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An Evaluation of California's Permanent Disability Rating System

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Prepared for the
California Commission on Health and Safety and Workers' Compensation



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Summary

When workers suffer a permanently disabling injury at the workplace, they are usually eligible to receive workers' compensation benefits. A defining characteristic of permanent partial disability (PPD) benefits in California and other states is that more-severely injured workers are entitled to higher benefits than less-severely injured workers. This characteristic of PPD benefits necessitates a system for ranking the severity of various impairments for both single parts of the body and across different body parts. This ranking, called the *permanent disability rating*, is used to distribute PPD benefits to workers with various types of impairments. In California, injured workers with higher disability ratings are entitled to more benefits than those with lower ratings.

The disability rating process sparks controversy in every state, but nowhere has it been more controversial than in California. California has historically relied on its own system for measuring disability, a system that has been criticized by many observers as being inconsistent, prone to promote disputes, and conducive to fraud. In this report, we discuss the criteria that are used to evaluate different types of injury, and the system for delivering benefits in California, and compare those criteria to the criteria used in other jurisdictions. This discussion provides a useful framework for thinking about the various principles upon which the equity and efficacy of California's PPD benefits delivery system can be judged. We then provide a systematic empirical evaluation of California's permanent disability ratings system. We examine the extent to which workers with higher ratings experience higher earnings losses, and the extent to which workers with similar ratings for impairments in different parts of the body suffer similar earnings losses. In addition, we study how other factors, such as early return to work,¹ impact losses, and we examine the consistency of different physicians' assessments of the same impairment.

¹ *Return to work* is a term used by participants in the workers' compensation system to describe various aspects of employment following injury. Sometimes also called the *return to work rate*, the term usually refers to the amount of time between an injury and the first day of return to work. More generally, the term refers to both return to work rates for injured employees and other characteristics of post-injury employment, such as retention and subsequent employment. In this report, "return to work" implies the latter, more general definition.

Background on the Disability Ratings Controversy in California

Workers' compensation must include a means for assigning benefits—i.e., a structured system for converting the medical evaluation of a permanent impairment from a workplace injury into a quantitative measure of the severity of the injured worker's disability. In California, the PPD rating system converts the quantitative measure (the *disability rating*) into a benefit amount based on the worker's pre-injury wage. PPD benefits are paid to workers who have injuries that are serious enough to have permanent consequences but are not serious enough to be totally disabling. Higher ratings translate into higher benefits, reflecting the fact that one would expect more-serious injuries to have a more disabling effect on a person's ability to work.

Historically, California's approach to assigning benefits has differed markedly from that used by most other states, and critics blame that approach for many of the ills of the state's workers' compensation system. In 1996, the California Commission on Health and Safety and Workers' Compensation (CHSWC) commissioned the RAND Corporation to begin an extensive review of PPD benefits in California; the study described in this report is one of five that RAND eventually completed. In late 2003, we delivered to CHSWC an interim report on our findings from this study. The interim report helped to inform the policy debates that ultimately resulted in Senate Bill (SB) 899, a 2004 bill that reformed many aspects of the state's workers' compensation system, including the permanent disability rating system. This report provides more formal documentation of our evaluation of the system *pre-reform* and additional discussion of potential issues to be considered within the post-reform system.

The California permanent disability system attempted to produce a measure of disability that combined both severity of an impairment and the effect of the impairment on work. The disability ratings were based on a variety of objective and subjective criteria. The reliance on subjective criteria to measure disability was the most controversial feature of the California system and what most distinguished it from the systems used in other states. Supporters of the system contended that California's unique approach to compensating disabilities better targeted benefits to workers, and that some disabilities, while real, cannot be objectively measured using medical criteria. Critics of the system countered that the use of these criteria led to excessive PPD claiming and an inappropriate distribution of benefits.

Our approach cannot test the merits of considering subjective factors, because we cannot separately identify disability ratings that do or do not include a subjective component. Likewise, because we have data on only ratings using the California system, we cannot say whether the system performed any better or any worse than any other state's system. Nevertheless, we are able to address some of the criticisms that have been directed at the old system and explore the potential for empirical data on earnings loss to improve permanent disability ratings.

Research Questions and Approach

As requested by CHSWC, RAND undertook a sweeping evaluation of the PPD rating system. The study largely focused on the following questions:

- Did the PPD system ensure that the highest ratings (and therefore the most benefits) go to the most severely impaired individuals?
- Did individuals with different types of impairments but similar disability severity receive similar ratings?
- Would different physicians examining the same impairment provide assessments that lead to similar ratings?
- Were the inconsistencies in physician ratings substantial enough to provide parties with incentives to litigate (given the adversarial nature of the system)?

To address these questions, RAND analyzed data on almost 350,000 PPD claims in California, from the sample of cases with an injury date between January 1, 1991, and April 1, 1997, that were rated by the state's Disability Evaluation Unit (DEU). Because several years of post-injury earnings must be observed to estimate earnings losses, injuries occurring after April 1, 1997, were not used. We were able to match most (more than 69 percent) of the injured workers in this sample to administrative data on wages from the Employment Development Department (EDD). Thus, we were able to create a database that includes the type of impairment, disability rating, and the estimated earnings losses for 241,685 PPD claimants in California.²

Using these data, we can compare the disability ratings produced by the DEU with the observed earnings outcomes. Earnings-loss estimates provide a direct measure of how a permanent disability affects an individual's ability to compete in the labor market. This measure provides the empirical basis that had previously been lacking to evaluate the ranking of impairments. By comparing the disability ratings and earnings losses of injured workers in California, we can directly assess the extent to which the PPD rating system provides injured workers with appropriate compensation.

Did Workers Receive Benefits Appropriate to Their Injuries?

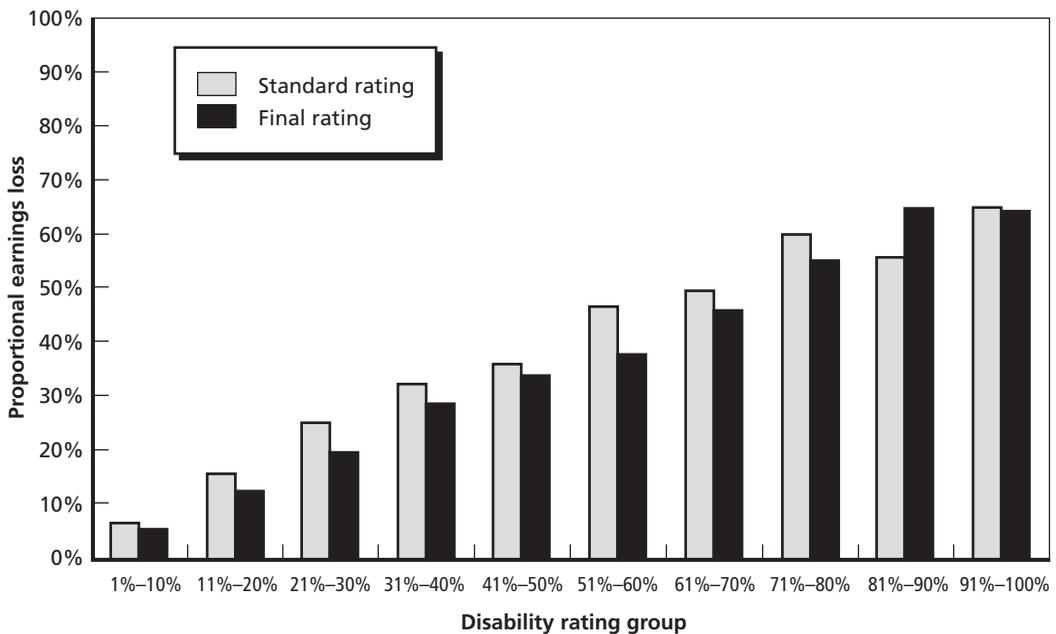
Our analysis showed that, on average, the pre-SB 899 California rating system appeared to function reasonably well in terms of targeting higher PPD benefits to

² The methodology for estimating earnings losses for disabled workers is the same as that used in past studies, including Peterson et al. (1997), Reville (1999), and Reville et al. (2001c).

workers with higher proportional losses. This finding is illustrated in Figure S.1, which shows the average three-year (12 quarters) cumulative proportional earnings losses for those cases with disability ratings of 1–10 percent, 11–20 percent, and so forth, up to ratings of 91–100 percent. The figure includes two stages of the disability rating, the unadjusted *standard rating* and the *final rating*.³ If the disability rating system targets higher benefits effectively to more-severely injured workers, then we would expect to see the average earnings losses increase as we move from left to right in Figure S.1. This is clearly the case; the average proportional losses for cases with a rating of 1–10 percent are about 5 percent, while the losses for those with a rating of 91–100 percent are more than 60 percent. This positive association holds for almost every rating category, allowing us to conclude that, on average, California’s injured workers who have more-severe impairments appear to receive higher PPD benefits.

The targeting of higher benefits to the more-severe impairments is only one objective of the rating schedule; another is to ensure that the ratings are distributed equitably for impairments to different parts of the body. In theory, the rating system

Figure S.1
Three-Year Cumulative Proportional Earnings Losses by Disability Rating Group



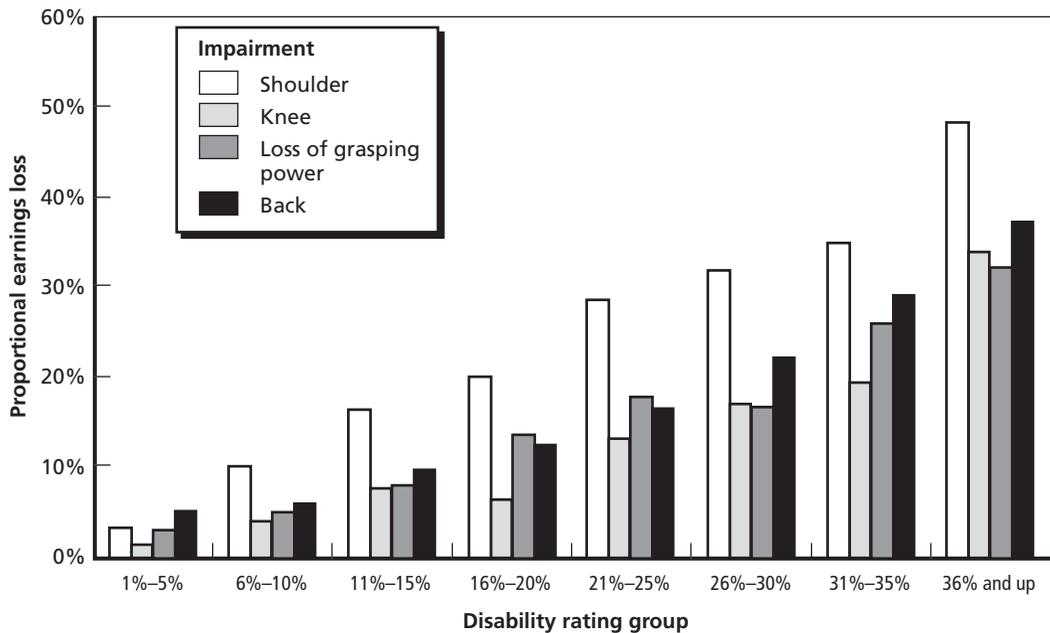
RAND MG258-S.1

³ The standard rating is based solely on physician evaluation of disability severity (using objective and subjective factors), while the final rating incorporates additional adjustments for age and occupation.

is supposed to incorporate *all* the medical information that is relevant for determining the severity of an impairment, suggesting that, for example, an impairment to the back and an impairment to the shoulder that have the same impact on an individual's ability to compete in the labor market should receive the same rating. In this report, we document that the overall positive relationship between earnings losses and disability ratings masks considerable differences in the distribution of benefits across impairments to different body parts.

Past work has already demonstrated substantial inequities among the ratings assigned to different upper-extremity impairments (Reville et al., 2002a). Figure S.2 extends the analysis to consider four major impairment categories—shoulder, knee, back, and loss of grasping power.⁴ Two key results should be noted from this analysis. The proportional earnings losses for every type of impairment increase with the increase in the disability rating. This finding reflects the fact that the system targets disability benefits appropriately to more-severe impairments on average *within a*

Figure S.2
Three-Year Losses by Disability Rating Category by Injury Type



RAND MG258-S.2

⁴ Because the number of observations grows small for individual rating categories for ratings above 35 percent, in Figure S.2 we present finer groups of lower-rated claims and lump together the higher-rated claims.

given body part. However, it is also apparent that there are clear disparities among the observed proportional earnings losses for different impairments that are given similar ratings.

The overall positive relationship between earnings losses and disability ratings masks considerable differences in the distribution of benefits across impairments to different body parts. In the lowest disability-rating group (ratings of 1–5 percent), back injuries have the highest estimated losses, about 4.6 percent, while knee injuries have the lowest, about 0.9 percent. For all other rating groups, however, shoulder injuries have substantially higher proportional earnings losses than all other types of injury. Knee injuries have the lowest earnings losses on average, although the loss of grasping power seems to have the lowest percentage of losses for the highest rating category. These disparities are even more pronounced if we consider psychiatric impairments (not illustrated here). All psychiatric claims, regardless of rating, have substantial earnings losses, exceeding 38 percent on average. Additionally, even low-rated psychiatric claims have a higher percentage of losses than all but the highest-rated claims for the other impairment types.

These results provide a striking illustration of the impact of a lack of empirical bases for disability rating schedules. It is usually possible to show that, between two individuals with the same impairment, one impairment is more severe than the other. This is why, within impairment type, every rating group has higher proportional wage losses than the next-lowest rating group. However, it is far more difficult to compare severity across impairments to different body parts. Moreover, equally severe impairments (as measured by the disability rating) to different body parts each impact earnings differently. Using wage losses to evaluate impairment severity allows us to provide a common standard of comparison across impairment types.

Ability to Return to Work Impacts Long-Term Earnings

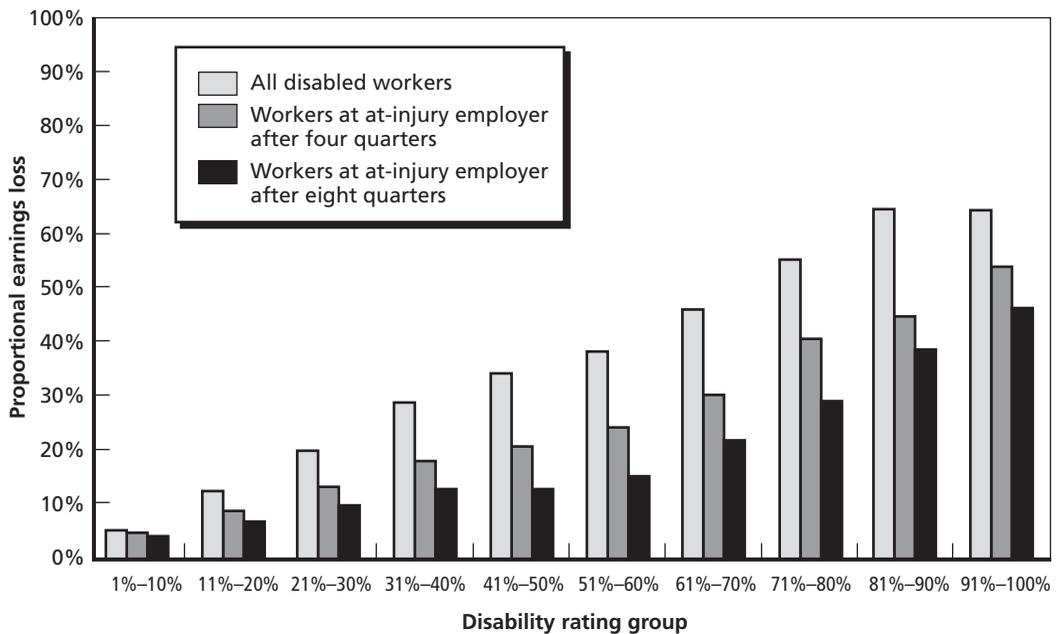
While California's disability rating system incorporates a number of important factors that might indicate an individual's earnings capacity, one factor that it does not consider in rating a disability is the observed return to work by an individual. Return to work, particularly return to the at-injury employer, is an important factor because it is a strong predictor of the long-term economic outcomes of disabled workers. Despite this fact, an injured worker in California receives the same compensation whether or not he or she returns to work. Injured workers who continue at the at-injury employer may actually receive benefits that exceed their earnings losses after tax considerations are taken into account, at least for some period of time after the date of injury.

Figure S.3 displays the estimated three-year proportional earnings losses for permanently disabled workers in California by their disability rating. The lighter gray

bars show the average proportional losses for all disabled workers, whether or not they are observed returning to work (the “Unconditional” losses). The darker gray bars represent the average three-year losses of workers who are observed at the at-injury employer four quarters (one year) after the date of injury. The black bars represent the average three-year losses for workers who are observed working eight quarters (two years) after the date of injury.

Figure S.3 makes it clear that, at every level of severity, workers who return to the at-injury employer experience much lower long-term proportional earnings losses than those who do not. While the differences in earnings losses among workers with very low disability ratings (those between 1 percent and 10 percent) are very small, workers with medium or severe disabilities have much lower earnings losses if they return to the at-injury employer. For example, for disabled workers with a disability rating of 11–20 percent, the overall proportional losses are approximately 12 percent, but the overall proportional losses are just 8 percent for workers with the same disability ratings who are observed at the at-injury employer one year after injury and 6 percent for workers observed at the at-injury employer two years after injury. For more severe disabilities, such as those with ratings of 41–50 percent, the overall

Figure S.3
Three-Year Proportional Earnings Losses for Injured Workers in California by Disability Rating Group and Return-to-Work Status



losses are approximately 34 percent, compared with losses of 20 percent for those working at the at-injury employer one year after injury and just 13 percent for those working at the at-injury employer two years after injury. Note that we do not indicate whether the worker is employed full time, so even modified work might have a positive impact on long-term earnings outcomes.

In this report, we discuss how other states use *two-tier benefit* systems to factor in return to work when assigning PPD benefits. Two-tier systems, which provide relatively lower benefits to workers who receive a legitimate employment offer from the at-injury employer and higher benefits to those who do not, can boost labor market participation for disabled workers by providing both employers and workers with incentives to offer and accept, respectively, modified employment opportunities at the at-injury employer. Two-tier systems have the potential to improve the equity of disability benefits while also improving the earnings and employment of disabled workers.

Large Inconsistencies in Disability Ratings by Physicians

The reliance on subjective factors in the California rating system has led to numerous accusations that disability ratings are assigned inconsistently in the state. An inconsistent disability rating system is one in which two physicians can evaluate the same injured individual and produce different disability ratings. If a rating system involves a substantial degree of subjectivity, then it would stand to reason that there is substantial room for variation among physicians' assessments, potentially leading to inconsistency in the ratings.

To study this issue, we can take advantage of the fact that the DEU data include three kinds of ratings: applicant, defense, and summary. An *applicant rating* is a rating based on the medical report of a physician hired by the applicant (the injured worker); similarly, a *defense rating* is based on the medical report of a physician hired by the defense (the "payer," which is either the employer or the employer's insurer). *Summary ratings* are typically based on a report by a randomly assigned "qualified medical examiner" or an "agreed medical evaluator" selected by both parties, who can plausibly be considered neutral.

As stated earlier, disability benefits increase with the increase in ratings, so a physician's report that is favorable to the applicant will lead to higher benefits, whereas a physician's report that is favorable to the defense will lead to lower benefits. Because the physicians that produce summary ratings can plausibly be considered to be neutral, their ratings should not lead to systematically higher or lower rat-

ings than the “true” or “correct” rating.⁵ By examining applicant, defense, and summary reports *for the same injury*, we can extract some information on the extent to which ratings in the California system differ due to variability in physician evaluations. Given that disability *raters* (state employees charged with converting physician medical reports into actual ratings), like summary physicians, can plausibly be considered neutral, any systematic differences between the ratings by physician type should be independent of rater inconsistency (in other words, the error by raters can be assumed to have a mean of zero).

We find clear support for our initial hypothesis that the applicant rating on average is greater than the summary rating, which in turn is greater on average than the defense rating. Cases with multiple ratings tend to involve more-severe disabilities on average; they have an average summary rating of 30.43. The average applicant rating is 37.07, 6.63 percentage points higher than the summary rating (a difference of about 22 percent). The average defense rating is 28.29, which is 2.15 percentage points (or 7 percent) lower than the summary rating. Both sets of differences are statistically significant.

While our results suggest that there are large differences in evaluations by different physicians for the same case, it is not clear the extent to which this discrepancy in evaluations is driven by the old, pre-SB 899 California rating system. For example, we examined the regional differences in ratings and found that the inconsistency in ratings is considerably higher in Southern California than in the Central Coast region or Northern California. In Southern California, for cases with all three types of ratings (applicant, defense, and summary), the average summary rating is 31.86; the average applicant rating is 7.92 points (25 percent) higher than the summary rating; and the average defense rating is 3.72 points (12 percent) lower than the summary rating. In the Central Coast region, the applicant rating is just 11 percent higher than the summary rating on average, and the defense rating is just 3 percent lower than the summary rating, with the latter difference being statistically indistinguishable from zero. The difference between applicant and defense ratings in Northern California is 20 percent, comparable to that in Southern California. In comparison, the difference between the defense and summary ratings is negligible in Northern California.

While we cannot say how much of the discrepancy between physicians’ assessments is attributable or not attributable to the rating system, it appears that other factors (e.g., the relative litigiousness by region of parties in a workers’ compensation claim) may be just as important. Whatever its root cause, the differences in disability ratings can have a substantial impact on the disability benefits assigned to injured workers. For example, with three different ratings for the same injury, a worker

⁵ It is important to note that our assumptions about physicians (or raters, for that matter) may not hold for any particular individual. We simply argue that these relationships should hold *on average*.

might receive \$47,000 with the applicant rating, \$37,000 with the summary rating, and \$33,000 with the defense rating. These differences are substantial for injured workers, as well as for payers, and may fuel disputes and litigation.

Changes to the Permanent Disability Rating System in California

In the post-SB 899 system, reforms have been adopted that could affect many of the results presented in this report. One key change is that the new approach to rating permanent disability in California abandons the old rating schedule and adopts the “objective” criteria used by the *AMA Guides to the Evaluation of Permanent Impairment* (referred to as the *AMA Guides*) (American Medical Association, 2000). However, the California legislature also called for disability ratings to reflect the estimated wage losses of injured workers based on the nature of the workers’ impairments. Our results suggest that reordering the ratings to be consistent with average proportional losses for a particular impairment has the potential to improve equity in the system. However, because we have no data linking earnings losses to *AMA Guides* ratings, it is impossible to predict what the outcome of this reform will be.

A greater reliance on the use of objective factors could lead to reductions in the extent of inconsistency in physicians’ assessments, if ratings under the *AMA Guides* truly are more objective. However, the differences across the three regions of the state lead to some questions about the extent to which the rating system is the root cause of inconsistencies between physicians’ assessments. Another reform in SB 899 is the adoption of a two-tier system, which provides higher benefits to workers who do not receive an offer of post-injury employment when they are medically able to return to work. This system could provide employers with incentives to find appropriate employment for injured workers.