CLINICAL PATHWAY

Musculoskeletal Health

Low Back Pain Pathway

CHRISTIANA CARE HEALTH SYSTEM

Low Back Pain Pathway

Table of Contents (tap to jump to page)

INTRODUCTION

Low back pain causes more global disability than any other condition. Over $100,000,000,000 is spent on spine care in our country annually. Unfortunately, this cost is not matched by a decrease in disease burden or by excellent clinical outcomes. There are myriad reasons for this: large variations in clinical care; poor outcome measures and quality indicators for many treatments; excessive and inappropriate use of many diagnostic and therapeutic modalities.

In an effort to decrease unnecessary variation in clinical care, to improve the quality of care, and to reduce the cost of care, the Christiana Care Musculoskeletal Health service line engaged a multidisciplinary spine work group to develop an evidence-based pathway for low back pain.

Scope of this Pathway

This pathway is for patients who present to their primary care provider or medical aid unit with a complaint of low back pain.

Pathway Contacts

The content of this pathway is developed and maintained by the Musculoskeletal Health service line of Christiana Care Health System. Questions or feedback about the content may be directed to:

Back to Table of Contents

Administrative Lead: Lori Czajkowski, Executive Assistant for Musculoskeletal Service Line
phone: 302-733-5967
e-mail: LoCzajkowski@christianacare.org

Physician Lead: Scott T. Roberts, MD
phone: 302-623-4144
e-mail: Scott.T.Roberts@christianacare.org

CLINICAL PATHWAY

Please see the clinical pathway diagram below for a visual depiction of the pathway.

Patient presents with low back pain.

1) The first consideration is to rule out cauda equina syndrome. This is a very rare condition where acute, severe compression of the lumbar nerve roots results in significant acute neurologic loss, including acute bowel and bladder changes (inability to urinate, loss of bowel control), saddle anesthesia and bilateral lower extremity weakness and numbness. This does not include patients who present with a localized motor deficit, such as weakness with ankle dorsiflexion, great toe extension or ankle plantar flexion. If there is concern for cauda equina syndrome, the patient should be sent immediately to the emergency department to arrange for urgent surgical decompression.

2) The second consideration is to evaluate for any "red flag" signs or symptoms. These help to evaluate for the concerning causes of low back pain, including malignancy, infection and fracture:

a) history of cancer, unintentional weight loss (malignancy)
b) fevers, immunosuppression, IV drug abuse (infection)
c) significant trauma, osteoporosis, chronic corticosteroid use (fracture)
d) severe pain, unrelated to position (can be seen with cancer, infection or fracture)

If a red flag is identified, imaging should be ordered:

-Lumbar MRI without contrast is the preferred modality (consider ordering with contrast if the patient has had prior lumbar surgery in the region being investigated).

-A lumbar CT can be ordered if MRI is contraindicated.

-Plain x-ray has limited utility, but it can be used to screen for a compression fracture.

3) The next consideration is the patient's neurologic status. If there is a progressive or significant focal neurologic deficit, an MRI should be ordered and the patient should be referred to a spine surgeon. This deficit would be worsening weakness or a motor exam with focal weakness <4/5.

*****Utilize the Urgent Referral Network for lumbar radiculopathy (attached below)

4) If there is severe radicular pain (aka sciatica), an MRI should be ordered and the patient should be referred to a non-surgical spine specialist (PM&R, Anesthesiology, or Interventional Radiology) for an epidural steroid injection. Radicular pain is considered severe if the pain level is high (5-10) and this is causing a significant limitation in activities of daily living.

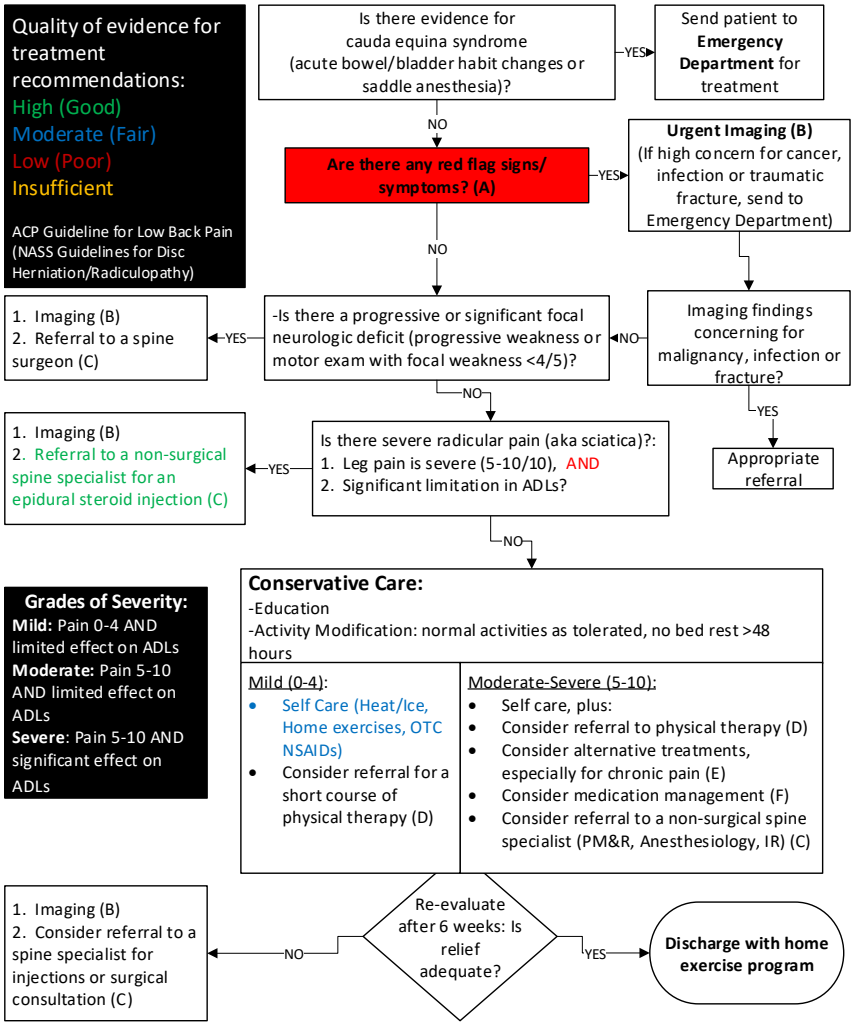
*****Utilize the Urgent Referral Network for lumbar radiculopathy (attached below)

5) If there is no concern for cauda equina, no red flags, no notable neurologic deficit and no severe radicular pain, the patient should be treated with conservative care. See pathway below.

6) The patient should be re-evaluated after 6 weeks of conservative care. If relief is adequate, they can be discharged with advice on a home exercise program. If relief is not adequate, considerate ordering an MRI and referring to a spine specialist for injections or surgical consultation.

PATHWAY ALGORITHMS

Christiana Care Low Back Pain Pathway



A. Red flags to rule out malignancy, infection, and fracture:

-History of Cancer	-Unintentional weight loss
-Fevers	-Immunosuppression
-IV drug abuse	-Significant trauma
-Chronic corticosteroid use	-Osteoporosis
-Severe pain, unrelated to position	

B. Imaging:
-Lumbar MRI without contrast is the preferred modality (consider ordering with contrast if recent spine surgery in the area in question)
-CT if MRI contraindicated
-Plain x-ray has limited utility, but can be used to screen for compression fracture

C. Referral to spine specialist:
-**Surgical referral**: If there is progressive or significant focal neurologic deficit, or severe pain persists despite conservative care, refer to a spine surgeon (Orthopedic or Neurosurgical spine surgeon)
-**Non-surgical referral**: If the primary issue is pain, with minimal or no motor deficit, refer to a non-surgical spine specialist: Physical Medicine and Rehabilitation, Anesthesiology, or Interventional Radiology. These providers will work to identify the pain generator, refer to ancillary providers and surgeons as indicated, perform appropriate injections and/or medication management, and coordinate care with all involved providers.
-**Acute lumbar radiculopathy** – Patients with an acute radiculopathy can be seen within one week of referral by providers in the **Urgent Referral Network.** This can be found in the **Lumbar Disc Herniation and Radiculopathy Pathway.** (Please note, the one week time frame is for acute radiculopathy, not low back pain)

D. Physical Therapy: start with a limited prescription for evaluation, treatment, education and direction on an appropriate home exercise program
-Mild: 1-3x/week for up to 6 sessions.
-Moderate-Severe: 1-3x/week for up to 12 sessions
(In either case, after this initial session, if the therapist and provider agree that more visits are needed, the prescription can then be extended)

E. Alternative care options: exercise, acupuncture, mindfulness-based stress reduction, massage, spinal manipulation, psychological therapies, tai chi, yoga

F. Medication Management: utilize the lowest effective dose for the shortest possible period of time. Start with non-opiates. Evidence for oral medications is extremely limited. These are spine work-group recommendations. Medication management needs to be tailored to the patient with careful consideration of comorbidities and risks/side effects of medication use:
-NSAIDs: take risk factors into account (GI, renal, cardiovascular, and cerebrovascular history; age), consider gastro-protective agent
-Consider neuropathic agent (such as gabapentin) for radicular pain
-Consider short course of oral corticosteroids for severe pain (caution with diabetics)
-Muscle Relaxants: warn of sedation
-Weak opioids or tramadol
--only if non-opioids are contraindicated or ineffective
--avoid routine use
--avoid tramadol if on SSRI/SNRI (serotonin syndrome)
--be aware of CDC and DE controlled substance regulations

Back to Table of Contents

URGENT REFERRAL NETWORK FOR LUMBAR RADICULOPATHY

Urgent lumbar radiculopathy patients (those with severe radicular pain or progressive neurologic deficit) will be seen within one week of referral. The patient or provider requesting the appointment should identify the patient as an acute radiculopathy pathway patient (or "pathway patient").

Please contact Lori Czajkowski if you have any difficulty with getting an appointment at 302-733-5967 / loczajkowski@christianacare.org.

Groups	Contact Number for urgent referral	Providers
AdvanceXing Pain and Rehabilitation	302-384-7439	Selina Xing, MD (PM&R-Pain)
Center for Interventional Pain and Spine	302-477-1706	Philip Kim, MD; Chee Woo, MD (Anesthesiology-Pain)
Christiana Spine Center	302-623-4144	Tony Cucuzzella, MD; Elva Delport, MD; Ann Kim, MD; Nancy Kim, MD; Yong Park, MD; Scott Roberts, MD (PM&R-Spine/Pain)
Christiana Spine	302-623-4004	Rush Fisher, MD (Orthopedics-Spine)
Comprehensive Spine Center	302-734-7246	Ganesh Balu, MD (PM&R-Pain)
Delaware Back Pain and Sports	302-733-0980	Barry Bakst, DO; Stephen Beneck, MD; Arnold Glassman, DO; Rachel Smith, DO; Craig Sternberg, MD (PM&R-Spine/Pain)
Delaware Neurosurgical	302-366-7671	Leif-Erik Bohman, MD; Paul

Group		Tymour Boulos, MD; Matthew Eppley, MD; Pawan Rastogi, MD; Pulak Ray, MD; Michael Sugarman, MD; Kennedy Yalamanchili, MD (Neurosurgery-Spine)
Delaware Orthopaedic Specialists	302-655-9494	Mark Eskander, MD (Orthopedics-Spine)
Delmarva Pain and Spine Center	302-355-0900	Shachi Patel, MD (Anesthesiology-Pain)
First State Orthopaedics	302-731-2888	Bruce Rudin, MD; James Zavlasky, DO (Orthopedics-Spine)

CLINICAN EDUCATION MATERIALS

- Algorithm/Referral Network reference sheet

REFERENCES

Work Group Consensus from the Christiana Care Spine Work Group, utilizing the following evidence and guidelines:

1. North American Spine Society (NASS) Evidence-Based Clinical Guidelines for Multidisciplinary Spine Care. Diagnosis and Treatment of Lumbar Disc Herniation with Radiculopathy. 2012

2. Qaseem A, et. al. Noninvasive Treatments for Acute, Subacute, and Chronic Low Back Pain: A Clinical Practice Guideline From the American College of Physicians. Ann Intern Med. 2017

3. Choosing Wisely Recommendations:

North American Spine Society: Don't recommend bed rest for more than 48 hours when treating low back pain. 2013

North American Spine Society: Don't recommend advanced imaging (e.g., MRI) of the spine within the first six weeks in patients with non-specific acute low back pain in the absence of red flags. 2013

American Academy of Family Physicians recommendation for imaging for low back pain 2012

4. Wenger, HC et. al. JAMA Clinical Guidelines Synopsis: Treatment of Low Back Pain JAMA 2017

5. Chou R, et. al. Systemic Pharmacologic Therapies for Low Back Pain: A Systematic Review for an American College of Physicians Clinical Practice Guideline. Ann Intern Med. 2017

6. Chou R, et. al. Nonpharmacologic Therapies for Low Back Pain: A Systematic Review for an American College of Physicians Clinical Practice Guideline. Ann Intern Med. 2017

7. National Institute for Health and Care Excellence (NICE) Guideline: Low back pain and sciatica in over 16s: assessment and management. 2016

8. Atlas S, et.al. The Maine Lumbar Spine Study, Part II: 1-Year Outcomes of Surgical and Nonsurgical Management of Sciatica. Spine 1996

9. Weinstein J, et.al. Surgical vs Nonoperative Treatment for Lumbar Disk Herniation: The Spine Patient Outcomes Research Trial (SPORT): A Randomized Trial. JAMA 2006

10. Weinstein J, et.al. Surgical vs Nonoperative Treatment for Lumbar Disk Herniation: The Spine Patient Outcomes Research Trial (SPORT): A Observational Cohort. JAMA 2006

11. Peul WC, et.al. Surgery versus Prolonged Conservative Treatment for Sciatica. NEJM 2007

12. Thomas KC, et.al. Outcome Evaluation of Surgical and Nonsurgical Management of Lumbar Disc Protrusion Causing Radiculopathy. Spine 2007

13. Cole, AJ and Herring, SA. The Low Back Pain Handbook – A Guide for the Practicing Clinician

14. Jarvik JG et. al. Association of Early Imaging for Back Pain With Clinical Outcomes in Older Adults Jama 2015

15. Boonstra AM et. Al. Cut-Off Points for Mild, Moderate, and Severe Pain on the Numberic Rating Scale for Pain in Patients with Chronic Musculoskeletal Pain: Variability and Influence of Sex and Catastrophizing. Frontiers in Psychology 2016

16. Roberts, ST and Christiana Care Health System's Musculoskeletal Service Line: eBrightHealth ACO: Clinical Best Practices for Low Back Pain

ACKNOWLEDGEMENTS

This pathway was developed by the Christiana Care Spine Work Group:

Scott Roberts, MD (PM&R) - Spine Work Group Chairman

Brian Galinat, MD, MBA (Orthopaedics) - MSK Service Line Physician Leader

Erin Watson, MD (ED)

Gregory Wanner, DO (ED)

Ganesh Balu, MD (PM&R)

Selina Xing, MD (PM&R)

Philip Kim, MD (Anesthesia)

Irina Phillips, MD (Anesthesia)

Mark Eskander, MD (Orthopaedic Spine)

Leif Bohman, MD (Neurosurgery)

Brad Sandella, DO (Family Med – Sports)

Dave Bercaw, MD (Family Med)

Todd Everett, PT (Physical Therapy)

Jodi Hartlep, MBA, MHA, FACHE (MSK Service Line Operations Leader)

A special thanks to Lori Czajkowski, Executive Assistant for Musculoskeletal Service Line

The Christiana Care Way

We serve our neighbors as respectful, expert, caring partners in their health. We do this by creating innovative, effective, affordable systems of care that our neighbors value.

CHRISTIANA CARE
HEALTH SYSTEM