RESEARCH UPDATE

Analysis of California Workers' Compensation Reforms

Part 1: Medical Utilization & Reimbursement Outcomes

by Alex Swedlow, MHSA and John Ireland, MHSA

EXECUTIVE SUMMARY

As part of its mandate to monitor the effects of California workers' compensation medical care reforms enacted between 2002 and 2004, the Workers' Compensation Insurance Rating Bureau (WCIRB) asked the California Workers' Compensation Institute (CWCI) to assist its efforts to track changes in workers' compensation medical utilization and associated payments. A preliminary analysis by CWCI conducted in 2005 showed an association between the reforms and significant reductions in average visits and average amounts paid per claim for physical therapy and chiropractic manipulation, as well as other forms of medical treatment.[1] This analysis, which uses claims with 2002 to 2005 injury dates and tracks medical utilization and reimbursements across an extended timeline, confirms the prior research findings and provides additional outcomes data.

Key findings include:

- **Changes in the Percentage of Claims with Medical Service by Fee Schedule Section:** Since the medical care reforms began to take effect in January 2004, the proportion of claims that involve at least one visit for physical therapy (PT), chiropractic manipulation, medicine section services, surgery or radiology services has declined. The most significant reductions have been in the percentage of claims involving PT services and chiropractic manipulation – two treatment categories that became subject to utilization review, treatment guidelines, and 24-visit caps set by SB 228. Much smaller reductions were noted in the proportion of claims involving medicine section services, surgery and radiology, while a marginal increase was noted in the percentage of claims involving evaluation and management services.

- **Changes in Percentage of Claims with Physical Therapy or Chiropractic Manipulation Exceeding the 24-Visit Caps:** At 12 months post-injury, the proportion of PT claims involving more than 24 PT visits declined 68 percent; while the proportion of chiropractic claims involving more than 24 chiropractic manipulation visits fell 85 percent.

- **Changes in the Average Number of Visits and Average Amounts Paid Per Claim by Fee Schedule Category:** For most types of treatment, the average number of visits and average amounts paid per claim at 3, 6, 9, 12 and 18 months post injury declined after the implementation of utilization review, treatment guidelines, and the PT/chiropractic care 24-visit caps. Among PT claims, for example, both the average number of PT visits and average payments per claim for these services at 18 months post injury fell 58 percent. Similarly, among chiropractic manipulation claims, the average number of visits at 18 months fell 67 percent, resulting in a 72 percent drop in the average amount paid per claim for those services. The study also found fewer visits and lower average amounts paid per claim in four of the five other medical service categories – the exception being surgery services, where utilization was steady, but average amounts paid per claim increased.

1 Swedlow, A. ICIS Says: Early Returns On Workers' Compensation Medical Reforms, Parts 1-6. CWCI, 2005.

BACKGROUND

Workers' Compensation Medical Reform – Medical Utilization

Prior to 2003, there were virtually no limits on the amount of medical services that an injured worker in the California workers' compensation system might receive. While the number of services per visit could be limited in some situations by Official Medical Fee Schedule ground rules adopted by the state Division of Workers' Compensation (DWC), the number of visits was often unlimited. Prior studies showed that the average number of visits for these services grew significantly between 1995 and 2002, even though there was little change in the underlying claimant or injury characteristics to warrant the increase in utilization.[2]

The research also found that the increases in medical treatment utilization and payments were associated with the enhanced role of the primary treating physician, which began with the passage of the 1993 workers' compensation reform legislation. The 1993 reforms attached a rebuttable presumption of correctness to the primary treating physician's opinion for the purpose of calculating permanent disability. Subsequent case law (the 1996 Minniear decision) expanded this presumption's application to all medical issues – including the appropriateness of any given medical treatment. The Minniear decision limited a payor's ability to question or object to medical utilization, allowing challenges to the primary treating physician's opinion only if it could be proved that the medical treater's opinion was not supported by the medical literature -- a standard rarely overcome in the appeals process, even when it was clear that a given treatment was not curative. With little control over workers' compensation medical utilization, the cost of treating injured workers climbed rapidly, with the average ultimate medical cost per indemnity claim in California workers' compensation more than doubling between accident years 1995 and 2002.

Workers' compensation reforms signed into law between 2002 and 2004 contained provisions designed to assure that injured workers received appropriate types and levels of treatment for their medical condition, and to control the spiraling cost of medical care. Among the specific reforms:

- Repeal of voluntary utilization review (UR) and the primary treating physician's presumption of correctness.
- Enactment of a mandatory UR model beginning in 2004, requiring that medical care for injured workers meet nationally recognized, evidence-based, peer-reviewed treatment guidelines, beginning with the American College of Occupational and Environmental Medicine (ACOEM) guidelines. State lawmakers gave the ACOEM guidelines the presumption of correctness until the DWC Administrative Director promulgated a medical treatment utilization schedule.
- 24-visit caps on chiropractic care, physical therapy, and occupational therapy.
- Five percent reductions in maximum allowable physician service fees that exceeded Medicare rates. The Administrative Director was given the authority to adopt a physician fee schedule in 2006 and revise it at least biennially.
- A mandatory second opinion process for spinal surgery.
- Expansion of the Official Medical Fee Schedule to cover out-patient surgical facilities and ambulance services. State lawmakers set maximum reasonable fees for in-patient and out-patient hospital facility fees, ambulance services, durable medical equipment, prosthetics, orthotics and supplies (DMEPOS), and pathology and laboratory procedures at 120 percent of the Medicare rate, and mandated that the fees stay current with Medicare adjustments.
- Pharmacy rates set at 100 percent of the Medi-Cal rate, and expansion of the generic drug substitution requirements to encompass all dispensers.
- Provisions allowing employers to set up medical provider networks (MPNs) to direct their injured workers' medical care on or after January 1, 2005.

Emergency regulations to implement the Official Medical Fee Schedule changes took effect on January 2, 2004, and after a number of public comment periods, final regulations became effective July 1, 2004. On the other hand, while the reforms allowed Medical Provider Networks for treatment as of January 1, 2005, most MPNs were not approved by the state and did not become operational until well after January 1, 2005, so their impact on the post-reform results in this study is limited.

2 Gardner L, Swedlow A. The Effect of 1993 – 1996 Legislative Reform Activity on Medical Cost, Litigation and Claim Duration in the California Workers' Compensation System. Research Note. CWCI. May 2002;
Johnson, T. The Effect of California's PTP Legislation on the Utilization of Healthcare, California Workers' Compensation Institute, December 2002.

DATA & METHODS

The goal of this study was to measure the associations between the California workers' compensation medical care reforms implemented in 2004 – most notably, mandatory utilization review, the ACOEM guidelines, and the 24-visit caps on physical therapy and chiropractic care – and changes in the amount of treatment provided to injured workers, and the associated medical reimbursements.

The authors compiled data for the study from its Industry Claims Information System (ICIS) database into a special data set measuring medical utilization and payments at five valuation points within the life of each claim: 3, 6, 9, 12 and 18 months post injury. The data set encompassed 785,250 medical-only and indemnity claims with dates of injury between January 2002 and September 2005, as well as all medical services delivered from January 2002 through November 2005 -- the cut-off point for the ICIS database. Medical reimbursements on all claims in the sample totaled $1.4 billion.

After grouping the claims by month and year of injury, the authors further summarized medical service details for all claims into six fee schedule classifications**:**

1. Physical Therapy
2. Chiropractic Manipulation
3. Evaluation & Management (Including Office Visits)
4. Medicine Section Services
5. Surgery[3]
6. Radiology

For each of the six medical fee schedule categories, the authors then calculated the average number of visits (defined for purposes of this study as unique dates of service) and the average amount reimbursed per claim for services within the category at each valuation point. If a claim showed at least one date of service for any of the service categories, the analysts included data from that claim in calculating the utilization and payment averages. However, if a claim showed multiple services within the same category on the same date of service (e.g. multiple physical therapy services on the same day), it was counted as a single visit for that service category.

To compare pre- and post-reform utilization and payments for medical services and procedures in each of the six fee schedule sections, the authors created a series of trend lines that measured changes in the average number of visits and the total amounts paid per claim between the valuation points. Table 1 shows the first and last dates of injury (DOI) of the claims used for each valuation period.

Table 1: First and Last DOI For the Five Valuation Samples

Valuation Point (time elapsed from date of injury)	**First DOI in the Valuation Sample**	**Last DOI in the Valuation Sample**
@ 3 Months	Jan 2002	Sept 2005
@ 6 Months	Jan 2002	June 2005
@ 9 Months	Jan 2002	Mar 2005
@ 12 Months	Jan 2002	Dec 2004
@ 18 Months	Jan 2002	June 2004

For each medical treatment category, the authors calculated two sets of utilization and payment averages. The first set measured the average number of visits and average amounts paid within each category using only those claims in which services from the specific fee schedule section had been used in the first 18 months post injury. The second set of measures was based on the overall claim sample and included all 785,250 claims, regardless of whether or not they involved services covered by the specific fee schedule section.

A technical appendix, available in the ICIS section of the CWCI website (www.cwci.org) provides additional detail on average visits and payments for each fee schedule section at all valuation points, using both sets of measures. The appendix also provides additional metrics, including the leading procedure codes for each fee schedule section, as well as demographic characteristics of the injured workers within the final data set.

3 The surgery category for this study included all services other than injections covered by the Surgery Section of the fee schedule.

RESULTS

Changes in Percentage of Claims with Medical Service by Fee Schedule Category

Table 2 compares pre- and post-reform claims data (accident year 2002 through accident year 2005) to show the change in workers' compensation medical utilization by fee schedule category after the reforms took effect.

Table 2: Medical Utilization by Type of Service
% of All Claims – Pre-Reform vs. Post-Reform

Fee Schedule Treatment Category	Pre-Reform		Post-Reform		Relative Change '02-'05
	2002	2003	2004	2005	
Physical Therapy	39.2%	40.9%	36.3%	32.3%	- 17.6%
Chiropractic Manipulation	10.5%	11.2%	7.0%	4.1%	- 61.0%
Evaluation & Management	94.3%	93.7%	96.8%	97.4%	+ 3.3%
Medicine Section Services	26.9%	28.1%	26.9%	25.6%	- 4.8%
Surgery (Excluding Injections)	39.4%	39.7%	41.1%	36.5%	- 7.4%
Radiology	58.2%	58.2%	56.5%	53.3%	- 8.4%

In five of the six fee schedule treatment categories, the authors found the implementation of the medical care reforms was associated with declines in medical service utilization. The biggest reductions were in the use of physical therapy and chiropractic manipulation, both of which became subject to 24-visit caps as well as utilization review in 2004. The pre-reform data from 2002 and 2003 show about 40 percent of all California work injury claims involved physical therapy procedures, but by 2005, that proportion was down to 32 percent, a relative drop of 17.6 percent. Over the same period, the percentage of claims involving chiropractic manipulation dropped from 10.5 percent to 4.1 percent, a relative decline of 61 percent. The use of medicine section services, surgical procedures, and radiology also declined, but to a lesser degree. Between 2002 and 2005, the proportion of all claims involving medicine section procedures fell slightly (26.9 percent vs. 25.6 percent); the proportion involving surgery procedures fell from 39.4 to 36.5 percent; and the proportion utilizing radiology services dropped from 58.2 to 53.3 percent. At the same time, the proportion of claims with evaluation & management services registered a moderate increase, rising from 94.3 percent to 97.4 percent.

Changes in the Percentage of Physical Therapy and Chiropractic Manipulation Claims Exceeding the 24-Visit Caps

The authors also compared pre-reform data from accident years 2002 and 2003 to post-reform data from accident year 2004 to further assess the impact of the 24-visit caps on physical therapy and chiropractic care after the January 2004 implementation date. Using samples from each of those three years, they calculated the proportion of claims involving physical therapy or chiropractic manipulation that exceeded the 24-visit caps. To assure comparable data, for each sample the number of physical therapy and chiropractic manipulation visits was measured at 12 months post injury.

To see how those percentages changed between 12 and 24 months, and to obtain benchmark data for future comparisons, the analysts also calculated the percentage of 2002 and 2003 (pre-reform) PT and chiropractic manipulation claims that exceeded 24 visits for those services within two years of injury. At the time of the study, similar 24-month data was not available for the 2004 (post-reform) claims.

Table 3: Percent of PT & Chiropractic Manipulation Claims with > 24 Visits

	At 12 Months Post DOI			At 24 Months Post DOI		
	2002	2003	2004	2002	2003	2004
Physical Therapy	30.4%	29.6%	9.7%	34.4%	32.3%	NA
Chiropractic	44.3%	40.2%	6.7%	48.1%	42.1%	NA

Table 3 shows that after the implementation of the 24-visit cap in 2004, the percentage of physical therapy claims that exceeded 24 PT visits within 12 months of injury fell from 30.4 percent to 9.7 percent (a relative decline of 68 percent). The post-reform utilization pattern for chiropractic manipulation was even more dramatic. Prior to the reforms, 44.3 percent of claims involving chiropractic manipulation had more than 24 visits in the first 12 months after the injury; after the caps and utilization review took effect in 2004, that proportion dwindled to 6.7 percent (a relative decline of 85 percent). As noted above, the 2004 claims data was not sufficiently developed to evaluate the impact of the caps at 24 months post injury, so this area will require further study, though early indications are that the downtrends in the use of PT and chiropractic manipulation will hold and possibly strengthen.

Changes in Visits and Cost by Fee Schedule Category

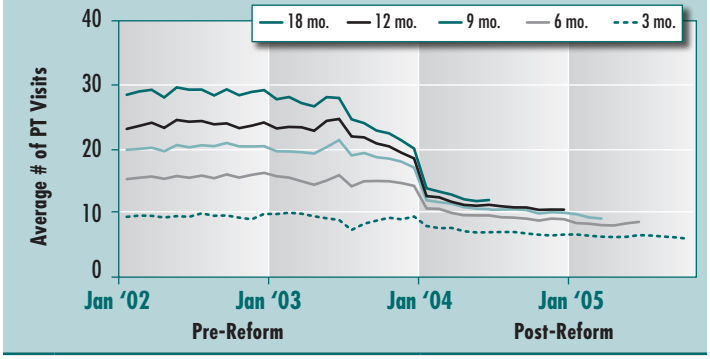
A December 2005 CWCI study that measured early returns on California's 2002-2004 workers' compensation reforms[4] showed significant reductions in visits and payments at 3, 6, and 9 months post injury for most major categories of California workers' compensation medical services. This study updates and expands the earlier analysis by measuring the average number of visits per claim and the average amounts paid for medical treatment at 3, 6, 9, 12 and 18 months post injury for six categories of treatment. The following sections summarize the results for each of the six fee schedule treatment categories.

PHYSICAL THERAPY

The data show that after the reforms were implemented, physical therapy claims involved fewer PT visits, and lower amounts paid per claim for physical therapy services at all five valuation points.

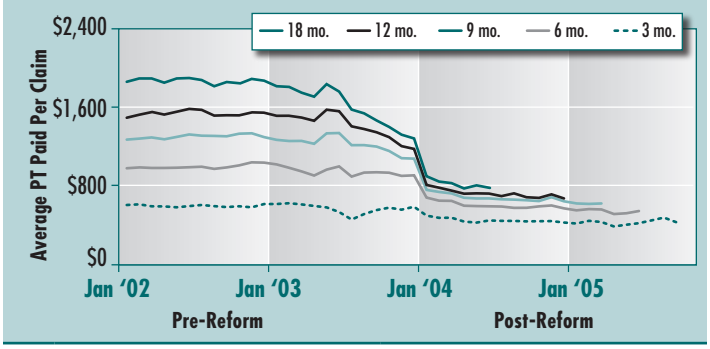
The drop off in utilization ranged from 3.0 fewer visits per PT claim at three months post injury (-31 percent) to 16.3 fewer visits (-58 percent) at 18 months post injury (Chart 1).

Chart 1: Average # of PT Visits @ 3, 6, 9, 12, & 18 Months
Physical Therapy Claims Only



The trends were similar for physical therapy payments. Reductions in the average amount paid for PT per physical therapy claim ranged from $169 (-28 percent) at three months post injury to $1,065 (-58 percent) at 18 months (Chart 2).

Chart 2: Average PT Paid @ 3, 6, 9, 12, & 18 Months
Physical Therapy Claims Only



To put these changes into a broader context, for each category of medical care the authors also calculated the average number of visits and average payments across all claims, including those that did not involve that type of service.

Table 4: Avg. # of PT Visits & PT Paid @ 3, 6, 9, 12 & 18 Months
All Claims – Pre- vs. Post-Reform

	Avg. # of PT Visits		Avg. Paid/Claim for PT	
Valuation Point	1st Pre-Reform Measurement (Jan '02)	Most Recent Post-Reform Measurement	1st Pre-Reform Measurement (Jan '02)	Most Recent Post-Reform Measurement
@ 3 Months	3.8	1.9	$241	$128
@ 6 Months	6.1	2.7	$390	$167
@ 9 Months	8.0	3.0	$509	$209
@ 12 Months	9.4	3.6	$603	$231
@ 18 Months	11.4	4.4	$742	$285

For physical therapy, the sharp drop in the average number of visits among PT claims, coupled with a declining proportion of all claims receiving this type of care (shown in Table 2), led to dramatic reductions in the average number of PT visits and associated payments for all claims. Table 4 shows the reductions in average PT visits ranged from an average of 1.9 fewer visits (-50 percent) at three months post injury to an average of seven fewer claims (-61 percent) at 18 months. This declining utilization yielded similar reductions in the average amounts paid for PT across all claims, which ranged from $113 less (-47 percent) at the three-month valuation to as much as $457 less (-62 percent) 18 months after the injury date.

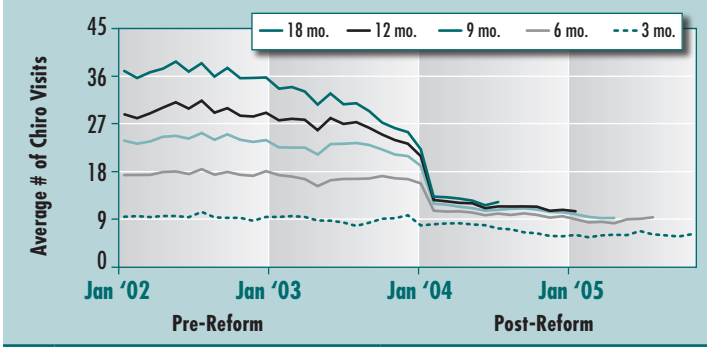
4 Swedlow, A. "Changes in Medical Utilization and Average Cost by Medical Service Type," ICIS Says Report, Early Returns on Workers' Compensation Medical Reforms, Part 5. CWCI, December 2005.

CHIROPRACTIC MANIPULATION

Following reform implementation, chiropractic manipulation claims also involved fewer visits and lower average payments for chiropractic manipulation services at all five valuation points.

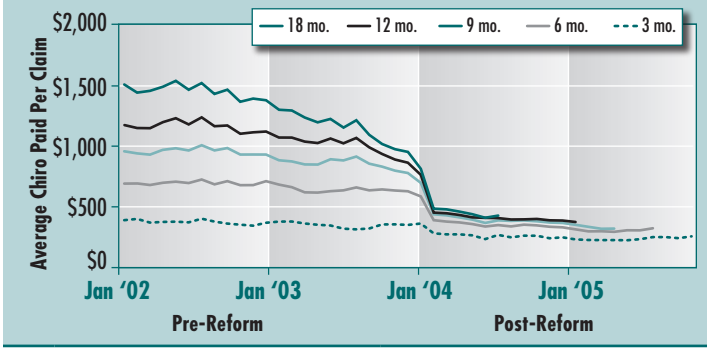
Chart 3 shows that among workers who received chiropractic manipulation, post-reform reductions in utilization ranged from an average of 2.6 fewer chiropractic manipulation visits (-22 percent) at three months post injury to 24.9 fewer visits (-67 percent) after 18 months.

Chart 3: Average # of Chiro Manipulation Visits @ 3, 6, 9, 12, & 18 Months
Chiropractic Manipulation Claims Only



Again, the downtrend in the utilization of this type of service after the reforms were implemented was reflected in the average payment data, with chiropractic manipulation payments per chiropractic claim averaging $131 less at three months post injury (-34 percent) to $1,072 less at 18 months (-72 percent).

Chart 4: Average Chiro Manipulation Paid @ 3, 6, 9, 12, & 18 Months
Chiropractic Manipulation Claims Only



The reduction in the average number of chiropractic manipulation visits for claimants receiving this type of care (Chart 3), combined with the sharp decline in the proportion of claims involving chiropractic manipulation (Table 2), resulted in significant reductions in the average number of chiropractic visits and associated payments for all claims.

Table 5: Avg. # of Chiro Manipulation Visits & Chiro Paid @ 3, 6, 9, 12 & 18 Months
All Claims – Pre- vs. Post-Reform

	Average # of Chiropractic Manipulation Visits		Average Paid/Claim for Chiropractic Manipulation	
Valuation Point	1st Pre-Reform Measurement (Jan '02)	Most Recent Post-Reform Measurement	1st Pre-Reform Measurement (Jan '02)	Most Recent Post-Reform Measurement
@ 3 Months	1.0	0.3	$40	$10
@ 6 Months	1.8	0.4	$71	$14
@ 9 Months	2.4	0.4	$98	$13
@ 12 Months	3.0	0.6	$120	$20
@ 18 Months	3.8	0.9	$153	$31

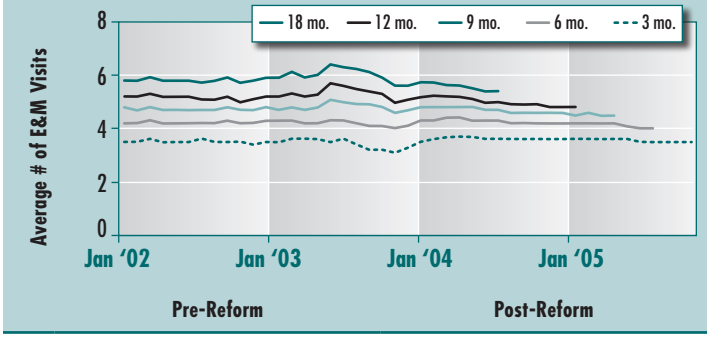
Table 5 shows the reductions in the average number of chiropractic manipulation visits across all workers' compensation claims ranged from 0.7 fewer visits per claim at three months post injury to 2.9 fewer claims (-70.0 percent) after 18 months. This reduced utilization, in turn, led to similar declines in the average paid per claim for chiropractic manipulation, which ranged from $30 less (-75.0 percent) at 3 months to $122 less (-80.0 percent) at 18 months.

EVALUATION AND MANAGEMENT

Evaluation and management (E&M) services are among the most prevalent type of medical services in California workers' compensation, as these codes cover office visits, and were paid in nearly all claims both before and after the reforms. Thus, unlike most other medical care categories, at each of the valuation points, the average number of E&M visits (service dates) per claim involving this type of service showed only marginal changes.

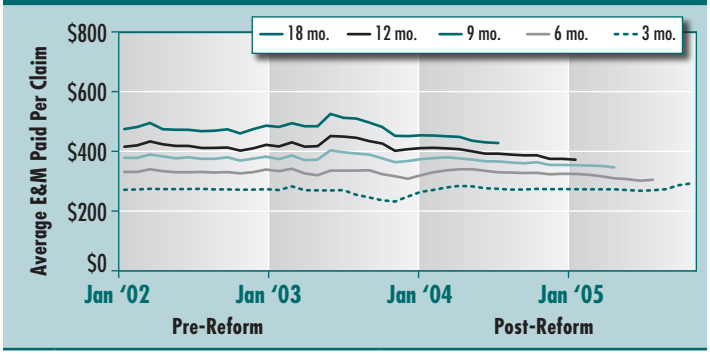
Overall, among E&M claims there were marginal net changes in the average number of E&M visits after the reforms. Chart 5 shows that both before and after the reforms, E&M claims averaged approximately 3.5 E&M visits at three months post-injury; 4 visits at six months; 4.8 visits at nine months; 5 visits after one year; and 5.8 visits at 18 months.

Chart 5: Avg. # of E&M Visits @ 3, 6, 9, 12, & 18 Months
Evaluation and Management Claims Only



The 2003 reform bill (SB 228) mandated that the Official Medical Fee Schedule maximum allowances be reduced by 5 percent, but not below the Medicare rate. To implement SB 228, the DWC updated the fee schedule amounts for E&M and other services to make them consistent with Medicare adjustments that took effect July 1, 2004, and the Division has continued to revise those fees to track with subsequent changes in the Medicare rates.[5] As a result, beginning in 2004, the changes noted in average amounts paid per claim for E&M services at each valuation point (Chart 6) reflect not only the marginal changes in the average number of E&M visits per claim and shifts in the mix of E&M services, but also slight adjustments in Medicare rates. Changes in the average E&M payment per E&M claim ranged from a $24 increase at 3 months to a $49 decrease at 18 months.

Chart 6: Average E&M Paid @ 3, 6, 9, 12, & 18 Months
Evaluation and Management Claims Only



Post-reform changes in the average number of E&M visits per claim across all claims (Table 6) ranged from an increase of 0.2 visits per claim at the three-month valuation to decreases of 0.2 visits at 9 and 18 months post injury, and 0.3 visits at the 12-month valuation. Average amounts paid for E&M services across all claims offer varying results as well, ranging from a $33 increase at three months post injury to a $36 reduction at the 18-month valuation point.

Table 6: Avg. # of E&M Visits & E&M Paid @ 3, 6, 9, 12 & 18 Months
All Claims – Pre- vs. Post Reform

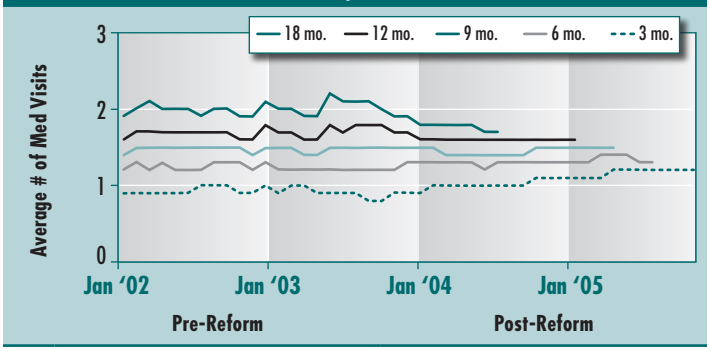
	Avg. # of E&M Visits		Avg. Paid/Claim for E&M	
Valuation Point	1st Pre-Reform Measurement (Jan '02)	Most Recent Post-Reform Measurement	1st Pre-Reform Measurement (Jan '02)	Most Recent Post-Reform Measurement
@ 3 Months	3.3	3.5	$254	$287
@ 6 Months	4.0	3.9	$312	$296
@ 9 Months	4.5	4.3	$357	$327
@ 12 Months	4.9	4.6	$392	$361
@ 18 Months	5.4	5.2	$448	$412

5 In December 2006 the DWC proposed further changes to reimbursement levels for E&M services. The DWC also has committed to a full evaluation of reimbursement levels for other fee schedule sections in 2007.

MEDICINE SECTION SERVICES

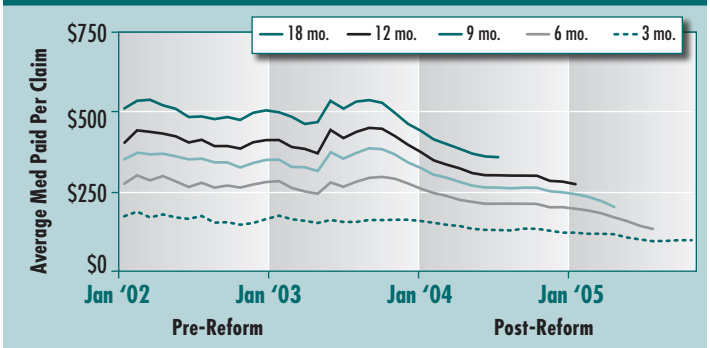
Among claims involving medicine section services, the utilization trends for those services appear relatively flat (Chart 7). After the reforms were implemented, the average number of visits for medicine section services at 3, 6, and 9 months post injury increased only modestly from pre-reform levels, while the average number of visits noted at both the 1-year and 18-month valuations registered marginal declines.

Chart 7: Average # of Medicine Section Service Visits @ 3, 6, 9, 12, & 18 Months
Medicine Section Service Claims Only



Nevertheless, among claims receiving medicine section services, the average amounts paid per claim for those services declined sharply after the reforms took effect, with reductions noted at all five valuation points (Chart 8). Those reductions ranged from $75 per claim (-43 percent) at the 3-month valuation point to $151 (-29.7 percent) after 18 months. The decreases in average payment per claim for medicine section services reflect a relative decrease in the per unit price of medical services due to the 5 percent reductions in the fee schedule maximums called for by SB 228, and may also indicate a change in the mix of medicine section services once the ACOEM guidelines and mandatory utilization review took effect in January 2004.

Chart 8: Average Medicine Section Services Paid @ 3, 6, 9, 12, & 18 Months
Medicine Section Service Claims Only



Utilization and payment trends for medicine section services on all claims were similar (Table 7). A comparison of pre- and post-reform results shows that the average number of visits per claim for medicine section services increased marginally in the first three months after the date of injury, but that average was flat at the 6, 9, 12, and 18-month valuations. In contrast, average amounts paid per claim for these services decreased across the board, with reductions ranging from $18 in the first three months to as much as $39 per claim at the nine-month valuation.

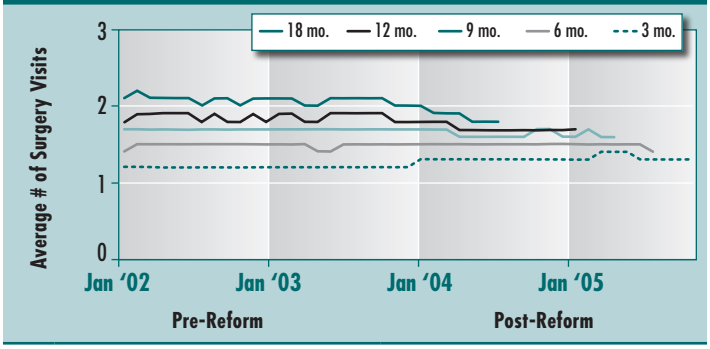
Table 7: Avg. # of Medicine Section Visits & Medicine Section Paid @ 3, 6, 9, 12 & 18 Months
All Claims – Pre- vs. Post-Reform

	Average # of Medicine Section Visits		Average Paid/Claim for Medicine Section Services	
Valuation Point	1st Pre-Reform Measurement (Jan '02)	Most Recent Post-Reform Measurement	1st Pre-Reform Measurement (Jan '02)	Most Recent Post-Reform Measurement
@ 3 Months	0.2	0.3	$44	$26
@ 6 Months	0.3	0.3	$70	$35
@ 9 Months	0.4	0.4	$90	$51
@ 12 Months	0.4	0.4	$102	$71
@ 18 Months	0.5	0.5	$128	$98

SURGERY

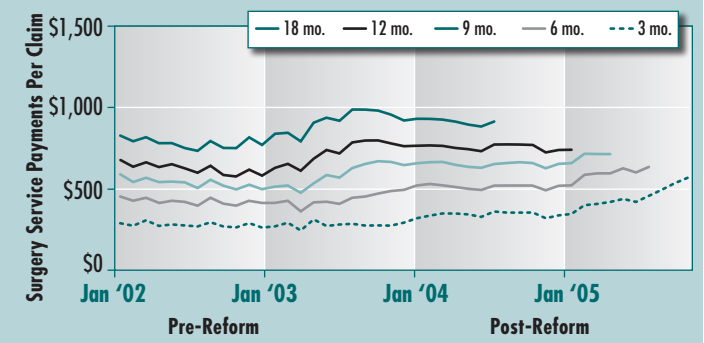
Among workers' compensation claims involving surgery services, the average number of surgery visits remained relatively unchanged following the implementation of the reforms (Chart 9). The exception was at the 18-month valuation point, where the average number of surgery visits fell from 2.1 to 1.8 visits after the reforms were in place.

Chart 9: Average # of Surgery Visits @ 3, 6, 9, 12, & 18 Months
Surgery Claims Only



In contrast, the average amount paid per claim for surgery services following the reforms increased at all five valuation points (Chart 10). These increases ranged from $90 more at 18 months post-injury (the point at which the average number of surgery visits declined) to $276 more at the three-month valuation – nearly double the pre-reform average paid for surgery visits at 90 days. This finding is consistent with a prior study which showed that the mix of surgery services shifted toward more complex, higher reimbursement level procedures after the reforms were implemented.[6]

Chart 10: Average Surgery Services Paid @ 3, 6, 9, 12, & 18 Months
Surgery Claims Only



Once again, the study found a similar pattern for surgery visits and payments among all claims (Table 8). The average number of surgery visits across all claims registered only marginal changes in the wake of the reforms, though the total amount paid per claim for surgery visits was higher at all five valuation points, ranging from $60 more at the 18-month valuation to $87 more in the first three months after the injury.

Table 8: Avg. # of Surgery Visits & Surgery Paid @ 3, 6, 9, 12 & 18 Months
All Claims – Pre- vs. Post-Reform

	Average # of Surgery Visits		Average Paid/Claim for Surgery Services	
Valuation Point	1st Pre-Reform Measurement (Jan '02)	Most Recent Post-Reform Measurement	1st Pre-Reform Measurement (Jan '02)	Most Recent Post-Reform Measurement
@ 3 Months	0.4	0.4	$109	$196
@ 6 Months	0.5	0.5	$170	$235
@ 9 Months	0.6	0.6	$221	$275
@ 12 Months	0.7	0.7	$253	$305
@ 18 Months	0.8	0.7	$311	$371

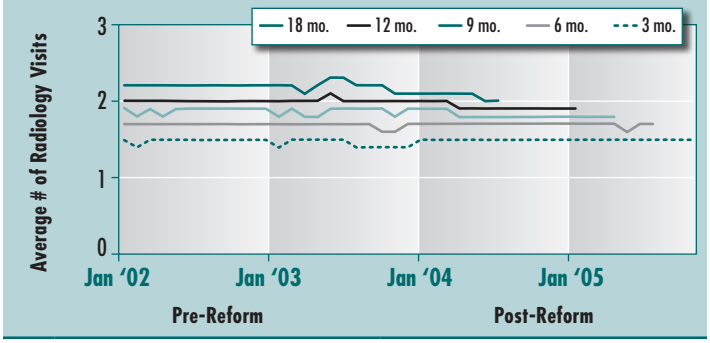
6 Swedlow, A. ICIS Says: Early Returns On Workers' Compensation Medical Reforms, Part 5--"Changes In Medical Utilization And Average Cost By Medical Service Type." CWCI, December 2005.

RADIOLOGY

The post-reform utilization and payment patterns for radiology services are similar to those noted for medicine section procedures, with slight reductions in the average number of visits and more significant reductions in the average amounts paid per claim noted at most valuation points.

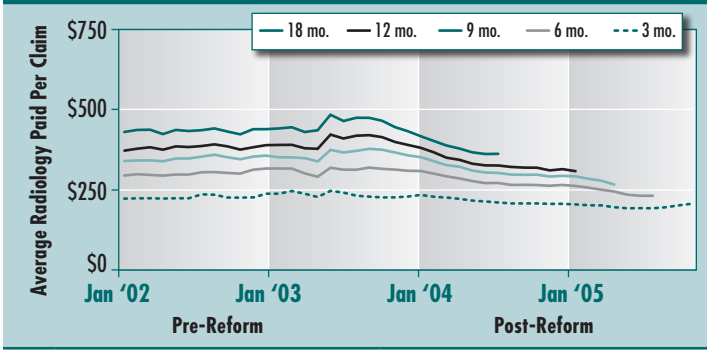
For radiology claims, the utilization trend lines registered almost no change after the reforms (Chart 11). Across the five valuation periods, the biggest change was in the average number of radiology visits at 18 months, which fell from 2.2 visits prior to reform to 2.0 visits after the reforms.

Chart 11: Avg. Radiology Visits @ 3, 6, 9, 12, & 18 Months
Radiology Claims Only



Despite the flat utilization trendlines for radiology claims, average amounts paid per claim for these services declined at all five valuation points (Chart 12). Post-reform reductions in average amounts paid for radiology ranged from $16 at the 3-month valuation to $70 after 18 months. The decreases in average payments during a period in which utilization of radiology services showed little change indicate a relative decrease in the per unit price of radiology services at all valuation points -- likely reflecting the SB 228 fee schedule reductions and changes in the mix of services following implementation of mandatory UR and the ACOEM guidelines.

Chart 12: Avg. Radiology Paid @ 3, 6, 9, 12, & 18 Months
Radiology Claims Only



Post-reform utilization and payment patterns were similar when the average number of radiology visits and average amount paid for radiology were calculated for all claims (Table 9). At the five valuation points, the average number of radiology visits for all workers' compensation claims showed little change or edged down slightly, while the average reductions in the amounts paid per claim for these services ranged from $18 in the first three months after injury, to as much as $58 at the 9-month valuation point.

Table 9: Avg. # of Radiology Visits & Radiology Paid @ 3, 6, 9, 12 & 18 Months
All Claims – Pre- vs. Post-Reform

	Average # of Radiology Visits		Average Paid/Claim for Radiology Services	
Valuation Point	1st Pre-Reform Measurement (Jan '02)	Most Recent Post-Reform Measurement	1st Pre-Reform Measurement (Jan '02)	Most Recent Post-Reform Measurement
@ 3 Months	0.8	0.8	$130	$112
@ 6 Months	1.0	0.9	$171	$121
@ 9 Months	1.1	0.9	$198	$140
@ 12 Months	1.2	1.0	$218	$167
@ 18 Months	1.3	1.2	$251	$206

SUMMARY

This research confirms that the reductions in workers' compensation medical utilization and payments for many outpatient services first observed as early returns by CWCI in 2005 were still evident at 12 and 18 months post injury. Of the six areas of the fee schedule observed, physical therapy and chiropractic manipulation continue to show the greatest reductions, with the proportion of claims involving these services, the average number of visits, and the average amounts paid all significantly lower than pre-reform levels.

Evaluation & management services continued to be noted in nearly all claims, and there were relatively small changes in the average number of visits and average amounts paid per claim for these services. At the same time, the percentage of claims involving medicine section services, radiology and surgery fell slightly. Though only minor reductions were noted in the average number of visits for these services, the study showed sharp reductions in the average amounts paid for medicine section and radiology services, while the average amounts paid for surgery increased significantly at all five valuation points. The technical appendix posted in the ICIS section of the Institute's website (www.cwci.org) provides additional information and details on average utilization and reimbursement patterns by fee schedule section for all valuation periods.

Recent anecdotes presented at public hearings[7] and in newspaper reports illustrate the controversial nature of the California workers' compensation system's utilization review program, with various parties asserting inappropriate denial of care, requests for medical services that lack support in the evidence-based utilization guidelines, poor documentation from medical providers, and lack of timely access to care. Workers' compensation researchers have responded with a growing array of post-reform health service research outcome studies. For example, a recent CWCI study on post-reform access to care found no significant change in injured workers' access to either primary care providers or medical specialists. Future research based on analysis of empirical data is needed to test the anecdotal assertions surrounding utilization review issues. One example of this is the notable complaint that injured workers may be arbitrarily denied post-surgery physical therapy. Part IV of this research series will focus exclusively on the issue of access and utilization of post-surgical physical therapy and chiropractic services.

THE RESEARCH SERIES

California Workers' Compensation Post-Reform Outcomes

This analysis is the first in CWCI's four-part series that tracks changes in various aspects of the California workers' compensation system following the implementation of the 2002–2004 legislative reforms. The series will include analyses of the following:

- **Part I: Medical Utilization & Reimbursement**
- **Part II: Temporary Disability**
- **Part III: Medical Provider Networks**
- **Part IV: Post-Surgical Use of Physical Therapy and Chiropractic Manipulation**

As noted above, the next report in the series, scheduled for release in early 2007, will measure post-reform changes in temporary disability.

7 Division of Workers' Compensation. History of Medical Utilization Schedule. Transcript of August 23, 2006 public hearing testimony. August 2006. (http://www.dir.ca.gov/dwc/whatsNew2006.htm)

ABOUT CWCI

The California Workers' Compensation Institute, incorporated in 1964, is a private, non-profit organization of insurers and self-insured employers conducting and communicating research and analyses to improve the California workers' compensation system. Institute members include insurers that collectively write more than 87 percent of California workers' compensation direct written premium, as well as many of the largest public and private self-insured employers in the state.

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