

# THE STRATEGY THAT WILL FIX SPINE CARE



50 Harvard Business Review October 2013

Image Adapted from Porter<sup>48</sup>



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A discussion of health care incentives, evidence based medicine, and interdisciplinary spine pain centers.



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# 3 QUICK FACTS ABOUT MARY FREE BED



- It's our 125<sup>th</sup> B-Day!
- 5<sup>th</sup> Largest Rehab Hospital in the USA
- We've got a big mission, but we fit it into our logo:

Restoring Hope and *Freedom*  
**Mary Free Bed**  
Rehabilitation Hospital



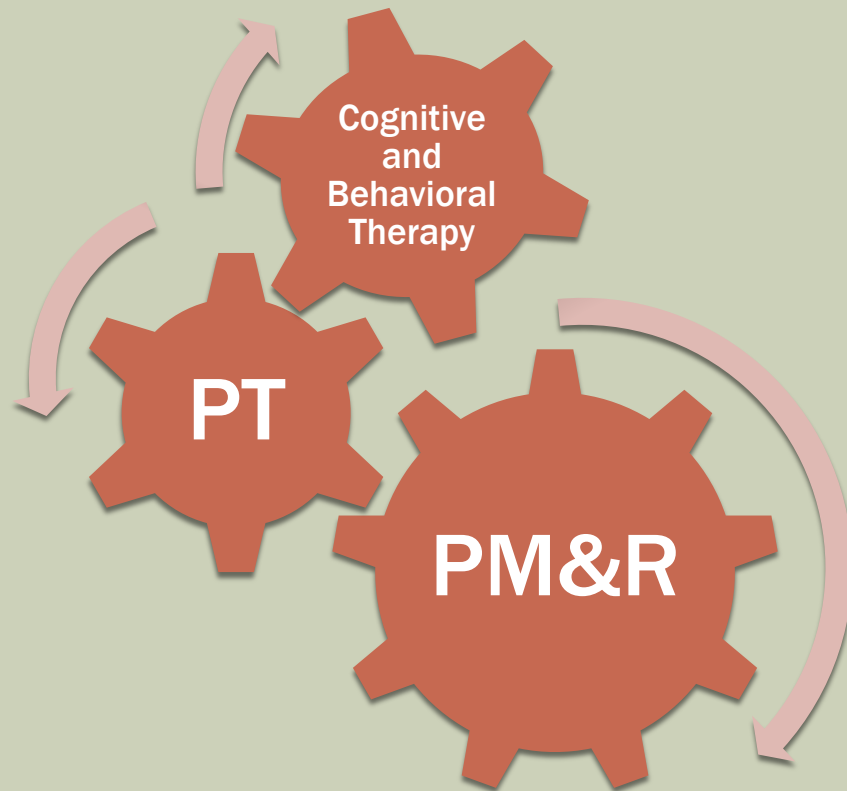
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# TODAY'S OBJECTIVES

- Give a quick history of Mary Free Bed's Spine Center
- Be able to identify the epidemiology involving low back pain in the US
- Discuss solutions offered by interdisciplinary spine centers
- Understand the typical treatment plan for low back pain and escalation of treatment strategies based on patient symptoms
- Be able to give realistic expectations to patients dealing with chronic low back pain

# INTERDISCIPLINARY SPINE AND PAIN CENTERS (ISPC)

- Data driven model providing comprehensive care for spine related patient problems





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# INTERDISCIPLINARY **SPINE** AND PAIN CENTER

The Agency for Healthcare Research and Quality has summarized ISPCs into 4 components<sup>5,41</sup>

- Medical Care
- Physical Reconditioning
- Behavioral Medicine
- Patient Education

# TEAM ROLES

## ■ **Physiatry**

- Skilled physician evaluation to determine cause of pain
- Need for additional imaging
- Utility of medications for management of pain
- Utility of less conservative options for treatment (injections and surgery)
- Utility of physical therapy intervention and assessment of safety for therapy intervention
- Medical stewardship to decrease cost of treatment plan and stepwise approach to treatment
  - Don't throw the book at them!

# TEAM ROLES

- **Physical therapist responsibility**
  - Thorough mechanical spinal evaluation
  - Immediate communication with physiatry/referring physician
  - Determine efficiently whether or not physical therapy is the appropriate tool
  - Make recommendations to treatment team to facilitate optimal functional restoration



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# INTERDISCIPLINARY OUTCOMES

- Interdisciplinary programs have been shown to decrease prescription medications 63%<sup>5,40</sup>
- Are 44% more cost effective than surgery in reducing pain<sup>5</sup>
- 12 times more cost effective than conventional care for returning patients to work<sup>5</sup>
- Have shown 50% reduction in disability rates<sup>5</sup>
- Strongly recommended in multiple clinical practice guidelines<sup>5,7,12,15,27,28,32,40,41</sup>





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# SPINE CENTERS OF EXCELLENCE

Spine

SPINE Volume 38, Number 3, pp E178–E184  
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HEALTH SERVICES RESEARCH

## The Effect of Required Physiatrist Consultation on Surgery Rates for Back Pain

John Fox, MD,\* Andrew J. Haig, MD,† Brian Todey, BS,\* and Sastish Challa, MS\*

**Study Design.** Prospective trial with insurance database and surveys.

**Objective.** This study was developed to determine whether an insurer rule requiring physiatrist consultation before nonurgent surgical consultation would affect surgery referrals and surgery rates.

**Summary of Background Data.** Spine surgery rates are highly variable by region and increasing without evidence of a concordant

**Key words:** back pain, surgery, physical medicine and rehabilitation, shared decision making. **Spine 2013;38:E178–E184**

Spinal disorders represent an increasing societal burden in terms of pain, disability, lost work productivity, and cost. Surgery is one intervention for back pain. The rates for various types of surgical procedures are increasing in the United States. Americans undergo surgery at a rate higher

**48% Decrease in Surgical Referrals**  
**34% Higher Satisfaction with PM&R**



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# WHY DID WE DO IT?

- Low Back Pain (LBP) is the most common type of pain<sup>1,25</sup>
- 85% lifetime prevalence<sup>3,4,5</sup>
- 20-30% point prevalence in general US population<sup>1,6,17</sup>





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# HOW BIG IS THE PROBLEM?

- 5th most common reason for all US physician visits<sup>1,2,17,25</sup>
- 2<sup>nd</sup> most common reason for primary care visits<sup>1,2,17,25</sup>
- Costliest chronic condition in the US health care system<sup>5</sup>





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# HOW BIG IS THE PROBLEM?

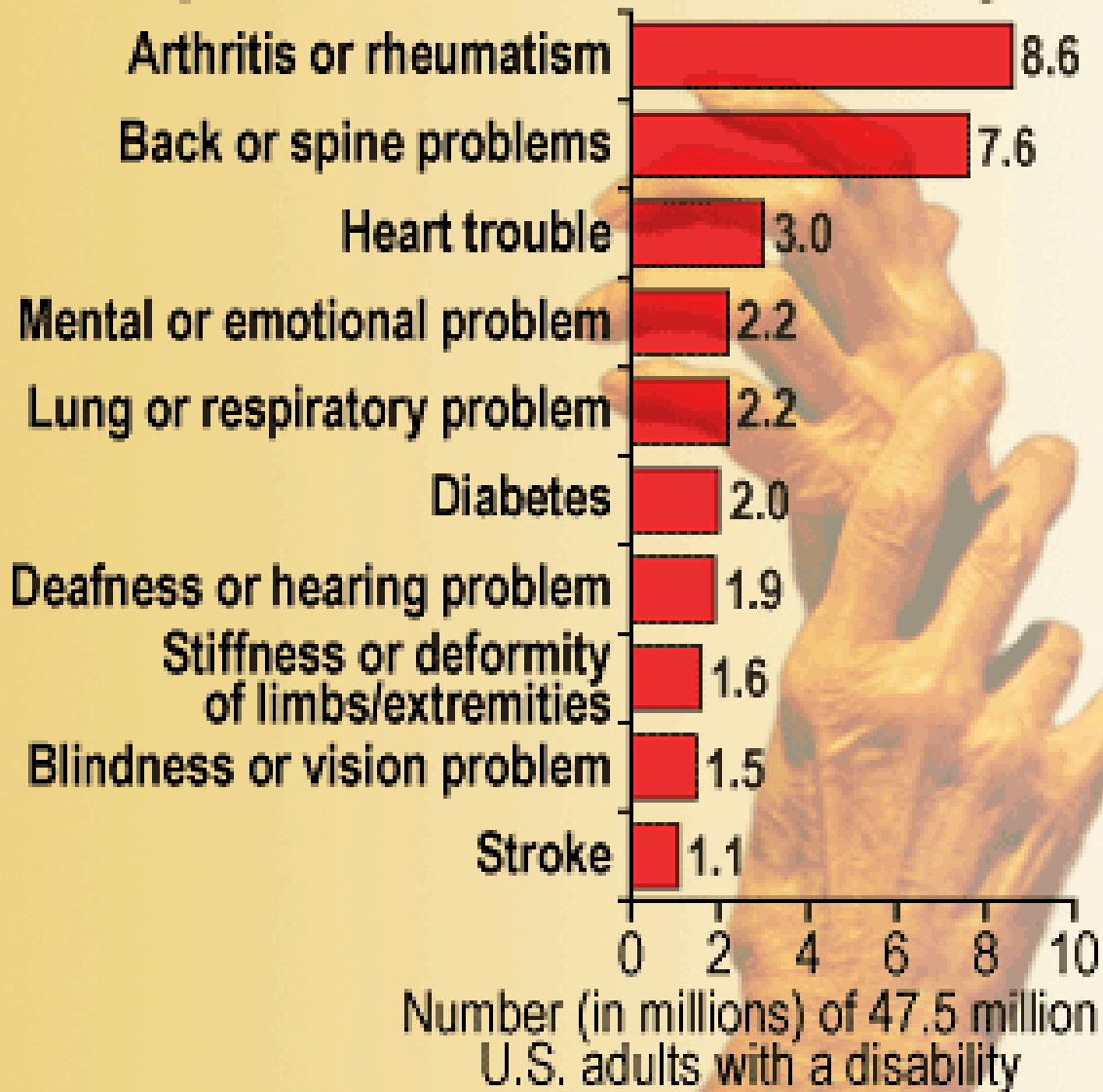


- Only 20% of cases have a known cause<sup>28</sup>
- Only 25–39% of Americans are ever treated<sup>3,4</sup>
- 60% of those treated continue to have pain a year later<sup>7,10</sup>



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## Top 10 Causes of Disability



Adapted from [www.cdc.gov](http://www.cdc.gov)



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# HOW BIG IS THE PROBLEM?



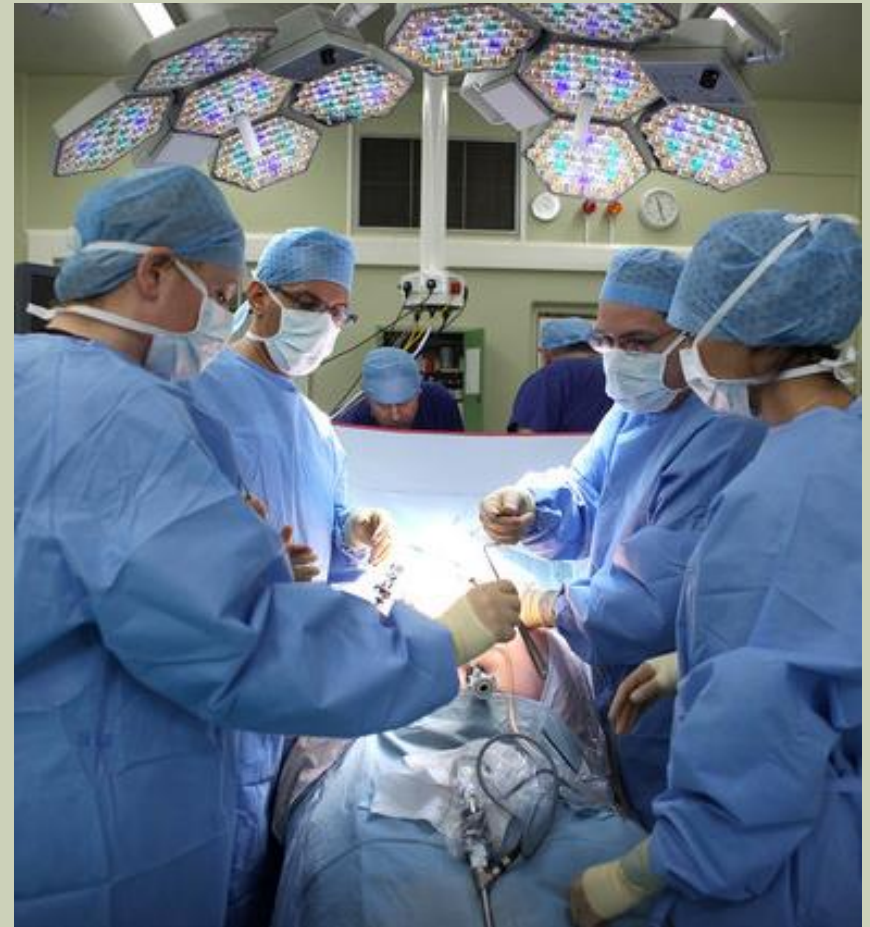
- 2<sup>nd</sup> most common reason to miss work<sup>5,8</sup>
- 41-87% of worker's compensation costs<sup>5,8</sup>
- 14% miss work each year due to LBP<sup>17,18</sup>

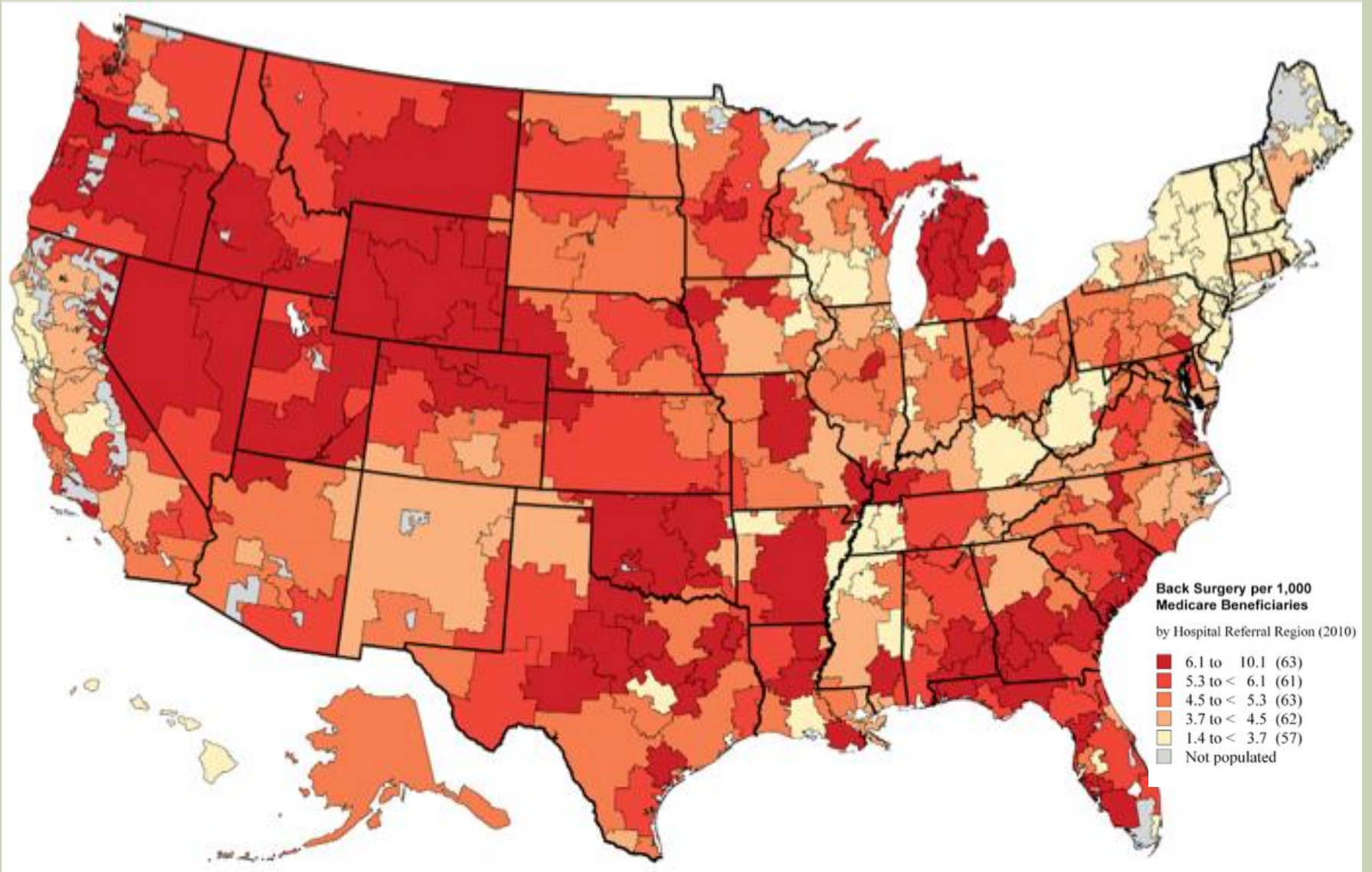


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# WHAT'S OUR PREFERENCE?

- US has highest rate of lumbar surgery in the world
- 2-5 times more than other developed countries
- 200% increase in the last decade<sup>11,12,17,20</sup>



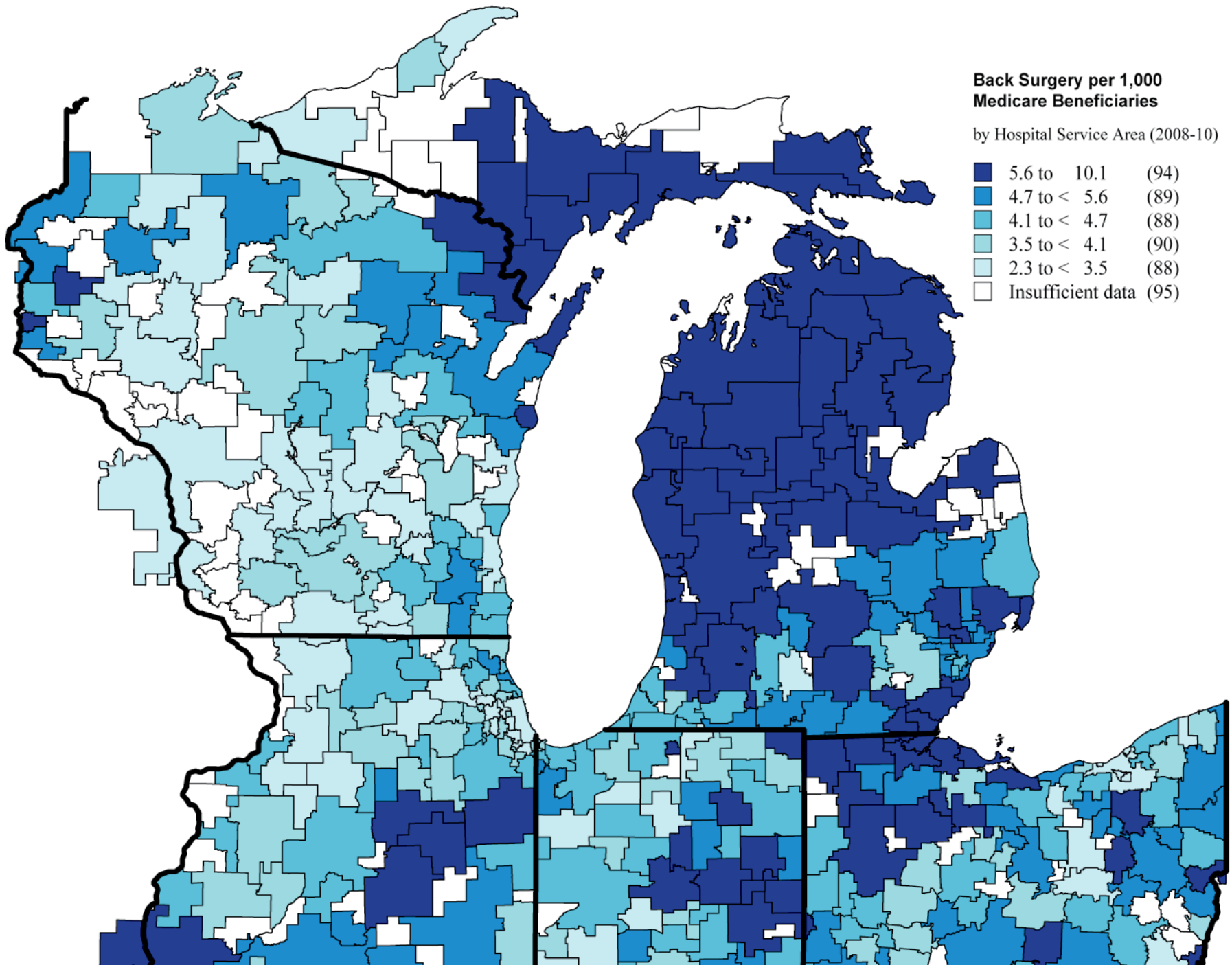
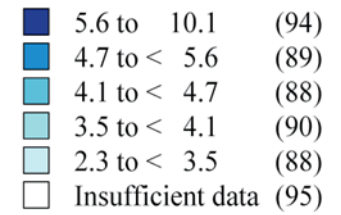


Adapted from [www.dartmouthatlas.org](http://www.dartmouthatlas.org)



**Back Surgery per 1,000  
Medicare Beneficiaries**

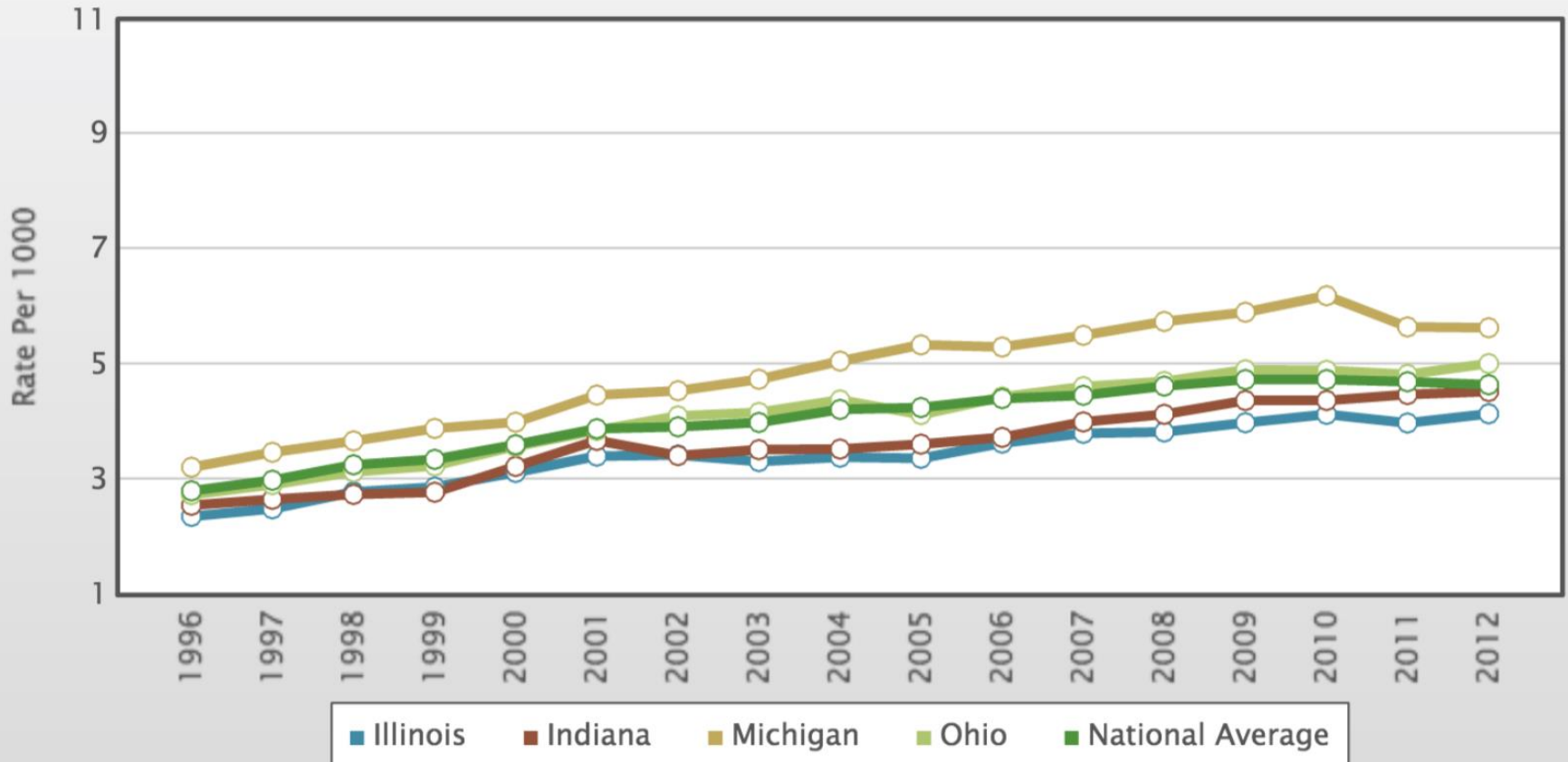
by Hospital Service Area (2008-10)





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## Inpatient Back Surgery per 1,000 Medicare Enrollees, by Gender

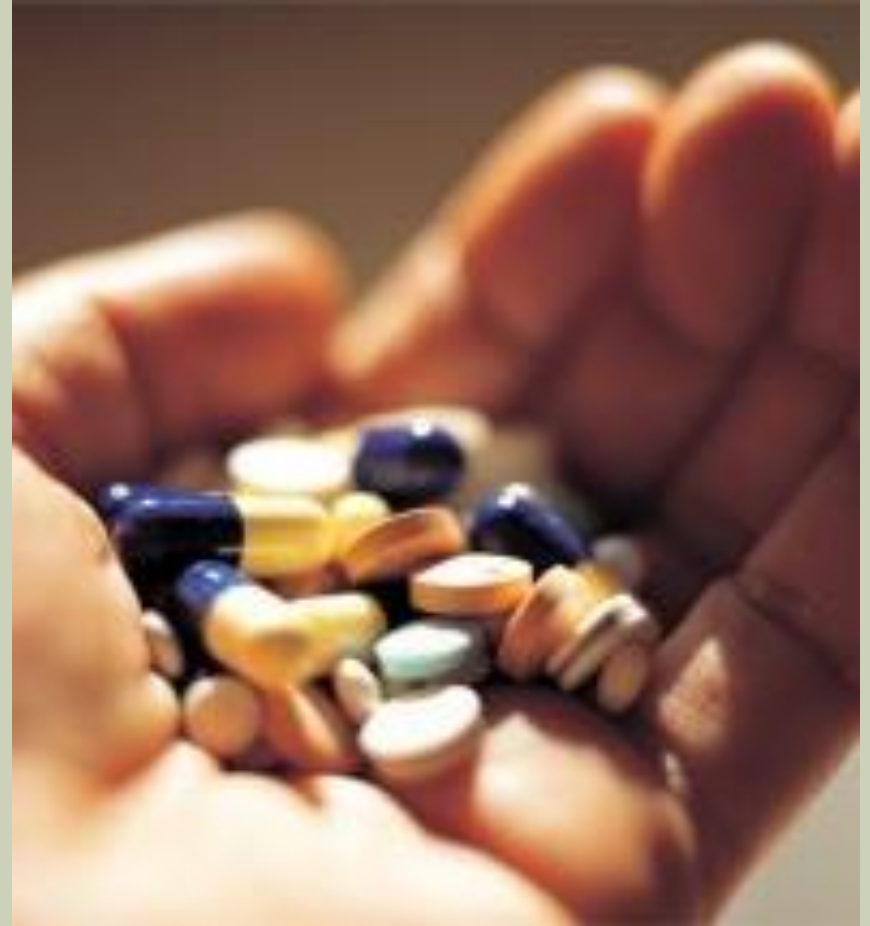




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# WHAT'S OUR PREFERENCE?

- Americans constitute 4.6% of the world's population, but consume 80% of the global supply of opioids<sup>32</sup>
- Americans consume 99% of the global supply of hydrocodone<sup>32</sup>





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# WHAT'S OUR PREFERENCE?

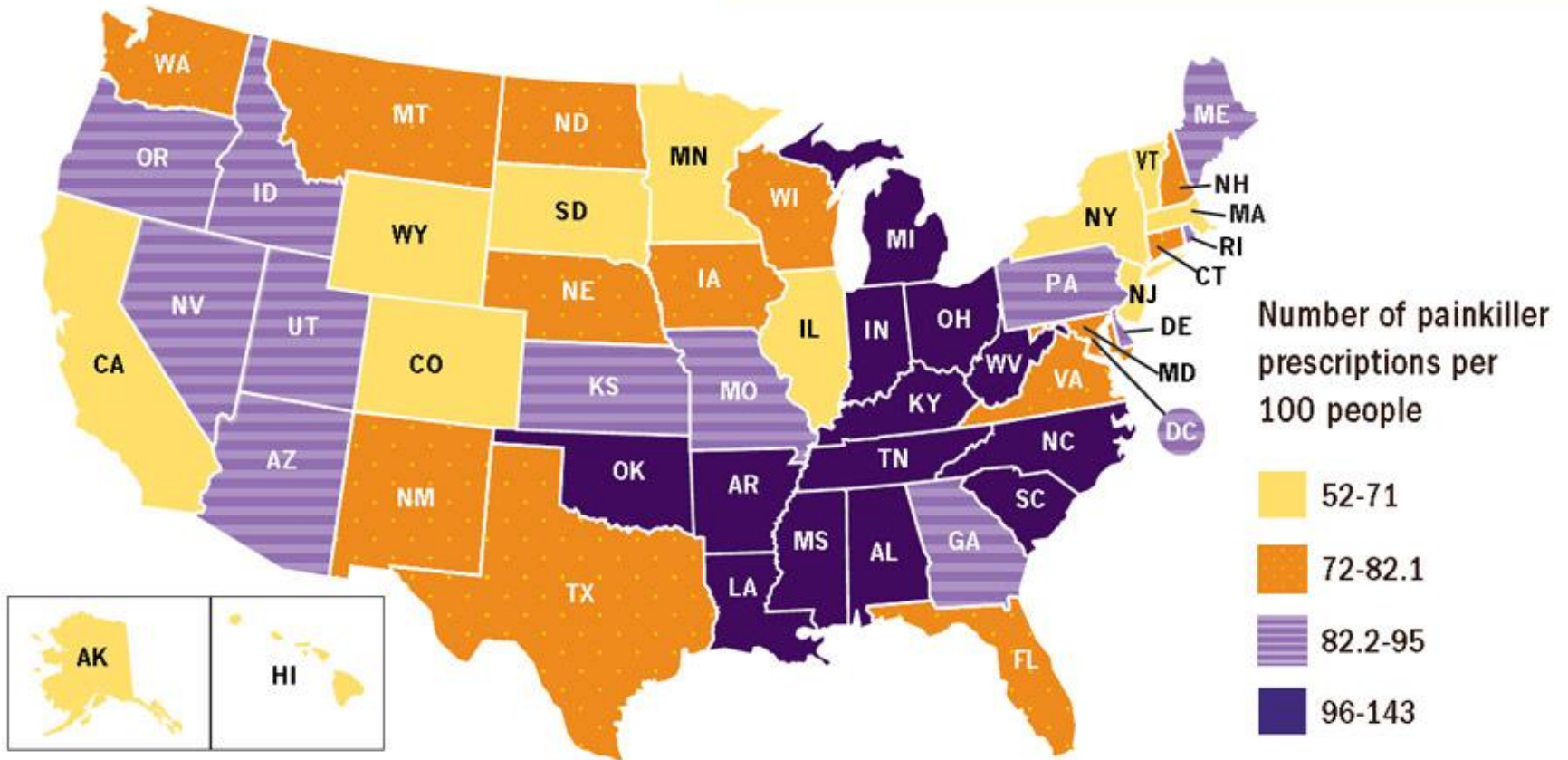
- 40% of opioid prescriptions in the US are written by primary care or internists<sup>31</sup>
- Hydrocodone use has increased 280% from 1997 to 2007<sup>34</sup>
- Methadone usage has increased 1,293% from 1997 to 2007<sup>34</sup>





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Some states have more painkiller prescriptions per person than others.



SOURCE: IMS, National Prescription Audit (NPA™), 2012.

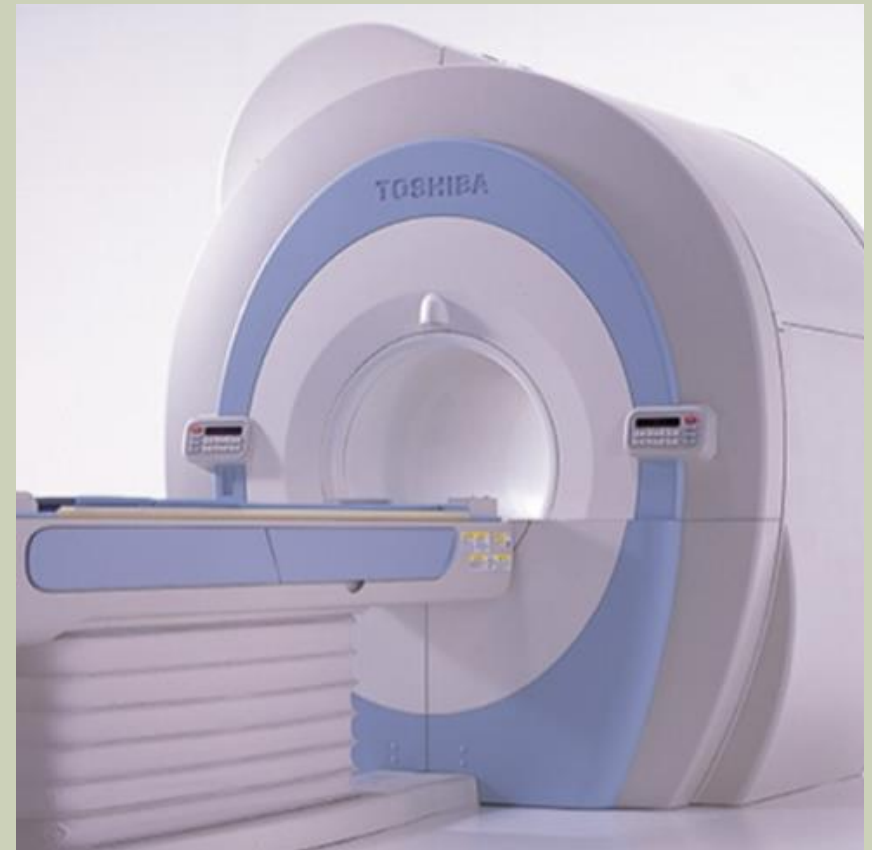
Adapted from [www.cdc.gov](http://www.cdc.gov)



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# WHAT'S OUR PREFERENCE?

- “Strong evidence shows that routine back imaging does not improve patient outcomes, exposes patients to unnecessary harms, and increases costs.”<sup>17</sup>
- Patients from high imaging use areas are 5 times more likely to have an MRI or CT scan – without an associated improved clinical outcome<sup>17,21,22,23</sup>

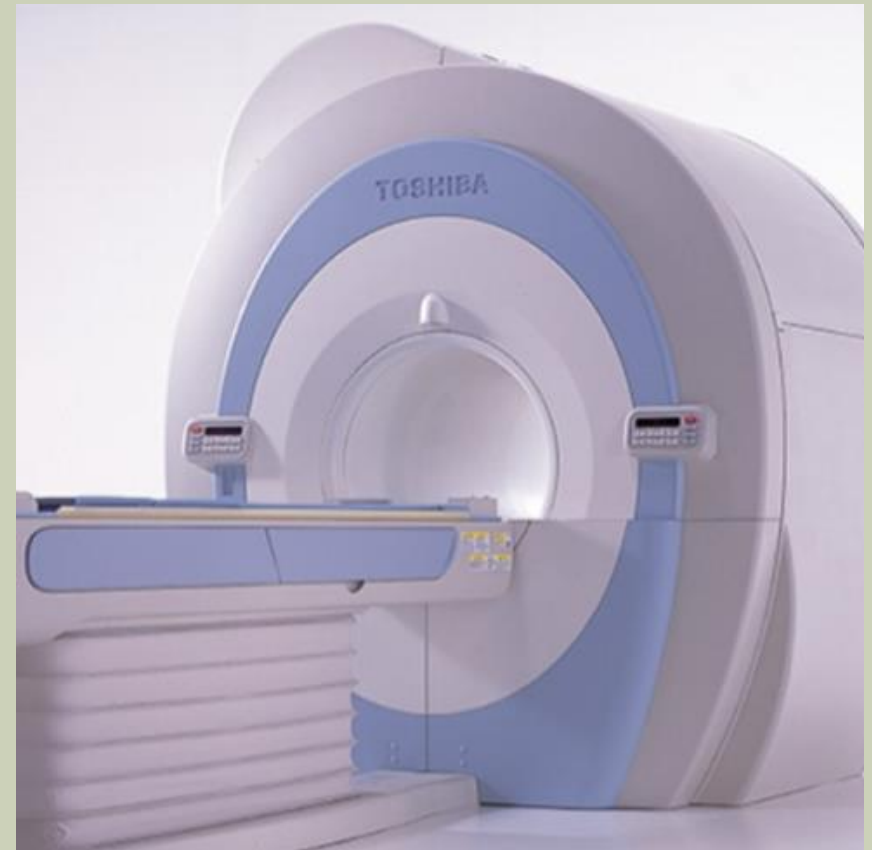




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# WHAT'S OUR PREFERENCE?

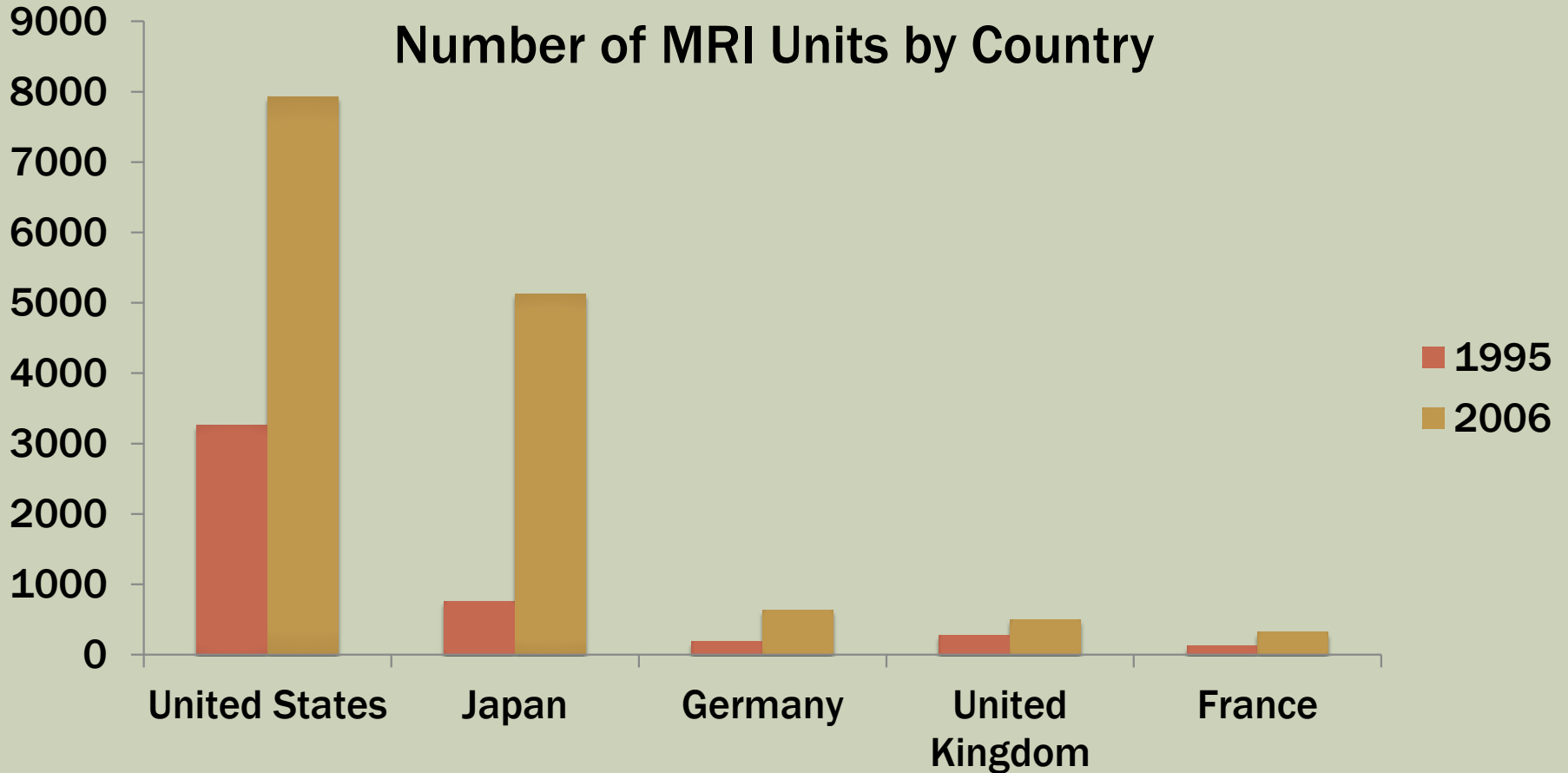
Depression is a stronger predictor of who will report LBP than baseline imaging findings<sup>13</sup>





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# WHAT'S OUR PREFERENCE?



SOURCE: Organisation for Economic Co-operation and Development (OECD); 2007 Computed Tomography (CT) and Magnetic Resonance Imaging (MRI) Census. Benchmark Report: IMV, Limited, Medical Information Division.





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# WHAT'S OUR PREFERENCE?

- Between 1997 and 2006 facet procedures increased 543%<sup>5,26,30,39</sup>
- “There is moderate evidence that facet joint injections with corticosteroids are not more effective than placebo injections for pain relief and improvement in disability.”<sup>39</sup>





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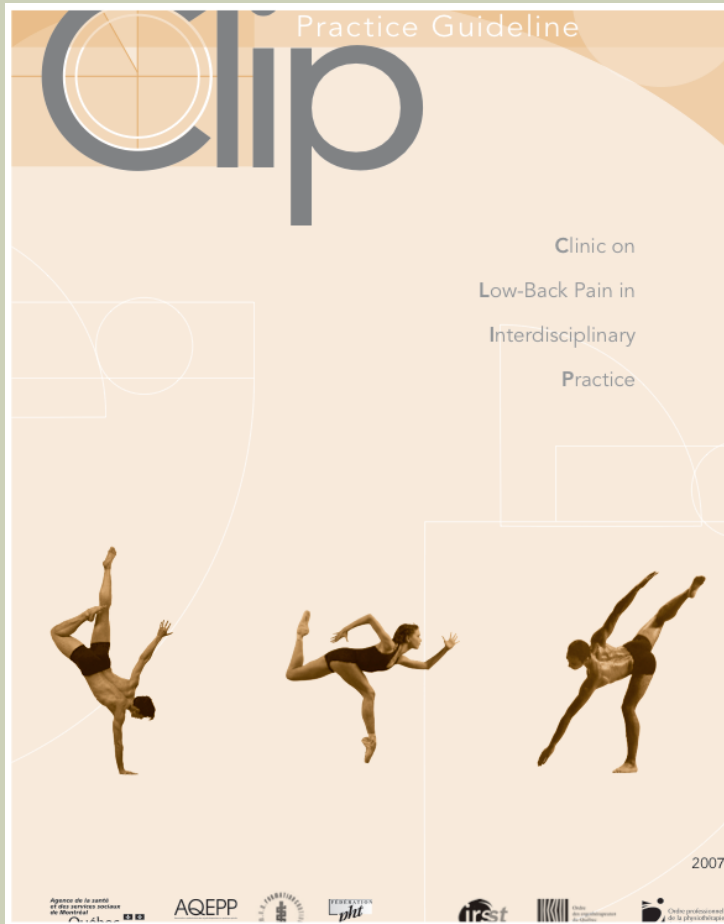
# PROBLEM SUMMARY

- Almost everyone gets spine pain
- Treatment is preference driven – not evidence driven
- American's prefer surgery, imaging, medications, and injections
- Michiganders have expensive preferences for treating spine pain



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# EDUCATE PATIENTS WITH THE EVIDENCE



## CLINICAL GUIDELINES

### Diagnosis and Treatment of Low Back Pain: A Joint Clinical Practice Guideline from the American College of Physicians and the American Pain Society

Roger Chou, MD; Amir Qaseem, MD, PhD, MHA; Vincenza Snow, MD; Donald Casey, MD, MPH, MBA; J. Thomas Cross Jr., MD, MPH; Paul Shekelle, MD, PhD; and Douglas K. Owens, MD, MS, for the Clinical Efficacy Assessment Subcommittee of the American College of Physicians and the American College of Physicians/American Pain Society Low Back Pain Guidelines Panel\*

**Recommendation 1:** Clinicians should conduct a focused history and physical examination to help place patients with low back pain into 1 of 3 broad categories: nonspecific low back pain, back pain potentially associated with radiculopathy or spinal stenosis, or back pain potentially associated with another specific spinal cause. The history should include assessment of psychosocial risk factors, which predict risk for chronic disabling back pain (strong recommendation, moderate-quality evidence).

**Recommendation 2:** Clinicians should not routinely obtain imaging or other diagnostic tests in patients with nonspecific low back pain (strong recommendation, moderate-quality evidence).

**Recommendation 3:** Clinicians should perform diagnostic imaging and testing for patients with low back pain when severe or progressive neurologic deficits are present or when serious underlying conditions are suspected on the basis of history and physical examination (strong recommendation, moderate-quality evidence).

**Recommendation 4:** Clinicians should evaluate patients with persistent low back pain and signs or symptoms of radiculopathy or spinal stenosis with magnetic resonance imaging (preferred) or computed tomography only if they are potential candidates for surgery or epidural steroid injection (for suspected radiculopathy) (strong recommendation, moderate-quality evidence).

**Recommendation 5:** Clinicians should provide patients with evidence-based information on low back pain with regard to their expected course, advise patients to remain active, and provide information about effective self-care options (strong recommendation, moderate-quality evidence).

**Recommendation 6:** For patients with low back pain, clinicians should consider the use of medications with proven benefits in conjunction with back care information and self-care. Clinicians should assess severity of baseline pain and functional deficits, potential benefits, risks, and relative lack of long-term efficacy and safety data before initiating therapy (strong recommendation, moderate-quality evidence). For most patients, first-line medication options are acetaminophen or nonsteroidal anti-inflammatory drugs.

**Recommendation 7:** For patients who do not improve with self-care options, clinicians should consider the addition of nonpharmacologic therapy with proven benefits—for acute low back pain, spinal manipulation; for chronic or subacute low back pain, intensive interdisciplinary rehabilitation, exercise therapy, acupuncture, massage therapy, spinal manipulation, yoga, cognitive-behavioral therapy, or progressive relaxation (weak recommendation, moderate-quality evidence).

*Ann Intern Med.* 2007;147:478-491.  
For author affiliations, see end of text.

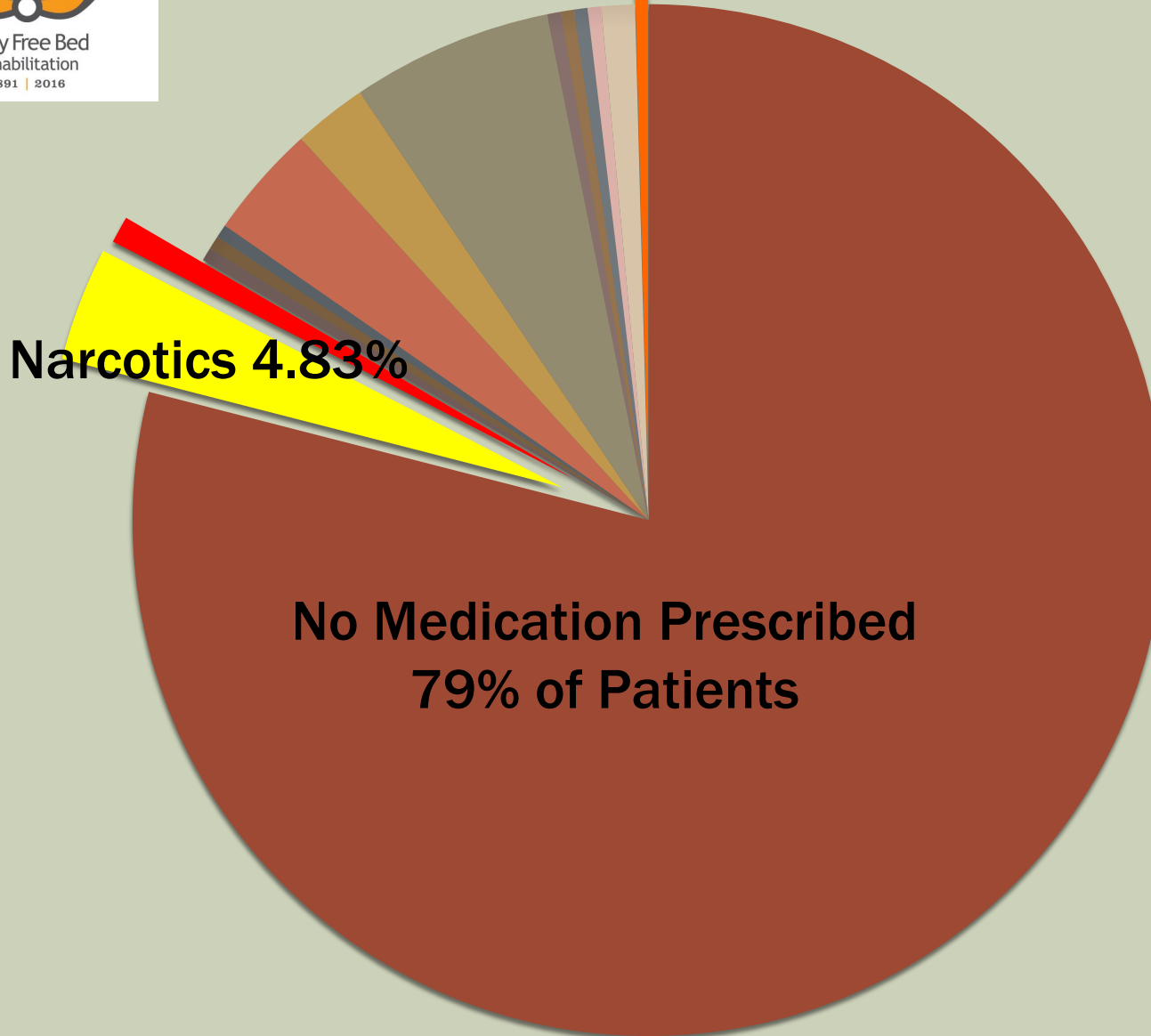
[www.annals.org](http://www.annals.org)



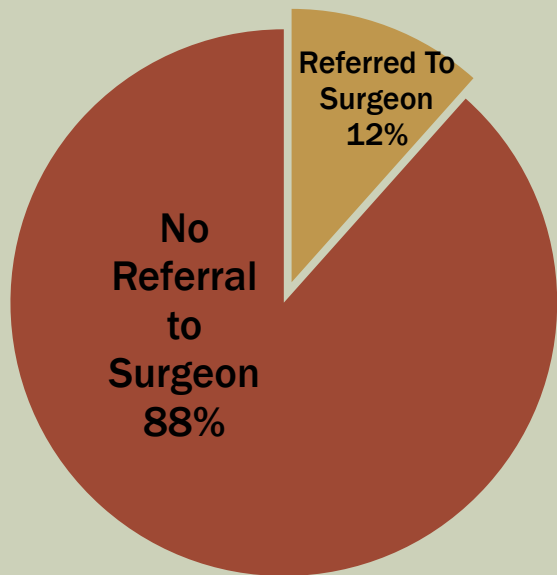
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# MFB Spine Center MEDICATIONS PRESCRIBED

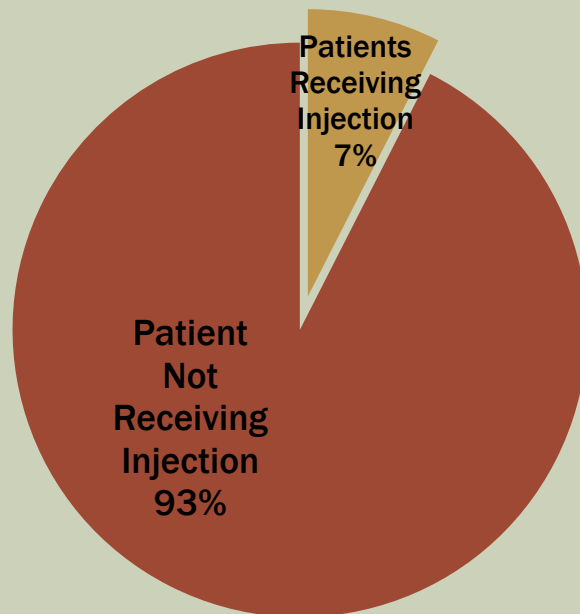
- No Medication
- Norco
- Vicodin
- Clinbril
- Cymbalta
- Elevil
- Trazadone
- Flexeril
- Gabapentin
- Lyrica
- Motrin
- Naprosyn
- Mobic
- Ambien
- Tramadol



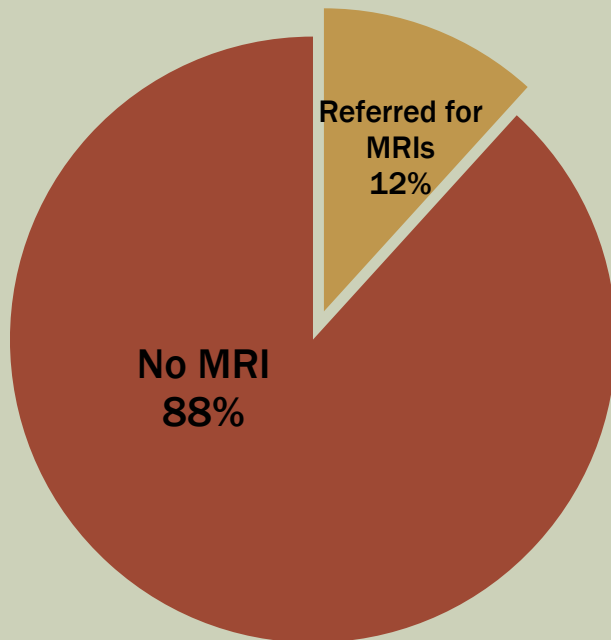
## Surgical Referrals



## ESI Referrals



## MRI Referrals



# WORK HARDENING AND CONDITIONING

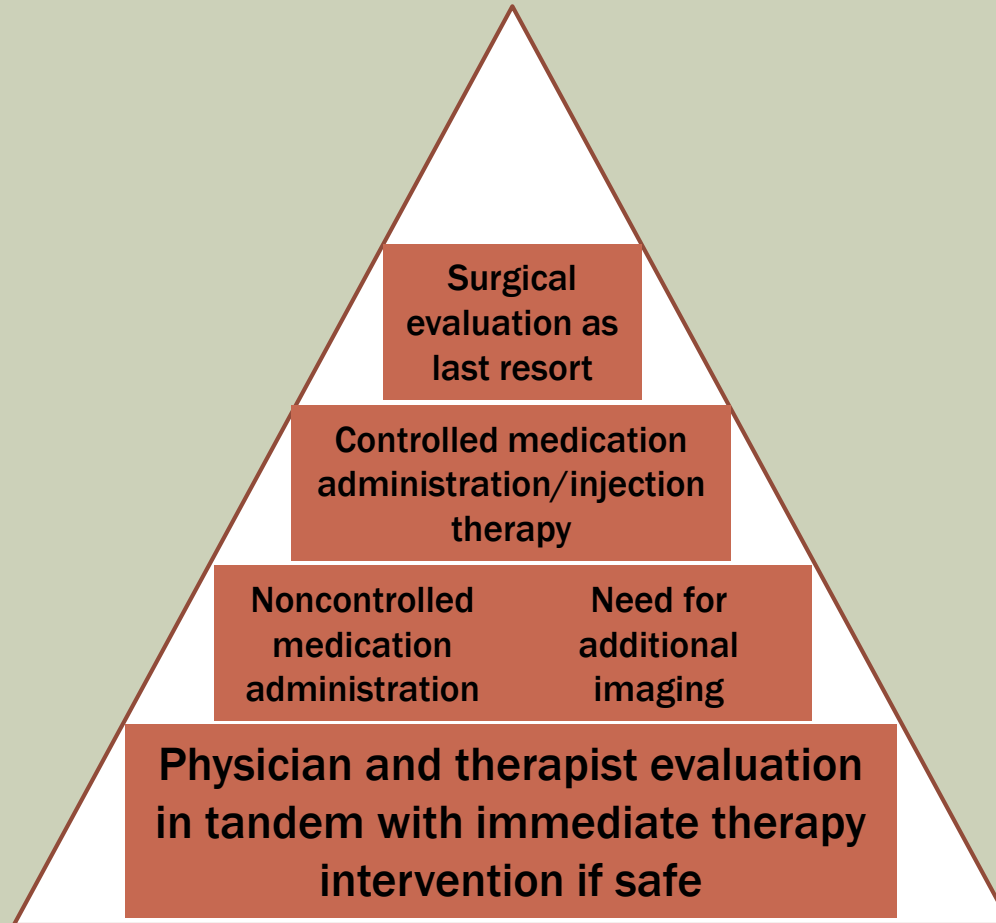
- Evaluation should include both physical & functional limitations
- When assessing functional limitations, focus should be on function related to work demands, while not ignoring those related to ADL's
- Evaluation also includes patient's aerobic endurance level.
- Work Hardening Components:
  - Aerobic conditioning in preparation for work
  - Strengthening in preparation for work
  - Lifting mechanics/body mechanics for daily activity
  - Job Simulation
  - Patient Education
- Patient's report of job functions & demands should be verified through case manager or employer when possible
- While physical limitations have been assessed, focus of the program goals should be functional - related to return to work
- Program can (and should) be customized to needs of the patient, carrier & case manager

# FUNCTIONAL CAPACITY ASSESSMENT

## WHAT IS IT & WHEN SHOULD IT BE USED.....

- One time, three hour test. Components include History, Physical Examination & Functional Testing
- Functional testing includes positional & movement tolerances, cardiovascular endurance and maximal lifting/pushing/pulling tolerances.
- Deficits in physical examination should correlate with functional deficits.
- Used to compare functional status to regular job duties;
- To determine functional status to begin vocational process after MMI;
- To determine functional status in relationship to disability filing;
- To determine baseline or progress during rehabilitation process.

# MARY FREE BED SPINE CENTER EXPECTATIONS





# MARY FREE BED SPINE CENTER EXPECTATIONS

- Interdisciplinary comprehensive spine care
- Low cost of spine care by avoidance of unnecessary testing and procedures
- Avoidance of addictive medications
- Access to work hardening/conditioning programs
- Access to behavioral medicine/pain center



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