Designated Doctor and MMI/IR Doctor Pre-course Cases

Spine MMI/IR

Case 1 – Spine MMI/IR

History of Injury

- 28-year-old warehouse worker lifted 50 pound box at work 4 months ago
- Experienced lower back pain and right lower extremity pain

Treatment History - Date of Injury

- Occupational medicine physician diagnosed lumbar sprain
- Initial treatment naproxen, cyclobenzaprine and tramadol
- Released to return to work with restrictions not to lift more than 20 pounds; employer able to accommodate restrictions
- 6 PT visits in occupational medicine clinic consisting of hot packs, electrical stimulation, and some exercises involving lumbar and hip flexion stretching
- Follow up three weeks post injury reporting worsening symptoms with pain extending into right buttock with “numbness and tingling” sensation in right lateral thigh and leg

Treatment History - 3 Weeks Post Injury

- NSAID switched to meloxicam and told to discontinue physical therapy
- Continued to work with restrictions

Treatment History - 4 Weeks Post Injury

- Lumbar spine plain film x-rays obtained
- Show moderate spondylosis at L4/L5

Treatment History - 6 Weeks Post Injury

- Occupational medicine physician referral to PMR physician
- Low back and right lower extremity symptoms increased with sitting, bending forward, lifting and in morning; better with standing and walking

- Left lumbar list
- PMR records reported
  - VAS 8/10 and Oswestry score 54%
  - Pain drawing showing right > left lumbosacral pain extending into right buttock, posterior thigh, lateral leg and dorsum of foot
- Lumbar flexion fingertips to knees with increased low back, right buttock and posterior thigh pain, extension slightly decreased with increased right low back pain
- Patellar and Achilles DTRs 2+ bilaterally, unable to obtain hamstring DTRs bilaterally
- Decreased sensation right lateral thigh, leg and dorsum of foot
- Right ankle dorsiflexion, EHL and hip abduction 4+/5
- Diagnosis
  - Right L5 radiculopathy secondary to suspected L4/L5 HNP
- PMR ordered non-contrast lumbar MRI scan

Treatment History - 8 Weeks Post Injury

Lumbar MRI scan

- 5 mm posterolateral right L4/L5 herniated nucleus pulposus (HNP) displacing right L5 nerve root
- Disc desiccation at L4/L5
- No other findings noted

Treatment History - 10 Weeks Post Injury

- Transforaminal ESI at 10 weeks post injury
  - Significant relief right lower extremity symptoms for 3 weeks
- Right lower extremity symptoms recurred with sitting and bending forward
- Working restricted duty
- Preauthorization denial for repeat ESI

DD Medical History - 16 Weeks Post Injury

- Warehouse worker for 5 years, present for past 2 years
- Currently working with restrictions
- No co-morbid medical conditions or relevant past medical history
- Sleep disturbed due to back and leg pain

- No history of psychological distress or treatment
- Oswestry score 52%
- Pain scale 7/10
- Pain drawing shows right low back, buttock, posterior thigh and lateral leg pain extending to dorsum of right foot
- Preauthorization denial appealed

DD Physical Exam – 16 Weeks Post Injury

- Vitals
  - height 70 inches
  - weight 175 lbs.
  - BP 130/82
  - pulse 65
  - respiration 16
- Able to rise from sitting to standing with difficulty assuming lumbar lordosis
- Ambulates with normal gait
- No scars on back or trunk
- Slight left trunk list
- Able to walk on heels and toes, squat and perform 10 calf raises on each leg without obvious weakness
- 4/5 strength right EHL, right tibialis anterior, and right hip abductors; otherwise manual muscle testing shows 5/5 strength
- Patellar and Achilles DTRs 2+ bilaterally
- Medial hamstring DTRs absent bilaterally
- Sensation slightly decreased over right posterior thigh and anterolateral leg and dorsum of foot
- Symmetric thigh and calf circumference
- Right supine SLR to 45° with increased sharp lower back pain extending into right buttock and posterior thigh
- Worsened with ankle dorsiflexion and hip adduction/internal rotation
- Left supine SLR 70° with only hamstring tightness/discomfort
- Negative femoral nerve root tension signs
- Tenderness with palpation and hypertonicity of right lower lumbar paraspinal muscles at L4/L5/S1

Question for DD
Based on medical records and physical exam, what is the compensable injury for certifying MMI and IR?

a) Lumbar sprain
b) Right L5 radiculopathy
c) Lumbar sprain and right L5 radiculopathy secondary to L4/L5 HNP
d) Lumbar sprain, right L5 radiculopathy secondary to L4/L5 HNP and L4/L5 disc desiccation

Question for DD to consider in the exam:

Has MMI been reached?

If so, on what date? *(May not be greater than statutory MMI date shown on DWC Form-032)*

a) Yes, date of initial PMR visit, 6 weeks post injury
b) Yes, date of TF ESI, 10 weeks post injury
c) Yes, date of DD exam,16 weeks post injury
d) No, not at MMI

Case 1 - Spine MMI/IR - *The Sequel*

DD Medical History - 40 Weeks Post Injury

- Transforaminal ESI x2 with 12 visits concurrent/post ESI McKenzie based PT progressing into trunk strengthening
- Discharged from PT with independent home and gym exercise program 26 weeks post injury
- Illegible handwritten PT discharge notes
- Medical records document PMR follow-up 30 weeks post injury
  - Reports significant improvement with TF ESI x2 and PT, but persistent low back and right lower extremity pain with sitting, bending and lifting, “2 - 3/10”
  - Working full duty, not lifting >50 lbs.
- Medical records document PMR follow-up 30 weeks post injury (cont’d)
  - No lumbar list
  - Decreased lumbar flexion with deviation to left and increased low back and right buttock pain, slightly decreased extension
  - Right SLR at 60° produces right low back and buttock pain, pain increased with ankle DF
- Medical records document PMR follow-up 30 weeks post injury (cont’d)
  - LE strength 5/5 bilaterally

- LE DTRs bilaterally symmetric
- Does not want to pursue spine surgery
- Continue home exercise program
- Follow-up as needed

- Oswestry score 16%
- Pain scale 2-3/10; pain drawing shows right low back, right buttock and posterior thigh pain
- Indicates recurrent low back pain with repeated bending forward, sitting/driving greater than 45 minute intervals, lifting > 50 lbs.
- Reports some relief of low and RLE symptoms with HEP and ibuprofen prn
- Vitals
  - height 70 inches
  - weight 175 lbs
  - BP 120/78
  - pulse 65
  - respiration 16
- Able to slowly assume lumbar lordosis from sitting to standing
- No list or deformity
- Ambulates with normal gait
- Lumbar flexion fingertips to proximal shin, with deviation to left and increased right low back and buttock pain, full extension with moderate low back pain
- Able to walk on heels and toes, squat and perform 10 calf raises on each leg without obvious weakness
- 4+/5 strength right EHL; 5/5 right tibialis anterior; and 5/5 right hip abductors
- Left lower extremity strength 5/5
- Patellar and Achilles DTRs 2+ bilaterally
- Medial hamstring DTRs absent bilaterally
- Sensation slightly decreased over right posterior thigh and anterolateral leg and dorsum of foot

DD Physical Exam - 40 Weeks Post Injury

- Symmetric thigh and calf circumference
- Right supine SLR to 62º with increased lower back pain extending into right buttock and posterior thigh worsened with ankle dorsiflexion and hip adduction/internal rotation
- Left supine SLR 75º with hamstring tightness/discomfort only

- Tenderness with palpation and hypertonicity of right lower lumbar paraspinal muscles at L4/L5/S1

Question for DD to consider in the exam**:** Has MMI been reached? If so, on what date?

(May not be greater than statutory MMI date shown on DWC Form-032)

a) Yes, date of PT discharge, 26 weeks post injury
b) Yes, date of PMR follow-up, 30 weeks post injury
c) Yes, date of DD exam, 40 weeks post injury
d) No, not at MMI

Question for DD to consider in the exam: On MMI date, what is whole person IR?

a) DRE II = 5% for non-uniform loss of range of motion
b) DRE II = 5% for non-verifiable right L5 radiculopathy
c) A and B
d) DRE III = 10% for right L5 radiculopathy

Case 2 – Spine MMI/IR

25 year-old male taxi driver involved in rear-end motor vehicle accident 8 months ago

Evaluated by EMS at scene of accident

- Neck pain, occipital headache
- No loss of consciousness, normal neurologic exam, no transport

Treatment History

- Saw chiropractor 1 week post injury
  - Neck pain, occipital headache
  - Decreased cervical extension, right rotation and right lateral flexion with right neck pain
  - Deviation of head/neck to left during decreased extension
  - Palpation reveals hypertonicity and joint hypomobility C2/3-C6/7 R>L
  - Cervical x-rays show no evidence of fracture or dislocation
  - C5/C6 disc space narrowing, with marginal osteopyhte at anterior aspect of superior endplate at C6

Chiropractor's Records

- Diagnosis of acute cervical sprain/strain

- Manipulation and soft tissue techniques
- Progression of exercise program – self mobilization, stretching, scapular strengthening with theraband
- 14 visits over 12 weeks

Chiropractor's Records - 12 Week Follow-Up

- 1-2/10 pain scale
  - "occasional neck pain, no occipital headache"
- Full CROM without pain
- Palpation essentially normal
- Normal upper extremity sensation, strength and DTRs
- Good understanding and demonstration of HEP
- Follow-up as needed

DD Medical History - 24 Weeks Post Injury

- Chief complaint occasional neck pain
- Pain drawing shows "ache" sensation right side of neck
- Working full duty without restrictions for last 14 weeks
- Neck Disability Index (NDI) score 16%, 2/10 pain scale
- No interim treatment since seeing DC 12 weeks post injury

DD Physical Exam - 24 Weeks Post Injury

- Vitals
  - height 72 inches
  - weight 175 lbs
  - BP 118/78
  - pulse 64
  - respiration 14
- Pleasant affect, cooperative with history and exam, oriented to time, person, and place with normal attention span and concentration
- No scars on the neck or visible deformity, scoliosis, or kyphosis
- Cervical range of motion full and without pain
- No palpable muscle spasm of cervical paraspinal muscles

- Normal upper extremity deep tendon reflexes, sensation, and strength
- No upper extremity atrophy

Question for DD: Based on medical records and physical exam, what is the compensable injury for certifying MMI and IR?

a) Cervical sprain/strain status post rear-end MVA
b) Suspected cervical HNP
c) Other

Question for DD to consider in the exam: Has MMI been reached? If so, on what date?

(May not be greater than statutory MMI date shown on DWC Form-032)

a) Yes, 12 weeks post injury after 14 visits with DC
b) Yes, 24 weeks post injury on date of DD exam
c) Other
d) No, not at MMI

Question for DD to consider in the exam: On MMI date, what is whole person IR?

a) DRE I = 0%
b) DRE II = 5%
c) DRE III = 10%
d) DRE IV = 20%

Case 3 – Spine MMI/IR

28-year-old male landscape worker began having acute low back and right buttock pain after lifting tree 8 months ago

Treatment History

- Initially seen day of injury at occupational medicine clinic
- Diagnosed with lumbar sprain/strain
- Treated with cyclobenzaprine and Ibuprofen
- 6 visits PT over 3 weeks at occupational medicine clinic
  - hip/lumbar flexion and rotation stretching, and some “stabilization” exercises
- Released to return to work with restrictions

- Employer did not accommodate restricted duty and reportedly said “come back when you are 100%”
- 10 days post injury reported pain and numbness in right posterior thigh and lateral calf
- 4 weeks post injury x-rays showed moderate spondylosis at L5/S1 with bilateral pars defects with a Grade I isthmic spondylolisthesis also at L5/S1
  - No evidence of segmental instability or alteration of motion segment stability on standing flexion and extension views

Imaging

- **8** weeks post injury, lumbar MRI scan obtained showing disc desiccation at L5/S1 and 7 mm right posterolateral L5/S1 HNP displacing right S1 nerve root
- Chronic bilateral pars defects well established without increased T2 or inversion recovery signal changes consistent with acute injury
- 14 weeks post injury, had translaminar lumbar epidural steroid injection at L5/S1 without significant or lasting improvement
- 20 weeks weeks post injury, underwent right L5/S1 hemi-laminotomy/discectomy resulting in some relief of lower extremity symptoms
- 24 weeks through 32 weeks post injury –
  14 visits of active PT. Initiated lumbar extension range of motion exercises progressing into strengthening exercises and work simulation
- 30 weeks post injury - Repeat lumbar MRI scan with contrast showed post-operative changes and chronic bilateral pars defects without evidence of recurrent or residual disc herniation
- 32 weeks post injury – found another job supervising landscape crew; released to return to work full duty
- 36 weeks post injury - treating doctor exam
  - Intermittent back and right lower extremity pain
  - Right SLR “positive” at 45 degrees
  - Moderately reduced lumbar flexion
  - Right Achilles DTR decreased
  - Numbness to pinprick over the right lateral foot
  - Right ankle plantar flexion 4+/5
  - Did not want to pursue additional interventional pain management procedures
  - Continue with gabapentin, follow-up as needed

DD Medical History - 52 Weeks Post Injury

- Chief complaint episodes of low back, right buttock and right posterior thigh pain after prolonged sitting, repeated bending forward or lifting
- Lower back, buttock and right lower extremity symptoms had improved significantly
- Continues to work as landscape crew supervisor
- Takes gabapentin, continues home exercise program

DD Physical Exam - 52 Weeks Post Injury

- Vitals
  - height 70 inches
  - weight 175 lbs.
  - BP 124/78
  - pulse 62
  - respiration 13
- Pleasant affect, cooperative with history and exam, oriented to time, person, and place with normal attention span and concentration
- Able to rise from sitting to standing with no abnormal motion
- Ambulates with normal gait
- Well healed approximate 3 cm surgical scar at midline lumbosacral junction
- No visible deformity, scoliosis or kyphosis
- Able to walk on heels, weakness on right toe walk
- 4/5 strength of right toe flexion; ankle inversion and eversion; and knee flexion
- Lumbar flexion and right lateral flexion moderately decreased; extension and left lateral flexion essentially full

DD Exam - 52 Weeks Post Injury

- Left SLR 65º limited by hamstring tightness
- Right straight leg raise limited to 45º where it produces right low back and right buttock pain, further increased with ankle dorsiflexion
- Patellar DTRs 2+ bilaterally; right Achilles DTR decreased
- Repetitive calf raises on right reveals some weakness
- 2 cm of right calf atrophy
- Some palpatory tenderness and hypertonicity of lumbar paraspinal muscles at right lumbosacral junction

Questions for DD

Based on medical records and physical exam, what is the compensable injury for certifying MMI and IR?

a) Lumbar sprain/strain
b) Lumbar sprain/strain and persistent right S1 radiculopathy status post right L5/S1 hemi-laminotomy/discectomy
c) Other

Question for DD to consider in the exam: Has MMI been reached? If so, on what date? *(May not be greater than statutory MMI date shown on DWC Form-032)*

a) Yes, 32 weeks post injury, date completed post-op PT and released to full duty work at new job
b) Yes, 36 weeks post injury, date of treating doctor follow-up visit
c) Yes, 52 weeks post injury, date of DD exam
d) No, not at MMI

Question for DD to consider in the exam:

On MMI date, what is whole person IR?

a) DRE I = 0%
b) DRE II = 5%
c) DRE III = 10%
d) DRE IV = 20%

Case 4 – Spine MMI/IR

History of Injury

25-year-old male roofer fell from a roof sustaining T12 compression fracture at work 10 months ago

Treatment History

- Initially seen at ER
- X-rays demonstrating stable anterior compression fracture at T12
- No neurologic deficit
- Orthopedic surgeon initiated conservative treatment with bracing, pain medication and ADL/work modifications

- 8 visits of PT over 10 weeks with significant improvement in symptoms and activity tolerance
- X-rays at 6 months showed well healed T12 compression fracture with 20% loss of anterior vertebral body height
- Ortho follow up at 6 months
  - Essentially full ROM
  - "remains neurologically intact"
  - "much better after PT, doing well, has RTW, return as needed"

DD Medical History - 9 months post injury

- Chief complaint low back pain
- Oswestry score 30%
- Pain scale 3/10

DD Exam – 9 Months Post Injury

- Vitals
  - height 70 inches
  - weight 175 lbs
  - BP 128/78
  - pulse 68
  - respiration 14
- Pleasant but somewhat flat affect, cooperative with history and exam, oriented to time, person, and place with normal attention span and concentration
- Able to rise from sitting to standing with no abnormal motion
- Ambulates with normal gait
- No visible deformity, scoliosis or kyphosis
- Able to walk on heels, toes and squat without weakness
- Lumbar flexion and extension and right/left lateral flexion all slightly decreased
- 5/5 strength of bilateral lower extremity
- SLR bilaterally 65º limited by hamstring tightness
- Patellar and Achilles DTRs 2+ bilaterally
- Thoracolumbar paraspinal muscle tenderness but no spasm

Questions for DD: Based on medical records and physical exam, what is the compensable injury for certifying MMI and IR?

Question for DD to consider in the exam: Has MMI been reached? If so, on what date? *(May not be greater than statutory MMI date shown on DWC Form-032)*

a) Yes, 6 months post injury, date of the ortho follow-up and x-rays showing healed fracture

b) Yes, date of designated doctor exam

c) No, not at MMI

Question for DD to consider in the exam: On date of MMI, what is whole person IR?

a) DRE I = 0%

b) DRE II = 5%

c) DRE III = 10%

d) DRE IV = 20%