

# Occupational Medicine

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## Risk and Disability Evaluation in the Workplace

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Volume 15/Number 4  
HANLEY & BELFUS, INC.

October–December 2000  
Philadelphia

STATE OF THE ART REVIEW

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## UNIFIED FITNESS REPORT FOR THE WORKPLACE

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Fitness statements often are required of physicians by patients, employers, governmental agencies, and insurance providers to determine if a patient is fit for duty. Physicians making these ability statements are legally obligated to carefully justify them, as they determine placement or exclusion of individuals from the workplace. The Americans with Disabilities Act (ADA) mandates that medical providers use justifiable criteria and rational thought when determining the capability and risk of an individual. This chapter reviews the legal requirements of the ADA for employers and physicians and presents a uniform methodology that both could use to determine the performance capability of an individual with a temporary or permanent impairment or disability.

It is increasingly common for physicians, irrespective of medical specialty, to be asked to determine an individual's physical, mental, or social abilities, for either temporary or permanent work. Those requesting this information include government agencies (social security, state welfare, employment security, labor commissions, vocational rehabilitation, driver's license divisions) employers, insurance payers (workers' compensation, short- and long-term disability, Family Medical Leave Act qualifications), and loan deferment officers. Each requests the same basic information with a plethora of significantly different and time-consuming forms. The interest in medically objectifiable and legally defensible abilities and risk statements is increasing, as most agencies requesting this information are experiencing significant increases in disability applications and costs. For example, from 1970 the Federal Government has seen individuals awarded Social Security Disability

Insurance (SSDI) and Supplemental Security Income (SSI) double. At the end of 1992, approximately 8.8 million people were receiving SSDI and/or SSI benefits for a total cost of \$52 billion.<sup>1</sup> Likewise, U.S. employers have seen their costs for work-related injuries and associated disabilities increase from \$2.1 billion in 1960 to an annual estimated total cost of \$171 billion a year.<sup>2</sup> Currently, the average cost of a lost-time work-

related injury is more than \$20,000.<sup>3</sup> It is now estimated that at least 43 million Americans are disabled in some way. However, 60% of those not working have indicated that they would like to work if the opportunity were made available,<sup>4</sup> and 25% of disabled individuals have reported some form of current job discrimination.<sup>5</sup>

Medically determined physical-ability-and-risk statements are the first step toward the final administrative disposition as to whether a person is deemed fit or unfit for duty (Fig. 1). These ability decisions carry heavy legal and ethical responsibilities, because fitness-for-duty decisions often are directly related to the individual's earning capacity and/or disability benefits. Current employment law indicates that any attempt to limit an individual's employability involves the need for a medical, legal, and ethical approach that protects not only the physician, individual, and employer, but the general public as well.<sup>6</sup> In the past, there was minimal research available predicting who would become disabled, so physical-ability-and-risk statements were made intuitively by medical providers.<sup>7,8,9,10</sup>

Generally, treating physicians cannot be sued for their opinions concerning an individual's ability to work unless a physician's statement is proved false and was made with recklessness. However, physicians can be sued for negligent interference with the worker's contractual relationship.<sup>11</sup> Therefore, all who are involved with physical ability decisions must realize that physicians determine *ability*, not disability. Generally, it is not the physician's responsibility to tell the employer whether the employee can do his or her job, determine the essential functions of the job, devise accommodations for the individual, or determine the reasonableness of any accommodation proposed by the employer. Employability, accommodation, and disability decisions are administrative.

In making physical ability statements, physicians should be cognizant that returning individuals to gainful employment is one of the most potent therapeutic and rehabilitative modalities available. Work promotes independence and is essential to a person's self-respect and quality of life.<sup>12</sup> Resumption of work also has been shown to be a significant part of the treatment for an injury or illness, even benefiting pa-

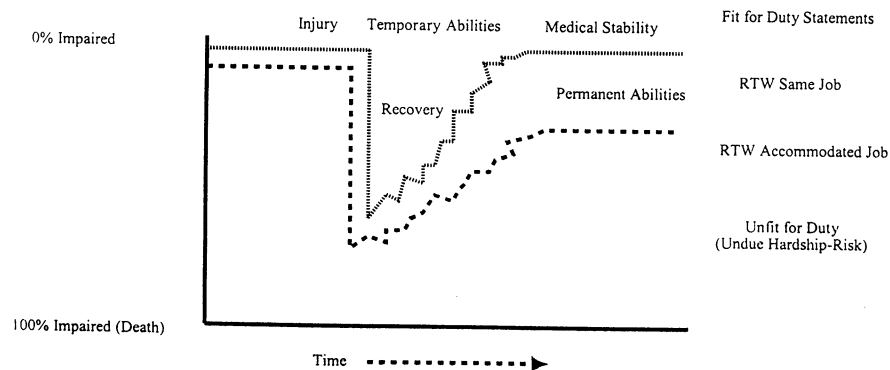


FIGURE 1. Recovery graph.

tients suffering from chronic pain.<sup>13,14,15,16</sup> Conversely, prolonged time away from work makes recovery and eventually returning to work progressively less likely.<sup>17,18</sup> American industry has come to appreciate W. Edwards Demming's philosophy that the "individual worker is the company's most important asset, and respect for individuals is paramount for business success."<sup>19</sup> Studies have shown that workers who return to their original employer are usually better off financially than workers who choose other options, such as alternative vocational rehabilitation plans that include retraining or new job placement.<sup>20,21</sup> Many companies now sponsor modified work programs before full duty is assumed. Effective accomplishment of returning impaired individuals to work often requires the combined efforts of the individual, healthcare provider, and employer, to carefully evaluate the patient's ability and then, if necessary, consider efforts to provide reasonable accommodations.<sup>22</sup>

## FITNESS FOR DUTY UNDER ADA

The ADA is a civil rights law that prohibits discrimination in public and private employment, governmental services, public accommodations, public transportation, and telecommunication. Its prohibitions apply to employers with 15 or more employees and to state and local governments and public services of any size. The ADA specifically protects all individuals with a physical or mental impairment that substantially limits one or more of the major life activities; with a record of such impairment; and regarded as having such an impairment. This law protects injured individuals, those who acquire various diseases, and those who have lifetime disabilities and may have never worked. The ADA also is designed to assist employers in managing the effects of individuals' disabilities and places very specific requirements on employees, employers, and their medical advisors to determine the conditions under which individuals can work.<sup>23</sup>

Under the ADA, it is no longer sufficient for a physician simply to determine if a person is disabled. Capability must first be ascertained before other administrative issues such as "reasonable accommodation," "undue hardship," or "direct threat"<sup>24</sup> can be addressed. Failure to comply with the ADA may result in costly litigation. Originally it was thought the ADA would primarily prevent discrimination in the hiring process; however, the enforcing agency, the Equal Employment Opportunity Commission, reports that 52% of cited violations relate to wrongful discharge of an employee, 27% to failure to provide reasonable accommodation, and only 10% to hiring practices.<sup>25</sup> Physicians can unwittingly provide a trigger for ADA coverage by recommending work restrictions focused on what an employee is unable to do and not relating the restrictions to the particular specific functions of the job at issue.<sup>26</sup>

## DIRECT THREAT

In order for an employer to determine if an individual is unfit for his or her current job, or whether a job offer should be withdrawn based on a physician's recommendations, it must be shown that the individual poses a high probability of causing substantial harm to self or others, and that the risk of substantial harm cannot be eliminated or reduced below the direct threat level by reasonable accommodation.<sup>27</sup> This is a very stringent standard that most employers and physicians rarely are able to meet when attempting to screen for potential future injury, in that medical science rarely produces data that demonstrates a "high probability" that something bad will happen. Probability is a term that refers to the likelihood or chance that an injury or illness was caused or aggravated by a particular factor. "Possibility" sometimes is used to imply a likelihood of less than 50%; "probability" sometimes is used to imply a likelihood of greater than 50%.<sup>28</sup> Moreover, such claims cannot be speculative or

based on potential future risk. Only the current abilities of the individual to perform essential job functions safely can be assessed.

## EMPLOYER RESPONSIBILITIES

Given appropriate medical abilities information, an employer's administrative responsibility is to determine whether reasonable accommodations can be made. If the employer feels that accommodations represent an "undue hardship" for the company, or that the employee is considered a "threat to self or others," an employability decision by management of the individual being unfit for duty is made. Such action requires appropriate legal review and significant documentation. The decision may depend on a number of variables, including the size of the employer's organization, their resources available, and the nature of the operation.<sup>29,30</sup> Whether a particular accommodation will impose an undue hardship must be determined on a case-by-case basis.<sup>31,32</sup> An accommodation that poses an undue hardship for one employer at a particular time may not pose an undue hardship for another employer or the same employer at another time. Factors to be considered in determining whether an accommodation would create an undue hardship on a particular business are reviewed in greater detail in the ADA and Technical Assistance Manual.<sup>33</sup>

## UNIFIED FITNESS MEDICAL REPORT

A number of contributing variables, including the history and physical examination, medical testing results, diagnosis, functional capacity evaluations, compliance with treatment guidelines, and medical outcome studies, may need to be considered in arriving at a fitness-for-duty statement (Fig. 2). Comprehensive functional abilities can be determined via 21 different categories from which individual health concerns may arise (Table 1).

To facilitate this complicated process, the Utah Medical Association (UMA) has developed a novel interdisciplinary approach, referred to as The Unified Fitness Report (UFR).<sup>34</sup> These guidelines were developed in a similar format as the Utah Driver License Division's health form and by a consensus of 28 specialists of the UMA, with consideration of the ethical and legal liabilities that physicians, ergonomists, attorneys, business managers, and supervisors experience in balancing the patient's and societal interests as required under ADA. Originally published elsewhere,<sup>35,36,37</sup> this model continues to expand toward a goal of providing a complete and defensive methodology for determining fitness for duty.

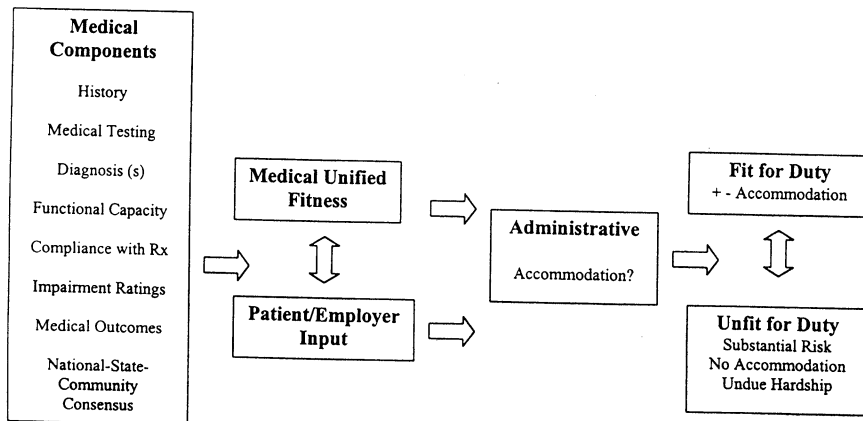


FIGURE 2. Fitness for duty components.

TABLE 1. Twenty-one Different Categories of Health Concerns

Musculoskeletal—Upper Ext	Cardiovascular	Diabetes
Musculoskeletal—Hand	Hematology/Immunology/	Dermatology
Musculoskeletal—Leg	Oncology	Memory/Learning/Communication
Musculoskeletal—Spine	Ophthalmology	Psychiatric/Psychological/Emotiona
Neurology—General	Otolaryngology	Substance Use Disorder
Epilepsy/Other Episodic	Gastroenterology	General Medical
Disorders	Genitourinary (M or F)	General Surgical
Pulmonary	Genitourinary	
	(Women's Pregnancy)	

The categories were selected to follow, in general, the sequence used in the 4th edition of the American Medical Association's *Guides to the Evaluation of Permanent Impairment*.<sup>27</sup>

### The UFR has four purposes:

1. To assist workers who develop health problems to return to the appropriate work they can do.
2. To assist those who have health problems and who have not worked to gain employment at tasks they can accomplish effectively.
3. To help employers by providing guidelines for appropriate levels of work as determined by the employee's health condition.
4. To offer employers suggestions as to possible accommodations to consider in determining if an employee might accomplish the essential functions of a job.

The term "unified fitness" was used to focus on what an individual *can* do, rather than on what he or she cannot do. While many of the functional ability categories are concerned with specialized capabilities, such as vision, hearing, and learning, others are related primarily to physical demands for lifting or carrying. For many years, the U.S. Department of Labor (DOL) and the Social Security Administration have classified all jobs into five levels of exertion and skill (Table 2).<sup>38</sup> The DOL model is widely accepted and used in making legal determinations of disability and fitness for duty. The UMA's medical specialists have severity indexed, as outlined by the DOL work profiles, each of the 21 different categories of health concerns. This categorization scheme, established by consensus, provides a uniform standard necessary to meet the ADA's direct threat definition of "reasonable medical judgment that relies on the most current medical knowledge and/or the best available evidence." Currently, 5-year outcome data from the Utah Drivers License Division, which uses a similar rating scheme shows positive predictive value for most of the profile categories.<sup>39</sup> A profile severity

TABLE 2. United States Department of Labor Physical Demands Characteristics of Work Chart

Physical Demand Level	Occasional (0–33% of Workday)	Frequent (34–66% of Workday)	Constant (67–100% of Workday)	Typical Energy Required
Very Heavy	Over 100 lbs.	Over 50 lbs.	Over 20 lbs.	Over 7.5 METS
Heavy	100 lbs.	50 lbs.	20 lbs.	6.4–7.5 METS
Medium	50 lbs.	20 lbs.	10 lbs.	3.6–6.3 METS
Light	20 lbs.	10 lbs. and/or Walk/Stand/Push/ of Arm/Leg controls	Negligible Pull/Push of Arm/Leg controls while seated	2.20–3.5 METS
Sedentary	10 lbs.	Negligible	Negligible	1.5–2.1 METS

METS = metabolic energy expenditure equivalents

level 1 indicates no present or past limitation for that category of health concern, while level 10 indicates a condition in which work of any sort does not appear to be indicated (Table 3).

The UFR's unique value lies in assessing an individual when more than one medical condition simultaneously exists. The severity profile of each medical category is recorded, with the most severe profile level indicating the patient's maximum safe work capability. Limitations of the musculoskeletal category profiles have been identified as not being specific enough, for which there continues to be ongoing updates and improvements. Since the 21 categories of health concerns involve comprehensive medical knowledge, the final fitness-for-duty statement should be made by a doctor of medicine or osteopathy, with input from the patient and other sources as indicated. The medical disposition should be limited to advising the employer about an individual's current functional abilities and limitations in relation to essential job functions and about whether the individual meets the employer's health and safety requirements.<sup>40</sup>

**Final Fitness for Duty Statements: Interaction of Three Specific Functions**

**Unified fitness evaluation.** In arriving at a final, defensible fitness statement, a number of contributing variables, including the history and physical examination, medical testing results, diagnosis, functional capacity evaluations, compliance with treatment guidelines, and medical outcome studies may need to be considered. After consideration of these components, a report is generated based on the intended use of the UFR (see end of chapter for information on obtaining form). Physicians have found the report form quick and easy to use. An "x" placed in the appropriate severity profile of each medical category and notations as to times and stability are sufficient. As recovery occurs, a simple change in the profile level allows additional work activity. There is room to add additional comments in unusual circumstances. In more complex cases or in special situations, a full profile of all categories may be needed.

**Patient/employee function.** After completion of the UFR by the physician, the patient takes (or sends) it to his or her employer and counsels with the company as to how the employer can best accommodate to the limitations recommended.

**Employer functions.** In response to the UFR suggesting appropriate capability because of an employee's health problem, the employer can use this information to make an appropriate work fitness-for-duty assessment. The employer also may use the suggested ideas for possible accommodations to help determine whether the essential functions of a job can be accomplished. This will help the employer materially in meeting their responsibilities under the ADA.

The UFR has no coercive or controlling effect, but is useful for employers to consider. A summary of the 21 health categories, along with the fitness profile levels,

TABLE 3. Profile Severity Levels

- 1 = No problems
- 2 = Some problem, with complete recovery
- 3 = Mild
- 4 = Slight
- 5 = Moderate
- 6 = Severe
- 7 = Very severe
- 8 = Special considerations
- 9 = Under evaluation, temporary
- 10 = No work, permanent or during recovery

Category	Profile Levels									
	1	2	3	4	5	6	7	8	9	10
A-U Musculoskeletal - Upper Extremity	All work activities	All work activities	Infrequent heavy lifting - affected extremity	Medium lifting - affected extremity	Light lifting - affected extremity	No lifting - affected extremity	No lifting - either extremity	According to special circumstances - depends upon nature of problem	Temporary adjustment - under evaluation - depends on situation	No work activity appropriate
A-H Musculoskeletal - Hand	All work activities	All work activities	Minimal loss of skill/lifting - one hand	Slight loss of skill/lifting - one hand	Medium skill/lifting - one hand	Minimum skill/light tasks - bilateral	Substitute for all hand functions	According to special circumstances - depends upon nature of problem	Temporary adjustment - under evaluation - depends on situation	No work activity appropriate
A-L Musculoskeletal - Lower Extremity	All work activities	All work activities	Heavy: May Lift - Occasional - 100 lbs. Frequent - 50 lbs. Constant - 20 lbs.	Medium: May Lift - Occasional - 50 lbs. Frequent - 20 lbs. Constant - 10 lbs.	Light: May Lift - Occasional - 20 lbs. Frequent - 10 lbs. Constant - Negligible	Sedentary: May Lift - Occasional - 10 lbs. Frequent - Negligible Constant - Negligible	Limited sedentary	According to special circumstances - depends upon nature of problem	Temporary adjustment - under evaluation - depends on situation	No work activity appropriate
A-S Musculoskeletal - Spine	All work activities	All work activities	Moderately high risk tasks	Moderate risk tasks	Slight risk tasks	Slight risk or special limits	Limited sedentary or substitute functions	According to special circumstances - depends upon nature of problem	Temporary adjustment - under evaluation - depends on situation	No work activity appropriate
B-G Neurology - General	All work activities	All work activities	Heavy, not sustained	Medium	Light or intermittent medium	Sedentary, without oxygen	Sedentary or ground-level tasks	According to special circumstances - depends upon nature of problem	Temporary adjustment - under evaluation - depends on situation	No work activity appropriate
B-E Epilepsy/Other Episodic Disorders	All work activities	All work activities	Heavy	Medium	Light	Sedentary	Sedentary, with oxygen	According to special circumstances - depends upon nature of problem	Temporary adjustment - under evaluation - depends on situation	No work activity appropriate
C Pulmonary (Lung)	All work activities	All work activities	Heavy	Medium	Light	Sedentary	No risk to others	According to special circumstances - depends upon nature of problem	Temporary adjustment - under evaluation - depends on situation	No work activity appropriate
D Cardiovascular (Heart/Blood Vessels)	All work activities	All work activities	Heavy	Medium	Light	Sedentary or decreased standing	Limited sedentary	According to special circumstances - depends upon nature of problem	Temporary adjustment - under evaluation - depends on situation	No work activity appropriate
E Hematology/Immunology/Oncology	All work activities	All work activities	No commercial driving	Medium	Light	Sedentary or decreased standing	Limited sedentary	According to special circumstances - depends upon nature of problem	Temporary adjustment - under evaluation - depends on situation	No work activity appropriate
F Ophthalmology (Eye)	All work activities	All work activities	No special bearing skills	Limited bearing equipment/power tools	Desk/bench work	Sound/light signals	No allergens/irritants	According to special circumstances - depends upon nature of problem	Temporary adjustment - under evaluation - depends on situation	No work activity appropriate
G Otolaryngology (E.N.T.)	All work activities	All work activities	No special bearing skills	Limited bearing	No hearing required	Limit noise exposure	No allergens/irritants	According to special circumstances - depends upon nature of problem	Temporary adjustment - under evaluation - depends on situation	No work activity appropriate
H Gastroenterology (Digestive)	All work activities	All work activities	Heavy, except at intervals	Medium	Medium - less work load	Sedentary	Selected facilities	According to special circumstances - depends upon nature of problem	Temporary adjustment - under evaluation - depends on situation	No work activity appropriate
I-G Genitourinary - General (G.U. - Male or Female)	All work activities	All work activities	Heavy	Medium	Light	Sedentary	Selected facilities	According to special circumstances - depends upon nature of problem	Temporary adjustment - under evaluation - depends on situation	No work activity appropriate
I-W Genitourinary - Women/Pregnancy	All work activities	All work activities	Heavy	Heavy, with adjustment	Medium	Light	Sedentary	According to special circumstances - depends upon nature of problem	Temporary adjustment - under evaluation - depends on situation	No work activity appropriate
J Diabetes	All work activities	All work activities	Heavy	Heavy, with injections	Minimal risk tasks	Limited risk tasks	Sedentary/limit standing	According to special circumstances - depends upon nature of problem	Temporary adjustment - under evaluation - depends on situation	No work activity appropriate
K Dermatology (Skin)	All work activities	All work activities	Limit exposure to allergens/irritants	Minimize irritants	Eliminate allergens	No exposure to irritants	No exposure to allergens	According to special circumstances - depends upon nature of problem	Temporary adjustment - under evaluation - depends on situation	No work activity appropriate
L-M Memory/Learning/Communication	All work activities	All work activities	Learn new, complex tasks	Complex tasks; usual supervision	Previous complex tasks with assistance	New, simple tasks with supervision	Simple tasks with supervision	According to special circumstances - depends upon nature of problem	Temporary adjustment - under evaluation - depends on situation	No work activity appropriate
L-P Psychiatrist/Psychologist/Diagnostician	All work activities	All work activities	All - with monitoring	Select tasks; monitoring	Medium tasks; close supervision	Limited tasks/risks; close supervision	Highly selected tasks/risks; close supervision	According to special circumstances - depends upon nature of problem	Temporary adjustment - under evaluation - depends on situation	No work activity appropriate
L-S Substance Use Disorders	All work activities	All work activities	Moderately high risk tasks; normal supervision <sup>a</sup>	Moderate risk tasks; intermediate supervision <sup>a</sup>	Slight risk tasks; increased supervision <sup>a</sup>	Limited risk tasks; close supervision <sup>a</sup>	No risk to self; close supervision <sup>a</sup>	According to special circumstances - depends upon nature of problem	Temporary adjustment - under evaluation - depends on situation	No work activity appropriate
M-M General Medical	All work activities	All work activities	Heavy; may reduce hours	Medium	Light	Sedentary	Limit exposure to others	According to special circumstances - depends upon nature of problem	Temporary adjustment - under evaluation - depends on situation	No work activity appropriate
M-S General Surgery	All work activities	All work activities	Heavy; may reduce hours	Medium	Light	Sedentary	Depends on type of problem	According to special circumstances - depends upon nature of problem	Temporary adjustment - under evaluation - depends on situation	No work activity appropriate

FIGURE 3 Summary of profile levels and work activities

are found on the back of the report form (Fig. 3). Further detailed information on each of the 21 health categories is provided in the UFR booklet. A summary of the Musculoskeletal Spine section of the UFR booklet is presented below (Table 4).

#### CATEGORY: MUSCULOSKELETAL SPINE

Most people report low back problems at some time in their lives, and national statistics indicate a general yearly prevalence in the U.S. population of 15–20%.<sup>41</sup> Low back problems are the second most common symptomatic reason expressed by patients for office visits to primary care physicians.<sup>42</sup> Among working-age people surveyed, 50% admit to back symptoms each year,<sup>43,44</sup> and back symptoms are the most common cause of disability for persons under age 45.<sup>45</sup> Various estimates of the total annual societal cost of back pain in the United States range from \$20 to \$50 billion.<sup>46</sup> In most instances, individuals appear to accept or tolerate back pain as an expected part of life, especially as they become older. However, when the spine is injured, there may be clear indication for adjustments in work expectations.

The issue is of concern not only for the worker's comfort and efficiency, but for the possible effects of work activities in causing increased pathology. While the details of medical history, physical examination, and special tests are essential for a correct diagnosis, clinical experience and, possibly, a functional capacity assessment can be used to estimate a person's fitness in the workplace.

The spine is divided into three segments: cervical, thoracic, and lumbosacral. Each of the segments shares, in general, limits on weightbearing or posture, such as lifting, carrying, bending, reaching, and standing. Problems including the pelvis should be handled as related to the lumbosacral spine or as a special situation, depending on the circumstance. Hip problems are considered under Category A-L (musculoskeletal—lower extremity).

Fractures of any segment of the spine or spinal surgery usually requires a variable amount of time off work, followed by a return to work with limitations of lifting and car-

**TABLE 4.** Category: Musculoskeletal-Spine

Profile Level	Circumstances	Appropriate Work Activity*	Possible Accommodations
1	No past limitation	All	None
2	Past limitation fully recovered	All	None
3	Mild limitation of function, but with little likelihood of aggravation.	Heavy	None
4	Slight limitation of function and/or with slight risk of aggravation.	Medium	Use of assistive devices, minimize standing, limitation of lifting, bending, stooping, carrying, etc.
5	Moderate limitation of function and/or moderate risk of aggravation.	Light	Change in height of work surfaces.
6	Severe limitation of function and/or marked risk of aggravation.	Sedentary	Special equipment. Limit distance from vehicle to work site.
7	Very severe limitation of activities with pain and decreased stamina.	Sedentary, with limitations	Special equipment, limited hours, special schedules, rest periods, etc.
8	Special circumstances	Depending on specific problem	According to situation
9	Under evaluation	Depending on situation	Temporary adjustment
10	Health problem where work activity is inappropriate	None	Review if improved

\*Profiles to be based on function with use of appropriate braces, etc.

rying even if protected by a brace or cast. Soft tissue lesions, on the other hand, usually become stabilized within a few weeks and generally permit a return to work with appropriate accommodations. As further healing takes place, the profile level and duration of exposure may be upgraded to permit more demanding work, bearing in mind the balance between the desire to return to a previous job versus the risk of aggravating the condition. Some degree of discomfort should be expected on return to work, even with appropriate accommodations. Chronic pain that extends beyond what might be expected from the defined pathology should be considered for its emotional overtones and also may be profiled under the psychiatric/psychological/emotional section, if appropriate.

If spinal injury results in significant damage to the spinal cord, causing partial or complete paraplegia, this condition also should be profiled under the general neurology section. If radiculopathy results, the effect on function of the limbs also may be profiled under the musculoskeletal—upper extremity section or the musculoskeletal—lower extremity section or both. If the cauda equina is damaged, bladder symptoms may be profiled under genitourinary and bowel symptoms under gastroenterology.

The following are some examples of suggested profile levels:

- A 22-year-old male with symptoms of neck and shoulder pain, normal clinical findings, with full range of motion; x-rays normal; Profile Level 3 with duration specified.
- A 30-year-old male with low back pain after a heavy load that he was helping to carry shifted; examination and x-rays negative; symptoms stabilized in 3 weeks; Profile Level 4, full-time.
- A 55-year-old female with a long history of low back pain treatments, with radiating leg pain (radiculopathy); decreased range of spinal motion; x-rays showed moderate spondylolysis and disc herniation at L5; Profile Level 5, duration specified.
- A 40-year-old obese male with gradual onset of mid-back pain after long hours of heavy lifting; extensive degenerative changes in the lumbar spine; Profile Level 4, duration specified.

These profiles are both dynamic and flexible. If a patient shows progressive recovery, worsening, or the development of another condition, the profile level, along with the exposure duration, can be modified as needed. For example, if the 55-year-old female patient above had a seizure 2 months ago, and was now on medication, she would currently have a profile level 7 under the epilepsy category and a level 5 under musculoskeletal-spine. These recommendations would suggest that her appropriate work activities would be “sedentary and ground level; using handheld tools with permitted exceptions.”

#### History of Medical Condition

The medical history is one of the most important factors a physician or employer can rely on to identify worker's risk to themselves or others. The rationale for this recommendation is based on the medical literature.<sup>47</sup> For conditions such as low back pain (LBP), some believe that history is the most important component for the prediction of risk.<sup>48,49</sup> Recurrent episodes of LBP appear frequently to be a precursor of future LBP. Rowe<sup>50</sup> found that 83% of those with LBP had recurrent attacks. Patients with sciatica had a recurrence rate of 75%<sup>51</sup> Similar recurrence rates have been reported by other investigators.<sup>52,53</sup> In determining the significance of the history, a number of factors must be considered. These include; ongoing treatment, the number of visits received for an injury to the same region, prior objective testing to the same region, prior work restrictions because of problems in the same area, the duration

since last episode, the number of prior episodes in the same region, and prior time lost from work because of symptoms in the same region.

These factors have been severity indexed (Fig. 4), which allows an evaluator a reasonable and logical approach to improve uniformity and reliability in determining risk from prior occurrences. Determining severity of prior occurrences, combined with other tests, may be a way of increasing the predictive value. Further outcome studies must be completed to refine and validate this process.

### Functional Capacity Evaluations

The Functional Capacity Evaluation (FCE) is another component to assist in placing an individual in a UFR Profile. It is an extensive set of tests that purports to assess an individual's ability to perform work at the present and in the future.<sup>54</sup> A review of the medical literature on FCEs reveals that professionals who conduct, report, and interpret FCEs are concerned about the absence of formal standards, outcomes, and specific guidelines for these assessments. The ways in which the FCEs currently test for information vary in the number of measurements obtained, degree of standardization, clarity of the concepts and underlying theories, variety in choice of measuring instruments, adequacy of measurement for certain injury groups, use and availability of normative data, and ability to predict return to work or recurrence of injury.

Severity Indexing for Determining Future Risk			
Severity Index the History for Treatment/Testing to the Same Anatomical Region by the Following Schedule:			
Score	0	1pt.	2pts.
A Time Lost from Work in the Last 12 Months Because of Symptoms in the Same Region.	0	1-3 days	>3 days
B Number of Prior Episodes in the Same Region	0	1-3	>3
C Duration since Last Episode	0	1-3 Years	<1 year
D Prior Work Restrictions Because of Problems in the Same Region	None	Temporary	Permanent
E Prior Objective Testing to the Same Region: (EMG-NCV, X-ray, MRI-CT, Bone Scan)	>3yrs	If taken prior to 2 years	If taken within the last 2 years
F Prior to latest claim, what ongoing Medical, Physical Therapy Chiropractor, etc, visits were received for an injury to the same region.	0-2 times in last 3 yrs	3-6 times in last 3 yrs	>6 in last 3 yrs

Points	Risk	Recommendations
0 - 3 pts	Minimal Risk for Future Recurrence	Administrative or ergonomic/engineering considerations to reduce future risk of recurrence
3 - 6 pts	Moderate Risk for Future Recurrence	
>7 pts	High Risk for Future Reoccurrence	Individual being evaluated should not return to work at prior work level or forces
Total pts		

**FIGURE 4.** Prior history severity indexing and recommendations. A significant predictor of future problems in any given area is the patient's past medical history. This model provides a reasonable and logical approach for an evaluator to improve uniformity and reliability in determining risk from prior occurrences.

An extensive review of the 10 most used FCEs was published in the official journal of the American Physical Therapy Association.<sup>55</sup> Issues of interrater reliability, intrarater reliability, report writing, qualifications of examiners, examiner training, projection of findings to an 8-hour day, and safety demonstrate significant variations among systems manufacturers. Predictive validity is defined as the ability of any test to predict future performance. FCEs typically are ordered to assess current patient ability or future risk. Of the 10 most common commercially available systems, only one had any validation studies published in a peer-reviewed scientific journal. Regarding validity, the review article concludes, "Lack of peer-reviewed publications for the FCEs reporting the completion of validity studies leaves open the question of whether the FCEs are acceptable. With the exception of the PWPE (ErgoScience), the FCEs reviewed for this article do not provide the validly studies that are seen as the prerequisite for demonstrating that a measure is credible."<sup>56</sup> In summary, the FCE is not a stand-alone test, but currently a somewhat subjective test, that can be utilized with other findings, albeit with caution, in determining a fitness profile.

### Worker Improvement Efforts

An essential component to be considered before placing an individual in a UFR profile is the effort the individual has expended to improve his or her health. Studies have demonstrated compensation for injuries can inherently affect effort and thereby prolong recovery,<sup>57,58,59</sup> increase disability,<sup>60,61,62,63</sup> and decrease the potential to return to work.<sup>64,65,66</sup> All individuals being considered for placement in a UFR profile, can be categorized into one of four effort quadrants (Fig. 5).

Considerable concern and resources are spent in determining the effort quadrant in which patients perform. Patients whose efforts are not sincere during rehabilitation or testing may overuse treatment, have a prolonged recovery, have increased cost of care, or receive unwarranted disability payments.<sup>67,68,69</sup> However, healthcare providers have been known to erroneously label patients as giving poor effort or as "symptom magnifiers." These unwarranted labels can be emotionally and financially devastating to the patient, particularly when an undiagnosed medical condition is discovered that was significantly limiting performance.

Currently, a number of procedures are promoted as ways a clinician can detect effort. An excellent and comprehensive review of the eight most widely used methods used to detect sincerity of effort is available (Table 5).<sup>70</sup> The article concludes: "The American Physical Therapy Association standards for measurements and practice require that clinical measurements used to detect sincerity of effort have established validity. Currently, clinicians do not have legitimate tools or methods with which to make these assessments. Any statements regarding sincerity of effort, therefore, are strictly clinical opinion. Therapists who draw unwarranted conclusions from test results are violating the rights of the person being tested." As with the conditioning of any athlete, effort assessments are best made by a clinician who has continuously worked with an

1. Can do Good Effort	3. Can't do Good Effort
2. Can Do Poor Effort	4. Can't Do Poor Effort

**FIGURE 5.** Effort quadrants.

**TABLE 5.** Widely Used Methods for Determining Sincerity of Effort.

Waddell's nonorganic signs
Coefficient of variation
Bell-shaped curve
Rapid exchange grip
Correlation between musculoskeletal evaluation and functional capacity evaluation
Documentation of pain behaviors
Documentation of symptom magnification
Ratio of heart rate to pain intensity

individual over the course of rehabilitation. Even for a single visit, documentation of compliance, physiological observations, performance indicators, pain behaviors, and the therapist's intuition<sup>71</sup> are easy to record and provide the reader with an indication of the perceived effort individuals are expending to help themselves. A list of some of these indicators is given the acronym BICEPS (Fig. 6). Validation of these indicators will need to be prospectively studied.

### Confidentiality of Information

Physicians and employers alike must remember that all medically related information must be kept confidential at the worksite and limited only to what is necessary for an appropriate job assignment or for making a reasonable job accommoda-

Individual Effort Indicators (BICEPS)		
<b>B</b> ehavior	Compared with other patients having similar conditions, pain behaviors that appear amplified such as grimacing, verbal expression, over reaction, give away weakness, and non physiological pain and movement patterns should be noted during each visit.	
<b>I</b> ntuition	Most clinicians have extensive experience as they have participated in the rehabilitation of hundreds of various individuals with different diagnosis. This valuable experience provides clinicians with an intuitive sense of an individuals desire to improve that is reportable.	
<b>C</b> ompliance	Attendance	Number visits Scheduled/No. Attended.
	Punctuality	Time Scheduled /Time Began
	Completion of Program	Record % of Assigned Program to % Completed
<b>E</b> xpectations:	Positive as well as negative comments reflecting personal expectation rehabilitation/Testing	"I have to get back to work", "When can I get back to work" etc. "I can't go back" or "I don't know why they are doing this to me, they know I will never be able to go back to work" etc.
<b>P</b> erformance	Is the patient's observed performance consistent with what they indicate they can do?	Walking Tolerance
		Sitting Tolerance
		Standing Tolerance
<b>S</b> igns	Notes taken of the following physiological signs as to whether observations are consistent with experience with other patients with similar conditions.	Heart Rate:
		Respiration Rate
		Perspiration

**FIGURE 6.**

tion. In certain instances, an employer may have a "need to know" as described below. However, specific information about the nature of the medical condition must be kept confidential in the employee's personal medical record. Supervisors are only entitled to know the limitations of the profile level indicated. By using the UFR form and simply noting the nature of a worker's problem and checking the appropriate profile level, the ADA requirements for confidentiality are met and the employer is permitted to act in a prudent and reasonable fashion. Exceptions to this include the following: (1) supervisors and management must be informed about necessary work restrictions; (2) first aid and safety personnel should be informed if the disability may require emergency treatment or if any specific procedures are needed in the case of fire or other evacuations; (3) government officials can investigate compliance with ADA; (4) relevant information must be provided to state workers' compensation offices or second-injury funds; and (5) relevant information must be provided to insurance companies for cases in which the company requires a medical examination in order for health or life insurance to be provided.

### Use of Skill and Judgment

The following quotation from the AMA Guides represents the philosophy by which use of the UFRs in the workplace should be governed:

*The physician's judgment and his or her experience, training, skill, and thoroughness in examining the patient and applying the findings to the AMA Guides criteria will be factors in estimating the degree of the patient's impairment. These attributes comprise part of the art of medicine, which, together with a foundation in science, constitute the essence of medical practice. The evaluator should understand that other considerations will also apply, such as the sensitivity, specificity, accuracy, reproducibility, and interpretations of laboratory tests and clinical procedures, and variability among observers' interpretations of the test and procedures.*<sup>72</sup>

### SUMMARY

UFRs have been developed to enhance the objective flow of fitness-for-duty information between physicians and employers of any condition(s) physicians are presented with. These efforts are preliminary to what could become a more refined and objective method of describing individual fitness. UFRs also provide a service consistent with Principle VH of the American Medical Association's Principles of Medical Ethics, which states that, "a physician shall recognize a responsibility to participate in activities contributing to and improving the community."

Copies of the *Unified Fitness Report Booklet* and the Report Forms will be available at a reasonable cost from the Utah State Department of Health, 288 North 1460 West, P.O. Box 15680, Salt Lake City, Utah 84116-1580. All or part of the *Unified Fitness Report Booklet* may be duplicated freely by individuals or organizations for their use, but not for purposes of sale or profit.

### Acknowledgment

Special acknowledgment is given to Dr. Madison Thomas, Task Force Chairman, and the 28 members of the Utah Medical Association who contributed to the UFR.

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