- Infectious Disease was consulted after purulent drainage was noted at the lateral incision, taken back to surgery again for I&D.
- She eventually received Physical Therapy.
- Prior to discharge, a CT scan identified another colon leak (thought to be around the repair); decision was made to continue wound care by packing the area.

# Case Study: Appropriateness of Care As Determined By External Peer Review

- The surgery performed was not medically necessary
- The patient's history, physical exam, and MRI scans did not confirm the pre-operative diagnosis of spinal stenosis or spondylolisthesis
- No documentation of an adequate trial of conservative management was submitted, but with the physical therapy she did receive, she had shown improvement in back pain
- There was no medical necessity to perform a two-stage procedure based upon the submitted MRI
- The fusion, if indicated, could have easily been performed in a single posterior procedure, which would have prevented the serious complications that occurred
- The cause of the patient's left leg pain was not determined prior to surgery (imaging studies may have resolved this issue); the operation that was performed could not reasonably be expected to address this problem

# External Peer Review Ensures Quality of Care

- Ongoing evaluation of hospital practitioners ensures excellence in physician performance and the highest standard of care for patients
- External peer review allows hospitals to perform:
  - In-depth evaluation of sentinel events
  - Credentialing and re-credentialing
  - Privileging and re-privileging
  - Proctoring
  - Ongoing measurement and monitoring of physician performance

# Internal vs. External Peer Review

- **Internal peer review**

- Peer review committees composed primarily of in-house personnel often lack the resources to help the hospital achieve their performance improvement goals
- Social and professional relationships lead to conflicts of interest

- **External peer review**

- Avoids conflicts of interest that can arise from economic, professional, or social ties among physicians within a single institution
- May be an effective solution for hospitals that lack adequate physician resources to conduct timely performance analyses

# Systematic External Peer Review As a Risk Reduction Strategy

- Reduces medical errors through objective evaluations performed in a non-punitive, educational context that supports a culture of continuous improvement
- Improves quality of care and patient safety
  - Physicians know that their work will be objectively evaluated at regular intervals by board-certified specialists with the same credentials and from similar practice settings
- Uncovers problematic practice patterns and physician- and hospital-level issues that need to be addressed before they turn into claims

# Conclusions

- Spine surgeons face the ongoing challenge of ensuring that patients receive highest quality of care
- Increased use of spinal surgeries has generated concerns about safety, effectiveness, and cost of these procedures
- Many insurance companies base coverage decisions on guidelines such as Milliman or Interqual; patients must meet certain requirements before surgery can be considered
- External peer review facilitates regular assessment of high-risk procedures such as spinal surgeries
  - Allows risk avoidance through prevention
  - Helps hospitals discover, highlight, and deal with physician performance issues quickly and efficiently before they turn into claims

# Questions and Answers

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