

 **OPTUMHealth**
Education



Coming Soon!

May, Weight Reduction Strategies: When to Use Medical vs Bariatric Treatments

June, Evaluation and Management of Sleep Apnea


July, Chronic Kidney Disease: Identifying Causes and Preventing Progression to End Stage Renal Disease

August, CAD: Emphasis on Secondary Prevention, Post AMI/PCI


Chronic Low-back Pain, Appropriate Non-Surgical vs. Surgical Management

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Introducing Your Faculty



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Objectives

At the end of this activity, participants should be able to:

- Recognize common causes of and non-surgical treatment recommendations for low-back pain (LBP)
- Identify current and recommendations for pharmacologic treatments for LBP
- Discuss the importance of appropriate screening and shared-decision making for individuals with LBP and the associated outcome measures
- State the importance of securing high quality surgeons to optimize outcomes when surgery is necessary
- List best practices for managing chronic LBP through the use of case studies

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Agenda

- Importance of LBP
- Common causes, etiology of LBP
- Treatments: conservative vs. surgical
- Benefit vs risk of interventions
- Appropriate pharmacologic interventions
- Risk assessment and shared decision making
- Complications of surgery and interventions to decrease risk

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LBP Acute/Chronic Duration Definitions

- Acute LBP – duration of under a month
- Sub-acute LBP – Duration from 1-3 months
- **Chronic LBP – Duration greater than 3 months – presentation focus**

Why is this important? Care path recommendations vary, depending on chronicity, clinical context and prior interventions

UpToDate: www.uptodate.com/contents/evaluation-of-low-back-pain-in-adults?search=back%20pain&source=search_result&selected_title=190&usage_type=ref&display_rank=1 Introduction and
 UpToDate: www.uptodate.com/contents/subacute-and-chronic-low-back-pain-nonpharmacologic-and-pharmacologic-treatment Introduction

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Why is This Topic Important?

- 80% of adults will experience LBP
- Most common cause of job-related disability and missed work days
- 20% with acute LBP develop chronic LBP
- One of the most common reasons for opioid prescriptions
- Recent American College of Physician (ACP) 2017 Guidelines:
2006 – over \$100 billion spent related to back problems
- Right care: 40-50% of lumbar fusion surgeries are not indicated
- Guideline directed care for best outcome
- Common co-morbidity in members with other conditions
- Reasons for escalations to provider/ Medical Director

Case management recommendations/support based on symptoms, time course, co-morbidities, and prior treatments

NH: www.nhds.nih.gov/Disorders/Patient-Caregiver-Education/Fact-Sheets/Low-Back-Pain-Fact-Sheet Introduction and ACP and
 ACP: onlinelibrary.wiley.com/doi/10.1111/j.1365-2214.2017.03107.x Introduction and ACP and

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Care Management of LBP – Value Pillars

Right Provider <ul style="list-style-type: none"> Conservative care (PCP, PT, Chiropractor, Complimentary Alternative Medicine (CAM)) Behavioral Health Surgical 	Right Treatment <ul style="list-style-type: none"> Non Surgical/Pharmacologic Surgical Matching symptoms, signs, imaging findings 2nd opinion prior to operation, especially if a revision
Right Care <ul style="list-style-type: none"> Ensuring Right Diagnosis Evidence-based, guideline directed care: Centers of Excellence, when appropriate Short and long-term outcomes Avoiding opioids Surgery 	Right Lifestyle <ul style="list-style-type: none"> Diet Exercise Tobacco avoidance Healthy weight Proper management of other conditions

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Why Focus on Low-back (lumbo-sacral) Area?

- 1) Cervical: not as much weight to support, do better over long term
- 2) Thoracic: more rigid; less frequently injured; disc herniation rare
- 3) Lumbar: myriad causes, trauma, degenerative changes of disc/joints/stenosis/misalignment /fractures, tumors

Lumbar fusion surgery is expensive, multiple approaches/combined procedures, highest complications, most variation in incidence, and can have poor long term outcomes

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Chronic LBP

Where is the problem and how do you manage it?

- Duration > 3 months
- Outcomes – hospital related vs long term outcomes (revision surgery in 10 yrs.)
- Variation in non-operative and operative treatments
- Could be related to bone, nerve, muscle, ligaments, combination or not clear
- Goals: decrease pain, increase function, improve quality of life (patient reported outcome measures, PROMs, e.g. - Oswestry Disability Index, not used by 30% surgeons)
- Diagnosis: H&P, testing (lab, MRI, bone scan, EMG, etc.) MRI- spine and soft tissues
- Integrate history, physical and imaging finding with guidelines (MCG, policies, specialty societies, Ortho-Net, CDC)

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Anatomy



Definitions:

- 1) Spondylolysis: fx of facet joint, weakest portion of the vertebra
- 2) Spondylolisthesis: slippage of vertebra
- 3) Lumbar spinal stenosis: narrowing of space within the spinal canal
- 4) Vertebral fracture – osteopenia vs osteoporosis
- 5) Herniated disc
- 6) Arthrodesis – fusion

AAOS <http://aofa.org/orthopedics/conditions/spondylolysis-and-spondylolisthesis/>
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Case Example

58 yo male with chronic LBP, prior fusion surgeries; smoker, uncontrolled HTN, morbid obesity, hyperlipidemia, on ciprofloxacin for prostatitis, and type 2 diabetes. He was routed to an Orthopedic Health Support case manager, c/o severe back pain, diaphoresis and dizziness; you advise him to:

- A. Take a NSAID, if not better, call for a PCP appointment
- B. Offer to set-up a healthcare provider appointment
- C. Call 911
- D. Advise him to lose weight, stop smoking, and take his BP pills

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Crucial Role for Case Manager

Assessment of urgency/severity of condition for appropriate referral. If not clear or a need for support, engage Medical Director

LBP – may not be related to a primary spine condition

- Dissecting aneurysm (2x the risk with fluoroquinolones, FDA alert 12/20/18), Marfan's, Ehlers-Danlos; middle age males, smokers, HTN, high death rate
- Cauda equina syndrome (neurogenic bladder, paraplegia) – cancer diagnosis
- Vertebral compression fracture with spinal/nerve compression (older patient, steroids, trauma)
- Underlying cancer (prostate, breast, lung, myeloma, etc.), may require radiation therapy
- Infection – fever, catheter associated, recent surgery, increasing pain – dialysis patient with catheter related bacteremia

Signs/symptoms for prompt evaluation

- 1) Fever (surgical site infection up to 90 days after surgery: wound, implant, osteomyelitis)
- 2) Dizziness, syncope, diaphoresis (hemodynamic instability)
- 3) Change in pain pattern – more severe (mechanical failure from metal implant)
- 4) Chest pain, dyspnea (PE can occur up to 30 days after surgery)
- 5) Skin rash getting worse (implant metal allergy, usually nickel)
- 6) Falls with new or change in symptoms – fracture, dislocation, bleed (on anti-coagulation)

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Non-surgical Interventions (Conservative Treatment)

- Majority do not require surgery

DRGs 459-460

Spinal fusion except cervical
(MCG 9/17/15)

Model B: Moderately Managed		
Admits per 1000	ALOS	Days per 1000
0.3886	3.3641	1.3073

- Spinal fusion rates and costs 2004-2015:
 - Increase rate, from 0.006% to 0.008%, 42% for lumbar fusions
 - Hospital costs: increase of 177%, \$10 billion 2015
 - Average per surgery >\$50,000
- Fortunately, most get better with time
- Do non-surgical treatments work?

NIH: www.ncbi.nlm.nih.gov/pubmed/23074971

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Pharmacological Treatment

- Goals
 - Familiarity with CDC recommendations for chronic Low-back pain (LBP) treatment*

*in clinical practice, members may have comorbidities and other factors that lead the prescriber towards different pharmacotherapy
 - Actions to take based on member's pharmacotherapy
 - Knowledge of drug reference resource, eg. [LexiComp](http://online.lexi.com/icc/action/home) (online.lexi.com/icc/action/home)
 - Is this drug considered an NSAID? What is the maximum daily dose?

CDC First-Line

Acetaminophen (APAP)
Non-Steroidal Anti-Inflammatory Drugs (NSAIDs)

CDC Second-Line

Serotonin & Norepinephrine Reuptake Inhibitors (SNRIs)*
Tricyclic Antidepressants (TCAs)*

Other Treatments

Opioids
Gabapentin* or Pregabalin*
Skeletal Muscle Relaxants*
Epidural Steroids*
Topical

*drugs may be used off-label; ie, they are not FDA-approved for pain management

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CDC First-Line Options

APAP*	NSAIDs**	Recommended Actions
✓	✓	Reconcile the drug/dose/frequency , & inquire if it was recommended by the member's physician (if the drug is an over-the-counter [OTC] product). If the member is taking it "as needed," ask how often they take it.
✓	✓	Educate the member that this drug (or a similar product) may be found in many OTC products, such as cough & cold products. Advise they consult with their prescriber or pharmacist when considering a new OTC product.
✓		Reconcile if the member has kidney disease or liver disease. If so, is the prescriber aware & monitoring for adverse effects?
	✓	Reconcile if the member has cardiovascular disease, gastrointestinal disease, kidney disease, heart failure , hypertension , or liver disease. If so, is the prescriber aware & monitoring for adverse effects?

*APAP (Acetaminophen)

**NSAID (Non-Steroidal Anti-Inflammatory Drugs) – eg. ibuprofen, meloxicam

CDC: www.cdc.gov/ncqo/overdose/pdf/nonopioid_treatments-a.pdf

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CDC Second-Line Options





(note – drugs may be used off-label; ie. they are not FDA-approved for pain management)

SNRIs	TCAs	Recommended Actions
✓	✓	Reconcile the drug/dose/frequency. If the member states it was prescribed "as needed," refer them back to the prescriber, as these drugs are generally prescribed scheduled, not as needed.
✓	✓	Educate the member this drug increases a hormone called serotonin. If there is too much serotonin in the body, it may cause serotonin syndrome . The signs to monitor for are agitation, palpitations, restlessness, profuse sweating, fever, diarrhea, balance difficulty, confusion, muscle twitching, shivering, or tremor. If they experience acute symptoms advise they seek urgent medical attention.
✓	✓	If the member is aged ≥24 years , educate them this drug may increase risk of suicidal thinking & behavior . Encourage them to be mindful of any behavior changes & discuss them with their prescriber.
✓	✓	If the member is aged ≥65 years , assess fall risk & blood pressure . If the member has a history of falls, fractures, orthostatic hypotension, or bradycardia, suggest they discuss with prescriber if this medication is appropriate.
✓	✓	Educate the member not to abruptly stop taking their medication, which may cause a withdrawal syndrome . Possible symptoms include anxiety, impaired concentration, dizziness, gastrointestinal complaints, & insomnia. If prescriber decides to discontinue a drug, they will likely taper it over a period of at least 2-4 weeks, depending on the drug, half-life, & member's dose.

Serotonin & Norepinephrine Reuptake Inhibitors (SNRIs) – eg. Duloxetine, venlafaxine
 Tricyclic Antidepressants (TCAs) – eg. Amitriptyline, nortriptyline
 CDC: www.cdc.gov/drugoverdose/pdf/serotonin_treatments-a.pdf

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Other Treatments: CDC Opioids

- 
 • Reconcile prescriber(s) who ordered opioid(s) &/or sedatives (including benzodiazepines)
 - Verify all prescribers are aware of member's regimen.
 - Verify member has **regular appointments** to discuss pain control & function with prescriber(s). CDC recommends evaluation within 1-4 weeks of chronic therapy start or titration, then at least every 3 months thereafter.
- 
 • Document medication regimen & assess member for side effects
 - Remember to assess & document how often member is taking "as needed" medications.
 - Opioid **side effects** may include confusion, constipation, depression, dizziness, dry mouth, itching, nausea, vomiting, low testosterone (which can lower sex drive, energy, & strength), sedation, and sweating.
- 
 • Reconcile if prescriber(s) discussed naloxone with member
 - CDC recommends prescribers consider **naloxone** in those on 50 morphine milligram equivalents (MME) or greater.
- 
 • Be aware clinical protocols may be in-place, depending on daily MME doses
 - State laws may be stricter than federal.
 - Pharmacy benefits programs may require prior authorization clinical review for daily MME's above a certain threshold. Note these laws/protocols may vary based on drug indication (i.e., cancer & end-of-life pain treatment may be exempt).

CDC: www.cdc.gov/drugoverdose/pdf/Guidelines_Factsheet-a.pdf

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Other Treatments

(note – drugs are used off-label; ie. they are not FDA-approved for pain management)

Gabapentin or Pregabalin	Muscle Relaxants	Epidural Steroids
<ul style="list-style-type: none"> • May be used if neuropathic component of LBP. • Assess kidney function; if decreased advise member ask prescriber if dose is appropriate. • Assess for concurrent opioids, sedatives (including benzodiazepines), muscle relaxants, or alcohol abuse, which can ↑ sedation & abuse risk. • Educate members there is abuse potential with both drugs. • Dependence & abuse potential appear to be higher with pregabalin; its more potent, with quicker absorption and greater bioavailability than gabapentin. 	<p>Eg. Carisoprodol, cyclobenzaprine</p> <ul style="list-style-type: none"> • May be used acutely for flare. • Assess for benign prostatic hypertasia. Educate member the drug can cause urinary retention, & advise he discuss w/prescriber. • Assess for concurrent opioids, sedatives (including benzodiazepines), or alcohol abuse, which can ↑ sedation & abuse risk. • On Beers list of medications to avoid in those aged ≥65, due to questionable efficacy and anticholinergic side effects, sedation, & risk of falls/fractures. Educate member & refer them to prescriber to discuss risk vs. benefits. 	<p>Eg. Dexamethasone, methylprednisolone</p> <ul style="list-style-type: none"> • May be used if radiculopathy or sciatica present. • Educate member that while these may quickly relieve pain & restore function, the effect is generally not sustained (i.e., duration may be <6 weeks). • Some injection site pain, bleeding, or local hematoma is possible. • Educate member to monitor for symptoms of infection (fever, injection site swelling, pus, or redness), which is a rare occurrence.

*Anticholinergic side effects may include dry mouth, constipation, urinary retention, bowel obstruction, dilated pupils, blurred vision, increased heart rate, decreased sweating, impaired concentration, confusion, & memory impairment.

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Other Treatments: Topicals

- Many dosage forms: creams, gels, lotions, ointment, patches, solutions, sprays
- Agents include (but are not limited to) camphor, capsaicin, lidocaine, menthol, NSAIDs, & salicylates.

- Educate members NOT to use heating pads over topical products, this can ↑ absorption.
- Use of topical + oral agent in the same class isn't recommended; no ↑ benefit shown.
- Use only on intact skin; stop using if irritation (rash, dermatitis, etc.) occurs.
- Ensure members have specific instructions on quantity to use per dose.
- Do NOT cut patches without checking with prescriber & pharmacist.
- Educate members NOT to create occlusive barrier; this may ↑ toxicity risk.
- When disposing of patches or tubes, be sure they cannot be accessed by children & pets.

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The Evidence vs. "Trial and Error"

Goal – improve function, quality of life (psycho-social), decrease pain

Expectation – Conservative measures can help, may need a combination of interventions (difficult to do studies)

Treatment	Effect	Strength of Evidence
NSAIDs	Small to moderate	Moderate
SSRIs, TCA, duloxetine	None to small	Moderate
Exercise	Small	
Tai-chai	Moderate	Low
CBT (Cognitive Behavioral Therapy)	Moderate/no effect	Low
Acupuncture	None to moderate	Low to moderate
Chiropractic Treatment	Similar to others, may have better short term improvement	

Clinical Guidelines [4 April 2017] : Noninvasive Treatments for Acute, Subacute, and Chronic Low Back Pain: A Clinical Practice Guideline From the American College of Physicians
Benefits of SMT (Spinal Manipulation Therapy): similar effects compared to other recommended treatments, may be better for improvement in function in the short term.
Published online 2019 Mar 5. doi: 10.1136/bmj.g899

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Other Treatments Members May Utilize

Common questions by members or providers (attempting to get insurance coverage). Case management referrals to MD for questions related to benefits

- PT – early PT may lower risk of long-term opioid use
 - (JAMA Open Network, 12/14/18. Sun et al, n=40,883, LBP)
- TENS – low quality evidence, no difference with sham TENS (pain and function) or between TENS and acupuncture
- Epidural injection proven and medically necessary for treating acute and sub-acute sciatica or radicular pain
 - (Commercial Medical Policy, 2018 0004EE, 11/1/18)
- Implanted Electrical Stimulators are proven and medically necessary
 - (Commercial Medical Policy, 2018 T0567L, 12/1/18)
- Bone or soft tissue products to enhance healing: stem cells, placental extracts, platelet rich plasma – unproven
 - (Medical Policy, 2018 T0410U, 11/1/18)

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How to Support Members

Referral to other programs, second opinions (physiatrist, neurologist, rheumatologist), engage COE

- Select treatments with fewest harms/lowest costs
- Avoid opioids (addiction, accidental overdose)
- Up to 1/3 have persistent pain 1 year after acute episode
- 1/5 have substantial limitations in activity

ACP: www.ncbi.nlm.nih.gov/pubmed/28192788

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10 Most Common Conditions Treated with Opioids

What conditions are most likely to be treated by opioids and are opioids more effective than non-opioids for chronic pain? (Annals of Internal Medicine, 2018)

#1 Lumbago (Low-back pain) – ICD M54.40 – lumbago with sciatica, unspecified side, ICD M54.41 – R side, ICD M54.42- L side

#2 Type 2 diabetes

#3-10 could be related to back/joints/muscles (other chronic pain, unspecified backache, site unspecified osteochondrosis, etc.)

- **Chronic back (65%) or hip/knee pain**, randomized controlled trial, comparing opioids (short/long acting) vs. non-opioids) up to 12 months, opioids not more effective, and had more drug related adverse effects

Opioids may not help, can have side effects, and can lead to addiction

Annals of IM: annals.org/aim/fullarticle/2018/05/01/nonopioids-opioids-gave-similar-relief-back-pain-osteoarthritis-osteoarthritis

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Opioid Use for Musculo-Skeletal pain

Risk for chronic opioid use among opioid naïve patients with newly diagnosed MS pain in the neck, shoulder, knee or low back

- 1) Commercial data, 412,021 patients – followed from 3-12 months
- 2) Decreasing use over time
- 3) Highest risk: low back pain and multiple areas
- 4) Other risk factors – opioids given < 90 days after diagnosis, co-morbidities

Support evidence-based guidelines – avoid opioids

ACP: jama.ama-assn.org/article-abstract/311/13/risk-risk-factors-chronic-opioid-use-among-opioid-naive-patients

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Common Co-morbidities

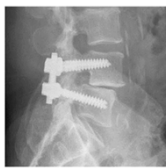
- Fibromyalgia: clinical diagnosis; > 3 months, more common in women
- Neuralgia/Neuropathy – diabetes, frequently with PVD, retinopathy, CKD; B12 deficiency (pernicious anemia), and alcoholism
- Obesity – Body Mass Index (BMI)
 - Morbid obesity: 40-49
 - Super-morbid obesity 50 or higher (highest complications after surgery (wounds, mortality, highest costs)*
- Depression / anxiety: portends poor outcomes after spine surgery

Case management evaluation to provide the best, holistic approach

* CDC: cdc.gov/healthysw/assessingbmi/adult_bmiindex.html

Surgical Interventions

- Disc removal and artificial discs
- Laminectomy (excision of bone)
- Fusion and motion preserving implant (Coflex)



1 level fusion L 4-5 with spondylolisthesis

American Academy of Orthopedic Surgery

When is Surgery Indicated?

- Chronic LBP with sciatica: herniated disc, spinal stenosis, spondylolisthesis, or vertebral fractures with nerve involvement
- Chronic LBP without sciatica associated with degenerative disc disease
- Types of surgery: lumbar discectomy, laminectomy, spinal fusion (eliminates painful motion), artificial disc

Medical necessity guidelines: MCG 22nd edition, S-820, ISC; and check Member's Policy

Evidence-based medicine for approval/denial of spine surgery (not arbitrary), frequently a combination of types, multiple levels

Lumbar Fusion

MCG Lumbar Fusion (S-820, ISC): Clinical Indication for Procedure example: (used by OrthoNet for coverage determination)

- Lumbar spinal stenosis treatment needed as indicated by 1 or more of the following:
 - Rapidly progressive or very severe symptoms of neurogenic claudication with imaging findings of lumbar spinal stenosis that correlate to clinical findings
- Estimates 40% or higher may be unnecessary; travel to a large COE network: 50% of proposed surgeries were not needed; (Becker's Spine Review 11/14/18)

Lumbar fusions: variation in indications; high cost; high complication rates

Variation in Care of Surgical Conditions

Dartmouth Atlas: Wide regional variation, 15x lumbar fusions Bradenton, FL compared to Bangor, Maine with no better outcomes

- Cost variation – due to type of surgery and local market
- "x-ray dx" – 21% of asymptomatic members had spinal stenosis
- 94,000 inpatient fusions 2011, \$2.3 billion in cost
- Any surgery for lumbar stenosis at 2 years – 17% reoperation rate, 25% readmit rate
- **Complex spine surgery** (multiple levels, approaches): 3x higher complication rate than decompression

Shared Decision Making (SDM), Clinical Support Tools

- Data – risks vs benefits (short and long-term outcomes): function, quality of life, pain
- Spinal surgery: 4 years after surgery, 59% are better, 2% infection, 1% blood clots, 1% nerve damage, 6% re-ops within a year, 13% within 4 years, 25% within 10 years
- Patient preferences (Dartmouth Atlas Variation in care of surgical conditions)

Treatment Options	Decision Support Tool Components			Patient Outcomes
	Patient Needs	Decision Support	Decision Quality	
Medication Physical therapy Steroid injections Surgery - Decompression - Fusion	Clarification of individual values and preferences Knowledge of procedure risks, benefits, and other considerations	Continuously updated, patient-specific data regarding risks and benefits Guidance for the patient/surgeon interaction Other considerations	Assessment of patient knowledge and understanding Assessment of congruence with pre-specified values and preferences	Measurement of: Pain reduction Quality of life Surgical complications 30-day readmission Need for repeat surgery

Members Ask: Right Provider – Ortho or Neurosurgeon?

- For most of the typical spine operations both types of surgeons are equally well qualified (both may sub-specialize)
- Orthos tend to do spinal deformities (scoliosis), neurosurgeons, spinal tumors, C1-2 lesions, both may use minimally-invasive techniques
- Large academic programs may have spine surgeons who specialize in complex cases (revisions, failed back syndrome).

Questions to ask the surgeon:

- 1) Volume of cases per year
- 2) Board certified, fellowship in Spine Surgery
- 3) Revision rates (< 1 year, ≥ 1 year, ≥ 5 years)
- 4) Group practice and hospital affiliation
- 5) Premium designation for quality

Case Management goal: Get the member to the best provider/facility; they may or may not have surgery

Spine: Spine (Phis Pa 1970)

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HSS - #1 Orthopedic Hospital in US Spine Care

- Hospital for Special Surgery: multidisciplinary approach, non-operative management, escalate if needed:
- Triage to PT or NP within 24-48 hours (quick response, triage)
- Education and exercise-based therapies, decreasing reliance on opioids
- **Red flags:** previous ops, long history of pain; **yellow flags:** psycho-social factors, supports
- If not better after 5 PT sessions or if needed, seen by non-op MD – neurologist, physiatrist, primary care sports medicine MD, or rheumatologist; may require advanced imaging; may see multiple specialists same visit
- 1-2 / 500 (0.2-0.4%) eventually will have surgery
- Pre-op evaluation: HbA1C <8.0, screen for OSA (overnight stay), use of opioids/benzos, anticoagulants, anti-platelets. Management – internist, anesthesiologist, pain specialist, diabetes NP daily, obesity specialist, complex nurse navigator
- **Center of Excellence expertise example**

Becker Spine Review: www.beckerspinespine.com/spinellitem143076/the-hss-spine-care-model.html

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Peri-operative Case Management Issues to Address

Directions clear to member; if any questions, escalate to provider, internal medical director

- | | |
|---|---|
| Diabetes | Antiplatelet Agents (primary or secondary CV protection) |
| 1) optimize pre-op control (HbA1C < 7.5) | 1) Stop 5-7 days before surgery, except prior PCI or carotid endarterectomy |
| 2) AM of surgery: no oral agents, insulin held or decreased | 2) Restarted after major risk of bleeding has passed |
| 3) Close monitoring post-op | 3) ASA – 20% higher major bleeding risk |
| • OSA: bring bi-PAP or CPAP machine to hospital, monitor for hypoventilation after surgery | Anticoagulants: warfarin stopped 5-7 days before surgery, usually no bridge therapy; newer anticoagulants (Xarelto, Pradaxa, Eliquis) short acting, stop 1-2 days before surgery |
| • B-blockers: (non-cardiac surgery) | |
| Continue if on, AM of surgery, for HTN, rate control for a.fib, angina, heart failure, prior MI | |
| (If stopped, increased mortality risk within 48 hrs of surgery) | |

UpToDate: www.uptodate.com/contents/management-of-cardiac-risk-for-noncardiac-surgery?searchbeta%20blocker%20before%20surgery&source=search_res&selectedTitle=1~160&usage_type=default&dq=diagnosis%20rank=1

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Complications after Lumbar Surgery

Short term, hospital related

- 1) 30 day mortality
- 2) 30 day DVT/PE rate
- 3) 90 day **Surgical Site Infection (SSI)**, mechanical failure
- 4) Days on short term disability, return to work

Long term (patient reported outcome measures)

- 1) Short form, quality of life surveys (Oswestry): pain, function, BH issues
- 2) Registries – **revision rates**

Proxies for quality

- 1) Volume
- 2) Readmission rates
- 3) Member satisfaction
- 4) Premium Designation for quality

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Venous Thromboembolism (VT)

VT is one of the most common causes of hospital-related mortality

A 62 yo female, with remote MI (cleared by cardiologist), obesity, HTN, had an orthopedic procedure, 2 weeks of ASA to prevent blood clots, then readmitted with bowel perforation, surgery; 1 month later, expired of pulmonary emboli (PE).

- **Additional risk: prior VTE (RR 8.1, 4.92);** hematology consult if hx thrombophilic disorder – Protein C, S or anti-thrombin 3 deficiency, lupus anti-coagulant
- Stop anti-platelets before surgery (moderate evidence)
- Use of meds and/or compression devices for **VTE prevention** – unclear evidence which is optimal, **most use ASA**

AAOS: www.aaos.org/research/guidelines/VenVte_full_guideline.pdf

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Centers of Excellence

COEs for Spine and Joint Surgery:

- → **Value proposition:** quality/cost with bundled payments (rewarding value over volume)
- → COE qualification: accreditation, orthopedic program leadership, criteria (volume, readmits, complications)
- → **RN CM model:** pre-op risk assessment, post-discharge follow-up for 90 days, working with program care navigator
- Decrease in readmits/complications, saving employers \$18,000 per operation
- **Spine:** 10% fewer readmits, 3.4% fewer complications (22%, 17% for hip and knee replacements)
- Bundled payment (warranty) to 90 days for covered complications: SSI, mechanical failure, mortality + 30 day readmits
- Orthopedic Health Support: to promote appropriate guideline directed care

Business Wire, finance.yahoo.com/news/unitedhealthcare-value-based-care-program-120000211.html

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Summary

Best Care for Patients / Families for LBP

- 1) Most with acute and sub-acute LBP get better with time and conservative low risk interventions
- 2) More likely to have surgery if seen by surgeon, especially in geographic areas with high surgeon concentration
- 3) Through Shared Decision Making/Education, better decisions can be made; especially regarding surgeries with high complication rates
- 4) Engage providers and program Medical Directors regarding urgent conditions/complications
- 5) Centers of Excellence models can provide better clinical outcomes at lower cost
- 6) Importance of correlation of symptoms, physical exam, and imaging studies
- 7) Address co-morbid conditions for a holistic approach

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Case Study #1

47 yo female: recent L3-4 fusion; prior L4-5 fusion (2016); with post-op epidural hematoma; 3 other ops 2017; recommended to have another fusion.

Co-morbidities:

- 1) Severe obesity (BMI-42) – (discussed bariatric surgery possibility)
- 2) Smoker (counseled)
- 3) BH: OCD, PTSD, anxiety
- 4) Chronic opioid use (oxycodone 10mg tid regularly)
- 5) DVT post-op
- 6) L4 radicular pain, both LEs, uses a cane, history of falls

Polling Question #1

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Case Study #2

59 yo high risk spine surgery, bipolar, osteoporosis, prior hip fracture,

- Non-COE surgeon, SJS requested a 2nd opinion by COE surgeon (TCH), supported surgery (“otherwise she will be in a wheel chair”), supposed to be 2 stages 1/17
- Had op, 3 subsequent revision surgeries, in SNF >90 days, after last surgery, had wound vac; high cost

Polling Question #2

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Case Study #3

62 yo female with chronic LBP who recently with bilateral numbness, weakness, urinary urgency, with spondylolisthesis, and still working at her job.

Polling Question #3

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Case Study #4

61 yo male with prior lumbar fusion (2015), multi-level revision 10/18, now with severe radicular pain LLE, weakness legs requiring back brace and 2 canes

Rx: no relief with gabapentin, Lyrica, opioids, aqua-therapy, po steroids, foot injection for plantar fasciitis. EMG: nerve damage L5/S1

Neurologist: not sure what is new, and what is old

Next steps - possible steroid injection, exploratory surgery

Polling Question #4

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Q & A

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Appendix

- Knowledge Library (internal resource) for UHC Medical/ Drug Policies, Commercial, C&S, Medicare; coding, Federal and State mandates: kl.uhc.com/bboard.aspx. Or type KL in the intranet address bar on the Hub
- Spine and Joint Solutions Clinical Performance Guideline, lumbar spine surgery, JA 22212538, 2018: Nexus- atlas optumgrt.uhc.com/Pages/Default.aspx, search lumbar stenosis, 1st reference
- MCG – Millman Care Guidelines: medical necessity, length of stay, disposition careweb.careguidelines.com/22/index.htm
- Dartmouth Atlas Variation in Surgical Conditions – spinal stenosis archive.dartmouthatlas.org/downloads/reports/Spinal_stenosis_report_10_29_14.pdf

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References

- ACP, Annals of Internal Medicine, Noninvasive Treatments for Acute, Subacute, and Chronic Low Back Pain: A Clinical Practice Guideline From the American College of Physicians, annals.org/aim/fullarticle/2013/03/29/noninvasive-treatments-acute-subacute-chronic-low-back-pain-clinical-practice, April 14, 2017, Accessed 4/1/19
- American Geriatrics Society. 2019 Beers Criteria Update Expert Panel. American Geriatrics Society AGS Beers Criteria for Potentially Inappropriate Medication Use in Older Adults. J Am Geriatr Soc 2019; 1-21. onlinelibrary.wiley.com/doi/pdf/10.1111/jgs.15767?ref=referrer_access_token=QNVeR3jodR5shLlQ2lqWdYtsBa23j9t9KrsdF0x07LQCFN_ADO5SHC&mbpXcl.91cJcTce4MwI5T6vY93xQ8DRQscv1T6S0tmN17RocOeXAGisGicPmT6sPYCl, Updated 2018, Accessed 4/1/19
- Becker Spine Review: www.beckersspine.com/spine/tem/43976-the-hss-spine-care-model.html, Accessed 4/10/19
- Business Wire, UnitedHealthcare's Value-Based Care Program for Knee, Hip and Spine Procedures Demonstrates Improved Health Outcomes and Reduced Costs, finance.yahoo.com/news/unitedhealthcares-value-based-care-program-120000211.html, May 9, 2018, Accessed 4/1/19
- CDC, About Adult BMI, www.cdc.gov/healthyweight/assessing/bmi/adult_bmi/index.html, Reviewed Aug 29, 2017, Accessed 4/1/19
- CDC, Guideline for Prescribing Opioids for Chronic Pain, www.cdc.gov/drugoverdose/pdf/Guidelines_Factsheet-a.pdf, Accessed 4/1/2019
- CDC, Guideline for Prescribing Opioids for Chronic Pain – United States 2016, www.cdc.gov/mmwr/volumes/65/mr16501e1.htm?CDC_AA_refVal=https%3A%2F%2Fwww.cdc.gov%2Fmmwr%2Fvolumes%2F65%2Fmr16501e1er.htm#B1_down, MMWR March 18, 2016;65(1):1-49, Accessed 4/1/2019

Proprietary and Confidential. Do not distribute. 44

References

- CDC, Non-Opioid Treatments for Chronic Pain, www.cdc.gov/drugoverdose/pdf/nonopioid_treatments-a.pdf, Accessed 4/1/2019
- Chou R, Hashimoto R, Friedly J, et al. Epidural corticosteroid injections for radiculopathy and spinal stenosis: a systematic review and meta-analysis. annals.org/aim/fullarticle/2013/02/07/epidural-corticosteroid-injections-radiculopathy-spinal-stenosis-systematic-review-meta-analysis, Ann Intern Med 2015;163:373-81, Accessed 4/1/2019
- Chou R, Deyo R, Friedly J, et al. Systemic pharmacologic therapies for Low-back pain: a systematic review for an American College of Physicians clinical practice guideline, annals.org/aim/fullarticle/2003/02/29/systemic-pharmacologic-therapies-low-back-pain-systematic-review-american-college, Ann Intern Med 2017;166:480-92, Accessed 4/1/2019
- Clinical Resource, Comparison of Gabapentin and Pregabalin. Pharmacists Letter. August 2018
- Clinical Resource, Topical for Pain Relief. Pharmacists Letter. November 2017
- Clinical Resource, Treatment of Chronic Low-back Pain. Pharmacists Letter. May 2017
- LexiComp, www.cdc.gov/drugoverdose/pdf/Guidelines_Factsheet-a.pdf
- Cassem, A, Will, T.J, McLean RM, et al. Noninvasive Treatments for Acute, Subacute, and Chronic Low Back Pain: A Clinical Practice Guideline From the American College of Physicians, annals.org/aim/fullarticle/2017/04/16/2017-04-16-530, Ann Intern Med. 2017 Apr 4;166(7):514-530. doi: 10.7326/M16-2367. Epub 2017 Feb 14., Accessed 4/1/2019

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References

- Seicean, A., Alan, N., Seicean, S. et al. Surgeon specialty and outcomes after elective spine surgery. Spine (Phila Pa 1976). www.ncbi.nlm.nih.gov/pubmed/24983930, 2014 Sep 1;39(19):1605-13. doi: 10.1097, analysis of 50,361 patients. Accessed 4/1/2019
- Wheeler, Stephanie, MD, Wipf, Joyce, MD, Staiger, Thomas, MD, et al. Evaluation of low back pain in adults. www.upstate.com/contents/evaluation-of-low-back-pain-in-adults, July 12, 2018. Accessed 4/1/2019
