EVIDENCE INFORMED TREATMENT OF CHRONIC LOW BACK PAIN

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Thank You

- MNPTA Conference Committee
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Disclaimer

A financial or non-financial conflict of interest does not exist related to any products or services presented

Biography

- Academic
  - BA from Concordia College, Moorhead, MN, 1996
  - Master’s in PT from Mayo School of Health Related Sciences, 1998
- Certification-Awards
  - Board Certified in Orthopaedics 2010
  - Recognized as Innovator: 2013 APTA Innovation Summit
  - Washington D.C.
- Professional Service
  - PPSIG Board of Directors
  - MN and WPTA Wellness Committee Member
  - PPS ACO Task Force Chair
  - PPS Nominating Committee
Biography

- Professional
- Staff Physical Therapist, Central MN Group Health, St. Cloud, MN
- Staff PT-HealthPartners, Hudson Hospital
- Senior PT-Allina, River Falls Area Hospital
- Interim Homecare, St. Paul, MN/Hudson, WI
- PPPT: LSMPT and Catalyst, Western, WI and East Metro Twin Cities, MN
- Rehab Coordinator, Mayo Clinic Sports Medicine Center, Rochester, MN

Two Goals

1. Present the Research on Efficient and Effective Conservative Treatment of Chronic Low Back Pain
2. Brainstorm a Strategic Plan and Identify Key Execution Levers for Physical Therapy to become the most efficient and effective option in treating/preventing Chronic Low Back Pain in the state of Minnesota
Stephen Covey

- Reactive people focus their efforts in the circle of concern
- Proactive people focus their efforts in the circle of influence

External View

Industry, Market Drivers, Competitors

Importance of MSK Conditions

Non-malignant Spine Total Episode Cost - # of Providers Seen During Episode

David Elton, DC
Senior Vice President, Clinical Programs
Optum Health Care Solutions-United Healthcare
Legislative Pressure

Risk Sharing

Comparative Effectiveness

1. Do nothing (regression to the means, lack of financial resources)
2. Enter system with over 30+ other providers, services, products, choices
   - PCP, DC, LMT, ATC, Fitness Club, Personal Trainer, Online, Home Videos, Friends, Acupuncture
   - Versus
3. See a physical therapist or a program directed by one
Background Chronic Low Back Pain

1. Up to 70% of those who initially improve, experience repeated fluctuating pain episodes.

2. Patients who develop chronic LBP (pain and disability persisting for more than 3 months) use more than 80% of all health care for back pain.

3. The majority of the cost associated with LBP is generated by a small percentage of patients whose condition proceeds to chronicity.
Unique Resources

- Hourly Wage, Labor Cost
  - (less than MD, more than personal trainer, massage therapist, athletic trainer)
- Doctoring Profession
  - Access to assistants or team
- Knowledge in both direct and non-specific treatment effects
- Unique prerequisite requirement of both Psych and Bio
- Differential Diagnosis Skills in MSK Conditions

PT Unique Capabilities, Gaps

Summary

1. MSK conditions are the largest driver of overall medical expense
2. LBP is the single biggest expense driver of MSK conditions
3. Treatment of Chronic LBP 1st Cost Driver in LBP
4. Who a patient sees first and number of providers drives overall cost per episode
5. Practice variation exists in the delivery of physical therapy
6. Legislative change through HCR and the courtroom of public opinion are creating an opportunity for physical therapy

Opportunity!

Clinical Care of Chronic Low Back Pain

1. Review the evidence in the care of chronic low back pain in the last 5 years
2. Identify four execution levers to position PT as provider of choice for CLBP

Evidence Based Practice (Dr. David Sackett, 1996)
Four Execution Levers

1. Early and Consistent Psychological Assessment and Subsequent Referral
2. Right Patient, Right Time
   - START Tool
3. Prevent Acute LBP from becoming Chronic
   - WM Model, early PT
4. Reduce Unwarranted Practice Variation

Psychological Screen for PT’s

- Generally accepted that biologic, psychological, and social factors play a role in those who develop chronic LBP
- Can we identify those with psych factors and get them help sooner vs later?

1. Goal to determine what signs/symptoms could help providers identify which patients with chronic LBP may benefit from further psychological testing and/or treatment
   - Develop a clinical prediction tool for quick use in the clinic
2. Prospective Cohort Study
3. N=229 participants in outpatient rehab unit from 2000 to 2005 in Netherlands
   - Inclusion Criteria included:
     - Age < 18
     - Pain greater than 3 months
     - With or without leg symptoms
   - Exclusion: Red Flags

- Nine Psychologists administered:
  - Two evaluations 90 minutes each consisting of:
    - Dutch Pain Cognition Test
    - Dutch Coping Strategy Questionnaire
    - Beck Depression Inventory
    - Symptom Checklist 90 Revised
    - Tampa Scale for Kinesiophobia
    - Occasionally MMPI
  - Determined via clinical opinion if patient had “relevant psychological disturbances” or not
    - Clinical opinion based on determining if obstacles to recovery, depression, fear, anxiety, anger, and/or hostility existed from exam and testing

Results:

1. 53% of patients with CLBP had Relevant Psychological Disturbances


- Three physical Therapists administered:
  - Physical Exam in three, one (1) hour sessions with four goals
    1. Determine if directional preference existed in Lumbar AROM through McKenzie Technique
    2. VAS for pain in 0-100 scale and Pain Diagram by Margolis
       1. 45 areas weighted from 0-100 based on percentage of body the patient covers with marks
  3. Assess 8 Waddell Signs
  4. Objectify the amount of pain med use as either every day or not every day


Results:
1. Probability Chart created from statistical analysis
2. Authors suggest greater then 50% probability could be used for cut point for referrals (42 points)


3. Assess 8 Waddell Signs


1. Waddell Score x 6
2. + Pain Drawing Score
3. +No directional Preference (14)
4. +Daily use of Meds (12)

Example
\[(6\times5=30)+20+14+12=76\]
which equals 90-100%
Relevant Psychological Disturbance


Execution Lever #2: Right Patient, Right Time
- Right Patient
  - Does the patient have an acute functional loss?
  - Is the loss transient and will improve without therapy?
  - Does the patient need the skill of a PT?
- Right Time
  - Is the patient making functional improvement?
  - Has the patient improved back to their baseline?
  - Does the patient's mental and medical condition allow meaningful participation in therapy?
Algorithm for classifying and treating Low Back Pain

- Comparison of stratified primary care management for low back pain with current best practice (STarT Back): a randomized controlled trial

  - Main Hypothesis
    - A stratified approach (low, medium, high risk) to treating low back pain would lead to better outcomes at a lower cost than the current best practices

  - Methods
    - Query of EMR databases for patients recently identified as having low back pain

Comparison of stratified primary care management for low back pain with current best practice (STarT Back): a randomized controlled trial


  - Methods Continued
    - England, June 2007 to November 2008
    - Reviewed 75,208 Medical Records to find 2,793 adults with low back pain, 1,572 attended and assessed for inclusion/exclusion in study (1,220 did not respond)
    - Final group 851 met criteria

    - Inclusionary Criteria
      - 18 years of age or older
      - Could understand and speak English
      - Back pain of any duration with or without radiculopathy

    - Exclusionary Criteria
      - Potentially serious conditions (cauda equina, inflammatory arthritis, malignancy)
      - Serious illness or comorbidity (including anyone with Axis I/II Psych Disorders as diagnosed through DSM-IV)
      - Spinal surgery in the past 6 months
      - Pregnant
      - Anyone already receiving any treatment for back pain except PCP
      - Unwilling or unable to attend sessions

  - Methods Continued
    - Randomly Assignment to Two Groups
      - Intervention Group (n=568 members)
      - Control Group (n=283 members)

      - Control Group
        - 30 min eval by Physio, patient given advice and exercises; referral to additional services, imaging per standard best practices; offered additional physical therapy at the discretion of the physical therapy with current best practices

      - Intervention Group
        - 30 min eval by Physio, standard treatment including advice on appropriate levels of activity, including return to work, a pamphlet about local exercise groups and self-help groups, watched a 15 minute video Get Back Active and given the Back Book. The patients were then stratified into the three risk level groups per the standardized tool

Algorithm for classifying and treating Low Back Pain

- Comparison of stratified primary care management for low back pain with current best practice (STarT Back): a randomized controlled trial

  - Methods Continued
    - Obtained demographic and clinical outcomes data at randomization, 4 months, and 12 months post
    - Clinical outcomes based on Roland and Morris Disability Questionnaire
    - Secondary Outcomes Assessed included:
      - Referral for further physiotherapy
      - Back pain intensity
      - Tampa Scale of Kinesiophobia
      - Hospital Anxiety and Depression Scale
      - Health Related Quality of Life Screen
      - STarT Back Screen Tool
      - Perception of General Change (GROC)
      - Number of Physio Sessions
      - Completion of initial physio evaluation
      - Adverse Events
      - Health care costs over episode of care
      - Patient Satisfaction
      - Number of days off work

Algorithm for classifying and treating Low Back Pain

- Low and Medium Risk Group Treatment Plan

  [Image of the treatment plan diagram]
Comparison of stratified primary care management for low back pain with current best practice (STarT Back): a randomized controlled trial

• Results and Conclusion
  • A stratified mgmt approach with prognostic screening and targeted treatment resulted in better outcomes
  • Physiotherapists providing care in the Intervention Group were allowed to overrule the STarT Tool. Of the 568 patients, they agreed with the tool all but 15 times in which group the patient should be stratified (Low, Medium, High Risk)
  • Physiotherapists providing care in the Control Group referred patients onto further PT per their discretion. Of those in the control group who would have been identified as Medium or High Risk with the STarT Tool and thus given PT, the physio only referred 2/3 of those patients onto further PT
  • Utilization: Up to 6 visits over 3 months maximum

Comparison of stratified primary care management for low back pain with current best practice (STarT Back): a randomized controlled trial

• Results and Conclusion
  • Secondary Outcomes:
    • 12 Months:
      • Intervention group had a significant impact on the following
        • Catastrophising
        • Fear
        • Depression
        • General Health
        • STarT Back Screening Tool Risk Reduction
        • Took fewer days off for pain
        • Lower Healthcare Costs
Execution Lever #3 - Prevent Acute from Becoming Chronic

Impact on Virginia Mason

1. Lower Cost
   1. FTE: Decrease by 29%
   2. Area sq foot: Decrease by 78%

2. Greater Revenue
   1. RVU/MD/Day: Increase by 76%
   2. New Patients/Year: Increase by 64%

3. Greater Margin/Year
   1. Direct and Indirect Cost: Reduction by 56%
Execution Lever #4 - Reduce Unwarranted Practice Variation

- European guidelines for the management of chronic non specific low back pain
- Low Back Pain: Clinical Practice Guidelines

Most Effective Treatments

- First line of treatment: Supervised Exercise
  - European Guidelines for Managing Chronic Non Specific LBP

TENS

- Prospective, Randomized, Single Blind Study
- N=236 patients with at least 3 months of LBP
- Treatment: four (4) sessions x one (1) hour of either sham e-stim or Conventional Stim (100 pps) intermixed with low frequency (2pps) bursts every 3 seconds over 12 weeks
- Outcomes Tested:
  - Roland-Morris Disability Questionnaire, VAS Pain, Decreased use of Meds, Overall Satisfaction
- Assessed outcomes at 6 and 12 weeks
- FINDINGS:
  - No change in functional status
  - Statistically significant decrease in pain from eval to 12 weeks

Treatment Based Classification in CLBP

- Adri T. Apeldoorn; Judith E. Bosmans; Raymond W. Ostelo • Henrica; Eur Spine J. Cost-effectiveness of a classification-based system for sub-acute and chronic low back pain; 2012 Jul;21(7):1290-300
  - 1. Netherlands
  - 2. Total of 156 patients, 74 in Modified Delitto's Classification System 82 in “Usual” Physical Therapy
  - 3. Modified Delitto
    - Directional, Stabilization, Spinal Manipulation; No Traction (Limited equipment and not recommend in Dutch Recommendations)
  - 4. Usual Physical Therapy
    - Education, Active intervention (stretching, resistive strengthening, postural exercises), setting functional goals

Treatment Based Classification in CLBP

- Adri T. Apeldoorn; Judith E. Bosmans; Raymond W. Ostelo • Henrica; Eur Spine J. Cost-effectiveness of a classification-based system for sub-acute and chronic low back pain; 2012 Jul;21(7):1290-300
  - 1. 4 weeks of Treatment
  - 2. Variables
    - Cost Direct and Indirect
    - VAS for Pain
    - Oswestry
    - Global Perceived Effect (7 Point Likert scale)
  - Outcome
    - Significantly better global perceived effect with classification-based system
    - No significant difference in cost of episode (classification approx 12% more), pain, or disability, or quality-adjusted life-years

Local, Specific Exercises vs General

- Efficacy of movement control exercises versus general exercises on recurrent sub-acute nonspecific low back pain in a sub-group of patients with movement control dysfunction, protocol of a randomized controlled trial
Strategy Formulation and Execution Discipline

**Strategy Diamond**

- **Arenas**
- **Economic Logic**
- **Vehicles**
- **Differentiation**

**Staging**
- How will we get there?
  - Internal development?
  - Joint ventures?
  - Licensing/ franchising?
  - Experimentation?
  - Acquisitions?

- Differentiators
  - How will we win?
    - VRINE
    - Image?
    - Customization?
    - Price?
    - Styling?
    - Product reliability?
    - Speed to market?

**External View**
- Industry/Market
  - Drivers, Competition

**Internal View**
- Unique Resources/Capabilities
  - Gaps

**Scorecard**
- Execution Levers

**Strategic Goals**
- Core Values

**Vision,** **Mission,** **Strategic**

**Q & A**