

Chronic Pain and Pain Rehabilitation










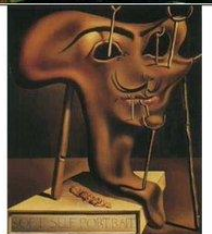
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High Brow Pain Scale

Which level of pain are you?

<p>1. Vermeer I feel a little twinge now and then.</p>		<p>2. Da Vinci I can grin and bear it.</p>	
<p>3. Whistler I just want to sit here.</p>		<p>4. Rembrandt I've been better.</p>	
<p>5. Durer Yes I'm in pain. I wouldn't be here otherwise.</p>		<p>6. Van Gogh Can't talk...</p>	
<p>7. Picasso Something is very, very wrong with me.</p>		<p>8. Courbet Morphene!</p>	
<p>9. Munch AGHHHHHHHHHH!!!!</p>		<p>10. Dali Not. Even. Human. Any. More.</p>	





JCAHO On Assessment

- Pain is a “fifth vital sign”
- Pain will be routinely measured
- Policies will define points of time when pain assessments are performed
- Policies will define actions to be taken if pain intensities reach specified levels
- Progress notes must reflect action taken



JCAHO On Assessment

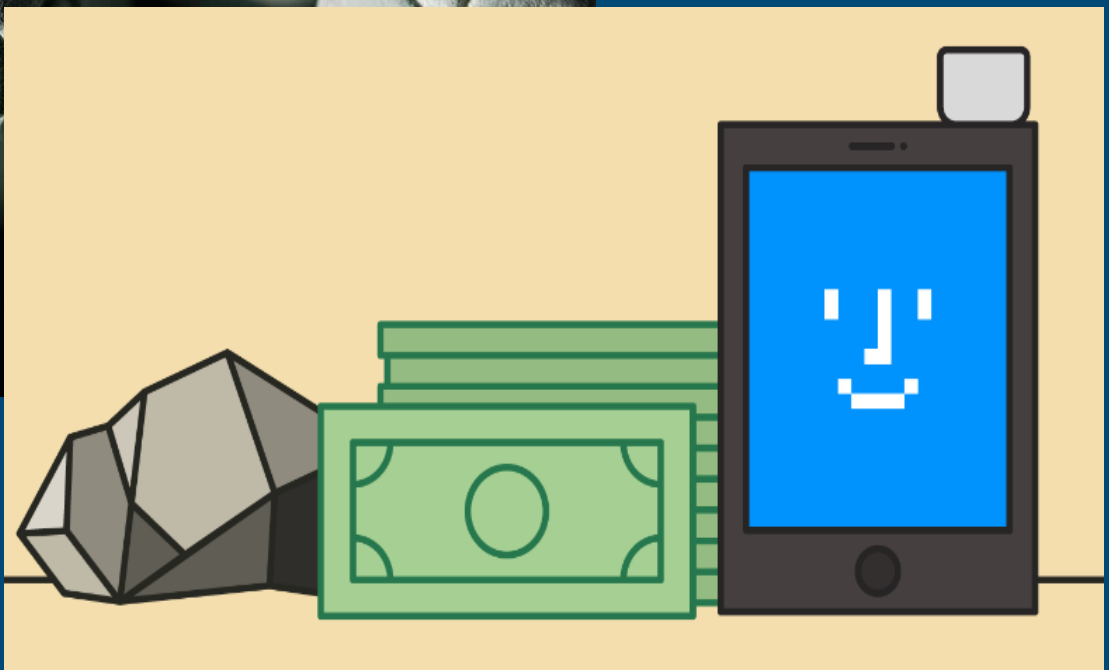
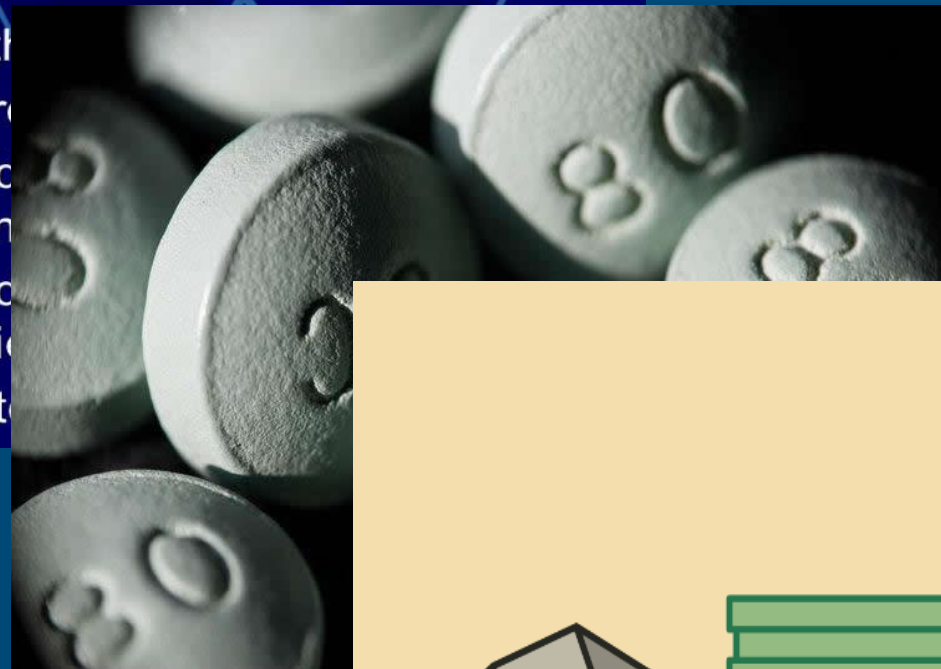
- Pain is a “fifth vital sign”
- Pain will be recognized as a patient safety issue
- Policies will cover pain assessment and management
- Policies will cover pain intensity and patient education
- Progress noted in pain management



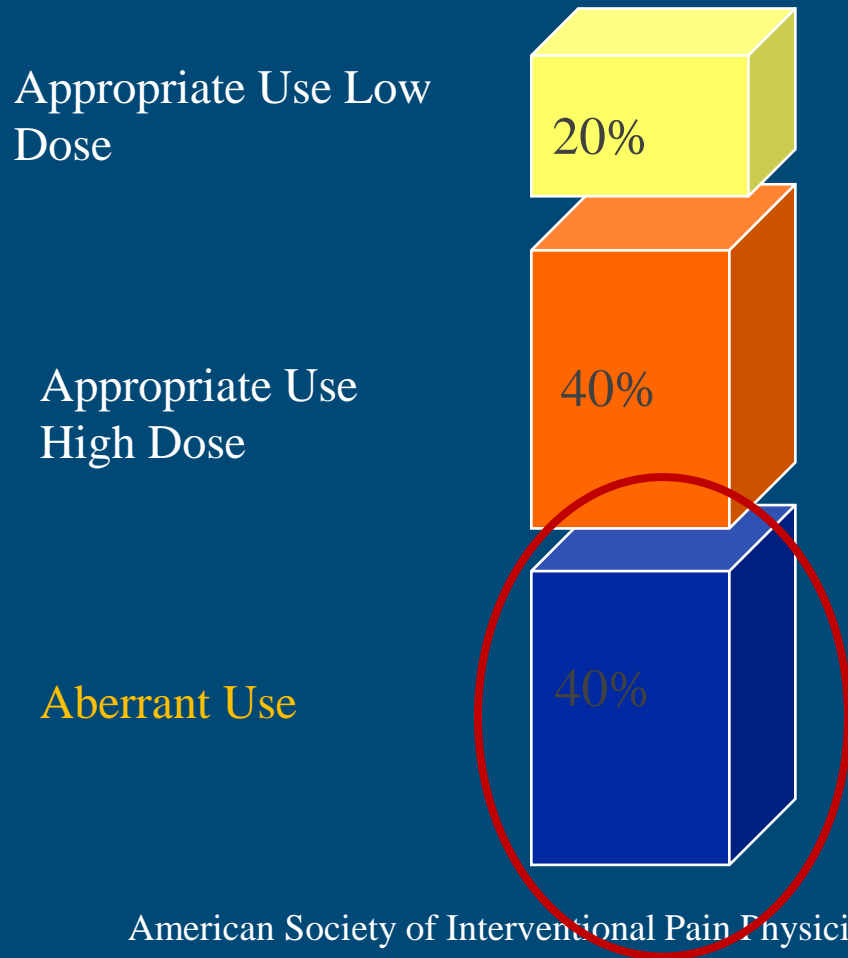


JCAHO On Assessment

- Pain is a “fifth vital sign”
- Pain will be recognized as a patient’s primary concern
- Policies will cover pain assessment and management
- Policies will cover pain intensity and quality
- Progress noted in patient records



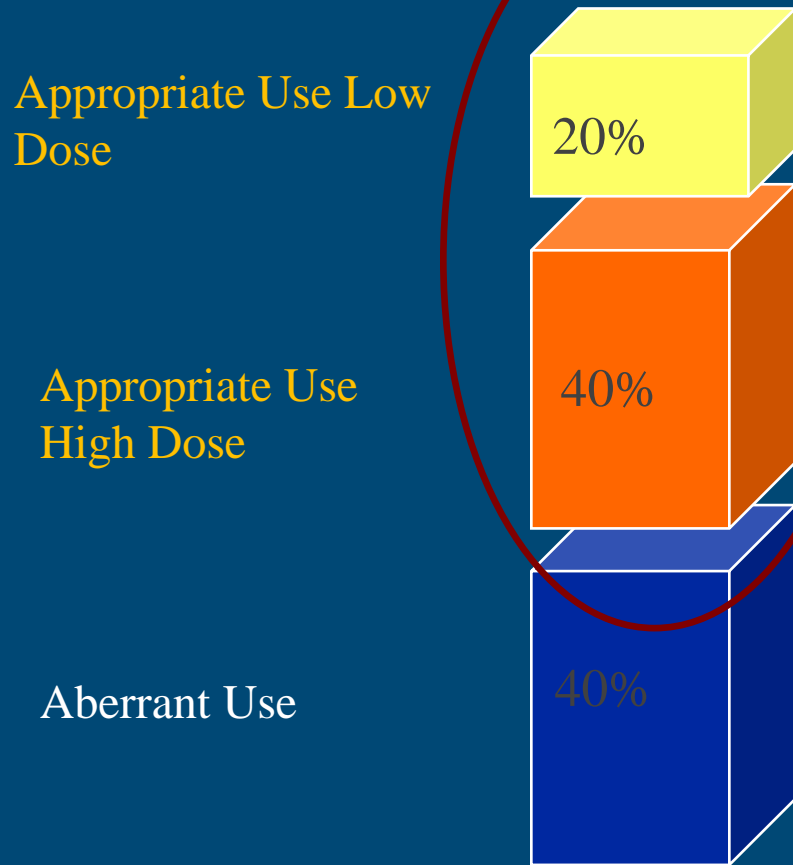
OPIOID OVERDOSE



- 40% of OPR overdoses occur in patients who are clearly misusing



OPIOID OVERDOSE



- 60% of overdoses occur in patients without evidence of aberrant use
- The majority occur in patients taking either:
 - High doses >100mg OME
 - Combined opioid and sedative





ACUTE VS CHRONIC PAIN

Acute Pain

- Associated with tissue damage
- Abrupt in onset
- Short duration
- Correlation is observed between the site and extent of tissue injury and the location and intensity of pain experienced or expressed

Chronic Pain

- Sudden or gradual onset
- May be associated with a chronic disease process or nervous system dysfunction
- May occur in the absence of identifiable causes

Chronic Pain/Symptom Conditions

- Headache
 - Abdominal Pain
 - Pelvic Pain
 - Back/Neck Pain
 - Fibromyalgia
 - Myofascial Pain
 - TMD
- Spells
 - Environmental Sensitivity
 - Spasms
 - Nausea/Vomiting
 - Dizziness
 - PNES
 - FND

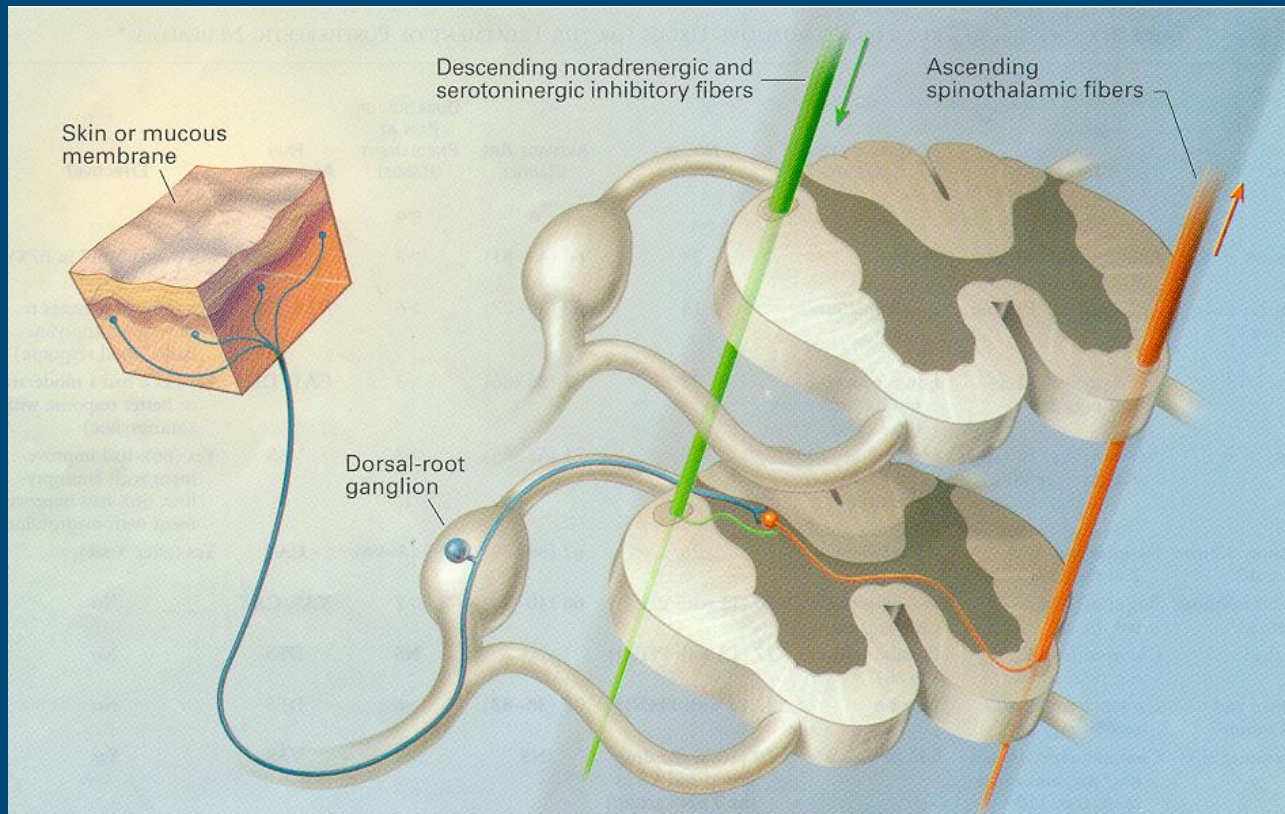
Traditional Medical Model

- Pain/Symptom perception is the direct result of tissue damage or disease process
- Severity of pain or pain complaints are directly proportional to the severity of the tissue damage
- Pain/Symptoms, in the absence of identifiable pathology, is questionable or *psychogenic*
- Fits acute pain/symptoms fairly well

Pain - Modern Concepts

- Excitatory Pathways
- Inhibitory Pathways
- Neuromodulation
 - Short-term changes
- Neuroplasticity
 - Long-term changes

Pain Pathways



Abnormal Central Processing

- Patients with chronic pain have been shown to have exaggerated temporal summation of painful stimuli.
- This is analogous to “wind-up” phenomena seen in animal models of pain.
- In those models, wind-up is thought to reflect changes in the receptors for excitatory amino acids (NMDA) and neuropeptides in spinal neurons.

Medical/Biomedical

- Beginning point of investigation and intervention
- Views pain as a problem to be fixed
- Mechanistic and orderly approach to pain generators and mechanisms
- Often highly effective

“A narrow medical focus may miss that which should be found and find that which should be missed.”

J.D. Loeser, M.D.



Chronic Pain



Chronic Pain Characteristics

- Enduring symptoms
- Elusive causes
- Exhausting treatments
- External normalcy
- Existential quandary

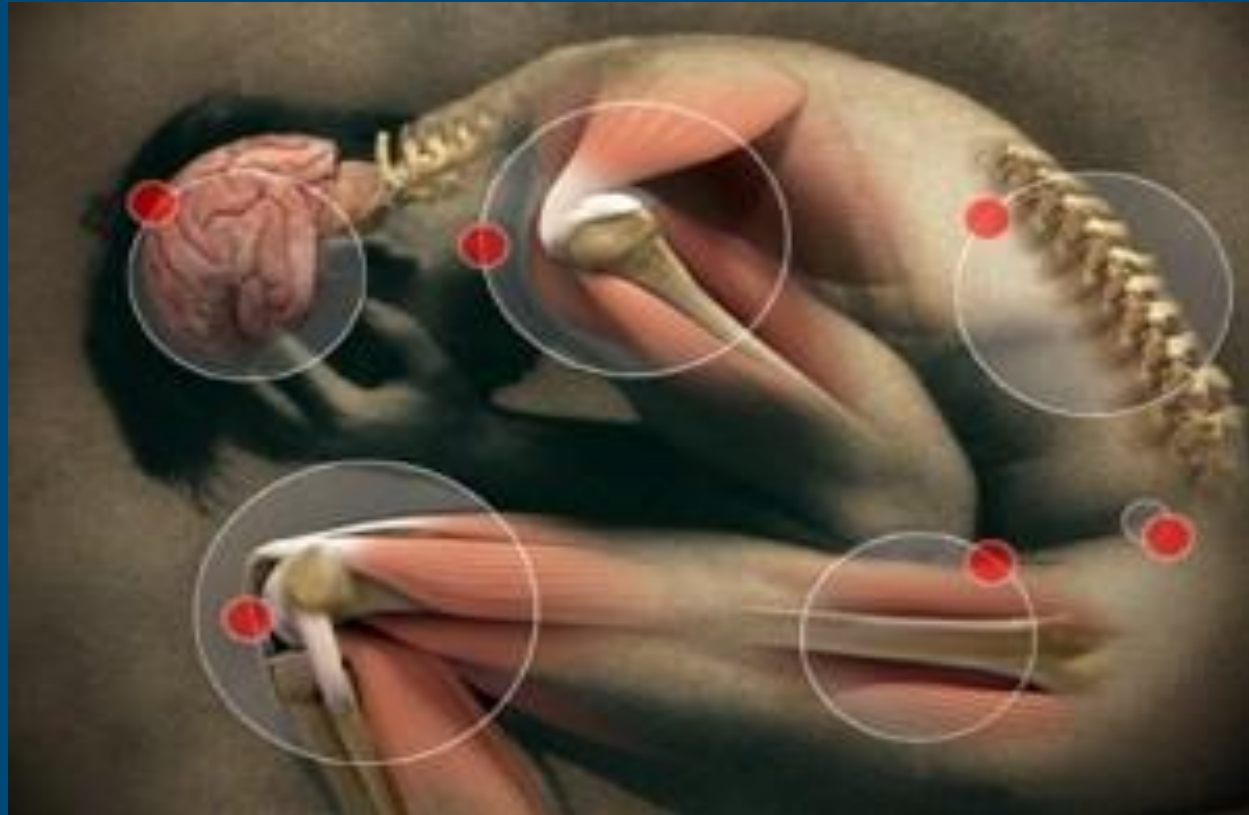
Chronic Pain Syndrome Characteristics

- Primary complain of persistent pain/symptoms
- Pain behaviors in excess of physical findings
- Deconditioned physical state
- Disturbed sleep
- Depressive symptoms
- Disability or impaired job performance
- Abuse of alcohol or prescription medications
- Over-utilization of health care resources

The Psychological Set-up

- Chronic pain is invisible and incurable
- The behavioral consequences begin early and often escalate
- Social and environmental influences can be significant
- Behavioral issues worsen by physical factors – medications, de-conditioning etc.

Central Sensitization



Peripheral Upregulation

- Skin
- Gut
- Muscle
- Bones
- Joints
- Vascular
- Nerves
- Balance
- Taste
- Smell
- Vision
- Hearing

Central Sensitization

- Somatosensory Cortex
- Consequence: More sensitive to...

Pain

Fatigue

Dizziness

Nausea

Touch

Light

Sound

Smell

Temperature

Taste

Central Sensitization

- Motor Cortex
- Consequence: More prone to...

Imbalance

Weakness

Tremor

Abnormal Gait

Spasms

Muscle 'Jerks'

Spells

Seizure-Like

Difficulty starting and maintaining movements

Environmental Reinforcement of Pain/Symptoms

- Family/Social responses to illness
- Avoidance of work responsibility
- Financial compensation
- Lack of reinforcement of well behavior
- Analgesic or sedating medication
- Avoidance of unpleasant chores
- Avoidance of aversive work environment

Cognitive-Behavioral (Turk)

- Incorporates cognitive/affective components with operant learning factors
- Uses behavioral techniques
- Treatment focused on cognitions, emotions, and behavior
- Specific attention given to maintenance of treatment gains

Biopsychosocial Model

- Recognizes that pain/symptoms are multidimensional
- Pain/symptom perception is the result of emotional, environmental, and cognitive factors in addition to physical factors
- Outcomes of disability or loss of function result from the interplay of all of these variables
- Fits chronic pain/symptoms better than traditional model

Biopsychosocial Model

Psychosocial Variables

- Mood
- Attributions (beliefs) about pain
- Attention on pain
- Anxiety
- Social/Family support
- Employment status
- Disability compensation
- Family models of chronic pain
- Abuse history
- Somatization

Chronic Pain Syndrome Characteristics

- Primary complain of persistent pain
- Pain behaviors in excess of physical findings
- Deconditioned physical state
- Disturbed sleep
- Depressive symptoms
- Disability or impaired job performance
- Abuse of alcohol or prescription medications
- Compensation-seeking behavior
- Over-utilization of health care resources

The Final Common Path

- ◆ Persistent pain in excess of medical findings
- ◆ Behavioral and functional morbidities similar despite site of pain
- ◆ Disability and behaviors persist despite attempts to treat peripheral component of pain syndrome
- ◆ Behavioral morbidities reinforced by operant conditioning

Assumptions Underlying Treatment at Multidisciplinary Pain Centers

1. A chronic pain problem always involves psychological and social factors in addition to physiological ones
2. Patients benefit from taking an active role in the management of their pain problems
3. “Cure” of the symptoms in the sense of alleviation of the source of the symptoms may not be possible, but that symptom complaints and behaviors need not be the focal point of the patient’s life

Objectives of Cognitive-Behavioral Approach to Pain Rehabilitation

1. Combat demoralization
2. Foster self-efficacy
3. Break up automatic, maladaptive patterns
4. Skills training
5. Facilitate maintenance and generalization

Treatment Goals

Reduce the frequency of pain behaviors

Increase the patient's capabilities and activities to a level considered normal for his/her age and sex

Eliminate the patient's reliance on pain-relieving medications

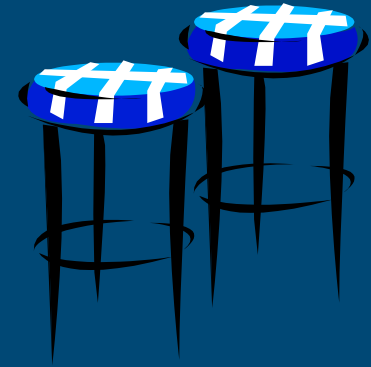
Reduce the patient's utilization of medical care resources for the purposes of pain relief

Educate family members/significant others in pain rehabilitation approach in order to maintain the gains achieved while in the program

Multidisciplinary Team Approach

Treatment Team

- Physician
- Psychologist
- Nurse Case Managers
- Physical Therapist
- Occupational Therapist
- PMR -Biofeedback
- Pharmacy



GOAL: Functional Restoration, Emotional Stabilization and Withdrawal from Medication

Pain Rehabilitation Center (PRC)

- Candidacy evaluation
- 3 week intensive outpatient training
- Rolling admission
- Group setting
 - Social support
 - Helper-therapist phenomenon
- Discharge planning
 - Coordination with home care providers
- 6-month follow-up (1 year)

Assumptions of CBT for Pain Management

- Person's distressing symptoms and mood are modified/ exacerbated by maladaptive thoughts, and behaviors
- Structured techniques are used to identify and change maladaptive thoughts and behaviors increasing focus on what can control
- Emphasis on teaching skills for patient to practice and apply

ABC Versions of a Chronic Pain Patient

• A-Pre-Symptom

- Active
- Productive
- Social
- Motivated
- Independent



B-Symptom

Depressed
Deconditioned
Discouraged
Dependent
Drugged



C-Post PRC

More active
More productive
Stable
Moderation
More Independent

Reactive and Maintaining Factors

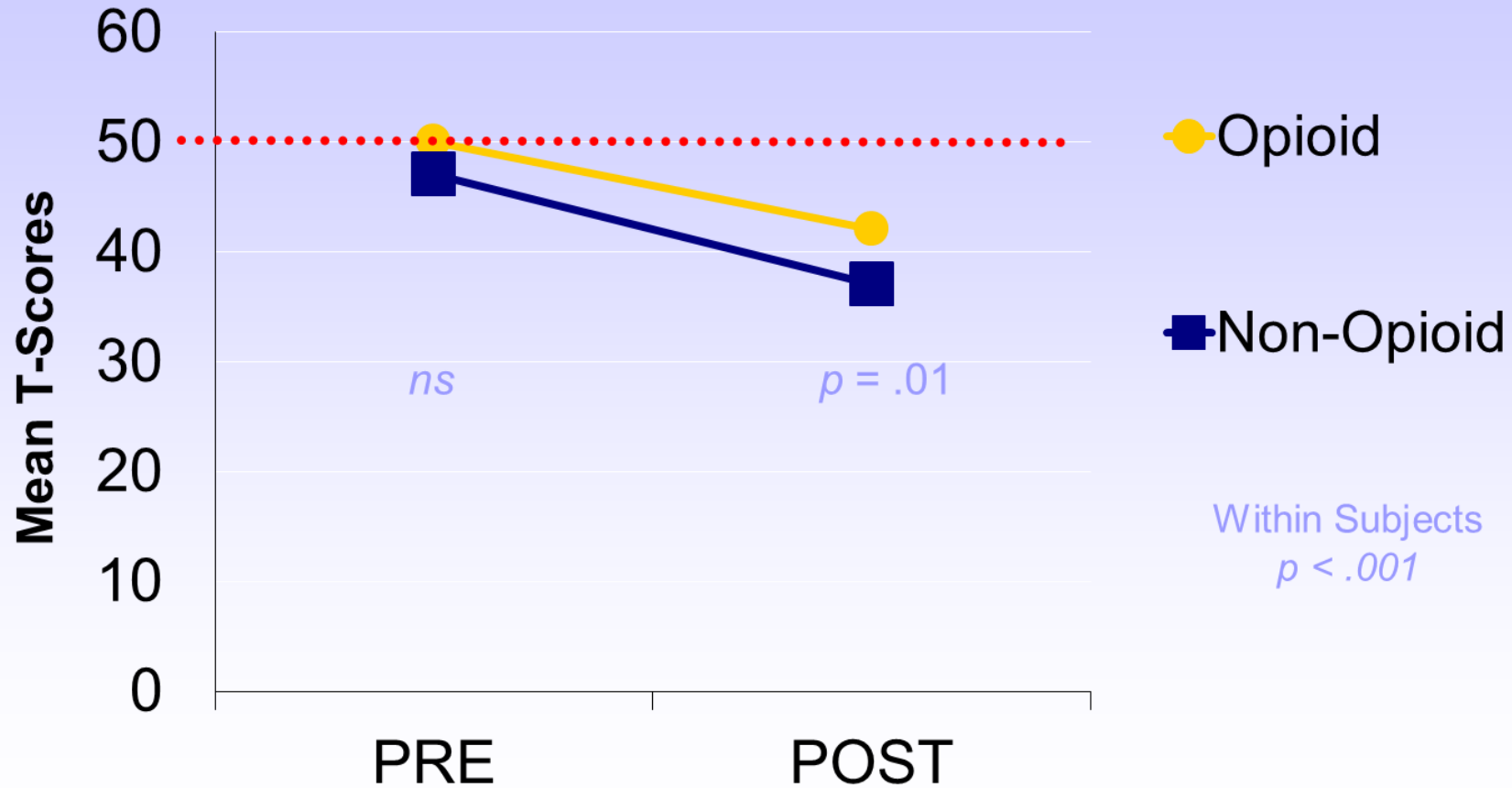
- Physical
- Behavioral
- Emotional
- Chemical

Treatment Outcomes for PRC

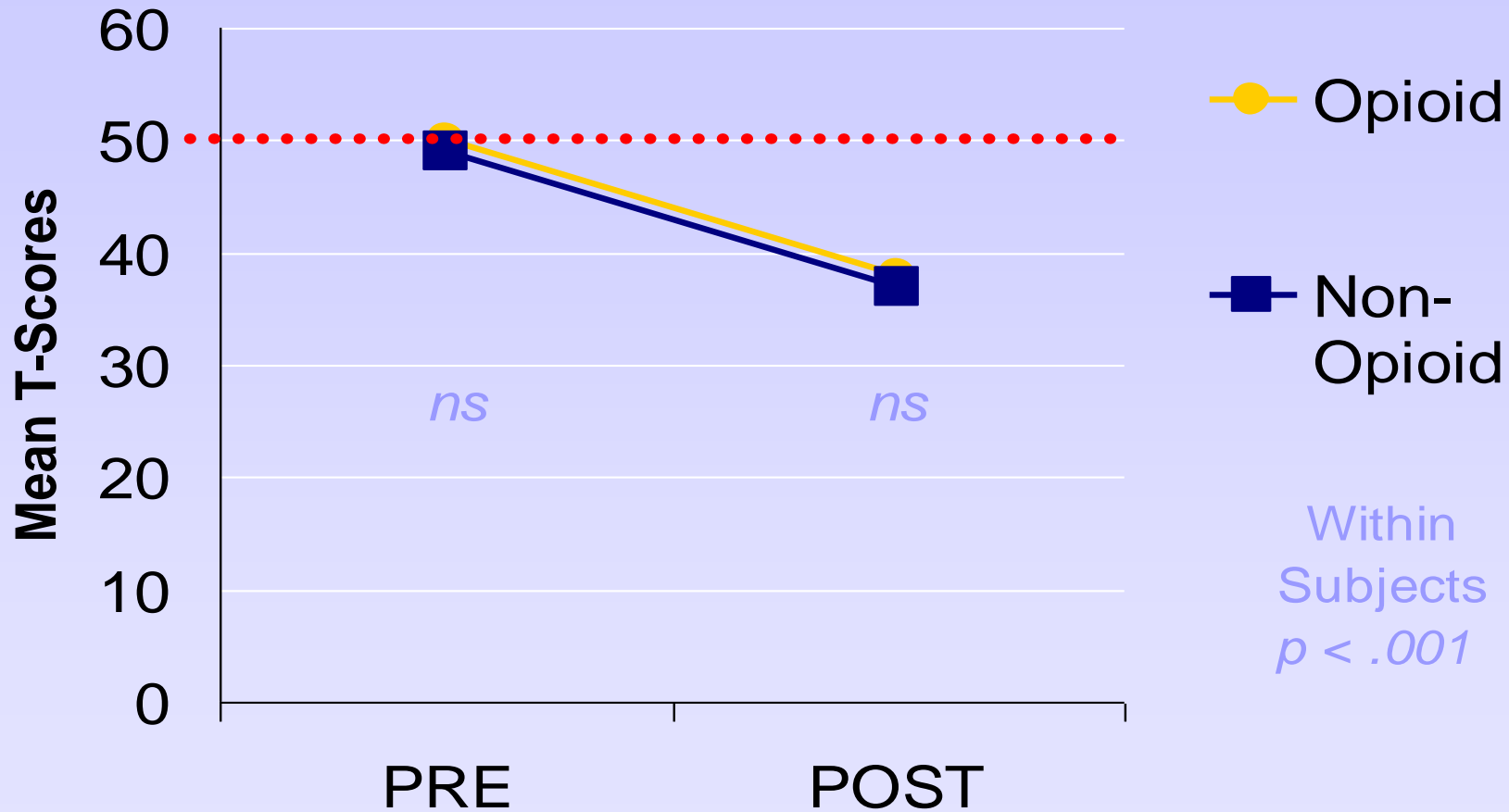
Rome, JD. Townsend, CO. Bruce, BK. Sletten, CD. Luedtke, CA. Hodgson, JE.
Chronic non-cancer pain rehabilitation with opioid withdrawal: Comparison of
treatment outcomes based on opioid use status at admission. Mayo Clinic
Proceedings. 2004 Jun; 79(6): 759-68



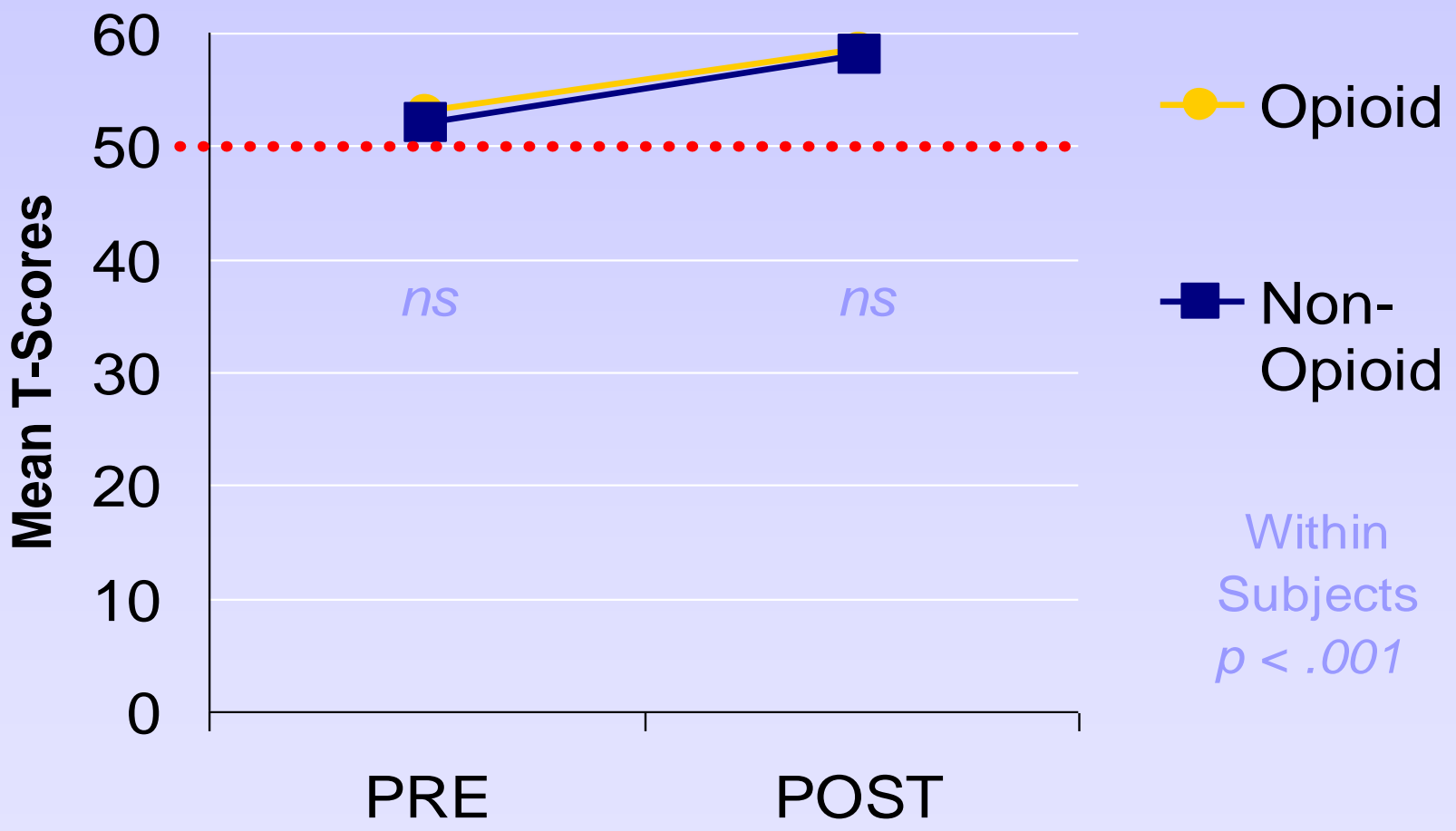
Pain Severity (MPI)



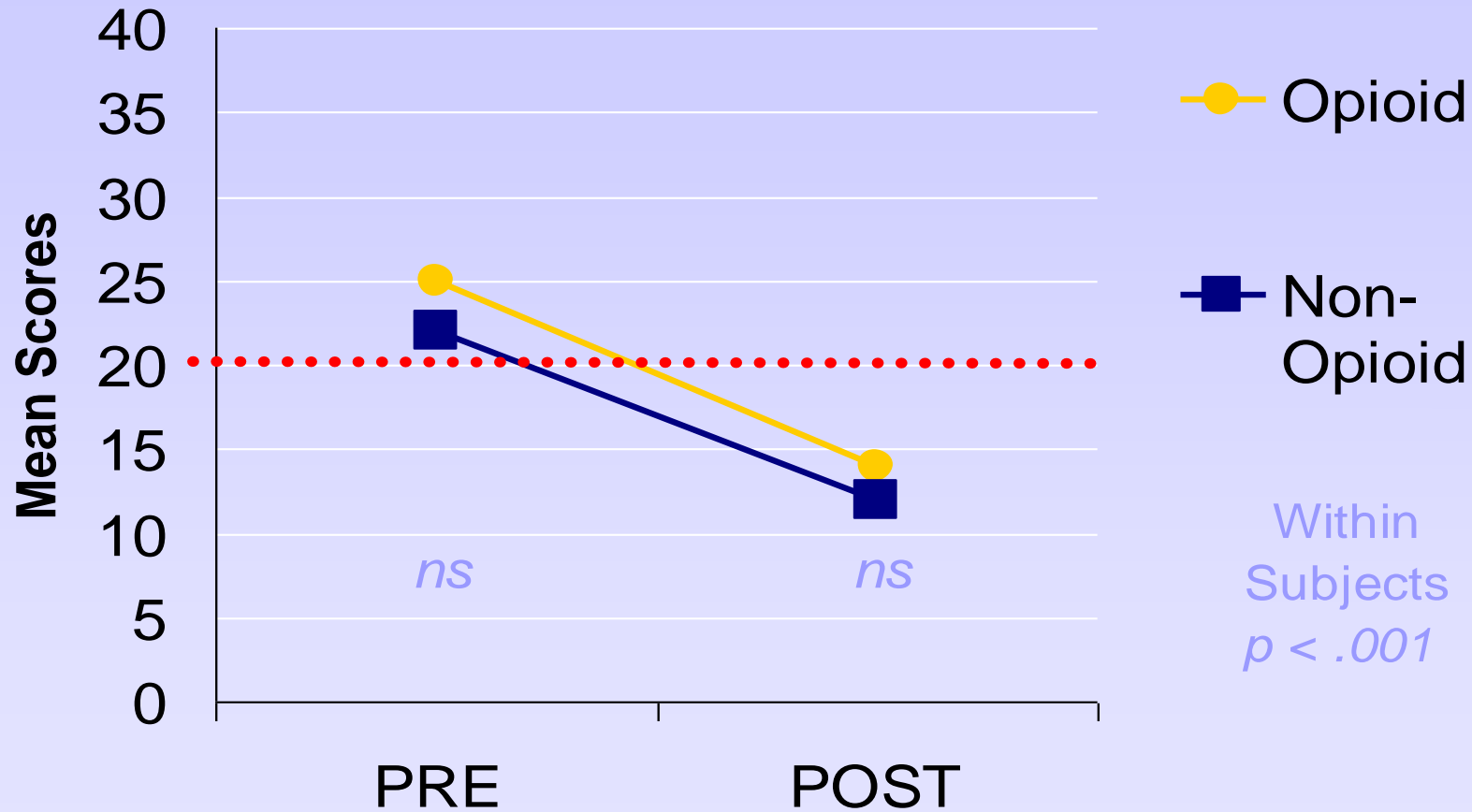
Interference With Life (MPI)



General Activity (MPI)



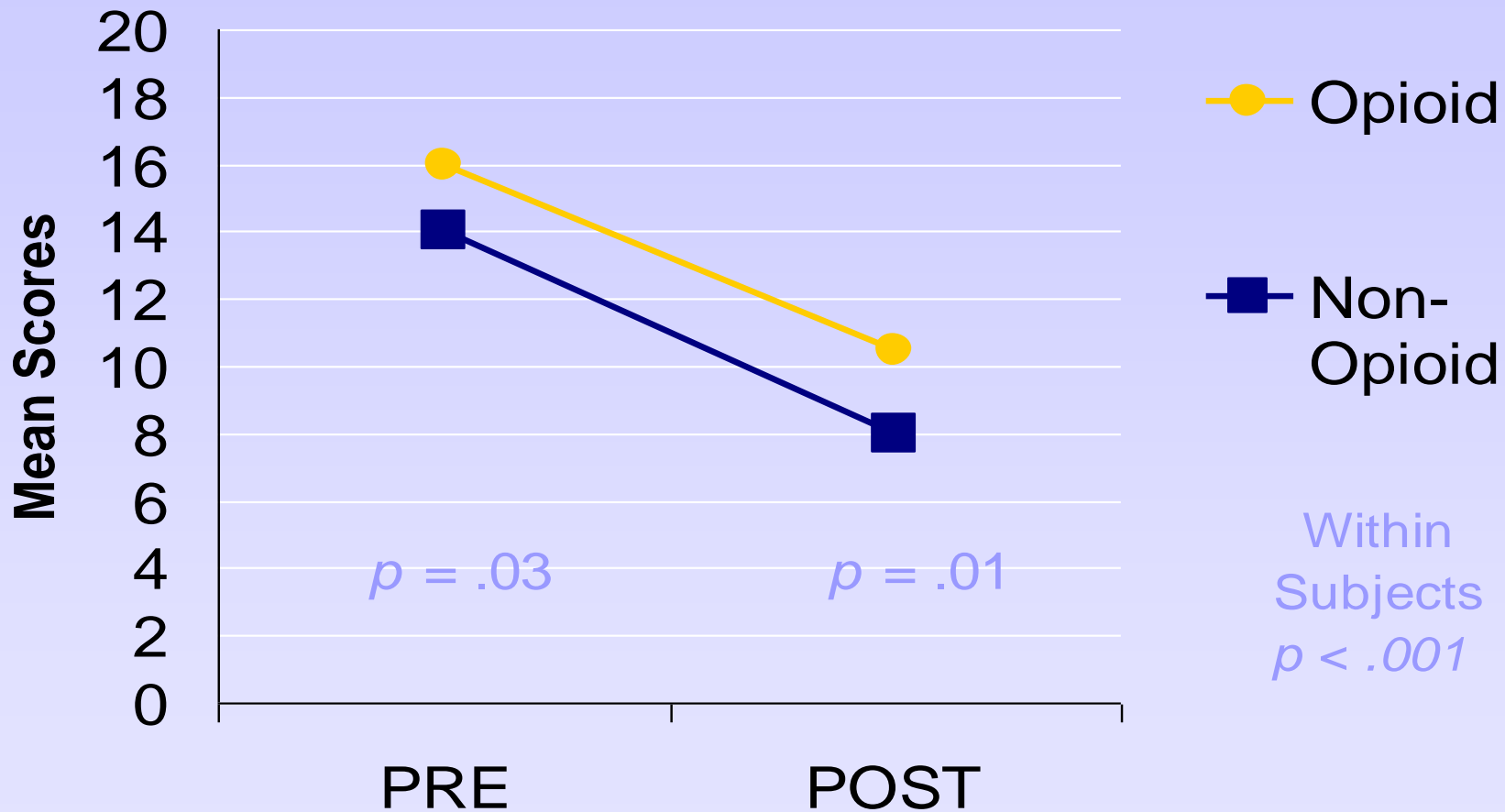
CES-D



Rome et al, 2004



Catastrophizing (CSQ)



“Real” Reason to Hurt

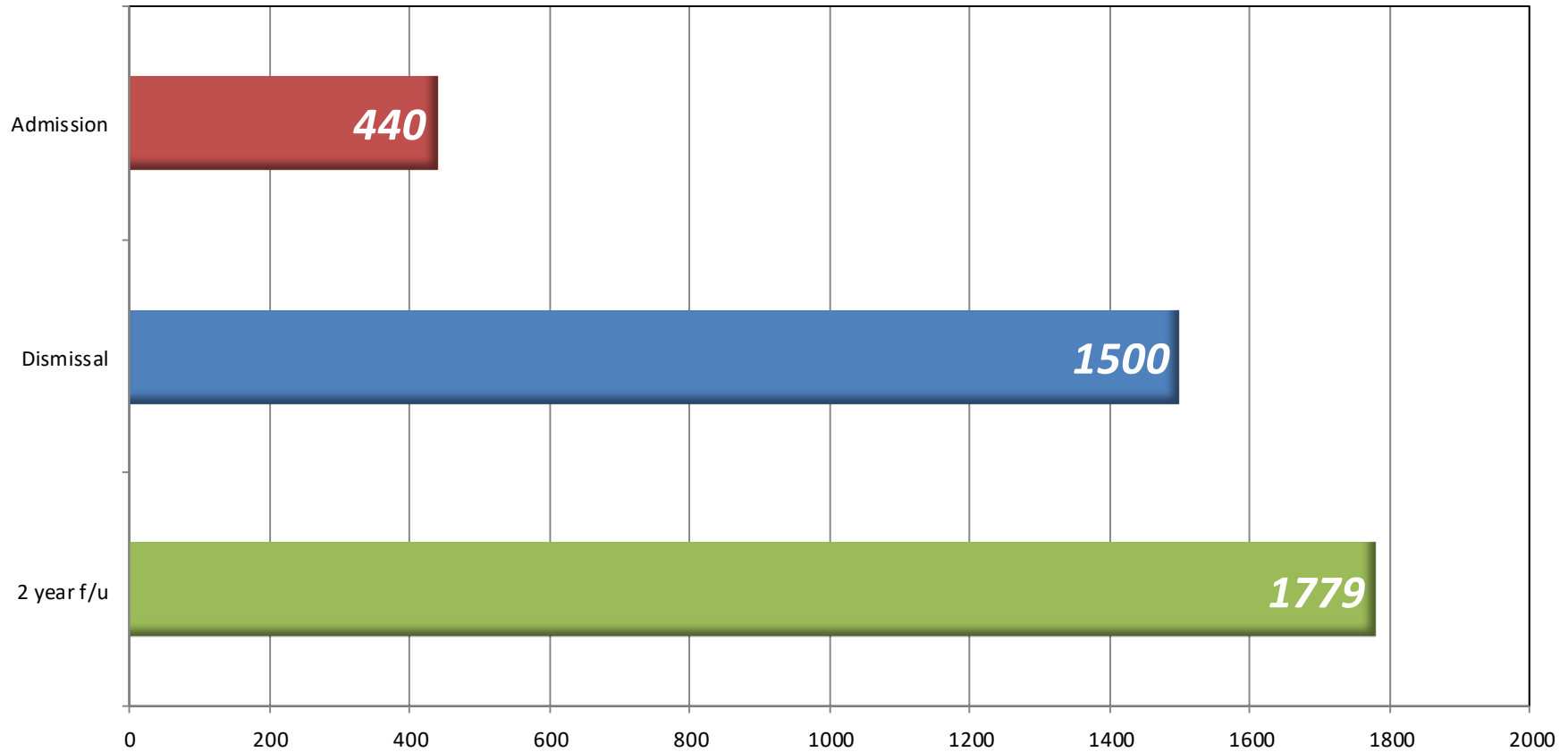


A Behavioral Rehabilitation Model for Chronic Pain: A Case Study

- The case is of a 33 year-old Caucasian female with a complex lower extremity injury following MVA in November 2006. She sustained LLE Pilon fracture initially treated with ORIF. She developed significant co-morbidities, including recurrent cellulitis.
- Interventions including outpatient PT, pharmacotherapies and chiropractic care were ineffective in relieving pain or restoring function. From injury to PRC over 6 years, Pt. became increasingly sedentary due to pain. Treatment was largely ineffective in restoring patient to her previous functional level.
- Since PRC, pt. has continued to attend PRC Aftercare sessions. She participates in a regular fitness routine. She is active in volunteer activities with PRC graduates and current patients. She has also returned to teaching music.

6 Minute Walk Test Data

Distance in Feet



Outcomes

ADMISSION TO PRC:

440 ft @ 0.8 mph

Fall Risk, Cane

OME = 240

Limited Community Ambulator

Sedentary, living with family, requires assistance

PRC DISCHARGE:

1500 ft @ 2.8 mph

No Fall Risk, no A.D.

OME = 0

Community Ambulation

Active lifestyle, living with family and no assistance

2 Year FOLLOW UP:

1779 ft @ 3.4 mph

No fall risk, OME = 0

Independent mobility

Return to vocation

Regular fitness routine, living independently

Conclusion

- 3-week PRC has a significant and enduring effect on direct medical costs
- Patients and health care systems are able to manage chronic medical conditions in a more conservative and cost-effective manner.
- The comprehensive nature of this treatment results in better independent functioning.

Economic Analysis of a Comprehensive Pain Rehabilitation Program

Sletten, Kurklinsky, Chinburapa, and Ghazi (2015).



Study Background

- First of its kind collaboration between a major commercial health insurance company and an independent health care organization
- Blue Cross/Blue Shield of Florida (Florida Blue) provided economic costs for a sample of 53 patients
- These patients completed the Mayo Clinic Pain Rehabilitation Center (MCPRC).
- MCPRC is a 3-week, hospital-based, day treatment program that includes:
 - Physical Therapy: Daily stretches, Cardiovascular conditioning, and PT strengthening
 - Occupational Therapy: Daily instruction in moderation, time management and functional adaptation
 - Behavior Therapy: 3, one-hour group sessions/day focused on behavioral therapy for stress management and behavior change
 - Medically supervised medication withdrawal: Opiates, benzodiazepines, sleeping pills etc.

Key Findings

Category	3 Months (pre/post)	6 Months (pre/post)	12 Months (pre/post)	18 Months *(pre/post)
Average Medical Cost	- 86%	- 68%	- 64%	- 90%
Total Pharmacy Cost	3%	- 24%	- 42%	- 72%
Specialty Care Visits	- 17%	- 34%	- 39%	- 51%

*only 10% of original sample was eligible for 18 Month analysis



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Philosophy of Pain Rehabilitation

The goal of a pain rehabilitation approach is to help the patient function better to feel better