Designated Doctor Certification Course
Non-MSK MMI and IR
Pre-Course Cases

Case 1 – Traumatic Brain Injury (TBI)

History of Injury
- Injured employee fell 20 feet from scaffolding

Injuries sustained were:
- Traumatic brain injury with GCS 7
- Left clavicle fracture and Gr III AC sprain
- Left zygomatic and inferior orbital wall fracture
- C6 and C7 spinous process fracture
- Left 1st – 6th rib fractures
- Left pulmonary contusion

Initial CT imaging of the head demonstrated
- Small left temporal epidural hematoma with acute depressed (4 mm) skull fracture
- Right frontal / temporal lobe hemorrhagic contusion (contrecoup lesion)
- Left lateral upper maxillary bone fracture and left zygomatic fracture (orbital fractures)

Treatment History
- Initial GCS was 7/15
- Intubated and treated in ICU for 14 days
- Intermittently combative, so sedated
- On prophylactic Keppra x 14 days
- Increased intracranial pressure (ICP) treated with mannitol.
- Craniotomy to elevate skull fracture.
- When stable, OMS treated facial fractures
- Initiated PT, OT, and Speech / Language therapy as level of responsiveness improved
- Transferred from ICU to the floor for 4 days
- At the time of his rehab admit, he was still somewhat combative / inappropriate and had a low GOAT score.
- IE was in inpatient rehabilitation for 3 weeks, then attended CARF accredited out-patient cognitive behavioral therapy for 6 months (completed at 9 months after the DOI).
    - In therapy at 3 months, the IE had a witnessed Grand Mal seizure and subsequently suffered intermittent minor focal motor seizures in the right upper extremity
    - EEG confirmed abnormal seizure activity in the left temporal lobe
    - Responded to anti-seizure medication with no recurrence of Grand Mal seizures after 6 months but continued mild focal motor seizures.
    - Saw the neurologist monthly between months 3-9

DD Evaluation, 18 months after DOI

History

- IE had mild concerns about his appearance related to residuals of his facial fractures.
- HE saw his PM&R doctor monthly for the first year after the DOI
- The IE returned to work with some changes in duties at 9 months
    - He kept a notebook and uses his phone as a memory aid
    - He functions at work, as the things he does are based on prior / old memory
- At 12 months he reported to the PM&R doctor that he has more difficulties in new situations or social situations, and that can make him anxious
- At 12 months, the PM&R doctor was of the opinion that he was stable enough in function to be seen every 6 months.
- The IE still had problematic breakthrough seizures, so he continued to see the neurologist monthly up to 9 months after the DOI. He was then seen every 3 months up until 18 months after the DOI. At 18 months, the IE was to follow up every 6 months for a med check.
- His employer made him supervisor of the crew at 14 months.
- The IE felt he was making improvements in memory and function until 18 months after the DOI.

DD Examination

- Alert and oriented x 4
- Mood / affect within normal limits, but appears anxious
- Increased psychomotor activity, but no exaggerated pain behaviors
- Speech is without dysarthria
- Mild difficulty understanding and finding words, naming objects, minimal difficulty following multi-step commands if offered slowly.
- No other obvious receptive or expressive aphasia
- Cranial nerve function intact except subjective decreased sensation in CN V-II distribution on the left.
- Gait and cerebellar exam remarkably normal
- No sensory / motor deficits
- No spasticity, hyperreflexia, clonus, and negative Hoffman's / Babinski test
- No evidence of a movement disorder

DD considered the medial evidence in the records, the certifying exam and the EBM.

- Ordered Neuropsychological evaluation to evaluate residuals of the TBI
    - Results were a valid representation with good effort, consistent responses
    - Results consistent with residual mild cognitive deficit. Also consistent with:
        - Location of original or residual imaging abnormalities
        - Other evidence in the records
- DD ordered MRI of brain and internal auditory canals with contrast
    - Left temporal lobe encephalomalacia
    - No residual left subdural hematoma, resolved contusion of right temporoparietal area
    - No obvious trauma to the internal auditory canal (IAC)

Case 1 - Question

On the MMI date, what is the whole person IR, considering ONLY the TBI?

_____% WP

Case 2 – Visual System

Treatment History

IE struck in left eye and orbit with piece of wood

- Native lens intact bilaterally
- At MMI best corrected visual acuity
- Right eye distant 20/25, near 14/21
- Left eye distant 20/200, near 14/70
- Monocular visual field assessment via
- Goldman perimeter
- Peripheral vision left eye 480º (20º loss)
- No loss of visual field in right eye
- Normal ocular motility
- No diplopia

Case 2 Question:

On the MMI date, what is the whole person IR?

_____% WP

Case 3 – Hernia

History of Injury

- IE sustained ventral and left inguinal hernias while working
- Underwent ventral hernia repair and left inguinal hernia repair, both with mesh
- At MMI no palpable defect in either surgical site
- With increased pressure maneuvers including Valsalva, coughing, and lifting head up while supine, slight protrusions in inguinal canal and abdominal hernia repair which were reducible
- Returned to work in warehouse lifting more than 50 pounds occasionally

Case 3 Question:

On the MMI date, what is the whole person IR?

_____% WP

Case 4 – Skin

History of Injury

- Injured employee sustained 3rd degree burn to right arm and forearm which required skin grafting
- Some activities of daily living affected, including intolerance of sunlight exposure.
- Had to apply moisturizing cream daily to prevent skin from cracking

At MMI

- Grafting area atrophic, elevated and indurated
- Wrist ROM full
- Active elbow ROM
    - Extension minus 10º
    - Flexion 130º
    - Supination 70º
    - Pronation 70º
- Some decreased sensation over scar, but normal sensation proximal and distal to scar
- 5/5 strength of upper extremities bilaterally

Case 4 Question:

On the MMI date, what is the whole person IR?

_____% WP

Case 5 – PTSD

History of Injury

- Convenience store clerk robbed and assaulted
- Subsequently diagnosed and treated for PTSD
- Treatment included focused cognitive behavioral therapy and Lexapro
- Psychological evaluation at MMI 12 months post injury reveals RTW in different job as retail stock clerk
- Complains of disrupted sleep due to nightmares about robbery
- Reports feeling hopeless about future and disinterested in activities previously found enjoyable
- Wife reports he is "jumpy" and not spending as much time with friends, including biweekly poker game
- Mood highly irritable and fighting much more than normal with wife
- Wife also reports he has begun to drink 2-5 alcoholic beverages most evenings
- Able to perform most basic ADLs independently, but requires reminders ~ 25 % of the time
- Has returned to work in a different capacity, but is reported to have difficulty getting to work on time (different than prior job performance)

DD refers for Psychological Testing

Psychological Testing:

- Was a valid representation of effort without overreporting or significant atypical symptoms.
- Results of testing consistent with
- DSM-5 criteria for PTSD
- Emotional disturbance that impairs some, but not all useful functioning in the 4 spheres of ADLs, social, concentration / pace and adaptation.

Case 5 Question:

On the MMI date, what is the whole person IR?

_____% WP

Case 6 – Multiple

History of Injury

- 36 year old ICU nurse.
- Contracted Covid-19 in her work duties.
- Non-smoker, normal BMI and no significant PMH such as DM, HTN, other cardiovascular disease or hereditary neuropathies.
- Initial URI symptoms, then anosmia, ageusia
- Had high fever, respiratory distress with declining 02 saturations
- Admitted to ICU for cardiopulmonary support
- Received immunoglobulins
- Remained intubated for 6 weeks for ventilatory support and weaned by 8 weeks

In addition to cardiopulmonary issues...

- Mild inflammatory demyelinating polyneuropathy
- Clinical exams were consistent with anosmia and ageusia
- Hearing was reported as decreased on the left and mild balance abnormalities
- Weakness of left sided facial muscles

History of Injury: Hospital Work up

- MRI of the brain with contrast demonstrated contrast enhancement of the left Facial (VII) and Vestibulocochlear (VIII) Cranial nerves
- CSF with protein >100 mg/dl without increase in cells
- EMG / NCS consistent with a demyelinating polyneuropathy affecting sensory motor fibers

History of Injury

- Remained in primary hospital for 10 weeks
- BMI declined from 28 to 17
- Discharged from the hospital to inpatient rehabilitation unit for 3 weeks
- Out-patient PT / OT for 6 months
- Despite time and a home exercise program, at one year after completion of PT, she has continued fatigue and shortness of breath, that has been stable
- Most of sensory motor impairment has dissipated, without recurrence over 18 months

Designated Doctor Examination

- Complaints:
    - Were consistent with the medical records
    - Continued fatigue that makes it difficult to perform ADLs and work activities
    - Gets short of breath easily with minimal exertion
    - Impaired taste to the anterior 2/3 of the tongue
    - She could not distinguish sweet, salty, bitter or sour
    - The anosmia and hypogeusia affected her oral intake.
    - She was below ideal body weight for her height.
    - She has continued unilateral facial weakness affecting mainly the mid to upper face.
    - Since she wears a mask at work, this makes visual communication cues difficult
    - No specific complaints related to distal sensory loss or weakness in the extremities

Medical history:

- Negative for ever smoking cigarettes
- Negative 2nd hand smoke exposure
- No H/O Asthma
- Negative for any other significant childhood / adult pulmonary infection or disease.
- No significant cardiovascular disease
- No other risk factors for hearing loss (age, cerumen impaction, medications, toxins).
- No family history of inherited neuropathies, amyloidosis, etc

Occupational History:

- No exposure to asbestos (or potential for silicosis)
- No prior occupation with significant noise exposure

DD Examination

- BMI = 18 (for the last year)
- O2 saturation 89% to 94% on room air at points during the exam
- SOB with moving on and off the exam table.
- Lungs clear to auscultation and percussion
- Heart with regular rhythm and rate
- Gait steady though slow, without AD.
- No unusual verbal or non-verbal pain behaviors and no evidence of symptom magnification

DD Neurologic exam

- Gait without ataxia or spasticity
- No increased or decreased tone, focal or general atrophy of any limb
- Hoffman's, Babinski negative, no clonus
- Romberg negative and other cerebellar tests WNL
- CN III, IV, VI (visual), V and IX, X, XI, XII intact
- Weakness of the frontalis, orbicularis oculi, and zygomaticus muscles (upper branches of the facial nerve)
- Hearing loss on the left to confrontation
- Residual patchy areas of slight decreased sensation in portions of distal peripheral nerve distributions. Inconsistent (LE >UE)
    - Non-specific to any specific peripheral nerve distribution.
    - No H/O recurrent episodes of sensorimotor dysfunction – NO CIDP

- Strength 5 - to 5 / 5 in the upper and lower extremities without focal nerve distribution

DD Orders Additional Testing

- Pulmonary Function Tests (PFTs)
- Audiometry Testing
- Did not order current EMG / NCS

Testing Results:

- Audiogram: Tested without hearing aids.
  - Right Ear:
    - 500 Hz = 10 db, 1000 db = 20 db, 2000, = 30 db and 3000 = 40 db.

    DSHL = 100
  - Left Ear:
    - 500 Hz = 40 db, 1000 db = 50 db, 2000, = 75 db and 3000 = 105 db.

    DSHL = 270
- Pulmonary Function Tests (PFs**)**
  - Respiratory Impairment - Referred for PFTs
  - FEV1 was 80TH %
  - FVC was 75TH %
  - FEV1 / FVC was 76th %
  - DCO was 61st %
  - Functionally, the changes in DCO2 are most impactful with Covid-19.

Case 6 Questions:

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

A. Central Nervous System - Cranial Nerves other than hearing
B. EENT – Hearing loss
C. Respiratory System
D. Peripheral Nervous System (via Chapter 3)
E. Other systems
F. A, B, C

On the date of MMI, what is the whole person IR, or IR Range?

_____% WPI