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**Relative Maximum Values Approach to Estimating  
Impact of Permanent Disability Rating Schedule  
Effective 1/1/05**

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E-mail: frankn@uclink4.berkeley.edu**Mapping pre-2005 CPDRS to AMA Guides and Estimating the Expected Change in Average Rating and Average Indemnity Award****Executive Summary**

The effect of the adoption of a new permanent disability rating schedule can be estimated by mapping ratings under the pre-2005 California Permanent Disability Rating Schedule to ratings expected under the AMA-based schedule that took effect January 1, 2005. This paper describes a method to conduct such a mapping and provides an estimate of the effect of the change in rating schedules.

The pre-2005 California Permanent Disability Rating Schedule is referred to as “CPDRS.” The CPDRS used a “standard rating” for the evaluation of each disability which was then adjusted for the age and occupation of the injured worker to produce the final disability rating. The schedule adopted effective January 1, 2005 is referred to as the “1/1/05 schedule.” The 1/1/05 schedule uses impairment ratings according to *AMA Guides for the Evaluation of Permanent Impairment* (5<sup>th</sup> edition), often referred to as “AMA impairments” or “impairment ratings.” The 1/1/05 schedule introduces a new adjustment factor for diminished future earning capacity, called the FEC adjustment. The remaining adjustments are the same adjustments for age and occupation that were used in the CPDRS.

The mapping approach described in this paper employs a combination of empirical data developed under the CPDRS and the relative maximum values of ratings that are possible for each type of injury under the CPDRS and the AMA Guides. This approach using relative maximum values is designated as the RMV approach. The ratio of the maximum ratings for each impairment under the two schedules can be thought of as a way to fit the distribution of impairment values under the CPDRS within the new maximum values under the AMA Guides. For example, if the maximum possible standard rating for a spine impairment was 100 under the CPDRS and the average maximum possible impairment rating for the three regions of the spine is 63.4 under the AMA Guides, then the ratio is 63.4 to 100. Under this example, a disability that received a 50% rating under the CPDRS would be expected to receive approximately a 32% impairment rating under the AMA Guides. The 1/1/05 schedule provides an FEC adjustment of 1.27 for spine impairments, which would bring the FEC-adjusted impairment up to 40%. The

distribution of spinal ratings would change as reflected by Figure 1.

A large sample of ratings from the Disability Evaluation Unit (DEU) was used as the empirical basis for this work. Impairment categories that each had at least 100 summary ratings in the DEU data were mapped to the AMA Guides. These impairments accounted for 95.6% of all summary ratings by the DEU. After the ratios for each type of impairment were established, we recalculated the disability ratings for a very large sample of ratings (n=218,053) from the DEU by applying the RMV ratio to the prior rating to estimate the predicted impairment rating under the AMA Guides.

In addition, we calculated the amounts of permanent disability indemnity payments under the CPDRS and the 1/1/05 rating schedule using the indemnity rates in effect for 2006, as legislated by AB-749 and SB-899.

Evaluating spinal impairments required additional steps. The AMA Guides distinguish between impairments to lumbar, thoracic, and cervical regions of the spine. The AMA Guides apply very different maximum values to each region of the spine, ranging from a maximum of 75% for the lumbar region to 20% for the thoracic region. Because spinal impairments constitute about 30% of all PD ratings and the difference in values between regions is so large, it was necessary to identify the frequency distribution of ratings for each region. Table 4 gives the estimated distribution of spinal impairments by spinal region.

The comparison of the CPDRS and AMA Guides was made with and without the adjustment for future earning capacity (FEC). The FEC adjustment applies one of seven factors, between 1.1 and 1.4, that increase the AMA-rated impairment to reflect the varying economic consequences of impairments to different parts of the body.<sup>1</sup>

Applying the FEC adjustment required an additional mapping of the 7 FEC factors to each of the impairment categories mapped between the CPDRS and the AMA Guides. The distribution of FEC adjustment factors is given in table 5. The main conclusions about the FEC adjustment are:

- The weighted average FEC adjustment is approximately 1.22.
- Because ratings cannot exceed 100, the actual impact is to increase the unadjusted AMA rating by 22.2%.
- Since indemnity payments rise more rapidly than ratings, the overall effect of the FEC factor is to increase indemnity payments by about 33.8%.

Finally, we calculated the overall effect of moving from the pre-2005 CPDRS to the 1/1/05 schedule. This was done by calculating new ratings for all 218 thousand summary ratings under the pre-2005 Schedule, the AMA Guides before adjustment, and the final rating using the FEC adjustment in the 1/1/05 schedule. The results are shown in Tables 6 and 7. The main conclusions are:

For AMA Guides without application of the FEC:

- Using the relative maximum value approach, we estimate the average rating under AMA Guides will be reduced by 19.0%, before application of FEC.

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<sup>1</sup> Note: the 1/1/05 PD schedule ranks factors from “One” to “Eight,” but the third rank is never used.

- Using the relative maximum values approach, we estimate the average PD indemnity payments will be reduced by 24.0%, before application of FEC.

The final estimation, including the adjustment for the FEC gives the following results:

- Using the relative maximum value approach and including the FEC adjustment, average ratings under the AMA Guides will be about 1.1% less than under the previous schedule.
- Using the relative maximum value approach and including the FEC adjustment, average indemnity awards under the AMA Guides will be slightly higher, about 1.7% more, than under the previous schedule.

Several alternative estimates were made using the RMV approach that gave slightly different results. The most important of these involved limiting the maximum value of ratings for the spine by using the limits imposed by the Diagnostic Related Estimate (DRE) approach. The DRE approach resulted in lower average ratings for spine impairments and reduced the overall average rating. Under this approach ratings under the 1/1/05 schedule, after FEC were 8.2% less and indemnity awards were 7.0% less.

These estimates should be used with caution. First, and most important, this approach does not estimate the impact on employers' costs or workers' payments of cases that will receive zero ratings under the AMA Guides. A significant portion of cases that received positive ratings under the CPDRS may not receive a rating under the more limited definition of impairment used by the AMA. The estimates presented here should be thought of as the average ratings and average indemnity awards for those permanently disabled workers that are considered impaired under the AMA Guides criteria. This suggests that the cost savings estimates are too conservative and should be adjusted for the readers estimate of the portion of claims that would have received a rating under the CPDRS but are excluded under the 1/1/05 Schedule.

On the other hand, the ratings under the CPDRS that are extracted from the DEU represent the results of the actual process of rating, using various doctors, rather than the 'perfect' process that might be associated with an AMA evaluation specialist. Especially in the short- to medium-term, one might expect doctors to apply ratings that will partially reflect their past experience with similar injuries under the CPDRS.

Consequently, while this might be considered a conservative estimate of the reduction in average PD ratings and awards in the long term, it may represent a reasonable approximation of PD ratings during the short to medium term adjustment period.

## Mapping pre-2005 CPDRS to AMA Guides and Estimating the Expected Change in Average Rating and Average Indemnity Award

### *Purpose*

SB 899 required the Division of Workers' Compensation (DWC) to adopt a permanent disability rating schedule based on the AMA Guides but taking into account the impact of proportional wage loss as defined by prior RAND studies.<sup>2</sup>

The Insurance Commissioner is required to post recommended pure premium rates based, in part, on recommendations by the Workers' Compensation Insurance Rating Bureau of California (WCIRB). In order for the Insurance Commissioner and WCIRB to calculate appropriate rates, it is necessary to estimate the impact of changes to the permanent disability rating schedule on benefit payments. In this case, the effort targets a mid-year pure premium adjustment effective July of 2005.

There are several efforts underway meant to offer alternative estimates for the impact of the newly adopted permanent disability schedule. This paper describes what we will call "relative maximum values" or RMV approach. Other approaches that are being pursued are:

- Re-rating a series of medical legal reports and comparing the ratings obtained for the AMA Guide based schedule with those previously given by the DEU under the CPDRS. This study is being undertaken by Chris Brigham with the cooperation of the DEU and CHSWC at the request of the WCIRB.
- Comparing actual DEU ratings for various impairments under the new schedule with the ratings given by the DEU under the previous schedule. This approach requires extracting and analyzing data from the DEU's rating database. The study is being undertaken by Frank Neuhauser with the cooperation of the DEU at the request of the Commission on Health and Safety and Workers' Compensation (CHSWC) and the WCIRB.

Together these three studies will allow:

- Rate-makers the opportunity to estimate the impact of the PD schedule change,

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<sup>2</sup> Labor Code Section 4660 provides, in part:

(a) In determining the percentages of permanent disability, account shall be taken of the nature of the physical injury or disfigurement, the occupation of the injured employee, and his or her age at the time of the injury, consideration being given to an employee's diminished future earning capacity.

(b) (1) For purposes of this section, the "nature of the physical injury or disfigurement" shall incorporate the descriptions and measurements of physical impairments and the corresponding percentages of impairments published in the American Medical Association (AMA) Guides to the Evaluation of Permanent Impairment (5th Edition).

(2) For purposes of this section, an employee's diminished future earning capacity shall be a numeric formula based on empirical data and findings that aggregate the average percentage of long-term loss of income resulting from each type of injury for similarly situated employees. The administrative director shall formulate the adjusted rating schedule based on empirical data and findings from the Evaluation of California's Permanent Disability Rating Schedule, Interim Report (December 2003), prepared by the RAND Institute for Civil Justice, and upon data from additional empirical studies.

- Policymakers to evaluate the appropriateness of the FEC adjustments under the 1/1/05 schedule, and
- Legislators to evaluate the adequacy of benefits under the 1/1/05 schedule.

### *Relative Maximum Value Approach*

A number of observers have expressed the opinion that the AMA Guides give significantly lower ratings for specific impairments than were given under the pre-2005 CPDRS. For example, the Commission on Health and Safety and Workers' Compensation (CHSWC) has analyzed a series of examples and found that the AMA Guides offer consistently lower estimates.<sup>3</sup> A study by J. Paul Leigh for the California Applicant Attorney Association (CAAA) rated a sample of medical legal reports under both schedules and found that while some reports rated higher and some lower, overall the AMA Guides gave lower average ratings. A sample of cases from Colorado rated under the AMA Guides 5<sup>th</sup> edition resulted in lower average ratings for impairments than typically observed in the California system. While each of these different approaches has strengths and add usefully to the debate, they also have important limitations. Generally, they rely on non-representative samples and subjective evaluations by a limited set of observers.

The Relative Maximum Values (RMV) approach avoids the problems of sample selection by considering nearly the entire universe of claims. It also avoids, to the extent possible, the subjective evaluation of individual observers by applying a transparent empirical approach. That said, there are important caveats to the approach that will be discussed later.

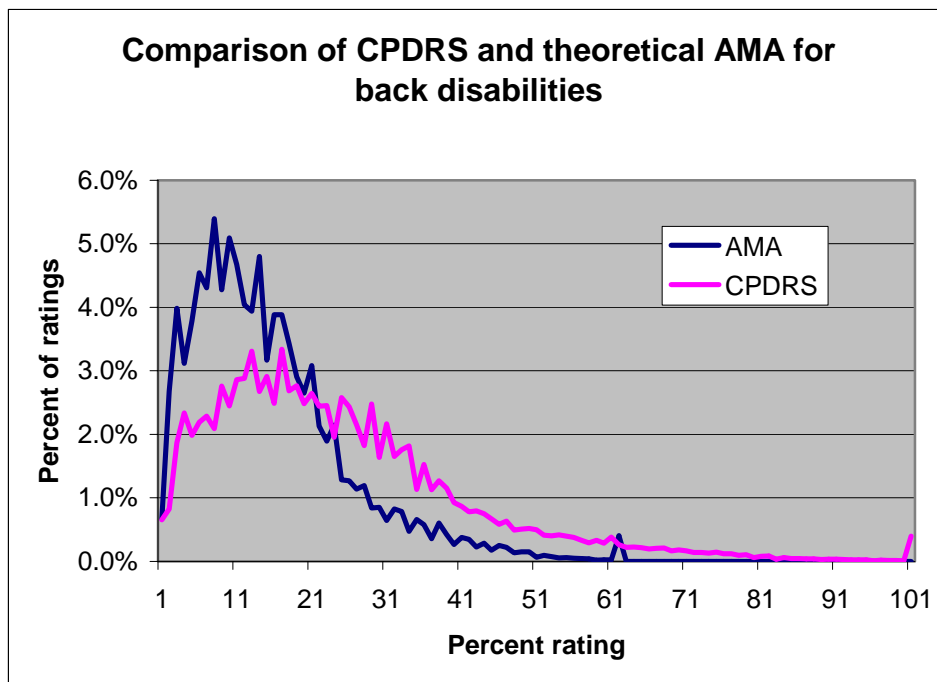
RMV takes advantage of the maximum values assigned to each impairment in the CPDRS and the AMA Guides. It compares these values and creates a ratio of the AMA Guides to the CPDRS for each impairment. It then assumes that the distribution of ratings under the AMA Guides will be similar to the CPDRS, but the mean will be shifted up or down by the ratio of the maximum values.

An example may make this process clearer. As will be discussed later, the AMA Guides has an average maximum value for the spinal impairments of 63.4%. The CPDRS allows a maximum value of 100% for spinal impairments. Consequently, we assume that the distribution of severity within the spinal impairments will be the same, but the average value and distribution will be reduced by the factor 0.634. The value for about 86 thousand spine disabilities in the DEU database was evaluate using this method and each rating was revalued to reflect the 0.634 factor. The result is displayed in Chart 1.

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<sup>3</sup> Available from the Commission on Health and Safety and Workers' Compensation on request.

Figure 1



As one can observe, the distribution of back ratings is shifted to the left and the mode is more concentrated around 11-12% than 15-20%. The result will be that the average rating is about 40% lower. The average indemnity award will be reduced even more because of the progressive nature of the indemnity payment schedule.

This same calculation was made for all types of impairments in the DEU database that had more than 100 summary ratings within each type. The table in Appendix 1 gives the maximum values assigned to each of the approximately 96 impairments for which maximum values could be assigned. In some cases, e.g. immobility of the knee joint, maximum values for the impairment type were assigned to disability categories of less than full loss (e.g. less than complete immobility of the knee joint) on the assumption that the ratio between the two schedules will be similar across the range of partial loss of function. As another example, finger amputations are valued at the carpal (maximum value), proximal, and distal joints. For simplicity, we used the relative values for the carpal joint for comparison of all finger amputations.

*Special Analysis for Spinal Impairments*

The CPDRS defines one category of back impairment. (DISCAT 18.x., pre-4/1/97, and 12.1, post-4/1/97). There are three levels of severity indicated by the place to the right of the decimal point.) The AMA Guides define three separate regions of the back: lumbar, thoracic, and cervical. Under the AMA Guides, these areas are given different body-part to whole body ratios. Our current data are defined in the following table along with the AMA

whole body ratios.

**Table 1: Comparison of CPDRS and AMA for Back Impairments and Wage Loss**

Body Part	Proportional Earnings Loss	Final Rating	Avg. rate/ Avg. WL	CPDRS Whole Body	AMA Whole Body Ratio
Back	.163	.212	1.30	1.00	
					.35 Cervical
					.20 Thoracic
					.75 Lumbar

The original DEU and wage loss data did not allow us to discriminate between various parts of the back and to fill in the 2<sup>nd</sup> through 4<sup>th</sup> rows in the table above for the AMA categories. However, data from a text field of the DEU database called the “Digest” allowed us to determine the distribution of impairments by region of the spine. We gathered these for a sample of single-impairment back disabilities between 1991 and the beginning of 2003.

The Digests are used by raters to explain the basis for ratings. They include a description of the impairment and some indication of the basis for the severity determination. We had a sample of 29,536 back claims with digests.

The back digests are written out as separate lines of text. The lines are a maximum of 30 characters. I am not sure if there are limits on the number of lines in the database, but we limited our search to the first 40, 30-character strings in order to make the dataset more manageable. This included 99.3% of all text fields. A higher percentage of all unique claims had their entire text included (99.7%) The first step in the analysis was linking all text lines for a specific impairment and then concatenating the text. Concatenation is important if one wants to search for terms like “lower back” which could be split across two lines of text. This also required removing extra spaces at the end of lines.

Next, I selected a set of search terms defining different sections of the back. The following table indicates the number of unique claims that included at least one reference to the term. Not all back digests included a reference to the key search terms.

**Table 2: Search Terms for Back Digest Analysis by Region of Spine**

Main Term	Terms used as additional search terms for main body part	Unique claims with at least one occurrence



Lumbar		2,521
	Low back	5,583
	Lower back	673
Thoracic		177
	Upper back	556
	Shoulder	1,777
Cervical		1,368
	Neck	4,232

The above table cannot be summed to get the total number of claims that can be used for sub-category analysis. Many digests included terms covering more than one area of the back. For example, a digest might indicate that the worker experiences pain in both the lumbar and cervical region. Consequently, claims with successful matches to one or more search terms are assigned to one of the main categories or one of four possible combinations or regions. These numbers are given in the table below.

**Table 3: Search Results for Back Digest Text Search**

<b>Groups</b>	<b>Number of unique claims</b>	<b>Code</b>
Lumbar	6,190	1
Thoracic	452	2
Cervical	2,452	3
Lumbar + Thoracic	266	12
Lumbar + Cervical	1,024	13
Thoracic + Cervical	1,140	23
Lumbar + Thoracic + Cervical	462	123

The greatest concern is the overlap between the thoracic and cervical areas. Use of “shoulder” in the search terms could pick up some cervical related issues. There is a substantial overlap between these two areas when we search for terms descriptive of both, i.e., the combined Thoracic+Cervical is a larger sample than the Thoracic alone. These concerns may be somewhat mitigated by the similarity in the body part to whole person ratios used by the AMA Guides which give similar maximum values to the thoracic and cervical areas

The following table shows a breakdown of the distribution of the frequency of claims and the average rating. To create maximum values for the combination impairments, e.g. Lumbar + Thoracic, the maximum values for each spinal region were combined using the AMA combined values chart (p. 604-5).

<b>Spinal Area</b>	<b>Distribution within spine</b>	<b>Average Standard Rating</b>	<b>Maximum CPDRS</b>	<b>Maximum AMA Guides</b>
<b>Lumbar</b>	50.7%	19.90	100	75
<b>Thoracic</b>	4.1%	18.16	100	20
<b>Cervical</b>	20.1%	19.84	100	35
<b>Lumbar+ thoracic</b>	2.3%	21.43	100	80
<b>Lumbar + cervical</b>	8.7%	20.08	100	84
<b>Thoracic + cervical</b>	10.0%	18.64	100	48
<b>All three</b>	4.1%	20.88	100	87
<b>Weighted Average</b>	<b>100%</b>	<b>19.51</b>	<b>100.0</b>	<b>63.4</b>

Since we do not know the specific spinal region or combination of regions for each of the more than 80 thousand summary rated spinal disabilities in the DEU dataset, even many of those with back digests, we assigned the weighted average value of the maximums as the appropriate maximum value under the AMA Guides. Since the maximum value under the CPDRS was 100, the ratio used for back disabilities was 0.634.

This ratio, when applied to the DEU ratings results in a distribution of final ratings that is reflected in chart 1 above.

#### *Future Earning Capacity (FEC) Factors*

The 1/1/05 schedule makes use of an additional factor, the Future Earnings Capacity (FEC) adjustment. This adjustment serves two purposes. The adjustment is meant to improve the equity across impairments by adjusting the relative values to reflect relative proportional wage loss associated with the impairments.<sup>4</sup> Since the FEC values range from

<sup>4</sup> Two sources offer greater detail on this process.

Seabury, Seth, Robert Reville, and Frank Neuhauser, "Data for adjusting disability ratings to reflect diminished future earnings and capacity in compliance with SB-899." RAND, DRR-3524-ICJ, November 2004.

Reville, Robert, Seth Seabury, and Frank Neuhauser, "Evaluation of California Permanent Disability Rating Schedule: Interim Report." RAND, DB-443-ICJ, 2003.

1.1 to 1.4, they also have the effect of increasing the ratings to offset the anticipated differences in scale between impairments under the AMA Guides and disability ratings under the CPDRS.

Since the effect of the FEC adjustment can be large, especially in terms of average dollars paid, we also analyzed the impact of the FEC factors. This was done by identifying the FEC factors for each of the 96 impairment categories that were mapped between the CPDRS and the AMA Guides. The distribution of FEC factors was then analyzed by determining the frequency with which the factors would have appeared using impairments in the DEU dataset. Table 2 gives the distribution for each of the eight factors.<sup>5</sup>

<b>FEC</b>	<b>FEC Factor</b>	<b>Percent of Impairments</b>
One	1.1000	15.25
Two	1.1429	15.55
Three	1.1857	0.00
Four	1.2286	8.34
Five	1.2714	48.67
Six	1.3143	0.64
Seven	1.3571	9.38
Eight	1.4000	1.43
<b>Weighted Average FEC</b>	<b>1.2224</b>	

The average value of the FEC adjustment is 1.2224, when weighted by the distribution of impairments in the DEU dataset. The actual impact on ratings is somewhat less than 22% because impairments cannot exceed 100%. The actual effect is to increase the average rating by about 21%.

#### *Final Estimation of the Effect of the AMA Guides*

For most impairments, the AMA Guides have lower maximum ratings for specific impairments (examples of higher ratings under AMA are ankle instability and grasping power). However, the application of the FEC factor can often result in ratings that are higher

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<sup>5</sup> Note that there are 8 factors in the table with assigned values. However, factor 3 is not assigned to any impairments in practice.

under the 1/1/05 schedule. For example, psychiatric disabilities under the CPDRS have a maximum of 100. The post-2005 schedule uses the Global Assessment of Functioning scale and assigns values of up to 90. This ratio of .90 however is adjusted by the FEC factor of 1.4 and results in a final ratio for comparing the schedules of 1.26.

Table 6, below, gives the estimated impact of the AMA impairment ratings on permanent disability ratings and indemnity payments before the application of the FEC factors. Before application of the FEC, the RMV method finds that the average rating would be 19.0% lower, and average indemnity awards would be reduced by 24.0%

**Table 6: Comparison of Ratings Under Pre- and Post-2005 PD Schedules Using Relative Maximum Values (without FEC adjustment)**

	Average Rating	Average Award
CPDRS Pre-2005 Schedule	20.26	\$22,026
AMA Based Post-2005 Schedule	16.40	\$16,746
Percent Difference	-19.0%	-24.0%

n=218,053

The application of FEC adjustments makes a substantial improvement in the match between the old and new schedules. As Table 7, below, shows, using the RMV method, we find only very small differences between the two schedules. The average rating is reduced by about 1.1%. However, because application of the FEC makes that distribution of ratings somewhat wider, the average indemnity award actually increases under the 1/1/05 schedule, by about 1.7%, for those workers receiving an impairment rating under the more restrictive AMA impairment definitions.

**Table 7: Comparison of Ratings Under Pre- and Post-2005 PD Schedules Using Relative Maximum Values (including FEC adjustment)**

	Average Rating	Average Award
CPDRS Pre-2005 Schedule	20.26	\$22,026
AMA Based Post-2005 Schedule	20.04	\$22,404
Percent Difference	-1.1%	+1.7%

n=218,053

*Alternative Specifications*

Reviewers of this paper have made a number of suggestions, including some alternatives to the RMVs that are presented in Appendix 1. As a result of reviewer comments a very low maximum value was adopted for head aches under the AMA Guides (maximum of 3% whole person). An alternative specification (maximum 70%) was also evaluated. The higher maximum has a small on total values these particular impairments are infrequent (e.g., headaches are less than 1% of impairments).

One proposed adjustment, to spinal RMVs, may be important because spinal impairments are approximately 1/3<sup>rd</sup> of all summary PD ratings done by the DEU. Consequently, we explored this adjustment in more detail.

Table 8 offers alternative maximum values for each of the three spinal regions and 4 combinations of regions and compares those with the maximum possible values dictated by AMA. The alternative values arise because for the majority of spinal impairments, AMA expects them to be evaluated under Diagnosis Related Estimates (DREs). DREs have lower maximum values than allowed for lumbar range of motion (ROM) estimates and slightly higher maximums for cervical and thoracic. Since lumbar impairments dominate, the overall effect is to decrease average ratings if a portion of spinal impairments are expected to be restricted by DRE maximums.

A problems with applying multiple maximums within spinal regions are 1) that we do not know the portion of cases that will be subject to the alternative maximums and 2) we do not know whether cases rated under DREs are typically more or less severe than those rated under ROM.

Chris Brigham, an expert on AMA Guides, estimated that about 90% of cases should be rated under the DRE method. For purposes of the alternative estimate made here, we choose a slightly less restrictive break point and assume that 75% of cases will be evaluated under the DRE method. This later estimate reflects the likelihood that evaluators will be less consistent in their application of AMA Guides criteria, some may believe that ratings under AMA underestimate the true level of disability especially if they are anchored to CPDRS values and some may aggressively pursue higher ratings for their patients for a variety of reasons.

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**Table 8: Distribution of Spinal Values Using DRE Maximum Values**

<b>Spinal Area</b>	<b>Distribution within spine</b>	<b>DRE Maximum</b>	<b>75/25 DRE/ROM</b>	<b>Maximum AMA Guides</b>
<b>Lumbar</b>	50.7%	28	54	75
<b>Thoracic</b>	4.1%	28	26	20
<b>Cervical</b>	20.1%	38	37	35

<b>Lumbar+ thoracic</b>	2.3%	48	56	80
<b>Lumbar + cervical</b>	8.7%	55	62	84
<b>Thoracic + cervical</b>	10.0%	55	53	48
<b>All three</b>	4.1%	68	73	87
<b>Weighted Average</b>	<b>100%</b>		<b>50.9</b>	<b>63.4</b>

The implication of majority use of DREs is to predict a lower weighted average maximum impairment rating for AMA Guides spinal impairments. Assuming that DREs will be the approach used in 75% of cases, we get a weighted average maximum of 50.9 instead of 63.4.

The impact on average ratings and indemnity payments of using this alternative compared to the pre-2005 CPDRS is:

- Using the alternative spine maximums and the RMV approach and including FEC factors, average ratings for all impairments under the AMA Guides will decline by 8.2% to 18.6.
- Using the alternative spine maximums and the RMV approach and including FEC factors, average indemnity payments for all impairments under the AMA Guides will decline by 7.0% to \$20,488.

A second modification to the primary estimates suggested by reviewers was to estimate the impact of switching to the AMA Guides on the costs of Life Pensions (LP) and Permanent Total Disability (PTD) payments. LP payments are made on cases where the rating is greater than or equal to 70% and involve a complicated formula for calculating the payments which begin after PPD is paid out and are paid for the remainder of the claimant's life. PTD is paid bi-weekly starting when the worker is permanent and stationary and continuing for the remainder of the claimant's life. Both benefits are subject to COLAs.

Estimation of the impact of AMA on LP and PTD involves estimating both the change in the frequency of these benefits and the difference between receiving LP or PTD and the alternative PD award under the CPDRS. We estimate the portion of PD ratings that would receive Life Pensions and Permanent Total Disability under the CPDRS and the 1/1/05 schedule. These data are shown in Table 9. The 1/1/05 schedule results in a doubling of PTD claims and a 23% increase in the portion of claims receiving a life pension. However, the impact on cost is small because the change in value is often small (life pension cases) or the cases are very infrequent (PTD cases).

Only a small fraction of cases receive either Life Pensions (1.6%) or PTD (0.6%) under the new schedule. PTD cases under the new schedule were typically Life Pension cases under the old schedule. We estimated that the average PTD award for cases under 2006 benefit rates. This resulted in an average PTD award of \$725,000. These "new" PTD cases would have received an average of \$198,000 in PPD and LP under the CPDRS in effect before 1/1/05. Consequently, the change in PTD cost is the difference between PTD and the \$198,000 for 0.3% of cases. The impact then is to increase PD costs by about 1.1%, equivalent to an increase in indemnity costs of about .6% and overall system costs by about

0.2% - 0.3%.

A similar calculation was done for the impact of the additional Life Pensions, but again, the impact will be small. This is particularly true of life pensions because they are paid a number of years in the future, after all PPD has been paid out. Consequently, the discounted value of life pensions is fairly small. We estimate that the frequency of life pensions will increase from 1.3% to 1.6%. Given that Life Pensions currently account for just 0.6% of indemnity costs, the impact on system costs will be less than 0.1%.

Both populations are characterized by higher average age than the typical PD population (approximately 39 years). This also has the effect of reducing the impact of Life Pensions and PTD.

PTD		
	Percent of “paid” indemnity (2003)	1.5%
	Estimated percent of cases rated PTD under 1/1/05 schedule	0.6%
	Estimated percent of cases rated PTD under CPDRS	0.3%
	Average PD indemnity cost under 1/1/05 schedule*	\$725,000
	Average PD indemnity cost under CPDRS (including life pensions) for “new” PTD cases under AMA + FEC	\$198,000
	Average age	48.8
	Average wage (1997\$)	\$487
Life Pensions		
	Percent “paid” indemnity (2003)	0.6%
	Estimated percent of cases receiving Life Pensions under 1/1/05 schedule	1.6%
	Estimated percent of cases receiving Life Pensions under CPDRS	1.3%
	Average value of Life Pensions (2006 benefit rates)	\$35,000
	Average age	47.4
	Average wage (1997\$)	\$477

\* Assumes 25 year average life expectancy and 3% annual COLA

*Discussion*

The results obtained from the Relative Maximum Value (RMV) approach (small reduction in average rating, small increase in average indemnity payment) contrast sharply with the earlier estimates by several groups. Those evaluations found substantial reductions in benefits associated with adopting the 1/1/05 schedule.

One important reason for the difference may be that the RMV method makes use of the actual behavior of practicing medical-legal evaluators and treating physicians in applying a permanent disability schedule. The higher average ratings might suggest that other characteristics of the California workers' compensation system, legal environment, perceptions of benefit adequacy, and liberal interpretation in favor of the worker may all lead to a consistently more generous interpretation regardless of the basis of the schedule adopted.

Second, much of the prior research has focused on claims that will not receive ratings under the AMA Guides. Averaging in the zero rated claims has the effect of lowering the average PD rating and indemnity payment. The RMV approach does not take into account the zero rated claims. In this respect, the cost savings estimates will be too conservative. On the other hand, the average rating and indemnity award for those claimants identified as permanently impaired under the AMA Guides may more closely approximate past awards than indicated by the earlier studies. In the legislative debate, the parties were generally willing to allow the more conservative definition of impairment under AMA to exclude a portion of cases, as long as the workers with AMA-ratable impairments, often referred to as "truly injured workers," received adequate benefits. It was also acknowledged that the portion of indemnity claims that received a PD award (about 40-45%) in California was substantially higher than the national average.

Table 8 gives an indication of the extent to which including and excluding zero rated claims might change the estimated impact of the new schedule. It will also give an indication of the degree to which at least a subset of those claims that receive positive ratings might be similarly rated by both schedules. In this case, psychiatric evaluations were compared under both schedules. For this small sample, the average rating is substantially lower (-39%), even after application of the FEC. However, if we exclude claims rated 0 under the GAF Scale, the average ratings are virtually identical between the two schedules. Keep in mind that 1) this is a small sample, 2) for a specific area of the new schedule, and 3) the psych section replaces the AMA section that does not offer ratings.

The most important caveat regarding the RMV approach is the assumption made that the distribution of severity within the maximum values will be similar across the CPDRS and the AMA Guides. Certain types of disabilities and measurements lend themselves well to this assumption. For example, range-of-motion measurement and severity are very similarly scaled in both systems. However, the custom under the CPDRS was often to use Work Capacity Guidelines as a substitute for range-of-motion measurement. It is not as clear that the distribution of severity under Work Capacity Guidelines will approximate the stricter guidelines of the AMA Guides. As another example, while lumbar impairments have a maximum impairment rating of 75%, if the lumbar impairment is appropriately evaluated



under the Diagnosis-Related Estimate approach, the maximum value is 28%. Ultimately, the most accurate way to evaluate the impact of the 1/1/05 schedule will be to see how the distribution of ratings being performed under the new schedule compares to the distribution of ratings already gathered under the CPDRS.

In the near future we will be obtaining data on ratings conducted under the new schedule by the DEU. These ratings will be compared to similar workers rated under the previous schedule. As these data become available over the next several months, we should be able to refine our estimates of the effect of the change in schedules.

Taking into account information from all three approaches being pursued by the WCIRB and CHASW, we should be able to make reasonable estimates of the impact of the schedule change on PD ratings and awards. These three approaches will also allow researchers and policymakers to assess the success of the FEC adjustments in correcting inequities found by the RAND study among the PD awards for different impairments.

Table 8: Comparison of Ratings for Sample of Dual-rated Claims with both 8-work Function and GAF Scores

Current CPDRS rating	GAF based rating	GAF based * 1.4
6	46	64
35	21	29
16	0	0
21	19	27
60	0	0
49	9	13
35	5	7
24	24	34
18	0	0
41	0	0
37	6	9
10	0	0
15	29	40
<b>28.2</b>	<b>Average</b>	<b>17.2</b>
	<b>% difference</b>	<b>-39.2%</b>
<b>Excluding claims rated 0 under GAF</b>		
<b>27.8%</b>	<b>Average</b>	<b>27.9%</b>
	<b>% difference</b>	<b>= +.45%</b>

## Appendix 1: Comparison of Relative Maximum Values

Row notes	DISCAT	n	%	definition	Range or dominant/ non-dom.	CPDRS	AMA	FEC Factor
1	1	112	0.04	undefined				
2	1.4	4,370	1.64	Psych		100	90	1.4000
3	1.5	379	0.14	PTSD		100	100	1.3143
4	1.52	131	0.04	PTSD		100	100	1.3143
5	1.6	122	0.04	Vertigo		100	95	1.1429
6	1.7	1,587	0.57	headaches		100	70	1.0000
7	1.72	124	0.04	headaches		100	70	1.0000
8	2	269	0.10	Vision		100	100	1.1000
9	2.1	255	0.10	Vision		100	100	1.1000
10	3	258	0.09	Hearing		60	35	1.4000
11	3.1	355	0.13	Hearing		60	35	1.4000
12	3.111	864	0.31	Hearing		60	35	1.4000
13	3.113	2,134	0.78	Hearing		60	35	1.4000
14	4	166	0.06	Cosmetic disfigurement		80	50	1.1429
15	4.1	263	0.09	Cosmetic disfigurement		80	50	1.1429
16	4.5	139	0.05	jaw injuries		30	19	1.1429
17	6	315	0.10	chest		100	100	1.1429
18	6.1	605	0.23	Lung		100	100	1.3571
19	6.3	825	0.32	Heart		100	100	1.2714
20	6.5	429	0.17	rib cage		50	100	1.1429
21	7	20,388	7.26	general upper	75/70	73	60	1.2714
22	7.3	16,460	5.70	shoulder	35/30	33	36	1.3571
23	7.311	410	0.15	shoulder		35	36	1.3571
24	7.312	263	0.10	shoulder		31	36	1.3571
25	7.331	3,145	1.11	shoulder		35	36	1.3571
26	7.332	1,784	0.63	shoulder		31	36	1.3571
27	7.333	444	0.15	shoulder		33	36	1.3571
28	7.5	5,467	1.91	elbow	35/30	33	42	1.1429
29	7.521	773	0.30	elbow		35	42	1.1429
30	7.522	474	0.18	elbow		30	42	1.1429
31	7.541	470	0.18	elbow		35	42	1.1429
32	7.542	345	0.14	elbow		30	42	1.1429
33	7.7	11,235	3.96	Wrist	30/25	28	35	1.2286
34	7.711	2,567	0.91	Wrist		30	36	1.2286
35	7.712	1,419	0.49	Wrist		27	37	1.2286
36	7.713	546	0.19	Wrist		28	38	1.2286
37	8.131	101	0.04	thumb-loss		16	22	1.1000
38	8.132	141	0.06	thumb-loss		14	22	1.1000
39	8.231	229	0.09	index-loss		8	11	1.1000
40	8.232	189	0.07	index-loss		7	11	1.1000

41	8.331	144	0.06	middle-loss		8	11	1.1000
42	8.332	172	0.07	middle-loss		7	11	1.1000
43	9	233	0.08	two digits, undefined-loss				1.1000
44	9.5	338	0.12	5-finger immobility	45/41	43	18	1.1000
45	10	201	0.07	three digits				1.1000
46	13	329	0.12	undefined finger immobility				1.1000
47	13.1	849	0.31	thumb immobility		9.5	22	1.1000
48	13.121	271	0.11	thumb immobility		10	22	1.1000
49	13.122	238	0.09	thumb immobility		9	22	1.1000
50	13.131	168	0.07	thumb immobility		10	22	1.1000
51	13.132	213	0.08	thumb immobility		9	22	1.1000
52	13.2	407	0.16	index immobility		5.5	11	1.1000
53	13.211	333	0.13	index immobility		6	11	1.1000
54	13.212	335	0.13	index immobility		5	11	1.1000
55	13.3	314	0.12	middle immobility		7.5	11	1.1000
56	13.311	192	0.07	middle immobility		8	11	1.1000
57	13.312	193	0.07	middle immobility		7	11	1.1000
58	13.4	199	0.08	ring immobility		5.5	5	1.1000
59	13.411	139	0.05	ring immobility		6	5	1.1000
60	13.412	145	0.06	ring immobility		5	5	1.1000
61	13.5	222	0.09	little immobility		5.5	5	1.1000
62	13.511	312	0.12	little immobility		6	5	1.1000
63	13.512	301	0.12	little immobility		5	5	1.1000
64	14	360	0.13	Undefined				1.2714
65	14.4	106	0.04	hip		45	20	1.2714
66	16	1,269	0.50	limited motion 4 digits	40/36	38	54	1.1000
67	16.2	169	0.07	limited motion 4 digits	40/36	38	54	1.1000
68	16.211	409	0.16	limited motion 4 digits	40/36	38	54	1.1000
69	16.212	374	0.15	limited motion 4 digits	40/36	38	54	1.1000
70	16.8	945	0.36	complete loss of grasping power—dominant	40/36	38	54	1.2286
71	16.811	15,519	6.03	complete loss of grasping power—non-dominant	40/36	38	54	1.2286
72	16.812	7,745	3.02	complete loss of grasping power	40/36	38	54	1.2286
73	16.813	3,176	1.23	complete loss of grasping power--both	40/36	38	54	1.2286
74	17	2,853	1.10	immobility all fingers	45/41	43	18	1.1000
75	17.1	2,381	0.92	immobility all fingers	45/41	43	18	1.1000
76	18.1	88,762	34.66	Spine		100	63.4	1.2714
77	19	318	0.12	abdomen				1.3143
78	19.2	389	0.15	potential hernia		50	19	1.3143
79	19.3	275	0.11	abdominal impairment, loss of one kidney		20	14	1.3143
80	21	3,857	1.50	hip		45	20	1.2714
81	21.1	594	0.23	hip		45	20	1.2714
82	21.111	291	0.11	hip		45	20	1.2714

83	21.2	305	0.12	other disabilities of hip		90	35	1.2714
84	21.3	11,397	4.43	knee-immobility		30	14	1.1429
85	21.311	2,184	0.84	knee-immobility		30	14	1.1429
86	21.313	160	0.06	knee-immobility		30	14	1.1429
87	21.4	9,769	3.80	knee-instability		40	20	1.1429
88	21.421	125	0.05	knee-instability		40	20	1.1429
89	21.441	3,323	1.29	knee-instability		40	20	1.1429
90	21.5	3,102	1.21	ankle-immobility		20	12	1.1429
91	21.511	1,777	0.69	ankle-immobility		20	12	1.1429
92	21.6	3,140	1.22	ankle-instability		30	35	1.1429
93	21.641	817	0.32	ankle-instability		30	35	1.1429
94	21.7		0.32	toes		12	4	1.2714

## Notes on Appendix 1.

Line	Explanation
2	2005 schedule, using GAF scores allows ratings up to 90%
6&7	Headaches are not explicitly covered in the AMA Guides. Here the assumption is that they would be rated under Chapter 18 (Pain) and the rating would reflect the level of disability. There are no precise ratings for pain in AMA outside a maximum of 3% when pain is added to an impairment measured under another chapter. We make an assumption that under AMA specific pain related disability would receive a maximum of 70%. One could argue for other maximums for AMA. A different maximum would change the overall estimated impact of AMA, but since headaches are a small percentage of impairments, the effect will likely be small.
14&15	See page 256, Table 11-5, AMA Guides
16	See page 262, Table 11-7, limitation to semi-solid or soft foods
17	Undefined chest impairment in DEU
21--36	When DEU data is in an upper extremity (accept fingers) category where the dominant/non-dominant characteristic is not defined, the weighted average standard rating between dominant and non-dominant is used as the maximum. The weighting is 60/40 (dominant/non-dominant), consistent with the distribution observed in the data.
37--63	When DEU data is in a finger impairment category where dominant/non-dominant is undefined, the average rating for dominant/non-dominant is used, consistent with the 50/50 split in finger impairments.
70-72	See page 509, Table 16-34
76	Weighted average maximum values for spinal impairments described in the body of the report.
78	Class 2 abdominal impairment, Table 6-9, page 136
79	Single kidney function = 19.3, Table 7-1, class 1
83	Page 546, Table 17-33 (15) plus ROM Table 17-15
94	Used maximum for all toes, one foot