

Wage Loss for Injured Workers with Permanent Disabilities

The regulations establishing the 2005 Permanent Disability Rating Schedule (PDRS) require the Division of Workers' Compensation (DWC) to compile data for 18 months (Jan. 1, 2005–Jun. 30, 2006) and analyze the data to determine the effects of the new PDRS. Specifically, the DWC is required to evaluate available data and, based on that data, determine the aggregate effect of the diminished future earning capacity adjustment on permanent partial disability ratings under the 2005 PDRS and revise, if necessary, the diminished future earning capacity adjustment to reflect consideration of an employee's diminished future earning capacity for injuries.

To fully evaluate the effects of the 2005 PDRS, it is necessary to conduct a comprehensive wage loss study. However, a comprehensive wage loss study requires three years of post-injury wage data, which will not be available until late 2008 for workers rated under the 2005 PDRS. Three years of wage loss data are available for some claims with dates of injury before Jan. 1, 2005, that have been or will be rated under the 1997 PDRS.

In lieu of a full wage loss study, and in order to more swiftly evaluate the effects of the new PDRS, the DWC has developed a research plan, broken into three phases, to analyze the schedule.

DWC's return-to-work study, released in January, represents the first phase of the research plan. The retrospective wage loss study reported in this paper represents the first part of the second phase of analysis. Research still to be completed in phase two includes correlating return-to-work rates and indemnity payments to determine uncompensated wage loss under the 1997 PDRS and comparing that data to ratings under the 2005 PDRS. Phase three is the ongoing update of return-to-work and wage loss data.

The study detailed here duplicates the research methodology used by the RAND Corporation in its initial analysis of wage loss for permanently disabled workers injured between 1991 and 1996¹. The RAND study methodology was duplicated to establish a baseline and check the data and methodology to ensure consistency and accuracy.

Research Methodology

The data on permanent disability ratings come from the DWC Disability Evaluation Unit (DEU). The DEU data contain specific information about the type of impairment, severity of the impairment and demographic data about the injured worker (gender, age, occupation). The earnings data come from the base wage file maintained by the California Employment Development Department (EDD). Every quarter, employers covered by unemployment insurance in California are required to report the quarterly earnings of every employee to EDD, and these reports are stored in the base wage file.

Estimation of wage loss involves tracking the wages of injured workers before and after the date of injury. This tracking permits measurement of wage growth of injured workers after injury. In order to estimate wage loss resulting from occupational injury, it is necessary to compare this trend in earnings to wage trends for comparable workers.

In duplicating the previous RAND study, injured workers were matched to co-workers with similar earnings and their post-injury earnings were tracked for three years using quarterly unemployment insurance earnings

¹ Seabury, Seth A., et.al. "Data for Adjusting Disability Ratings to Reflect Diminished Future Earnings and Capacity in Compliance with SB 899". RAND Institute for Civil Justice Working Paper WR-214-ICJ (December 2004).

data. The actual earnings of co-workers were used to estimate what the earnings of the injured workers would have been in the absence of their injury.

The Findings

The overall key finding is that compensation did not decrease between the two time periods:

- The three-year proportional wage loss calculated for 2000 through 2003 (14.93 percent) is marginally changed from the 1991 through 1996 time period (14.25 percent).
- The average disability rating in DWC's study group is up slightly, from 15.58 in the RAND study to 17.38 in the DWC study.
- The ratio of PD ratings over wage loss is very similar: 1.09 in the RAND study and 1.16 in the DWC study.

Other findings from DWC's analysis of injuries from 2000 to 2003, compared with RAND's 1991 through 1996 study include:

- Wage loss for backs, the largest category of injury, was down slightly.
- Wage loss increased for injuries to the upper extremities.
- Wage loss change was mixed for injuries to the lower extremities.
- Wage loss was significantly decreased for lungs and heart, although the sample size was small for these body parts in the DWC study.

The result of DWC's study of wage loss of permanently injured workers with injuries from Oct. 1, 2000 through Jun. 30, 2003 is shown in **Table 1-A** (left panel). These injured workers' disabilities were rated under the 1997 PDRS.

Table 1 - A

Table 1-B

DWC: Dates of Injury = October 2000-June 2003

RAND: Dates of Injury = 1991-1996

Part of Body	Final Rating (Col.1)	3-Year Proportional Earnings Loss (Col. 2)	Ratio of Ratings over Losses (Col. 3)	Number of Workers with PD (Col. 4)	Part of Body	Standard Rating (Col.1)	3-Year Proportional Earnings Loss (Col.2)	Ratio of Ratings over Losses (Col. 3)	Number of Workers with PD (Col.4)
Spine	23.45	16.61	1.41	9,240	Spine	19.70	18.45	1.07	39,198
Knee	16.20	13.79	1.18	3,849	Knee	14.65	9.31	1.57	12,846
Grip Strength	12.17	12.07	1.01	3,025	Grip Strength (Loss of grasping power)	11.21	8.73	1.28	11,776
Other Arm	19.80	18.08	1.10	2,506	Other Arm (General upper extremity)	17.89	17.98	1.00	8,776
Shoulder	10.99	16.78	0.66	2,851	Shoulder	9.73	13.08	0.74	7,358
Hand	9.05	8.94	1.01	1,684	Hand (Hand/fingers)	8.86	4.89	1.81	6,895
Wrist	15.89	14.78	1.07	1,828	Wrist	13.15	10.84	1.21	5,968
Ankle	15.94	12.41	1.28	1,130	Ankle	14.12	9.28	1.52	4,151
Elbow	11.10	13.44	0.83	965	Elbow	9.44	6.23	1.51	2,896
Hearing	9.55	12.14	0.79	179	Hearing	10.71	17.69	0.61	2,068
Other Leg	20.14	13.91	1.45	512	Other Leg (General lower extremity)	19.00	17.21	1.10	1,765
Psychiatric	25.33	34.26	0.74	123	Psychiatric	22.13	49.01	0.45	1,433
Toe(s)	5.87	3.53	1.66	72	Toe(s)	10.10	9.09	1.11	523
Hip	23.62	9.14	2.58	121	Hip	21.68	21.10	1.03	475
Soft Tissue	27.40	28.01	0.98	10	Soft Tissue (General abdominal)	18.26	19.24	0.95	448
Heart	36.23	10.04	3.61	35	Heart (Heart disease)	29.78	30.82	0.97	353
Eyes	14.86	14.00	1.06	77	Eyes (Vision)	10.31	5.68	1.81	306
Respiratory	15.05	7.12	2.11	22	Respiratory (Lung disease)	20.06	25.44	0.79	264
<i>Other (Headaches)</i>	<i>NA</i>	<i>NA</i>	<i>NA</i>	<i>NA</i>	Other (Headaches)	7.75	12.35	0.63	181
Post-traumatic head syndrome	32.07	28.98	1.11	14	Post-traumatic head syndrome	23.85	25.57	0.93	96
Other	14.78	12.41	1.19	350	Other (Other Single)	13.81	9.04	1.53	597
Multiple	28.20	19.73	1.43	3,800	<i>Multiple</i>	<i>NA</i>	<i>NA</i>	<i>NA</i>	<i>NA</i>
TOTAL (excluding multiple)	17.38	14.93	1.16	28,593	TOTAL (excluding multiple)	15.58	14.25	1.09	108,373

Table 1-B (right panel) shows corresponding wage loss, calculated by RAND, for workers with dates of injury between 1991 and 1996. Information contained in these tables allows DWC to observe how wage loss changed over the past decade. This gives DWC a more current benchmark of wage loss prior to PDRS revisions made as a result of Senate Bill (SB) 899. Both studies used only summary ratings – ratings on claims that are not litigated.

Column 1 of both tables shows disability ratings for injured workers by part of body. DWC used injured workers' final ratings, while the RAND study used injured workers' standard ratings. The difference is that a final rating represents adjustment (of the standard rating) for age and occupation. Adjustments for age and occupation both increase and decrease ratings, and the final ratings also reflect decreases due to apportionment. Apportionment is the method of determining how much permanent disability is due to the work injury being rated and how much is due to other disabilities. The standard ratings do not reflect apportionment. The final ratings/standard ratings columns are alternative measures of average ratings by body part for the two periods and should be considered comparable for purposes of this analysis.

Column 2 in each of the two tables summarizes the average proportional three-year wage loss, by body part, experienced by the two samples of injured workers. Proportional wage loss is defined as the average difference in earnings of comparable uninjured co-workers compared to injured workers, as a percentage of the uninjured group's wages².

Column 3 shows the ratio of ratings divided by wage loss. Lower ratios indicate lower remuneration. In Table 1-A, for example, a knee injury has 13.79 percent three-year loss versus 13.44 percent for elbow injuries. However, elbow injuries have a ratio of .83, while knee injuries have a ratio of 1.18. This indicates that the average compensation is higher for the knee due to the higher ratio of the final permanent disability rating relative to the wage loss.

Additional Research Steps

Table 1 provides a benchmark to prior studies, while the additional wage loss calculations to be conducted by DWC will determine how much *uncompensated* wage loss is sustained by permanently disabled workers. Table 1 shows the difference in earnings between injured and uninjured workers, but it does not capture wage replacements received in the workers' compensation system that offset wage loss, such as temporary disability payments, vocational rehabilitation maintenance benefits and permanent disability payments.

Accordingly, the results from Table 1 will not be the sole wage loss calculation(s) that will be used to determine whether there should be any adjustments to the future earning capacity (FEC) multiplier. Specifically, DWC is conducting additional needed research, using a more sophisticated research technique than that used when RAND performed its original study.

Figure 1 below illustrates the wage loss methodology used in this analysis. The shaded area of the figure is the wage loss, which is based on the difference between the reported earnings of injured workers and the reported earnings of uninjured co-workers, divided by the uninjured workers wages to create a percentage of difference. This methodology does not take into account any wages that were replaced by workers' compensation benefits.

² Both the DWC and RAND figures are calculated as the present values of wages for the control uninjured workers (numbering between 1 and 5 for each injured worker) for the three years post date of injury of the sample injured worker compared to the present value of the injured worker's wages during the same three years. The resulting difference, as a percentage of the control group's present value wage is then calculated. The numbers in the wage loss column are averages for injured workers with permanent disabilities for each part of body listed.

Figure 1

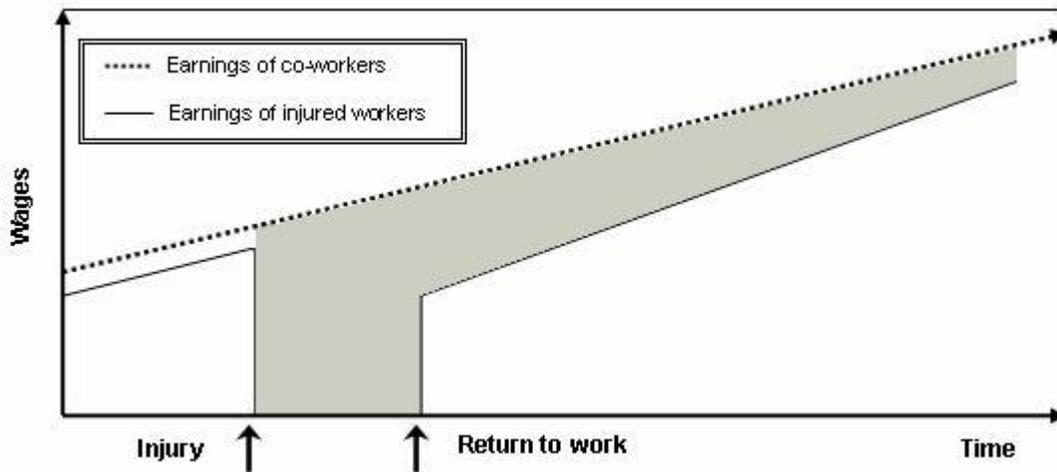
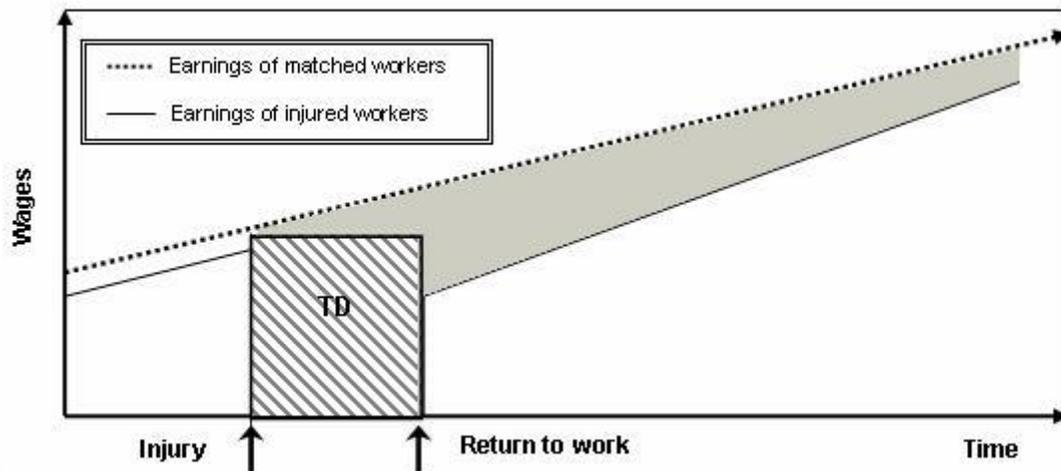


Figure 2 illustrates the uncompensated wage loss that will determine any appropriate revisions to the 2005 PDRS. Temporary disability (TD) functions as a wage replacement, thereby reducing wage loss, as reflected in the shaded portion of the figure. In 2005, 97 percent of injured workers received TD benefits at a full two-thirds of their salary at the time of injury. TD benefits are tax-free.

Figure 2



The RAND study only compared injured workers with uninjured workers at the same employer who had similar earnings. This excludes some employers from the study, which can affect the resulting estimate of wage loss. In the second phase of the wage loss study already underway, DWC is comparing injured workers to uninjured workers by matching numerous characteristics: gender, industry, size of employer, tenure at employer, wage history and employer location.

The previous RAND study was limited to injured workers who did not litigate their claim (summary ratings). The next phase of DWC's work will entail calculating wage loss for all injured workers who sustained permanent disability during the study period (both summary and consultative ratings), whether or not their claim was litigated. Moreover, in a future analysis, DWC will examine the influence of age and occupation on wage loss.

Recalculation of the wage loss using a more sophisticated matching system and accounting for wage replacement is initially being calculated for workers injured from Oct. 1, 2000 to Jun. 30, 2006, and rated under the 1997 PDRS. This will allow DWC to determine the exact effect of this methodology on the total group. Secondly, wage loss will be calculated for workers injured between Jan. 1, 2003 and Jun. 30, 2003, for ratings under both the 1997 PDRS and the 2005 PDRS. Information from these studies will be correlated with return-to-work rate information and indemnity payment data for the study period to provide information on uncompensated wage loss that can be used to revise the PD schedule.

In summary, the next phase research methods will differ from the results shown in this study and will:

- Estimate wage loss for available groups of injured workers using a more sophisticated methodology and more information to match injured workers to uninjured workers.
- Estimate uncompensated wage loss, or wage loss not replaced by temporary and permanent disability payments received.
- Calculate wage loss by age and by severity to determine if the current age adjustments are correct.
- Evaluate the wage loss numbers in light of changes in the workers' compensation system that occurred since 2003.

Ultimately, DWC will recalculate and publicly release wage loss figures on a quarterly basis. These initial research phases are laying the groundwork for what will become an automatic system of updates that can be monitored regularly to determine whether changes are needed in the PDRS to ensure adequacy and equity of benefits.

Impact of Changes since 2003 on Wage Loss

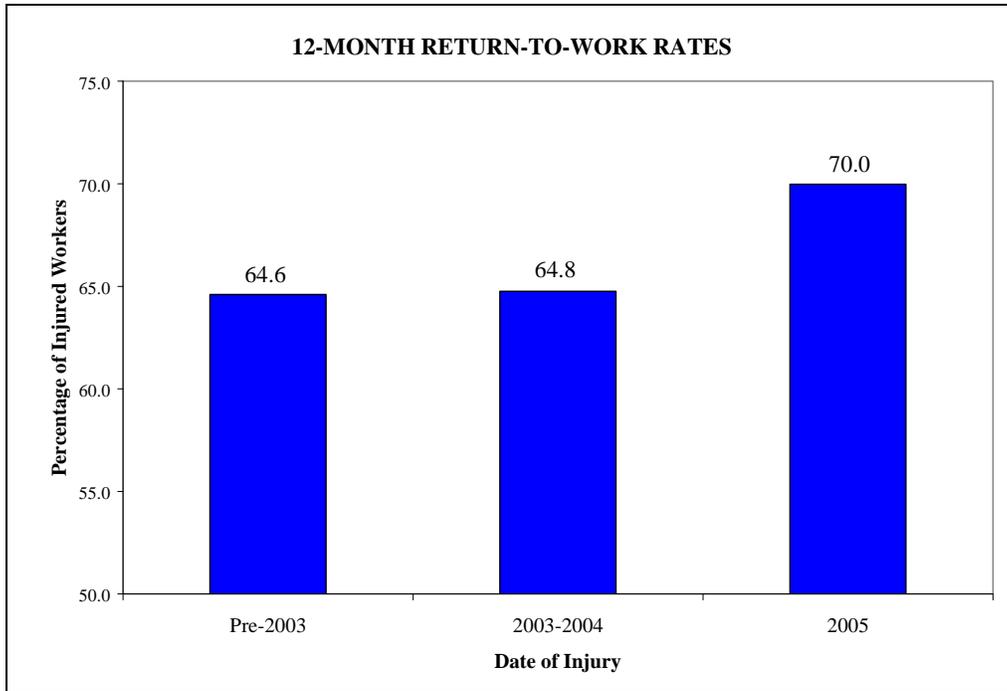
In addition to completing the second phase of wage loss calculation described above, DWC will adjust those calculations to reflect the impact of several major changes that have occurred since 2003, the last year for which three years of wage information are available. Since the purpose of this research is to estimate wage loss for workers injured on or after Jan. 1, 2005, who are rated under the 2005 PDRS, system changes that impact wage loss have to be taken into account. The major changes are an increase in return-to-work rates as a result of return-to-work incentives, an increase in temporary disability benefits and an overall decrease in average permanent disability ratings.

Return-to-work rates

Past research by RAND and others has shown a direct relationship between return-to-work rates and wage loss. The return-to-work rates under the 2005 PDRS show that more employees who have sustained a measurable permanent disability are going back to work since the implementation of return-to-work incentives. The percentage of permanently disabled workers employed four quarters after the quarter in which they were injured increased by over five percentage points beginning in 2005: from 64.6 percent to 70 percent.

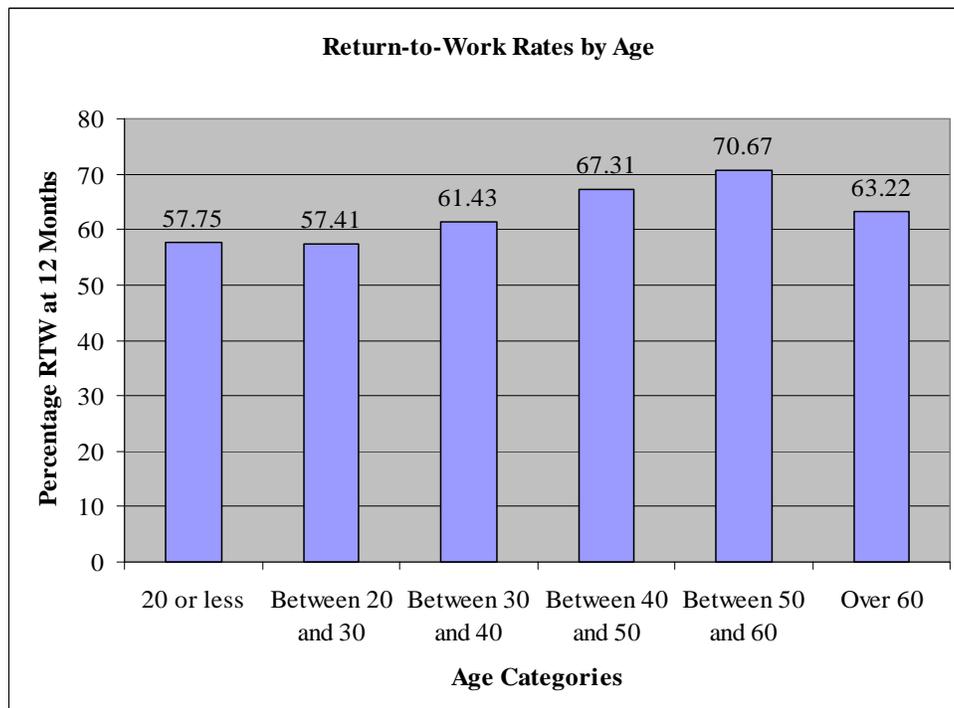
Chart 1 below shows the percentage of all injured workers with summary or consult ratings whose permanent disability was rated within 18 months of the date of injury, and who were working four quarters after the quarter of their date of injury. This time frame approximates a 12-month return-to-work rate, which RAND characterized as a strong predictor of the long-term economic outcomes of disabled workers. DWC will consider the increased return-to-work rates along with the wage loss calculations to evaluate compensation adequacy for workers injured in 2005 and later.

Chart 1



DWC also calculated return-to-work rates by age. The return-to-work rates steadily increased as the workers aged, up to age 60, but even the 60+ age group had a higher return-to-work rate than any age group under 40. **Chart 2** below details return-to-work rates by age.

Chart 2



Labor Code section 4660 requires the administrative director of DWC, in determining the percentages of permanent disability, to take into account the nature of the physical injury, the occupation of the injured employee, his or her age at the time of injury, and diminished future earning capacity. Under both the 1997 PDRS and the 2005 PDRS, workers under age 39 receive a downward adjustment in their permanent disability rating, while workers above age 39 receive an upward adjustment. This is based on the philosophy behind the 1997 schedule, which was to compensate injured workers for their decreased ability to compete in the open labor market.

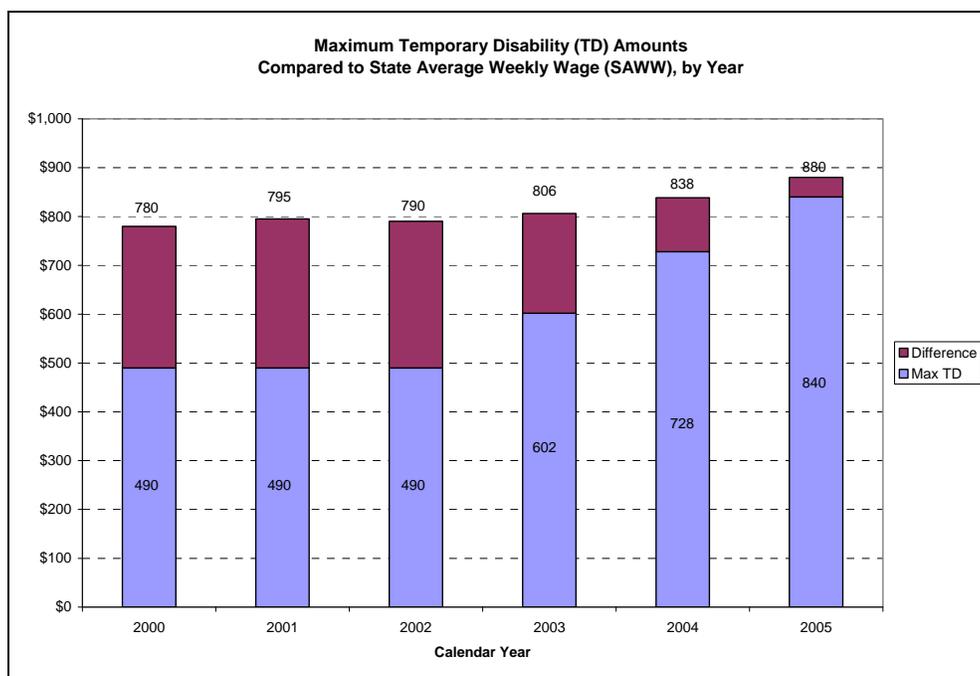
The 2005 PDRS is designed to compensate injured workers for diminished future earning capacity, as defined by wage loss. Since wage loss is directly related to return-to-work rates, it is probable that the existing age adjustment is no longer correct and should be modified. DWC will examine wage loss by age group to determine what, if any, adjustment should be made to the age modifiers.

Temporary disability (TD) rates

In 2002, the Legislature passed AB 749, which increased TD rates over three years, starting in 2003, and mandated that minimum and maximum TD payments thereafter be tied to increases in the state average weekly wage (SAWW). For work injuries occurring before 2003, the maximum weekly TD payment had been \$490, with a minimum of \$126 per week or actual wages if less than that amount. Beginning with claims for 2003 injuries, the minimum TD payment was set at \$126 per week, while the weekly maximum increased to \$602. The maximum then increased to \$728 for injuries occurring in 2004, and \$840 for injuries occurring in 2005. Labor Code section 4659(c) requires that, for workers injured on or after Jan. 1, 2003, permanent total disability (PTD) and life pension payments are increased on Jan. 1, 2004 and every January 1 thereafter based on changes in the California SAWW.

Chart 3 details the maximum TD amounts payable in years 2000 through 2005, as compared to the SAWW. In order to approximate wage loss for workers injured in 2005 and later, the wage loss that DWC calculates for workers injured in 2003 and prior will have to be adjusted to take into account the much greater portion of wage loss that is being replaced by TD benefits under the benefit structure in AB 749.

Chart 3



The California Workers' Compensation Institute (CWCI) calculated the impact of the TD increases on the proportion of injured workers with temporary disability to determine the proportion who receive at least two-thirds wage replacement while they are receiving TD. CWCI determined that the percentage of workers who would have qualified for a higher TD rate, had one been available, decreased from 20.1 percent in 2002, to 2.9 percent in 2005. This means that 97 percent of injured workers were receiving a full two-thirds wage replacement from TD benefits in 2005. TD benefits are tax-free.

There are two approaches to address adequacy of benefits. The first involves increasing the level of workers' compensation benefits, while the other involves reducing wage losses. With the latter approach, both injured workers and their employers gain. Changes in law since 2003 to increase TD benefits and improve return-to-work outcomes likely have had a significant impact on reducing wage loss.

Uncompensated wage loss calculations will also be adjusted to reflect the changes in average ratings by body part.

Changes in average permanent disability ratings

One of the major changes in the 2004 workers' compensation reform was to change from subjective measurements of permanent disability to objective measurements of permanent disability by using the Guides to the Evaluation of Permanent Impairment (5th Edition), published by the American Medical Association.

At the request of the Commission on Health and Safety and Workers' Compensation (CHSWC) and the Workers' Compensation Insurance Rating Bureau (WCIRB), Frank Neuhauser from U.C. Berkeley compared average ratings under the 2005 PDRS to comparable groups of ratings under the pre-2005 PDRS. The comparison, dated Feb. 23, 2007, includes all ratings conducted under the 2005 PDRS through January, 2007, which includes 30,537 ratings under the new schedule. According to Mr. Neuhauser's findings:

- The average rating on summary ratings (non-litigated claims) was 11.95 percent compared to an average of 20.50 percent for a comparable group of claims under the pre-2005 PDRS.
- The average rating for consultative ratings (litigated claims) was 19.72 percent compared to an average of 33.50 percent for a comparable group of cases rated under the pre-2005 PDRS.

In Conclusion

The DWC is charged with creating a permanent disability rating schedule that provides objective, uniform and consistent ratings, removing subjectivity from the system. DWC is further charged with ensuring injured workers get prompt, sound medical care so they can return to work quickly. The 1997 schedule was revised because it resulted in inflated ratings for lower level disabilities and a protracted process, which caused increased litigation and claim costs, and led to poor outcomes for injured workers. Under the 2005 PDRS, uncertainty and contention over ratings are eliminated because using the AMA guides requires ratings be based on objective medical evidence of disability.

To further implement the mandate of removing subjectivity from the system, DWC is analyzing data to determine the aggregate effect of the diminished future earning capacity adjustment so it can revise that adjustment if necessary. The first step in this process was to gather the data. Step two involves several projects to analyze that data:

- Review return-to-work rates.
- Examine three-year wage loss information for workers injured between Jan. 1, 2003 and Jun. 30, 2003.
- Correlate the return-to-work rates and indemnity payments from that period to provide information on how much uncompensated wage loss there was under the 1997 PDRS.
- Compare this uncompensated wage loss to the ratings under the 2005 schedule.

Phase I: Analysis of Return-to-Work Rates	
Phase II: Wage Loss Analysis	Step 1: Three-year wage loss for workers injured Jan. 1, 2003 to Jun. 1, 2003
	Step 2: Correlate return-to-work rates and indemnity payments to determine uncompensated wage loss under the 1997 PDRS
	Step 3: Compare to ratings in the 2005 PDRS
Phase III: Quarterly Updates of Return-to-Work Rates and Wage Loss Analysis	

The DWC has completed Phase I and part of Phase II of its research, and data analysis continues. Once the Phase II analysis of uncompensated wage loss is complete, DWC expects to be able to make revisions to the 2005 PDRS based on facts that promote consistency and uniformity, and that provide injured workers and employers with a workers' compensation system focused on the ability to return to work.