National Orthopaedic Physical Therapy Outcomes Database

Orthopaedic Section
Knee Pain Pilot Project

Introductory Webinar
May 17, 2016

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Chair, NOPTOD Task Force

G. Kelley Fitzgerald, PT, PhD, FAPTA
Chair, Knee Outcomes Work Group

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Member, Knee Outcomes Work Group
Orthopaedic Section Strategic Plan

Strategic Outcome 1 – Standards of Practice:

Objective B – Develop National Orthopaedic Physical Therapy Outcomes Database
NOPTOD Task Force

- James Irrgang PT PhD ATC FAPTA (Chair)
- Gerard Brennan PT PhD
- William Boissonnault PT DHSc DPT FAAOMPT FAPTA
- Chad Cook PT PhD MBA FAAOMPT
- Anthony Delitto PT PhD FAPTA
- Joe Godges PT DPT MA OCS
- Lori Michener PT PhD ATC SCS
- Michael Reed DPT MSc OCS MTC
- Joshua Cleland PT PhD OCS FAAOMPT
- Marc Goldstein EdD
National Orthopaedic Physical Therapy Outcomes Database

Purposes:

• Provide clinicians with a tool they can use to assess their clinical performance
• Describe orthopaedic physical therapy practice
• Provide evidence of the value of orthopaedic physical therapy
National Orthopaedic Physical Therapy Outcomes Database

Quality Improvement Projects:

• Assess clinician and organizational performance
• Permitted use of protected health information
• Does not require IRB approval
National Orthopaedic Physical Therapy Outcomes Database

The NOPTOD is **NOT** a Research Project
National Orthopaedic Physical Therapy Outcomes Database

Neck Pain Pilot Project:
• Successfully completed
  • N = 250 patients
  • N = 40 therapists

Shoulder Pain Pilot Project:
• Currently In Process
National Orthopaedic Physical Therapy Outcomes Database

Purposes of Knee Pilot Project:

- Demonstrate feasibility of collecting and analyzing outcomes data
- Determine usefulness of information to enhance clinician performance & establish value of orthopaedic physical therapy
- Use results to plan for an electronic data capture & analysis system for the NOPTOD
NOPTOD Knee Pain Pilot Project

Overview:

Participation in Pilot Project is Voluntary & Open to All PT Members of Orthopaedic Section
NOPTOD Knee Pain Pilot Project

Overview: Registration Process

• Contact Ortho Section office for Registration
  
  E-mail: lvogt@orthoPT.org
  Postal mail: Orthopaedic Section, APTA, Inc.
  2920 East Avenue South, Suite 200
  La Crosse, WI 54601
  Telephone: (800) 444-3982 ext. 2090
  Fax: (608) 788-3965

• Complete Registration Form:
  – Name
  – E-mail address
  – Practice setting
  – Organization
  – Facility
  – Entry level degree
  – Years of practice
  – Advanced degrees (including DPT if entry level degree was not DPT)
  – Residencies/Fellowships
  – ABPTS certifications

Also See: MOP page 6
Overview: Registration Process

- Completed registration form submitted to Section Office
- Section Office will assign organization/facility & PT ID numbers
- Individualized Case Report Forms, including the organization/facility & PT ID numbers will be provided by Section Office
- Only use Case Report Forms that contain your personal ID information to submit information to the NOPTOD
- Data Use Agreement between clinical site and section
  - Complete and return prior to submission of any data

Also See: MOP page 6
NOPTOD Knee Pain Pilot Project

Overview:

• **Data collection:** paper-based forms
• **Data to be collected includes:**
  – Patient characteristics
  – Symptoms & physical examination findings
  – Treatment classification(s)
  – Interventions
  – Clinical outcomes
  – Information summarizing episode of care
NOPTOD Knee Pain Pilot Project

Overview:

- Data collected prospectively for 6 months:
  - June 1, 2016 – November 30, 2016
- Record data *during* course of care
  - Retrospective chart review of patients treated prior to data collection period not eligible for inclusion in pilot project
NOPTOD Knee Pain Pilot Project

Overview:

• Completed forms to be sent to Orthopaedic Section Office
  – Scanned & e-mailed
  – Faxed
  – US Postal Service

• Forms should be sent soon after the end of care, but will also accept forms monthly or at end of data collection period
NOPTOD Knee Pain Pilot Project

Overview:

- Analysis & summary of information:
  - Completeness of data collection
  - Accuracy of treatment classification
  - Adherence to evidence-based treatment guidelines
  - Summary of clinical outcomes
  - Summary of episode of care (duration, visits)
NOPTOD Knee Pain Pilot Project

Overview:

• Results sent to all section members contributing data
• Summary of personal results
• Summary of overall results to permit comparisons with peers across country
• All results reported anonymously
NOPTOD Knee Pain Pilot Project

Two Key Documents

• **Manual of Operating Procedures (MOP)**
  – Reference document describing project and details of standardized methods for data collection
  – The MOP should be able to answer most of your questions about completing the forms

• **Case Report Form**
  – Data Collection Form
    • Intake Data (pages 1 and 2)
    • Weekly Reporting (pages 3 and 4)
NOPTOD Knee Pain Pilot Project

Manual of Operating Procedures (MOP):

- Developed by team of researchers and clinicians based on published literature and practice guidelines
- G. Kelley Fitzgerald, PT, PhD, FAPTA (Chair)
- Allyn Bove, PT, DPT
- Gerard Brennan, PT, PhD
- Terese Chmielewski, PT, PhD, SCS
- James Irrgang, PT, PhD, ATC, FAPTA
- David Logerstedt, PT, PhD, MPT, MA, SCS
- Andrew Lynch, DPT, PhD
- Kate Minick, PT, DPT, OCS
- Brett Neilson, PT, DPT, OCS, FAAOMPT
NOPTOD Knee Pain Pilot Project

Manual of Operating Procedures (MOPs):

• Reference document providing detailed description of project:
  – Overview & purpose of project
  – Instructions for registration to participate in pilot project
  – Instructions for completing & submitting Case Report Forms

• Standardized methods for:
  – Assessment of symptoms
  – Examination procedures
  – Classification of patient
  – Reporting intervention strategies
  – Assessment of outcomes
Case Report Form

Identification Information:

- Section Office will provide 10 forms
  - Clinic, PT & Patient ID numbers
- Start with form number 001 and use consecutively numbered form for each new patient
- Do not include any patient identification information (name, SSN, MRN) on form
- Use only forms that have your ID information
- Contact Orthopaedic Section Office if additional forms are needed
NOPTOD Knee Pain Pilot Project

Case Report Form Overview:

• **Intake Reporting** (pages 1-2)
  – Episode of Care Data
  – Patient characteristics
  – Functional Status
  – Examination findings & Classification

• **Weekly Reporting** (pages 3-4)
  – Daily/weekly
  – Interventions
  – Outcomes
  – Changes in Classification

No Patient Identifiers!!!

Also See: MOP Appendix D
National Orthopaedic Physical Therapy Outcomes Database
Orthopaedic Section, APTA
Knee Case Report Form

**Episode of Care**

Start of Care Date: __/__/__  
End of Care Date: __/__/__  
# of Visits: ______  
End of care status (select one):  
☐ Discharged by PT  
☐ Patient terminated treatment  
☐ Physician terminated treatment  
☐ Other

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**Patient Characteristics**

**Demographics**
- **Age:** _______ years
- **Gender:**  
  - ☐ M  
  - ☐ F
- **Height:** _______ inches
- **Weight:** _______ pounds
- **Ethnicity:**  
  - ☐ Not Hispanic  
  - ☐ Hispanic
- **Race** (all that apply):  
  - ☐ White/Caucasian  
  - ☐ Black/African-American  
  - ☐ Asian  
  - ☐ Hawaiian/Pacific Islander  
  - ☐ Am. Indian/Alaska Native  
  - ☐ Other _________
- **Insurance** (all that apply):  
  - ☐ Commercial  
  - ☐ Medicare  
  - ☐ Medicaid  
  - ☐ Self-Pay  
  - ☐ Automobile  
  - ☐ Workers Compensation  
  - ☐ Other _________

**Comorbidities**
- Arthritis (OA or RA)  
- Osteoporosis  
- Asthma  
- COPD, ARDS  
- Angina  
- CHF, CAD  
- MI  
- Neuro (MS, PD)  
- CVA or TIA  
- PVD  
- DM (I or II)  
- Upper GI  
- Depression  
- Anxiety, panic  
- Visual impairment  
- Hearing impairment  
- DDD, stenosis  
- Obesity (BMI ≥ 30)

**Knee History**
- **Current use of:**  
  - ☐ NSAIDs  
  - ☐ Rx opioids  
  - ☐ Oral steroids
- **Recent knee injections:**  
  - ☐ Corticosteroids  
  - ☐ Viscosupplementation
- **# of prior knee surgeries**  
  - ☐ 0  
  - ☐ 1  
  - ☐ ≥ 2
- **Side(s) being treated:**  
  - ☐ Unilateral  
  - ☐ Bilateral

**Non-Surgical**
- Onset: __/__/__
- **Mechanism:**  
  - ☐ Gradual or chronic  
  - ☐ Sudden, nontraumatic  
  - ☐ Traumatic
- **Recent problem?**  
  - ☐ No  
  - ☐ Yes, < 1 month hx  
  - ☐ Yes, 1-6 month hx  
  - ☐ Yes, 6-12 month hx  
  - ☐ Yes, > 12 month hx

**Surgical**
- Surgery date: __/__/__
- **Date of injury leading to surgery:** __/__/__
- **Cause of surgery:**  
  - ☐ Gradual or chronic  
  - ☐ Sudden, nontraumatic  
  - ☐ Traumatic
- **Surgery (check all that apply):**  
  - ☐ Meniscectomy  
  - ☐ Meniscus repair  
  - ☐ ACL reconstruction/repair  
  - ☐ Other lig. recon./repair  
  - ☐ Cartilage procedure  
  - ☐ Patellofemoral procedure  
  - ☐ TKA  
  - ☐ UKA  
  - ☐ HTO  
  - ☐ ORIF or other fx repair  
  - ☐ Arthroscopic lavage/debridement  
  - ☐ Other _________

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**Smoking:**  
- ☐ None  
- ☐ Current  
- ☐ Past

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Also See: MOP Appendix D
Case Report Form: Page 1

Intake

Episode of Care:

• Dates for start and end of care:
  – Use mm/dd/yyyy format
• Total number of visits during episode
• End of care status:
  – Discharged by PT
  – Patient terminated treatment
  – Physician terminated treatment
  – Other (e.g. patient deceased)

Also See: MOP Page 7
## Case Report Form Pg 1

### Patient Characteristics:

#### Demographics:
- Age
- Gender
- Height and Weight
- Ethnicity and Race
- Insurance

#### Comorbidities:
- Per Charlson Index

#### Smoking (Current, Past, None)

### Knee History
- Current Meds (for Knee only)
- Recent injections?
- # of Prior Surgeries
- Unilateral vs. Bilateral treatment
- Surgery (yes/no)

### Non-Surgical (skip column if surgical)
- Onset date
- Onset mechanism
- Recurrent problem?

### Surgical (skip column if non-surgical)
- Date of surgery
- Date of injury
- Onset mechanism
- Surgical procedure

Also See: MOP Pages 7-9
### Functional Status

<table>
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<th>Limitations with activities of daily living</th>
<th>Limitations with work or homemaking duties</th>
<th>Limitations with strenuous activity or sport</th>
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### Diagnostic Classification & Corresponding Examination Findings (check all that apply)

- **Impaired Knee Joint Motion**
  - Limited extension ROM (>3 deg side/side difference)
  - Limited flexion ROM (>5 deg side/side difference)
  - Functional limitation of ROM, or stiffness

- **Impaired Quadriceps Strength or Endurance**
  - Presence of lag
  - MMT 4/5 or lower on one or both sides
  - 10% or greater deficit compared to uninvolved side on 1RM or dynamometer
  - Functional strength or endurance deficit observed by PT

- **Impaired Musculotendinous Length**
  - Rectus Femoris
  - Hamstrings
  - Iliotibial band / tensor fascia latae
  - Gastrocnemius
  - Other muscle, limiting function

- **Impaired Hip Strength or Endurance**
  - MMT 4/5 or lower (glut med, glut max, and/or hip rotators)
  - 10% or greater deficit compared to uninvolved side on 1RM or dynamometry
  - (+) hip hike test

- **Pain or Impaired Mobility of Soft Tissue**
  - Limited or painful scar mobility
  - Painful or hypomobile patellar glides
  - Pain with palpation of knee soft tissue

- **Impaired Structural Alignment**
  - Knee varus or valgus observed in static postural exam
  - Abnormal foot pronation or supination in static postural exam
  - True leg length discrepancy

- **Impaired Neuromuscular Control**
  - Sense of instability
  - Abnormal laxity
  - Unwanted compensatory movement and/or balance strategies during WB functional tasks
  - Impaired balance/proproprioeception

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Also See:

- MOP Appendix D: Form
- MOP Appendix A: Detailed Definitions of Exam Findings
Case Report Form: Page 2

Functional Status:
• ADLs, work or homemaking, strenuous activity or sport
• Y/N question; indicate “N/A” if the patient never performed the tasks prior to the knee injury or surgery

Diagnostic Classification & Corresponding Exam Findings (see next slides):
• Check ALL that apply – you do not need to select one classification. If a patient fits into several classifications, you may select all relevant classifications!
Case Report Form: Page 2

• Classifications

[ ] Impaired Knee Joint Motion
  [ ] Limited extension ROM (>3 deg side/side difference)
  [ ] Limited flexion ROM (>5 deg side/side difference)
  [ ] Functional limitation of ROM, or stiffness

[ ] Impaired Quadriceps Strength or Endurance
  [ ] Presence of lag
  [ ] MMT 4/5 or lower on one or both sides
  [ ] 10% or greater deficit compared to uninvolved side on 1RM or dynamometer
  [ ] Functional strength or endurance deficit observed by PT

[ ] Impaired Musculotendinous Length
  [ ] Rectus Femoris
  [ ] Hamstrings
  [ ] Iliotibial band / tensor fascia latae
  [ ] Gastrocnemius
  [ ] Other muscle, limiting function

[ ] Impaired Hip Strength or Endurance
  [ ] MMT 4/5 or lower (glut med, glut max, and/or hip rotators)
  [ ] 10% or greater deficit compared to uninvolved side on 1RM or dynamometry
  [ ] (+) hip hike test

Also See: MOP Pages 10-11; 20-22
Classifications, cont:

- Pain or Impaired Mobility of Soft Tissue
  - Limited or painful scar mobility
  - Painful or hypomobile patellar glides
  - Pain with palpation of knee soft tissue

- Impaired Structural Alignment
  - Knee varus or valgus observed in static postural exam
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  - True leg length discrepancy

- Impaired Neuromuscular Control
  - Sense of instability
  - Abnormal laxity
  - Unwanted compensatory movement and/or balance strategies during WB functional tasks
  - Impaired balance/proprioception
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<td>Please Indicate Changes in Classification</td>
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<td>Week 2</td>
<td>Week 3</td>
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<td>Limited extension ROM</td>
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<td>Limited flexion ROM</td>
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<td>Functional limitation of ROM, or stiffness</td>
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<td><strong>Impaired Quadriceps Strength or Endurance</strong></td>
<td>Y N Y N</td>
<td>Y N Y N</td>
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<td>Y N Y N</td>
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<td>Presence of lag</td>
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<td>MMT 4/5 or lower on one or both sides</td>
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<td>10% or greater deficit compared to uninvolved side</td>
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<td>Functional strength or endurance deficit observed</td>
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<td>Rectus Femoris</td>
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<td>Hamstrings</td>
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<td>Iliotibial band/tensor fascia latae</td>
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<td>Gastrocnemius</td>
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<td>Other muscle, limiting function</td>
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<td><strong>Impaired Hip Strength or Endurance</strong></td>
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<td>MMT 4/5 or lower (glut med, max, hip rotators)</td>
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<td>10% or greater deficit compared to uninvolved side</td>
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<td>(+) hip hike test if MMT 5/5</td>
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<td><strong>Pain or Impaired Mobility of Soft Tissue</strong></td>
<td>Y N Y N</td>
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<td>Limited or painful scar mobility</td>
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<td>Painful or hypomobile patellar glides</td>
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<td>Pain with palpation of knee soft tissue</td>
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<td><strong>Impaired Structural Alignment</strong></td>
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<td>Knee varus or valgus observed in static posture</td>
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<td>Abnormal foot pron/supin in static posture</td>
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<td>True leg length discrepancy</td>
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<td><strong>Impaired Neuromuscular Control</strong></td>
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<td>Sense of instability</td>
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<td>Abnormal laxity</td>
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<td>Unwanted compensatory movement during tasks</td>
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<td>Impaired balance/proprioception</td>
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Also See: MOP Appendix D
<table>
<thead>
<tr>
<th>Clinic ID: ___________</th>
<th>PT ID: ___________</th>
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<tbody>
<tr>
<td><strong>Date:</strong></td>
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<tr>
<td><strong>Not Scheduled/Discharged/Terminated Tx:</strong></td>
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<tr>
<td><strong>Irritability</strong> (H = high; M = medium; L = low)</td>
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<td><strong>Interventions (# of times provided during week):</strong></td>
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<tr>
<td>ROM (A, AA, or P; could also be CPM or cycling)</td>
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<td>Stretching – manual</td>
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<td>Stretching – mechanical</td>
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<td>Joint mobilization – patellofemoral</td>
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<td>Joint mobilization – tibiofemoral</td>
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<tr>
<td>Joint mobilization – other joint</td>
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<td>Soft tissue mobilization – instrumented</td>
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<tr>
<td>Soft tissue mobilization – non-instrumented</td>
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<tr>
<td>Strengthening: quadriceps NWB</td>
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<td>Strengthening: hamstrings NWB</td>
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<td>Strengthening: hips (WB or NWB)</td>
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<td>Strengthening: calves</td>
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<td>Strengthening: WB multijoint</td>
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<td>Strengthening: trunk (incl. trunk stabilization)</td>
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<td>Aerobic exercise</td>
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<td>Orthotics/bracing</td>
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<td>Taping for pain or dysfunction @ knee</td>
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<td>Modalities: heat or cold therapy</td>
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<td>Modalities: ultrasound</td>
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<td>Modalities: e-stim for pain/swelling</td>
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<td>Modalities: e-stim for muscle strength</td>
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<td>Modalities: e-stim for muscle re-education</td>
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<td>Modalities: Iontophoresis or phonophoresis</td>
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<td>Modalities: dry needling</td>
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<td>Agility training (walking/running-based)</td>
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<td>Balance training (incl. perturbation training)</td>
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<td>Movement re-education</td>
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<td>Task-specific training</td>
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<td>Plyometrics</td>
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<td>Assistive device fitting/prescription</td>
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<td>Other, please list</td>
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<tr>
<td><strong>Change in Classification? (If Y, go to other side)</strong></td>
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<tr>
<td><strong>Outcomes</strong></td>
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<tr>
<td>IKDC (0 to 100, 100 = best function):</td>
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<tr>
<td>Calculation: (sum of item scores / 87) * 100</td>
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</table>
Weekly Reporting

• **Enter date** for start of each week of treatment at the top of each column

• **Check box in column if patient was not seen during that week** – may be due to:
  – Patient was not scheduled during week
  – Patient has been discharged or
  – Patient has terminated treatment on his/her own

• **Check irritability box:** High/Medium/Low
• **Irritability Classification**
  
  – This is **may change** over an episode of care, **record weekly**
  
  – Select the best option from the following definitions:
    
    • *High*: effusion of at least 2+ on sweep test, moderate to severe pain, limited ROM with pain before end range, increased skin temperature
    
    • *Medium*: stable 1+ or lower effusion on sweep test, mild and stable pain levels, pain around the end of ROM
    
    • *Low*: trace or zero effusion on sweep test, no pain at rest or with ADLs, may have some pain with overpressure at the end of ROM

*Also See: MOP Page 14*
Case Report Form: Page 3

• Interventions
  – record number of times provided each week
  – “Initial” treatment should include entire 1st week of treatment
  – If patient was seen beyond 6 weeks, record total number of times each intervention was provided beyond 6 weeks in the column labeled “DC” (discharge)

• Change in Classification?
  – If YES, then fill out page 4
  – If NO, then do not fill out page 4 for that week

• Outcomes – please measure weekly
  – IKDC
  – KOOS

Also See: MOP Pages 14-17
• Complete **only** when a change in classification occurred during the relevant week; **otherwise**, leave blank for that week.
Outcome Measures: IKDC

- Found in Appendix B of MOP
- Record WEEKLY
Outcome Measures: KOOS

- Found in Appendix C of MOP
- Record WEEKLY

Also See:
MOP Appendix C: Form
MOP Pages 16-17: Scoring Information
National Orthopaedic Physical Therapy Outcomes Database

The NOPTOD is a Quality Improvement Project

NOT

a Research Project

IRB Approval Is Not Necessary
Questions???

Questions regarding registration or paperwork: contact Leah Vogt at Orthopaedic Section (contact info on Slide 10)

Questions regarding how to complete documentation or regarding physical therapy aspects of the project: contact Ally Bove
ams453@pitt.edu; (412) 624-9255