

Misuse and Abuse

AMA Guides to the Evaluation of Permanent Impairment

by Christopher R. Brigham

The American Medical Association's *Guides to the Evaluation of Permanent Impairment*, Fifth Edition, are widely used in workers' compensation, Longshore and Harbor Workers Act, automobile casualty and personal injury cases to quantify permanent losses associated with injury or illness. Most impairment ratings are erroneously elevated and typically errors are undetected; as a result the costs of these claims are increased. A national study of 2,100 cases referred for impairment rating review found 80 percent of all ratings erroneous, with 89 percent of the erroneous ratings being higher than was appropriate. This study involved the critique of 1,445 cases and the assessment of impairment on the basis of file review of 655 cases. Of Fifth Edition whole person erroneous ratings (839 cases of 1,037 cases critiqued), the rating by the original rating physician averaged 15.5 percent whole person permanent impairment, and upon re-rating by physi-

cians expert in impairment rating the corrected rating averaged 5.6 percent whole person permanent impairment. Depending on type of case and jurisdiction, these errors typically reflect changes in the valuation of a case between several thousands and hundred of thousands of dollars per case. Impairment ratings must be based on objective data and assessed by skilled independent evaluators. All impairment ratings must be critically reviewed.

This article provides a review of the use of the *AMA Guides*, presents data regarding typical ratings and errors, discusses the causes for erroneous ratings, presents "red flags" for detecting erroneous ratings and provides specific effective strategies to manage impairment evaluations.

Use of the *AMA Guides*

The *AMA Guides to the Evaluation of Permanent Impairment*, Fifth Edition (Cocchiarella L, Andersson G, *AMA Guides to the Evaluation of Permanent Impairment*, Fifth Edition, AMA Press, 2001) is the most widely used basis for determining impairment. Impairment is defined on page 2 of the *Guides* as the "loss of, loss of use of, or derangement of any body part, system or function." The most recent edition is

the Fifth Edition published in 2001. The Fifth Edition states that "since this edition encompasses the most current criteria and procedures for impairment assessment, it is strongly recommended that physicians use this latest edition, the fifth edition, when rating impairment." The Fifth Edition of the *Guides* does have significant shortcomings; however, it is the current standard for rating impairment. The Sixth Edition is scheduled to be published in 2007.

The *Guides* define procedures for obtaining and analyzing clinical data, which are then applied to criteria to provide an impairment rating. The evaluation is performed by a physician once the patient is at maximal medical improvement. Most often impairment ratings of specific body parts are converted to a whole person permanent impairment rating; zero percent rating reflects normal functioning and 100 percent rating reflects death. A rating of 90 percent to 100 percent whole person permanent impairment reflects very severe organ or body system impairment or requires the individual to be fully dependent on others for self-care, approaching death. The correct whole person permanent impairment ratings average six percent whole person; it is uncommon to see accurate ratings beyond 30 percent whole person, with the notable exception of multiple or catastrophic injuries, such as a spinal cord or serious head injury.

The *Guides* are comprised of 18 chapters; the first two chapters explain the use of the *Guides*, chapters 3 through 17 deal with specific organ systems, and chapter 18 deals with pain. Chapter 15—Spine, Chapter 16—The Upper Extremities, and Chapter 17—The Lower Extremities are the chapters that are most commonly used.

They are used in most jurisdictions—however, not all states make use of the current edition. The statutes may or may not specify which edition of the *Guides* to use and how the *Guides* are to be utilized. The most widely used edition is the Fifth Edition. Some states do not make use of the *Guides*; rather they utilize state specific guidelines, *i.e.*, Florida, Illinois, Minnesota, New York, North Carolina, Utah and Wisconsin. Other states may use their own guidelines for specific problems and use the *Guides* for other problems. Many states use a statutory schedule for amputations,



Christopher R. Brigham, MD, MS, FAADEP, FACOEM, CIME is President of Brigham and Associates, Inc. in Portland, Maine, and San Diego. Dr. Brigham is Editor of the *AMA Guides Newsletter* and the *Guides Casebook*. The author expresses his appreciation to Cathy Brigham, RN, Mindy Brigham, Francis Brewer, DC, Leslie Dilbeck, Carol Laboissonniere, Kathy Head, MD, MPH, Michael Hughes, MD, MPH, Dean Redington, DC, Craig Uejo, MD, MPH, Jenny Walker, and Phil Walker, JD for their assistance with this article.

hearing loss, visual loss, hernias and disfigurement. Some states may use a statutory schedule and use the *Guides* for nonscheduled injuries, and others do not specify the use of any specific guidelines.

The *Guides* are also used to rate impairment beyond state workers' compensation laws. Federal workers' compensation laws cover all federal employees (including postal workers) and citizens of Washington, D.C. Federal systems include Federal Employees' Compensation Act (FECA), Federal Employer's Liability Act (FELA), Jones Act, and Longshore and Harbor Workers' Compensation Act (LHWCA). Under the Federal Employees' Compensation Act (FECA 5 U.S.C. 8107), benefit is given for permanent impairment to specific body parts including extremities, hearing, vision and loss of specific organs (breast, kidney, larynx, lung, penis, testicle, tongue, ovary and uterus/cervix and vulva/vagina). Awards are based on a formula of $66^{2/3}$ percent of monthly wages multiplied by a specified number of weeks' compensation for a specific body part; for the upper extremity this includes arm, hand and individual digits. Under the Longshore and Harbor Workers' Compensation Act, ratings are performed for "scheduled injuries" (e.g., a scheduled member of the body defined by section 8(c)(1)-(20) of the LHWCA). This includes upper extremity injuries (with the exception of the shoulder), lower extremity injuries and hearing loss.

The *Guides* are often used to quantify the extent of injuries resulting from an automobile casualty or personal injury. Insurers may use an impairment rating as one of the factors in determining the reserving or settlement value of a claim. Attorneys may use this to quantify the impact of an injury. With no fault insurance, some states may restrict suits to cases where a specific defined threshold has been met; in these states the *Guides* play an important role. Florida, for example, has a no fault system for automobile insurance. Where personal injury protection (PIP) coverage exists, an insured's claims for pain and suffering are subject to threshold limitations as a basis for recovery outside the automobile no fault system. Florida Statutes §627.737(2) (1995) state:

- (2) In any action of tort brought against the owner, registrant, operator, or

occupant of a motor vehicle with respect to which security has been provided as required by ss. 627.730-627.7405, or against any person or organization legally responsible for her or his acts or omissions, a plaintiff may recover damages in tort for pain, suffering, mental anguish, and inconvenience because of bodily injury, sickness, or disease arising out of the ownership, maintenance, operation, or use of such motor vehicle only in the event that the injury or disease consists in whole or in part of:

- (a) Significant and permanent loss of an important bodily function.
- (b) Permanent injury within a reasonable degree of medical probability, other than scarring or disfigurement.
- (c) Significant and permanent scarring or disfigurement.
- (d) Death.

The *Guides* are commonly used in Florida automobile casualty cases to define "significant and permanent loss of an important bodily function." Therefore, ratings are subject to challenge. *Guides* ratings are an important aspect of many bodily injury claims.

Analysis of Impairment Ratings

The *Guides* state on page 17 that "if the clinical findings are fully described, any knowledgeable observer may check the findings with the *Guides* criteria." Brigham and Associates, Inc., as one such observer, reviews impairment evaluations nationally; the goal is to determine if ratings are accurate and the probable impairment based on the available clinical information. Cases are referred by attorneys (defense and plaintiff), insurers, other claims administrators, fact finders and physicians. Many clients refer all ratings for review, whereas other clients will select ratings that they believe are questionable. It is probable that defense attorneys are more likely to refer rating reports they suspect higher than appropriate and plaintiff attorneys are more likely to refer those they suspect are lower than appropriate. It is recognized that this is not a random sample of all impairment ratings performed in the United States. It is

not possible to identify which clients send all cases versus selected cases. For those clients who state they send all reports for review, however, it appears the results are similar. Within these limitations, review of this data provides excellent insight to some of the challenges seen with *Guides* rating.

In the review process, if the original rating is judged to be incorrect by the expert reviewer and if there is adequate clinical information to rate impairment, then the case is re-rated using the *Guides* criteria and the data provided. Each reviewing expert is a Certified Independent Medical Examiner by the American Board of Independent Medical Examiners, a Certified Impairment Rater, board-certified in occupational medicine by the American Board of Preventive Medicine, and has several years experience in clinical medicine and ratings. Therefore, typically the expert reviewer has considerably greater knowledge and skill in the use of the *Guides* than does the original rater. Each critique results in recording key data and preparing a written report. Although this is not a random sample, this large unique national database illustrates challenges encountered with ratings.

As of December 15, 2005, 2,100 cases were reviewed and entered into the database; 1,445 (69 percent) of these were critiques of ratings that had been performed by another physician and 655 (31 percent) were independent ratings performed on the basis of medical records. The cases included 1,103 cases reviewed in 2005, 602 in 2004 and 395 prior to 2004. Most of the cases involved the use of the Fifth Edition, this reflecting 1,670 (80 percent) of all ratings reviewed or performed and 92 percent of the cases critiqued. The database was national and included workers' compensation, Longshore and Harbor Workers Act, automobile casualty and personal injury cases. Cases from 44 different states were reviewed; 45 percent of the cases were from California (the *Guides* were adopted for use in workers' compensation cases in 2005 as a result of workers' compensation reform and enactment of California Senate Bill 899), 12 percent from Hawaii, 9 percent from Florida, and 37 percent from other states. Depending on type of case and jurisdiction, the final ratings were expressed as a whole person or regional impairment.

The vast majority (98 percent of cases) were musculoskeletal impairment assessments, the most common being spine (36 percent), followed by upper extremity (31 percent), lower extremity (21 percent), and multiple musculoskeletal (12 percent) conditions. The most common region rated was the lumbar spine (17 percent of all cases). The majority of the patients were male (62 percent). The *Guides* require impairment evaluations to be performed by a licensed physician; 86 percent of the original ratings were performed by allopathic physicians (M.D.), 10 percent by chiropractic physicians (D.C.), 3 percent by osteopathic physicians (D.O.) and 1 percent by other professionals.

Of the Fifth Edition cases critiqued 80 percent were found to be erroneous and of the Fourth Edition cases critiqued 79 percent were erroneous. Of the 567 California Fifth Edition cases critiqued in 2005, 78 percent were erroneous, and for non-California cases 84 percent were erroneous. Therefore, the error rate seen in California with the introduction of the *Guides* is similar to that seen nationally. However, 100 percent of the ratings reviewed in January–February 2005 were erroneous. This initially improved with error rates of 84 percent for March–April, 75 percent for May–June, and 73 percent for July–August,

but then worsened with error rates increasing to 84 percent for September–October and to 87 percent for November–December (illustrated in Figure 1). This change in the error rate could be explained by differing selection criteria for referral and by certain physicians becoming more knowledgeable about the *Guides* and attempting to modify approaches consistent with their personal biases. The error rate for the review of 132 Florida cases was a staggering 94 percent. The vast majority of Florida ratings were performed by treating physicians typically prior to the probable date of maximum medical improvement. Plaintiff-oriented physicians in Florida may be inclined to report permanent impairment; if no threshold injury is found, tortfeasors with personal injury protection coverage are immune from liability for most tort claims. §627.737(1), Fla. Stat. (1995).

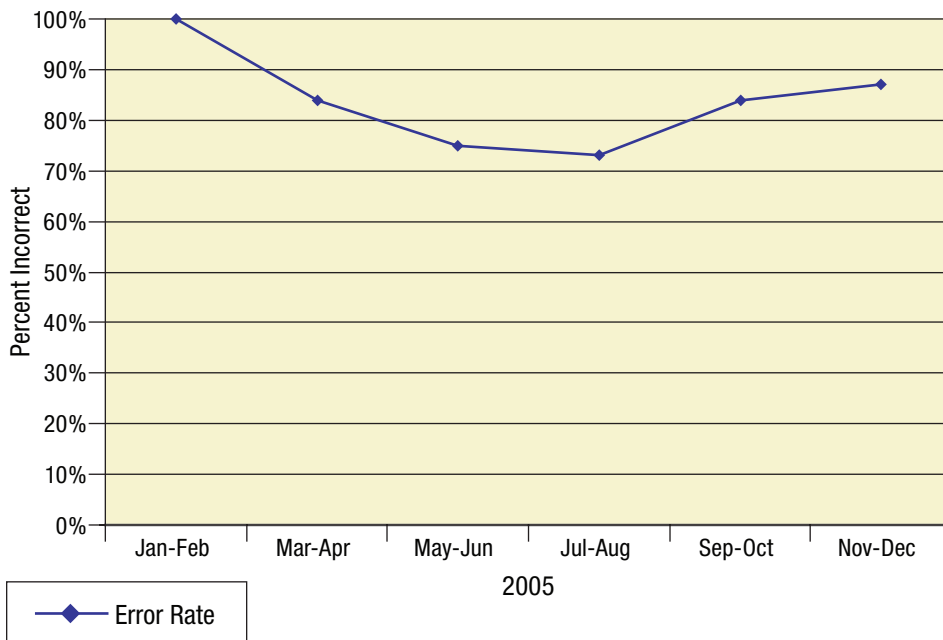
Of the 1,229 allopathic (M.D.) reports reviewed, 78 percent were determined to be erroneous, of the 47 osteopathic (D.O.) reports the error rate was 85 percent, and of the 141 chiropractic (D.C.) reports reviewed the error rate was 88 percent. Errors were more common if the rating was by the treating physician. The error rate was higher as the value of the original rating increased; for 1,037 original whole person Fifth Edition ratings critiqued, for ratings under five

percent whole person the error rate was 57 percent, between five percent and 15 percent whole person the error rate increased to 86 percent, and between 16 percent and 25 percent whole person the error rate was 94 percent, and over 25 percent the error rate was 91 percent. Error rates by specific criteria are illustrated in Figure 2. Error rates for lower extremity ratings was less (72 percent incorrect), than for spine (81 percent incorrect) and upper extremity (80 percent incorrect).

Each physician's report was rated for quality on a scale of 4—Excellent, 3—Good, 2—Fair, 1—Poor and 0—Unacceptable. A rating of “Good” reflects adherence to standards defined in the *Guides* and “Fair” reflects adequate information to assess the case, although deficits were present. The mean scores for all physicians were: history 2.2 (Fair), examination 2.1 (Fair), clinical analysis 2.1 (Fair), application of criteria 1.5 (between Poor and Fair). Comparison to criteria was consistently the weaker aspect of most reports. Review of the data suggests that rating physicians typically demonstrate consistently poor performance with rating, specific physicians would consistently overrate or underrate.

Of all the erroneous reports, 89 percent had ratings higher than was appropriate based on the clinical data provided, for Fifth Edition ratings, 90 percent had ratings higher than appeared appropriate. The corrected value for a permanent impairment rating averaged less than half of the original rating. For all Fifth Edition whole person ratings the mean original rating was 14.2 percent whole person permanent impairment, while the mean expert rating was 6.2 percent whole person permanent impairment. Examining the subset of the 80 percent of Fifth Edition whole person ratings that were erroneous, the rating by the original physician averaged 15.5 percent (standard deviation of 9.4 percent) whole person permanent impairment and upon re-rating the corrected rating averaged 5.6 percent (standard deviation of 14.3 percent) whole person permanent impairment, with a correlation coefficient of 0.54. The relationship between the original and expert rating is illustrated in Figure 3. For Fourth Edition whole person ratings, the mean original rating was slightly greater at 18.4 percent whole person permanent

Figure 1. California Impairment Rating Error Rate, Bimonthly (2005)



Workers' Compensation Committee

impairment and the expert rating was also higher at 9.0 percent whole person permanent impairment. Of all Fifth Edition erroneous reports where ratable permanent impairment was originally identified, upon expert re-rating 37 percent were found to have no impairment; in Florida, 76 percent previously rated as having impairment were found to have no impairment.

Examining the 839 Fifth Edition whole person erroneous ratings, only seven percent of the cases (61) were under-rated (*i.e.*, based on the clinical information provided the rating should have been higher.) With these cases the mean original rating was 9.9 percent whole person, although it should have been 16.2 percent whole person. Thirteen of the erroneous ratings had the same numeric value when rated, but the rating process used by the physician was incorrect and the similar results were coincidental.

Twenty-seven percent of all erroneous ratings incorrectly referenced the name of the AMA Guides (*e.g.*, referencing it as the "AMA Guidelines"). This compares to a misnaming rate of 13 percent among ratings that were correct.

Of 850 Fifth Edition cases that were found either through critique or review of records to have impairment, 90 percent of the cases had impairment less than 22 percent whole person. Less than five percent of all ratable cases have impairment greater than 30 percent whole person permanent impairment.

Findings for specific regions are presented in Table 1, which reflects Fifth Edition whole person critiques (including operative interventions). Selected findings by body region are illustrated in Figure 4. For all regions, the original ratings were rated higher than what appears appropriate based on the medical information provided. The error rate was consistent among regions with approximately 80 percent error rate, with an exception for multiple regions of the spine with the error rate being 90 percent. The actual mean expert rating of all regions, with the exception of thoracic spine, was between three percent and eight percent whole person permanent impairment, with an overall mean of six percent whole person permanent impairment. Many of the thoracic cases involved corticospinal tract involvement and were therefore associated with greater impair-

ment. Table 2 presents data on Fifth Edition whole person critiques for specific criteria. It is noted that cases are only included where applicable data is provided. The data

suggests that higher ratings are seen for older, male patients and for older injuries.

In summary, the analysis of the 2,100 reviews reveals that the vast majority of

Figure 2. Impairment Rating Error Rate (2005), by Criteria

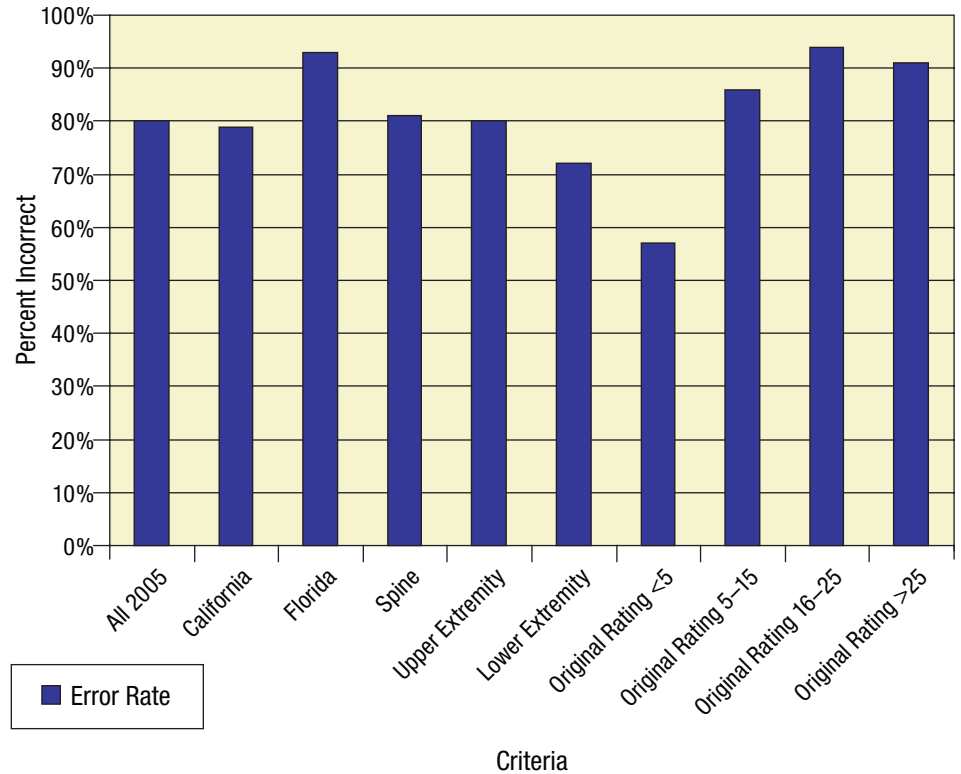
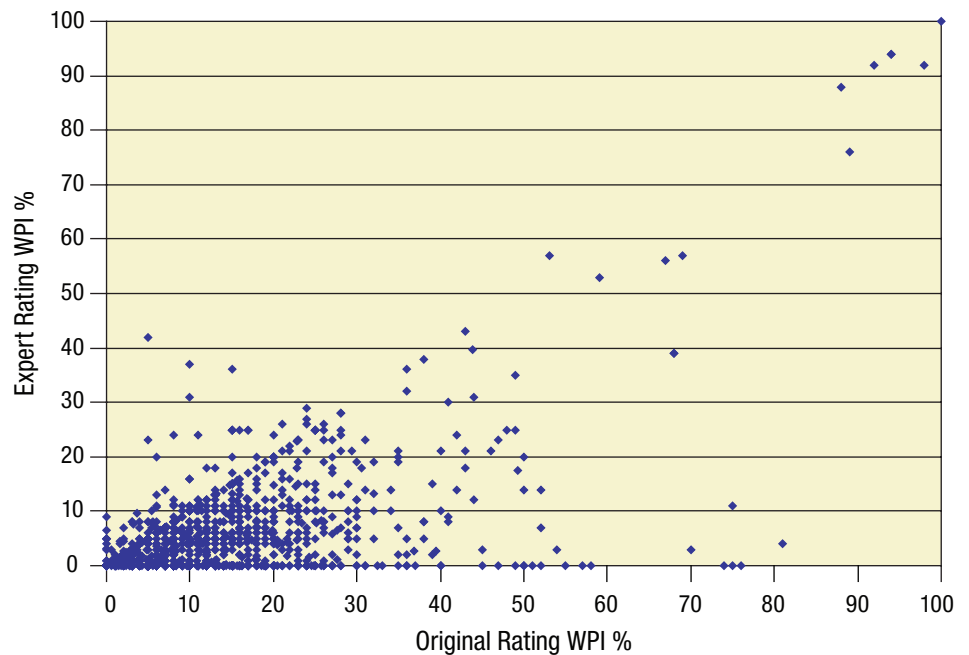


Figure 3. Relationship Original Rating to Expert Rating



Workers' Compensation Committee

AMA *Guides* ratings are erroneous and substantially higher than appropriate.

Causes of Erroneous Ratings

The goal of the *Guides* is to provide consistent ratings, thereby reducing conflict. The *Guides* state that “Two physicians, following the methods of the *Guides* to evaluate the same patient, should report similar

results and reach similar conclusions.” (AMA *Guides*, p. 17) Yet, review of this data reveals that this is often not achieved.

There are many cases of erroneous ratings, including bias, differences in clinical and causation assessment, and misapplication of *Guides* criteria, either through lack of knowledge and skills in rating impairment or intent. The nature of the errors is

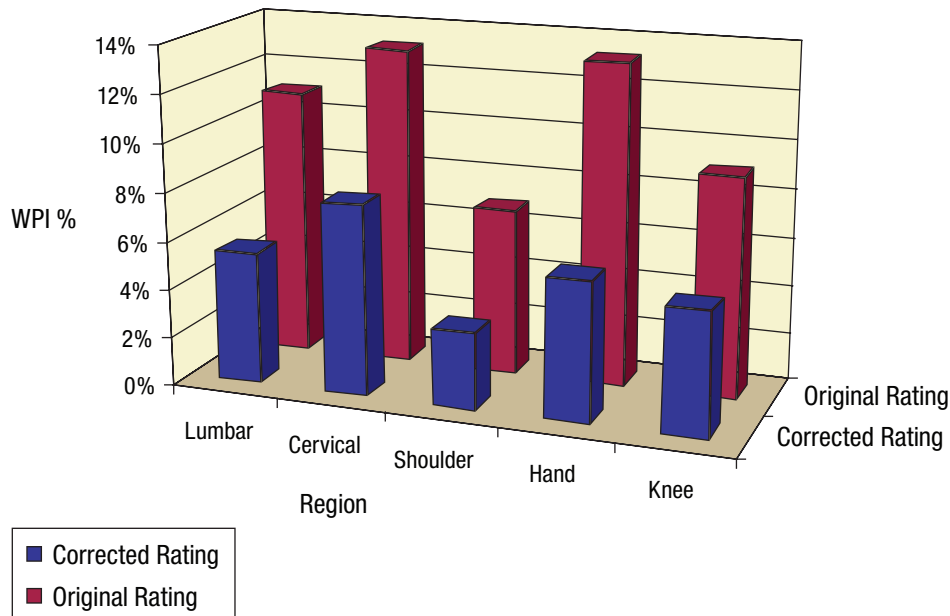
such that it is more likely that an erroneous rating will be higher, rather than lower. Most medical schools and residency training programs do not include instruction on the assessment of impairment, disability or causation. Therefore, many physicians lack an adequate ability to assess these and other medicolegal issues.

The principles of assessing impairment are provided in Chapters 1 and 2, however, it appears that many physicians have not become familiar with the rules presented in these chapters, and rather focus their attention on chapters specific to the region they are rating. Chapter 2, Practical Application of the *Guides*, is a particularly important chapter, not only for rating physicians, but also for attorneys. This chapter specifies rules and standards for the impairment evaluation. It also provides superb content for an effective cross-examination of a physician who has performed an erroneous rating. Section 2.1 defines impairment evaluations, Section 2.2 discusses who performs impairment evaluations, Section 2.3 identifies the roles and responsibilities of the examiner, Section 2.4 explains when ratings are performed, Section 2.5 provides critical rules for the evaluation, and Section 2.6 outlines standards for reports. Failure to follow the defined procedures will result in an erroneous report. Section 2.6 Preparing Reports provides detailed standards for reports. Failure to follow these standards will result in a questionable report and rating.

Table 1. Fifth Edition Whole Person Impairment Rating Critiques, by Region

Region	Mean Original Rating (whole person impairment)	Mean Expert (Corrected) Rating (whole person impairment)	Number of Whole Person Cases Critiqued
Spine—Lumbar	11.1%	5.5%	173
Spine—Thoracic	21.7%	17.9%	15
Spine—Cervical	13.2%	7.9%	103
Spine—Multiple	16.6%	5.1%	166
Upper Extremity—Shoulder	6.9%	3.2%	51
Upper Extremity—Elbow	9.6%	3.8%	23
Upper Extremity—Wrist	14.3%	4.9%	43
Upper Extremity—Hand	13.3%	5.8%	43
Upper Extremity—Neurological	11.6%	6.3%	24
Lower Extremity—Knee	9.1%	5.1%	90
Lower Extremity—Ankle/Foot	10.5%	5.8%	35

Figure 4. Comparison of Whole Person Impairment Ratings: Original vs. Corrected



Bias

The rating physician must be “independent and unbiased.” This can be challenging for any evaluator, but is more likely to be problematic for the treating physician since there is an inherent patient advocacy role. R.J. Barth and C.R. Brigham, *Who Is in the Better Position to Evaluate, the Treating Physician or an Independent Examiner?*, *Guides Newsletter*, November–December 2005. The *Guides* state on page 18 that “[a]n impairment evaluation is a medical evaluation performed by a physician, using a standard method as outlined in the *Guides* to determine permanent impairment associated with a medical condition. . . . The physician’s role in performing an impairment evaluation is to provide an independent, unbiased assessment of the individual’s medical condition, including

its effect on function, and identify abilities and limitations to performing activities of daily living as listed in Table 1-2.”

A skilled independent medical evaluator typically spends more time with a patient than a treating physician at a single visit, and therefore may obtain clinical information not known to the treating physician. It is probable that the treating physician will not consider alternative or new diagnoses at the time of rating. It is possible that the treating physician will causally relate problems to an injury if this appears advantageous to the patient and/or the physician. For example, if a treating physician receives referrals from plaintiff counsel it is not unexpected that this physician will causally relate problems to the defined injury and may inflate a rating. A treating physician caring for a patient in a managed care situation may be more likely to relate a problem to an injury if this provides an additional source of revenue. The treatment role may influence when the physician defines maximal medical improvement (MMI). For example, at discharge from care, the physician may be inclined to define the patient as ratable, even though it is probable that the patient is not yet at MMI. A treating physician may want to increase a rating, particularly if the impairment number does not appear to reflect a level of perceived disability.

A corollary to influences by physician on rating impairment is the assessment of disability. The assessment of disability is more complex than that of the rating of impairment, since the disability assessment process is less structured. Physician recommendations limiting activity and work after injury are highly variable, often reflecting their own pain attitudes and beliefs. J.R. Rainville, *et al.*, *The Physician as Disability Advisor for Patient with Musculoskeletal Complaints*, *Spine* 2005;30(22):2579–84. One study revealed that 87 percent of “sick-listing” certifications were not medically justified. L. Englund and K. Svardsudd, *Sick-listing Habits among General Practitioners in a Swedish Country*, *Scan J Prim Health Care* 2000;18:81–6. Another study has revealed that almost half of physicians surveyed were willing to exaggerate clinical data to help a patient obtain disability certification. W. Zinn and N. Furutani, *Physician Perspective on the Ethical Aspects of Disabil-*

ity Determination, *J Gen Intern Med* 1996; 11:525–32. Patients who are having an impairment evaluation as a result of a work-related or personal injury reflect a subset of all patients with injuries. Often these patients have sought extensive medical care. Patients who seek extensive medical care for musculoskeletal complaints have beliefs about pain and function that are more restrictive and report higher levels of disability. M. Szpalski, *et al.*, *Health Care Utilization for Low Back Pain in Belgium. Influence of Socio-cultural Factors and Health Belief*, *Spine* 1995;20:431–42. Therefore, these factors may impact what the examinee portrays at an evaluation and the behavior of the physician in assessing impairment.

Errors in Clinical and Causation Analysis

There are many potential rating errors resulting from inaccurate clinical or causation analysis. These include inappropriate diagnosis, rating prior to being at maximal medical improvement, using unreliable examination findings, not considering what is normal for the individual, and inaccurate causation assessment. Exaggeration of complaints is common, although frank malingering is probably rare. L.H.

Ensalada, *The Importance of Illness Behavior in Disability Management*, *Occup Med*, 2000;15:739–54. J. Rainville, *et al.*, *The Effect of Compensation Involvement on the Reporting of Pain and Disability by Patients Referred for Rehabilitation of Chronic Low Back Pain*, *Spine* 1997;22:2016–24.

Incorrect clinical assessment can result in the rating of impairment for a condition that is not present or unrelated to the alleged injury. For example, the physician may label a patient as having “complex regional pain syndrome” (CRPS) and rate for this disorder, whereas the more accurate diagnosis is “somatization.” In the *Guides*, certain diagnoses are not typically associated with ratable impairment, *i.e.*, tendonitis or psychiatric illness. A physician attempting to inflate a rating may choose to provide another diagnostic label that would result in ratable impairment.

Assessing impairment prematurely will often result in an inflated impairment rating. The rating of permanent impairment cannot occur until the patient has achieved maximal medical improvement (MMI). MMI is defined on page 601 as “a condition or state that is well stabilized and unlikely to change substantially in the next year, with

Table 2. Fifth Edition Whole Person Impairment Rating Critiques, by Specific Groups

Group	Mean Original Rating (whole person impairment)	Mean Expert (Corrected) Rating (whole person impairment)	Number of Whole Person Cases Critiqued
Fifth Edition (all)	14.3%	6.2%	1037
Fifth Edition (erroneous)	15.5%	5.6%	831
Allopathic (M.D.) Rater	13.9%	6.3%	850
Chiropractic (D.C.) Rater	15.1%	5.4%	138
California Cases	13.1%	5.1%	526
Florida Cases	12.2%	2.3%	126
Injury Date Prior to 2004	16.4%	7.9%	545
Injury Date 2004 or later	11.9%	4.3%	472
Male	14.7%	6.5%	455
Female	13.5%	5.8%	370
Age under 40 years	12.9%	4.6%	297
Age 40 and over	15.0%	7.0%	483
Male, 40 and over, with injury date prior to 2004	17.7%	8.9%	119
Female, under 40, with injury date 2004 or later	9.7%	3.5%	43

or without medical treatment.” Following an injury, a patient will typically improve over time. Improved range of motion and neurological function and resolution of ratable findings will result in a lower impairment rating. MMI is often not achieved until a minimum of six months to one year post-injury. Cases that often require a longer time frame for resolution include carpal tunnel syndrome with ongoing neurological deficits, hand injuries and head injuries.

An erroneous rating will occur if the rating is based on clinical findings that are erroneous. Findings must be reproducible if they are to serve as a basis for impairment rating. The *Guides* state in Section 2.5d on page 20:

Two measurements made by the same examiner using the *Guides* that involve an individual or an individual's function would be considered consistent if they fall within 10 percent of each other. Measurements should be consistent between two trained examiners or by one observer on two separate occasions, assuming the individual's condition is stable.

Many clinical findings are not totally objective, *i.e.*, independent of the examinee. For example, with range of motion impairment rating, the rating is based on findings of active motion—what the individual demonstrates. An individual may display less range of motion than actual capability. Neurological findings, such as reports of diminished sensation, are dependent on self-reporting and an individual may demonstrate less strength than true capability. In that an individual can demonstrate less capability than they are truly capable of, while being unable to demonstrate greater capability than this limit, inconsistent examination findings will nearly always result in greater impairment. Examiners vary in their clinical examination skills; therefore, there may be a lack of reliability in demonstrating clinical findings. Varying interpretations of electrodiagnostic and imaging studies may also alter the rating.

The musculoskeletal chapters (Chapters 15 to 17) define standards for consistency. For example, in Chapter 15, The Spine, there is a lengthy discussion of process of obtaining spinal range-of-motion measurements using an inclinometer. Section 15.8a (General ROM Method Measurement

Principles) on page 399 provides emphasis with italics.

Pain, fear of injury, disuse, or neuromuscular inhibition may limit mobility by diminishing the individual's effort, leading to inaccurately low and inconsistent measurements. *The physician should seek consistency when testing active motion, strength, and sensation. Tests with inconsistent results should be repeated. Results that remain inconsistent should be disregarded. When the physiologic measurements fail to match known pathology,*

The expert reviewer has considerably greater knowledge and skill in the use of the *Guides* than does the original rater.

they should be repeated and, if still inconsistent, disallowed until documented evidence is provided for the abnormalities noted on the physical examination. . . . The measurements and accompanying impairment estimates may then be disallowed, in part or in their entirety. There are multiple potential sources of error in a quantitative physical examination. The greatest source of error that occurs is due to test administrator inexperience or lack of knowledge”

Using the spine as an example, there are other findings that may not be reliable, including “spasm,” “guarding,” “non-verifiable radicular complaints” and neurological findings. It may be advantageous for physicians wanting to demonstrate the need for ongoing treatment to report findings that may not be observed by others. In reviewing a report, it is imperative to determine whether the examination findings were reliable. This includes assessing whether the physician has performed the examination to determine the presence of consistent findings and comparing examination findings, since the patient has been at maximal medical improvement to observations of other health care providers; other sources of data may include physician records, physical therapy records, and surveillance.

Another common error is not consider-

ing what is normal for the individual. The Fifth Edition discusses in Section 1.2a (Impairment) the determination of normal. The *Guides* state on page 2 that “when evaluating an individual, a physician has two options: consider the individual's health preinjury or preillness state or the condition of the unaffected side as “normal” for the individual if this is known, or compare that individual to a normal value defined by population averages of healthy people. The *Guides* uses both approaches.” Section 16.4c (Method for Motion Impairment Calculation) states on page 453 that “The measurements reported in the impairment tables and pie charts reflect the accepted average range(s) of motion for each joint. However, certain people can have either lesser or greater joint flexibility than average. It is therefore most important to always compare measurements of the relevant joint(s) in both extremities. If a contralateral “normal” joint has a less than average mobility, the impairment value(s) corresponding to the uninvolved joint can serve as a baseline and are subtracted from the calculated impairment for the involved joint. The rationale for this decision should be explained in the report.” In this case the opposite extremity does serve as “normal” for this individual, therefore losses should be determined in relationship to this normal. Extremity evaluations should always include examination of both sides.

In assessing impairment it is necessary to distinguish what impairment is related to the alleged injury as opposed to impairment that may be due to other injury, degenerative disease, or illness. The premise of causation is that a given cause (A) and a given effect (B) are associated within a reasonable degree of medical probability. If the practitioner promotes the premise that, “within a reasonable degree of medical probability (A) and (B) are causally related,” all three of the following separate notions are assumed to be correct (medically probable):

1. (A) The cause is medically probable—(A) is more likely than not the cause and/or aggravator of the problem.
2. (B) The effect is medically probable—(B) is more likely than not the correct diagnosis or condition.
3. (A) and (B) are related in a medically probable manner. If either (A) or (B) or both are considered to be possible, but not probable, the causal association can-

not be upheld as being medically probable. Further, no number of possible causes can be taken together and viewed as a probable cause.

Once it has been established that both (A) and (B) are probable, then there must also be a probable relationship established between the two before a final positive causality conclusion can be promulgated. A conclusion that a cause did contribute to an effect or impairment must rely on the documentation of circumstances that were present and verification that the type and magnitude of the factors were sufficient and bore the necessary temporal relationship to the condition. Many ratings of impairment lack this critical analysis.

Causation analysis is the critical first step to apportionment analysis. Impairment may be related to multiple causes. Section 2.5h (Changes in Impairment from Prior Ratings) on page 21 provides a discussion of the *Guides* approach to apportionment. The *Guides* state:

[I]f a prior impairment evaluation was not performed, but sufficient historical information is available to currently estimate the prior impairment, the assessment would be performed based on the most recent *Guides* criteria. For example, in apportioning a spine impairment, first the current spine impairment rating is calculated, and then an impairment rating from any preexisting spine problem is calculated. The value for the preexisting impairment rating can be subtracted from the present impairment rating to account for the effects of the intervening injury or disease.

Different jurisdictions may approach apportionment in different ways. For example, in California workers' compensation injuries, the examining physician must determine the percentage allocation for each component of an impairment rating. P. Walker, *Apportionment and California Workers' Compensation Reform*, *Guides* Newsletter, January–February 2005; 51:4. A patient being rated in California for residuals after a carpal tunnel release may have ratable impairment. However, after apportionment analysis, it may be found that little, if any, of the impairment is work-related, but rather is due to risk factors, such as gender, age and weight. N. Becker, *et al.*, *An Evaluation of Gender, Obesity,*

Age and Diabetes Mellitus as Risk Factors for Carpal Tunnel Syndrome Clinical Neurophysiology, 2002 Sept 113 (9): 1429–34. Another example would be apportioning knee arthritis in an older worker. C.R. Brigham, *et al.*, *Knee Osteoarthritis*, *Guides* Newsletter, March–April 2005.

In reviewing a case it is imperative to assure that clinical and causation assessments were accurate, that the rating was performed when at maximal medical improvement, that examination findings were consistent, and that what was normal for the individual was determined. An unreliable examination will result in an erroneous rating, and nearly always this erroneous rating will be higher than is appropriate.

Errors in Rating Process

The *Guides* criteria must be applied appropriately. As Section 2.5b (Combining Impairment Ratings) explains: “[b]egin with an estimate of the individual’s most significant (primary) impairment and evaluate other impairments in relation to it. Related but separate conditions are rated separately and impairment ratings are combined unless criteria for the second impairments are included in the primary impairment.” It is important to assure that the impairment is adequately rated without duplicative rating, *i.e.*, “double dipping.”

Spinal impairment ratings are often erroneous. Common errors include basing the rating on unreliable data, using the wrong method, misapplying a method, and rating for non-existent corticospinal tract damage. Chapter 15, *The Spine*, explains there are two methods, the Diagnosis-Related Estimates (DRE) Method and the Range-of-Motion (ROM) Method, and three spinal regions, cervical, thoracic and lumbar. The Fifth Edition states in Section 15.2, (Determining the Appropriate Method for Assessment) on page 379 that “[t]he DRE method is the *principal methodology* used to evaluate an individual who has had a distinct injury” (emphasis supplied). Typically, the ROM Method will result in a higher rating than the DRE Method, with the notable exception of cervical spine fusions. (With cervical fusions, a single-level fusion is rated using the DRE Method and typically this results in a higher rating than with a multiple-level fusion that is rated using the ROM Method.) A common inappropriate excuse

for this is multiple level degenerative disease, a finding associated with aging and genetics. Section 15.2, (Determining the Appropriate Method for Assessment (pp. 379–81)) stipulates specific situations when the ROM method is used. It is used if there is radiculopathy at multiple levels, although it is not used merely on the basis of degenerative changes. The *Guides* explains on page 383:

The DRE method recommends that physicians document physiologic and structural impairments relating to injuries or diseases other than common developmental findings, such as (1) spondylolysis, found normally in 7 percent of adults; (2) spondylolisthesis, found in 3 percent of adults; (3) herniated disk without radiculopathy, found in approximately 30 percent of individuals by age 40 years; and (4) aging changes, present in 40 percent of adults after age 35 years and in almost all individuals after age 50. As previously noted, the presence of these abnormalities on imaging studies does not necessarily mean the individual has an impairment due to an injury.

Therefore, first determine if the appropriate method was applied. Once the appropriate method is selected, it is important to determine the correct rating based on reliable examination findings. The *Guides* provide detailed standards for the physical examination in Section 15.1 (Principles of Assessment (374–78)) and for assessing motion in Section 15.8 (Range-of-Motion Method (398–403)); this is also excellent content for cross-examination. If the Diagnosis-Related Estimates (DRE) Method is used, the physician must select one of five categories based on specific, reliable findings and then within each category choose an appropriate numeric rating within a three percent range. A common error is to assign a patient to the wrong category. With the Range-of-Motion Method, a rating is based on the combination of impairments assigned to specific disorders, range of motion assessed by an inclinometer, and neurological deficit. Each of these components is fraught with potential error.

Upper extremity joint disorders and neurological problems, such as carpal tunnel syndrome, are rated using Chapter 16, *The Upper Extremities*. Common errors include: failing to perform an appropriate assessment as explained in Section 16.1

(Principles of Assessment (434–41)) not using the opposite uninjured extremity as normal for that individual, erroneous sensory impairment assessment for carpal tunnel syndrome, rating for non-verifiable complex regional pain syndrome, rating for tendinitis, and inappropriately including grip strength in the rating. The *Guides* state in Section 16.8 (Strength Evaluation) on page 508 that “[d]ecreased strength cannot be rated in the presence of decreased motion, painful conditions, deformities, or absence of parts (e.g., thumb amputation) that prevent effective application of maximal force in the region being evaluated.”

The most common problem associated with the use of Chapter 17, The Lower Extremities, is combining multiple duplicative impairments. There are 13 approaches to assessing lower extremity impairment, and as noted on page 527, “[t]ypically, one method will adequately characterize the impairment and its impact on the ability to perform ADL (activities of daily living).” Other common problems are inappropriate rating for gait derangement or muscle strength loss, and rating for arthritis that is associated with aging rather than the injury.

Chapter 18, Pain, provides information on the evaluation and rating of pain. Pain may be rated qualitatively and in certain

unusual circumstances incremental impairment of up to three percent whole person permanent impairment may be given. Any rating for pain should be reviewed to determine if it is appropriate. There is no ratable impairment for controversial or ambiguous disorders such as myofascial pain syndrome, fibromyalgia, and “disputed neurogenic” thoracic outlet syndrome.

Multiple impairments are typically combined, rather than added. Adding values that should be combined will typically result in an over-rating impairment if the two numbers being combined are greater than 7 and 7.

Increasingly physicians are using software programs to assist in rating software. Although these can be useful resources, they can result in error if there is over reliance by the physician on the software for the impairment evaluation as compared to a thorough understanding of the *Guides*. If erroneous data is entered or incorrect criteria are selected, than erroneous rating results. If the software contains an error, the report it generates will be incorrect.

Strategies to Assure Accurate Ratings

There are several strategies to assure accurate ratings, and to minimize misuse and

abuse of the *Guides*. These include obtaining an accurate, unbiased rating; evaluating impairment ratings; managing erroneous ratings; and discrediting erroneous ratings. The first step is recognizing the high likelihood of error and becoming knowledgeable about the *Guides*.

Impairment evaluations should be performed by a board-certified physician in an appropriate medical or surgical specialty (<http://www.abms.org/>), experienced in the assessment of injuries and the use of the *AMA Guides to the Evaluation of Permanent Impairment*, Fifth Edition, who has demonstrated competency in the performance of independent medical examinations, either being a Certified Independent Medical Examiner (American Board of Independent Medical Examiners, <http://www.abime.org/>), a Fellow of the American Academy of Disability Evaluating Physicians (<http://www.aadep.org/>), having obtained Certification in Evaluation of Disability and Impairment Rating (<http://www.aadep.org/>) and/or a Certified Impairment Rater (<http://www.certifiedrater.com/>). These organizations typically list their members on their websites. It is appropriate to determine if the physician has attended educational programs specifically on the use of the *AMA Guides*. Training in impairment evaluation is provided by American Academy of Disability Evaluating Physicians (<http://www.aadep.org/>), American Academy of Orthopaedic Surgeons (<http://www.aaos.org/>), American Board of Independent Medical Examiners (<http://www.abime.org/>), American College of Occupational and Environmental Medicine (<http://www.acoem.org/>), Brigham Walker (<http://www.brighamwalker.com/>) and other organizations. A careful review of that physician’s curriculum vitae and sample reports is often useful.

The client requesting the evaluation should provide a cover letter describing the specifics of the evaluation and the physician should carefully review this referral letter. C.R. Brigham and P. Walker, *Referral Letter for the Performance of an Independent Medical Evaluation*, *Guides Newsletter*, January–February 2005; 51:8. All applicable medical records and other documents that may be helpful in the rating process should be provided

All impairment reports should be critically reviewed to determine the accuracy

Figure 5. Red Flags to Erroneous AMA Guides Ratings

1. The title “AMA Guides to the Evaluation of Permanent Impairment, Fifth Edition” not correctly stated.
2. Impairment rating performed by the treating physician.
3. Maximal medical improvement not defined, or impairment rating performed prior to one year from date of injury.
4. From a defense perspective, the rating is 5 percent whole person permanent impairment or greater. From a plaintiff perspective, the rating is less than 5 percent whole person permanent impairment.
5. Fails to document an adequate clinical evaluation and analysis, as specified in Section 2.6 (Preparing Reports) and for specific chapters in Principles of Assessment.
6. Reference to specific Figures, Tables and page numbers in the *Guides* is absent.
7. The term “disability” used, when should be referencing “impairment.”
8. Rating of subjective complaints, without specific objective findings.
9. For the spine, rating by Range Of Motion Method, without clear explanation of rationale and confirmation of reliable motion measurements.
10. For the spine, Diagnosis Related Estimate higher than Category III (unless a single level fusion).
11. For the upper extremity, ratings of the hand, carpal tunnel syndrome, grip strength or “other disorders.”
12. For the lower extremity, use of more than one method or ratings for gait or arthritis.
13. Ratings for mental/behavioral disorders or for pain.

of the rating, *i.e.*, was the rating performed consistent with the AMA *Guides* and does clinical data support the rating. Figure 5 presents "red flags" that are warning signals suggesting greater likelihood of an erroneous rating. All reports should be reviewed by a physician experienced in the use of the *Guides*. Clinical knowledge, skills and judgment are required to adequately analyze the clinical data and to appropriately apply the AMA *Guides*; this cannot be accomplished by a non-physician reviewer. The collection of data from individual reviews provides valuable insight to ratings.

Upon obtaining the results of a review, utilize this information for feedback to the initial rater in an attempt to correct an erroneous rating, as negotiation, as a basis for effective cross examination, and evidence. Often physicians will correct their prior erroneous ratings if constructive, tactful feedback is provided from a credible expert. The *Guides* provide a wealth of material for effective cross examination. Many physicians are unfamiliar with specific requirements defined in Chapters 1 and 2 and the rating chapters.

A 2005 Benefits Review Board decision by the U.S. Department of Labor, *Peter J. Desjardins v. Bath Iron Works Corporation*, BRB No. 05-333 (<http://www.dol.gov/brb/decisions/Inshore/unpublished/Nov05/05-0333.htm>), affirmed a Decision and Order (2004-LHC-1364) regarding the utility of impairment rating critique. The administrative law judge credited the rating opinion of an expert physician reviewer, who had not seen the claimant, over that of the treating physician. The appeals judges said:

Claimant appeals the Decision and Order (2004-LHC-1364) of Administrative Law Judge Jeffrey Tureck rendered on a claim filed pursuant to the provisions of the Longshore and Harbor Workers' Compensation Act, as amended, 33 U.S.C. §901 *et seq.* (the Act). We must affirm the administrative law judge's findings of fact and conclusions of law if they are supported by substantial evidence, are rational, and are in accordance with law. 33 U.S.C. §921(b)(3); *O'Keeffe v. Smith, Hinchman & Grylls Associates, Inc.*, 380 U.S. 359 (1965).

In 1982, claimant began working for employer as a pipefitter. His duties included repetitive pushing and pulling

on pipe wrenches and turning valves, as well as fabrication and hand welding. In 1999, claimant was diagnosed with bilateral carpal tunnel syndrome. Claimant had surgery on his right hand on December 1, 1999, from which he recovered without residual impairment. Following surgery on his left hand on January 12, 2000, claimant developed tingling and numbness. He had additional surgery on this hand on October 11, 2000. Claimant continued to complain of problems in this hand, and he sought permanent partial disability benefits for a 20 percent left upper extremity impairment based on the opinion of his treating physician, Dr. Kalvoda. Employer voluntarily paid claimant for a four percent impairment, based on the opinion of its expert, Dr. Brigham.

In his decision, the administrative law judge credited the opinion of Dr. Brigham over that of Dr. Kalvoda and denied claimant benefits in excess of the four percent permanent partial disability benefits already paid by employer. On appeal, claimant challenges the administrative law judge's finding that Dr. Brigham's opinion is entitled to greater weight than that of Dr. Kalvoda. Employer responds, urging affirmance of the administrative law judge's decision.

In the event of an injury to a scheduled member, recovery for permanent partial disability is confined to that provided in the schedule at Section 8(c)(1)-(19) of the Act, 33 U.S.C. §908(c)(1)-(19), and is based on the degree of physical impairment. *Potomac Electric Power Co. v. Director, OWCP*, 449 U.S. 268, 14 BRBS 363 (1980). The Act does not require that scheduled awards be based on the criteria of the American Medical Association *Guides to the Evaluation of Permanent Impairment* (AMA *Guides*) except in cases involving hearing loss and voluntary retirees. See 33 U.S.C. §§902(10), 908(c)(13), (23). Rather, the administrative law judge is not bound by any particular formula but may rely on a variety of medical opinions and observations in addition to claimant's description of symptoms and the physical effects of his injury in assessing the extent of permanent impairment. See *Pimpinella v. Universal Maritime Services*, 27 BRBS 154,

159-160 (1993). The administrative law judge may, however, rely on a medical opinion based on the AMA *Guides*, as it is a standard medical reference. See, *e.g.*, *Jones v. I.T.O. Corp. of Baltimore*, 9 BRBS 583, 585 (1979). Claimant contends that the administrative law judge unreasonably relied on the impairment rating of Dr. Brigham, a reviewing doctor who never examined claimant, over the opinion of his treating physician, Dr. Kalvoda, who performed claimant's surgeries. Claimant also avers that while Dr. Brigham criticized Dr. Kalvoda's application of the AMA *Guides*, his opinion is similarly faulty because Dr. Brigham did not personally examine claimant as the *Guides* require. Claimant argues that because it is well established that use of the AMA *Guides* is not required, the administrative law judge erred in giving undue weight to the procedures required by the *Guides* and to Dr. Brigham's expertise concerning its application.

The administrative law judge properly noted that use of the AMA *Guides* to rate claimant's impairment is not mandated by the Act, but stated that both physicians purported to rely on the *Guides*. In support of his claim, claimant submitted Dr. Kalvoda's opinion that claimant has a 20 percent left upper extremity impairment based on the AMA *Guides*. The administrative law judge is entitled to evaluate the doctor's opinion to determine whether it is well-reasoned and documented, including whether Dr. Kalvoda correctly applied the AMA *Guides*. See generally *Cotton v. Army & Air Force Exchange Services*, 34 BRBS 88 (2000); *Pimpinella v. Universal Maritime Service Inc.*, 27 BRBS 154,159 (1993). Dr. Kalvoda's opinion states in relevant part:

When using the Guides to Evaluation of Permanent Impairment put out by the American Medical Association, one finds that Mr. Desjardins has a moderate degree of impairment involving the left hand, which results in a 20 percent upper extremity impairment on the left, which can be changed to a whole person impairment of 12 percent. It principally involved the hypersensitivity radiating to the digital nerves from the

ular aspect of the middle finger and the radial aspect of the ring finger. CX 8 at 26. The administrative law judge found that Dr. Kalvoda offered no explanation beyond this assessment. The administrative law judge then relied on Dr. Brigham's opinion concerning the deficiencies in Dr. Kalvoda's opinion, and concluded that in light thereof he need not credit Dr. Kalvoda's opinion merely because he is the treating physician. *Id.* The administrative law judge's rejection of Dr. Kalvoda's opinion on this basis is rational and is affirmed. *See generally Sprague v. Director, OWCP*, 688 F.2d 862, 15 BRBS 11(CRT) (1st Cir. 1982); *Bath Iron Works Corp. v. White*, 584 F.2d 569, 8 BRBS 818 (1978) (1st Cir. 1978).

The administrative law judge next examined the opinion of Dr. Brigham, who opined that claimant has a four percent impairment under the Fifth Edition of the *AMA Guides*. The administrative law judge found that Dr. Brigham's opinion is based on the specifics of this case, and on his knowledge of the application of the *AMA Guides*, and warranted determinative weight based on Dr. Brigham's credentials, experience, and the well-reasoned nature of the opinion.

The administrative law judge rejected claimant's contention that Dr. Brigham's opinion is deficient because he did not examine claimant, as the administrative law judge credited Dr. Brigham's opinion that the *AMA Guides* do not require a personal examination by the reviewing physician when adequate clinical documentation is available.

It is well settled that the fact-finder is entitled to weigh the medical evidence and to draw his own inferences from it and is not bound to accept the opinion or theory of any particular medical examiner. *Todd v. Shipyards Corp. v. Donovan*, 300 F.2d 741 (5th Cir. 1962). Claimant has not demonstrated any error in the administrative law judge's decision to credit Dr. Brigham's opinion. *See generally Calbeck v. Strachan Shipping Co.*, 306 F.2d 693 (5th Cir.1962), *cert. denied*, 372 U.S. 954 (1963). Specifically, the administrative law judge rationally credited Dr. Brigham's statement that it was not necessary that he personally examine claimant due to the adequacy of the information provided in Dr. Kalvoda's records. To the extent that claimant seeks a re-weighing of this evidence, it is beyond our scope of review. *See Burns v. Director, OWCP*, 41 F.3d 1555, 29 BRBS

28(CRT) (D.C. Cir. 1994). Therefore, as the credited opinion of Dr. Brigham's constitutes substantial evidence supporting the administrative law judge's finding, we affirm the administrative law judge's determination that claimant suffers from a four percent permanent impairment to his upper left extremity.

This decision demonstrates the benefit of impairment rating review and the fact that the reviewer does not need to personally examine the individual if adequate clinical information is provided. The expert reviewer can provide evidence for the fact finder to "evaluate the doctor's opinion to determine whether it is well-reasoned and documented."

Conclusion

The *AMA Guides to the Evaluation of Permanent Impairment*, Fifth Edition are widely used and most of the ratings are erroneous and higher than appropriate. These errors are often due to bias, confusion, and misapplication of the *Guides*. For counsel to manage ratings, they must be familiar with the appropriate use of the *Guides*, observe for potentially erroneous ratings, utilize expert physician reviewers to critique these ratings, and be able to explain errors to other participants and to the court. 