

State of Colorado
Department of Labor & Employment
Division of Workers' Compensation
633 – 17th Street, 4th Floor
Denver, CO 80202

Division of Workers' Compensation

Level II Accreditation Course and Curriculum

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Note:

This curriculum was developed by the Division of Workers' Compensation with input and approval of the Medical Care Advisory Committee and the medical director. It must be used with the 3rd revised edition of the *AMA Guides to the Evaluation of Permanent Impairment* only.

**Department of Labor and Employment
Division of Workers' Compensation**

NOTICE AND DISCLAIMER

This written curriculum has been prepared and is endorsed by the Division of Workers' Compensation and its Medical Care Advisory Committee. Physicians enrolled in the Division of Workers' Compensation Physician's Accreditation courses are responsible for understanding and applying the written curriculum as presented in this notebook as well as any other written material that is provided by the Division at seminars or via a home-study course. For purposes of testing for and maintaining accreditation, physicians will be held accountable for this material.

Private physicians and other medical professionals assist and participate in the instruction of the seminar courses. There may be occasions where an instructor may discuss or comment on a complex medical case or legal/medical situation where he/she is expressing his/her opinion or offering reasonable alternatives for the purpose of facilitating discussion. In medicine, as in many other disciplines, opinions about the same case may reasonably differ. However, the opinions expressed by the instructors in these situations are their own and may not necessarily represent the opinions of the Division, nor will the Division necessarily endorse any or all statements by an instructor merely because he/she is engaged by the Division for this educational purpose.

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**DEPARTMENT OF LABOR AND EMPLOYMENT
DIVISION OF WORKERS' COMPENSATION
MEDICAL SERVICES DELIVERY SECTION**

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Dear Seminar Participant:

Enclosed are your Level II Physician Accreditation educational materials. Level II Accreditation is an educational process designed to provide physicians with an understanding of the administrative, legal and medical aspects of the workers' compensation system, as well as educating physicians in the uniform use of the American Medical Association *Guides to the Evaluation of Permanent Impairment, 3rd Edition, Revised*.

Lectures, workshops and demonstrations offered during the two-day accreditation seminar are based on this notebook. Included in your curriculum materials is a copy of the *AMA Guides to the Evaluation of Permanent Impairment, 3rd Edition Revised*. The Level II curriculum material serves two purposes: 1) to cover all of the material included in the course and 2) to serve as a reference for impairment and administrative issues. You will be tested only on the objectives at the beginning of each section. Important concepts included in the examination will be emphasized by the lecturers. You will need to read the material and familiarize yourself with the objectives **prior** to coming to the seminar. **Preview the pre-test included in the materials prior to beginning your studies. Take the pretest after studying and then restudy the areas you did not do well in. You will be required to hand in the computer answer sheet for the pre-test at the time you take your test.** You may keep the pre-test itself. Answers to the pre-test are included.

You will be required to take an examination to demonstrate understanding of the proper use of the *AMA Guides, 3rd Edition Revised* and any changes mandated by the Division of Workers' Compensation. The test includes multiple choice questions and case reports that require an impairment rating to be done using the Guides. **The Guides will need to be used for a reference during the case study part of the examination.** All physicians will be tested on the legal, ethical, administrative, and neurological sections. Upon passing the test for full accreditation, you will be allowed to perform impairment ratings on any patient. **If you wish to be accredited to rate only cases related to your specialty, you can choose to take a specialized examination for limited accreditation.** The Division will inform the physician of the other sections that will be included in his/her specialized examination. **Upon passing a specialized exam, the physician will be accredited to rate patients within specified diagnostic categories only.**

You will be accredited for three years on those impairment issues tested with successful completion of the examination. As an accredited physician, it is your responsibility to know the Workers Compensation rules and regulations of the Colorado General Assembly and the

Division of Workers' Compensation. During the course of the accreditation period, we will keep you informed of all new rules and regulations, updated guidelines and any other information you will need to make your work in the Workers' Compensation system a smooth process.

So that we can continue to offer accreditation seminars in the most efficient manner possible, you will be asked to complete an evaluation form at the completion of the seminar that you attend.

Thank you for your generous participation in our programs.

Paul Tauriello,
Director

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CURRICULUM - LEVEL II ACCREDITATION

DAY 1 TOPICS

Introduction to the course

Administrative/Legal

Elements of a Quality Workers' Compensation Report

Neurological Impairment

Hand and Upper Extremity Impairment

Spine and Lower Extremity Impairment

Workshops:

- Lower Extremity

- Upper Extremity

- Spine

- Spine Inclinometry

*Order of topics for actual seminar agenda is subject to change.

LEGAL / ADMINISTRATIVE CURRICULUM

OBJECTIVES – ADMINISTRATIVE CURRICULUM

1. Identify the duties and limitations associated with Level I and Level II accreditation.
2. Define “authorized treating physician.”
3. Define “maximum medical improvement” (MMI) and identify the party responsible for determining MMI.
4. Identify the possible payment and benefit consequences of not complying with a request for work status.
5. Explain the procedure used to handle an employee’s failure to attend physician appointment.
6. Explain the manner in which the temporary disability and permanent medical impairment benefits are determined under the workers’ compensation act.
7. Explain the utilization review process and method for revocation of fees under utilization review.
8. Describe the mechanism for revocation of Level II accreditation.
9. Know the required time limits for the WC-164 reports and describe the reimbursement method.
10. Demonstrate the ability to appropriately complete the Colorado Division of Workers’ Compensation *Physician’s Report of Workers’ Compensation Injury* (WC-164) and explain what information belongs in each of the appropriate sections.
11. List recognized physician and nonphysician providers under Rule 16 of the Workers’ Compensation Rules of Procedure.
12. Explain billing for cancellation fees.
13. Define the automatic waiver of patient/doctor privileges in a workers’ compensation case.

Chronology of a Workers' Compensation Case

Administrative Issues in WC

HISTORY OF WORKERS' COMPENSATION

For half a century, some workers unable to continue in their profession have been compensated for their disability. Pirates compensated those who lost extremities, and the Guilds of the 1600's aided families when workers were disabled, usually due to work-related injuries or diseases. In the 1860's, Sir John Simon of England presented a report to the Privy Council in which he established the need for a workers' compensation system by describing the many families left destitute due to industrial injuries. In the United States, two studies from the 1900's, one by the Illinois State Commission and the other by Crystal Eastwood in Pittsburgh demonstrated significant work-related disability compensated inadequately through private charities or the government. Both of these studies found that employers were paying high rates for liability insurance to defend themselves against claims of negligence and very few workers were prevailing in court under the required standard of negligence. Furthermore employers spent at least 53% of their premium dollar on litigation fees and investigation. At the same time, many uncompensated workers became disabled and were dependent on the government social support system, as well as private charities to support their families. This information was instrumental in encouraging employers and labor unions to agree on workers' compensation laws. Under these statutes, injuries, which occurred in relationship to work, would not be litigated by the employer. Further, the employer would not be held to a level of negligence to establish benefits. In exchange the statute would not require payment for pain and suffering but would cover reasonable medical expenses and disability. The employers then had the advantage of limiting the benefits paid, and not having to pay benefits for pain and suffering. All except six states had workers' compensation laws by 1920. These laws generally paid for 1) reasonable medical care, 2) temporary wage loss and 3) permanent wage loss and/or impairment due to loss of extremities or other significant long-term disabilities.

**CHRONOLOGY OF A TYPICAL
WORKER'S COMPENSATION CASE**

**Reference to
Rule, Statute, Etc.**

**Injury occurs at work or worker recognizes symptom of illness
which may be work-related**

§ 8-41-301, C.R.S.



Worker reports incident and symptoms to employer

§ 8-43-102(1)(a)
and (2), C.R.S.



Employer files a First Report of Injury form with insurance carrier

If employer does not concur that a work-related injury or disease exists and refuses to file a First Report form, the worker can file a Worker's Claim for Compensation directly with the Division of Workers' Compensation.

§8-43-103(1), C.R.S.



Worker must seek care with the provider designated by the employer.

The employer has the right in the first instance to select the authorized treating physician (defined under the statute as an M.D., D.O., chiropractor, podiatrist, or dentist). The claimant is presented with a list of at least two physicians, two clinics, or combination thereof, from which the worker must choose a primary treating physician. If the employer does not timely designate a list of at least two providers when the worker reports an injury, then the worker may see the physician of his/her choice. The physician whom the employee sees on the first visit becomes the authorized provider and remains the authorized provider unless the insurer and patient agree to change providers, the worker exercises an option for one unchallenged change of treating physician, or a judge orders a change in provider. Note that the provider is physician-specific. A provider is not a clinic or organization. Chiropractors must be Level I accredited to treat cases with three or more lost work days or to provide more than 12 treatments or to provide treatment exceeding 90 days. The first physician seen by the worker, meeting the above definitions, becomes the "authorized treating physician." Other physicians referred-to by this physician also become authorized treating providers.

§8-43-404(5), C.R.S.
and §8-42-101(1)(a);
(3)(a) (III); (3.6),
C.R.S.



Responsibilities of a physician at the first visit

1. Take a complete history including job duties, details regarding accident or hazardous exposure and related symptoms, additional past medical history, and history of non-occupational activities.
2. Perform a complete physical examination for all relevant body parts based on the history and patient complaints.
3. Render a diagnosis based on the above.
4. Determine the medically probable cause (greater than 50% likelihood) of the patient's condition. (Causation will be explored in detail in the following chapter.)
5. If it is determined that the patient's condition is not work-related, recommend to the patient that they return to their general health care provider for care. If you find the condition to be work-related, continue your treatment plan.
6. Order appropriate diagnostic studies and initial treatment (refer to relevant Colorado Division of Workers' Compensation Medical Treatment Guidelines).
7. Determine work and activity restrictions.

If the patient has any restrictions of normal activities of daily living (ADL's) or restrictions for specific job tasks, these restrictions must be clearly described. Examples would be:

- ❖ Occasional lifting up to 20 pounds
- ❖ Frequent lifting limited to 5 pounds
- ❖ No over-head work
- ❖ Sitting limited to 20 minutes followed by the change in position

NEVER order, "Modified duty," "desk duty," "light duty," etc. Supervisors differ greatly in their interpretation of these terms.

- Give a copy of work restrictions to the patient and ensure that the supervisor receives a copy.

Once a worker is off work for three days he becomes eligible for compensation. If the worker is totally restricted from duty, or if the employer cannot provide suitable accommodated duty, he is compensated 66.6% of his wages to a maximum of 91% of the state average weekly wage ("TTD" or Temporary Total Disability). If the employer allows the worker to return to part-time duty, he is compensated for the remainder of the time in which he cannot work 66.6% of his wages to a maximum of 91% of the state average weekly wage ("TPD" or Temporary Partial Disability). Note: The worker will not receive disability payment unless there is a physician's prescribed limitation of duty.

Complete the WC164 form ("Physician's Report of Workers' Compensation Injury"), submit within **14 days**, and supply a copy to the insurer and the patient. If you are requested to provide ability to work information and do not, payment for your medical care can be withheld.



Rules of Procedure,
Rule 17

§8-42-105; §8-42-106,
C.R.S

§8-42-105(2)(d), C.R.S.

Rules of Procedure,
Rule 16-7(E).

Follow-up patient visits

1. Continue diagnostic tests and treatment as necessary.
 - Be sure to follow the Division of Workers' Compensation Medical Treatment Guidelines. If the DOWC Guidelines must be exceeded, or treatment the patient requires is not covered in the Guidelines, pre-authorization must be sought from the insurance carrier. Carriers are only required to pay for care that is reasonable and medically necessary.
 - The insurer will not cover treatment of conditions not associated with the work-related illness or injury. If a new diagnosis results secondary to the treatment or complications of the primary diagnosis, this must be explained in your records for treatment to be covered.
2. Return the patient to full duty or specific activity restrictions as appropriate for current functional status.
3. Supply the WC164 Report or copies of your medical records when submitting bills to the insurer.

Rules of Procedure,
Rule 16-9(A)
Also see Rule 17
For Treatment
Guidelines

Rules of Procedure,
Rule 16-7(E)
and 16-8.

Patient No Shows

You can only receive a cancellation fee, the lesser of \$150 or one-half of the fee of the expected visit, when the insurer scheduled the appointment. Therefore notify the insurer of any no show. The insurer may also stop temporary disability payments if the patient fails to come to the insurer- scheduled visit.

Rule 18-6(B)
§8-42-105(2)(c)

Billing for Services

The Division of Workers' Compensation establishes a maximum fee schedule. To calculate the fee you must multiply the unit value in the 2010 Relative Values for Physicians© times the conversion rate set by the Division (\$9.62 for E&M codes). Billing must be submitted on a CMS 1500 and accompanied by documentation. If a service (1) falls outside of those listed in the medical treatment guidelines, (2) is performed by a nonphysician provider not authorized under the fee schedule, (Authorized providers – audiologist, acupuncturist, LCSW, LPN, LPC, LMFT, NP, OTR, OP, OTC, psychologist, LPT, PA, RN, RT, speech pathologist, surgical technologist), or (3) is listed in rule as preauthorized, it requires prior authorization.

Rule 18-2, 18-4
Rule 16-7

Rule 16-5

To contest a request for prior authorization the insurer must provide a review by a physician in the same or similar specialty including citation of treatment guidelines, if applicable, within seven days of a completed request. Following this, there is a seven-day response period for physician and re-response for insurer. If a payer does not respond timely to a complete prior authorization request, then treatment is deemed authorized

Rule 16-10



Copying Medical Records

You continue to have an ethical responsibility to the patient. You should use your normal procedures for securing signed releases from the patient to forward copies of records to the payer for billing purposes or to any other parties. The statute only provides a “limited waiver of the doctor-patient privilege to persons who are necessary to resolve the claim.” The Division does not consider documentation of work restrictions as protected medical records.

§8-47-203(1), C.R.S.

Determination of Maximum Medical Improvement (MMI)

Maximum medical improvement exists when the underlying condition causing the disability has become stable and no further treatment is reasonably expected to improve the condition. MMI does not preclude medical maintenance or alteration of the medical condition with the passage of time.

§8-40-201 (11.5),
C.R.S

Continuing treatment to sustain the patient’s current level of functioning can be prescribed but should be documented by the physician in the final report.

(“Grover Meds”);
Grover v. Industrial
Commission, 759 P.2d
705 (Colo. 1988)

Patient at MMI

- ✓ Authorized treating physician completes WC164 form as a closing report.
- ✓ Define permanent work restrictions or release to full duty.
- ✓ Declare date of MMI
- ✓ Describe any continuing treatment needed or anticipated.
- ✓ Report impairment if present.

Rules of Procedure,
Rule 16-7(E)(1)

If the worker is unable to return to full duty, clearly state permanent physical restrictions. If the worker is unable to return to full duty and the employer cannot accommodate the worker’s permanent restrictions, the worker will not receive any further payment for temporary disability after the date of MMI.

§8-42-105(3)(a), C.R.S.

An impairment rating is used to calculate the final payment of permanent partial disability benefits to the worker. To qualify for impairment, the worker must have a permanent alteration of a body part or system that affects his activities of daily living. The AMA Guides 3rd Revised Edition, Rule 12 and the Level II Curriculum must be used to calculate impairment.

Rules of Procedure,
Rule 12-1 and 12-2

An impairment rating from the AMA Guides has no direct relationship to disability. Disability is related to whether or not a person is employable in various job positions.

Pursuant to Colorado statute 8-42-101(3.7), C.R.S. 2010: “. . . for purposes of determining levels of medical impairment, the physician shall not render a medical impairment rating based on chronic pain without anatomic or physiologic correlation. Anatomic correlation must be based on objective findings.”

§8-42-101(3.7) and
8-42-107(8)(c),
C.R.S.

- ✓ Patient or insurer may challenge the impairment rating submitted by the authorized treating physician or their consultant. The authorized treating physician’s impairment rating can be challenged by requesting an Independent Medical Examination (IME) agreed-upon by the insurer and the patient, or from the Division of Workers’ Compensation panel of Independent Medical Examiners. The current minimum cost for a Division IME is \$675.00.

§8-42-107(8)(b)(II);
§8-42-107.2, C.R.S.;
Rules of Procedure,
Rule 11

Additional Administrative Issues

Medical Care Accreditation Commission/Advisory Panel

In 1991 Senate Bill 218 radically changed the Colorado workers' compensation system. This bill created the Medical Care Accreditation Commission to advise the Director of the Division of Workers' Compensation on the development of medical fee schedules, medical treatment guidelines, utilization standards, and medical impairment rating guidelines. The commission developed Level I and Level II certification courses and implemented task forces to deal with medical treatment guidelines and impairment rating issues. The commission was sunsetted in July 1997, however the Director of the Department of Labor and Employment and the DOWC Director continued the MCAC as an advisory committee for a number of years. Currently a medical advisory panel which is larger and somewhat less formal than the MCAC provides input to the Division on medical issues.

Level I and II Accreditation and Impairment Rating

The Director of the Division of Workers' Compensation has established Level I and Level II Accreditation (C.R.S. § 8-42-101(3.6)). Level I Accreditation is only mandatory for chiropractors who desire to treat workers for lost time injuries or for more than 12 treatments. Lost time injuries are those where an injured worker is unable to return to work for more than three days. The Level I Accreditation program has been revised by the Division as an educational course appropriate for all physicians who treat injured workers but do not wish to provide impairment ratings.

Level II Accreditation is required to evaluate an injured worker who has been determined to have permanent impairment by the authorized treating physician. Chiropractors, dentists, podiatrists, psychologists, and audiologists cannot receive Level II accreditation. (C.R.S. §8-42-101(3.5))

The authorized treating physician providing primary care need not be Level I or Level II accredited to determine MMI or that no impairment is present. If a non-Level II treating physician determines that MMI has been reached and impairment is present, that physician must refer to a Level II accredited physician within 20 days. If this referral is not made, the insurance company has an additional 20 days to refer to a Level II accredited physician.

Accreditation must be renewed every three years and generally requires attending a seminar or completing an educational process specified by the Division. The director may also revoke a physician's accreditation by recommendation of a utilization review panel, or for any of the following: 1) refusal to comply, 2) substantial failure to comply, or 3) two or more incidents of failure to comply with the provisions of the workers' compensation rules, relevant statutes, the AMA Guides to the Evaluation of Permanent Impairment and applicable additions by the Division, medical treatment guidelines or utilization standards, or 4) a misrepresentation on an application for accreditation. An administrative law judge will make recommendations to the director regarding revocation of a physician at a hearing prior to revocation of accreditation.

Authorized Medical Care and Billing

The medical provider is authorized under the following circumstances (C.R.S. § 8-43-404(5)): 1) when the employer timely provides the injured worker with a list of at least two physicians or two clinics from which to choose a doctor, prior to the first treatment for the injury; 2) if an employer fails to provide such list after notice of the injury and the employee selects his/her own physician; and 3) in emergency circumstances. Emergency care is authorized; however once the emergency has ceased the employee must return to an authorized physician.

There are several ways by which an injured worker may seek a change in physician. (1) He/she may exercise an option for an unchallenged 'one-time' change of primary care physician if that request is made within 90 days after the date of injury and before MMI is reached. The new physician must be on the employer's designated provider list. [This information is set forth in Rule 8 of the Division's Rules.] (2) Alternatively, the injured worker may at any time request a change of physician by writing to the insurance carrier or self-insured employer. If the carrier or self-insured employer fails to object, or they agree on the new provider within 20 days, the change in physician becomes automatic. (3) The employee may also petition the Division of Workers' Compensation for a change of physician. A prehearing conference or a more formal hearing may then be held to determine whether there is a reasonable basis for a change of physician.

It is important to remember that medical providers will only be reimbursed for care that is reasonable and necessary, even if they are authorized providers. Providers are expected to use the guidelines and carriers should generally reimburse care prescribed in the guidelines. Multi-specialty task forces created the Medical Treatment Guidelines in Rule 17: low back; cervical spine; thoracic outlet; carpal tunnel; cumulative trauma; shoulder; chronic pain; traumatic brain injury, lower extremity and complex regional pain syndrome.

No provider can bill a patient for charges in excess of the fee schedule, or in excess of those they have contracted for with the self-insured employer or insurer. Physician must bill using the 2010 Relative Values for Physicians (RVP)©. Each calendar year the previous year's RVP© is applied, so that in 2012 the 2011 RVP© should be used, and so on. Rules 16 and 18 describe the procedures for preauthorization and list procedures requiring preauthorization as well as additional codes and fees.

Completion of an impairment rating by the primary authorized treating physician is billed under the Medical Fee Schedule at a maximum of \$355.00 (per the 2010 Fee Schedule). The fee includes the office visit, submission of the required impairment worksheets, and completion of the WC164 form "closing" report. Fee for the same service when the patient is seen on a referral basis is billed at a slightly higher rate (see Rule 18-6).

Completion of the WC164 report may be billed separately at a rate of \$42 for the *initial* visit with the patient or if the payer specially requests that the report be submitted at a time when the form is otherwise not required. The closing WC164 report may also be billed separately at \$42 if the patient is placed at MMI with an assessment of *no* impairment. (See Rule 18-6(G)(2)(e)).

Independent Medical Examination Program (IME)

If there is a dispute concerning MMI or impairment rating and the parties cannot agree upon an independent medical examiner, the Division of Workers' Compensation will select an independent medical examiner based on an application by the party who objects to the rating or statement of MMI from the authorized treating physician. The division independent medical examiner's opinion can only be overcome by clear and convincing evidence before an administrative law judge and the parties may not go to hearing until the IME physician has issued a completed report. The Division of Workers' Compensation reviews IME physicians' reports to assure that they are complete and adhere to the basic principles taught in the Level II accreditation curriculum and the *AMA Guides, 3rd Ed. (rev.)*.

An insurer may request a Division IME for purposes of determining an MMI date when an authorized treating physician has not yet declared MMI if: 1) it has been 18 months since the date of injury; and 2) another physician has examined the worker and declares the worker at MMI.

The Division of Workers' Compensation is soliciting board certified physicians for the independent medical examiner panel. The Division encourages qualified, board certified or eligible specialty physicians to apply. A prepaid fee of \$675 has been established for an IME examination. Please contact the IME unit at the

Division of Workers' Compensation for information on applying to become a member of the IME Panel.

Utilization Review Program (UR)

Utilization review was implemented to allow review and remedy for inappropriate or unnecessary health care. A panel of experts is selected by the Division to review care rendered in a case. The UR panel reviews all of the medical records and makes recommendations to the Director concerning the necessity and/or appropriateness of care. The committee may recommend by majority vote to change the medical provider. The committee may recommend by unanimous vote that fees be retroactively denied or repaid, or that the physician's accreditation be revoked. In the event of revocation of accreditation, carriers may deny reimbursement for medical services to that provider for up to three years. (C.R.S. § 8-43-501)

Physician-Patient Relationship

In all cases you retain the same obligations toward your patients with work related injuries as with non work-related injuries. Although the workers' compensation statute allows a "limited waiver" for "persons necessary to resolve the claim" the Division suggests you follow the same procedures you routinely use when releasing medical records that frequently contain medical history not directly related to the person's claim.

Physicians should know that workers' compensation insurance carriers are not covered under HIPAA (Health Insurance Portability & Accountability Act). Therefore, the records or reports that you send to the insurer could be provided to the employer without the patient's specific permission. The safest course is to have your patients sign an authorization for release of records if the WC medical reports are likely to contain information not directly related to the claim, e.g., gynecological or psychiatric history. Please refer to HIPAA regulations or the DOWC website for more specific information. (Click on the "Medical Providers" tab, and then "HIPAA" in one of the general subject indices.)

Work restrictions which do not include information regarding specific medical diagnosis or treatment are not considered medical records by the Division of Workers' Compensation. See the attached statements from professional societies for guidance on medical ethics.

A Word About Genetic information and Family Health History

There are instances when protected information about a worker's non-work-related health status is called to the attention of the medical provider treating a workplace injury or performing another type of employment-related exam (such as fitness for duty). Under the federal Genetic Information Nondiscrimination Act of 2008 (GINA), family medical history can be construed as "genetic information" which is protected and confidential, and should not be disclosed to the injured worker's insurer or employer without a specific release. Remember, under HIPAA, physicians and medical clinics are covered entities, but insurers and employers are not. Generally, avoid including family health history in records provided to the insurer/employer in a workers' comp case unless you have the patient's authorization.

QUALITY MEDICAL REPORTING FOR WORKERS' COMP

OBJECTIVES – WORKERS’ COMPENSATION REPORT

1. Describe the information that should be included in any complete narrative report for an impairment rating.
2. Define “medically probable.”
3. Describe the mechanism by which a physician determines an injured worker’s job responsibilities before returning him/her to work.
4. Identify the four items that must be included on the maximum medical improvement report.
5. Explain the accepted manner of reporting impairment on a condition that is multi-factorial and requires apportionment.
6. Identify parties who should not influence your medical decision regarding a case.

Elements of a Quality Workers' Compensation Medical Report

Introduction

Physicians perform three special functions in workers' compensation which are rarely required in general medical cases. The first is providing an opinion on the causal relationship between the work-related exposure or injury, and the patient's current pathology and need for treatment. Once causation has been established medical reports follow the traditional format of history including job requirements, physical examination, diagnosis and treatment. The second function occurs when a case is closed in workers' compensation and the physician must determine the presence or absence of a permanent impairment. If permanent impairment is present, then it must be rated according to the AMA Guides to the Evaluation of Permanent Impairment, Third Revised Edition. The rating must include the work sheets required by the Division of Workers' Compensation, and conform to the Level II curriculum and applicable Rule 12 impairment rating requirements.

Finally a physician must be able to communicate to non-medical personnel information needed to resolve claim issues. For instance, employers and patients must be able to understand work restrictions, and insurance adjusters and lawyers must easily comprehend the origin of impairment ratings. While certain areas overlap between medical and legal concerns in workers' compensation, this does not override the ethical responsibility of the physician to protect the doctor-patient privilege. In this section, we will explore how to determine causation in workers' compensation, and review the elements required for a workers' compensation impairment rating report.

Risk-Assessment or Causal Relationships in Everyday Life

Every day we make decisions based on an assessment of risk. We decide whether or not to fasten our seat belt on the way to work. We insist that our children wear bike helmets when riding in the neighborhood. When participating in recreational activities such as skiing or riding horseback, we decide whether or not to wear a helmet. These activities all have a different level of risk. Our decision to wear protective equipment is usually based on the personal inconvenience of wearing the equipment, weighed against the actual risks of a catastrophic event.

Causality Assessment in Medicine

Practitioners assess causality and risk when treating any medical case. The patient's reported history, combined with the physical exam findings, determine the likelihood of a specific disease, thus dictating diagnostic procedures and treatment. For example: a 55 year old overweight, hypertensive male presenting with low back pain must be assessed for abdominal aneurysm, whereas a 25 year old female with low back pain has little likelihood of abdominal aneurysm but should be assessed for an ectopic pregnancy. Using knowledge of common causes for back pain to establish differential diagnoses is actually assessing the risk of a particular diagnosis.

Workers' Compensation Causality

In worker's compensation the health care provider must discuss the relationship between the patient's diagnosis and the work-related exposure. The assessment process requires estimating the risk of developing the suspected diagnosis as a result of the actual exposure of the individual patient. Legally the physician must be able to state the medical probability, greater than 50% likelihood, that the patient's diagnosis and physical findings are related to the work-related exposure.

Causation Assessment

1. Record an occupational medical history including a detailed description of the incident reportedly causing the injury or a complete job description of all activities which could have contributed to the patient's symptoms. The description of job duties should include a list of physical activities required, the duration and frequency of these activities and the total time the individual has worked in the job position. At a minimum, the job activities description should consider specific hand tool use, driving or other skilled activities, approximate lifting estimations, description of the posture required in order to complete the job tasks and consideration of the force necessary for the job tasks.
2. Take a complete medical history including medical diseases past and present, and non-occupational activities which could have affected the complaint. Record hobbies involving the hands for upper extremity complaints and weekend sports activities for musculoskeletal injuries.
3. Establish a differential diagnosis for the patient using the complete history, physical exam findings, and the results of any preliminary diagnostic testing.
4. Assess the medical probability of the relationship between the assumed diagnosis and the work-related exposure.

Case Examples

In many cases the relationship between exposure and disease or injury is extremely clear. For instance, the patient with a mesothelioma who worked in the shipping industry in World War II and was exposed to asbestos has a medically probable relationship between his disease and World War II employment. A worker who slips on the ice entering the work-site and then complains of knee pain may be a more difficult case. In order to establish work-relatedness, the mechanism of the fall should be consistent with the suspected knee joint pathology. Among the most difficult causality questions are those related to cumulative trauma or repetitive motion. All cases should be determined using risk assessment techniques. The physician should examine existing scientific evidence to determine whether the individual's work exposure is the proximate cause of the disease process or injury. The Division has established risk factors for upper extremity injuries involving cumulative trauma and Carpal Tunnel Syndrome; those may be found in the Division's Cumulative Trauma Conditions Medical Treatment Guidelines.

Risk Assessment Method – Modified Bradford-Hill

1. Strength of the association: The study should show a significant relative risk for developing the disease in question when populations are exposed at a specific exposure level.
2. Consistency of the evidence: Studies with different populations exposed to similar work exposures should produce the same result.
3. Specificity of the result: Studies should be sufficiently controlled to prove that the exposure was the cause of the diagnosis, rather than other confounding exposures or disease entities.
4. Temporal Relationship: The timing of the study and follow-up investigation of the workers should be sufficient to identify the disease in question. Long latency disease studies should exclude those cases occurring too early to be related to the exposure identified in the study.
5. Biological gradient: Studies should show that the greater the exposure, the greater the likelihood of a particular disease or injury. In some cases the phenomenon is "all or none" and no gradient will be present.
6. Coherence: The proposed exposure should be biologically plausible and consistent with previous research. Naturally when an entirely new causal relationship is discovered, initial reports will not necessarily conform to previous literature on the subject.

Workers' Compensation Statutes

Work related exposure must be the "proximate cause" of the disease or injury.

Proximate cause is defined in Black's Law Dictionary as the last act "contributory to an injury, without which such injury would not have resulted. The dominant, moving or producing cause."

Pre-Existing Medical Condition

A pre-existing medical condition, which may pre-dispose the worker to an injury, does not necessarily mean the case is not work-related. If the worker would not have the injury **without** the work-related event, the injury is most likely also work-related.

The physician should not confuse the presence of pre-existing disease with the concept of proximate cause. A patient with a pre-existing medical meniscus tear may slip on a wet floor at work and further injure the meniscus. The injury would be work-related, even though the pre-existing condition resulted in an injury that is greater than might have occurred in a worker with a normal knee. However it is appropriate for the physician to discuss the impact of the pre-existing diseases or other concurrent disease or injury processes on the patient's work-related condition.

Using Risk Assessment

Case example – A worker is exposed to very low level formaldehyde on a weekly basis.

Consider the following two scenarios:

1. The worker claims to have irritant-induced reactive airway disease.
2. The worker claims the formaldehyde aggravated his pre-existing asthma.

When making a causality determination the health care provider should utilize the risk assessment method to define the limit at which the exposure in question would be a medically probable cause of the disease or injury in question. For instance, exposure to low levels of formaldehyde is not likely to cause irritant pulmonary symptoms and is extremely unlikely to cause permanent reactive airway disease. Thus a patient who has been exposed only to low levels of formaldehyde cannot claim that their reactive, irritant-induced airway disease is due to formaldehyde exposure, as no medically probable relationship exists between the formaldehyde exposures and the disease. On the other hand, even at low exposure levels, the patient could develop an allergy to formaldehyde, which exacerbates his pre-existing asthma

Always answer this question: "Without the work-related exposure or accident, is it medically probable that the patient would have the current diagnosis and require treatment?"

Activities of Daily Living

In some cases when a worker is performing an activity he would normally be expected to perform in day-to-day tasks at home the injury will not be work-related. The inciting event should have “. . . its origins in the employee’s work-related functions.” Madden v. Mountain West Fabricators, 977 P.2d 863 (Colo. 1999). Remember this is generally a legal decision, not a medical decision.

Case – An executive suffers a heart attack while reviewing his routine, office e-mail. This would not be work-related.

Isolated Mental Impairment (no physical injury)

Pursuant to C.R.S. §8-41-301(2)(a), mental impairment:

“. . . means a recognized, permanent disability arising from an accidental injury arising out of and in the course of employment when the accidental injury involves no physical injury and consists of a psychologically traumatic event that is generally outside of a workers’ usual experience and would evoke significant symptoms of distress in a worker in similar circumstances. A mental impairment shall not be considered to arise out of and in the course of employment if it results from a disciplinary action, work evaluation, job transfer, layoff, demotion, promotion, termination, retirement, or similar action taken in good faith by the employer.”

The final determination of work-relatedness rests with the judicial system, not the medical system. This allows consideration of course and scope of duties, enforced safety standards, and location of injury.

Remember: Your medical diagnosis and causality discussion is essential to a work-related case

CAUSALITY CHART

<i>STEPS IN CAUSALITY DETERMINATION</i>	
1.	Establish diagnosis (or differential diagnosis if further testing required)
2.	<p style="text-align: center;">Define Injury or Exposure</p> <p>For Exposures include</p> <ul style="list-style-type: none"> ❖ Length of exposure ❖ Level of exposure (actual lifting required, amount of repetitive motion, special tool use, etc.) ❖ Comparison of worker's exposure to that of the normal population
3.	<p style="text-align: center;">Discuss Intervening Factors</p> <p>Concurrent non-work-related injuries or disease processes, pre-existing impairment, or disease related activities outside of work, sports, hobbies, etc.</p>
4.	Explain any scientific evidence supporting a cause and effect relationship between the diagnosis and the exposure or injury
5.	<p style="text-align: center;">Assign a medical probability level to the case in question</p> <ul style="list-style-type: none"> ❖ Medically probable >50% likely ❖ Medically possible ≤ 50% likely

Creating a Narrative Impairment Report

The first goal of writing an impairment report is to assure adequate communication of the issues to all parties. Remember your impairment report will be used in a medical/legal context. The impairment rating is the basis for paying permanent partial disability. All parties should understand the origin of your impairment rating, and how it reflects the functional impairment of the patient. In addition, your report must address other legal issues such as the need for continuing care and any permanent work restrictions. The following sections should be included in an impairment rating report.

History

An impairment rating report should include a description of the mechanism of injury, or work-related disease and exposure. Be sure to address all areas of the body or organ systems that have been treated under the claim. Pertinent diagnostic tests should be noted when they were essential to establishing the pathological basis of disease or injury. A short summary of the treatment specifically including any surgical procedures should also be included.

It is essential to describe the patient's functional ability to perform activities of daily living (ADLs). Activities of daily living refer to self-care and personal hygiene, communication, normal living postures, ambulation, travel, nonspecific hand activities, sexual function, sleep, and social and recreational activities. ADLs are the basis for impairment rating, and should be used as a guide for determining the proper percentage when physicians must choose within a range of values to establish the impairment rating. The current occupation and work level of the patient should also be noted.

Finally, a list of the medical records reviewed for the report should be provided to the reader if a non-treating physician does the impairment rating. Otherwise parties will not know whether you reviewed specific material or did not receive the material.

Physical Examination

Remember to examine all pertinent body parts treated under this claim. Record specific range of motion values for any joints or spinal areas that are to receive an impairment rating. Neurological findings should also be recorded in detail to demonstrate to the basis for your rating. In addition it is important to include notations on trigger points and muscle spasm. If findings are inconsistent, they should be recorded as such.

Work Restrictions

Many patients who are receiving permanent partial impairment will have a work restriction. It is important to provide the specific physical details of the work restriction. Describe any permanent work restrictions including limitations for hours of work as well as physical limitations.

Maximum Medical Improvement

Be sure to establish that maximum medical improvement, the time at which the impairment “has become stable and no further treatment is reasonably expected to improve the condition,” is present for all areas under treatment. An impairment rating should not be rendered until all areas are at maximum medical improvement, including mental impairment where appropriate. At times a patient may refuse to undergo the treatment that has been recommended by their physicians. In this case physicians must rate the individual as they are at the time of maximum medical improvement. Physicians cannot rate based upon possible changes to the patient’s condition over time or as if the treatment that was recommended had actually been undertaken. It is also appropriate to declare the patient at MMI if further treatment would improve the patient’s condition, but the patient refuses to undergo any of the treatment that might be expected to improve their condition.

Continuing Treatment

Treatment can continue to occur after maximum medical improvement if it is needed to sustain the patient’s functional status. It is also important to note that a patient may settle a claim as full and final and be paid for future medicals in the settlement. In this case there will no further money provided by the insurer for continuing medical treatment. All parties should have a detailed understanding of the continuing treatment you expect may be necessary due to the injury or disease. This would include noting such conditions as severe degenerative knee disease, which may require a joint replacement in the future. It is essential that the patient and the insurance company understand the future medical liability for the life of the patient.

Impairment Rating

Be sure to address all of the diagnoses that you identified in your report as related to the workers' compensation injury. Some of these may not have an associated impairment rating, but it should be clearly addressed in your report. Finally, include all required worksheets from the *AMA Guides* or the Division. The following are required forms depending on the body parts involved: the spinal range of motion and summary forms, the upper extremity forms, the lower extremity form and the psychiatric form. Ratings will be returned to you if they do not contain the appropriate worksheets.

You should report the impairment rating as a whole person rating in concordance with the *AMA Guides*. All of the extremity worksheets must be provided because in many cases the patient will be paid permanent impairment as a "scheduled injury". A list of scheduled injuries is set forth in the Workers' Compensation Act. For scheduled injuries the permanent partial disability payment is calculated based on the level of the injury. For instance, a hand injury is paid using the hand impairment percentage and multiplying it times the available dollars in the statute for injuries to the hand. Scheduled injuries are paid at a much lower rate than whole person injuries.

Be sure to double-check your impairment rating to see that you have completed all the worksheets, and that the final rating has combined all of the relevant impairment values. The *AMA Guides* uses a method called *combination* to arrive at the final whole person or extremity rating. This is required because an arm is equal to 60% of the whole person, and a leg is 40% of the whole person. Thus if all four extremities were lost and the impairments were additive, the result would be a 200% loss of whole person. Since we cannot exceed a 100% loss, there must be an algebraic method for combining numbers to avoid exceeding 100%. This is achieved using the combined values chart on pages 254-56 of the *Guides*. This chart is generally used in any case in which unlike impairment ratings must be combined. Thus, an impairment rating for radicular problems in the leg, and an impairment rating for a spinal fracture are discordant impairment ratings and would be combined to arrive at the full value.

You should pay attention to those areas which are added and not combined. The most common of these is the addition of all ranges of motion at the same joint. Also the total impairment ratings for each digit are added to establish a hand impairment value. Be sure to combine only the ratings at the same anatomic level and in the same extremity, when applicable. Thus an upper extremity rating at the shoulder can only be combined with a hand rating after the hand rating is converted to an upper extremity rating. Once the combination of terms has been completed, remember to advance the rating to a whole person level.

When describing your impairment rating, be sure to reference the exact tables used, unless that is already noted on the worksheet. If the impairment rating differs from that of another physician on the same case, you should include a discussion of the differences and why you have chosen the particular rating method you are using.

It is essential to not confuse an impairment rating with disability. In some cases, a person may actually be unable to return to work and have almost no impairment. In other cases a patient may

be able to return to work and yet still receive impairment. Consider a pianist who loses her index finger. She is totally disabled from her chosen profession and must be retrained; however her impairment rating would be limited to 100% of the index finger or 11% whole person. An internist with the same index finger loss will receive the same impairment rating, since it is based on activities of daily living. In contrast, the internist will have no change in her ability to continue her occupation and earn the same salary. It is important not to equate these two concepts. If any ADLs are functionally affected due to an established work-related injury or disease, the physician should use the Guides to determine the level of impairment.

Impairment Rating for Workers who have Undergone an Invasive Treatment Procedure

The rating physician should keep in mind the *AMA Guides, 3rd Edition (rev.)* definition for impairment. “The loss of, loss of use of, or derangement of any body part, system, or function.” Given this definition, one may reasonably assume any patient who has undergone an invasive procedure which has permanently changed any body part has suffered a derangement under the definition of impairment according to the *AMA Guides, 3rd Edition (rev.)*. Therefore it is incumbent on the rating physician to perform the necessary testing as appropriate in that edition of the Guides for the condition which was treated by the invasive procedure. This should not be interpreted to say that all persons with invasive procedures necessarily qualify for an impairment rating. The impairment rating on many individuals who have had invasive procedures may be zero percent. Thus in cases with surgical procedures the person qualifies under the initial definition of impairment due to the derangement of a body part or system and the rating physician must justify the zero percent rating using the appropriate portions of the *AMA Guides, 3rd Edition (rev.)*. Examples in which this rating procedure is necessary include arthroscopic debridement of the shoulder, anterior cruciate ligament surgery of the knee, facet rhizotomy procedures, and surgery to repair carpal bone instability.

Preexisting Impairment

An impairment rating may be apportioned when the patient qualified for an impairment rating using the Third Revised Edition of the Guides prior to the current workers’ compensation injury or disease, and with consideration of any other applicable statutory requirements (see next paragraph).. In this case the physician must create a pre-injury rating using the *AMA Guides*, Rule 12 and Level II curriculum. This rating must be established on verifiable facts. If a patient qualifies for a pre-injury rating from Table 53 – Impairments due to Specific Disorders of the Spine – then range of motion may be apportioned. Range of motion can be apportioned using pre-injury range of motion measurements on the patient, or if there are no pre-injury range of motion measurements, an apportionment can be accomplished using the spinal apportionment worksheet found in the spinal portion of the curriculum. Once a pre-injury apportionment rating is established, it should be subtracted as appropriate from the current total impairment rating.

In 2008 the law regarding apportionment of preexisting conditions changed for cases with a date of injury on or after July 1, 2008. In those cases, where the *prior* injury was *non-*

work-related, apportionment may only apply if that prior injury was identified, treated, and independently disabling at the time of the current work-related injury. See the Apportionment of Impairment “flow chart” at the end of this section for details.

Guide to Writing a Narrative Impairment Report: The following is a succinct guide to the elements you should include in an impairment report.

- Thorough review of records, with quotations as appropriate.
- Documentation of patient’s complaints.
- Summary of the clinical course.
- Thorough description of physical examination findings and psychometric testing results.
- Diagnostic impressions.
- Causation as appropriate, with rationale.
- Status of medical stability/MMI.
- Impairment Rating with rationale.
- Apportionment as appropriate, with rationale.
- Detailed description of work restrictions and work status.
- Limitations secondary to gaps in records, conflicting information, patient behavior, etc.
- Send the report to the appropriate parties.
- Say all that you can, but no more.

Causality and Report References

The Independent Medical Evaluation Report, C.R. Brigham, S. Babitsky, J.J. Mangraviti, Jr., Seak, Inc., Falmouth, MA, 1996

“The Environment and Disease: Association or Causation?” A. Bradford Hill, Proceedings of the Royal Society of Medicine 58:295-300 1965

The following pages and tables are reproduced from the Cumulative Trauma Conditions medical treatment guideline, eff. October 30, 2010. This information should be used for assessment of causality and diagnoses of disorders involving especially but not exclusively disorders of the upper extremity. The algorithm on pages 40-41 applies to causation assessment in general.

Physical Examination Findings Reference Table

Section F.	Specific Musculoskeletal Diagnosis	
DIAGNOSIS	SYMPTOMS	SIGNS (Required Findings)
Aggravated Osteoarthritis of the Wrist.	Pain usually in the carpal-metacarpal joints; or in metacarpal-phalangeal joints.	<p><u>At least one of the following:</u></p> <ul style="list-style-type: none"> • Positive grind test resulting in pain; crepitus; • Subluxation of the metacarpal may be induced in advanced cases; • Swelling; • Reduced motion; • Angular deformities; • Tenderness with palpation of thumb phalangeal-metacarpal or carpal-metacarpal joint.
de Quervain's Disease	Tenderness over the first dorsal extensor compartment(anatomical snuff box).	<p><u>At least one of the following:</u></p> <ul style="list-style-type: none"> • Pain worsened by resisted thumb abduction and/or extension with or without resistance; • Positive Finkelstein's test.
Epicondylitis-Lateral (Epicondylalgia)	Elbow pain over the lateral epicondyle increased with gripping.	<p>Tenderness to palpation at/near lateral epicondyle and pain over the lateral epicondyle and/or extensor mass of the forearm with one of the following maneuvers:</p> <ul style="list-style-type: none"> • Active or resisted wrist extension; • Active or resisted middle finger extension; • Active or resisted supination.
Epicondylitis-Medial (Epicondylalgia)	Elbow pain over the medial epicondyle.	<p>Tenderness to palpation at/near medial epicondyle and pain over the medial epicondyle and/or flexor mass of the forearm with one of the following maneuvers:</p> <ul style="list-style-type: none"> • Active or resisted wrist flexion; • Active or resisted pronation.
Extensor Tendon Disorders of the Wrist	Pain localized to the affected tendon(s) worsened by wrist or finger extension.	Pain and/or tenderness with active or resisted wrist/digit extension, specific to the extensor mechanism involved.
Flexor Tendon Disorders of the Wrist	Pain/tenderness localized to affected tendons.	Reproduction of pain with active or resisted wrist/digit flexion or ulnar deviation specific to the flexor mechanism involved.
Triangular Fibrocartilage Complex Tear	Symptoms mainly on ulnar side of the wrist.	Tenderness over the TFCC complex and localized pain, clicking, or findings of abnormal motion with one of the following movements:

Section F.	Specific Musculoskeletal Diagnosis	
(TFCC)		<ul style="list-style-type: none"> • Forced supination and pronation with axial pressure on an ulnar deviated wrist; • The patient pushes up from a seating position using the hand, and/or • Ballottement of the distal ulna with the wrist supinated causes abnormal motion as compared to the asymptomatic side.
Trigger Finger	Difficulty flexing the finger with a catching or triggering sensation.	<p>One of the following:</p> <ul style="list-style-type: none"> • Tenderness at the A-1 pulley with finger flexion; • Triggering of the digit; • Difficulty flexing and extending the finger with a palpable nodule.

Physical Exam Findings Reference (continued):

Section G		Specific Peripheral Nerve Diagnosis
DIAGNOSIS	SYMPTOMS	SIGNS (Required Findings)
Carpal Tunnel Syndrome	<ul style="list-style-type: none"> • Specific paresthesias in 2 of the following digits: thumb, index, and middle finger. • Shaking of the hand (to relieve symptoms) and nocturnal symptoms are common. 	<p>At least one of the following:</p> <ul style="list-style-type: none"> • Positive Phalen’s sign; • Positive Tinel’s sign over the carpal tunnel; • Positive closed fist test; • Positive compression test; • Thenar atrophy may be present later in course; • Weakness of abductor pollicis brevis; • Sensory loss to pinprick, light touch, two-point discrimination or Semmes-Weinstein monofilament tests in a median nerve distribution.
Cubital Tunnel Syndrome	Paresthesias or dull, aching sensations in the 4 th and 5 th digits (ring and small fingers) and discomfort near the medial aspect of the elbow.	<p>Paresthesias or dull, aching in the 4th and 5th digits and at least one of the following exam findings:</p> <ul style="list-style-type: none"> • Diminished sensation of the fifth and ulnar half of the ring fingers, which may sometimes include sensory loss to pinprick, light touch, two-point discrimination or Semmes-Weinstein monofilament tests in an ulnar nerve distribution; • Positive elbow flexion/ulnar compression test; • Later stages manifested by: intrinsic atrophy and ulnar innervated intrinsic weakness; Wartenberg’s sign; Froment’s sign.
Guyon Canal (Tunnel) Syndrome	Paresthesias in the 4 th and 5 th digits (ring and small fingers) without proximal ulnar complaints.	<p>At least one of the following exam findings:</p> <ul style="list-style-type: none"> • Positive Tinel’s at hook of hamate; • Numbness or paresthesias of the palmer surface of the ring and small fingers; • Decreased strength of the adductor pollicis, abductor digiti minimi, and/or lumbricals.
Posterior Interosseous Nerve Entrapment (PIN)	Weakness of finger and thumb extension	Weakness or inability to extend fingers or thumb;

Section G	Specific Peripheral Nerve Diagnosis	
Pronator Syndrome	Pain/paresthesias in the median nerve distribution distal to the elbow.	Paresthesias in the median nerve distribution and at least one of the following reproduces median nerve symptoms: <ul style="list-style-type: none"> • Resisted pronation with elbow flexed at 90 degrees or elbow extended; • Positive Tinel's at the proximal edge of the pronator teres muscle over the median nerve.
Radial Tunnel Syndrome	Pain over the lateral posterior forearm. May occur in conjunction with and must be distinguished from lateral epicondylitis. May include paresthesias over the dorsal radial hand and wrist.	The following two elements are required: <ul style="list-style-type: none"> • Tenderness over the radial nerve near the proximal edge of the supinator muscle; • Resisted supination or resisted middle finger extension with the forearm pronated and extended reproduces symptoms.

3. MEDICAL CAUSATION ASSESSMENT FOR CUMULATIVE TRAUMA CONDITIONS (ref. CTC Treatment Guideline)

General Principles of Causation Assessment

The clinician must determine if it is medically probable (greater than 50% likely or more likely than not) that the need for treatment in a case is due to a work-related exposure or injury. Treatment for a work-related condition is covered when: 1) the work exposure causes a new condition; or 2) the work exposure causes the activation of a previously asymptomatic or latent medical condition; or 3) the work exposure combines with, accelerates, or aggravates a pre-existing symptomatic condition. In legal terms, the question that should be answered is: "Is it medically probable that the patient would need the treatment that the clinician is recommending if the work exposure had not taken place?" If the answer is "yes," then the condition is not work-related. If the answer is "no," then the condition is most likely work-related. In some cases, the clinician may need to order diagnostic testing or jobsite evaluations to make a judgment on medical probability. The following steps should be used to evaluate causality in CTC cases:

Step 1: Make a specific and supportable diagnosis. Remember that cumulative trauma, repetitive strain and repetitive motion are not diagnoses. Examples of appropriate diagnoses include: specific tendonopathies, strains, sprains, and mono-neuropathies. Refer to Sections F (Specific Musculoskeletal Disorders) and G (Specific Peripheral Nerve Disorders) for the specific findings of common CTCs.

Step 2: Determine whether the disorder is known to be or is plausibly associated with work. The identification of work-related risk factors is largely based on comparison of risk factors (as described in Section D.3. a. & b. Foundations for Evidence of Occupational Relationships and Using Risk Factors to Determine Causation) with the patient's work tasks.

Step 3: Interview the patient to find out whether risk factors are present in sufficient degree and duration to cause or aggravate the condition. Consider any recent change in the frequency or intensity of occupational or non-occupational tasks. In some cases, a formal jobsite evaluation may be necessary to quantify the actual ergonomic risks. Refer to the Jobsite Evaluation Section E.6.c.

Step 4: Complete the required match between the risk factors identified on the Risk Factor Table and the established diagnosis using the system described in Section D. 3. b.

Step 5: Determine whether a temporal association exists between the workplace risk factors and the onset or aggravation of symptoms.

Step 6: Identify non-occupational diagnoses, such as rheumatoid arthritis, obesity, diabetes, as well as avocational activities, such as golf and tennis. This information infrequently affects the work-related causation decision. It may be applicable when exposure levels are low and the case does not meet evidence-based criteria.

a. Foundations for Evidence of Occupational Relationships: All results described in this section are a result of a thorough review of the epidemiologic literature available at the time of this guideline. The studies most heavily relied upon healthy worker populations with a variety of exposures, not all of which were well-described quantitatively. No single epidemiologic study fulfills all criteria for causality. The clinician must recognize that currently available epidemiologic data is based on population results. Individual variability lies outside the scope of these studies and must be addressed by the physician on a case-by-case basis. The clinician is responsible for documenting specific information regarding the force, posture, repetition, and other risk factors as listed in the table entitled "Risk Factors Definitions." Job title alone is not sufficient to determine the risk factors. A jobsite evaluation is usually necessary.

Many studies have been completed in industrial setting focusing on cumulative trauma conditions or upper extremity complaints in relationship to work exposures. The studies vary in several ways that directly affect the interpretation of their results. Studies with 1) an accepted clinical exam confirming the diagnosis and 2) work exposures validated by direct observation, or questionnaires that were correlated with direct observation, provide the strongest evidence. Well-done, prospective, longitudinal studies (cohort studies) are preferred; however for uncommon disorders, these studies may not be able to identify the causal factors. We considered other large prevalence and incidence studies when minimum quality criteria had been met and the self-reported exposure uses reliable questionnaires.

Many studies report symptoms rather than disease conditions. These studies are useful for ergonomic research or as pilot studies but do not directly affect the evidence level for causation. They are mentioned, when useful, as indirect evidence. If multiple well-done symptom studies show no increase in symptomatology with specific activities, it follows that there is very little change that the studied exposure causes disease.

In addition, there are a few studies which address less common musculoskeletal diagnoses or peripheral nerve conditions other than carpal tunnel syndrome, such as posterior interosseus nerve entrapment and pronator syndrome. In these cases, we rely upon studies which report the risks for related conditions.

Many of the original studies identifying diagnosable cumulative trauma conditions were performed in manufacturing industries and meat, fish and poultry processing companies. In these industries most workers are exposed to highly repetitive mono-task jobs which frequently involve a forceful grip, awkward postures, vibration, and cold environments. The evidence for increased disorders when these multiple risk factors are present is compelling. Research attempting to define clear, threshold exposure limits for increased risk from isolated tasks and/or intermittent exposures has less consistent results.

The quality of keyboarding studies is highly variable. Most of the studies rely on self report. Self report appears to approximately double the actual time spent using the keyboard. Some studies show distortion highest in the medium range of use. There appears to be less inflation for self reported mouse use. Fortunately a few studies have provided more objective keyboard use data.

The group of studies now available provides good evidence that keyboarding in a reasonable ergonomic posture (wrist with 30 degrees or less of extension and 15 degrees or less of radial deviation) up to 7 hours per day under usual conditions is very unlikely to cause carpal tunnel syndrome or other upper extremity disorders. This is based on studies of carpal tunnel pressure under a variety of typing and wrist positions as well as a number of studies of workers who keyboard on a regular basis. Clinicians may determine in a particular case that there is a relationship based on the ergonomic conditions or on excessive typing, such as more than 7 hours per day of essentially uninterrupted keyboard use per day or full-day court reporting.

There is some evidence that mouse use appears to be associated with carpal tunnel syndrome and related symptoms with 4 hours or greater per day of continuous use. Studies of pressure within the carpal tunnel indicated that pressures may rise to levels which could affect the median nerve when the mouse is being dragged or clicked. Again the actual ergonomics of the work place should be considered for each individual patient before making a final causation decision.

There was a large variety in assessment strategies for lower quality studies. Examples included: symptom only reports; dichotomous choices for exposures, e.g. 1 hour or less per week repetitive activities versus more than 1 hour per week; self report data that does not follow basic pathophysiology, e.g. mouse use between 2.5 & 5 hours per week causing wrist pain; and bias introduced due to prior knowledge of the participants regarding expected work & symptom correlations. In order to reasonably integrate the volume of disparate data, interpretation of lower quality studies took into account reasonable pathophysiology and exposure limits. Dose response relationships were also examined to look for trends in exposure which resulted in increased disease or symptoms.

Most studies were unable to truly assess repetition alone, unassociated with other risk factors. Indirect evidence from a number of studies supports the conclusion that task repetition up to 6 hours per day unaccompanied by other risk factors is not causally associated with cumulative trauma conditions. Risk factors that are likely to be associated with specific CTC diagnostic categories include: extreme wrist or elbow postures; force including regular work with hand tools greater than 1 kg or tasks requiring greater than 50% of an individual's voluntary maximal strength; work with vibratory tools at least 2 hours per day; or cold environments.

The variability in study design presented a challenge for creating physiologically reasonable hour limits for the specific primary and secondary risk factors. We chose the strongest studies for the specific risks involved and extrapolated the measures utilizing the number of quartiles in the working day the person was exposed, or the exposure groups themselves. For example, $\frac{3}{4}$ of a day exposure was translated to a 6 hour exposure and exposure groups working on assembly lines or in similar employment were also assumed to be performing the same tasks for at least 6 hours per day. This cut-off corresponds the best to studies which found positive diagnoses in workers performing repetitive jobs with at least one other risk factor. These constitute our primary risk factor definitions. For the secondary risk factor definitions one study provided direct evidence of 4 hours for the most common risks. We also found indirect evidence from other studies, such as one assessing upper extremity functional impairment and another determining the presence of upper extremity symptoms that 4 hours was a reasonable cut off point for determining physiologically acceptable secondary risks.

No studies examined the relationship between the development of ganglion cysts and work activities; however, work activities, such as bending or twisting of the wrist repetitively, may cause an aggravation of existing ganglion cysts that interferes with function.

Aggravation of a pre-existing medically established diagnosis must be determined on an individual case basis. A comparison of the worker's specific job duties with usual activities of daily living and the occupational risk factors should contribute to the discussion.

Non-occupational exposures

Most studies demonstrate an association of cumulative trauma conditions with older age; high BMI; the presence of other upper extremity musculoskeletal diagnoses; related diseases such as auto-immune conditions, diabetes, hypothyroidism and rheumatologic diseases; and psychosocial issues including relationships with supervisors. The influence of these non-occupational risk factors varies according to the specific diagnoses involved. While the presence of any of these additional factors may be viewed as contributing to the disorder in question, that does not refute the actual evidence from the defined risk factors supporting a specific work related condition.

Use the Risk Factor Definition and Diagnosis Based Risk Factors tables with the following direction to formulate the causation of diagnoses established as cumulative trauma conditions.

b. Using Risk Factors to Determine Causation (Directions):

The physician should perform the following:

Step 1. Determine the diagnosis.

Using the history, physical examination and supporting studies, a medical diagnosis must be established. Refer to Section F (Specific Musculoskeletal Disorders and G (Specific Peripheral Nerve Disorders).

Step 2. Clearly define the job duties of the worker.

Do not rely solely on the employer's description of job duties. The worker's description of how they actually perform the duties is extremely important. Jobsite evaluations are always appropriate, but are sometimes unnecessary when the physician can identify the job duty which appears to be causing the symptoms and provide a method for ergonomically correcting the activity.

Step 3. Compare the worker's duties with the Primary Risk Factor Definition Table.

Hours are calculated by adding the total number of hours per day during which the worker is exposed to the defined risk. Breaks, time performing other activities and inactive time are not included in the total time. When the employee meets the definition for a sole Primary Risk Factor and the risk factor is physiologically related to the diagnosis, it is likely that the worker will meet causation for the cumulative trauma condition. When the Primary Risk Factor identified is not physiologically related to the diagnosis, causation will not be established at this point and Step 4 needs to be considered.

Step 4. Compare the worker's risk factors identified in Step 2 with the Secondary Risk Factor definitions on the Risk Factor Definition Table. If secondary risk factors are identified proceed to the Diagnosis Based Risk Factor Table.

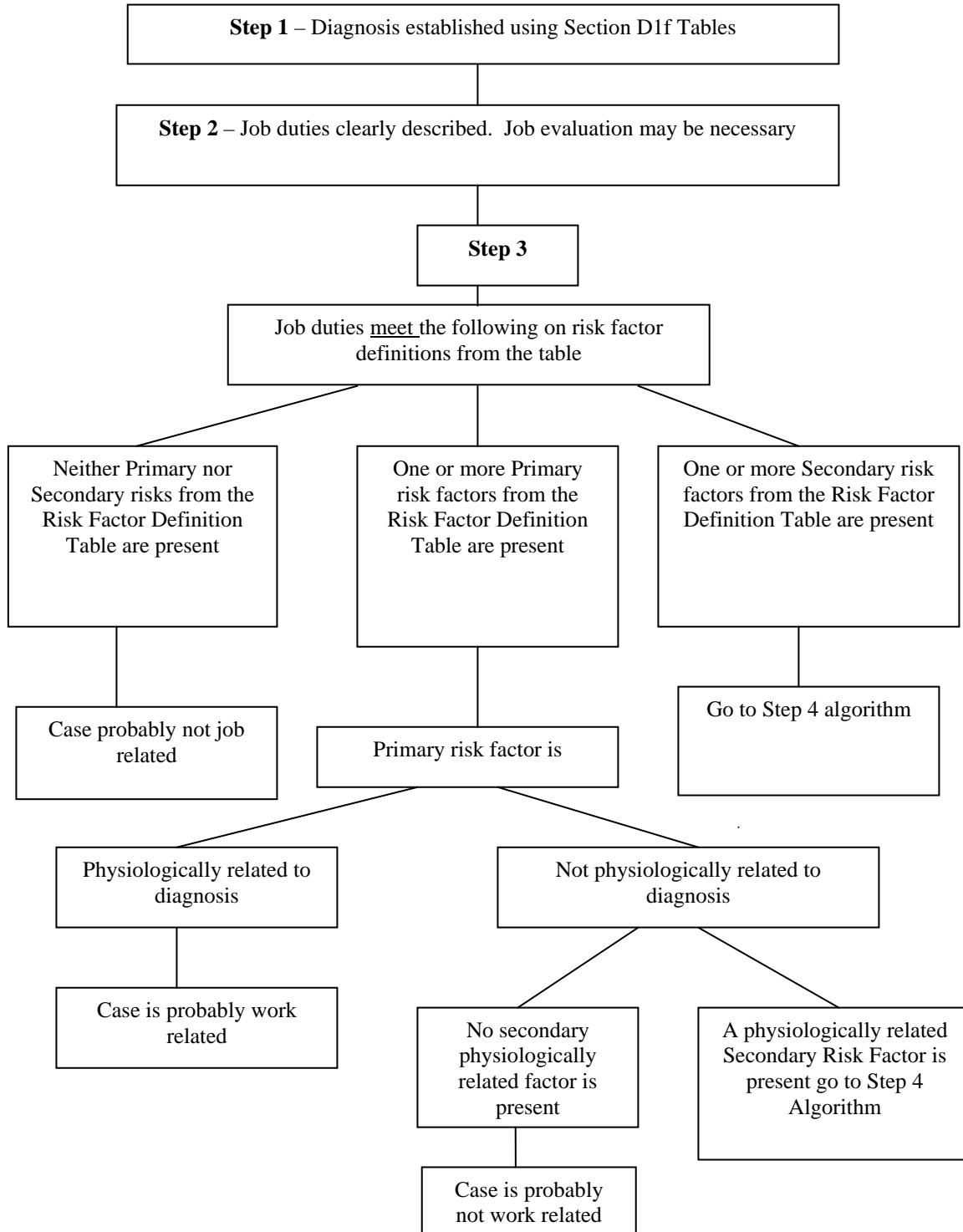
When no Primary Risk Factors are present but one or more Secondary Risk Factors are found on the Risk Factor Definitions Table proceed to the Diagnosis Based Risk Factor Table. Elements in this table are listed under the strength of evidence headings. This includes a category for strength of evidence for risks that have been demonstrated not to be

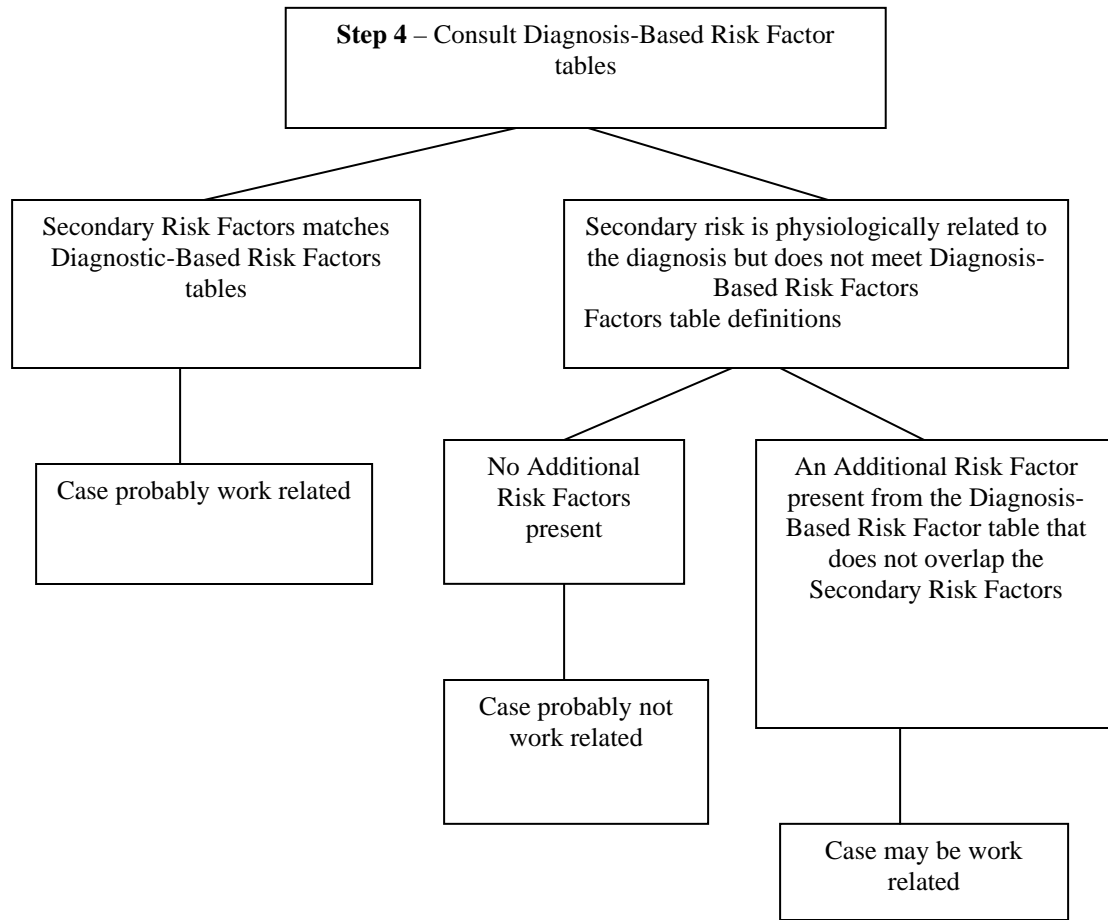
related to the diagnosis. Consult the diagnostic category pertaining to the worker. For a number of less common diagnoses, little direct research has been done that meets our quality standards. Therefore, the risk factors for these diagnoses use the risk factors from physiologically related, better researched diagnostic titles. Initially, check the evidence statements for or against causation based on the secondary risks identified previously. If the Diagnosis Based Risk Factor table establishes a match between the Secondary Risk Factor(s) and other job duties, using the evidence based columns for the established diagnosis, the case is likely work-related based on evidence. If none of the evidence categories matches the worker, causation based solely on evidence from research has not been established.

Step 5.

If an evidence based causation relationship, based on Steps 1-4, has not been established and the worker has one Secondary Risk Factor from the Risk Definition table, the physician may consult the last column of the Diagnosis Based Risk Factor table entitled "Additional Risk Factors." This category describes medically accepted physiologic risk factors for the diagnosis and risk factors which demonstrated an association with the diagnosis in lower quality studies that did not meet our standards of evidence. Some of the additional risk factors have less clear definitions due to lack of definition in the lower quality studies. These risk factors were added only when the medical consensus of the multi-disciplinary group agreed they were physiologically plausible. When a Secondary Risk Factor has been identified that does not meet the evidence based definitions in the Diagnosis Based Risk Factor Tables, physicians may use the other "Additional Risk Factors", as appropriate, to establish the presence of combined risk factors and establish causation. The worker must have met at least one of the Secondary Risk Factor definitions from the Risk Factor Definition table and that risk factor must be physiologically related to the diagnosis, in order to use the "Additional Risk Factors" in the Diagnosis Based Risk Factor table. Additional Risk factors that duplicate the conditions in the Secondary Risk Factor identified for the case may not be used. Any conclusions using this methodology are not strictly evidence-based and therefore the physician should include a discussion of why the Additional Risk Factors are pertinent in the particular case.

Algorithmic Steps for Causation Assessment





RISK FACTOR DEFINITIONS

CAUSATION MAY BE ESTABLISHED BY THE PRESENCE OF 1) A DIAGNOSIS-RELATED SOLE PRIMARY RISK FACTOR WHICH IS PHYSIOLOGICALLY RELATED TO THE DIAGNOSIS OR; 2) AT LEAST ONE SECONDARY RISK FACTOR THAT MEETS THE REQUIREMENTS FROM THE DIAGNOSIS-BASED RISK FACTOR TABLE

NOTE: Hours are calculated by totaling the cumulative exposure time to the risk over an 8 hour day. Breaks or periods of inactivity or performing other types of work tasks are not included.

Category	As a Primary Risk Factor	Secondary Risk Factor
<u>Force and Repetition/Duration</u>	6 hrs. of: > 50% of individual maximum force with task cycles 30 seconds or less or force is used for at least 50% of a task cycle-maximum force for most individuals is 3-5 kg of force.	4 hrs. of: > 50% of individual maximum force with task cycles 30 seconds or less or force is used for at least 50% of a task cycle-maximum force for most individuals is 3-5 kg of force.
	6 hrs. of: lifting 10 lbs > 60x per hour.	4 hrs. of: lifting 10 lbs > 60x per hour. *
	6 hrs. of: use of hand held tools weighing 2 lbs or greater.	4 hrs. of: use of hand held tools weighing 2 lbs or greater.
<u>Awkward Posture and Repetition/Duration</u>	4 hrs. of: Wrist flexion > 45 degrees, extension > 30 degrees, or ulnar deviation > 20 degrees.	
	6 hrs. of: Elbow - flexion > 90 degrees.	4 hrs. of: Elbow - flexion > 90 degrees.
	6 hrs. of: Supination/pronation with task cycles 30 seconds or less or posture is used for at least 50% of a task cycle.	4 hrs. of: Supination/pronation with task cycles 30 seconds or less or posture is used for at least 50% of a task cycle.*
<u>Computer Work</u>	<p>Note: Up to 7 hours per day at an ergonomically correct workstation is not a risk factor.</p> <p>> 4 hrs. of: Mouse use.</p>	

RISK FACTOR DEFINITIONS

CAUTION MAY BE ESTABLISHED BY THE PRESENCE OF 1) A DIAGNOSIS-RELATED SOLE PRIMARY RISK FACTOR WHICH IS PHYSIOLOGICALLY RELATED TO THE DIAGNOSIS OR; 2) AT LEAST ONE SECONDARY RISK FACTOR THAT MEETS THE REQUIREMENTS FROM THE DIAGNOSIS-BASED RISK FACTOR TABLE

NOTE: Hours are calculated by totaling the cumulative exposure time to the risk over an 8 hour day. Breaks or periods of inactivity or performing other types of work tasks are not included.

Category	As a Primary Risk Factor	Secondary Risk Factor
<u>Use of handheld vibratory power tools and Duration</u>	6 hrs. for more common types of vibration exposure.	2 hrs. When accompanied by other risks.
<u>Cold Working Environment</u>		Ambient temperature of 45F or less for 4 Hrs. or more, such as handling frozen foods that are 10 degrees.

* Referencing related studies, which established 4 hours as a cut off for symptoms of cumulative trauma conditions and which found 4 hours of exposure to be related to functional problems of the upper extremity, as well as reasonable inferences from physiological knowledge, 4 hours is considered the most reasonable cut off.

DIAGNOSIS - BASED RISK FACTORS

Hours are calculated by totaling the cumulative exposure time to the risk over an 8 hour day. Breaks or periods of inactivity or performing other types of work tasks are not included. Unless the hours are specifically stated below, “combination” of factors described below uses the Secondary Risk Factor Definitions from the Risk Factor Definition Table

Diagnosis	Evidence FOR Specific Risk Factors			Evidence AGAINST Specific Risk Factors	Non-Evidence-Based Additional Risk Factors to Consider. These factors must be present for at least 4 hours of the work day, and may not overlap evidence risk factors. ¹
	Strong Multiple high quality studies	Good One high quality study or multiple adequate studies	Some One adequate study		
<u>Aggravated Osteoarthritis of the Wrist</u>	No Quality Evidence Available				Awkward Posture (depending on the joint involved) Repetition of activities affecting the joint involved for 4 hrs. Prior Injury.
<u>Carpal Tunnel Syndrome</u>		Combination of force, repetition, and vibration.	Wrist bending or awkward posture for 4 hrs.	Good evidence - Keyboarding less than or equal to 7 hrs. in good ergonomic position is NOT RELATED.	High repetition defined as task cycle times of less than 30 seconds or performing the same task for more than 50% of the total cycle time.
		Combination of repetition and force for 6 hours.			

DIAGNOSIS - BASED RISK FACTORS

Hours are calculated by totaling the cumulative exposure time to the risk over an 8 hour day. Breaks or periods of inactivity or performing other types of work tasks are not included. Unless the hours are specifically stated below, “combination” of factors described below uses the Secondary Risk Factor Definitions from the Risk Factor Definition Table

Diagnosis	Evidence FOR Specific Risk Factors			Evidence AGAINST Specific Risk Factors	Non-Evidence-Based Additional Risk Factors to Consider. These factors must be present for at least 4 hours of the work day, and may not overlap evidence risk factors. ¹
	Strong Multiple high quality studies	Good One high quality study or multiple adequate studies	Some One adequate study		
		Combination repetition and forceful tool use with awkward posture for 6 hours – Deboning study.	Mouse use more than 4 hours.	Good evidence- Repetition alone less than or equal to 6 hrs. is NOT RELATED.	Tasks using a hand grip.
		Combination force, repetition, and awkward posture.	Combination cold and forceful repetition for 6 hours - Frozen food handling.		Extreme wrist radial/ulnar positions or elbows in awkward postures.
<u>Cubital Tunnel Syndrome</u>			Combination forceful tool use, repetition and probably posture for 6 hours - Holding a tool in position with repetition.		Wrist bending and/or full elbow flexion/extension, repetition for 4 hours, vibration.
					Repetitive pronation of forearm. ³
					Sustained pressure at the cubital tunnel.
<u>DeQuervain's Disease</u>		Combination force, repetition, & posture.			Wrist in ulnar deviation. ³
<u>DeQuervain's (cont)</u>					Repetitive thumb abduction and extension. ³
					Wrist bending in extreme postures.

DIAGNOSIS - BASED RISK FACTORS

Hours are calculated by totaling the cumulative exposure time to the risk over an 8 hour day. Breaks or periods of inactivity or performing other types of work tasks are not included. Unless the hours are specifically stated below, “combination” of factors described below uses the Secondary Risk Factor Definitions from the Risk Factor Definition Table

Diagnosis	Evidence FOR Specific Risk Factors			Evidence AGAINST Specific Risk Factors	<u>Non-Evidence-Based Additional Risk Factors to Consider.</u> These factors must be present for at least 4 hours of the work day, and may not overlap evidence risk factors. ¹
	Strong Multiple high quality studies	Good One high quality study or multiple adequate studies	Some One adequate study		
					Precise hand motions e.g. dental hygienists.
					Repetitive hitting.
<u>Epicondylitis Lateral -</u>		<p>Combination – awkward posture (forearm supination past 45 degrees) and forceful lifting.</p> <p>Combination force and possible awkward posture – study used repetition and turning and screwing.</p> <p>Combination – force & repetition, force and wrist and hand repetition.</p>		Some evidence keyboard use is NOT RELATED.	Wrist posture in extension and repetitive supination of the forearm and/or elbow extension. ³

DIAGNOSIS - BASED RISK FACTORS

Hours are calculated by totaling the cumulative exposure time to the risk over an 8 hour day. Breaks or periods of inactivity or performing other types of work tasks are not included. Unless the hours are specifically stated below, “combination” of factors described below uses the Secondary Risk Factor Definitions from the Risk Factor Definition Table

Diagnosis	Evidence FOR Specific Risk Factors			Evidence AGAINST Specific Risk Factors	Non-Evidence-Based Additional Risk Factors to Consider. These factors must be present for at least 4 hours of the work day, and may not overlap evidence risk factors. ¹
	Strong Multiple high quality studies	Good One high quality study or multiple adequate studies	Some One adequate study		
<u>Epicondylitis Lateral (cont)</u>			Combination repetition and awkward posture including static posture.		
<u>Epicondylitis Medial</u>		Combination - force & repetition, force and wrist and hand repetition. Combination - forceful exertion and repetition 6 hours.		Some evidence keyboard use is NOT RELATED.	Wrist posture in flex and repetitive pronation and/or elbow extension. ³

DIAGNOSIS - BASED RISK FACTORS

Hours are calculated by totaling the cumulative exposure time to the risk over an 8 hour day. Breaks or periods of inactivity or performing other types of work tasks are not included. Unless the hours are specifically stated below, “combination” of factors described below uses the Risk Factor Definitions found in the Secondary Risk Factor column.

Diagnosis	Evidence FOR Specific Risk Factors			Evidence AGAINST Specific Risk Factors	Non-Evidence-Based Additional Risk Factors to Consider. These factors must be present for at least 4 hours of the work day, and may not overlap evidence risk factors.
	Strong Multiple high quality studies	Good One high quality study or multiple adequate studies	Some One adequate study		
<u>Extensor tendon disorders of the Wrist</u>		Combination force, repetition, & posture.			Sustained tool use. Awkward posture. ³ No relationship to keyboard use is expected in a good ergonomic workstation. Wrist bending in extreme postures. Repetitive hitting.
<u>Flexor tendon disorders of the Wrist</u>		Combination force, repetition, & posture.			Sustained tool use. Awkward posture. ³ No relationship to keyboard use is expected in a good ergonomic workstation. Wrist bending in extreme postures. Repetitive hitting.
<u>Guyon Canal</u>	No Quality Evidence Available.				Ulnar wrist posture and flexion. Direct pressure on the wrist.

DIAGNOSIS - BASED RISK FACTORS

Hours are calculated by totaling the cumulative exposure time to the risk over an 8 hour day. Breaks or periods of inactivity or performing other types of work tasks are not included. Unless the hours are specifically stated below, “combination” of factors described below uses the Risk Factor Definitions found in the Secondary Risk Factor column.

Diagnosis	Evidence FOR Specific Risk Factors			Evidence AGAINST Specific Risk Factors	Non-Evidence-Based Additional Risk Factors to Consider. These factors must be present for at least 4 hours of the work day, and may not overlap evidence risk factors.
	Strong Multiple high quality studies	Good One high quality study or multiple adequate studies	Some One adequate study		
<u>Posterior Interosseus Nerve Entrapment</u>	Refer to lateral epicondylitis section above for indirect evidence. No specific evidence available.				
<u>Pronator Syndrome</u>	Refer to medial epicondylitis section above for indirect evidence. No specific evidence available.				
<u>Trigger Finger</u>			Hand tool use – 6 hours.		Repeated digital flexion.
<u>Radial Tunnel Syndrome</u>			Repetition and force - force of 1 kg with cycle time < 1 minute or awkward posture (static posture) elbow > 90 degrees.		Repetitive Supination. Extension of the elbow from 0 to 45 degrees.
<u>Triangular Fibrocartilage Compression</u>	No Quality Evidence Available.				Usually from traumatic hyperextension which may become symptomatic over time. Wrist posture in extension and repetitive supination of the forearm and/or elbow extension. For occupational, usually unilateral with ulnar wrist pain while supinating and extending the wrist as part of the regular work duty.

DIAGNOSIS - BASED RISK FACTORS

Hours are calculated by totaling the cumulative exposure time to the risk over an 8 hour day. Breaks or periods of inactivity or performing other types of work tasks are not included. Unless the hours are specifically stated below, “combination” of factors described below uses the Risk Factor Definitions found in the Secondary Risk Factor column.

Diagnosis	Evidence FOR Specific Risk Factors			Evidence AGAINST Specific Risk Factors	Non-Evidence-Based Additional Risk Factors to Consider. These factors must be present for at least 4 hours of the work day, and may not overlap evidence risk factors. ¹
	Strong Multiple high quality studies	Good One high quality study or multiple adequate studies	Some One adequate study		

¹ Physiological risk factors are those generally agreed upon by the medical community to cause the specific condition described. Other risk factors described are those identified in lower quality studies that are possibly related. These are consensus risk factors.

² Combined factors refer to the Secondary Risk Factor definitions found in the Risk Factor Definition Table.

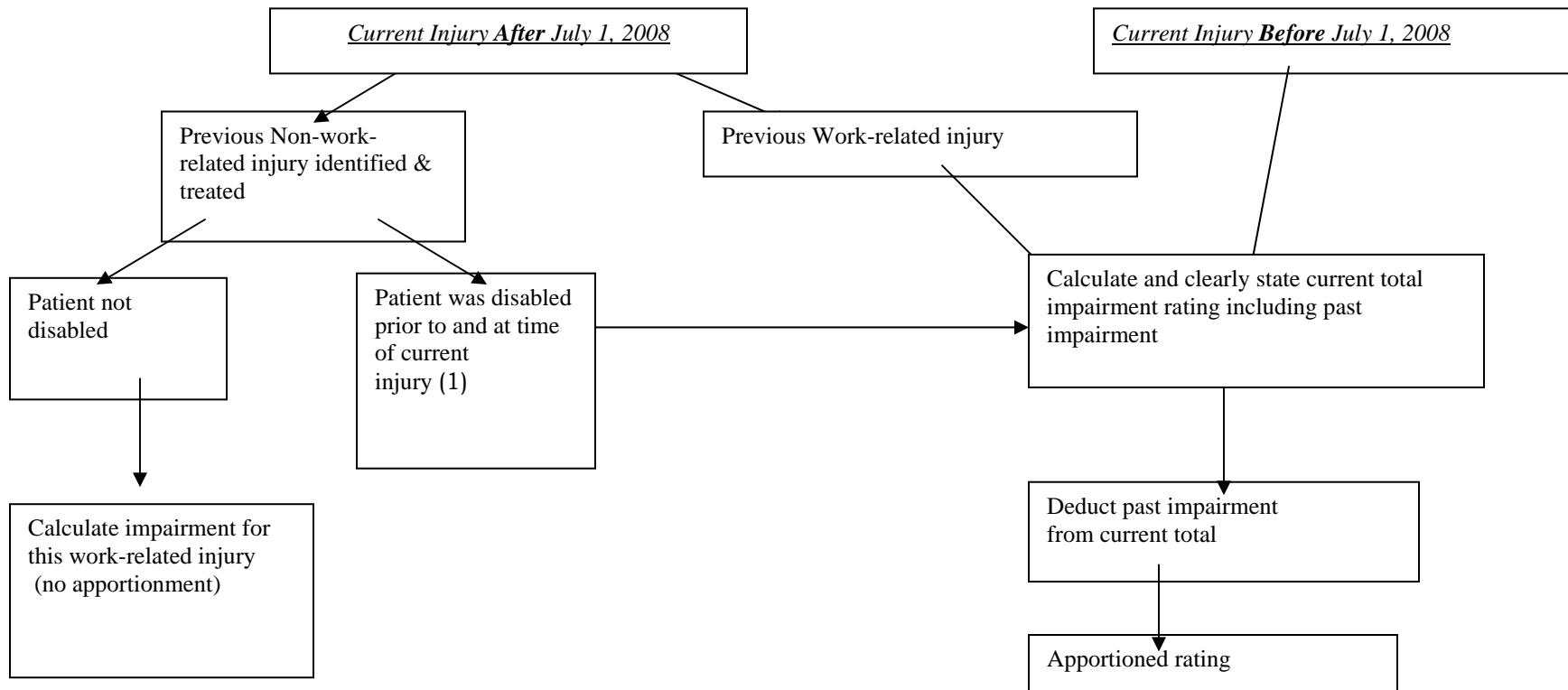
³ **Caution:** These additional risk categories may not be used when awkward posture, using a similar definition, has been cited as a Secondary Risk Factor.

⁴ Evidence rated as strong by NIOSH 1997 criteria are placed in the “good” category because the NIOSH strong evidence definition matches the Colorado “good” level of evidence requiring multiple adequate studies.

⁵ Due to small case size and a definition of low force/high repetition jobs that likely included many jobs qualifying for a force risk from the “Risk Definitions” table, this study does not support repetition as a sole risk factor.

APPORTIONMENT OF IMPAIRMENT
Guideline for Accredited Physicians
Changes per Senate Bill 08-241 and Workers' Compensation Rule 12-3

MEDICAL RECORDS OR OTHER OBJECTIVE EVIDENCE SUBSTANTIATES PRE-EXISTING IMPAIRMENT



(1) 'Disabled' requires information that the prior injury was identified, treated, and independently disabling at the time of the current injury. 'Disability' is expected to include conditions which adversely impact the claimant's ability to perform his job, or limits the claimant's access to other jobs. Permanent work restrictions would generally fall in this category.

ETHICAL STANDARDS

ETHICAL STANDARDS IN PATIENT/DOCTOR RELATIONSHIP IN WORKERS' COMPENSATION CASES

Professional Standards:

See Code of Ethical Conduct for Physicians Providing Occupation Medical Services (American College of Occupational and Environmental Medicine), a copy of which is attached.

Also see Interprofessional Code (Interprofessional Committee of the Colorado Bar Association, Colorado Medical Society, Denver, Bar Association, Denver Medical Society) - copy attached. The Code may also be obtained from the Colorado Bar Association at (303) 860-1115 or via their website at: *www.cobar.org*.

Modern society has placed a necessary strain upon the traditional patient/doctor relationship. Specifically, the filing of a Worker's Compensation case automatically results in "limited waiver" of the patient/doctor privilege allowing release of information "relevant" to the particular worker's compensation case for the purposes of resolving the claim. This modern rule reflects a balancing of interest between the patient/doctor relationship on the one hand and the need for administrative bodies and insurance companies to properly adjudicate claims on the other. The operative word is "relevant."

**AMERICAN COLLEGE OF OCCUPATIONAL AND ENVIRONMENTAL
MEDICINE**
**Code of Ethical Conduct for Physicians Providing Occupational
Medical Services**

These principles are intended to aid physicians in maintaining ethical conduct in providing occupational medical service. They are standards to guide physicians in their relationship with the individuals they serve, with employers' and workers' representatives, with colleagues in the health professions, and with the public.

Physicians should:

1. accord highest priority to the health and safety of the individual in the workplace;
2. practice on a scientific basis with integrity and strive to acquire and maintain adequate knowledge and expertise upon which to render professional service;
3. relate honestly and ethically in all professional relationships;
4. strive to expand and disseminate medical knowledge and participate in ethical research efforts as appropriate;
5. keep confidential all individual medical information, releasing such information only when required by law or overriding public health considerations, or to other physicians according to accepted medical practice, or to others at the request of the individual;
6. recognize that employers may be entitled to counsel about an individual's medical work fitness, but not to diagnoses or specific details, except in compliance with laws and regulations;
7. communicate to individuals and/or groups any significant observations and recommendations concerning their health or safety; and
8. recognize those medical impairments in oneself and others, including chemical dependency and abusive personal practices, which interfere with one's ability to follow the above principles and take appropriate measures.

Adopted by the ACOEM Board of Directors on October 25, 1993.

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Overview of the Litigation Process

There are generally two types of legal cases. Criminal cases involve a charge prosecuted by a governmental body that some individual broke a criminal law and should be punished. Civil cases involve private disputes between individuals where damages or some other remedy is requested. Administrative claims such as workers' compensation or social security claims are resolved through a form of civil proceeding conducted by an administrative body. These different types of cases involve different burdens of proof, different rules of procedure, and different roles for the expert witness.

The expert is most often asked to become involved in a civil lawsuit. The expert can come from many different professions, such as physicians, accountants, engineers, and economists.

In civil cases, the "plaintiff" is the party who brings the lawsuit and the "defendant" is the party who is being sued. Before a lawsuit is commenced, the injured party may be referred to as the "claimant." A civil action is started by filing a "pleading" called a "Complaint" with the court, which is then "served" on the defendant along with a "Summons." The defendant must then timely file a pleading called an "Answer." Depending upon the complexity of the lawsuit, other pleadings and parties may be added. The purpose of this pleadings stage is simply to determine the legal claims, defenses and other legal issues involved. The pleadings serve as a framework for later proceedings.

The parties may then conduct discovery, where each side seeks to discover the facts and evidence relevant to the legal issues involved and which tend to support or contradict a given party's position. Various discovery devices are allowed under the Rules of Civil Procedure. These include "Interrogatories" (written questions requesting information provided under oath); "Requests for Production of Documents or Things" (written requests for documentary or tangible evidence in the possession or control of the other party); "Requests for Medical Examination" (an examination by a physician or health care specialist of a party's own choosing of some physical or mental condition which has been placed "in controversy" by the opposing party); and "Depositions" (sworn testimony taken before a shorthand reporter wherein the attorneys can personally ask questions of a party or witness).

Thus, in the discovery phase, a "treating physician," i.e., one who has provided care and treatment to a party, may be asked to provide medical records, medical reports, and patient billing. Or, a company's C.P.A. may be required to provide financial records, tax returns, and client billings. Such an expert may also be asked to give a deposition. Further, a physician who has never treated a party may be asked to perform a mental or physical examination, or an accountant who has never worked for a party may be requested to review the books and records of a party and provide a report on behalf of a party to the lawsuit solely for litigation purposes and not for treatment or regular business purposes.

Much of today's litigation involves complex factual issues concerning such areas as medicine, psychiatry, engineering, economics, rehabilitation, and law. When issues are sufficiently complex that they are beyond the common knowledge or understanding of the judge or jury, "expert testimony" by "expert witnesses" may be necessary to assist the judge or jury in determining the case.

Therefore, a witness may become an "expert witness" who is called to testify as to certain facts within his or her knowledge and give "expert opinions" on certain complex factual issues. For example, a treating or examining physician may be called as an expert witness to testify concerning the examination, care, and treatment of a party and may be requested to give opinions on such issues as diagnosis, causation, prognosis, permanency, disability, need for future treatment, and reasonableness of costs of past or future treatment.

In investigating or evaluating a case involving complex factual issues, an expert may also be asked simply to assist an attorney or party in understanding the issues involved. In doing so, the expert may become an "expert consultant" or "specially retained expert." Such an individual does not thereby agree to become an

"expert witness" for that party and can limit his or her review or involvement in the case simply to that of a consultant with no obligation to give expert testimony. He or she can also condition his or her involvement upon anonymity such that his or her name will not be disclosed to opposing counsel or to the court, unless compelling circumstances justify a court order requiring disclosure. If such a limited or conditional role is requested, it should be clearly understood between the expert and the attorney, and preferably reduced to writing, to avoid future confusion or disputes.

An "expert consultant" or "specially retained expert" may agree to become an "expert witness" on the issues he or she has reviewed. These may involve complex issues of causation, or apportionment of injuries as between multiple causes, in claims involving products liability, medical liability, workers' compensation, or other personal injury actions. This may also include issues such as "standard of care," "informed consent," or other issues involving propriety of conduct or responsibility.

Sometime before trial, each party must disclose his or her "expert witnesses" to the other side and to the court. Simply because an expert is disclosed by one party or another does not suggest that the expert's opinions are expected to be totally favorable to that party or that the expert should be anything other than fair and objective to all sides. The disclosure of the experts is pursuant to the rules governing procedure in the courts where the case is filed. If the expert is disclosed past the required deadlines in the rules, the expert may not be allowed to testify.

The rules are quite specific and broad requiring the items that must be disclosed for an expert specially retained to testify and include such items as a copy of the expert's report or summary; a complete statement of all opinions to be expressed and the basis and reasons therefor; the data or other information considered by the witness in forming the opinions; any exhibits to be used as a summary or support for the opinions; the qualifications of the witness, including a list of all publications authored by the witness within the preceding ten years; the compensation for the study and testimony; and a listing of any other cases in which the witness has testified as an expert at trial or by deposition within the preceding four years.

Experts such as treating physicians are often endorsed as possible expert witnesses based solely on their role as a treating physician and the notes or records they have generated, even though they have never been contacted by the lawyer. The disclosures required for these experts are much less burdensome. Opinions or other potential testimony of an expert that are not adequately disclosed to the other side and to the court can result in their not being allowed at trial.

After an expert witness is disclosed, he or she may be asked to submit to a deposition so that the opposing attorney can gain further knowledge as to that expert's opinions and possible testimony. This also assists the opposing attorney in assessing the need for obtaining an expert of his or her own choosing to address the same issue.

If the case proceeds to trial, those experts who have been disclosed as expert witnesses may be called to testify. The party who calls the witness asks the first series of questions on "direct examination," the opposing attorney can then "cross-examine," and there may be further "redirect examination" by the attorney who called the witness. Adequate pretrial consultations should prepare the expert concerning this trial testimony.

In jury trials, the judge determines the admissibility of evidence and instructs the jury on the applicable law. The jury determines the facts based on the credibility of the witnesses and the weight of the evidence and determines the outcome based on the law as provided by the court. If legal errors were made by the court in ruling on motions, admitting evidence, or instructing the jury, a party may ask the trial court to correct that error or may appeal to an appellate court.

Most civil cases are settled. Settlement can occur at any time, including before the case is filed, during the pretrial phase or discovery phase, during trial or even jury deliberations, or after trial and during appeal.

General Principles

1.1 In cases involving personal injuries and where a patient suffers from a condition which is the subject of a legal dispute, a treating physician has a duty to provide medical information pertinent to the patient's claim in reports, depositions, conferences and trial testimony. In other cases, experts may have a duty to provide information that experts have obtained in the course of their normal duties, such as an accountant auditing books of a business.

It is recognized that the primary duty of a physician is to treat a patient's illness or injuries. However, an additional responsibility of a treating physician is to provide necessary medical information and opinions by virtue of his or her acceptance of that patient for treatment. Like any other citizen, a physician or other expert can be required to tell what he or she knows if such information will aid the judicial process.

The transmittal of this medical or other information may include a written report which either sets forth the diagnosis, treatment and prognosis, or which responds to specific questions posed by an attorney concerning important issues in the case. Later, the expert's deposition may be taken to "discover" further information. Incidental to these contacts, one or more conferences between the expert and the attorney endorsing or retaining the expert may be requested. Finally, if the case does not settle, the expert may be called as a witness to testify in court.

The expert and attorney should cooperate in this information-gathering process to facilitate settlement, promote the administration of justice, and control the costs of litigation.

1.2 Experts and attorneys should openly communicate with one another and, wherever possible, agree in advance concerning the terms of their relationship so as to avoid conflict and disputes between the professions.

Open communication is the touchstone of dispute avoidance and dispute resolution. While experts' services are essential to the administration of justice, the expert and attorney should seek out and discuss ways of minimizing the burden of services on physicians and other experts as well as minimizing the cost to clients. Unless an attorney and expert have a history of prior business dealings, it is desirable to agree in advance concerning the nature, scope, and cost of the expert's services. (These subjects are discussed in greater detail in other sections of this Code.) The expert may already have set policies, or an agreement may be worked out at the time of the initial contact. Preferably this agreement should be reduced to writing.

If an agreement cannot be reached, the matter should be discussed immediately. At all times, the client's best interests should be the overriding concern. The professionals should agree on as much as possible and submit any residual dispute to the court or an interprofessional dispute resolution committee.

Toward this end, direct communication between the expert and attorney is preferable to communication between secretaries, receptionists, or clerical staff.

1.3 The role of the expert is not that of an advocate or trier of fact and, at all times, the expert's opinions should remain fair, unbiased, and objective.

The role of the expert in a lawsuit is that of a witness only. The expert should never become an advocate or a trier of fact. The expert should not seek to openly support or oppose the position of either party. No matter how much he or she inwardly favors or opposes the cause of one party to a lawsuit, it is the expert's clear duty to present information in a fair, unbiased, and objective fashion. When called to testify, the expert's duty is to answer the questions truthfully and to the best of his or her knowledge. Under no circumstances is an expert justified in suppressing evidence. The expert should never be influenced by extraneous matters such as the source of his or her compensation, friendships, personalities, or inappropriate pressures from patients, clients, attorneys, insurers, or professional organizations.

1.4 Although an attorney is an advocate, an attorney is never justified in abusing or intimidating an

expert witness in any manner, in an attempt to discourage the expert's further involvement in the litigation or to alter or suppress the expert's testimony.

An attorney is an advocate and has a duty to zealously represent his client's best interests in litigation. However, that duty as advocate never justifies abuse, intimidation, badgering, or personal attacks on a witness. Improper attempts to discourage the expert's further involvement in the litigation or to alter or suppress the expert's testimony should be strongly denounced. Such attempts are never justified or necessary. Adequate means are available to test credibility by cross-examination, impeachment, and rebuttal. An expert need not tolerate abusive or improper conduct and should promptly bring it to the attention of the opposing counsel, the court or tribunal in which the action is pending, or an appropriate grievance committee.

1.5 Attorneys should refrain from giving advice on medical management or interfering in the physician-patient relationship. Similarly, physicians should refrain from giving advice on legal matters or interfering in the attorney-client relationship. In other cases, non-physician experts and attorneys should refrain from interfering in the relationship between the expert, his or her client, and the attorney and client.

Physicians, other experts, and attorneys must recognize that they hold a position of trust and confidence with their patient-client. Each professional must recognize the limitations of his or her role and expertise and defer to the other professional in matters uniquely within that individual's expertise.

Hence, a lawyer should not encourage "physician shopping" or "expert shopping," should not counsel a client concerning treatment options, and should not otherwise improperly influence the client in an attempt to accentuate damages.

At the same time, the expert should refrain from counseling the client concerning such legal matters as the value of the client's claim, the nature or terms of the fee agreement with the attorney, or trial techniques and strategy decisions. These are exclusively the province of the lawyer.

Confidentiality of Information

2.1 Information obtained by experts in the course of their regular duties may be privileged by statute and deemed confidential. Such privileges exist for physicians, clergy, attorneys, accountants, licensed psychologists, and others. Great care must be exercised to prevent unauthorized or inappropriate disclosures of such confidential information.

To assure frank and complete disclosure of sensitive information concerning a person's health, legal matters, religious matters, or other privileged information and to assist a particular expert in providing services for the expert's patient or client, the law in Colorado recognizes that such information is privileged and confidential and cannot generally be disclosed without the patient or client's consent. See C.R.S. § 13-90-107.

The unauthorized disclosure of such confidential information may expose the expert to a common law claim for

damages; it may constitute a violation of the expert-patient/client privilege; it may be a breach of the expert's ethics; and may also constitute a felony under Colorado's Theft of Medical Information Statute, C.R.S. § 18-4-412.

There are restrictions regarding meeting with and/or disclosing information to the patient's adversaries. See § 6.3 for further discussion.

In certain circumstances, if the disclosure of sensitive medical, psychiatric, psychological, or other confidential information would undermine the relationship with the patient/client, or adversely affect his or

her treatment or services, disclosure may be opposed until appropriately reviewed by a court. If a question arises concerning the propriety of a requested disclosure of confidential information, the expert should consult the patient/client or the patient's/client's attorney, or seek advice from the expert's personal attorney.

Medical Records

3.1 Complete and accurate medical records should be maintained for each patient.

Medical records are not only necessary for proper patient care but also assume important medico-legal implications. They are invaluable to the physician in defending medical liability claims. They are also of great assistance in evaluating and presenting a patient's personal injury claim. If they are sufficiently complete and legible, they may avoid the necessity, time, expense, and effort of formal reports. Because of their medico-legal importance, accuracy is crucial and such records must not be altered, supplemented, or destroyed because of pending or anticipated litigation.

Complete and accurate records should be maintained by other experts under various Colorado laws and rules, such as for attorneys and accountants. These records are also important in evaluating claims that may exist with regard to the services provided or for other issues. Such records should be available to the patient/client under similar conditions to medical records set forth in this Section 3.1 through 3.4.

3.2 A medical release authorization form, complying with all federal and state statutes and regulations, should be provided to the physician or health care provider before medical records are released.

By Colorado statute, patient medical records are available for inspection and copying upon " ... submission of a written authorization-request for records, dated and signed by the patient ... " C.R.S. §25-1-801.

Federal Privacy Acts concerning the release of drug and alcohol treatment program records also have very specific requirements concerning the contents of an authorization form (42 C.F.R. 2.31). Other federal, state, and local statutes, laws, and regulations may also limit the disclosure and dissemination of certain medically related information.

A standard approved authorization form, complying with all existing applicable laws and privacy interests, has been developed in a joint effort by the Colorado Bar Association Interprofessional Committee and the Colorado Certified Medical Record Administrators, and is included here as an Appendix. If questions arise concerning the propriety of releasing certain information, the health care provider should contact his or her attorney. The requirement by some institutions and health care providers that a special internally developed form be used is disapproved. Such special forms add undue expense and are a waste of time and effort to the institution or health care provider, as well as to the patient and attorney. The perceived advantages of internal forms are outweighed by the advantages of the standard approved authorization form.

Further, an internal requirement by a health care provider that the form be signed within a certain period of time prior to the request is disapproved, and the signed form should be deemed valid unless, by its expressed terms, it has expired.

There is no requirement that the signature be notarized. The release should identify the individual or entity to which the authorization is given, but one release may cover multiple health care providers. There should be a description of the information requested, and specific authorization should be stated if drug or alcohol treatment records or psychiatric or psychological records are requested.

3.3 A treating physician should surrender legible and complete copies of all records requested in the authorization to assist a patient in

litigation and to advance the administration of justice.

Under Colorado law, a patient has a right of access to his or her patient records. An exception applies to certain psychiatric or psychological records which have special restrictions before disclosure is allowed. CRS §25-1-801 et seq.

A physician therefore has a duty to provide all information requested in a patient authorization concerning a patient's health to assist the parties and the finder of fact in the evaluation and presentation of that patient's personal injury claim. (See §1.1.)

Often times, all parties to a lawsuit will request such medical records. When this occurs, an attempt should be made to coordinate requests for medical records to avoid needless duplication of effort and unnecessary inconvenience to the health care provider.

Whenever possible, if a medical records deposition is taken and the only purpose is to obtain patient medical records, the subpoena should be addressed to the custodian of records or the physician's agent and not the physician.

Generally, the original medical records or x-rays should not be provided, but should be available for examination. While releasing original records or x-rays may pose some concerns, where necessary to release the originals, a receipt should be obtained. All copies provided should be complete and legible. If records are not legible, a literal transcription of those records may be requested.

If original records from a health care provider are required for trial purposes, this should be fully explained to the custodian of the records. Promptly following the completion of the trial, copies should be substituted in the court file for the original records and the originals should be returned to the custodian.

3.4 A reasonable charge may be requested for copies of medical records. However, the charge may not exceed that permitted by Colorado Department of Public Health and Environment regulations.

Currently, the Colorado Department of Public Health and Environment regulations governing patient access to medical records from licensed health institutions, facilities, or health care providers mandates that the maximum allowable charge can not exceed \$14.00 for the first ten or fewer pages, \$0.50 per page for pages 11-40, and \$.33 per page for every additional page without Department approval. Actual postage or shipping costs and applicable sales tax, if any, also may be charged. The per-page fee for records copied from microfilm shall be \$1.50 per page. No fees shall be charged by a health care provider of patient records for requests for medical records received from another health care provider or to an individual regulated pursuant to Section 25-1-802(1) solely for the purpose of providing continuing medical care to a patient. Chapter II 5.2.3.4. A physician or health care provider cannot charge an exorbitant fee for medical records simply because litigation is involved or he or she wishes to discourage litigation-related requests. (See § 9.3.)

If an attorney requests that a physician's hand-written chart be transcribed, an additional reasonable charge may be requested for that service.

Records should be released without regard to any outstanding unpaid balance due on the patient's bill for medical treatment. (See § 9.7.)

Although there are no current regulations for records kept by other experts, they should also be entitled to a reasonable charge for copying records. The reasonableness of the charge will be evaluated by reference to the standard set by the Colorado Department of Public Health and Environment.

Expert Opinions, Reports and Endorsements

In many instances, expert reports may be legally required by procedural rules or court order. Even when not required, reports from experts may foster settlement or avoid more formal, expensive, and time-consuming depositions.

Experts should be mindful that all expert opinions must be disclosed to the opposing side by way of either a report or an endorsement of the expert witness in discovery or pre-trial documents. If an opinion is not disclosed, it may be precluded. Therefore, clear communication of the expert's opinion is of utmost importance.

4.1A request for a formal expert opinion should be in writing. It should fully inform the expert concerning the purpose for which the opinion is sought. It should identify the parties to the claim and the party requesting the opinion. It should specify the information and documentation provided to the expert on which the expert opinion should be based. The request should preferably provide a brief summary of the case. The request should specify the issues to be addressed by the expert and the legal terminology, if any, involved or required. The request should list all information that the expert will be required by court rule to disclose. The request may recite the financial arrangements to which the expert and the attorney have agreed.

The request for a formal expert opinion is intended to alleviate any future misunderstandings concerning the nature, scope, and purpose of the expert's review and further involvement. In many cases, a request for a formal expert opinion may be preceded by a conference at which the expert's qualifications will be reviewed and the issues requiring the expert's opinion described. The information needed by the expert to complete the review will also be discussed. Information about the expert that must be disclosed because of court rules will be discussed. This information may include the qualifications of the expert, the expert's publications, and any previous cases in which the expert has testified at trial or deposition within the preceding four years. Financial arrangements will be agreed upon.

4.2 The attorney has the duty to determine the expert's legal competency to render opinions on a given issue. The expert should recognize the difference between a legal expert and an expert among his or her peers in a given specialty.

The attorney should be familiar with the legal rules of evidence governing competency of expert witnesses. It is the attorney's duty to make adequate inquiry into the expert's education, background, training, and experience to determine if the expert is legally qualified to address a given issue. An attorney should accept the limitations of the expert's expertise and avoid attempts to obtain opinions from an expert that are clearly beyond that expert's expertise.

At the same time, the expert should be aware that under the Colorado and Federal Rules of Evidence, an expert witness is one who by knowledge, skill, experience, training, or education, has sufficient knowledge and expertise to assist the trier of fact to understand the evidence or determine a fact in issue. To qualify as an expert for the purpose of testifying at trial, such an individual need not be a super-specialist or a university professor, nor must that person be recognized as an expert in a given subspecialty by the expert's peer group.

However, when an expert is testifying on the issue of standard of care in a medical negligence case, he or she is required to be substantially familiar with the applicable standards of care and practice as they relate to the act or omission in issue. The expert must also be in the same subspecialty or in a subspecialty with similar standards of care and practice as the defendant health care provider to testify with respect to standard of care issues. These restrictions do not apply to other testimony, such as degree of permanency of mental or physical impairment.

4.3 A copy of all records and other documentation pertinent to the issues to be addressed by the expert should be furnished to a reviewing expert before a formal opinion is rendered.

Experts who have had direct contact with the patient-client may rely on their observations, findings, and

records in rendering their opinion. For example, treating and examining physicians may legitimately rely upon the history, examination findings, radiological studies, and other test results which they acquire in their treatment or examination of a claimant.

However, non-treating physicians and experts who are retained or specially employed to independently evaluate or review an issue should be provided with all relevant documentation and records so that the opinions rendered are fully informed. The practice of providing only partial records which are favorable to a client's position is firmly condemned. If an expert requests further information which is reasonably available to the attorney, it should be provided. However, the expert should not be burdened with unnecessary, extraneous materials. Fair and unbiased summaries of depositions, records, or other facts may be provided to assist the expert in economically reviewing the issue involved.

The expert and retaining attorney should discuss the advantages and disadvantages of providing other experts' reports to the reviewing expert before he or she arrives at an opinion. Such disclosure of other experts' opinions may appear to affect the expert's independence and objectivity in his or her initial review.

Both expert and attorney should bear in mind that all documentation and information provided to the testifying expert, as well as all research, notes, reports, and other papers generated by the expert in his or her review of the claim, are discoverable by the opposing side.

4.4 If the treating physician or expert in another field who has not been retained or specially employed to provide expert testimony has an opinion, he or she may be obligated to state it. It is unclear to what extent an expert may be required to form an opinion.

The extent to which experts may be required to formulate expert opinions is unclear. However, a physician and other expert can be compelled to state his or her observations concerning a patient or other event that he or she has witnessed and may be required to testify as to information acquired in the course of treating a patient or investigating a matter. If the expert has an opinion concerning an issue, he or she may be compelled to express it.

An expert may also be required to answer hypothetical questions. If the expert can answer the questions as posed, he or she must do so. If further facts or study are necessary to answer the questions, the expert may so state.

4.5 Expert witnesses should be advised of factual disputes concerning the underlying facts on which the expert opinion is to be based. Even though the expert is asked to assume a "hypothetical" set of facts, the expert witness should still be provided with all relevant facts and records.

Experts asked to review issues should understand that they are not the ultimate finders of facts. Therefore, there may be factual issues which are beyond the competence of an expert witness to resolve, as where there are discrepancies in various records or disagreements over certain conversations, etc. The expert may therefore be requested to assume the truthfulness of a "hypothetical" set of facts when formulating his or her opinion.

"Hypothetical" facts do involve real cases. The reviewing expert should still be provided with all relevant records and facts and is entitled to know the nature of the underlying dispute.

In responding to hypothetical questions, the expert witness should set forth the significant factual assumptions underlying his or her opinions, and may qualify an opinion by stating that it could change if different factual assumptions were made.

4.6 It is preferable that the expert's opinions be set forth in writing in the expert's own language. If an attorney makes an expert witness endorsement or summary in addition to, or in lieu of, an expert report issued by the expert, such an endorsement or summary should only be done after its

contents have been carefully reviewed and approved by the expert.

Experts often prefer that their opinions be set forth in writing to avoid future misunderstanding concerning the nature, extent, and scope of the expert's review and opinions. The expert report also assures that the opinions are accurately communicated in the expert's own language.

In cases filed in the federal court, experts who are "retained or specially employed" to provide expert testimony in the case, or whose duties as an employee of a party to the case regularly involve giving testimony, must prepare and sign a written report. That report must contain a complete statement of all opinions to be expressed and the bases and reasons therefore; the data or other information considered by the witness in forming the opinions; any exhibits to be used as a summary of or support for the opinions; the qualifications of the witness, including a list of all publications authored by the witness within the preceding ten years; the compensation to be paid for the study and testimony; and a listing of any other cases in which the witness has testified as an expert at trial or by deposition within the preceding four years.

In cases filed in state courts, the expert's opinions may be set forth in either a written report prepared by the expert or a summary of the expert's opinions prepared by the lawyer. The report or summary must contain a complete statement of all opinions to be expressed and the bases and reasons therefore. With regard to "retained or specially employed" experts, the report or summary must also contain the data or other information considered by the witness in forming the opinions; any exhibits to be used as a summary of or support for the opinions; the qualifications of the witness, including a list of all publications authored by the witness within the preceding ten years; the compensation for the study and testimony; and a listing of any other cases in which the witness has testified as an expert at trial or by deposition within the preceding four years. In state court cases, if a report has been issued by the expert, it must be provided whether or not a written summary of the expert's opinions is also provided to the court.

To avoid miscommunication, expert witness reports should be encouraged. However, when an affidavit or a pre-trial summary of expert testimony is drafted by the attorney in the attorney's own language, legal terminology should be fully explained, and it should not be tendered to the court or opposing counsel until its contents are fully approved by the expert to whom the opinions are attributed.

4.7 Expert reports should be promptly provided.

Physicians and other experts should recognize that there are often legal time restrictions and court-imposed deadlines concerning the submission of expert reports or the summary of expert opinions. Therefore, attorneys should retain the expert and request reports sufficiently in advance of such deadlines so as to avoid inconvenience and hardship to the reviewing physician or expert. At the same time, undue delay in providing expert reports may hamper settlement negotiations, cause otherwise unnecessary continuances of trial dates, create burdensome scheduling difficulties for later depositions, or otherwise prejudice the party's ability to use the expert witness at trial.

4.8 An expert's report should be accurate and objective, and should fully and fairly address the issues presented. The author should be mindful of the legal terminology necessary to satisfy evidentiary rules concerning competency and burden of proof.

The expert should be aware of the significance and use of his or her reports. They play a vital role in the settlement process and in the necessary pretrial disclosure of expert witness opinions. The expert should therefore carefully review the attorney's request for the report and fully and objectively answer any special questions posed. Where legal terminology is required, the expert should attempt to set forth his or her opinions consistent with that necessary legal terminology.

4.9 Unless otherwise requested, a report from a treating physician should generally include the following information:

- (a) History of present illness**
- (b) Examination findings**

- (c) Pertinent radiological and other diagnostic test results
- (d) Diagnosis
- (e) Etiology and/or causation
- (f) Treatment rendered
- (g) Course and prognosis, including anticipated permanency and residual disability
- (h) Future treatment options and needs
- (i) Past and future medically related expense

Reports or summaries of opinions from other experts must contain a complete statement of all opinions to be expressed by the expert at trial and the bases and reasons for those opinions.

4.10 A reasonable charge may be made for the time spent in preparing an expert's report, and payment may be requested in advance of the expert's release of the report.

Experts have the right to be reasonably compensated for preparation of reports. The amount, terms, and conditions of such payment should be handled at the outset, preferably in a written retainer agreement or a letter setting forth the expert's policies. (See § 9.2.)

4.11 The furnishing of an expert report should never be conditioned upon payment of a bill for the underlying treatment or services. (See §9.7.)

4.12 Any expert is entitled to be advised whether he or she may be the subject of a professional liability claim if the expert is contacted by an attorney representing the claimant. If the expert is so advised, he or she should not provide a new written report to the attorney without first contacting his or her professional liability insurer and/or attorney. The expert must provide the complete records, unaltered, to the requesting party.

When an expert is contacted by a claimant's attorney and advised that he or she is being investigated as a possible defendant in a professional liability claim, the expert should not provide that attorney with new summary reports concerning the claim or facts underlying the claim. The complete records unaltered must be provided to the requesting party. The expert should also contact his or her professional liability carrier and/or attorney.

Similarly, attorneys investigating a potential professional liability claim against an expert should clearly state their purpose when requesting information from the expert about the claim.

Choice of Language and the Communication of Expert Opinions and Testimony

5.1 Experts and attorneys should attempt to understand the differences between their own professional concepts and legal definitions and standards to avoid confusion in opinions.

Experts and attorneys often differ in the terms of art they use in their respective professions. For example, physicians and attorneys differ in their defining of causation. This often leads to misunderstanding when the physician is asked an expert opinion on the issue of legal causation.

Medical etiology is the science of determining the causes of disease requiring medical treatment. As such, it is concerned with all possible causes. Through differential diagnosis, these causes can be narrowed such that treatment is rendered based on a final diagnosis. Therefore, the physician focuses primarily on those causes which are still operative and can be controlled, altered, or removed by treatment such that the outcome is affected. Legal causation focuses on these earlier precipitating or aggravating causes brought about by allegedly tortious conduct. Legal causation is a political and social decision as to where society feels a loss should fall. It is a factual determination, based on legal standards, as to whether a sufficient causal relationship exists between the alleged wrongdoing and the injury complained of.

Legal causation therefore has little to do with medical etiology and focuses on the role of a single past

traumatic event rather than all possible causes and conditions contributing to a medical condition.

A legal cause is often defined as a cause without which the claimed injury would not have occurred. A legal cause is also sometimes defined as conduct which is a "substantial factor" in bringing about the claimed injuries. It need not be the sole cause nor the last or nearest cause.

So long as it is a cause, it does not matter that it joined with other causes to bring about the claimed injury.

In cases where an underlying symptomatic medical condition was aggravated or worsened by a defendant's conduct, the defendant will only be responsible for that portion of the total harm caused by his or her conduct. These cases often require a physician's opinion attempting to apportion the plaintiff's underlying condition and the aggravation of that condition by defendant's conduct. If apportionment is impossible, the law will hold the defendant legally responsible for all of the harm. However, under the law there should be no apportionment made for asymptomatic pre-existing physical frailties, mental conditions, illness, etc. that may have made the plaintiff more susceptible to injury, disability or impairment.

Accountants, engineers, and court reporters may all use terms and concepts which differ from the meaning which attaches to those terms and concepts in a legal setting. Thus, experts and attorneys need to be clear on the other professional's use of various terms and concepts that may differ from their own.

5.2 An expert should understand the legal standards of proof and evidentiary rules concerning expert opinions, and attempt to express opinions by using necessary legal terminology.

Each profession has a highly technical language largely unknown to the other. This technical terminology is needed in each profession to attain accuracy and certainty of meaning. However, while this terminology facilitates understanding within a profession, it often blocks understanding between professions. Experts reporting or testifying in a lawsuit or claim should attempt to understand some of the legal standards of proof and technical terminology. The expert should understand that law is largely a profession based on words and language. Therefore, while many legal terms are foreign to the expert, they are of critical importance in stating a relevant and competent legal opinion.

Foremost among these necessary legal terms is "reasonable probability." To be competent, an expert's opinion should generally be based upon "reasonable probability." This term simply means that which is more probable than not, more likely than not, or over 50 percent probable.

This is consistent with the legal standard of proof that findings must be based upon probabilities and not possibilities. Opinions based upon surmise, speculation, or conjecture are irrelevant and inadmissible in law. However, an opinion need not be based upon scientific or medical certainty, which is a far more stringent standard than the law requires.

Therefore, experts should attempt to express their opinions using such terms as "reasonable medical probability," or "probably" or "likely." Terms such as "possible," "might," "may," "could," "guess," "maybe," and the like may, under some circumstances, render the opinion inadmissible.

Similarly, before testifying regarding a medical or professional liability claim, the expert should be thoroughly versed on such terms and issues as "standards of care," "negligence," "respectable minority," "judgment calls," etc.

It is the responsibility of the attorney requesting an expert opinion to educate the expert concerning the legal standards of proof and the significance of technical legal terminology. This can and should be done in the various meetings with the expert and any letters requesting a formal opinion.

5.3 Experts should use clear, plain and understandable language when testifying and should attempt to avoid overuse of complex terminology.

An expert may have an excellent command of the facts and the professional language of his or her specialty and may be adequately versed in the legal terminology. However, the expert must communicate his or her facts and opinions consistent with the level of sophistication of the fact-finding body hearing the case. Expert testimony may be so technically worded that its meaning is entirely lost to the jury or is so completely misunderstood that the jury arrives at a verdict that would have been different had it known the true import of the testimony.

The expert witness should remember that his or her role is essentially that of a teacher. The testimony is not intended to impress or edify, but to explain. If the testimony does not help explain and does not clarify the issues of a particular case, it has failed in the sense that it was not useful to the determination of the case.

To make expert testimony clear, an expert witness should preferably express his or her findings and opinion in medical or technical terms first. Those terms should then be translated as accurately as possible into language intelligible to the court, attorneys, and jury.

The attorney should assist the expert witness in choosing appropriate terminology and then monitor the testimony. If undue use of complex terminology is made by the expert, it is appropriate and even recommended that the attorney interrupt the testimony and obtain necessary clarification.

In complex cases, it may be appropriate to compile a glossary of terms and definitions which, with permission of opposing counsel and the court, may be provided to the jury.

Conferences and Consultations Between the Expert and Attorney

Communication with the expert is all-important to assure that necessary, competent and persuasive expert opinions are developed. This in turn facilitates settlement and the orderly presentation of evidence at trial. Therefore, conferences and open communication between the attorney and expert are encouraged so as to minimize misunderstandings over scheduling and fees, diminish the frequency and impact of surprises to both expert and lawyer, and overcome the often-present divisiveness between the professions. (See §1.2.)

6.1 It is often advisable to meet with a potential expert at the outset before the expert has reviewed the issues or rendered a report.

An attorney and expert should often confer at the very outset before opinions are formally rendered. The attorney should explore the expert's background, training, and experience to determine that expert's competence to render opinions on the issues involved. The background facts and disputed issues should be explored. The nature, scope, and availability of records and other documentation on which the expert opinion will be based should be discussed. Any special legal concepts or language needs which should be included in a report should be addressed. The attorney and expert should discuss the issues to be addressed by the expert. The information about the expert that must be disclosed because of court rules should be discussed. See § 4.9. Finally, financial arrangements, deadlines, scheduling, and availability should be fully reviewed at the initial consultation. Such conferences can often be held over the telephone, which saves the time, expense, and inconvenience of a more formal office consultation. Reasonable fees may be charged for such telephone conferences.

6.2 An attorney who expects to call an expert who has treated or who has been retained or specifically employed on behalf of the client to testify in a deposition or at trial should confer in advance with that expert.

An attorney should always meet with an expert before a trial, hearing, or deposition to place the expert at ease. Most experts have a fear of looking "foolish" in a testimonial setting and, by proper preparation of the expert, any such fears should be alleviated while, at the same time, a more effective presentation of evidence should be fostered. It is the responsibility of the attorney to schedule that conference at a mutually

convenient time sufficiently in advance of the time for testimony.

Some or all of the following topics should be discussed at a pre-deposition or pre-trial consultation:

- (a) The purpose for which that expert is being called as a witness, if that purpose has not previously been disclosed;
- (b) The significant issues which may arise during testimony;
- (c) Any potentially problematic evidentiary rules or issues;
- (d) The strengths and weaknesses of the evidence concerning these issues;
- (e) The theories and evidence which will probably be advanced by the opposing side and its experts;
- (f) Important legal terminology as it relates to the issues;
- (g) Supporting and contrary literature;
- (h) Any reports, records, or literature generated by the expert or others which should be studied to prepare for testimony;
- (i) Updating and reviewing the expert's qualifications and curriculum vitae and assuring his or her competency to address certain issues;
- (j) The substance of the questions the attorney will probably ask of the expert, including key specific questions and hypotheticals;
- (k) The scope and content of the anticipated cross-examination by the opposing side, including prior depositions, publications, reports, conflicting medical histories, fee arrangements, etc.;
- (l) Scheduling and trial or deposition procedures; and
- (m) Financial arrangements.

6.3 A treating physician or nurse has a duty of confidentiality concerning a patient's medical information.

A treating physician or nurse cannot meet to discuss medical information privately with a patient's adversaries without the patient's attorney's prior knowledge of the time and place of the meeting, affording the patient's attorney the opportunity to object and be present at that meeting. This assures that the physician-patient relationship of trust and confidence is not undermined and assures the propriety of any disclosure made. A physician or nurse may refuse requests from the patient's adversaries for informal interviews altogether. However, a patient or patient's attorney may not instruct a treating physician or nurse not to participate solely for the purpose of preventing the disclosure of non-privileged information.

During such informal interviews, if granted, it is improper to disclose information not relevant to the same physical or mental condition at issue in the litigation. If there is any question or dispute as to whether information remains privileged, the information should not be disclosed until the dispute is resolved by the parties or the court.

An exception may exist to the duty of confidentiality when a physician or nurse is sued by the patient as to the condition and treatment at issue in the suit.

A non-treating expert witness should not engage in private consultations with a representative of the opposing party without the knowledge of the party who retained him or her.

Scheduling and Subpoenas

7.1 The attorney should schedule an expert's testimony in depositions or at trial far enough in advance and in such a manner so as to minimize inconvenience to the expert and disruption of the expert's practice.

Scheduling of an expert's deposition or in-court testimony should be done as far in advance as possible. It is often a good practice to advise all potential witnesses of a trial date at the time the trial is first set. Vacation schedules and other potentially conflicting obligations can then be determined and resolved in advance. Specific arrangements concerning the date, time, and place of trial testimony preferably should be made more than six (6) weeks prior to the scheduled appearance.

Similarly, depositions should be scheduled at a mutually convenient time and place. Attorneys should readily agree to depositions "after hours" at the expert's office if that is the least disruptive to the expert's practice. However, if the expert's office is not large enough to accommodate the attorneys in a multiple-party case, the expert should readily agree to the deposition being held at an attorney's office, hospital, or other convenient location.

To avoid delays and unnecessary waiting at trial, the attorney should try to schedule an expert witness as the first witness in the morning or afternoon sessions. Lay witnesses may also be used as buffers to expert witnesses. It is sometimes possible to call an expert "out of order" to accommodate his or her schedule.

However, being called "out of order" may disrupt a trial, inconvenience other witnesses and interrupt the logical flow of evidence. Therefore, while the expert is entitled to some estimate of the amount of time needed for testimony, he or she should be mindful that the attorney has little control over the court's docket, the needs of other witnesses, or the opposing attorney's conduct or questioning. These may necessarily result in some delay in testimony or other inconvenience to the expert.

7.2 Experts should understand the significance of the subpoena and honor its enforcement. Likewise, an attorney should never abuse the power of the subpoena.

A subpoena is an order of court that may be issued by an attorney, compelling a witness to appear at the time and place stated in the subpoena. A subpoena duces tecum ("subpoena to produce") requires a witness to appear and produce certain things or documents. Subpoenas may be issued for deposition or trial testimony. The failure to comply with a subpoena may constitute contempt of court and subject the noncomplying witness to fine or imprisonment unless there exists "good cause" for the failure to comply such as a true medical emergency. A witness who does not comply with a subpoena takes the risk of later having to convince the court that the emergency was of sufficient gravity to constitute "good cause."

Not only professional courtesy, but the reputation of the expert and the safety of his or her patients or clients, demands that an attorney not abuse the subpoena power. Life or health must not be jeopardized so that an expert can make a timely appearance in court. On the other hand, every reasonable effort should be made by the witness to appear as scheduled, whether or not a subpoena has been issued.

While every reasonable attempt should be made to accommodate the expert, it must be understood by the expert that he or she does not always have the right to choose the time and place to give testimony. Like any other witness, an expert summoned to court by subpoena must appear at the time and place so designated. However, it must constantly be stressed that a lawyer should never abuse the use of a subpoena and should always recognize the potentially disruptive effect it could have on an expert's practice, if reasonable arrangements have not been made in advance to have the witness set aside the time.

If an expert feels that a subpoena has been improperly used, or a subpoena duces tecum's request to produce documents is overly burdensome, oppressive, or invasive of his or her privacy, the expert should contact his or her lawyer to determine what protective measures, if any, might be available.

Even though testimony is scheduled in advance, sound reasons still exist for subpoenaing an expert. The witness should understand that the issuance of a subpoena does not signify a lack of trust in the expert's agreement to appear, nor is it intended as a heavy-handed tactic to compel a recalcitrant or hostile witness. Rather, a subpoena is often necessary to protect the interests of the client seeking the testimony of the expert and to allow the attorneys and the court to better accommodate the expert's scheduling needs. Courts are often reluctant to grant continuances in the event of an emergency, take witnesses out of order, or otherwise accommodate busy experts unless they have been previously subpoenaed.

Frequently, a judge will permit the expert who has been subpoenaed to remain "on call," which means that

the expert need not be personally present at all times, so long as he or she can be reached by telephone and respond promptly when needed.

When the testimony of the expert witness has been completed, counsel should immediately move the court to excuse the witness from further appearances under the subpoena.

7.3 The use of a subpoena to compel an expert's presence does not in any way affect the expert's entitlement to an expert witness fee.

If the subject of testimony arises out of an individual's role or status as an expert, he or she is entitled to an expert witness fee. (See § 9.6.) The use of a subpoena to compel a witness's presence at a deposition, hearing, or trial does not in any way affect the expert's entitlement to such an expert witness fee.

Before a subpoena is issued and served on the expert, the better practice is for the attorney to contact the expert and attempt to agree upon a reasonable expert witness fee for complying with the subpoena. At the very least, a short note by the attorney should be served with the subpoena explaining that the check for the statutory mileage and witness fee accompanying the subpoena should not be considered the expert's sole remuneration for appearing under subpoena and a further expert witness fee is justified.

If no prior agreement is reached, the expert may bill the attorney for a reasonable expert witness fee for attending pursuant to the subpoena. (See §9.) If a disagreement arises over the entitlement to such a fee, or the amount requested, that dispute may be submitted to the court or to an interprofessional dispute resolution committee. (See §10.)

7.4 Service of a subpoena should be handled in the least disruptive manner. An expert should never seek to evade service of a subpoena so as to avoid having to give testimony.

At the time the expert's testimony is scheduled, the attorney should discuss with the expert the need for service of a subpoena and the manner in which the subpoena should be served. Personal service can be disruptive to the expert's office and embarrassing to the expert. A private process server should be instructed by the attorney concerning tactful and discrete service of a subpoena.

Many experts prefer that the subpoena be sent through the mail with a "Waiver and Acceptance of Service." This can also save the client service of process costs. If this is not returned a reasonable time before trial, personal service can still be accomplished.

An expert should never seek to evade service of a subpoena so as to avoid having to testify. This is beneath the dignity of the expert, substantially increases litigation costs, obstructs the administration of justice, and can result in eventual embarrassment to the expert when service is finally accomplished.

Depositions

8.1 Depositions are an inherent part of the pre-trial discovery process. Usually, the taking of a deposition is not in lieu of court appearance and testimony.

Depositions of witnesses, including expert witnesses, are sometimes taken for "discovery" purposes. In other words, they are taken by the attorney opposing the party retaining or endorsing the expert in order to discover the expert's opinions. As such, different rules of examination, foundation, and qualifications apply to discovery depositions than to trial testimony. Therefore, a pre-trial deposition is often not admissible at trial. This is especially so if the expert is otherwise available in the jurisdiction and amenable to compulsory attendance by the service of a subpoena.

The attorney retaining or endorsing the expert naturally does not want to rely upon his opponent's questioning to present his or her evidence. The lawyer also wants to assure an orderly presentation of evidence in compliance with all rules of evidence to assure admissibility of the testimony. Further, the attorney must be allowed the flexibility of addressing new issues that first arise during trial and could not

have been reasonably foreseen prior to trial. Finally, for the trier of fact to understand and evaluate expert testimony, especially complex or conflicting testimony, it is essential that they see that testimony live and that the expert appear in court.

Under new, limited discovery rules, and new rules mandating certain advance reports and disclosures, the prior practice of routinely deposing experts may be curtailed.

8.2 The party taking the deposition is responsible for timely payment of all reasonable charges for time spent by the expert traveling to and from the deposition and for participating in the deposition, unless there is an agreement or order to the contrary. The party retaining or endorsing the expert is responsible for the cost of the expert's time in preparing for the deposition. In the event a request for review of the deposition has been made, if the witness is a treating physician, the party noticing the deposition is responsible for any reasonable cost associated with the review and signature. If the witness is a retained expert, the party retaining the expert is responsible for any reasonable cost associated with the review and signature.

The party taking the deposition must pay reasonable compensation for the deposition he or she has requested. This includes reasonable costs and fees associated with any travel to or from the deposition as well as an expert witness fee for participating in the deposition. Preparation for the deposition, on the other hand, inures primarily to the benefit of the party retaining or endorsing the expert, and that party should be responsible for that preparation time. Presumably, such preparation furthers the cause of the endorsing party. Also, it would be unworkable and inappropriate for the opposing party to exercise control over the amount of time the other party's expert is to spend in preparation for a deposition. Rather, the party retaining or endorsing the medical expert can and should discuss and agree with the expert concerning the amount of time to be spent in preparation for a deposition and the charges to be incurred.

However, special requests made by opposing counsel for research or compiling of information may fall outside of "preparation for deposition." Who is responsible for payment of the fees for fulfilling these requests should be determined between the parties before the task is performed by the expert.

Under new rules, effective in 1995, review and signature of a deposition transcript are waived, unless the deponent or a party requests review and signature before completion of the deposition.

In the event a request for review of the deposition has been made, if the witness is a treating physician, the party noticing the deposition is responsible for any reasonable cost associated with the review and signature. If the witness is a retained expert, the party retaining the expert is responsible for any reasonable cost associated with the review and signature.

8.3 Depositions costs and fees should be reasonable and should be agreed upon in advance of the deposition. Disputes should be noted at the outset, and attempts should be made to amicably resolve such disputes or timely submit them to the court for resolution.

Deposition costs and expert witness fees should be reasonably based on the factors set forth in Section 9.2 of this code. Every effort should be made by the expert and retaining and deposing counsel prior to the deposition to agree on the manner, timing, and amount of compensation. In the alternative, the party endorsing the expert may legitimately condition the deposition upon prior financial arrangements being agreed to or determined by the court as set forth in Rule 26(b)(4) of the Colorado or Federal Rules of Civil Procedure.

An attorney taking the deposition of an opponent's expert witness should not withhold or delay payment of that expert's fees or engage in unnecessary conflict so as to discourage that expert witness from further involvement in the case, or as a means of "punishing" that expert for his or her testimony. When an agreement has not been reached and a dispute does arise, it should be promptly submitted to a judge or interprofessional committee for resolution. Any undisputed amounts should be remitted without delay.

Expert Compensation and Expert Witness Fees

9.1 Experts and attorneys should strive to agree in advance concerning the nature and scope of the services to be performed, the terms and amounts of compensation to be paid for those services, and the responsibility for payment of that compensation. Absent an agreement, disputes may arise which will require resolution by the court or an interprofessional committee.

The expert is entitled to reasonable compensation for providing services in connection with litigation. The issues of fees, costs, and scope of employment for expert services are frequent areas of disagreement. This is usually due to lack of open communication and the absence of a prior agreement between the expert and the attorney.

Therefore, whenever possible, these issues should be clarified before services are rendered and, whenever possible, confirmed by written agreement. It should be remembered that "an agreement" is not created by simply sending out a fee schedule, but is a product of negotiation and mutual consent. Failure by an attorney to object to a written fee policy may be an implied consent to abide by its terms. The agreement should be tailored to fit the specific circumstances, but it is suggested that the following be included:

- (1) The scope of services to be performed by the expert;
- (2) The rate of compensation to be paid for the expert's services, including whether the fee will vary depending upon the services rendered, e.g., research, review of documents, examination, dictating of report, travel, or testimony;
- (3) Whether advance payments or retainers are required and, if so, under what circumstances;
- (4) The handling of costs and expenses;
- (5) Cancellation terms and amounts; and
- (6) The person or persons responsible for payment of those costs and fees.

Experts are encouraged to develop office policies concerning involvement in legal matters, which can then be reduced to writing and provided to the attorney at the time of the initial request.

An attorney provided with such a written policy should immediately assent or object to the terms provided. It is improper for the attorney who does not object to continue to request the expert's services after being advised of the expert's policies for involvement in legal matters and then later deny that he or she agreed to the terms of those policies. However, the expert should recognize that providing the attorney with the expert's policies merely constitutes an offer and does not bind the attorney or client until they expressly or impliedly agree to those terms.

If no agreement can be reached between an expert and an attorney, the expert must recognize that he or she can still be compelled to provide necessary information and a court or Interprofessional Committee may be called upon to determine the amount and terms of reasonable compensation. A non-treating or consulting expert can simply refuse to participate absent an agreement with the attorney or his or her client.

9.2 An expert is entitled to fair and reasonable compensation for providing expert testimony.

In determining what constitutes a fair and reasonable expert witness fee, some or all of the following factors should be considered:¹

- (1) The amount of time spent, including review, preparation, drafting reports, travel, or testimony;
- (2) The degree of knowledge, learning, or skill required;
- (3) The amount of effort expended;
- (4) The uniqueness of the expert's qualifications;
- (5) Current and reliable statistical income information of similarly situated experts;
- (6) The amounts charged by similarly situated experts for similar services;
- (7) The amount of other professional fees lost; and
- (8) The impact, if any, on the expert's practice because of scheduling difficulties, other commitments, or other problems.

An expert should also be aware that some statutes, such as those governing workers' compensation

claims, set reasonable medical fee schedules and provide that it is unlawful, void, and unenforceable as a debt for any health care provider to charge a claimant in excess of the scheduled fee. See C.R.S. §8-42-101(3).

The use of itemized billing by the expert to the attorney should be encouraged and will often expedite payment.

9.3 An expert is never justified in charging excessive fees so as to capitalize on the client or patient's legal problem, or so as to discourage requests for information. At the same time, an expert cannot be expected to lose money or suffer financially as a result of participation in the litigation process. The expert should recognize that it is the patient or client who is ultimately responsible for payment of such litigation costs, regardless of the outcome of the case. Hence, charges for an expert's services should generally be no higher than the expert's hourly charges for other professional services.

An expert should neither gain nor lose financially as a result of his or her participation in the litigation process. An attorney should never expect the expert to sacrifice income merely because his or her patient or client is involved in litigation. The attorney should not abuse the power of the subpoena to attempt to obtain free or discounted expert testimony.

On the other hand, expert witness fees should not be so high that the fees prevent the patient or client from obtaining the expert's services, or as to create the appearance that the expert is attempting to capitalize on the patient's or client's legal problem. Experts should not seek to punish or deter attorneys, patients or clients from seeking the medical expert's services or information. This merely further victimizes the party who is compelled to seek compensation through litigation. The practice of charging fees in excess of those usually charged for other professional services to compensate for the "aggravation of litigation" is discouraged.

Even though the attorney may become obligated initially to pay the expert witness fees, the expert should always be mindful that the attorney's client is ultimately responsible for such litigation costs, regardless of the outcome of the case. Even in cases handled on a contingency fee basis, only the fee is contingent. While an attorney may advance these costs on behalf of the client, the lawyer's professional ethics require that the client remain ultimately responsible.

Therefore, fees charged for litigation-related services should be roughly equivalent to fees charged in the expert's practice for professional services.

9.4 In contracting for the professional services of an expert, the attorney is acting as an agent for the client. It is the client who remains ultimately responsible for such fees and costs. However, an attorney may ethically obligate himself or herself to pay the expert's fees and costs and, customarily, the attorney contacting or retaining an expert on behalf of a client is personally obligated to see that the expert is paid for litigation-related services.

An attorney is only an agent for his or her client, and litigation costs and expert witness fees are contracted for by the attorney on behalf of the client. Under agency law, an agent is usually not responsible for debts contracted for or on behalf of a disclosed principal.

However, different rules apply to expert witnesses in the litigation setting. An attorney is ethically obligated to compensate the expert directly for professional services he or she has requested. The attorney may also ethically advance or guarantee such litigation costs and expert witness fees, so long as the client remains ultimately responsible for payment.

Customarily, the attorney advances fees for expert witnesses he or she contacts on behalf of the client, even if the attorney is not obligated to do so. This is because the attorney is in a better position to assess

the client's ability to pay and to collect such advanced costs from the client.

The attorney's obligation, however, is generally limited to those fees relating to the expert's services as a witness, and does not extend to payment for treatment or services rendered directly to the client or patient.

9.5 Compensation of an expert witness may never be contingent upon the outcome or the content of the expert's testimony, or the court's acceptance of the witness as an expert witness.

An expert's compensation should never be conditioned upon, or measured by, the amount of the recovery in damages in the litigation. Any contingent witness fee naturally compromises the integrity of the testimony of that witness. The expert is entitled to reasonable compensation regardless of the outcome of the case.

It goes without saying that the attorney cannot condition compensation upon the content of the expert's testimony and thereby seek to purchase favorable testimony. This is clearly improper conduct on the part of the attorney.

Because the attorney should be familiar with court rules governing competency of expert testimony and has a duty to inquire concerning the qualifications of his or her tendered expert, it is also inappropriate to condition the expert's compensation upon the court's acceptance of the witness as an expert.

9.6 An expert witness fee is owed if the subject of the testimony arises out of the individual's role or status as an expert and cannot be conditioned upon the eliciting of expert "opinions."

The premise that an expert witness fee is due only if an expert opinion is elicited from the witness is not a valid assumption. An expert who comes into possession of facts or information solely because of his or her position as a professional person is entitled to receive compensation as an expert when he or she testifies to those facts in a deposition or in court. The expert's position and status at the time he or she comes into possession of relevant information determines whether the expert should be entitled to an expert witness fee.

However, the federal courts have held, in Colorado and elsewhere, that treating physicians may not be considered expert witnesses, unless specifically designated as such and unless expert opinions are elicited. The issue of whether a treating physician is an "expert" has been alluded to in a recent state court case, but not resolved.

9.7 An expert has a duty to provide information and participate in the client or patient's litigation regardless of the status of the client's or patient's bill for non-litigation related professional services.

Fees for non-litigation related professional services incurred by the party are exclusively the responsibility of the client/patient. It is unethical for the attorney to advance these costs on behalf of the party.

An expert may not condition his or her involvement in litigation (i.e., providing records, reports, depositions, or trial testimony) upon payment of the client's/patient's bill for other professional services. An expert should never feel that he or she has some financial interest in the outcome of the case, due to an unpaid bill, which might appear to taint the objectivity of expert testimony. The expert should recognize that some clients or patients are dependent upon a legal recovery to pay for past and future services. Further, public policy mandates that the expert provide necessary information and testimony to evaluate claims. However, as a professional courtesy, the attorney may make reasonable and ethical efforts to assist the expert in obtaining payment for his or her services. The attorney may urge the client to pay the expert for the services received as soon as possible regardless of the status of the lawsuit. It is not proper for the attorney to advise the client that payment for care and treatment professional services may justifiably be withheld until the lawsuit is completed. If the client has resources to make full or partial payment, the lawyer may properly urge the client to make payments due to the expert for services.

The attorney may also request permission from the client to pay the expert for such services directly out of any recovery received in the litigation. This authorization for direct disbursements to the expert can often be set forth in the attorney-client fee agreement.

9.8 Terms concerning cancellation of testimony should be discussed and agreed upon in advance. An expert is entitled to prompt notification of cancellation of testimony. Cancellation fees should be reasonably related to the actual loss to the expert.

Cancellation of testimony is often a source of interprofessional disputes. This usually can be alleviated by prior agreement between the expert and the attorney endorsing or retaining the expert. If the expert has a reasonable cancellation policy, the opposing attorney should be advised of that policy at the time a deposition is scheduled. The opposing attorney is then subject to the terms of the cancellation policy should he or she later be responsible for the cancellation of the deposition.

If a case is settled or continued, or the expert's testimony is otherwise canceled, the attorney who scheduled that testimony should immediately notify the expert of the cancellation. This should preferably be initially done by telephone and followed by a confirming letter or facsimile transmission.

In the event of settlement, the cancellation notification should also include an inquiry concerning any outstanding fees and costs which may be withheld and paid out of the settlement. As a professional courtesy, it is often a good practice to advise the expert of the outcome of the case and the role, if any, the expert played in that resolution or recovery.

Cancellation policies should be reasonable under the circumstances. There should be agreement concerning what constitutes "reasonable notice" of cancellation such that a cancellation fee will not be charged. Two or three business days in advance is usually considered to be reasonable. Longer cancellation periods are considered on a case-by-case basis.

Cancellation fees that are charged must be reasonably related to the actual loss to the expert in terms of lost professional fees and the impact on his or her practice. If the expert can use the canceled time productively, e.g., for seeing other patients or clients, necessary administrative functions, billing, dictation of reports, reviewing professional literature, this factor should be heavily considered in determining the need for and amount of a cancellation fee. Cancellation fees that provide excessive compensation must in fairness be reduced notwithstanding any written agreement or policy.

Dispute Resolution

10.1 Interprofessional disputes should be promptly submitted to an interprofessional dispute committee. Disputants should cooperate in the submission, investigation, and resolution of such disputes.

Regardless of the best efforts of both professions to avoid disagreements, disputes do arise. The Colorado/Denver Bar Association Interprofessional Committee is available to assist with the resolution of such disputes between experts and attorneys. Other local professional societies may have similar committees. If a dispute arises, the disputants are encouraged to submit the controversy to the appropriate dispute resolution committee for review.

In matters submitted to the CBA/DBA committee, the disputants are requested to submit written summaries of relevant facts along with pertinent documentation concerning the matter in controversy. Submission of the dispute should be done with fairness and candor, without rancor, and without unprofessional remarks or other conduct which would be further divisive to interprofessional relations.

A member or members of the committee are then assigned to investigate the dispute and make recommendations for its resolution. The disputants should remember that these investigators are unpaid volunteers, and every effort should be made to cooperate in their investigation.

A final recommendation by the investigator is then reviewed by the full committee. When the committee makes a final recommendation, the disputants will be advised in writing by the interprofessional committee involved. The recommendation of the interprofessional committee is not binding unless agreed to by the disputants. However, in most cases, the recommendations of the committee are followed.

Disputes may be submitted to the following CBA/DBA committee in writing, addressed to:

Colorado Bar Association/Denver Bar Association
Interprofessional Committee
1900 Grant Street, Suite 950
Denver, Colorado 80203-4309

¹While not controlling or meant to suggest the parameters of acceptable fees charged by experts, the following cases are illustrative of how various judges in various jurisdictions at various times have addressed the issues surrounding reasonableness of expert witness fees:

Leadville Water Co. v. Parkville Water District, 436 P.2d 659 (Colo. 1968): Expert witness fees are subject to the trial court's discretion; unusual compensation paid by a party may not be recoverable. Amounts allowed in the case included travel, ordinary witness fees, food and lodging expenses, preparation time, and \$100.00 per day for each day's attendance at trial.

Perkins v. Flatiron Structures Co., 849 P.2d 832 (Colo. App. 1992). Fees for experts' assistants are not recoverable; nor are fees for pre-trial preparation to render opinions not admitted into evidence; mileage costs are limited to statutory amounts.

American Water Dev. v. City of Alamosa, 874 P.2d 352 (Colo. App. 1994). The amount of expert witness fees is discretionary; the court may consider preparation time as well as time in court; travel, ordinary witness fees, food, and lodging may be considered.

Anthony v. Abbott Laboratory, 54 USLW 2024, D. RI 1985). \$420.00 per hour fee was reduced to \$250.00 for doctor associated with a medical school.

Crawford Fitting Co. v. J.T. Gibbons, Inc., 482 US 437, 107 S.Ct. 2494, 96 L.Ed. 2d 385 (1987). Federal courts can tax expert witness fees above \$30.00 per day, only if expert is court-appointed.

Baldwin v. Commercial Union Ins. Co., 87 CV 26030, Denver District Court (J. Stephen Phillips, J.) \$500.00 per hour fee is excessive. Fee for deposition of \$125.00 per hour is set as a reasonable fee.

THE ROLE OF THE OCCUPATIONAL MEDICINE PHYSICIAN IN THE MANAGEMENT OF INDUSTRIAL INJURY

You may contact the Division's Physician's Accreditation Program for a copy of this 1991 article. It is not available electronically for insertion into this document.

ADMINISTRATIVE FORMS

“WC164 FORM”

Physician’s Report of Workers’ Compensation Injury

Can be found on the Division’s website at: www.coworkforce.com/DWC/

Click on the “Official Forms” item on the main webpage menu.

See Workers’ Compensation Rules 16 and 18 for further information on how to use, and be paid for the use of, this form.

REPORT FORMS

The following is a list of vendors who carry the CMS 1500 forms. Remember the current version is the CMS1500 (08/05). Many other sources can be located via the Internet:

American Medical Association
Post Office Box 10946
Chicago, IL 60610
1-800-621-8335

PASCO
Post Office Box 452
Parker, CO 80134
(303) 759-2636

National Business Systems (NBS)
Cheyenne, WY
1-800-426-3167

International Business Forms
(719) 473-2655
1-800-777-5503

U.S. Government Printing Office
202-512-1800
www.gpo.gov

Many CMS program-related forms are available in Portable Document Format (pdf). The CMS1500 is not currently available in that format from CMS. Hard copy and other downloadable versions may be available from Intermediaries, Carriers, State Agencies, local Social Security Offices or End Stage Renal Disease Networks.

The WC164 as well as many other forms are available on the Division's website at: www.colorado.gov/cdle/dwc Click on the "Official Forms" item on the left side of the main menu page.

You can acquire the Supplemental Medical Claim form by contacting:

Division of Workers' Compensation
Medical Cost Containment
633 – 17th Street, Fourth Floor
Denver, CO 80202
(303) 318-8765

NEUROLOGICAL IMPAIRMENT SECTION

OBJECTIVES FOR THE NEUROLOGICAL SYSTEM SECTION

1. Ability to determine impairment of a spinal nerve root or peripheral nerve.
2. Demonstrate correct application of Table 3 - Grading Scheme for Sensation, and Table 4 - Grading Scheme for Strength, to clinical case scenarios.
3. Locate tables for all peripheral and spinal nerves.
4. Correctly apply the sections on disturbance of language, complex integral cerebral function, emotion, consciousness, sleep and arousal disorders, and episodic neurological disorders to case scenarios.
5. Rate a patient with spinal cord dysfunction using the tables referring to station and gait, use of upper extremities, respiration, urinary bladder function, and anorectal and sexual function.
6. Identify cranial nerves that use other sections of the guide to determine impairment rating.
7. Demonstrate ability to combine appropriate values using the COMBINED VALUES CHART.

NEUROLOGICAL IMPAIRMENT

INTRODUCTION

Four rating areas are covered in this section: the brain, the spinal cord, cranial nerves, and peripheral spinal nerves. The principles for rating peripheral nerve deficits are outlined in Chapters 3 and 4. Any physician performing ratings must also have a working knowledge of those principles discussed in Chapters 1 and 2.

As with all areas of the guides, ratings are primarily based on the evaluation of activities of daily living, which include self care and personal hygiene, communication, normal living postures, ambulation, travel, non-specialized hand activities, sexual function, sleep and social and recreational activities. The physician should always consider the impact of any impairment on these activities when determining the rating.

THE BRAIN

The sections described under the brain which may be rated are: sensory and motor disturbances, language disturbances, emotional disturbances, consciousness disorders, episodic neurological disorders, and sleep and arousal disorders.

Unlike other sections, the rating in each of these areas is not combined or added. The patient receives the highest rating that has been assigned in any of the six areas.

All of the brain subsections are patterned in a similar way. The majority discuss mild disturbance of daily activities, moderate disturbance of daily activities, disturbance of daily activities which require supervision, and disturbance of daily activities which render the individual unable to care for themselves without significant supervision. This is a useful overall system to consider when performing ratings for these and other areas.

Many of the activities described in the brain section overlap with activities which could be rated in other areas, particularly those found in the mental and behavioral disorders section. It is important that a rating for a specific category or dysfunction be limited to only one section of the Guides. For example, if a neurological deficit has occurred which causes a difficulty with communication, it should be rated only in the central nervous system section, and not receive an additional rating in the psychiatric section. A psychiatric rating should be given instead of a neurological rating if there were problems which do not appear to be related to physiological brain damage, but rather to overlying psychological effects of the injury. In general, whenever possible, grading of severity in the following sections regarding the brain should be correlated with objective neuro-psychometric and speech testing instruments.

Sensory and Motor Disturbances

It is rare that a patient would receive a rating solely for a brain sensory and motor disturbance. An example of a sensory impairment which may require a rating in this area is phantom limb sensation. If a rating for a sensory disturbance is being considered, the following factors should be taken into account: 1) pain and dysesthesias, 2) disorders in the recognition of the size, shape and form of objects (astereognosis), 3) disturbance of two point and position sense, 4) paresthesias of central origin, and 5) disturbance that might be identified by more elaborate testing. If there is a disturbance of the optic nerve or vision, this should be rated under Chapter 8.

Examples of motor disorders which may receive a rating in this area would include hemiparesis, involuntary tremors, disturbances of tone and posture, bradykinesia, and cerebellar or frontal origin dysfunctions.

No chart is given for rating these disturbances. It is suggested that the physician use descriptions of similar ratings under the spinal cord, cranial nerves, peripheral nerves or other appropriate sections. These will be reviewed in the appropriate sections. Table 1, page 109, is a complete summary of all central nervous system impairment ratings systems.

Language Disturbances

The rating should be given in this area only when there is a problem with the central mechanism for language comprehension, storage and production. There are other areas for rating the ability to speak found in Chapter 9, the ear, nose, throat, and related structures impairment section. The levels for rating in this section are:

- 0-15% = minimal disturbance in comprehension and production of language symbols of daily life
- 20-45% = moderate impairment in comprehension and production of language symbols for daily living
- 50-90% = cannot comprehend language symbols, therefore has an unintelligible or inappropriate production of language for daily living
- 95% = cannot comprehend or produce language symbols sufficient for daily living.

Disturbances of Complex Integrated Cerebral Functions

The following are included under this area: memory disturbances, difficulty understanding concepts or abstracting, orientation deficits, unacceptable social behavior, and inability to initiate decisions. These are functions which are generally related to organic brain dysfunction.

- 5-15% = degree of impairment of complex integrated cerebral functions but there is ability to carry out most activities of daily living as well as before onset.
- 20-45% = degree of impairment of complex integrated cerebral functions such that daily activities need some supervision and/or direction.
- 50-90% = degree of impairment of complex integrated cerebral functions that limit daily activities to directed care under confinement at home or other domicile.
- 95% = a severe degree of impairment of complex integrated cerebral functions that the individual is unable to care for self in any situation or manner.

Emotional Disturbances

Examples of this problem include outbursts of severe rage, irritability, lack of normal emotional responses, and abnormal emotional responses. Caution must be used when rating from this section to avoid duplication with a mental disorder rating.

- 5-15% = mild to moderate emotional disturbance under unusual stress.
- 20-45% = mild to moderate emotional disturbance under ordinary stress.
- 50-90% = moderate to severe emotional disturbance under ordinary to minimal stress which requires sheltering.
- 95% = severe emotional disturbance which continually endangers self or others.

Consciousness Disturbances

This section is used to rate disturbances of consciousness that are not rated under other central nervous system sections. These include hyperactive states, stupor, etc.

- 5-35% = mild alteration in state of consciousness.
- 40-70% = moderate alteration in state of consciousness.
- 75-90% = state of stupor.
- 95% = state of coma.

Episodic Neurological Disorders

Disorders such as syncope and seizures are included in this area.

- 5-15% = disorder of slight severity which is under control such that most activities of daily living can be performed.
- 20-45% = disorder of severity sufficient to interfere moderately with activities of daily function.
- 50-90% = severe and constant disorder which limits activities to supervised, protected care or confinement.
- 95% = severe and constant disorder which totally incapacitates the individual in terms of daily living.

Sleep and Arousal Disorders

This category can conceivably overlap significantly with other diagnoses. For example, cardiovascular diagnoses such as congestive heart failure, arrhythmias and cardiac failures may cause some arousal disorders. Again, the functional impairment rated here should not overlap with functional impairment rated on the primary diagnostic section. Depression is also mentioned in this section, but usually this will be rated sufficiently under the mental and behavioral disorder section. Other disorders which reduce daytime attention and concentration should be the primary impairments rated in this section.

- 5-15% = reduced daytime alertness due to sleepiness or sleep episodes, or disturbed nocturnal sleep affecting complex integrated cerebral functions but ability remains to carry out most activities of daily living.
- 20-45% = reduced daytime alertness, requires some supervision to carry out activities of daily living.
- 50-90% = reduced daytime alertness or other sleep disturbances significantly limits activities of daily living and requires supervision by caretakers.
- 95% = severe reduction of daytime alertness such that activities of daily living are severely limited, causing the patient to be unable to care for self in any situation or manner.

SPINAL CORD

Specific sections included under the spinal cord are station and gait, use of upper extremities, respiration, urinary bladder function, anal rectal function, and sexual function. Note that sensory disturbances including pain, temperature, vibration, or positional senses, and autonomic disorders including sweating, circulation and temperature regulation, may be rated under spinal cord disorders. In this section, all of the rating areas are combined for the complete rating.

Station and Gait

- 5-20% = ability to rise to a standing position and walk, but difficulty with elevations, grades, steps and distances.
- 25-35% = ability to rise to a standing position and walk with difficulty, but limited to level surfaces and variability as to the distance the patient can walk.
- 40-60% = ability to rise to a standing position and maintain it with difficulty, but inability to walk.
- 65% = can stand only with a prosthesis or help of others.

Use of Upper Extremities

Under this section there is a separate rating for the preferred upper extremity and the non-preferred upper extremity. The physician is reminded that this "preference" may change with time and should be reevaluated as necessary. There is a separate table for rating disorders which affect both upper extremities.

	Preferred Extremity	Nonpreferred extremity	Bilateral extremity
1. use of extremity for self care, grasping and holding, but difficulty with digital dexterity	5-10%	0-5%	5-15%
2. can use the involved extremity for self care, but grasp and hold objects with difficulty and no digital dexterity	15-25%	10-15%	20-40%
3. use of involved extremity, but difficulty with self care activities	30-35%	20-25%	45-80%
4. cannot use the involved extremity for self care or cannot use upper extremities	40-60%	30-40%	85%

Respiration

- 5-20% = capable of spontaneous respiration, but difficulty in activities of daily life that require extra exertion.
- 25-50% = spontaneous respiration, but of a degree that restricts patient to sitting, standing or limited ambulation.
- 75-90% = spontaneous respiration, but of a degree that limits the patient to bed existence.
- 95% = no capacity for spontaneous respiration.

Urinary Bladder Function

This section refers only to spinal cord disorders resulting in difficulties emptying the bladder. This rating should not overlap with Chapter 11 and should be correlated with uro-dynamic testing when possible.

- 5-10% = varying degree of voluntary bladder control but is impaired by urgency.
- 15-20% = good bladder reflex activity but no voluntary control (limited capacity with intermittent emptying times).
- 25-35% = poor reflex activities (intermittent dribbling) and no voluntary control.
- 40-60% = no reflex or voluntary control of the bladder (continuous dribbling).

Anal Rectal Function

This rating should not overlap with Chapter 10, but should be correlated with functional bowel testing whenever possible.

- 0-5% = reflex regulation but only limited voluntary control
- 10-15% = reflex regulation but no voluntary control.
- 20-25% = no reflex regulation and no voluntary control.

Sexual Function

Recall that this area is to be used only for sexual difficulties caused by spinal cord injury, not problems due to other neurological or psychiatric disorders. If the patient is below the age of 40 years, the values may be increased by 50%. For example, if the patient is 25 years old and has a 10% sexual function, the rating would be increased to 15%. Conversely, if the patient is over the age of 65, the percentage impairment is decreased by 50%.

- 5-10% = sexual function present, but with varying degree of difficulty of erection or ejaculation in males or awareness in both sexes.
- 10-15% = reflex sexual function possible, but there is no awareness.
- 20% = no sexual function.

CRANIAL NERVES

Olfactory

A complete loss of the nerve with bilateral involvement is a 3% whole person impairment rating. If the loss is only unilateral, there is no rating.

Optic

Loss of vision in one eye is 24%. Total blindness is equal to 85%. Other partial losses should be rated according to Chapter 8.

Oculomotor IV Trochlear, and V Abducens

Permanent diplopia from a malfunction of these nerves is considered equivalent to the loss of vision of one eye, or 24% of the whole person. If the loss of function requires the patient to hold their head in an unusual position, it is suggested that ratings be combined from the impairment table on station and gait, as discussed previously in the spinal cord section, or Chapter 8, if there is a partial visual impairment.

Trigeminal

Loss of sensation on one side may be rated between 3-10% depending on dysfunction. Bilateral loss is rated between 20-35%. Tic douloureux receives a rating of 10-50% depending on the severity and frequency of attacks. A complete loss of the motor function of one side of this nerve will be rated between 2-5% impairment of the whole person. A bilateral loss of the motor function would be 30-45% of the whole person. Refer to Chapter 9 to review impairment ratings for speech and ability to swallow, which may apply to this area.

Facial

Unilateral loss of taste, which is unusual, is a 3% impairment. Unilateral paralysis is between 10-15%, and complete bilateral paralysis 30-45%. Other motor losses are established based on difficulties with speech and eating. Refer to Chapter 9.

Auditory

These ratings are described in detail in Chapter 9. Bilateral loss of hearing has a rating of 35%, and Tinnitus has a rating of 3-5%.

Glossopharyngeal, X. Vagus, XI Cranial Accessory nerves, and XII Hypoglossal.

Refer to Chapter 9 for speech ratings. The rating for diet restriction is the same in Chapter 9 and the neurological section.

PERIPHERAL SPINAL NERVES

Peripheral spinal nerves can be rated according to the three groups of fibers: sensory, motor, and autonomic. If autonomic nerve fibers affect a specific organ or body system, that Chapter should be consulted to determine the degree of impairment.

The first step in rating a nerve, nerve root, or plexus is determining its value for total motor and sensation loss. This area can be somewhat confusing as all of the nerves are not listed in the same section. Some tables are found in Chapter 4 and others in Chapter 3. The peripheral spinal nerves chart on the following page lists all available Tables.

Peripheral Spinal Nerves Chart

Nerves Rated	Table #	Page #	Type of Rating
Unilateral spinal nerves head and neck, greater occipital, lesser occipital, great auricular, spinal accessory	5	113	whole person
Unilateral spinal nerves - inguinal and perineum, iliohypogastric, ilioinguinal, pudendal, coccygeal	7	114	whole person
Thoracic nerves	6	114	whole person
Unilateral spinal nerve roots upper extremity C5 - T1	12	43	upper extremity
Unilateral Brachial Plexus upper, middle, and lower trunks	13	44	whole person and upper extremity
Named peripheral nerves upper extremity, median, radial, ulnar axillary, etc.	14	46	upper extremity and digit
Upper extremity nerve entrapment	15	46	upper extremity
Unilateral spinal nerve roots lower extremity, L-3 - S-1	49	76	lower extremity
Unilateral lumbosacral plexus	50	76	whole person
Named peripheral nerves lower extremity; femoral, gluteal, sciatic, perineal, tibial, etc.	51	77	lower extremity

All nerves must be graded according to sensation loss and motor loss. In the neurological section, Chapter 4, Table 3, page 112 is used to grade sensation loss and Table 4, page 113, is for grading motor loss. When the nerve being rated is in Chapter 3, the upper and lower extremity and spine impairment chapter, use the Chapter 3 tables. In Chapter 3 the sensation grading system is found on page 42, Table 10 and the motor grading system is on Table 11, page 42. The grading tables differ slightly between the two chapters. All four grading tables include a summary of how to grade peripheral nerves at the bottom of the table.

The sensation loss is determined using verifiable sensation deficits, the presence of pain and the effect on activity performance. The ranges for sensation loss from Table 10, Chapter 3:

- 0% = no loss of sensation or spontaneous abnormal sensation
- 1-25% = decreased sensation with or without pain which is forgotten during activity
- 26-60% = decreased sensation with or without pain which interferes with activity
- 61-80% = decreased sensation with or without pain which may prevent activities (minor causalgia)
- 81-95% = decreased sensation with severe pain which may cause outcries as well as prevent activity (major causalgia)
- 96-100% = decreased sensation with pain, which may prevent all activity.

Once the sensation loss is determined from the grading deficit, it must be multiplied by the total loss of sensation rating for the specific nerve involved. This number will be found on one of the tables listed on the Peripheral Spinal Nerves Chart on the previous page.

Graded Sensation % X Total Sensation Loss for the specific nerve = Sensation Impairment Rating % for the nerve in the specific case

Motor strength, as determined by gross resistance testing of the affected nerve, is graded in Chapter 3 using Table 11, page 42, and the following categories:

- 0% = complete range of motion against gravity and full resistance.
- 1-25% = complete range of motion against gravity and some resistance, or reduced fine movements in motor control.
- 26-50% = complete range of motion against gravity and only without resistance.

51-75% = complete range of motion with gravity eliminated.

76-99% = slight contractibility, but no joint motion.

100% = no contractibility.

The percentage grade of the motor deficit is multiplied by the maximum loss of strength due to the nerve identified in order to determine the motor loss.

Graded Motor % X Total Motor Loss for the specific nerve = Motor Impairment Rating % for the nerve in the specific case

The sensation and motor nerve deficits are combined in order to arrive at the total deficit for that nerve or extremity. Review the examples found on page 77 which calculate the neurological losses for a specific patient.

Case Example:

A fifty seven year old female employee spends a minimum of 4 hours a day on the assembly line in a poultry processing plant and develops carpal tunnel syndrome. Her EMG demonstrated median nerve changes and conservative measures did not improve her condition. After a carpal tunnel release the patient improved but continued to have a motor deficit of median nerve functions which allowed complete range of motion against some resistance and resulted in a reduction in fine movements. She also experienced decreased sensation in the entire median nerve distribution below mid-forearm with pain which prevented her from working on the assembly line more than 15 minutes per hour.

ANSWER:

To calculate her impairment rating, Table 14, page 46, is consulted to determine the maximum % sensory and motor losses for the median nerve below the mid forearm. Tables 10 and 11, page 42 are consulted to determine the grading schemes that apply.

Sensory Impairment: Maximum sensation loss from Table 14, page 46, is 40%. Using Table 10, page 42, this patient has a grade 4 sensation loss. Thus for a highly motivated and consistent patient, 80% may be multiplied by 40% for a 32% upper extremity impairment due to loss of sensation. Any number in the grade 4 range may be used, 61-80%. A lower rating may be appropriate depending on the patient's difficulty with activities of daily living.

Motor Impairment: Maximum motor loss from Table 14, page 46 is 35%. Using Table 11, page 42, this patient has a grade 2 motor loss (1% - 25%). Thus 25% (or a percentage chosen within the Grade 2 range) may be multiplied by the maximum permissible loss of 35% for a 9% upper extremity motor loss.

Combined Impairment Rating: The sensory and motor impairment values are combined using the Combined Values Chart, page 254, for 38% total upper extremity impairment. [In this case any range of motion deficits that may occur are secondary to a nerve deficit and thus not used in the rating.]

Convert to Whole Person: The upper extremity rating may be converted to a whole person rating using Table 3, page 16. The whole person rating equals 23%. Ratings should be expressed both as extremity and whole person correlates.

Table 14, page 46 will result in an objective and supportable report on impairment due to peripheral nerve entrapment. Ratings using Table 15, page 46 are not recommended because the AMA Guides do not provide any definitions for mild, moderate and severe.

Range of motion deficits cannot be combined with motor deficits of the nerve if the range of motion deficits are secondary to motor nerve damage. (See page 41 of the *Guides*) In other words, if the patient has suffered a brachial plexus injury and has significant range of motion deficits of the wrist and elbow due to lack of motor function, these range of motion deficits should not be applied to the impairment rating. The motor deficit that you calculate for the involved nerves will take into account the range of motion deficit. Range of motion deficits are used for impairments which are not secondary to neurological dysfunction.

REFLEX SYMPATHETIC DYSTROPHY (CHRONIC REGIONAL PAIN SYNDROME) AND RELATED ISSUES

According to the Third revised edition of the *AMA Guides*, autonomic function may be rated by rating peripheral nerves, spinal nerve roots, spinal plexus or spinal cord functions (Chapter 4, Table 1). The task force on reflex sympathetic dystrophy advocated use of the spinal cord impairment tables for upper extremity or station and gait. If the injury has mainly caused sensation and motor deficits, it may be appropriate to use the sensation and motor percentage ratings for the appropriate peripheral nerves. Remember that range of motion deficits should not be calculated unless they were due to a cause other than a neurological injury such as reflex sympathetic dystrophy, since the rating for range of motion and deficits would be included in the sensation and motor deficits calculated.

In most cases, a rating for the autonomic dysfunction alone, i.e. temperature changes or vascular changes, will not be necessary as the effects on daily living can be sufficiently rated under the sensation grade for the nerve. However, if there is consistent vascularity change which has affected the tissue, or caused a significant change in the patient's daily function, this impairment should be combined with the neurological deficit. Use Table 16, page 47 which refers to impairment of the upper extremity due to peripheral vascular disease. Table 52, page 79, rates peripheral vascular disease in the lower extremity.

Related articles of interest:

Amadio, Peter C. et al, Reflex Sympathetic Dystrophy Syndrome: Consensus Report of an Ad Hoc Committee of the American Association for Hand Surgery and the definition of reflex sympathetic dystrophy syndrome; Plastic and Reconstruction Surgery 87:2, February, 1991, pages 371 -375.

Schwartzman, Robert J. and McLellan, Tony L.; Reflex Sympathetic Dystrophy: A Review; Archives of Neurology, Volume 44, May 1977, pages 555 - 561.

HELPFUL HINTS FOR GRADING NEUROLOGICAL DEFICITS

Report nerve findings on required report forms

- Upper extremity nerves – Upper Extremity Report Section III, Figure 1, Part 2 (page 13)
- Lower extremity nerves – Lower extremity report sheet in curriculum
- Spinal nerve root impairments – Spine impairment summary report sheet (Figure 84, p. 85)

Reference figures and tables for peripheral nerves and nervous system functions: *(These may be useful in localizing the level of nervous system pathology prior to the determination of impairment using the impairment tables.)*

- *Cutaneous sensory dermatomes of upper extremity and related peripheral nerves and roots – Figure 45, p. 39*
- *Origins and functions (motor and sensory) of the peripheral nerves of the upper extremity emanating from the brachial plexus (cervical 5 to 8 and Thoracic) – Table 9, p. 40*
- *Brachial plexus anatomic diagram – Figure 46, p. 44*
- *Motor innervation of the upper extremity – Figure 47, p. 45*
- *Sensory nerves of the lower extremity and their roots of origin – Figure 77, p. 73*
- *Origins and functions (motor and sensory) of the peripheral nerves to the lower extremity – Table 48, p. 74*
- *Lumbosacral plexus anatomic diagram – Figure 78, p. 75*
- *Motor innervation of the lower extremity – Figure 79, p. 75*

First step required to grade peripheral nerves

Locate maximum impairment loss for the nerve affected using the appropriate table identified on the attached chart. ***(Note whether the impairment is provided as an extremity impairment or whole person impairment.)***

Peripheral Spinal Nerves Chart (Chart in Level II curriculum – Neurological Section, p. 47)

Nerves Rated	Table #	Page #	Type of Rating
Unilateral spinal nerves head and neck, greater occipital, lesser occipital, great auricular, spinal accessory	5	113	whole person
Unilateral spinal nerves - inguinal and perineum, iliohypogastric, ilioinguinal, pudental, coccygeal	7	114	whole person

Nerves Rated	Table #	Page #	Type of Rating
Thoracic nerves	6	114	whole person
Unilateral spinal nerve roots upper extremity C5 - T1	12	43	upper extremity
Unilateral Brachial Plexus upper, middle, and lower trunks	13	44	whole person and upper extremity
Named peripheral nerves upper extremity, median, radial, ulnar axillary, etc.	14	46	upper extremity and digit
Upper extremity nerve entrapment	15	46	upper extremity
Unilateral spinal nerve roots lower extremity, L-3 - S-1	49	76	lower extremity
Unilateral lumbosacral plexus	50	76	whole person
Named peripheral nerves lower extremity; femoral, gluteal, sciatic, peroneal, tibial, etc.	51	77	lower extremity

Second step for grading peripheral nerve impairment –

Record maximum sensory and motor values for the affected nerve from the above tables.

Third step for grading peripheral nerve impairment –

Grade the sensory and motor loss for each nerve using the grading table from the same chapter as the maximum value for the nerve.

- Grading table for sensory and motor impairment for Chapter 3 (upper and lower extremity)
 - ✓ Sensory – Table 10, p. 42
 - ✓ Motor – Table 11, p. 42
- Grading table for sensory and motor impairment for Chapter 4 (nervous system)
 - ✓ Sensory – Table 3, p. 112
 - ✓ Motor – Table 4, p. 113
- To grade sensory deficit use physical exam findings and expected functional deficits
- To grade motor deficit use confrontational strength testing – 5/5 scale

Fourth step for grading peripheral nerve impairment –

Multiply sensory deficit % from above tables by maximum sensory nerve loss %- Multiply motor deficit% from above tables by maximum motor nerve loss %

Fifth Step for grading peripheral nerve impairment -

Combine sensory and motor values

OTHER IMPAIRMENT RATINGS

- Digital nerves are rated using a different system
 - ❖ Determine the length of the finger affected
 - Thumb and little finger – Figure 7, p. 19
 - Other digits – Figure 17, p. 25
 - ❖ Determine if digital nerve is partially affected (2-pt 7-15mm) or totally impaired (2-pt > 15mm)
 - Thumb and little finger rate using Table 4, p. 20 hand rating
 - Other digits – Table 8, p. 25
 - ❖ When the rating for each digit is completed convert to
 - Table 1, p. 15 digit to hand
 - Add all digits ratings in hand impairment rating %
 - When hand rating is completed, convert to upper extremity
 - Table 2, p 16 for hand to upper extremity
 - Table 3, p. 16 for upper extremity to % whole person impairment)
- Upper extremity entrapment peripheral neuropathy – Table 15, p. 46 (Note: “upper extremity” units)
 - ❖ The Division of Workers’ Compensation recommends that this table NOT be used since the categories of impairment (mild, moderate and severe) are not defined, and Table 14 is more specific.
- CRPS
 - ❖ Table 1, p. 109, Chapter 4 (the Division preferred method for rating CRPS)
 - ❖ Upper extremity and lower extremity vascular tables, p. 47 & 79 may be used to rate impairment due to severe swelling associated with chronic regional pain syndrome if functional deficit is not covered by Table 1 rating
 - ❖ In some cases of CRPS II use of the peripheral nerve table may be acceptable
- Grip strength impairment – pp. 52-54, very rarely appropriate – should never be used with a neurologic injury since neurologic injuries must be rated according to

muscle strength testing as previously described.

- ❖ % strength index = [Normal mean strength (use measured non-injured side or Tables 20-22, p. 53) – abnormal mean strength] ÷ normal mean strength (See p. 54)
- ❖ Find % strength index impairment table – Table 23, p. 54 (Note: “upper extremity” units)
- ❖ Note: The grip strength method may be used only when the peripheral nerve table is not directly applicable, i.e., crush injury resulting in fractures and ROM alone does not account for the functional deficit.

- Spinal cord impairment (Note: “whole person” units)

- ❖ Use Table 1, p. 109, left side “A” Spinal Cord and/or Brain”

Note: multiple categories can be combined from this column

- Brain impairment (Note: “whole person” units)

- ❖ Brain categorical impairments are not combined. Instead the largest numerical value of all categories rated is used to reflect total impairment due to brain pathology (see p. 104). Usually this refers to the categories on the right side “B.Brain” of Table 1, but would also include any categories of brain impairment from the left side “A”.

- Cranial nerves – Table 2, p. 111 (Note: “whole person” units)

- ❖ Note: Do not “double rate” by using both the cranial nerve impairment rating and the applicable end organ rating from its chapter in the Guides (i.e. vision, hearing, dysequilibrium).
- ❖ Generally corresponding end organ impairment will be rated using the appropriate chapter in the Guides rather than the cranial nerve impairment.

UPPER EXTREMITY IMPAIRMENT

OBJECTIVES FOR THE UPPER EXTREMITY SECTION

1. Show how the impairment levels of the upper extremity at the hand and forearm compare to the extremity as a whole and the whole body.
2. Explain the method for determining sensory loss of the fingers.
3. Explain the manner used to determine range of motion in all joints of the fingers.
4. Demonstrate the ability to determine impairment ratings for a finger and the thumb using all measurements for impairment.
5. Determine range of motion impairments for the wrist, elbow, and shoulder, given specific values in all planes.
6. Apply Table 16 - Impairment of the Upper Extremity due to Peripheral Vascular Disease - correctly to a case scenario.
7. Demonstrate understanding of the available tables on peripheral nerves.
8. Apply tables found in section 3.1J under Impairment Due to other Disorders of the Upper Extremity correctly to determine an impairment rating.
9. Using a clinical case scenario, combine the impairment ratings for range of motion of several joints in the upper extremity, as well as other deficits, to determine the upper extremity and whole body rating.
10. Correctly complete the report form found on pages 12 and 13.

UPPER EXTREMITY IMPAIRMENT

General Principles

Upper extremity impairment is viewed as some percentage of a complete amputation of the arm.

Figure 2, p.15 shows complete amputation of the arm as a 60% impairment of the whole person. Amputation of all digits is equivalent to a 90% impairment of the upper extremity and a 54% impairment of the whole person.

Any combination of types of injury or permanent impairment that add or combine to more than 100% of the upper extremity is equal to 100% of that upper extremity. This is the same principle used in other sections of the Guides.

Injury residuals of the various parts of the upper extremity are rated as follows:

- Rated at digit level.
- Digit or digits converted to hand level - Table 1, p.15
- Hand level converted to upper extremity level - Table 2, p.16
- All upper extremity ratings are combined in order from distal to proximal to determine total upper extremity rating.
- Upper extremity rating converted to whole person ratings - Table 3, p.16
- Each upper extremity is rated as whole person separately and both ratings are combined for final whole person rating when impairment is bilateral.
- Impairments of same kind or type - usually added (exceptions exist).
- Impairments of more than 1 type - combined.

Categories of upper extremity impairment:

- Amputation
- Sensory loss of digits
- Abnormal motion
- Peripheral neurological losses (Motor & Sensory)
- Vascular disorders

- OTHERS: joint crepitation, joint swelling, deviation, subluxation and dislocation, arthroplasty, carpal instability, muscle and tendons, and strength loss.

Note: Often, the elements included in "other" may be part of the 5 major types of impairment.

They are separately rated only when that particular "other" problem either lends more impairment than is included with the major five categories or does not cause any of the other five types of impairment but acts to impair function, e.g., finger may have full motion and no sensory loss but with joint crepitation, swelling, deviation, subluxation or dislocation.

Also, muscle tightness and arthroplasty and loss of strength are sometimes themselves an impairment even with normal range of motion and sensation.

A CAUTIONARY WORD ABOUT SOME TABLES AND FIGURES

There are several figures and tables or portions of figures and tables in the upper extremity chapter of the *AMA Guides* Third Edition, Revised that are in the text for explanatory reasons only. Because they can be confusing and mistakenly applied when one is performing a rating, we recommend that you cross them out in your book. These include:

Figure 3, Page 15

Figure 5, Page 17

Figure 7, Page 19 - Omit Total Transverse Sensory Loss Impairment % section only

Figure 9, Page 21

Figure 12, Page 22

Figure 14, Page 22

Table 5, Page 23 - Do not use Lost and Retained columns

Table 6, Page 23 - Do not use Lost and Retained columns

Figure 16, Page 24

Table 7, Page 24 - Do not use Lost and Retained columns

Figure 17, Page 25- Omit Total Transverse Sensory Loss Impairment % section only

Figure 25, Page 29

Figure 28, Page 30

Figure 31, Page 32

Figure 34, Page 33

Figure 37, Page 35

Figure 40, Page 36

Figure 43, Page 37

DIGITAL IMPAIRMENTS

Amputation of the digits

The impairment percentage of each amputated digit can be determined by using the appropriate figures.

Fig. 7, p.19 - thumb

Fig. 17, p.25 - other digits

Sensory loss of the digits

Sensory quality Classification

- 2 point discrimination greater than 15mm
= total sensory loss or 100%
- 2 point discrimination between 15-7mm
= partial sensory loss or 50% sensory impairment
- 2 point discrimination equal to or less than 6mm
= normal sensibility or 0%

Distribution of impairment

Digital sensory impairment is calculated as a percentage of the length of the digit involved and the grade of sensory loss.

Table 4, p.20 - gives values for sensory loss of the thumb and little finger.

Table 8, p.25 - gives values for the sensory loss of the index, middle and ring finger.

Range of Motion

Thumb

Flexion extension interphalangeal joint, Fig. 10, p.21

Flexion extension metacarpophalangeal joint, Fig. 13, p.22

Adduction, Table 5, p.23

Abduction, Table 6, p.23

Opposition, Table 7, p.24

Add all range of motion deficits of the thumb

Other digits

Flexion extension distal interphalangeal joint, Fig 19, p.26

Flexion extension proximal interphalangeal joint, Fig. 21, p.27

Flexion extension metacarpophalangeal joint, Fig. 23, p.28

Add range of motion deficits at each joint level, e.g., flexion deficit and extension deficit of the pip joint.

Combine, do not add, range of motion deficits from all involved joints on the digit. All digits except the thumb.

Total Digit Impairment

Combine deficits from amputation, sensation, range of motion and any other applicable disorders for each digit .

Multiple Digit Involvement

Translate each digit's total impairment to the hand impairment using Table 1, p.15.

Add all of the hand's impairment from each digit to determine the total hand impairment.

WRIST

Amputation

Use Fig. 2, p.15

An amputation at the wrist level is a 92% impairment of the upper extremity.

Range of Motion

Flexion extension, Fig. 26, p.29

Ulnar and radial deviation, Fig. 29, p.31

Add range of motion deficits.

ELBOW

Amputation

Use Fig. 2, p.15

An amputation at the elbow joint is a 96% impairment of the upper extremity.

Range of Motion

Flexion extension, Fig. 32, p.32

Pronation supination, Fig. 35, p.33

Add range of motion values for total ROM deficit.

SHOULDER

Amputation at shoulder equals 100% impairment of upper extremity.

Shoulder Range of Motion

Flexion extension, Fig. 38, p.35

Abduction-adduction, Fig. 41, p.36

Internal-external rotation, Fig. 44, p.37

Add range of motion deficits from each function.

PERIPHERAL NERVE DISORDERS

Determined as described in Neurological Section.

Nerves found on:

Table 14, p.46, Specific unilateral nerves

Table 13, p.44, Brachial plexus

Table 12, p.43, C₅-T₁, nerve roots

Sensory grading, Table 10, p.42

Motor grading, Table 11, p.42

Note: Loss of strength from any non-neurological cause may be graded according to grip and lateral pinch strength. However, a patient cannot be given a rating for a motor disorder due to a neurological cause under Table 11 and also receive a grip strength rating.

IMPAIRMENT DUE TO VASCULAR DISORDERS

Rate according to Table 16, p.47

These values are combined with other upper extremity impairments.

OTHER DISORDERS OF THE UPPER EXTREMITY

These tables must only be used when other measures of impairment have not adequately addressed the patient's impairment.

Joint Crepitation

May reflect synovitis or cartilage degeneration.

Use percentage joint impairment on p.48 and multiply by the applicable joint, Table 17, p.48

Joint Swelling due to Synovial Hypertrophy without range of motion deficits

Use impairments on p. 48 and again multiply by joint value Table 17.

Digital Lateral Deviation or Rotational Deformity

Lateral deviation and rotational deviation are found on page 49.

These values are multiplied by the total value of the digit (see Table 17, p.48)

If other impairments are present combine this value with them.

Persistent Joint Subluxation and Dislocation without range of motion deficits.

Multiply appropriate value on p.49 by involved joint, Table 17.

Joint Instability

Excessive medial lateral instability is evaluated by comparison with the uninvolved side. Values from p.49 are multiplied by the appropriate joint, Table 17.

This value should be combined with any other existing impairments.

Wrist and Elbow Joint Lateral Deviation

Measure with wrist or elbow in maximum extension.

Multiply value on p.50 by appropriate joint, Table 17.

Combine this value with any other existing impairments.

Carpal Instability without range of motion or strength deficits

These are based on radiographic findings. Refer to Table 18, p.50.

Do not use this if there are impairments of range of motion or grip present.

Do not add or combine impairments on this table - use the highest value only.

Arthroplasty

These values may be combined with range of motion deficits. Refer to Table 19, p.50. If more than one level is involved (e.g., fingers and elbow) combine deficits beginning with distal deficit.

If more than one thumb joint is involved add impairments.

If more than one joint is involved in another digit, combine impairments for that digit.

If multiple digits are involved, add the hand equivalent impairments for the digits.

Note: Resection arthroplasty referred to in the AMA Guides 3rd Edition Revised is to be used only for partial resection of the humeral head, a procedure rarely performed currently.

Neither resection nor implant arthroplasty values should be used for a distal clavicular resection. The upper extremity value assigned to a distal clavicular arthroplasty is 10%. The *AMA Guides* 4th and 5th Editions continue to suggest that subacromial arthroplasty should be rated using ROM, and when appropriate, 'joint

crepitation with motion' from the "Other Disorders" section. In general, when any additional rating for subacromial arthroplasty is deemed appropriate in a case with or without crepitus, because "other factors have not adequately rated the extent of the impairment," it should not exceed 10%.

Intrinsic Tightness Severity without range of motion deficit

This may be given only when there is no range of motion deficit. Refer to page 52. Bunnell's test - Restricted passive flexion of the PIP joint with MP joint hyperextended.

Multiply deficit by digit value, Table 17.

Constrictive Tenosynovitis without range of motion deficit

If there is a range of motion deficit this rating for the trigger finger cannot be used. Refer to page 52.

Multiply deficit by digit value, Table 17.

Extensor Tendon Subluxation at MP Joint without range of motion deficit

Rating may not be given if a range of motion impairment exists.

Refer to p.52 for percentage of impairment to be multiplied by digit value on Table 17.

Loss of Strength

This section should be used only when loss of strength cannot be adequately rated using the other sections, including neurological motor deficits. The neurological motor deficit and loss of strength must not be given for the same deficit. It is suggested that at least three measurements of grip and lateral pinch strength be taken at several intervals in an exam. There should be a less than 20% variation among three readings to establish reliability. At least three reliable readings for each extremity are averaged.

$$\text{strength index} = \frac{\text{strength of the normal hand} - \text{strength of the abnormal hand}}{\text{strength of the normal hand}}$$

Use table 23, p.54 to translate the strength index into upper extremity impairment. If there is no uninjured hand, use Table 21 and Table 22 on p.53 to determine the normal strength.

CUMULATIVE TRAUMA CONDITIONS/DISORDERS

First calculate any applicable impairment from range of motion, neurologic and/or vascular findings, or other disorders (section 3.lj) excluding grip strength. (Also refer to the tables and related information from the Cumulative Trauma Conditions treatment guideline, as needed, in the Workers' Compensation Report section of this curriculum.) If no impairment exists under these sections and the claimant has an impairment of daily living activities with anatomic and physiologic correlation, proceed to rate the impairment as follows:

1. Multiple joint and upper extremity sites can be involved in CTD. Limit the impairment determination to areas of primary pathology, with anatomic or physiologic correlation based on objective findings, and which meet criteria for a separate and distinct diagnosis. Do not rate areas of reactive muscular spasm and radiating or referred pain. (Also see Cumulative Trauma Conditions Medical Treatment Guideline, Sec. C: Definitions and Mechanisms of Injury.)
2. Using the cumulative trauma matrix, determine the stage of cumulative trauma for each joint involved, Stage 1 is 0-10%, Stage 2 is 11-20%, Stage 3 is 21-30%, and Stage 4 is 31-40%. See CTD Matrix at end of this section.
3. Identify the appropriate joint impairment found on Table 17, Chapter 3 of the *Guides*.
4. Multiply the joint impairment from Table 17 by the CTD stage impairment from step 2 to yield an upper extremity impairment. If there is anatomic and physiologic basis to rate other joints in the same extremity, complete the rating in the manner described and combine the extremity ratings distal to proximal.
5. If extremity impairment is bilateral, convert each upper extremity impairment to whole person rating and then combine whole person ratings for both right and left upper extremities as referenced in the *AMA Guides*. Complete the upper extremity worksheets, Figure 1 of Chapter 3 of the *AMA Guides*, for each extremity separately.

The CTD rating system is preferred to impairment determined by decrease in grip strength. If grip strength is used, the CTD rating system shall not be used as it would be duplicative. Similarly, care must be taken to avoid duplicative ratings with other associated disorders where there is significant neurovascular involvement or where there is limitation in range of motion.

Patients with cumulative trauma disorders should be tested after 6-8 hours of work for determination of impairment.

Any reports involving the upper extremity must be completed using Fig. 1, pp. 12 and 13.

Table 1: Cumulative Trauma Staging Matrix (also referenced I Workers' Comp Rule 12)

	Stage 1 (Minimal)	Stage 2 (Mild)	Stage 3 (Moderate)	Stage 4 (Severe)
History and Physical Examination	1-2 symptoms with signs identified on history and supported by physical examination with consistency of subjective and objective findings	2 or more symptoms with signs identified and supported by physical examination with consistency of subjective and objective findings	3 or more symptoms with signs identified and supported by the physical examination with consistency of subjective and objective findings	3 or more symptoms with signs identified and supported by physical examination with consistency of subjective and objective findings
	AND	AND	AND	AND
Response to Modification of Specific Aggravating Factors	Symptoms and/or signs improve or resolve with modification of specific aggravating activity	Symptoms and/or signs may improve but will not resolve completely with modification of specific aggravating activity	Symptoms and/or signs do not improve with modification of the specific aggravating activity, but may improve with elimination of the specific aggravating activity	Symptoms and/or signs do not improve with modification or elimination of the specific aggravating activity
	OR	OR	OR	OR
Activities of Daily Living (ADLs)	Minimal problems with ADLs	Noticeable aggravation by more difficult ADLs	Significant interference with most ADLs	Severe limitations of ADLs
Impairment Grades at MMI (See Note to obtain Multiplier below)	0-10%	11-20%	21-30%	31-40%

NOTE: When the Staging Matrix is used for impairment rating at Maximum Medical Improvement (MMI), assignment of the patient to a Stage should be based primarily on limitations in ADLs and history and physical examination findings. The response to modification of specific aggravating activities may be used to aid the rater in choosing a number within the available rating range. The staging number chosen from the “Impairment Grades at MMI” row is to be used as a multiplier in conjunction with the *AMA Guides*, Chapter 3, and Table 17. The primary presenting joint that corresponds to each specific established diagnosis should be rated. Descriptions of painful conditions without clear physiologic findings may not be rated using this chart. Examples include pain in the elbow or other upper extremity joint and myofascial pain disorder. The staging matrix is only used to rate a diagnosis when there is no impairment rating under range of motion and/or the specific diagnosis in the *AMA Guides* 3rd Ed. (rev.). All impairment ratings from this table are provided in upper extremity terms, and then converted to whole person. The table is not intended to distinguish between permanent partial disability as paid under 8-42-107 (2) and 8-42-107 (8).

SPINE, LOWER EXTREMITY, AND PELVIC IMPAIRMENT SECTION

OBJECTIVES FOR SPINAL, LOWER EXTREMITY, AND PELVIC IMPAIRMENT RATING SECTION

1. Demonstrate ability to properly measure range of motion for all joints found in the lower extremity.
2. Be able to use Table 53 - Impairments Due to Specific Disorders of the Spine - to determine impairment for specific clinical diagnoses.
3. Correctly determine pelvic impairment in a case scenario.
4. Determine spinal nerve root dysfunction accurately using a specific case scenario.
5. Use correctly all tables found in this chapter, including:
 - Table 47-Impairment of the Digits Foot Lower Extremity and Whole Person due to Amputations,
 - Table 45-Impairments of the Lower Extremity Due to Other Disorders of the Hip Joint,
 - Table 52-Impairment of the Lower Extremity Due to Peripheral Vascular Disease, and
 - Table 40 Impairment Ratings of the Lower Extremity for other Disorders of the Knee.
6. Demonstrate the ability to combine all the appropriate factors used in a spinal case and determine a correct impairment rating.
7. Report clinical cases properly on Figure 83, Lumbar Range of Motion form, found on Pages 84 and 85.
8. Demonstrate the ability to properly use the inclinometer to measure cervical, thoracic, and lumbar ranges of motion. (Performed in workshop)

SPINAL, LOWER EXTREMITY, AND PELVIC IMPAIRMENT

LOWER EXTREMITY

Definition of ankylosis

"complete absence of motion or planar restriction of motion preventing the subject from reaching the neutral position of motion in that plane."

Amputation

When an amputation occurs at a joint the physician is required to calculate the percentage impairment. Refer to Table 47, p.73 for a summary of impairments due to amputations, *except* when calculating amputation of the toes as stated below.

Distal amputation - if the amputation occurs distal to the distal joint, the percentage of lost bone is multiplied by the total percentage of loss given on the table for amputation at the distal joint. See p.56 for example.

Proximal amputation - if the loss occurs between 2 joints - the full impairment for the lost distal portion is added to the percentage of the bone lost between the joints multiplied by the remaining impairment at the proximal joint. The remaining impairment at the proximal joint is equal to the impairment given on the appropriate table for amputation at the joint minus the full impairment for amputation at the distal joint. See p.57 for example.

Great Toe

Measure range of motion of both MTP and IP joints

Table 24, p.56, interphalangeal joint - flexion and extension

Add the range of motion deficits at each joint.

Combine the total ROM deficits for MTP and IP.

Combine ROM deficit with any amputation impairment.

Convert to foot rating using Table 27, p.59.

2nd through 5th Toe - Range of Motion

Determine range of motion of applicable joints.

Table 28, p.60 - distal interphalangeal 2nd - 5th Toe
dorsi-plantar flexion and amputation

Table 29, p.60 - proximal interphalangeal joint 2nd - 5th toe
dorsi-plantar flexion and amputation

Table 30, p.61 metatarsophalangeal joint - 2nd toe
dorsi-plantar flexion and amputation

Table 31, p.62 - 3rd metatarsophalangeal joint dorsi-plantar flexion

Table 32, p.62 - 4th metatarsophalangeal joint dorsi-plantar flexion

Table 33, p.63 - 5th metatarsophalangeal joint dorsi-plantar flexion

Add range of motion deficits at each joint.
Combine the total ROM for each joint.
Combine ROM with amputation deficits.
Convert to foot rating using Table 34, p. 64.

Multiple toe involvement.

Impairment of each toe expressed as a percentage of the foot. These values are added to arrive at the total foot impairment.

Also see Table 35, p.64 - Impairment of Foot Due to Amputation and Ankylosis of Multiple Digits.

Hind Foot

Partial Foot Amputations - see Table 47, Page 73.

Measure range of motion for dorsal and plantar flexion
and inversion and eversion

Table 37, p.66 dorsi-plantar flexion of hind foot

Table 38, p.67 inversion and eversion of hind foot

Add range of motion deficits

For ankylosis, - use the larger value for dorsi-plantar flexion and inversion/eversion Do not add or combine.

Knee joint

Refer to Table 40, p.68 (Disorders of the Knee) for diagnostic and surgical impairments.

Measure range of motion - Table 39, p. 68 flexion and extension

Add flexion and extension deficits.

Combine Table 40 deficits with range of motion deficits.

For amputation of leg below knee, see Table 47, p.73. This value would be combined with the knee joint deficit if applicable.

Hip Joint

Measure range of motion of hip - abduction, adduction, flexion, extension and internal and external rotation.

Table 41, p.69 flexion

Table 42, p.70 extension

Table 43, p.70 abduction, adduction

Table 44, p.70 internal and external rotation

Add all range of motion deficits

If joint is ankylosed, determine ankylosis measurements for all ranges of motion. Do not add or combine values. Use the largest impairment rating for ankylosis.

Consult Table 45, p.72 for hip diagnoses which may be combined with the range of motion deficit.

Other amputation deficits are found on Table 47, p.73.

Multiple Unit Involvement

Combine ratings in order from distal to most proximal rating using combined value chart.

Convert to whole person rating using Table 46, p.72

Remember to report lower extremity and whole person impairment on all forms.

Peripheral Nervous System Disorders

The nerves are graded for sensory and motor deficits as discussed in the Neurological section.

Table 49, p.76 gives maximum loss for L₃-S₁ nerve roots. Other nerve tables are found on pages 76 and 77.

Use Table 10, p.42 for sensation gradation and Table 11, p.42 for motor gradation.

Strength testing is based on confrontational resistance testing.

Vascular disorders of the lower extremity

Rated per Table 52, p.79

Summary of evaluation of impairment of the lower extremity

- Complete the lower extremity impairment form found on the following page
- Make all measurements in relation to the "Neutral Position."
- Work within 1 unit at a time — toes, ankle, knee, hip.
 - A. Make all of the pertinent measurements, unit by unit.
 - B. Multiple planes of motion — 1 joint — **ADD** individual impairments.
 - C. Multiple joints — 1 unit — **COMBINE** individual impairments.
 - D. Ankylosis — use only the plane of motion yielding the highest impairment.
 - E. Amputations — Sliding scale based on % of amputation.
 - F. **COMBINE** B through E above to determine unit impairment.
- Only combine impairments from individual units after they have been converted to the same level — toe, foot or lower extremity.

- Convert each total unit impairment to lower extremity impairment and combine distal to proximal.
- Remember the additional lower extremity impairments for specific disorders of the knee (Table 40) and hip (Table 45).
- Consider impairment due to Peripheral Nervous System.
- Consider impairment due to Peripheral Vascular Disease.
- **Combine** all impairments obtained in the above to obtain Total Lower Extremity Impairment.
- Use Table 46 on page 72 to obtain the equivalent Whole Person Impairment and report both.
- When impairment is bilateral, each lower extremity is rated as whole person separately and both ratings are combined for final whole person rating.



Lower Extremity Impairment Record

Patient Name:

SPINAL IMPAIRMENT

Essential Elements of the Exam

Report all of the following physical findings:

- Inspection
- Palpation
- Range of Motion Testing
- Sensation
- Muscle Strength
- Reflexes
- Straight Leg Raise
- Psychometric Testing

Additional elements that must be reviewed and commented on include: chief complaint, history of present illness, past medical history, review of systems, family history and social history.

Rating must be done when the patient does not have an acute illness or acute spasm.

Use Table 53 or 54 to determine if the patient qualifies for a spinal impairment. If Table 53 rating is used, spinal range of motion must be completed and applied to the rating. Spine rating is in whole-person units.

Diagnoses Related Factors

Only the primary diagnoses in a given region can be considered for rating.

For example, if a patient received an L₄ fracture he should not receive ratings for the cervical, thoracic and lumbar portions of the spine since only the lumbar area was injured. On the other hand, if the patient fractured a cervical vertebrae and L₄ then he would receive ratings for the cervical and the lumbar areas.

Table 53, p.80 gives ratings for fractures, intervertebral discs, soft tissue lesions, spondylolysis and spondylolisthesis as well as spinal stenosis.

Table 54, p.86 cannot be used in addition to Table 53 but may be used instead of Table 53 if ankylosis is determined by radiography. Table 54 cannot be combined with range of motion.

Table 53, p.80

Fractures

Vertebral body compression fractures

Posterior element fractures - combine (not add!)

Dislocations - combine (not add!)

Intervertebral disc or other soft tissue lesions

Review this section. Medically documented rigidity associated with an injury -related diagnosis is the minimum requirement for a rating.

Note subparagraph F - deals with the issue of multiple levels, and G with multiple operations - 1 or 2% is added per level depending on the situation.

Spondylolysis and spondylolisthesis, non-operated

Grades I and II - note requirements

Grades III and IV - note requirements

Spinal stenosis, segmental instability, or spondylolisthesis, operated

The "fine print"

Address the regions of the spine separately.

Combine above impairments with other residuals using the Combined Values Chart.

Definition of "residual signs or symptoms"

- Ankylosis
- Abnormal motion in spine or extremities
- Spinal cord or spinal nerve root injuries with neuropathic impairment
- Note absence of chronic pain complaints

Range of Motion Testing

- Recognize the complexity of spinal motion
- Impossible to isolate, selected segmental motion
- Measure the upper and lower extremes of the segment to be rated

The ROM tester is encouraged to have the examinee stretch thoroughly before beginning measurements. The pelvis must remain stationary throughout the straight leg raising measurement. As soon as the tester begins to feel a rocking motion of the pelvis the straight leg raising motion should cease. The straight leg raising is not a passive measurement. Inclinometer method will be reviewed in the workshop.

Range of motion testing of the spine

- Use maximum range of motion measurements.
- Test Validity Criteria for Spinal ROM (amended as of July 22, 1994)
 - A set of valid measurements for the maximum cervical, thoracic and lumbar angles consists of 3 measurements of a motion which are within $\pm 10\%$ or 5° of

- the median value.
 - A minimum of two sets of three full measurements must be taken before invalidating the first trial. If these do not meet validity criteria then additional measurements, up to two sets of three, must be taken on a separate testing date before the examiner can declare the range of motion results invalid.
 - There is an additional test for validity which pertains to Lumbar flexion only. The tightest of the two maximum straight leg raise angles minus (hip flexion + hip extension) must be $\leq 10^\circ$.
- Add whole person impairments due to restriction of motion in each plane to attain whole person impairment due to restriction of motion.
 - Ankylosis measurements.
Ankylosis nicely defined in this edition - Page 81.
 - Complete absence of motion.
 - Inability to achieve the neutral position of motion in a given plane.
 Ankylosis and restriction of motion in a given plane are mutually exclusive.
 - Table 55, p.88 - Cervical flexion extension
Table 56, p.90 - Cervical lateral flexion
Table 57, p.90 - Cervical rotation
Table 58, p.96 - Thoracic flexion extension
Table 59, p.96 - Thoracic rotation
Table 60, p.98 - Lumbar flexion and extension
Remember that the "true lumbar flexion" angle is found by subtracting the sacral (hip) inclination from the T₁₂ inclination and the "true lumbar extension" is found by subtracting the sacral (hip) angle from the T₁₂ inclinometer angle.
Table 61, p.98 - Lumbar lateral flexion

Neurological Findings

See Neurological section and Lower Extremity section.

Remember to translate all impairment into whole body ratings before combining with other spinal impairments.

No "double dipping" - e.g., Do not rate both restriction of motion of ankle dorsiflexion and decreased motor strength of muscles dorsiflexing the ankle due to nerve root injury - unless they are independent processes.

Use of standardized forms in the Guides is required by the Division

Figures 81-83 for Range of Motion/Validity checks

[NOTE: In some copies of the *AMA Guides* an error exists on Fig. 83. Please check your book and correct as necessary. Under Straight Leg Raising, Right and Left, 10% should read 10°.]

Figure 84 for Spine Impairment Summary - may be reproduced without permission by A.M.A.

Summary of the spine impairment process

- Determine the primarily injured region
- Determine diagnosis-related whole person impairment "only the primary diagnosis should be considered"
- Determine regional range of motion to obtain whole person impairment due to loss of motion/ankylosis
- Remember mandatory validity checks
- Combine diagnosis-related and range of motion/ankylosis-based whole person impairments
- Repeat the preceding process for secondarily impaired spinal regions
- Combine whole person impairments for the various spinal regions
- Determine additional extremity impairments due to radiculopathy and convert these impairments to whole person impairment
- Combine the whole person impairments obtained in the previous two steps to determine the total whole personal impairment to the spine
- Combine spine-related whole person impairment with any whole person impairment due to other organ system conditions to arrive at a final whole person impairment
- If apportionment is appropriate because the patient qualified for a pre-injury rating under Table 53 but no pre-injury range of motion measurements were taken, complete the ROM apportionment worksheet found at the end of the administrative section of this curriculum.

PELVIS

Fractures of the pelvis are rated per p.101. Whole person ratings are given for healed fractures with and without displacement, deformity, and residuals.

Spinal Measurement Techniques – Inclinator Method

Philosophy:

The healthy spine is composed of 24 moving vertebrae, 1 sacrum and 1 coccyx. Each segment has the potential to move and this movement is measurable as is common of diarthrodial joints. (1) The loss of spinal mobility may lead to disability and loss of function. (2) It is, therefore, medically necessary to ascertain any loss of motion and document it accurately.

Objectives:

1. Measure the cervical, thoracic and lumbopelvic motions in the classic planes as defined by Dr. Tom Mayer, et.al.
2. Implement validity checks to ensure that the measurements are indeed valid, accurate and reproducible
3. Identify invalid range of motion efforts

Bubble Inclinator Measurement Techniques:

1. The patient must be an appropriate candidate for impairment rating as outlined in the *AMA Guides to Impairment*.
2. Instruct patient in proper movements, three to five repetitions
3. Landmark
4. Inclinator placement
5. Measure spinal motion
 - A. **Cervical**
 1. Landmark:
 - a. upper inclinometer:
Midsagittal line of the occipital bone or midcoronal line of the parietal bone
 - b. lower inclinometer:
Midsagittal line of the first thoracic vertebrae

2. Place the inclinometers on the landmarks so that gravity will affect the liquid within the inclinometer (sagittal plane).
3. Hold the inclinometer firmly in place and request the patient to complete the desired motion.
4. Repeat the measurements three (3) times and check for consistency of efforts.
5. Pitfalls:
often the inclinometer is not held steady as the patient flexes the neck.

B. Thoracic

1. Landmark:
 - a. upper inclinometer:
Midsagittal line of the spinous process of the first thoracic vertebrae
 - b. lower inclinometer:
Midsagittal line of the spinous process of the twelfth thoracic vertebrae
2. Place the inclinometer over the landmarks so that gravity will affect the liquid within. For measuring kyphosis and flexion, the inclinometer must be in the sagittal plane and for measuring rotation, the inclinometer must be in the coronal plane.
3. Hold the inclinometer firmly in place and request the patient to complete the desired motion.
4. Repeat steps 4 and 5 of the cervical section
5. Pitfalls:
 - a. scapular retraction will tilt the inclinometer and inflate the upper inclinometer reading during rotation.
 - b. knee flexion of the contralateral side will affect the readings during rotation.
 - c. often the patient cannot bend to 90 degrees of trunk flexion when measuring rotation and consequently, the inclinometer must be angled perpendicular to gravity in order to get the proper reading.
 - d. when reading minimum kyphosis, it is easiest to add the T-1 and T-12 measurements, i.e., values above the zero are positive and values below zero are negative. Subtraction of a negative number is defined as changing the sign and adding.

C. **Lumbar**

1. Landmark
 - a. upper inclinometer:
Midsagittal line of the spinous process of the twelfth thoracic vertebrae
 - b. Midsagittal line of the second fused vertebrae of the sacrum.
2. Place the inclinometer over the landmark so that gravity will affect the liquid within the inclinometer.
3. Repeat steps 3, 4 and 5 of the cervical section.
4. Pitfalls:
 - a. Patient bends knees
 - b. Patient lifts foot during side bending
 - c. The inclinometer moves

D. **Straight leg raise**

1. Landmark:
 - a. distal two thirds of the anterior tibia
 2. Place the inclinometer over the landmark
 3. Request patient to complete a straight leg raise while holding the opposite leg down.
 4. Read the correct scale of the inclinometer once the end of range is achieved and document it.
 5. Repeat the motions three times and check for consistency of efforts.
 6. Pitfalls:
 - a. patient bends the knees
 - b. patient jerks the leg at end range
6. Calculate validity of efforts as outline in the AMA Guides
 7. Notifying the patient of their efforts
 - A. Valid efforts
 - B. Invalid efforts — Physician must retest the patient once in an attempt to obtain a valid range of motion exam.
 8. Correlate findings to norms and calculate impairment rating if all of the criteria are reached.

Spinal Apportionment form goes here.

May be found on Division's website as DeskAid 10 (DK 10),

www.colorado.gov/cdle/dwc

CURRICULUM - LEVEL II ACCREDITATION

DAY 2 TOPICS

Impairment of the Pulmonary/Cardiovascular System

Impairment for Skin Diseases - to include scars and disfigurement

Impairment Ratings for Vision, Hearing, Ear, Nose, and Throat and
Gastrointestinal conditions

Mental Impairment

Workshops:

Pulmonary/Cardiovascular
Mental Impairment

Written Accreditation Examination

*Order of topics for actual seminar agenda is subject to change

**VISION, HEARING,
NOSE, THROAT, GASTROINTESTINAL,
URINARY, ENDOCRINE AND
HEMATOPOIETIC IMPAIRMENTS**

OBJECTIVES FOR SECTION ON VISION, HEARING, NOSE, THROAT, GASTROINTESTINAL, URINARY, ENDOCRINE AND HEMATOPOIETIC IMPAIRMENTS

1. Name the tests required to determine a visual impairment rating.
2. Explain how central visual acuity, visual fields, abnormal ocular motility and binocular diplopia are determined.
3. Demonstrate the ability to combine values from the above impairments to determine a whole body rating.
4. Name the two functions that are considered in rating the impairment of the ear.
5. Explain how the ratings for visual and ear disorders are determined.
6. Correctly apply Table 5-Classes of Air Passage Defects-to clinical cases.
7. Correctly rate a case which has mastication, deglutition and speech difficulties.
8. Identify the elements used to evaluate impairment of the esophagus, stomach and duodenum, small intestine, colon, rectum, anus, enterocutaneous fistulas, liver and biliary tract disease, pancreas disease, and hernias of the abdominal wall.
9. Identify criteria used to rate upper urinary tract impairment, and bladder and urethra impairment.
10. List the hematopoietic system disorders that are discussed in Chapter 7.

VISION, HEARING, NOSE, THROAT, GASTROINTESTINAL, URINARY, ENDOCRINE AND HEMATOPOIETIC IMPAIRMENTS

THE VISUAL SYSTEM

Evaluation of this system is based on three functions

- Corrected visual acuity for objects near and far.
- Visual fields and
- Ocular motility

Acuity

Determine near and far central visual acuity in each eye -- the chart should be illuminated at a level of at least 5 foot-candles. Far vision may be tested with the Snelling chart, illiterate E chart or Landolt's broken-ring chart. Near vision must be tested at 14 inches, following the Revised Jaeger Standard.

1. Measure both corrected and uncorrected vision, but use corrected for ratings.
2. Use Table Two (Page 163) to determine the percentage impairment for each eye -- use alternative value for monocular aphakia or pseudophakia if present.

Visual Fields

When a field defect is suspected, binocular visual fields should be tested using the Goldman kinetic outer isopter of the III/4e stimulus or the arc perimeter exam using a 3mm white test target at a radius of 330mm.

Use Esterman grid for determination of binocular field.

1. Transfer readings from validated visual field instrument to Grid.
2. Count dots outside of or on the visual field line (figure 2A, page 165).
3. Multiply # of dots x 5/6 to determine percentage field loss.

Use Monocular field measurements only if heterotropia, diplopia, or absence of one eye.

1. Measure total degrees of visual field retained.
2. Use Table 4 (page 167) to determine percentage of loss.

Ocular Motility and Diplopia

Plot the presence of diplopia along the meridians of the visual field. Then use figure 3 (page 168) to determine percentage of loss.

If only one eye, profound amblyopia, or profound loss of visual acuity, clinical evaluation of motility should be used to determine impairment.

Impairment of Visual System and Whole Person

If monocular visual field testing was performed:

1. Using Combined Value Chart (page 254) combine percentage loss of visual acuity and loss of visual field for each eye.
2. Combine loss of ocular motility using combined value chart for the worst eye only. Disregard loss of ocular motility for better eye.
3. Determine impairment of visual system by using Table 5 (page 169). Read impairment of worse eye down the left side of chart and the better eye impairment on the horizontal axis.
4. If bilateral aphakia present and corrected central visual acuity is used in calculations correct impairment by additional 25% factor of remaining impairment. See page 169.

If binocular visual field testing was performed:

1. Calculate the central vision impairment for both eyes using Table 5, page 169.
2. This impairment value of binocular visual acuity can then be combined with the binocular visual field loss using the Combined Value Chart to determine the visual impairment.

NOTE: Binocular visual field testing should not be performed when an ocular motility impairment is present.

3. If bilateral aphakia is present follow step #4 under monocular testing above.

Convert to whole person impairment using Table 6 (page 172).

An additional 10% impairment is possible for specific other conditions per section 8.6 (page 172); e.g., deformity of orbit.

On the following two pages are suggested Visual Impairment Forms. You may reproduce as necessary.

**VISUAL IMPAIRMENT FORM
MONOCULAR VISUAL FIELDS**

**OD
Right**

**OS
Left**

Central Acuity: Near uncorrected _____ _____
 Near corrected _____ _____
 Far uncorrected..... _____ _____
 Far corrected. _____ _____

(1). Total impairment for corrected acuity from Table 2, pg. 163..... _____ _____

Visual Fields:

Field Sector and Degrees Lost

Temporal _____ _____
 Down Temporal _____ _____
 Direct Down. _____ _____
 Down Nasal. _____ _____
 Nasal _____ _____
 Up Nasal..... _____ _____
 Direct Up _____ _____
 Up Temporal _____ _____
 Total Degrees Lost. _____ _____

(2). Total Impairment from Table 4, pg. 167 _____ _____

Motility:

(3). Percentage loss assigned to worst eye (Fig. 3, pg. 168) _____ _____

(4). If appropriate 5-10% of involved eye for other ocular impairments (e.g. vitreous opacities, non-reactive pupil, light scattering disturbances) _____ _____

Total Eye Loss (1, 2, 3 and 4 combined) _____ _____
 (combined values chart p.254)

Total Visual System (Table 5, pg. 169) _____
 _____

Total Whole Person (Table 6, pg. 172)..... _____ _____

**VISUAL IMPAIRMENT FORM
BINOCULAR VISUAL FIELDS WITHOUT MOTILITY LOSS**

	OD Right	OS Left
Central Acuity: Near uncorrected	_____	_____
Near corrected	_____	_____
Far uncorrected..... ..	_____	_____
Far corrected	_____	_____
Total impairment for corrected acuity from Table 2, pg. 163	_____	_____

Binocular Visual Field:..... .. _____

*If appropriate 5-10% of involved eye for other ocular impairments (e.g., vitreous opacities, non-reactive pupil, light scattering disturbances). _____

Total Visual Impairment:

Combine OD & OS central acuity using Table 5, pg. 169 _____

Combine visual field with above acuity impairment _____

Total Whole Person - Table 6, pg. 172 _____

AUDITORY IMPAIRMENT

Auditory impairment is based entirely on hearing and equilibrium. The five classes of impairment from disturbances of vestibular function are found on pages 178-179. These classes are based on changes in activities in daily living and objective test findings.

Use audiometers calibrated to ANSI specifications S3.6 - 1969 to determine decibels of hearing at 500, 1000, 2000 and 3000 Hertz.

If the hearing loss is less than 25 dB at these frequencies, there is no impairment. If it is greater than 91.7 dB, then the impairment is 100%.

Add the decibels determined at the four frequencies for each ear separately.

Using the decibel sum of the hearing threshold levels, determine the impairment loss on Table 2 (page 175).

Determine the binaural impairment by plotting the worst ear loss against the better ear on Table 3 (page 176).

Use Table 4 (page 178) to convert this loss to a whole person rating.

HEARING IMPAIRMENT REPORT

	<u>Right Ear</u>		<u>Left Ear</u>	
500 Hz		db		db
1000 Hz		db		db
2000 Hz		db		db
3000 Hz	_____	db	_____	db
Total	_____		_____	

Binaural Impairment

Table 3, p. 176-177

Total of Worse ear on vertical axis
Total of Better ear on horizontal axis

_____ %

Whole Person Impairment

Converted using Table 4, p. 178

_____ %

Monaural Impairment

Using Table 2, p. 175

Right Ear _____ % Left Ear _____ %

FACIAL DISFIGUREMENT

Determine the facial disfigurement class 1 through 4 (page 178) based on loss of support tissue, absence of anatomical areas or preclusion of social acceptance.

A facial disfigurement table is found on page 179. It consists of unilateral total facial paralysis (5%), bilateral total facial paralysis (8%), loss or deformity of outer ear (2%), loss of entire nose (25%), and nasal distortions in physical appearance (5%).

NOSE, THROAT, AND RELATED STRUCTURES

Nasopharyngeal obstruction causing dyspnea should be rated under Table 5, page 181. The four classifications under the table depend on shortness of breath on exertion and various listed anatomical defects of the oropharynx, laryngopharynx, trachea, nose or bronchi.

Mastication and Deglutition impairment (page 180) is based upon dietary limitations, e.g., soft food, liquids, or tube feedings. This is the only section of AMA Guides that relate to temporomandibular joint.

With respect to olfaction and taste, a 3% whole person impairment is given if there is a complete bilateral loss of either sense.

SPEECH

Have the patient read the specified paragraph, pages 181-82.

- Examiner must have normal hearing.
- Patient should be 8 feet from examiner with back towards the examiner.
- Also note the speech function during history.

Rate audibility (ability to speak at a level to be heard), intelligibility, and functional efficiency (ability to maintain reasonable rate of speech), per Table 6 (page 182).

Use Table 7 (page 183) to convert the worst rating of the three impairments to a whole person impairment.

Associated behavioral changes may also be rated per Chapter 14 and the guidelines noted on the behavioral section.

GASTRO INTESTINAL SYSTEM

Desirable Weight

This may be determined from previous medical records and by asking the patient what they consider to be their "usual weight." If neither of these methods are possible, use Table 1 on page 186.

Classification for Upper Digestive Tract

Impairments of the upper digestive tract may be rated under four classes found in Table 2, page 189. These classifications are determined by considering loss of weight, dietary restrictions and drug use required, and signs and symptoms of organic disease or anatomical loss. Objective tests to be considered when determining impairment are listed under each subsection; esophagus, stomach and duodenum, and small intestine.

Colon and Rectal Impairment

The four classifications in this section consider objective tests and anatomical loss, persistent bowel disturbance, restriction of daily activity, requirement for special diet and medication, and constitutional symptoms such as weight loss, fever, anemia. See Table 3, page 191.

Anal Impairment

The three classifications for this impairment are found in Table 4, page 193, and depend on the degree of anal incontinence.

Liver and Biliary Impairment

Table 5, page 194, covers the four classes of impairment for these rated diagnoses. Consideration is given to objective evidence of disease, nutrition and strength, and biochemical studies.

Pancreas

Rating for the digestive effects of the pancreas can be done only in this section, using Table 2, page 189. The Endocrine system, Chapter 12 must be consulted to rate the endocrine effects.

Hernias

The three classifications for hernia impairment, Table 6, page 196, are based on persistence and reducibility of the hernia, and limitation of activities. Incisional hernias are rarely painful or complicated. Generally they will not exceed class 1. Inguinal and femoral hernias entail a greater risk. Impairment rating is done only after appropriate surgical repair unless surgical intervention is not recommended for the patient.

Urinary and Reproductive Systems

Upper Urinary Tract

Table 1, page 201, describes the four classes of impairment for the upper urinary tract. Ratings are based on creatinine clearance, the 15 minute IV phenolsulfonphthalein (psp) test, and need for medical treatment.

Urinary Diversion

Ratings for these surgical procedures are found on page 201.

Other Subsections

Consult other specific subsections to determine ratings for the bladder, urethra, male reproductive organs, and female reproductive organs. Specific objective testing should be done when applicable. See Chapter 12, the Endocrine section, to rate hormonal effects.

Endocrine

The following subsections are included in this chapter for impairment ratings; hypothalamic pituitary axis, thyroid, parathyroid, adrenal cortex, adrenal medulla, pancreas (insulin and glycogen production only), gonads (for effects of hormonal changes only), mammary glands and metabolic bone disease.

Hematopoietic Disorders

Chapter 7 describes impairment of these disorders. Anemia can be rated using Table 1, page 154, which relates to the hemoglobin level and need for transfusions. Polycythemia, white blood cell disorders, and hemorrhagic and platelet disorders may also be rated.

RESPIRATORY AND CARDIOVASCULAR IMPAIRMENT RATING

OBJECTIVES FOR THE RESPIRATORY AND CARDIOVASCULAR IMPAIRMENT RATING SECTION

1. Define the four pulmonary functions that must be measured in order to determine a pulmonary impairment rating.
2. Know that the spirometric measurements and the D_{CO} measurement must conform to 1993 ATS standards.
3. Describe the use of arterial blood gas results in determining pulmonary impairment ratings.
4. Explain which situations require exercise capacity testing to determine pulmonary impairment.
5. Describe respiratory impairment rating for those diseases in which impairment is not directly related to lung function (asthma, hypersensitivity pneumonitis, pneumoconiosis, sleep disorders, and lung cancer).
6. Provide a correct pulmonary impairment rating given a case scenario.
7. List all 8 types of cardiovascular disease that can be rated using specific tables in Chapter 6.
8. Define the four functional classifications for cardiac disease found in Table 1, page 128.
9. List at least six elements of the history, physical, lab tests, or pathology that are needed to rate permanent impairment due to cardiovascular disease (in Tables 7 through 12, Chapter 6).
10. Explain how to estimate permanent impairment when a cardiovascular disease affects both cardiac output and causes arrhythmias.

RESPIRATORY AND CARDIOVASCULAR IMPAIRMENT RATING

INTRODUCTION

As with all of the "AMA Guides," the respiratory system and cardiovascular system chapters provide a reasonable starting point for impairment assessment and are meant only as a guide. In many instances, strict reliance on a set of tables of pulmonary function or of cardiovascular performance will provide a less than adequate assessment. Some occupational diseases, such as asthma, may wax and wane in severity, greatly complicating the determination of impairment. Others, like the pneumoconioses, cardiomyopathies, and valvular heart disease may continue to progress, leading to worsening impairment over time. Yet others, such as systemic arterial hypertension, may respond to specific medical interventions that require time to take effect before impairment estimates should be made. Sometimes radical changes in an individual's work environment are necessary to avoid further impairment, even when there is only a partial permanent impairment, as in individuals who become sensitized to a specific chemical. Confounding factors, such as the effect of cigarette smoking, must be taken into account. Under some circumstances both cardiac and respiratory disease are present. When this occurs, apply the Combined Values Chart (pp. 254-256).

RESPIRATORY SYSTEM IMPAIRMENT

Most schemes for assessing impairment due to respiratory disease incorporate some combination of: (1) pulmonary function test values, (2) pulmonary function test results as a percent of predicted normal values, and (3) respiratory symptom severity. The *AMA Guides* rely mainly on #2, and to some extent on #3. The principal components include: (1) medical history, (2) physical examination, (3) chest radiograph, and (4) measurements of pulmonary physiology, including spirometry, diffusing capacity (D CO), and in some instances arterial blood gases and exercise testing.

Medical History and Physical Examination

The first obligation of the clinician is to establish or confirm the disease diagnosis. History and exam are important components, although the actual impairment rating is based mainly on the physiologic assessment discussed below.

Inquire about:

- Dyspnea (see "dyspnea scale," Table 1, Chapter 5 (p.116) estimation of severity)
- Cough/sputum
- Wheezing
- Environmental/occupational exposures
- Tobacco use
- Job chronology - including specific exposures to inhaled dust, fumes, gases, vapors
- Hobbies with such exposures

Physical examination should especially focus on both the cardiac and respiratory systems, as well as certain key peripheral signs:

- Breathing rate and pattern
- Lung sounds (e.g., wheezes, rales, rhonchi)
- Signs of cor pulmonale (e.g., increased P₂ component of S₂, tricuspid regurgitation, parasternal lift, jugular venous distention)
- Edema
- Cyanosis
- Clubbing

Chest Radiography

The chest radiograph is important in diagnosis and in assessing onset and progression of disease, but it correlates poorly with lung physiology in many circumstances. It also correlates poorly with an individual's ability to work.

The International Labor Organization (ILO) Classification of Radiographs of the Pneumoconioses is a standardized system for the assessment of the severity of chest radiographs. By this system, qualified readers rate the extent of disease based on the profusion of interstitial lung opacities, size of masses, and extent of pleural reaction. It is not directly used in the estimation of impairment.

Physiologic Testing

Spirometry (FEV₁, FVC, FEV₁/FVC ratio) and diffusing capacity are the mainstays. Both studies must be performed in accordance with American Thoracic Society (ATS) standards (1993). Under some circumstances, arterial blood gases and exercise capacity testing are also warranted, as discussed below.

SIMPLE SPIROMETRY

It should be performed both pre- and post-bronchodilator. For purposes of estimating impairment, use the best effort obtained either pre- or post-bronchodilator.

Three pieces of data obtained from spirometry are used in estimating impairment:

1. Forced vital capacity (FVC)
2. Forced expiratory volume at 1 second (FEV_1)
3. FEV_1/FVC ratio

DIFFUSING CAPACITY OF CARBON MONOXIDE (D_{CO})

This is an indirect measure of pulmonary gas exchange and can be especially helpful in estimating impairment related to interstitial lung diseases. Although it is sometimes insensitive compared to more direct measurements of gas exchange during exercise, it is less invasive.

SIMPLE SPIROMETRY AND D_{CO} INTERPRETATION

In interpreting spirometry and D_{CO} , several generalizations can be made, although they are not inviolate:

- Obstructive diseases produce low FEV_1 and low FEV_1/FVC ratio. In asthma, D_{CO} is preserved; in emphysema it is decreased.
- "Restrictive diseases" (such as the pneumoconioses) produce a low FVC and low D_{CO} . FEV_1 and FEV_1/FVC ratio are normal.
- In the presence of significant emphysema, the FVC may appear low, because of lung hyperinflation (high residual volume is not measured by simple spirometry).
- Disorders that produce a "mixed" obstructive and restrictive pattern (such as hypersensitivity pneumonitis and some cases of pneumoconiosis) are difficult to interpret using spirometry alone, because the FEV_1 and FVC may both be low and $\pm D_{CO}$ low.

Applying Spirometry and D_{CO} in Estimation of Permanent Impairment

First, calculate the patient's percent predicted FEV_1 , FVC, FEV_1/FVC ratio, and D_{CO} using the best observed value and applying normal values from Tables 2-5, Chapter 5. Note that there are different tables for men and women. You must know the patient's age and height (cm). For non-caucasian populations, predicted spirometry norms should be estimated at 0.9 of those shown in Tables 2-5.

Example

52 year old white male with asbestosis, 180 cm tall,
 $FEV_1 = 2.8$ L, $FVC = 3.2$ L, $D_{CO} = 24.4$ ml/min/mm Hg

$$FVC : \text{Apply Table 2} : \frac{3.2 \text{ L (patient's best value)}}{5.04 \text{ L (predicted)}} \times 100 = 61\%$$

$$FEV_1 : \text{Apply Table 4} : \frac{2.8 \text{ L (patient's best value)}}{3.99 \text{ L (predicted)}} \times 100 = 70\%$$

$$FEV_{sub 1} / FVC = \frac{2.8 \text{ L}}{3.2 \text{ L}} = 88\%$$

$$D_{CO} : \text{Apply Table 6} : \frac{24.4 \text{ ml/ min /mm Hg (patient's best value)}}{36.6 \text{ ml/ min /mm Hg (predicted)}} \times 100 = 67\%$$

In general, at least one of these four values must be abnormal to consider a person to have impairment. Exceptions do occur (e.g., some patients with interstitial lung disease have normal spirometry, normal D_{CO} , but abnormal gas exchange).

After calculating these values, estimate the percent impairment using Table 8, Chapter 5:

Example

Using the data above, this man with asbestosis has FVC and DCO between 60-79% of predicted. By Table 8, he would be considered in Class 2, Mild Impairment of the Whole Person, approximately 20%.

Exercise Capacity

Maximal exercise testing provides useful information about a patient's capacity to do work, and can help identify limitation due to respiratory or cardiovascular disease, or both. The AMA Guides do not specify a single protocol for such testing (e.g., cycle ergometer versus treadmill). The exercise testing result used to rate respiratory impairment is the work load achievable. It is expressed as the maximum oxygen consumption (VO_2 max) or as METS (see Table 2 in Chapter 6 -- Cardiovascular System). As a general rule, one MET = 3.5 ml/kg•min VO_2 , approximately.

If the exercise test is performed with pre- and end-exercise arterial blood gases (preferably with an indwelling arterial catheter), important information about gas exchange can also be obtained. However, ABG determination is not part of the exercise capacity protocol outlined in the AMA Guides.

Not every patient with respiratory disease will require assessment of exercise capacity. Indications for exercise testing include:

1. dyspnea symptoms that are greater than spirometry or D_{CO} would indicate;
2. patient reports inability to perform specific job due to breathlessness;
3. submaximal or incorrect performance of spirometry or D_{CO}

Contraindications to the use of exercise testing for assessment of respiratory system impairment include:

1. severe impairment already found by spirometry and D_{CO} .
2. medical contraindications to exercise, such as heart disease, arrhythmias.
3. other physical limitations that preclude accurate testing.

Interpretation of Exercise Capacity Testing

The data derived should be interpreted by a physician with experience in exercise physiology, because results can be greatly affected by a patient's effort, metabolic state, level of conditioning, and by heart, lung, neurologic, neuromuscular, and orthopedic disorders.

See Table 8, Chapter 5. VO_2 max is utilized in that table's impairment scheme. A VO_2 max < 15 ml/kg•min is not a hard and fast criterion for severe impairment. It must be taken in context with other information about the patient's disease and other contributing diseases.

As a general rule, if working at his or her own pace, a person can work 8 hours a day if they do not exceed 40% of their VO_2 max as determined by exercise capacity testing.

Example

Our patient with asbestosis reports severe, "incapacitating" dyspnea on exertion which seems out of proportion to his spirometry and D_{CO} .

Exercise capacity testing shows good effort, normal cardiovascular response, and decreased exercise capacity. He was limited by ventilatory and gas exchange abnormalities, consistent with his underlying lung disease diagnosis.

The patient's maximum VO_2 was 15.9 ml/kg•min. (see Table 8). According to Table 8, Chapter 5, this exercise testing result would place him in Class 3 instead of Class 2, approximately 40% moderate impairment of the whole person. He presently works in "shipping and receiving" and is required to lift 20 to 50 pound boxes frequently during his work shift. He reports extreme dyspnea after 1-2 minutes of this activity.

Given a VO_2 max of 15.9 ml/kg•min, he achieves approximately 4.6 METS. Based on Table 2, Chapter 6, we estimate this to be in the range of METS seen in symptomatic patients and not in physically active individuals.

His current job requires him to work in excess of 40% of his predicted VO_2 max, making it unlikely that he is suitable for such strenuous work.

Arterial Blood Gas (ABG) Determination

ABGs can be measured both at rest and during maximal exercise. ABG determination, at rest, is not a routine part of the estimation of impairment. ABGs are not a standard part of the exercise capacity testing protocol in the AMA Guides. Its use is based on clinical judgment, and as such, is reserved for "selected cases," or if hypoxemia is "suspected." Because not all laboratories perform them accurately or reproducibly, the Guides require that you "document hypoxemia twice, 4 weeks apart," prior to using the data in estimating impairment. It makes no statement about the value of serial ABGs obtained during exercise testing, except to say that they can be performed if hypoxemia is suspected.

Interpretation of ABG

There is no normal "scale" provided for ABGs in the AMA Guides. The AMA Guides only state that ABGs indicate "severe impairment" when:

1. Resting $pO_2 < 60$ mm Hg on room air and the patient is stable on optimal therapy and has one or more of the secondary conditions related to hypoxemia. These secondary conditions include:
 - pulmonary hypertension
 - cor pulmonale
 - erythrocytosis
 - worsening hypoxemia during exercise
2. Resting $pO_2 < 50$ mm Hg on room air is by itself a criterion for severe impairment.

This is a problematic portion of the Guides, in that the Guides do not take into account the alveolar-arterial oxygen gradient (A-a)DO₂ and make no adjustment for altitude (even though the normal range for pO_2 is lower at Colorado's elevations). The normal range for pO_2 in Denver (5,280 feet) is 65-75 mm Hg.

Respiratory Impairment not Directly Related to Lung Function

"Certain respiratory conditions may cause impairment that is not readily quantifiable by spirometry, diffusing capacity, or measured exercise testing. Table 9 highlights these conditions, with some general comments. The evaluation of impairment of persons with these conditions should be done by physicians with expertise in lung disease, and the final impairment rating should be left to the physician's judgment.

"Note the specific comments in Table 9, Chapter 5 of the AMA Guides regarding:

1. Asthma
 - Assess when optimally treated
 - Use post-bronchodilator spirometry values

- Three successive tests, at least one week apart
 - Note special Comments on employability
2. Hypersensitivity pneumonitis
 - Need to remove from exposure to causative agents to avoid recurrence and chronic disease
 3. Pneumoconioses
 - May not cause impairment but usually requires removal from exposure to the dust that caused the condition
 4. Sleep disorders
 - Sleep apnea can result in impairment through hypersomnolence, hypoxia, hemodynamic changes, or personality disorders
 - Use Combined Values Chart and criteria from Chapters 4, 6, and 14 of AMA Guides
 5. Lung cancers
 - Consider severely impaired at time of diagnosis and as long as patient has the disease
 - If, at one year after diagnosis, patient is disease-free, then rate impairment according to physiologic parameters in Table 8
 - If recurrence, immediately consider patient severely impaired
 6. Neurologic disorders
 - Although not mentioned in Chapter 5, respiratory impairment due to neurologic disorders is rated in accordance with Table 1, consciousness disturbances, p.109., Chapter 4, The Nervous System.

CARDIOVASCULAR SYSTEM IMPAIRMENT

Most methods of assessing impairment due to cardiovascular system disease incorporate a combination of: (1) assessing symptomatic limitation; (2) requirement for treatment; (3) objective measures, such as auscultation, electrocardiogram, exercising testing, echocardiography and, in some cases, cardiac catheterization and radioisotope studies. Chapter 6 of the *AMA Guides* emphasizes which of the various tests are required to determine impairment, by specific cardiovascular disease category. Impairment rating of the cardiovascular system requires familiarity with functional classifications.

Symptomatic Limitation

Familiarity with the system outlined in Table 1, Chapter 6, page 128 is essential for the appropriate estimation of cardiovascular disease impairment. Understand how the cardiovascular disease affects ordinary daily activities and heavy physical exertion. Careful history taking must focus not only on the symptoms themselves but how they affect an individual's level of activity. All of the cardiac diagnostic rating subsections are divided into four similar impairment classes. Below are descriptions of the general activity limitation for most subsections:

- Class I: 0-10% asymptomatic during normal activities or with moderately heavy physical activities.
- Class II: 15-25% asymptomatic during normal activities, but some limitation in heavy physical exertion.
- Class III: 30-50% symptomatic during normal activities.
- Class IV: 55-100% normal activities are significantly limited and at rest symptoms may occur.

Exercise Testing

Exercise testing is the preferred method of quantifying most limitations due to cardiovascular disease. In certain cardiovascular diseases, other forms of quantitative assessment will be used in lieu of, or in addition to, exercise testing (example: angiography in the assessment of coronary artery disease).

Most exercise protocols call for the use of a treadmill and estimate work load in multiples of resting metabolic energy utilized for a given activity (MET). One MET is considered to be equal to 3.5 ml/(kg•min.).

See Table 2 (page 129) for the relationship of METS and functional class using the treadmill protocols.

See Table 3 (page 130) for the relationship of METS and functional class using a more simplified two-step protocol (for use when treadmill is not available).

Table 4 (page 130) demonstrates the METS using a bicycle ergometry version of the exercise test.

Most assessments will be made using a treadmill. However, cycle ergometry or the step test are also acceptable for quantitation. Under ideal circumstances, a laboratory that is equipped to measure oxygen consumption gives the most accurate information about the patient's exercise capability.

Exercise studies are useful, but it is important that the physician estimate the patient's cooperativeness and ability to exercise. Note that when patients are taking beta adrenergic blocking agents, METS should be used in place of the target heart rates found in Table 6, page 135.

Other Forms of Cardiovascular Assessment

Depending upon the type of cardiac disease being assessed, a variety of other investigative tools may prove helpful in objectively defining the extent of disease and hence rating impairment in conjunction with symptoms (functional classification). See the individual sections of Chapter 6 for details concerning the appropriateness of such tests for estimating impairment.

The Guides clearly state that tests such as echocardiography, angiography and radioisotope studies usually should not be ordered only for the purposes of rating impairment, but can contribute to the impairment rating when they are being performed for clinical diagnosis and management. The impairment rating should not drive physicians to perform expensive and sometimes invasive cardiovascular testing simply for the purpose of estimating impairment.

Level of Treatment

The need for chronic treatment, drug therapy, diet control and other treatment regimes are determining factors for classification and should be well described. If surgery is appropriate for the diagnosis, this will usually be included in the classification description. An impairment rating cannot be determined for many of these diagnoses until all treatment regimes (drug or surgery) have received adequate trials.

Categories of Cardiovascular Disease

The following table lists the categories of cardiovascular disease for which evaluation of permanent impairment may be required:

VALUATION OF PERMANENT IMPAIRMENT OF CARDIOVASCULAR SYSTEM

	<u>Table In AMA Guides</u>	<u>Chapter</u>	<u>Page in Guides</u>
AMA <u>Cardiac Disease</u>			
Valvular Heart Disease	5	6	133
Coronary Heart Disease	7	6	137
Congenital Heart Disease	8	6	141
Hypertensive Cardiovascular Disease	9	6	145
Cardiomyopathies	10	6	148
Pericardial Heart Disease	11	6	149
Arrhythmias	12	6	152
Vascular Disease of the Extremities*	16	3(upper)	47
	52	3(lower)	79

* These tables and page numbers are correct. There is an error in text of Chapter 6.

Review section 6.1 through 6.8, which contain good, self-explanatory case examples and complete tables.

In many cases, diagnostic categories may overlap. For instance, a patient may have coronary artery disease, hypertension and arrhythmias. When this occurs, each area should be rated separately and then combined using the Combined Values Chart. Patients who have renal damage or cerebral damage secondary to hypertension should receive ratings in the appropriate sections and have these ratings combined with the hypertensive rating.

Hypertensive Cardiovascular Disease

Transient elevations of arterial pressure are not sufficient to determine impairment. Sustained elevated pressure (on several occasions with diastolic pressure greater than 90 mm Hg) is required.

Evaluation should focus on the target organ effects produced by sustained elevations of blood pressure (such as aortic dissection, central nervous system, and renal injury).

Identify treatable causes of hypertension, such as coarctation, renal artery obstruction, Cushing's disease, endocrine disorders, etc...

Cardiomyopathies

Some cardiomyopathies are reversible. Allow adequate period of time before estimating permanent impairment.

Pericardial Heart Disease

Some cases of inflammatory pericardial disease completely or partially reverse. Allow sufficient time for patient recovery before assessing impairment.

Vascular Disease Affecting the Extremities

These disorders are dealt with only very briefly in the AMA Guides. Permanent impairment of the peripheral vascular system can result from:

- 1) Diseases of arteries reducing blood flow and producing claudication, trophic changes, ulceration, gangrene, Raynaud's phenomenon, or even loss of an extremity;
- 2) Diseases of veins producing pain, edema, stasis dermatitis, ulceration; and
- 3) Disorders of lymphatics, leading to lymphedema, sometimes complicated by infection.

A specific diagnosis of vascular disease should be established prior to evaluating impairment.

Estimation of impairment depends upon severity and extent of lesions rather than on diagnosis.

Upper extremity ratings are determined from Table 16, page 47, and lower extremity ratings from Table 52, page 79.

This page holds the place for an article from the American Thoracic Society,
*“Guidelines for the Evaluation of Impairment/Disability in Patients with
Asthma”*

Am Rev Respir Dis Vol 147, pp. 1056-1061, 1993.

This document is not available electronically for insertion into this book.
Please contact the Division’s Physician Accreditation Program for a copy.

DERMATOLOGICAL IMPAIRMENT RATING SECTION

OBJECTIVES DERMATOLOGICAL IMPAIRMENT RATING SECTION

1. Define the three elements used to determine the classifications for skin disorders.
2. Know how to utilize the dermatological ratings, neurological ratings, psychological ratings, and Chapter 9, section 2 (page 179), to determine an impairment rating for scars and other skin disorders.
3. Correctly rate a case scenario involving contact dermatosis.

DERMATOLOGICAL IMPAIRMENT RATING SECTION

INTRODUCTION

In order to rate cutaneous impairment, the functions of intact skin must be taken into account.

- A primary purpose is the provision of a protective barrier against environmental insults such as chemical irritants, allergic sensitizers, ultraviolet light and invasion from microorganisms such as bacteria or fungi.
- The skin has a key role in temperature regulation due to proper operation of small blood vessels and sweat glands. In addition it is involved in sensory perception.
- Fluid and electrolyte balance is related to the intact stratum corneum's barrier against fluid loss.
- Cutaneous immunologic defense of the skin prevents and controls bacterial, fungal and viral infections.
- Lastly, the skin has a unique ability to regenerate its epidermis and appendages.

PERMANENT IMPAIRMENT OF THE SKIN

- Cutaneous permanent impairment of the skin is defined as a skin condition that persists following maximal medical treatment, rehabilitation, and after a length of time sufficient to permit regeneration or other physiologic adjustments. This definition includes any functional or anatomic abnormality or loss including an acquired immunologic capacity to react to antigens (allergic contact dermatitis). Physical findings should always be subject to review since the degree of permanent impairment of the skin may not be static.
- Job-related permanent impairment of the skin most commonly results from contact dermatitis.
- According to the Guides, all dermatological impairments are calculated and applied to whole person impairments.

EVALUATING CUTANEOUS IMPAIRMENT

Medical evaluation involves:

- Detailed medical history
- Complete physical examination
- Diagnostic tests - helpful ones include:
 - ▶ Patch testing to diagnose allergic contact dermatitis
 - Careful interpretation is necessary
 - These tests can yield false positives and false negatives
 - Results depend on proper technique, physician's skill in interpretation, proper concentration and vehicle
 - ▶ Prick or scratch testing
 - ▶ Bacterial or fungal cultures
 - ▶ Potassium hydroxide scrapings
 - ▶ Skin biopsy

With permanent impairment of the skin, the amount of functional loss is of tantamount importance. Other factors to consider include:

- Extent of surface involved
- Altered cosmetic appearance:
 - ▶ Pus
 - ▶ Smell
 - ▶ Scale
 - ▶ Disfigurement
- Site involvement:
 - ▶ Hands and feet are more important
- Risk of treatment.

Skin impairment can be associated with other body system involvement. Each system should be evaluated independently for its degree of impairment and then combined using the combined values chart to assess the total impairment of the whole person.

PRURITUS

Itching with its associate desire to scratch or rub is a commonly associated symptom of a wide variety of skin diseases. The symptom can be intolerable. Like pain, the sensation involves variable afferent stimuli interacting with the emotional state of the individual. In evaluating impairment, one should assess:

- How pruritus interferes with the performance of daily living.
- Can the severity of the pruritus be supported by objective findings:
 - Excoriations
 - Lichenification (thickened skin)
 - Hyperpigmentation
 - Hypopigmentation
- Whether psychological factors play a role. In such a case, the psychological ratings should be employed.

DISFIGUREMENT

Disfigurement is defined as an altered appearance induced through changes in skin color, shape and/or structure. It can be a result of injury, disease, or an ongoing disorder.

There is usually no loss of body function and little to no effect on activities of daily living.

The physician should state probable duration and permanency of the altered state.

If the appearance can be improved through medical or surgical therapy, or concealment with makeup or wigs, this should be addressed in the report.

Psychological ratings may be needed to assess the extent of the patient's change in self image, interactions with others or withdrawal from society.

Scars - result from healing of burned, traumatized or diseased tissue.

- Assessment should include:
 - ▶ Size, shape, color and texture
 - ▶ Anatomic location
 - ▶ Evidence of ulceration and need for subsequent therapy
 - ▶ Depressed (atrophic) or elevated (hypertrophic) skin
 - ▶ Sensory or range of motion defect
 - ▶ Involvement of sweat gland function
 - ▶ Related psychological or behavioral changes

- Impairment rating must include consideration of the following elements:
 - ▶ Sensory alterations of a scar should be rated according to the Neurological Impairment Guidelines (Chapter 4).
 - ▶ Contracture leading to decreased range of motion should be assessed according to the Musculoskeletal Guidelines (Chapter 3), and if chest wall excursion is limited, respiratory impairment should be rated.
 - ▶ Loss of sweat gland function, hair and nail growth, along with pigment production should be assessed. This should be judged according to the impact on a patient's performance of their activities of daily living using the Dermatology Guidelines.
 - ▶ Scars involving the face should be rated separately, according to the ENT ratings for facial disfigurement (Chapter 9, Section 2).
 - ▶ Behavioral changes may be assigned an appropriate impairment rating according to psychological criteria.
 - ▶ If no neurologic, psychiatric or facial involvement exists, and there is no loss of range of motion, then the most likely rating would be a Class I under Table 1, Chapter 13 of the Guides.

IMPAIRMENT CLASSIFICATION FOR SKIN DISEASE

Three elements are used to define the five classes of skin impairment.

1. The presence of signs and symptoms of a skin disorder
2. Intermittent or continuous treatment
3. Assessment of the limitations in performance of the activities of daily living

Class I Impairment of the Whole Person, 0 - 5%.

- Signs and symptoms are present.
- With treatment, there are none or minimal limitations in performance of activities of daily living, although exposure to certain physical or chemical agents may increase limitations temporarily.
- For example:

Forty year old mechanic complains of a one year history of an intermittent foot rash. The eruption began on the dorsum of the foot. Recently, the eruption has spread onto his ankles. The rash improves with topical steroid therapy and on weekends when he is not working. The patient purchased new ankle high leather work boots 12 months ago. The shoes he wears at home are all made of synthetic materials. His feet sweat profusely on the job. Patch testing revealed a 2+ reaction to potassium dichromate which is used to tan leather. The eruption was completely

resolved with topical steroid treatment and switching to sturdy polyvinyl chloride work boots.

- ▶ Diagnosis:
Allergic contact dermatitis due to chromates used in leather tanning
- ▶ Impairment:
0% impairment of the whole person

A thirty year old woman worked as a waitress for the past eight years. Sixteen months ago she incurred a third degree burn on her arm due to a co-worker spilling scalding hot soup on her. Now she has a noticeable 10 X 6 cm atrophic scar. There is no sensory deficit or loss of range of motion. No grafting was necessary and she is able to perform activities of daily living. The patient has always worked in upscale restaurants where the waitresses wear short sleeved or sleeveless outfits. The management takes pride in their workers' appearance and had received complaints about the waitress' deformity. The patient had tried to conceal the disfigurement with various cover-up makeups with little success. Outside of work she experienced considerable embarrassment about her scar and avoids wearing short sleeved outfits on a social basis. However, she can PERFORM her job function in a competent fashion.

- ▶ Diagnosis:
Cosmetic disfigurement secondary to a forearm scar
- ▶ Impairment:
1-5% impairment of the whole person
- ▶ Comment:
The patient now has a permanent cutaneous abnormality that does not result in a functional disability, but may result in minimal limitations on activities of daily living. If the patient also has behavioral changes, then the appropriate psychological rating should be instituted.

If the scar had involved the face, then the appropriated facial disfigurement would be rated according to ENT guidelines (Chapter 9, Section 2).

Class II - Impairment of the Whole Person, 10 - 20%.

- Signs and symptoms of a skin disorder are present.
- Intermittent treatment is required.
- Limitation in performance of some activities of daily living.
- For example:

A 27 year old beautician has a chronic hand rash for the last seven years which she related to her workplace. As a child, the patient had atopic dermatitis involving mainly the popliteal and antecubital spaces which resolved as a teenager. Her current problem began when she started beautician school eight years ago. Since then, she has had increasingly difficult hand eruptions. Recently, the rash has spread to her forearms. At times, the rash has been so bad that she has had to miss work. Her job entails washing and cutting hair. She wears gloves while shampooing, but they are too cumbersome for hair cutting. While the eruption is worse on the job, she notes that everyday activities such as cooking and cleaning flares her eruption. Currently, despite precautions, a low grade dermatitis persists. Her fingerwebs and dorsal hand are primarily involved. Patch testing was negative and topical steroids improve her dermatitis. Ultimately, the patient chose to leave her job and engage in personnel work which is a "drier" environment. However, the patient still has chronic hand dermatitis.

- ▶ **Diagnosis:**
 - Chronic irritant contact dermatitis of the hands due to chronic exposure to chemicals and irritants at her beautician job
 - History of childhood atopic dermatitis
- ▶ **Impairment:**
 - 15% impairment of the whole person
- ▶ **Comment:**
 - Patients with history of childhood atopic dermatitis are predisposed to irritant contact dermatitis on the job. It is in the best interest of this patient to avoid "wet-work" including frequent contact with water and irritating chemicals. While her worst flares occurred at work, this patient will have intermittent flares necessitating treatment due to non-specific irritant exposures at home.

Class III - Impairment of the Whole Person, 25 - 50%.

- Signs and symptoms of a skin disorder are present.
- Continuous treatment is required.
- Limitation in performance of many activities of daily living.
- For example:

A 44 year old piston molder without a history of skin problems had been with the company for 12 years. Due to budget cuts, he was switched to a machinist job where he was exposed to cutting oils over the past 18 months. No protective clothing was worn and the cutting oil would splash all over him including his arms and legs. Shortly after starting the new position, he developed a pruritic hand dermatitis which later spread to involve his arms, legs, buttock and back. Initially, the eruption cleared with topical steroids, but over the last 6 months, the dermatitis has failed to completely clear despite aggressive therapy and avoidance of exacerbating agents. Patch testing was negative. As a result, he was returned to his original molding job. Wearing protective clothing with exposure to high temperatures induced sweating, which worsened his dermatitis while on the molding job. Now, despite being off work and avoiding exacerbating factors, the eruption has not subsided. The pruritus and continuous itching has resulted in lichenification (thickening), excoriations, scale and erythema. Forty percent of his body is involved (hands, thighs, legs, arms, buttock and lower back). Since his eruption began, he has been very anxious and depressed about losing his life's work. He cannot hold down an alternate job because all appear to flare his rash. He is more socially withdrawn and feels that the chronic eruption inhibits his contact with women. In addition, he is unable to sleep at night and believes he is itching "all over".

- ▶ **Diagnosis:**
 - Chronic irritant soluble oil contact dermatitis
 - Chronic neurodermatitis
- ▶ **Impairment:**
 - 30% impairment of the whole person
 - This should be combined with an appropriate psychological rating.
- ▶ **Comment:**
 - Soluble oil contact dermatitis tends to be chronic and lasts far longer than the exposure to the oil. Non-specific irritants such as warm environments, stress, cleansers and sweating can exacerbate the dermatitis.

His inability to sleep at night, depression and incessant scratching have resulted in a superimposed neurodermatitis (itch-scratch syndrome).

Class IV - Impairment of the Whole Person, 55 - 80%.

Signs and symptoms of a skin disorder are present.

- Continuous treatment is required.
- May include periodic confinement at home or other domicile.
- Limitation in the performance of many activities of daily living.
- For example:

A 50 year old white male cement worker for the last 30 years had a mild history of pedal edema and stasis dermatitis. His stasis dermatitis was well controlled with a 1% hydrocortisone ointment. One year ago, wet cement got trapped inside his right boot at work and he was unable to change the boot right away. He subsequently developed severe chrome-related ulcers. One healed with grafting. The other one failed multiple grafting attempts and now is approximately 3x4 cm and located near the medial malleolus. He now has increased pedal edema despite elastic stockings, diuretics and leg elevation. He is unable to stand more than 3-4 hours at a time.

▶ **Diagnosis:**

Persistent chronic ulcer secondary to cement burn

▶ **Impairment:**

55% impairment of the whole person

▶ **Comment:**

Patient suffered a cement burn on his right leg that had a previous history of poor circulation and edema.

Frequent medical care will be required indefinitely to heal this ulcer. Due to its location and his previous history, future breakdown after healing is probable.

Patient does have significant impairment of his activities of daily living due to his incapacity to stand for long periods of time.

Class V - Impairment of the Whole Person, 85 - 95%.

- Signs and symptoms of a skin disorder are present.
- Continuous treatment is required.

- Necessitates confinement at home or other domicile.
- Severe limitation of the activities of daily living.
- For example: (from AMA Guidelines)

A 25 year old man suffered burns on his body three years ago from a gasoline explosion. His daily treatment includes a 30 minute soak followed by total body Vaseline application. He still experiences a significant amount of itching and is unable to perspire except on his face. He cannot be outside in the heat or sun for prolonged periods of time due to his impaired ability to sweat and concomitant dizziness. He has difficulty writing, walking and doing nonspecialized hand activities due to scar formation. He has 85% skin involvement with some dermatologic disease including residual burn scars, graft sites, donor sites, depigmentation, partial destruction of his left ear and thickened fingernails. The cheeks were mildly involved.

- ▶ Diagnosis:
Residual skin damage with extensive scarring due to a gasoline explosion
- ▶ Impairment:
90% impairment of the whole person

Range of motion deficit should be rated according to the musculoskeletal section.

Facial involvement should be rated according to ENT guidelines.

Related Articles:

Hogan, DJ, et al. The prognosis of contact dermatitis. J Am Acad Dermatol 1990; 23:300-7.

Mathias, T. Contact dermatitis and worker's compensation: criteria for establishing occupational causation and aggravation. J Am Acad Dermatol 1989; 20:842-8.

Stewart, L. Occupational contact dermatitis. Allergy & Immunology Clinics of North America. November, 1992. In Press.

MENTAL IMPAIRMENT RATING

OBJECTIVES – MENTAL AND BEHAVIORAL DISORDERS

1. Identify the axes used in the diagnostic and statistical manual of mental disorders - DSM.
2. Understand the relationship between diagnosis and degree of impairment.
3. List sources of information which may be used to obtain descriptions of an individual's impairment.
4. Describe the types and uses of psychological tests in the overall evaluation of impairment.
5. Apply the guides for mental impairment rating to each area of function appropriately using a case.
6. Describe the method for calculation of psychiatric impairment rating when all areas of function have been rated.
7. Define the four areas of function used in rating mental impairment and give examples of activities in each of the areas.
8. Understand the complexity of assessment of impairment due to pain perception.
9. Classify impairment due to mental and behavioral disorders using the draft method in this section.

MENTAL AND BEHAVIORAL DISORDERS

INTRODUCTION

The psychiatric examination for Workers' Compensation is more specialized than a general psychiatric exam because the examiner must assess causality, the course of the illness and the response to psychiatric treatment in addition to making a diagnosis.

Only those psychiatric diagnoses classified in the latest version of the Diagnostic Statistical Manual (DSM) can be attributable to a work injury. For purposes of impairment rating, case law directs that the mental status of a worker at the time of the injury is the baseline from which to evaluate impairment for every worker including those with a past history of psychiatric disorders.

The examiner should explain the nature and purpose of the examination to the worker at the outset. The rapport essential to conducting an accurate psychiatric rating may be difficult to establish because the worker and those supporting or opposing the application may presume the clinician is biased about the examination. The clinician must rely on his or her empathic skills while gathering information and is influenced by his or her own beliefs, attitudes and experiences regarding mental illness.

THE PSYCHIATRIC EXAMINATION

The development of rapport with the examiner is based on the examinee's compliance and cooperation and the interviewer's interpersonal skills. The claimant's general posture and issues of candor, openness, disclosure, defensiveness and resistance should be noted. An open-ended interview style is recommended. The psychiatric examination includes the following sections:

- Description of causal work event.
- History of immediate or ensuing physical injury.
- History of immediate emotional impact and ensuing psychiatric disorder (emotional injuries).
- Review of the worker's basic psychological development is best obtained in an empathic and genuine conversation which includes:
 - Composition of nuclear family including birthplace.
 - Earlier relationships with family members or those with significant influence.
 - Performance in school including highest level of education.
 - Social adjustment growing up.
- Experience with use of alcohol and or drugs.
- History of emotional, physical or sexual abuse

- Detailed history of past psychiatric treatment.
- Detailed occupational history.
- Family psychiatric history
- Legal history – previous workers’ compensation claims, motor vehicle accidents and litigations.
- Current adjustment consisting of detailed description of a typical day’s activities from getting up to going to bed.
- Description of sleep, other daily living activities and sex.
- Detailed description of current enjoyable activities including social relationships and phone calls during the day.
- Description of how the work injury has affected the worker’s life in general (in worker’s own words).
- Mental status examination – attempt to describe the claimant in a manner which allows the non-physician reader to see and hear the worker through the clinician.
 - Complete description of appearance, general behavior and demeanor.
 - Assessment of affect, mood, cognition and thought processes.
 - A detailed description of how the claimant got to the examiner’s office may aid in describing cognitive function.

PRINCIPLES CENTRAL TO ASSESSING MENTAL IMPAIRMENT:

- **Psychiatric Diagnosis**
The latest DSM is the most widely accepted classification for mental disorders. There are 5 axes:
 - Axis 1 The clinical disorders and/or problems
 - Axis 2 Personality and chronic developmental disorders
 - Axis 3 Physical disorders
 - Axis 4 Psychosocial stressors
 - Axis 5 Global assessment of functioning (0 – 100 scale)
- Axis I should reflect the work-related diagnosis.
- **Longitudinal History of Impairment and Psychiatric Treatments**
The history of the psychiatric disorder(s) and treatment(s) allows for proper interpretation of the final impairment. Consider whether the diagnosis is chronic and what treatments will be required to maintain maximal improvement. Assume that permanent psychiatric impairments will require long term treatment.

DETERMINING MMI

Workers who have not received medically necessary and appropriate treatment are not at psychiatric MMI. For example, the examiner must assess whether maximal doses of medications and psychiatric therapy have been utilized to abate symptoms before the worker is considered at psychiatric MMI.

CHRONIC PSYCHIATRIC DIAGNOSES

If a psychiatric diagnosis preceded the injury, several sources can be used to establish the degree of prior impairment. Medical records from hospitals, clinics, psychiatrists and psychologists should be used to document psychiatric disorders.

Non-medical records from family members and any other sources can be used to document activities of daily living, social functions, concentration and response to stress.

USEFULNESS OF PSYCHOLOGICAL TESTS

Primary physicians should consider using standardized, brief tests to screen for the presence of depression, anxiety and other similar symptoms, requiring a psychiatric evaluation.

Other well-standardized tests such as the Rorschach, Thematic Apperception Test (TAT) and the MMPI (Minnesota Multiphasic Personality Inventory) may be useful in establishing diagnosis and chronicity. The WAIS (Wechsler Adult Intelligence Scale) may be useful in determining mental retardation. In cases of closed head injury, broad-based neuropsychological assessments such as the Halstead-Reitan or Luria-Nebraska may aid in determining brain function deficiencies. A list of available tests is found in the tabbed section of this notebook designated "Mental Impairment Forms."

SOCIAL SECURITY ASSESSMENT METHODS

The Social Security Administration suggests four areas for assessing the severity of mental impairments which have been adopted by the AMA Guides and are used by the Division of Workers' Compensation impairment rating system.

1. Activities of daily living
2. Social functioning
3. Concentration, persistence and pace
4. Adaptive functioning and response to stress

DIVISION OF WORKERS' COMPENSATION PSYCHIATRIC IMPAIRMENT RATING SYSTEM

General Instructions

In order to determine impairment for each subcategory of the areas of function, the examiner must first determine the individual's pre-injury performance in that area. The baseline performance descriptions for each subcategory are based on a population "norm." If the examinee's pre-injury performance falls below the baseline or norm and into an impaired category, determine whether any additional impairment has occurred from this work-related condition. Some patients with a pre-injury performance at variance from the stated population norm do not have a specific DSM diagnosis. The pre-injury performance level is merely a reflection of that individual's general level of function. Therefore, a lower than "normal" baseline performance need not be considered an apportionable condition requiring a separate worksheet.

For example, an individual who functioned pre-injury without a significant other, who has no close friends, meaningful relationship or group affiliations, has a low baseline in interpersonal relationships and should not be rated as impaired if their level of function did not change after the injury. By contrast, the previously gregarious or friendly worker who becomes less involved and avoidant after the injury should be rated with an impairment.

After the baseline performance of the individual has been determined, assign an appropriate impairment category to the individual. In general **minimal** impairment reflects a small amount of impairment in the subcategory, within which the patient is able to function without externally noticeable difficulty. An impairment for which the individual is able to self-correct without external assistance would be considered minimal. A **mild** impairment is one which has a greater effect on an individual's function and may require a small amount of interaction with others to correct. A **moderate** impairment is one in which others have noted the individual's functional deficit and requires external interaction with the individual for correction. A **marked** impairment is one in which the individual suffers frequent external problems secondary to the functional deficit despite interventions from others to correct the impairment. Very few individuals fall into the **extreme** or **maximum** impairment category. **Extremely** impaired individuals require frequent and concentrated intervention by others in order to maintain a minimally acceptable level of function within the subcategory. **Maximum** impairment is one in which the individual requires constant supervision or help from others in order to maintain any control over the subcategory.

For example, an individual who is frequently late for work resulting in suspension has a marked impairment in performing activities on schedule. An individual who needs help from his family to stay organized in order to get to work on time has a mild impairment in performing activities on schedule.

Pain

The rating of chronic pain is controlled by the statute. Chronic pain can only be rated when there is presence of an “anatomic or physiological correlation. Anatomical correlation must be based on objective findings.” §8-42-101(3.7), C.R.S. . Therefore, a rating for pain cannot be given unless there is objective, physical presence of an injury. The *AMA Guides 3rd Edition* (revised) does not encourage a rating of chronic pain in any areas other than those covered by the physical impairment rating system. (Refer to definition of chronic pain and impairment in appendix B, p. 252.) Psychiatric impairment ratings should be restricted to DSM diagnosis such as depression, adjustment or anxiety disorder, or other appropriate diagnosis and should not include pain disorder associated with psychological factors (307.80) nor pain disorder associated with general medical condition, which has no code in the DSM. The third possible category, pain disorder associated with both psychological factors and the general medical condition (307.89), would require the presence of other documented psychiatric symptoms which are usually found under depressive disorders, anxiety disorders, adjustment disorder or social phobia. Therefore, its use is not recommended. Evaluators should use the appropriate DSM categories for these disorders rather than “pain disorder with both associated psychological factors and the general medical condition”.

These principles apply to the following example. A worker’s ability to travel is impaired due to chronic back pain. This impairment is rated as part of the “anatomic or physiological” physical impairment. On the other hand, if a worker were injured in a truck accident, and is avoiding interstate freeways due to a phobia or post traumatic stress disorder, this impairment is rated as a psychiatric travel impairment under activities of daily living.

Medications

Any patient on medication must be rated as they are while using the medication. If a patient has refused to take a recommended medication or treatment, the patient is rated as he/she presents, without the medication or treatment recommended.

If a patient takes maintenance medications which enable him/her to function with no psychiatric impairment—in other words, all Areas of Function on the worksheet are rated as “zero” impairment—1-3% may be assigned for the use of the medication (see section V on the Mental Impairment worksheet). This 1-3% is assigned solely due to the requirement for medication maintenance treatment that did not exist previously. This applies to patients who take new or additional medication due to the work-related condition, as well as a worker who has not taken such medication prior to the injury. Patients who merit ratable mental impairments as assessed on the worksheet should not be assigned this 1-3% under Sec. V.

Patients may also experience side effects from maintenance medication. These side effects from psychiatric medication can be rated under the psychiatric subcategories or physical impairment as appropriate. Patients who are non-compliant with their prescribed medication should be rated as they are, but no

additional points should be allowed for medication use. The physician under these circumstances may consider adjusting the final calculation using Section IV, Final Calculation.

Evaluator Beware

Many of the functions found on the psychiatric worksheet overlap impairments which may also be present due to the physical injury. If the patient has an impairment due to a physical problem, for example chronic low back pain affecting sleep, then the condition may not be rated on the psychiatric worksheet. Only conditions caused by the DSM-established diagnoses can be rated on the worksheet. This is particularly important to remember in the areas of self-care and hygiene, travel, sexual function and sleep.

Remember that neurological function and other rating sections may overlap with mental and behavioral function. The same patient may not receive an impairment for loss of thinking, judgment, etc., under the neurological rating and the psychiatric rating. A patient cannot receive ratings for the same functional impairment from two sections of the *AMA Guides*.

Many of the subcategories under the Area of Function “Thinking, Concentration and Judgment” can be affected by brain pathology rather than psychiatric disorders. If abnormalities are found which are inconsistent with the patient’s established diagnosis or medication use, the patient should be referred for specialty consultation. If the patient is impaired due to a brain injury, the cognitive impairment must be rated in the neurological section and not on the mental disorder worksheet.

Occasionally workers with scars or disfigurement may qualify for an impairment rating if the scar or disfigurement causes a psychiatric disorder classified in the DSM. Any psychiatric component that is combined with the functional rating would need to be substantiated. There must be demonstrable changes in daily tasks or usual activities due to the psychological effect of the scar only, not due to any physiological effects of the scar, such as decreased range of motion.

Activities of Daily Living

No category sheets have been provided for the subcategories Self-care and Hygiene and Travel. Self-care and hygiene are usually not permanently affected by work-related psychiatric problems unless there is very severe depression which cannot be reversed with treatment. Therefore the majority of self-care and hygiene problems will be due to physical problems or pain secondary to the physical diagnosis. These issues **cannot** be rated on the psychiatric worksheet. Travel is most often affected by a physical diagnosis, such as low back pain or neck pain, rather than psychiatric diagnoses. The same precautions are true for sexual functions and sleep since these functions are commonly affected by pain from a physical source, which is rated in the physical impairment rating section rather than as a psychiatric problem. Note, however, that many psychotropic medications do cause sexual

side effects which require a psychiatric impairment rating.

Apportionment

If at the time of the injury, the worker's functioning was impaired from a DSM diagnosis, then the examiner must apportion the past impairment from the current impairment. This is done by evaluating the four areas of function as the patient functioned immediately prior to the current injury and subtracting that impairment rating from any present rating.

Do not assume that if a worker has a past history of a psychiatric disorder, he or she was necessarily impaired at the time of the injury. Many individuals with past psychiatric disorders return to their normal or baseline functioning. Others re-stabilize at lower baselines without a DSM diagnosis; however, some are impaired with chronic DSM diagnoses.

In 2008 the law regarding apportionment of preexisting conditions changed for cases with a date of injury on or after July 1, 2008. In those cases, where the *prior* injury or condition was *non-work-related*, apportionment may only apply if that prior condition was identified, treated, and independently disabling at the time of the current work-related injury. For details, see the Apportionment of Impairment "flow chart" at the end of the "WC Reports" section of this curriculum notebook.

ISOLATED PSYCHIATRIC IMPAIRMENT UNDER THE COLORADO STATUTE

Under Colorado law mental impairment or disability can only be compensated if it occurs 1) with a work-related physical injury or 2) "as a result of an accidental injury arising out of and in the course of employment when the accidental injury involves no physical injury and consists of a psychologically traumatic event that is generally outside of a worker's usual experience and would evoke significant symptoms of distress in any worker in similar circumstances". (§8-41-301(2)(a), C.R.S.) The worker must meet one of these two definitions before impairment may be considered. In addition, the statute limits the amount of compensation for permanent impairment of mental conditions except in cases of occupational disease with neurological brain damage or victims of violent crime or physical injury. (§8-41-301(2)(b), C.R.S.) Therefore, physicians should specifically address the presence of occupational neurologic brain damage in their narrative report.

DETERMINATION OF IMPAIRMENT RATING¹

1. Establish a work-related DSM diagnosis
2. Establish MMI

¹ This material, the sections on the next page and the Guidelines listed in the next section are based on the revised Division form denoted **Rev. 01/06 WC-M3-Psych.**

3. Interview the patient regarding function in each of the four areas of function
 - a. Activities of daily living
 - b. Social functioning
 - c. Thinking, concentration & judgment
 - d. Adaptation to stress

MECHANICS OF THE MENTAL IMPAIRMENT RATING

1. Record the DSM diagnosis on the worksheet.
2. On the worksheet, rank each element from 0 – 6 referring to the category definition guidelines and the Guidelines for elements found on the pages at the end of this section.
3. Average the two highest elements within each area of function to calculate the rating for each of the four areas of function.
4. Average the two highest areas of function ratings.
5. You may modify this number by up to 0.5 if you provide justification based on factors such as results of psychologic testing, reliability assessed on exam and compliance with treatment.
6. Convert your final category number to a percentage rating using the conversion table.
7. Combine the final rating with any physical rating.

NARRATIVE REPORT

Categorical ratings – The narrative report accompanying your impairment rating should include a thorough discussion of the criteria you used to establish your category ranking of each element in the four areas of function. Use the general categorical guidelines describing those elements to rank the category numbers. Those guidelines may be found at the end of this section. The Permanent Mental Impairment Report Work Sheet is found in this notebook behind the tab “Mental Impairment Forms.”

Continuing Medication – When maintenance medication is required, the dose of medications prescribed, the frequency of physician visits anticipated, and any monitoring laboratory tests required must be described in detail in order to obtain insurance coverage for the treatment and medication. Maintenance psychiatric visits can vary but generally should not be less frequent than every eight weeks in the first year after the worker has reached psychiatric MMI.

Work Restrictions – Some workers with a psychiatric impairment may have work restrictions due to their psychiatric condition. Any restrictions must be identified clearly in the narrative report including type and degree of stress, limitation of hours, etc. (Examples include limited interpersonal contact, difficulty in close supervisory relationship, difficulty supervising others, difficulty concentrating on complex tasks and difficulty with multi-tasking.)

GUIDELINES
FOR ASSESSING AND RATING ELEMENTS
UNDER THE MENTAL IMPAIRMENT RATING
WORKSHEET
“AREAS OF FUNCTION”

SEXUAL IMPAIRMENTS*

- Baseline:** First determine the usual frequency, responsiveness (orgasms, erections, ejaculations) and degree of enjoyment of sex before the injury.
- Minimal:** Rarely initiates but can usually climax (female)/erection (male). (Frequency is equal to slightly less than baseline frequency.)
- Mild:** Has sex once per month (baseline is once per week) in response to partner and can occasionally reach orgasm (female)/usually ejaculate (male). Still derives pleasure/enjoyment from sexual activity.
- Moderate:** Has sex once every two months or longer (baseline once per week) in response to partner and rarely reaches orgasm (female)/has occasional erectile dysfunction (male). Rarely experiences pleasure/enjoyment.
- Marked:** Has no interest in sex and is without orgasms (female)/always has difficulty with erections (male) and avoids sex.

- * Alterations in the sexual function due to pain is included in the physical impairment rating, not rated under psychiatric impairment.

SLEEP*

- Baseline:** First determine the usual sleep pattern and whether they used medications before the injury.
- Minimal:** Has trouble falling asleep most nights but can sleep through the night. If now on medication and not before the injury, the individual is at least minimally impaired.
- Mild:** Awakens twice during the night but can usually fall back to sleep in less than one hour.
- Moderate:** Has difficulty falling asleep and wakes up one to two times per night but is usually unable to fall back to sleep for several hours.
- Marked:** Can't get to sleep for more than two hours at a time and regularly naps during the daytime (disturbed diurnal pattern).

* Alterations in sleep patterns due to pain is included in the physical impairment rating, not rated under psychiatric impairment.

Social Functioning
SF1

INTERPERSONAL RELATIONSHIPS

Baseline: First determine the individual's usual openness to others and how often they greeted others, made new friends, and tolerated disagreements with others without behavioral extremes or adapted to get along with others.

Minimal: Can still initiate and meet new people and behave appropriately but feels uncomfortable and would prefer to be alone. There are less frequent social contacts but they still respond when others initiate or negotiate. Can still adapt to others when they have to. May raise voice or shout in response to interpersonal conflicts more frequently than usual.

Mild: The only social contacts are initiated by others and with some coaxing; rarely initiates social contacts and resents negotiating and compromising but still can adapt; can still enjoy some social experiences but not frequently. Can be verbally abusive when faced with interpersonal conflict.

Moderate: Requires pressure or necessity to have social contacts and rarely enjoys it, difficulty compromising, negotiating, and adapting but still can for very important purposes. Or at least one episode of physically threatening or abusive behavior directed at a person

Marked-Extreme: Has no interest in others and actively avoids interactions. Derives no social pleasure and finds it difficult to adapt to others even when there are dire consequences for not compromising or attending. May have had several incidents of physically abusive behavior directed at a person with possible legal charges.

Maximum: Requires constant supervision to monitor behavior

Social Functioning
SF2

COMMUNICATE EFFECTIVELY WITH OTHERS

Baseline: Determine the usual ability to get one's ideas across effectively to others.

Minimal: Complains that it is difficult to clearly and effectively communicate with others but still can.

Mild: Sometimes requires help from others to clearly and effectively communicate with them.

Moderate: Suffered a consequence for not effectively communicating with others. This individual requires the listener to actively interpret the intent of the communication.

Marked-Extreme: Experiences serious consequences due to inability to consistently communicate effectively with others. This individual is poorly understood despite active attempts to interpret the intent of the communication.

Maximum: Inability to communicate with others except regarding basic physical needs. (e.g., autistic, catatonic)

* Many communication problems are secondary to CNS and/or ENT disorders and require evaluation using those specific guidelines instead.

Examples of psychiatric disorders impairing clear and effective communications include symptoms of mood disorders (flight of ideas, loose associations, paucity of thought), symptoms of psychotic disorders (paranoia, delusions, hallucinations), substance abuse.

RECREATIONAL ACTIVITIES

- Baseline:** Determine the usual sedentary, active physical and spiritual activities they participated in before the injury, how frequently they initiated and participated in them and how pleasurable they were.
- Minimal:** Still participates in some (any) recreational activities but feels less comfortable. There is decreased frequency of initiation but they can still respond when others initiate and still derive pre-injury pleasure.
- Mild:** Only participates in response to others with some coaxing and cajoling. Rarely initiates recreational activity but responds when others initiate and can still derive some degree of pleasure.
- Moderate:** Only participates in a recreational activity under pressure and rarely enjoys it.
- Marked-Extreme:** Has no interest in participating in recreational activities, actively avoids it and experiences no pleasure from it.
- Maximum:** Participates in no recreational activities.

MANAGE CONFLICTS WITH OTHERS – NEGOTIATE, COMPROMISE

- Baseline:** Determine the individual's usual ability to resolve difficulties with others or reach consensus in a conflict before the accident. (The conflict is pathological.)
- Minimal:** Gets upset and has feelings of resentment which are not expressed. Regains composure by avoiding others and therefore prefers to work alone. Not overtly angry but internally troubled.
- Mild:** Sometimes gets upset and argumentative and expresses anger with the conflict eventually getting resolved. Can “go with the flow” but with some difficulty.
- Moderate:** Frequently argues with others when involved with or interacting with others. The conflict remains unresolved (rigid, sulks) until others intervene. The anger and conflict disrupts relationships on a team, in a family or friendship. They have suffered a consequence for inappropriate conflictual behavior.
- Marked - Extreme:** Frequently argues, unwilling to compromise. Gets upset and the anger and conflict are so disruptive that external control, limits, or measures are necessary. The conflict remains unresolved (rigid, sulks) and disrupts relationships. The conflict requires external help and is even then difficult to resolve. They have suffered a serious consequence for inappropriate conflictual behavior such as threatened job loss or other disciplinary action.
- Maximum:** Incarcerated, confined or hospitalized for aggressive behavior.

SET REALISTIC SHORT & LONG TERM GOALS

Baseline: Determine the usual level of judgment used to set attainable goals. Does he/she usually underestimate, overestimate or achieve what he/she sets out to do? How much assistance is usually needed to set realistic achievable goals?

Minimal: Finds it difficult and/or stressful to determine what he/she can or cannot do but usually doesn't underestimate or overestimate or require assistance from others.

Mild: Requires and accepts some assistance from others to determine what he/she can or cannot do and occasionally underestimates or overestimates.

Moderate: Frequently underestimates or overestimates what he/she can do which causes mild consequences unless assistance is received from others. Requires some regular external structure but has difficulty accurately determining when assistance is necessary for himself/herself. (Results in increased symptoms, material damage.) When provided, assistance is accepted.

Marked-Extreme: Frequently underestimates or overestimates what he/she can do which causes serious consequences. Unaware of need for structure and assistance and either resists or has difficulty utilizing assistance from others. (Results in increased symptoms; potential or actual serious injury to self or others.)

Maximum Unable to achieve any basic short or long-term goals.

**PERFORM ACTIVITIES (including work)
ON SCHEDULE**

- Baseline:** Determine the usual punctuality of the individual. How usual is it for them to be late for work or miss important functions?
- Minimal:** Finds it stressful to be on time and perform at an acceptable pace.
- Mild:** Requires some assistance from others to be on time and perform at an acceptable pace (reminders, phone calls, physical assistance).
- Moderate:** Suffered minor consequences for lateness and slow performance (reprimanded, upset others, confronted by others).
- Marked - Extreme:** Suffered serious consequences for lateness or slowness (threat of being fired, late for or missed very important appointment).
- Maximum:** Cannot be expected to complete a task. (No expected performance)

ADAPT TO JOB PERFORMANCE REQUIREMENTS

- Baseline:** Determine the individual's ability to adapt (be flexible) to a non-negotiable change in rules or follow established procedures (new supervisor, change in shift, required meeting).
- Minimal:** Resistance, denial, negativity is felt but not overtly expressed.
- Mild:** Negative reaction to limits and rules is expressed, such as resistance, avoidance, making excuses, attempting to substitute another task for the required one.
- Moderate:** The behavior of the individual is called to his/her attention and they experienced mild external (corrective) consequences such as written reprimand. The individual demonstrates overt resistance to performing what is expected.
- Marked- Extreme:** They experienced serious disciplinary consequences such as suspension. Their behavior disrupts workplace relationships. The individual frequently does not perform required tasks.
- Maximum:** Due to inability to accept limits and/or follow rules, they experience dire consequences such as termination from employment, or incarceration.

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COLORADO DEPARTMENT OF LABOR AND EMPLOYMENT
Division of Workers' Compensation

PERMANENT WORK-RELATED MENTAL IMPAIRMENT RATING
REPORT WORK SHEET

Since the AMA Guides to the Evaluation of Permanent Impairment, 3rd Edition (Revised) does not provide a quantified method for assigning permanent impairment percentages under Chapter 14, "Mental and Behavioral Disorders," the provider shall utilize this form.

Patient Name
WC #

Date of Service:
Carrier #

SCORING INSTRUCTIONS:

1. This form should only be used to determine an impairment after the case has been found to meet all of the specific criteria for a Diagnostic and Statistical Manual (DSM) diagnosis.
2. The AMA Guides to Permanent Impairment, 3rd Edition (Revised) should be consulted for guidance in determining these ratings.
3. Determination of a rating of permanent mental or behavioral impairment shall be limited to mental or behavioral disorder impairments not likely to remit with further mental health treatment.
4. Impairment ratings based on chronic pain are not applicable within the mental/behavioral domain, but are restricted to physical examination with evidence of anatomic or physiologic correlation and included within a physical impairment rating.
5. To obtain the final overall impairment rating:
 - a. The elements to be rated are divided into four Areas of Function: Activities of Daily Living; Social Functioning; Thinking, Concentration and Judgment; and Adaptation to Stress.
 - b. Assign a rating (0-6) to each subcategory of the areas of function based on patient self-report, other sources of information, and the physician's clinical assessment. (See Category Definitions on Page 6 of this form.) Given the heavy reliance on the patient's subjective report for information in some of the ratings, the physician should give careful consideration to any corroborating evidence that might be available.
 - c. Average the two highest subcategory ratings within each Area of Function to obtain the overall category rating. For example, if the two highest scores are 2 and 5, the category score is 3.5.
 - d. To calculate the overall impairment rating, average the two highest category ratings and then, if appropriate in the case, use clinical judgment to add or subtract up to 0.5 point from the result. If the score is modified in this fashion due to clinical judgment, ***justification for doing so must be documented***. Factors influencing the physician's discretion may include the following:
 - i. Factors influencing the patient's believability, such as the presence of symptom magnification, or the presence or absence of corroborating information from psychological or neuropsychological testing;
 - ii. The extent to which medication ameliorates the effects of the condition;
 - e. Use the Category Conversion Table in these instructions to convert the final number to a percentage.
Level II Curriculum
6. Include the DSM diagnosis at the top of the worksheet.

The final determination must include ratings for all of the elements in each area of function, the category averages reached in each area of function, the overall average, the final assigned overall permanent impairment rating, and documentation for any divergence (± 0.5) from the calculated score.

CATEGORY CONVERSION TABLE	
Final Score	Percentage
0	0
0.25	0
0.5	1
0.75	1
1	1
1.25	2
1.5	3 to 4
1.75	5
2	6 to 7
2.25	8 to 9
2.5	10 to 12
2.75	13 to 15
3	16 to 18
3.25	19 to 21
3.5	22 to 23
3.75	24 to 25
4	26 to 32
4.25	33 to 38
4.5	39 to 44
4.75	45 to 50
5	51 to 56
5.25	57 to 62
5.5	63 to 68
5.75	69 to 75
6	76 to 83
6.25	84 to 91
6.5	92 to 100

7. If apportionment is applicable, complete a separate form calculating the pre-injury rating to be subtracted from the total current rating.
8. If there is a finding of no impairment, refer to Part V on the worksheet, if appropriate.

WORKSHEET

Patient Name

Date of Service:

WC #

Carrier #

NOTE: Determination of a rating of permanent mental or behavioral impairment shall be limited to mental or behavioral disorder impairments not likely to remit with further mental health treatment. Further, impairment ratings based on chronic pain are not applicable within the mental/behavioral domain, but are restricted to physical examination with evidence of anatomic or physiologic correlation and included within a physical impairment rating.

I. DSM Diagnosis: Axis I: _____ Axis II: _____

II. LEVELS OF PERMANENT MENTAL IMPAIRMENT

Category

0. No permanent impairment
1. Minimal Category of Permanent Impairment
2. Mild Category of Permanent Impairment
3. Moderate Category of Permanent Impairment
4. Marked Category of Permanent Impairment
5. Extreme Category of Permanent Impairment
6. Maximum Category of Permanent Impairment

III. AREAS OF FUNCTION²

1. Activities of Daily Living. *Rate only impairments due strictly to the psychiatric condition.*

- 0 1 2 3 4 5 6 Self care and hygiene (dressing, bathing, eating, cooking)
0 1 2 3 4 5 6 Travel (driving, riding, flying) i.e. impairments in driving, riding, flying which are generally a result of symptoms of affective or anxiety disorders
0 1 2 3 4 Sexual function (participating in usual sexual activities)
0 1 2 3 4 Sleep (restful sleep pattern)

Overall Category Rating:
(average of 2 highest)

2. Social Functioning

- 0 1 2 3 4 5 6 Interpersonal relationships
0 1 2 3 4 5 6 Communicates effectively with others
0 1 2 3 4 5 6 Participation in recreational activities (consider pre-injury activities of the patient)
0 1 2 3 4 5 6 Manage conflicts with others--negotiate, compromise

Overall Category Rating:
(average of 2 highest)

² See attached Appendix for further description of all or part of the listed areas of function.

3. Thinking, Concentration & Judgment

- 0 1 2 3 4 5 6 Ability to perform complex or varied tasks
- 0 1 2 3 4 5 6 Judgment
- 0 1 2 3 4 5 6 Problem solving
- 0 1 2 3 4 5 6 Ability to abstract or understand concepts
- 0 1 2 3 4 5 6 Memory, immediate and remote
- 0 1 2 3 4 5 6 Maintain attention, concentration on a specific task
- 0 1 2 3 4 5 6 Perform simple, routine, repetitive tasks
- 0 1 2 3 4 5 6 Comprehend/follow simple instructions

Overall Category Rating:
(average of 2 highest)

4. Adaptation to Stress

- 0 1 2 3 4 5 6 Set realistic short & long term goals
- 0 1 2 3 4 5 6 Perform activities (including work) on schedule
- 0 1 2 3 4 5 6 Adapt to job performance requirements

Overall Category Rating:
(average of 2 highest)

IV. FINAL CALCULATIONS:

Average the two highest Area of Function ratings: _____ + _____ divided by 2 = _____

Add or subtract up to 0.5 from the completed calculation above, if appropriate, based on clinical judgment.

Justify this deviation below or attach a separate sheet:

Using the Category Conversion Table on page 2 of this form, convert the final number to a percentage for the overall permanent impairment rating:

**Overall Psychiatric
Permanent Impairment**

Rating _____%

OR

V. If this patient has ZERO impairment according to the above criteria and requires continuing medication for their DSM diagnosis, an impairment of _____% may be assigned. 1-3% may be assigned _____%.

***IF ZERO %
PSYCHIATRIC RATING***

RATING _____%

VI. TOTAL IMPAIRMENT RATING (if applicable)
Total Whole Person *Physical* Impairment = _____%

Combined with psychiatric permanent impairment equals:

**Total Whole Person
Impairment (including
psychiatric impairment)**

_____%

Physician: _____ Date: _____
(Signature)

APPENDIX

1. Activities of Daily Living

Sexual Function: Scoring categories 5 and 6 are not available because the maximum impairment allowed per the AMA Guides for total loss of sexual function is 30% for a male less than 40 years of age; 20% for a male 40 or older.

Sleep: Scoring categories 5 and 6 are not available because the AMA Guides allow a maximum of 50% impairment for sleep or arousal disorders. To reach a 20% rating the activities of daily living must be affected to the extent that supervision is required in some areas. To reach a 50% rating, supervision by caretakers is required.

2. Social Functioning

Social functioning refers to an individual's capacity to interact appropriately and communicate effectively with other individuals. Social functioning includes the ability to get along with others, such as with family members, friends, neighbors, grocery clerks, landlords or bus drivers. Impaired social functioning may be demonstrated by a history of altercations, evictions, firings, fear of strangers, avoidance of interpersonal relationships, social isolation, etc. Strength in social functioning may be documented by an individual's ability to initiate social contacts with others, communicate clearly with others, interact and participate in group activities, etc. Cooperative behaviors, consideration for others, awareness of others' feelings, and social maturity also need to be considered. Social functioning in work situations may involve interactions with the public, responding appropriately to persons in authority, such as supervisors, or cooperative behaviors involving co-workers.

Again, it is not the number of areas in which social functioning is impaired, but the overall degree of interference with a particular functional area or combination of such areas of functioning. For example, a person who is highly antagonistic, uncooperative, or hostile, but is tolerated by local storekeepers may nevertheless have marked restrictions in social functioning because that behavior is not acceptable in other social contexts, such as work. (*AMA Guides, 3rd Edition (revised)*, p. 237)

3. Thinking, Concentration and Judgment

Thinking, concentration, and judgment refer to the ability to sustain focused attention sufficiently long to permit the timely completion of tasks and to make reasoned or logical decisions as to alternative courses of action. Deficiencies in concentration and judgment are best observed in work and work-like settings. Major impairment in this area can often be assessed through direct psychiatric examination and/or psychological testing, although mental status examination or psychological test data alone should not be used to accurately describe concentration and sustained ability to perform work-like tasks. On mental status examinations, concentration is assessed by tasks requiring short-term memory or through tasks such as having the individual subtract serial sevens from 100. In psychological tests of intelligence or memory, concentration can be assessed through tasks requiring short-term memory or through tasks that must be completed within established time limits. Strengths and weaknesses in areas of concentration can be discussed in terms of frequency of errors, time it takes to complete the task, and extent to which assistance is required to complete the task. (*Disability Evaluation Under Social Security*, p.88, Social Security Administration Pub. No. 64-039)

4. Adaptation to Stress

The individual should be able to set realistic and appropriate goals. Given that the work-related injury may have induced various limitations, the individual should demonstrate realistic adaptations to the medical/physical situation. He/she should be able to accommodate changes from pre-injury status to the current status. Adapting to performance standards requires that the individual can adequately cope with job performance and time expectations. Further, the individual should demonstrate the capacity to follow rules and policies, respond appropriately to changes in the work setting, and utilize resources available within the community, medical and family areas.

PERMANENT WORK-RELATED MENTAL IMPAIRMENT RATING
REPORT WORK SHEET
CATEGORY DEFINITION GUIDELINES

CATEGORY 0: No Permanent Impairment.

Mental symptoms arising from the work-related psychiatric diagnosis have been absent for the past month. ADLs are not affected. Functioning is at pre-injury baseline in social and work activities in all areas; no more than everyday problems.

CATEGORY 1: Minimal Category of Permanent Impairment.

Mental symptoms, arising from the work-related psychiatric diagnosis and not likely to remit despite medical treatment, minimally impair functioning.

CATEGORY 2: Mild Category of Permanent Impairment.

Mental symptoms, arising from the work-related psychiatric diagnosis are not likely to remit despite medical treatment, and are mildly impairing. ADLs are mildly disrupted. Functioning shows mild permanent impairment in social or work activities.

CATEGORY 3: Moderate Category of Permanent Impairment.

Mental symptoms, arising from the work-related psychiatric diagnosis and not likely to remit despite medical treatment, are moderately impairing. ADLs are moderately disrupted. Functioning shows moderate permanent impairment. Activities sometimes need direction or supervision.

CATEGORY 4: Marked Category of Permanent Impairment.

Mental symptoms, arising from the work-related psychiatric diagnosis and not likely to remit despite medical treatment, are seriously impairing. ADLs are seriously disrupted. Functioning shows serious difficulties in social or work activities.

CATEGORY 5: Extreme Category of Permanent Impairment.

Mental symptoms, arising from the work-related psychiatric diagnosis and not likely to remit despite medical treatment, are incapacitating. At times, ADLs require structuring. Functioning is quite poor, unsafe in work settings, at times requires hospitalization or full-time supervision. Most activities require directed care.

CATEGORY 6: Maximum Category of Permanent Impairment.

This impairment level precludes useful functioning in all areas. These individuals are generally appropriate for institutionalized settings, if available. All activities require directed care.

Examples of various psychological tests or screening tools follow. Most are not available in an electronic format that can be inserted here. Please contact the Division's Physicians' Accreditation Program for copies.