INTRODUCTION

In Kentucky workers’ compensation claims, our legislature has statutorily mandated use of the American Medical Association Guides to the Evaluation of Permanent Impairment, latest edition available, when deriving impairment ratings for injured workers. Currently, the Commissioner of the Office of Workers’ Claims has certified the Fifth Edition of the AMA Guides to the Evaluation of Permanent Impairment as the latest available edition, which must be utilized pursuant to KRS 342.730(1)(b) when deriving impairment ratings for injured workers.

While the Sixth Edition of the AMA Guides has been published, and would seemingly be readily available and the latest edition available, the Commissioner has stayed invocation of the Sixth Edition of the AMA Guides. As such, impairment ratings for workers’ compensation purposes must be derived from the Fifth Edition of the AMA Guides to the Evaluation of Permanent Impairment.

While the Fifth Edition of the AMA Guides is intended to be utilized by physicians to derive impairment ratings, it is important for all professionals who work within the Kentucky workers’ compensation system to have at least a fundamental understanding of the AMA Guides to effectively perform their job duties. A fundamental understanding of the AMA Guides requires knowledge of the Guides’ purposes, how the Guides are to be applied, how impairment ratings are derived and how to verify whether or not a given impairment rating is derived pursuant to the Guides. The purpose of this seminar will be to familiarize workers’ compensation specialists in attendance with an overview of the Guides’ purpose, application, limitations and how to derive and/or verify impairment ratings.

PART I: PHILOSOPHY, PURPOSE AND APPROPRIATE USE OF THE GUIDES

The AMA Guides define impairment as “A loss, loss of use, or derangement of any body part, organ system, or organ function.” (Section 1.2A). An impairment is considered permanent when it has reached maximum medical improvement (which is defined by the Guides as "A condition or state that is well stabilized and unlikely to change substantially in the next year, with or without medical treatment. Over time, there may be some change; however, further recovery or deterioration is not anticipated.").

The Guides also distinguish impairment from disability. The Guides explicitly state, "Impairment ratings are not intended for use as direct determinants of work disability." (Page 5). Disability is defined as "Alteration of an individual's capacity to meet personal, social, or occupational demands or statutorily or regulatory requirements because of an impairment. "Disability is a relational outcome, contingent on the environmental conditions in which activities are performed." (Page 600). The Guides limit assessment of a permanent impairment to only physicians and explains the physician’s role is to determine impairment and provide medical information to assist in disability
determinations (by an Administrative Law Judge, state agency, or other responsible agency).

Impairment percentages or ratings, pursuant to the Guides, are consensus derived estimates that reflect the severity of the medical condition and the degree to which the impairment decreases an individual’s ability to perform common activities of daily living excluding work (Page 4). Whole person impairment ratings estimate the impact of the impairment on the individual’s overall ability to perform activities of daily living excluding work. (Id.).

Activities of daily living commonly measured by the Guides include such activities as self-care and personal hygiene, communication, physical activity, sensory function, non-specialized hand activities, travel, sexual function, and sleep (Table 1-2).

When considering the purposes established in Chapter 1 of the Guides, the following limitations and questions are identifiable:

1. The Guides are only to be utilized by physicians (see the definition of physician in KRS 342.0011(32) and the cases regarding non-physician use of the Guides).

2. How can one determine maximum medical improvement has actually been achieved in order to have a rating assigned?

**PART II: PRACTICAL APPLICATION OF THE GUIDES**

Chapter 2 of the Guides revisits several of the topics first presented in Chapter One. Chapter 2 sets forth the process the physician should utilize when performing evaluations and preparing reports. One of the most significant portions of Chapter 2 is contained in Section 2.5H, which discusses changes in impairment from prior ratings. The Fifth Edition of the Guides directs when previous impairment ratings have been addressed for a prior injury, the physician should reassess the current state of impairment according to the most recent edition of the Guides.

This type of reassessment is particularly important during any reopening proceedings for a worsening of an injury pursuant to KRS 342.125. As this statutory subsection permits a claim to be reopened for a worsening of condition within four years from the date the original award or settlement became final, this provides ample opportunity for a new edition of the AMA Guides to have been adopted, certified as readily available by the Commissioner of the Office of Workers’ Claims. In such an instance, the Guides direct assessment of the individual's current state of impairment based on the most recent edition. The Guides recognize over time changes may occur, and what was previously thought to be a permanent impairment could become a worsening of the condition, or alternatively, an improvement. The physician should utilize the prior evaluation findings in conjunction with the current findings to derive a current impairment rating using the Fifth Edition of the AMA Guides for the condition that existed at the time of the prior evaluation as well as the patient’s present condition.

The Guides also direct if a prior evaluation was not performed, but if sufficient historical information is available to currently estimate the prior impairment, the physician may do so. In essence, if the previous medical records contained a sufficient amount of information for which a particular injury can be rated currently by the physician, the
physician can perform a records review and derive an impairment rating per the Fifth Edition for the condition that previously existed, but was never rated.

PART III: USE OF THE COMBINED VALUES CHART

Page 604 of the Fifth Edition of the AMA Guides begins the Combined Values Chart. The Guides direct to combine the impairment ratings, beginning with the larger of any values on the left hand side of the chart to the smaller value contained on the bottom of the chart. This process should be repeated for all impairment ratings provided when multiple injuries and/or ratings are present.

The Guides instruct if three or more impairment values are to be combined, select any two and find their combined value, then use the combined value from the first two ratings as the beginning point on the left hand side of the chart and combine the third rating with the already derived combined rating. This process is repeated until one ultimate combined rating is derived from all separate ratings.

The Combined Values Chart is utilized only for combination of whole person impairment ratings, not upper extremity ratings, lower extremity ratings or other ratings not expressed in whole term values. This will be discussed further below in the upper and lower extremity portions of this seminar.

PART IV: SPINAL IMPAIRMENT RATINGS

The majority of work related injuries involve injuries to the spine. Chapter 15 of The Fifth Edition of the AMA Guides establishes spinal impairment ratings. Chapter 15 divides the spine into regions, including the lumbar, thoracic and cervical. Chapter 15 also provides methodology for deriving impairment ratings for pelvic injuries as well as nerve root and/or spinal cord injuries as well as corticospinal tract damage.

For purposes of this presentation, and considering time constraints, the focus will be on injuries to the lumbar, cervical or thoracic spine and whether or not use of the diagnosis related estimate (DRE) or range of motion (ROM) method is appropriate for any given injury. The Guides instruct the DRE method is the primary method to evaluate individuals with an injury. The ROM method is utilized only in specific instances, as established by the Guides.

The introductory section of Chapter 15 also contains important directives for the evaluator when deriving spinal impairment ratings. In particular, the Guides direct that a positive imaging study in and of itself does not establish a diagnosis. For example, physicians will often diagnose radiculopathy based solely upon a radiologist’s interpretation of an MRI film revealing a herniated disk. However, the Guides direct that to be of diagnostic value, clinical symptoms and signs must agree with the imaging findings. In order to confirm a diagnosis, the imaging study must correlate with clinical findings.

The Guides also instruct clearly positive electromyography (EMG) studies that correlate with the imaging study and clinical symptoms qualify an evaluee for at least a DRE category III impairment rating. In other words, if clinical symptoms, imaging studies and electrodiagnostic studies all correlate to establish a diagnosis of nerve root impingement producing radiculopathy, the injured worker will qualify for at least a DRE category III
lumbar, thoracic or cervical rating. However, as we often see, an imaging study will reveal a bulge/herniation that does not correlate with clinical signs and symptoms, i.e. the bulge is to the left, but the injured worker reports symptoms on the right side. This does not establish a diagnosis of nerve root impingement or radiculopathy and does not rise to the level of a DRE III rating.

The definition of "radiculopathy," as set forth in the Guides on page 382, requires clinical correlation of nerve root impingement in a dermatomal distribution as well as substantiation of a disk herniation by an appropriate finding on an imaging study. When considering the validity of an impairment rating based upon a diagnosis of a herniated disk with radiculopathy, both clinical findings and a positive imaging study must be present. Otherwise, the diagnosis is not in conformity with the Guides, and arguably, should not be relied upon by an Administrative Law Judge to support an award of a DRE category III impairment rating.

As noted above, the DRE is the principal methodology used to evaluate an individual who has had a distinct injury. The Guides set forth five situations in which the range of motion method could be utilized. These include the following:

1. When an impairment rating is not caused by an injury, if the cause of the condition is uncertain and the DRE method does not apply, or an individual cannot be easily categorized in a DRE class.

2. When there is multi-level involvement in the same spinal region (e.g. Fractures at multiple levels, disk herniations, or stenosis with radiculopathy at multiple levels or bilaterally).

3. Where there is alteration of motion segment integrity (e.g. fusions) at multiple levels in the same spinal region, unless there is involvement of the corticospinal tract (then use the DRE method for corticospinal tract involvement).

4. When there is recurrent radiculopathy caused by a new (recurrent) disk herniation or recurrent injury in the same spinal region.

5. Where there are multiple episodes of other pathology producing alteration of motion segment integrity and/or radiculopathy.

The Guides also instruct in a small number of instances in which the ROM and DRE methods can both be used to evaluate the individual and award the higher rating. Further, the Guides direct in a circumstance where a previous injury had occurred to the same spinal region and the range of motion method was utilized to derive a rating, it must again be used if sufficient prior range of motion measurements exist. If the previous evaluation was based on the DRE method and now is evaluated with the ROM method, if prior ROM measurements exist, the evaluator should utilize the prior ROM measurements to calculate an impairment rating which is subtracted from the current impairment, utilizing the ROM method. If no prior ROM measurements exist, the evaluator should utilize the DRE method to rate the prior injury and subtract this from the current ROM ratings.

If the ROM method is applicable, the Guides also instruct if certain conditions are present, the ROM measurements are not valid for estimating permanent impairment. In
many instances, you will see an IME report list under the physical findings section the presence of muscle spasms. The Guides specifically instruct "If acute muscle spasm is present, this should be noted in the examiner’s report; however, the mobility measurements would not be valid for estimating permanent impairment." (Page 399).

The Guides take into consideration if such things as acute muscle spasms are present, then the evaluatee cannot be considered to have attained maximum medical improvement, and as such, a whole person impairment rating per the Guides is prohibited. The Guides further require that if the ROM method is utilized, at least three consecutive measurements must be taken and direct that the measurements should not change substantially with repeated efforts. The Guides provide if the average ROM scores are less than fifty degrees, the three consecutive measures must fall within 5 percent of the mean, and if the average is greater than fifty degrees, the three consecutive measurements must fall within 10 percent of the mean. If after up to six attempts the measurements do not meet this criteria, the spinal motions are considered invalid.

In the vast majority of instances where the ROM method is applicable, the evaluatee will fall into the second, third or fourth situation listed above. The second situation involves multi-level involvement within the same spinal region. The Guides specifically provide examples that fall within this category, to include fractures, herniations or stenosis with radiculopathy at multi-levels (or bilaterally for the latter).

We often see physicians diagnosing disk protrusions/bulges at multiple levels within the same spinal region (i.e. the lumbar region, cervical region or thoracic region). However, in every example contained in Chapter 15 of the Guides, the range of motion method was limited to actual disk herniations, fractures or stenosis with radiculopathy at multiple levels or bilaterally. In no circumstance did the Guides use simple disk bulges/protrusions at multiple levels to invoke utilization of the ROM method.

Many IME physicians will diagnose disk bulges/protrusions at multiple levels to support use of the range of motion method which typically results in a higher impairment rating than the DRE method would. Arguably, as the Guides limit situation #2 to multi-level fractures, herniations or stenosis, situation #2 is inapplicable and the range of motion method should not be utilized.

In reference to the third scenario, alteration of motion segment integrity at multiple levels within the same spinal region, this is a situation that is encountered most often when an injured worker undergoes multi-level fusion surgery. Scenario is inapplicable to a single level fusion surgery (i.e. C3-4, L5-S1, T11-12, etc.). Situation #3 specifically limits use of the range of motion method to situations involving multi-level alteration and motion segment integrity (a fusion surgery’s primary purpose is to stabilize the motion segment integrity).

Many physicians that are providing impairment ratings attempt to invoke the ROM method with single level fusion surgeries. While in most instances alteration of motion segment integrity is in fact present, which condition necessitated the fusion, the Guides limit application of the ROM method to multi-level involvement. The American Medical Association has published a textbook entitled Master of the AMA Guides Fifth as a companion book to the Fifth Edition of the AMA Guides. This companion text contains additional information regarding application of the Guides as well as additional examples
not contained within the Fifth Edition of the AMA Guides themselves. This book also contains additional medical and legal tips in reference to situations such as fusion for which both the DRE and ROM methods may be applicable. The text directs "insure that the physician uses the DRE method only if a single symptomatic pathology within a single region is involved."

Example 15-6 (Page 208) provides analysis of an L5-S1 fusion. An impairment rating of 28 percent whole person based upon a DRE category IV was ascribed as was a single level fusion, and as such, the ROM method was not utilized.

The fourth situation when the ROM method is utilized is seen less frequently. This scenario allows use of the range of motion method when there is recurrent radiculopathy caused by new (recurrent) disk herniation or recurrent "injury" in the same spinal region. Scenario four is one of the more difficult scenarios to analyze and determine whether or not the ROM method would apply.

The only example set forth in the Guides is Example 15-22. In that example, the evaluatee initially had a herniated lumbar disk treated surgically with near complete relief of pain. Several months after the operation, he re-injured his lumbar spine and the MRI revealed a recurrent disk herniation at the same level and size as before, and he underwent a second diskectomy. The diagnosis provided was "recurrent herniated disk with radiculopathy." In that instance, the range of motion method was utilized to derive a 23 percent impairment rating. What is not addressed is whether or not subsequent herniation with radiculopathy at a different level would also invoke use of the range of motion method.

Situation number four simply requires recurrent radiculopathy caused by a new (recurrent) herniation "or recurrent injury in the same spinal region." While most evaluating physicians simply defer to the DRE method when other disk levels within the same spinal region are ultimately herniated, producing radiculopathy (with or without surgery and ascribe a DRE category III 10 percent to 13 percent impairment), utilization of the range of motion method in this instance may in fact reduce the overall impairment rating resulting from the second herniation at a different level.

For example, if the initial herniation with radiculopathy was proven to be a pre-existing and active condition for which apportionment/carve-out from the current impairment rating is appropriate, if by using the range of motion method the overall impairment rating resulted in an 18 percent whole person impairment, the initial herniation with radiculopathy would have been rated using the DRE method at 10-13 percent, which would be subtracted from the current range of motion rating, resulting in an impairment rating less than the 10-13 percent that would result from the new herniation with radiculopathy pursuant to a DRE category III 10-13 percent.

As noted above, the DRE method is the principal and preferred method to rate a spinal injury. The criteria utilized to establish DRE category I, II, III, IV and V ratings for lumbar, thoracic and cervical injuries are all, for the most part, very similar. A DRE category 10 percent impairment is warranted when there are "No significant clinical findings, no observed muscle guarding or spasm, no documentable neurological impairment, no documented alteration of structural integrity, and no other indication of impairment related to injuries or illness; no fractures."
A DRE category II impairment is most often based on one of the three following criteria:

1. History and examination compatible with a specific injury, including findings of significant muscle spasm or guarding at the time of the examination, asymmetrical loss of range of motion and nonverifiable radicular complaints where there is no noted amosi or significant radiculopathy.

2. Previously identified clinically significant radiculopathy in an imaging study demonstrating a herniated disk that correlates with the level and side that would be expected based on the radiculopathy, but has improved to the point there is no currently verifiable radiculopathy and has not undergone surgery.

3. Vertebral fractures of less than 25 percent.

A category III impairment generally will meet one of the following three criteria:

1. Significant radiculopathy (Which does not necessarily have to be verified by electrodiagnostic findings), that is evidenced by clinical findings, including pain, sensory loss, a dermatomal distribution, loss of reflexes, strength or unilateral atrophy in comparison with the unaffected side (which, under this scenario, does not necessarily have to be verified by an EMG/NCV).

2. Radiculopathy verifiable by an imaging study at the level and on the side to be expected from the objective clinical findings or prior history of radiculopathy, just now improved/resolved post surgically.

3. Vertebral fractures of 25 percent to 50 percent.

The criteria for a DRE category IV impairment typically involves one of the three scenarios:

1. Alteration of motion segment integrity (AOMSI) (of at least a certain required millimeter distance) or loss of motion segment integrity due to fusion surgery.

2. Vertebral fractures greater than 50 percent without residual neural compromise.

A DRE category V impairment is seldom seen and is seldom in conformity with the Fifth Edition of the AMA Guides’ criteria. For lumbar injuries, this requires the evaluatee has met the criteria of both DRE categories III and IV, i.e. has both radiculopathy and AOMSI and requires significant lower extremity impairment remains present as indicated by atrophy, loss of reflexes, sensory changes, etc. Alternatively, a DRE lumbar category V can be established through a fracture of one vertebral body of greater than 50 percent compression with unilateral neurological compromise.

A DRE cervical category V impairment is somewhat different in that it can be established either through significant upper extremity impairment requiring the use of upper extremity external functional or adaptive devices or vertebral fractures with structural compromise on the spinal canal accompanied by severe motor and sensory deficits.
A DRE thoracic category IV impairment can be established either through presently meeting both the DRE III and IV criteria or fractures greater than 50 percent neural motor compromise unilaterally.

As noted above, the most frequent situation encountered in work-related injuries is when one IME physician will ascribe a DRE category II impairment based on non-verifiable radiculopathy and another physician a DRE III category based on what is purported to be significant radiculopathy. Also, as noted by the above, the Guides specifically define radiculopathy and limit this diagnosis for application of the Guides to situations where a herniated disk is substantiated by an imaging study AND clinical examination confirming a dermatomal distribution of pain, numbness and/or paresthesia.

The Guides provide dermatomal distribution charts in Figures 15-1 and 15-2 (Page 377). For purposes of determining the validity of an impairment rating, these charts along with the radiology report, can provide significant insight if, for example, the MRI report reveals a disk herniation producing impingement of the L3 nerve root, but the evaluatee complains of pain, numbness and tingling extending below the knee into the foot and toes. A dermatomal distribution is absent as the L3 nerve root does not extend below the knee. As such, a diagnosis of radiculopathy does not conform with the mandates as established by the Guides, and a DRE category III impairment rating premised upon radiculopathy is not in conformity with the Guides and should not properly be relied upon to support an award of a 10 percent to 13 percent whole person impairment rating (in absence of prior surgical intervention).

Understanding the basic principles above regarding application and use of the AMA Guides permits professionals working within the workers’ compensation system to assess the validity of a physician stated impairment rating for a spinal injury, and also presents possible avenues for impeaching the validity of any given impairment rating.

PART V: MENTAL AND BEHAVIORAL DISORDERS

As anyone who has previously dealt with psychological impairment ratings in the past has come to realize, determining the validity of a psychological impairment rating per the AMA Guides is elusive. Psychological impairment ratings are, to a large extent, premised upon subjective limitations and/or inabilities.

Making things even more problematic is the fact the last edition to actually have impairment ratings listed for classes of psychological disorders is the Second Edition. Neither the Third, Fourth or Fifth Editions have impairment ratings listed for classes of psychological impairments. As such, our Supreme Court has instructed that any current psychological impairment rating must be based upon the classes of impairment established in the Fifth Edition of the AMA Guides with a reference to the obsolete Second Edition to ascribe a corresponding impairment rating.

The problem is the classes of impairments of psychological impairments between the Fifth and Second Edition do not necessarily coincide. The criteria is different in each edition, and as such, any given class of impairment as established by the Fifth Edition of the AMA Guides criteria does not necessarily coincide with the Second Edition’s criteria for the same class of impairment upon which the ultimate impairment rating is based.
To establish a class of impairment rating per the Second Edition of the AMA Guides, the following areas must be considered: Intelligence, thinking, perception, judgment, affect, behavior, ability and potential.

In comparison, to establish a class of impairment per the Fifth Edition, only the following factors are considered: Activities of daily living, social functioning, concentration and adaptation. Further, the Second Edition requires each factor to be graded then an average rating derived by dividing the gross rating number (i.e. all separate class I, II, III, IV and V for each factor added up then dividing the gross total by eight, rounding up or down to the nearest class).

A further complicating factor is the fact the Guides direct that it is important to follow the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV). The Guides recognize establishment of psychological impairment ratings per the DSM-IV is based in large part upon subjective self-reports of limitations and inabilities. As psychological diagnoses and impairment ratings are inherently premised upon subjective criteria, it makes it difficult to impeach the opinions of psychiatrists and psychologists regarding the psychological impairment rating they have ascribed. However, it is not an impossible task.

The Fifth Edition sets forth the above four criteria which can be analyzed in conjunction with the history taken by the psychiatrist or psychologist upon which their ultimate impairment rating is based. If the history and/or other relevant information portrayed in the report can be impeached through other evidence such as other medical records, video surveillance, lay witness testimony, etc., then inherently this would have an effect on the class of impairment ultimately utilized to support the psychological impairment rating.

Table 14-1 establishes classes of impairment due to mental and behavioral disorders (Page 363). This table contains the five classes of impairment which are established based upon the four factors of area or aspect of functioning, including activities of daily living, social functioning, concentration and adaptation.

The classes of impairment are as follows:

**Class I:** No impairment. This class mandates the evaluator find no noted impairment.

**Class II:** Mild impairment. This requires establishment of impairment levels that are compatible with most useful functioning.

**Class III:** Moderate impairment. This level mandates impairment levels are compatible with some, but not all useful functioning.

**Class IV:** Marked impairment. This class requires that impairment level significantly impedes useful functioning.

**Class V:** Extreme impairment. This class requires impairment levels must preclude useful functioning.

The Guides use the four areas or aspects of functioning to establish the class and explain each area or aspect as follows:
1. **Activities of daily living**: These include such activities as self-care, personal hygiene, communication, ambulation, travel, sexual function and sleep. Any limitations in these activities of daily living should be related to the mental disorder rather than to other factors, such as lack of money, transportation, etc. To judge the qualities of activities of daily living, the examiner should consider independence, appropriateness, effectiveness and sustainability of the activities performed. Moreover, the examiner must not only assess simply the number of activities, but the overall degree of restriction or combination of restrictions for all activities.

2. **Social functioning**: The Guides indicate social functioning refers to an individual's capacity to interact appropriately and communicate effectively with other individuals. This includes the ability to get along with others, including initiating social contact, communicating clearly, interacting and actively participating in group activities, etc.

3. **Concentration, persistence in pace**: The Guides indicate deficiencies in this area are best noted from previous work attempts or from observations in work-like settings. The Guides also direct, however, that psychological testing alone should not be considered adequate to fully describe the individual's concentration and sustained ability to perform work tasks.

4. **Adaptation**: This factor includes an individual's deterioration or decompensation in complex or work related settings, *i.e.* an individual's repeated failure to adapt to stressful circumstances. This factor is characterized by such things as withdrawal from situations or exacerbations of signs and symptoms of mental disorders.

The most readily available means of impeaching a psychiatrist or psychologist's psychological impairment rating is to demonstrate their conclusions were premised upon inaccuracies in each of the four above areas. For example, if the evaluee provides erroneous information regarding their abilities to perform activities of daily living and social functioning and portray themselves as unable to meaningfully perform activities of daily living or engage in any meaningful social functions, then other evidence can be utilized to impeach the credibility and reliability of the psychiatrist or psychologist's opinion. Medical records, physical therapy records, IME reports, etc. often contain valuable information that can be used to impeach psychological impairment ratings. Likewise, testimony from lay witnesses can be useful if these witnesses can provide testimony contradicting the subjective self-limitations relied upon by the psychiatrist and/or psychologist.

Another valuable tool in some cases is surveillance. One has heard the old adage "a picture says 1,000 words." If an individual reports engaging in no meaningful activities of daily living, social functioning, etc. and in fact video surveillance documentation reveals otherwise, this can be extremely useful in impeaching psychological impairment ratings, either through deposing the psychiatrist or psychologist and presenting the evidence which conflicts with the information upon which he/she derived the impairment rating, thus resulting in a different class of impairment or even a change of impairment within the given class (as there are substantial ranges within most classes).
Also, in any workers’ compensation case for which a psychiatric injury has been alleged and an impairment rating has been filed, a rebuttal psychiatric IME will need to be performed. The psychiatrist or psychologist chosen to perform the rebuttal IME can also utilize the above contradictory evidence to impeach an impairment rating premised upon erroneous information.

Undoubtedly, considering the inherently subjective nature of psychiatric impairment ratings, verifying the validity of a given impairment rating is a daunting task, which in most instances, is best accomplished through an independent medical examination with a psychiatrist or psychologist of your own choosing. However, in some cases, other evidence that is developed in a given claim may warrant, in addition, cross-examining the psychiatrist or psychologist who provided an impairment rating based upon faulty information. Through cross-examination, the ascribed impairment rating may be substantially reduced or eliminated all together; thus, resulting in a significant reduction in potential indemnity benefits.

**PART VI: UPPER EXTREMITY IMPAIRMENTS**

One of the most important things to remember regarding upper extremity impairment ratings, per Chapter 16 of the *Guides*, is that the *Guides* do not always express a given impairment rating per a table or chart in terms of a whole person impairment rating. For example, many charts provide an impairment rating to the digit which must be converted to a hand impairment rating, which then must be converted from a hand to an upper extremity rating, then again from an upper extremity rating to a whole person impairment rating.

One of the most frequent errors encountered in upper extremity impairment ratings is failure to make the appropriate conversions, which after making the appropriate conversions, always results in a lower impairment rating. For example, a 20 percent rating to the thumb is converted to an 8 percent rating to the hand, which is then converted to a 7 percent rating to the upper extremity, then is converted again to a 4 percent whole person impairment rating.

When determining the validity of a given upper extremity rating, one must pay particular attention to the methods of assessment set forth in the *Guides*, the descriptions of the figures utilized to derive ratings and the examples given. Determining whether or not impairment ratings have been appropriately converted is relatively simple and will be discussed further below.

In addition to appropriately converting impairments in terms of a whole person impairment rating, determining the accuracy of range of motion ratings is necessary for a given injury affecting range of motion ratings is necessary for a given injury affecting range of motion of a finger(s), hand, wrist, elbow, shoulder, etc. All primarily rely upon utilization of a specific chart or combination of charts and simply plugging in range of motion scores to the chart to derive a rating, whether it be a digit rating, upper extremity rating, etc. As shoulder injuries with loss of range of motion are likely the most frequently encountered injuries, an illustrative example is warranted.

All range of motion impairments are derived from the range of motion scores of a variety of planes measured. For shoulders, the overall range of motion impairment rating is derived from flexion, extension, abduction, adduction, internal and external rotation measurements.
**Flexion** is the degree of motion measured by holding the arm straight down to the side with the palm facing backward then vertically extending the arm over the head and represents a 180 degree plane.

**Extension** range of motion begins the same way as flexion, *i.e.* the arm straight down to the side, palm facing backward. However, extension measures range of motion from the neutral plane to the side to how far backwards the arm can be extended, with a plane from 0 to 50 degrees.

**Abduction** refers to the range of motion present holding the arm straight down to the side with the palm facing toward the thigh and raising the arm out to the side and over the shoulder level as far as possible, with a plane of 0 to 180 degrees.

**Adduction** begins the same way, with the arm straight to the side, palm facing the thigh, then measuring the plane of movement from that position across and in front of the chest, with a plane of 0 to 50 degrees.

**External rotation** begins by holding the arm in a 90 degree angle, with the elbow and shoulder parallel, palm facing down then moving with the arm remaining fixed from this position upwards as if one were waving to a crowd. The plane is 0 to 90 degrees.

**Internal rotation** begins in the same 90 degree position, parallel to the shoulder and moving the arm while remaining in a fixed position downward toward the hip, with a plane of 0 to 90 degrees.

After obtaining these six measurements, the range of motion scores are simply plugged into three pie charts, one for flexion and extension, a second for abduction and adduction, and the third for internal and external rotation. The pie chart then reflects an upper extremity impairment rating for each score. After all six scores are given an upper extremity impairment rating, they are added together (Do not use the Combined Values Chart after adding the upper extremity range of motion impairments. These must be converted pursuant to Table 16-3 to express a whole person impairment rating. (Page 479)).

An example is set forth in the *Guides* as follows:

The valid range of motion scores obtained through physical examination reveal the following: Flexion 90 degrees, extension 20 degrees, abduction 100 degrees, adduction 30 degrees, internal rotation 50 degrees, external rotation 70 degrees.

Referring to Figure 16-40, 90 degrees of flexion equals 6 percent UEI and 20 degrees of extension equals 2 percent UEI. Figure 16-3 reveals abduction of 100 degrees equals 4 percent UEI and 30 degrees adduction equals 1 percent UEI. Figure 16-46 reveals 50 degrees internal rotation equals 2 percent UEI and 70 degrees external rotation equals 0 percent UEI (60 degrees and above is considered normal with no associated UEI). Adding the upper extremity ratings together results in a 15 percent UEI. Table 16-3 converts the 15 percent UEI to a 9 percent whole person impairment rating.
In addition to confirming the examining physician is properly utilizing the conversion charts and has also properly provided correct ratings for any loss of range of motion present, one can also utilize medical records and physical therapy records to assess the validity of an upper extremity impairment rating. As range of motion is inherently subjective, the impairment rating can necessarily be manipulated by an examinee through lack of motivation or suboptimal effort.

Many physicians treating the upper extremity injury will also record range of motion scores in their treatment notes. Further, the vast majority of physical therapy facilities will obtain repeated range of motion scores to demonstrate the effectiveness or ineffectiveness of physical therapy. One should always review the medical and physical therapy records to determine whether or not range of motion scores are present, and if present, these recorded measurements conform with or are similar to the measurements recorded by the physician who ultimately provided the impairment rating.

These medical and physical therapy records can be extremely valuable in identifying errors in range of motion testing. For example, if the medical and/or physical therapy records obtaining range of motion methods, either before or after the measurements used to derive an impairment rating differ significantly, this is a very good indicator that either the physician providing the impairment rating improperly performed the range of motion testing, or alternatively, that the injured worker provided submaximal effort, thereby inflating the impairment rating. If these types of records are identified, then the given impairment rating is easily impeached, either by cross-examination, presenting these records to your own IME physician or both.

Even the most seasoned evaluating physician would find it extremely difficult if not impossible to concede the impairment rating they derived was not an accurate representation of the true extent of impairment, and as such, should not properly be relied upon to support an award of benefits. This outcome becomes more and more certain if multiple range of motion scores are reflected in the medical/physical therapy records in closest proximity of time to the evaluation upon which the impairment rating was derived.

Further, if significantly increased range of motion scores are documented after the examination upon which the impairment rating was derived which reveal a marked increase in the range of motion, these too make it very difficult for the physician ascribing the impairment rating to maintain the rating accurately represents the extent of impairment.

Although simply perusing the pages of Chapter 16 may lead to the impression that application of its contents should best be left to a medical professional, most Chapter 16 impairment ratings are in fact not that difficult to derive, simply based upon the information already contained in the file. Further, assessing the validity of most Chapter 16 impairment ratings received simply requires a review of the various range of motion scores contained in the file; plugging these scores into the respective charts, deriving a regional impairment then converting the regional impairment into a whole person impairment, by taking out a small amount of time and making the above effort, you will likely be surprised at the number of erroneous ratings provided, which if gone unnoticed, result in an overpayment of indemnity benefits.
PART VII:  LOWER EXTREMITY IMPAIRMENTS

Unlike the upper extremity assessments explained above, the lower extremity assessments are usually derived by methods other than simply using the range of motion method. While the range of motion method is utilized to some extent in Chapter 17, other assessment methods are much more prevalent. An important component to understanding the validity of the impairment ratings expressed in Chapter 17 is becoming familiar with Table 17-2, the Guide to the Appropriate Combination of Evaluation Methods. Table 17-2 prohibits use of various methods in combination with each other.

When physician’s reports are received that contain multiple lower extremity impairment ratings, Table 17-2 should always be consulted to determine whether or not the Guides permit combining impairment ratings from the multiple stated methods. Methods of assessment in Chapter 17 include nine various anatomical assessments, three functional assessments and diagnosis based assessments (all of which are primarily derived from Table 17-33).

A comprehensive review of the multiple assessment methods contained in Chapter 17 can be extremely time consuming and beyond the scope of this presentation. However, there are several key assessment methods that seem to recur most often. These include diagnostic based assessments for specific fractures or deformities as well as ligamentous instability and various surgical procedures including joint replacements and meniscectomies. Also, it appears utilization of gait derangement impairment ratings are becoming more and more commonplace, as these ratings typically result in a large whole person impairment rating. Impairment ratings for arthritic conditions, especially in the knees, are also becoming more prevalent. Below is a summary of some key points that must be considered when determining the validity of impairment ratings for the most commonly received ratings.

Diagnostic based ratings are primarily contained in Table 17-33; confirming the validity of a rating per this section is relatively straightforward once the nature of the injury, surgical procedure, etc. has been specifically identified. Table 17-33 provides corresponding whole person as well as lower extremity rating. When reviewing a given rating, one must ensure the corresponding rating is actually the whole person impairment rating, not the lower extremity rating given in parenthesis beside of the whole person impairment rating. This is a common mistake that physicians will make and substantially increases the numerical rating, as it has not been converted to a whole person rating.

A practice pointer for verifying ratings given pursuant to Table 17-33 is to ensure the condition that is rated or the surgical procedure that is rated is actually supported by the medical records, including the operative report. It is important to document the exact nature of the injury or surgical procedure, as this will necessarily affect the given impairment rating. For example, a partial medial or lateral meniscectomy warrants only a 1 percent whole person rating, while a partial medial and lateral meniscectomy warrants a 4 percent rating. Likewise, an undisplaced patella fracture warrants only a 3 percent rating while one that remains displaced more than three millimeters warrants at least a 5 percent whole person impairment rating.
Determining the validity of a diagnostic based rating per Table 17-33 is often as simple as determining what surgery has been performed, finding that surgical procedure within the Table and documenting the rating given by the Guides (just make sure you document the whole person rating and not the regional/extremity rating or you will be paying too much).

Gait derangement impairment ratings are on the rise. A possible reason could be that the lowest whole person impairment rating for gait derangement, pursuant to Table 17-5, is 7 percent which is higher than the rating given for the majority of injuries/surgeries rated through the diagnostic method in Table 17-33 above. When a gait derangement impairment rating is received, it should definitely be scrutinized unless it is irrefutable the injury sustained requires dependence on assistive devices. Even then, the Guides direct "Whenever possible, the evaluator should use a more specific method." (Page 529). As such, gait derangement is arguably only a default method for assessment of an impairment due to an injury. Table 17-2 also directs that gait derangement should never in any circumstance be utilized in combination with any other impairment evaluation method for a given injury.

The Guides also admonish gait derangement does not apply to abnormalities based on subjective factors such as pain or sudden giving way for which the injured worker chooses to utilize an assistive device when walking. Pursuant to Table 17-5, impairment ratings can be given up to a 10 percent whole person impairment rating even in absence of dependence on an assistive device. However, simply utilizing a cane or crutch part time for distance walking, even if not usually used at the home or in the workplace, increases the impairment rating to 15 percent as does the use of a short leg brace. Routine use of assistive devices warrants a minimum 20 percent impairment rating.

Considering the relatively high whole person impairment ratings that can be obtained by use of the gait derangement method, it is of little surprise more and more gait derangement impairment ratings are being provided. However, as noted above, if a more specific method is available, that method should be utilized.

Another area in which impairment ratings are becoming more commonplace concerns arthritic changes. Section 17.2H (Page 544) provides the method for obtaining arthritis impairment ratings; a rating based upon arthritic changes must be determined utilizing roentgenogram’s (x-rays). The x-rays are utilized to measure arthritic changes in cartilage intervals or joint spaces (i.e. loss of preservation of cartilage interval or joint space). These losses are generally referred to as degenerative joint disease (DJD).

Arthritic changes can be combined with the majority of other Chapter 17 impairment ratings, and as such, can result in an increased impairment rating for a given condition. For example, if a worker sustains a knee injury resulting in a medial meniscal tear for which he/she undergoes a partial medial meniscectomy, Table 17-33 would provide only a 1 percent whole person impairment rating. However, if x-rays also establish the presence of arthritis in the knee, depending on severity, an additional 3 percent to 20 percent whole person impairment rating may be added to the 1 percent resulting from partial meniscectomy.

Only four methods are excluded from combination with arthritis. These are gait derangement, muscle atrophy, muscle strength and range of motion. In determining the validity of an impairment rating based on arthritis, several factors need to be considered.
First, as noted above, sufficient x-rays must be taken to appropriately measure the loss of cartilage interval or joint space. In absence of measurements obtained through x-rays, an impairment for arthritis is not in conformity with the Guides' requirements.

Second, you must keep in mind that the vast majority of arthritic conditions are the result of normal wear and tear through aging. If, for example, immediately following the occurrence of an injury, x-rays demonstrate significant arthritis, this arthritic condition was already present. The question then becomes whether or not the already present arthritis can be determined to be a pre-existing active condition versus a dormant condition brought into disabling reality for which, obviously, the latter would be compensable for purposes of Kentucky workers' compensation law.

If, following an injury, an impairment rating is received providing an arthritis rating, it is important to document whether or not the injured worker had pre-existing symptoms and/or treatment. If prior films are available, they are of utmost importance to document the degree of pre-existing arthritic changes present before the subject injury.

**CONCLUSION**

While it may be impossible for non-physicians to master the entirety of the Guides to the Evaluation of Permanent Impairment, professionals working within the workers' compensation system or other system which relies upon the Guides to establish impairment rating may nonetheless become proficient with the Guides in many key areas. By doing so, this will enable the practitioner to evaluate the legitimacy of most impairment ratings received and ensure workers' compensation benefits are appropriately paid based upon a correct whole person impairment rating.