RESEARCH UPDATE

Analysis of California Workers' Compensation Reforms

Part 1: Medical Utilization & Reimbursement Outcomes
Accident Years 2002 - 2006 Claims Experience

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EXECUTIVE SUMMARY

As part of its legislative requirement to analyze changes in medical costs as a result of the recent implementation of legislative reforms, the Workers' Compensation Insurance Rating Bureau asked the California Workers' Compensation Institute to assist its efforts to measure ongoing trends and changes in medical utilization and the associated payments. The initial analyses conducted by CWCI in 2005 and 2006 showed an association between recent workers' compensation medical reforms and significant reductions in average visits and reimbursements for physical therapy and chiropractic manipulation, as well as other forms of medical treatment. This analysis, which features data from accident year 2002 through June 2006 claims and an extended timeline of medical treatment development, confirms prior research findings, including:

- **Changes in the Percentage of Claims with Medical Service by Fee Schedule Category:** Comparing claims with 2002 injury dates to those with 2006 injury dates, the Institute found a significantly lower proportion of the post-reform claims involved one or more visits for chiropractic manipulation, physical therapy (PT), medicine section procedures and radiology. As in the earlier analyses, the biggest decline was in the percentage of claims involving chiropractic manipulation, which fell from 10.5 percent of AY 2002 claims to 3.3 percent of the AY 2006 claims, a relative decline of 68.6 percent. Over the same period, the proportion of claims involving physical therapy fell from 39.2 percent to 32.8 percent (-16.3 percent); the proportion using medicine section services dropped from 27.6 percent to 23.4 percent (-15.2 percent); and the utilization rate for radiology services dropped from 58.8 percent to 53.6 percent of all claims (-8.8 percent). In contrast, the proportion of claims involving surgery services other than injections held steady at around 40 percent, and nearly all claims continued to involve evaluation and management services – which include office visits.
- **Changes in the Percentage of Claims with Physical Therapy or Chiropractic Treatments Exceeding the 24-Visit Caps:** The percentage of physical therapy claims that exceeded the 24-visit PT cap in the first year following the injury dropped from about one out of three claims to one out of 14 claims between AY 2002 and AY 2005 (a relative decline of 78 percent). Meanwhile the proportion of chiropractic manipulation claims that exceeded the 24-visit cap in the first year fell from more than half of all chiropractic claims to just over 5 percent (a relative decline of nearly 90 percent).
- **Changes in the Average Number of Visits and the Average Amounts Paid Per Claim by Fee Schedule Category:** Except for medicine section services and surgery visits within the first year, the average number of visits for all treatment categories declined

at 6, 9, 12, 18 and 24 months post injury following the introduction of mandatory utilization review, the Medical Treatment Utilization Schedule, and the PT/Chiropractic 24-visit caps. Once again, the most dramatic reductions were in the use of physical therapy and chiropractic manipulation. For example, at 24 months post-injury, the average number of physical therapy visits among PT claims declined nearly 61 percent, producing a similar reduction in the average amount paid per PT claim for those services. Likewise, at 24 months post injury, the average number of chiropractic manipulation visits for claims with chiropractic services declined by more than 70 percent, reducing the average payments for those services by 74 percent.

In five of the six treatment categories, the average amount paid per claim for that type of treatment during the first 2 years following the injury declined – the only exception being surgery. Among surgery claims, the average amount paid for surgery services at the two-year valuation point was about 5 percent higher in the post-reform period than in the pre-reform period.

BACKGROUND

Workers' Compensation Medical Reform – Medical Utilization

California workers' compensation reform legislation signed into law between 2002 and 2004 contained provisions to assure that the types and levels of medical care injured workers receive are appropriate for their injuries, and to control the growth of medical development. Prior to 2003 there were virtually no limits on the amount of medical services that an injured worker might receive. While the number of services per visit could be contained in some situations by the Official Medical Fee Schedule ground rules, the number of visits was otherwise unlimited. As a result, between 1995 and 2002, the average number of visits by injured workers for medical treatment had grown significantly, even though there was little change in the underlying claimant or injury characteristics to warrant the increase in utilization.[1]

Given the difficulty of controlling the types of treatment and number of visits during this period, one of the most significant reforms enacted in 2003 was the partial repeal of the Primary Treating Physician's presumption of correctness in matters of medical treatment, which studies had linked to increasing medical utilization and costs.[2]

State lawmakers included two key elements in SB 228 to help curb the cost and overutilization of medical care[3] in California workers' compensation:

1) Beginning in January 2004, the state required the adoption and implementation of utilization controls featuring nationally recognized, peer-reviewed, evidence-based medical treatment guidelines (beginning with the ACOEM Guidelines). The guidelines were given a presumption of correctness, which effectively meant that the medical treatment for a given type of work injury had to be supported by high-grade medical evidence. Regardless of the date of injury, workers' compensation medical care became subject to review in accordance with utilization review standards and medical treatment guidelines based on the date of service.

2) For injuries on or after January 1, 2004, SB 228 established 24-visit caps for chiropractic care, physical therapy, and occupational therapy. The statute went on to state that if a claims administrator authorized more than the stated 24 visits, no further utilization review control could be exercised.

Beyond the adoption of mandatory utilization review guidelines and the 24-visit caps, several other reforms signed in 2003 also affected both the utilization and cost of medical services rendered to injured workers on or after January 1, 2004. These included:

- A requirement that injured workers receive second opinions for spinal surgery.
- Expansion of the Official Medical Fee Schedule to cover out-patient surgical facilities and ambulance services.
- Revisions to the maximum reasonable amounts allowed for in-patient hospital and out-patient surgery facility fees, durable medical equipment, prosthetics, orthotics and supplies (DMEPOS), pathology and laboratory procedures, and ambulance services – all of which were all set at 120 percent of the Medicare rate. In addition, a new mandate required automatic updates, linking these fees to Medicare adjustments.

1 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, Scheduled for Publication Dec 2002.

2 ibid

3 For more information: Labor Code Section 4604.5 (d)

- Changes to maximum physician service allowances in the Official Medical Fee Schedule. Those allowances that exceeded Medicare rates were reduced up to 5 percent, and the Administrative Director of the Division of Workers' Compensation was given the authority to adopt a physician fee schedule in 2006 and revise it at least biennially.
- Updated pharmacy rates, which were set at 100 percent of the Medi-Cal rate.
- Expansion of the generic drug substitution requirement to include all dispensers.

Emergency regulations to implement all of the fee schedule changes were enacted on January 2, 2004. After a number of comment periods, the state adopted final regulations that became effective July 1, 2004.

The 2004 reform bill (SB 899) also increased medical control through the introduction of workers' compensation Medical Provider Networks (MPNs) beginning in January 2005. Most MPNs, however, were not approved by the state and did not become operational until well after January 2005, so it should be noted that their impact would be greater on the AY 2006 results in this study than on the AY 2005 results.

DATA & METHODS

The goal of this study was to generate updated data showing the associations between the California workers' compensation medical reforms implemented in 2004 – most notably, mandatory utilization review, the ACOEM guidelines, and the 24-visit cap 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 the Institute's 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: 6, 9, 12, 18 and 24 months post injury. The data set encompassed 958,638 medical-only and indemnity claims with dates of injury between January 2002 and June 2006, as well as all medical services delivered from January 2002 through October 2006, the cut-off point for the ICIS database. Medical reimbursements on all claims in the sample totaled $1.8 billion.

After grouping the claims by month and year of injury, the authors further summarized medical service details into six categories, based on the section of the Official Medical Fee Schedule where the services are found:

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

For each of the six medical fee schedule categories, the authors then calculated the average number of visits (defined for the 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 in each of the six fee schedule sections, the authors created a series of trend lines measuring changes in the average number of visits and the total payments per claim between the valuation points. Table 1 shows the first and last dates of injury of the claims used for each valuation period.

Table 1: First and Last Dates of Injury For the Five Valuation Samples

Valuation Point (Time Elapsed from Date of Injury)	First Dates of Injury in the Valuation Sample	Last Dates of Injury in the Valuation Sample
@ 6 Months	Jan 2002	Mar 2006
@ 9 Months	Jan 2002	Dec 2005
@ 12 Months	Jan 2002	Sep 2005
@ 18 Months	Jan 2002	Mar 2005
@ 24 Months	Jan 2002	Sep 2004

For each treatment category, the authors calculated two sets of utilization and payment averages:

1) the average number of visits and average amount paid per claim for just those claims that had involved services within the specific treatment category in the first 24 months post injury; and

2) the average number of visits and average amount paid per claim for all 958,638 claims in the sample, regardless of whether they involved services within the specific treatment category.

RESULTS

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

Table 2 shows the change in workers' compensation medical utilization by treatment category. For each of the six treatment categories, the table shows the proportion of all claims that involved at least one medical visit for that type of treatment, with results broken out for the pre-reform period (accident years 2002 and 2003) and the post-reform period (AY 2004 through June 2006).

Table 2: Medical Utilization by Type of Service – Pre- Vs. Post-Reform
% of All Claims Involving Specific Types of Treatment

Fee Schedule Treatment Category	Pre-Reform		Post-Reform			Relative Change '02-'06
	AY 2002	AY 2003	AY 2004	AY 2005	AY 2006*	
Physical Therapy	39.2%	40.8%	36.6%	33.9%	32.8%	- 16.3%
Chiropractic Manipulation	10.5%	11.1%	7.2%	4.4%	3.3%	- 68.9%
Evaluation & Management	94.6%	94.0%	96.7%	97.2%	96.7%	+ 2.2%
Medicine	27.6%	29.0%	27.6%	27.6%	23.4%	- 15.3%
Surgery (Excluding Injections)	39.6%	39.7%	40.7%	40.7%	39.0%	- 1.5%
Radiology	58.8%	58.8%	54.9%	54.9%	53.6%	- 8.9%

* claims with DOI through June 2006

Comparing pre-reform claims with dates of injury in 2002 to post-reform claims with dates of injury in the first half of 2006, the utilization rates (percent of all claims with at least one visit) declined in five of the six treatment categories: physical therapy; chiropractic manipulation; medicine section services; surgery and radiology. The proportion of claims involving chiropractic manipulation dropped from more than 1 in 10 AY 2002 claims to only 1 in 33 AY 2006 claims – a relative decline of nearly 69 percent. At the same time, the percentage of claims involving physical therapy dropped from around 40 percent to about 33 percent, a relative decline of 16.3 percent. Likewise, the proportion of claims using medicine section services showed a relative decline of 15.3 percent, while the percentage of claims using radiology fell nearly 9 percent. Evaluation & management services (which include routine medical office visits) increased slightly to nearly 97 percent of all claims, while the use of surgery remained relatively unchanged, with about 40 percent of all claims continuing to involve surgery services other than injections.

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

Table 3 shows the percentage of claims involving physical therapy or chiropractic manipulation that exceeded the 24-visit caps before and after the implementation of the medical reforms in January 2004. (To ensure comparable data, claims used for the 24-month valuations were limited to those with pre-2005 dates of injury.)

Table 3: Percent of PT & Chiropractic Claims with > 24 Visits, Pre vs. Post-Reform

	At 12 Months Post DOI				At 24 Months Post DOI			
	Pre-Reform		Post-Reform		Pre-Reform		Post-Reform	
	2002	2003	2004	2005	2002	2003	2004	2005
Physical Therapy	31.5%	30.7%	11.2%	6.9%	34.3%	32.8%	13.6%	NA
Chiro	50.2%	46.0%	8.6%	5.1%	52.6%	47.7%	9.7%	NA

After implementation of the reforms in 2004, the percentage of physical therapy claims with more than 24 PT visits within 12 months of injury declined sharply, falling from 31.5 percent of AY 2002 claims to 6.9 percent of the AY 2005 claims. A similar decline was noted at 24 months post injury, as the percentage of physical therapy claims with more than 24 PT visits declined from 34.3 percent in AY 2002 to 13.6 percent in AY 2004.

The use of chiropractic manipulation showed an even more dramatic decline following implementation of the reforms. Prior to 2004, about half of all chiropractic manipulation claims involved more than 24 visits in the first year after the injury; after the caps and utilization review took effect, that proportion dwindled, falling to just over 5 percent of AY 2005 claims (a relative decline of 90 percent). Similar declines were noted at 24 months post injury, as the percentage of chiropractic claims with more than 24 chiropractic visits fell from 52.6 percent in AY 2002 to 9.7 percent in AY 2004 (a relative decline of 82 percent).

Changes in Average Number of Visits and Amounts Paid Per Claim by Fee Schedule Category

Preliminary results from a 2005 CWCI study[4] showed significant reductions in physical medicine and chiropractic manipulation visits and payments at 3, 6, and 9 months of development following the implementation of 24-visit caps, utilization review and other medical care reforms. Subsequent data from a January 2007 CWCI study[5] updated and extended that research by measuring post-reform changes in average utilization and payments for six major treatment categories covered by the Official Medical Fee Schedule (physical therapy, chiropractic manipulation, evaluation and management, medicine, surgery and radiology) valued at 3, 6, 9, 12, and 18 months of development.

That analysis noted reductions in the average number of visits across all six categories of treatment, as well as reductions in the average amounts paid at 18 months in all categories except surgery. In terms of treatment utilization and reimbursement, by far the most significant post-reform reductions were noted in physical therapy and chiropractic manipulation. This study further expands the view of the earlier analyses by measuring the average number of visits and average amounts paid per claim for the six categories of treatment at 24 months post injury. The following six sections display the updated results for each of the fee schedule service categories.

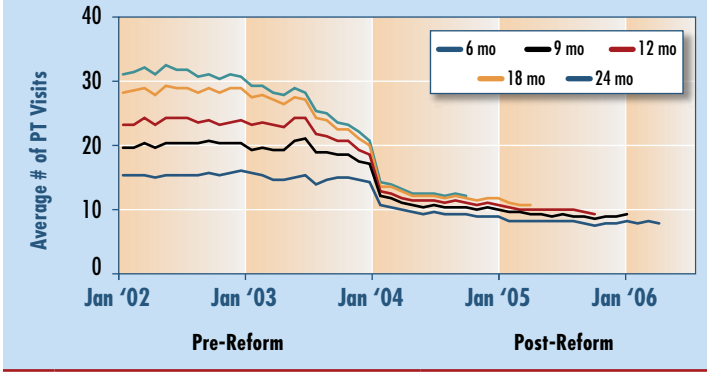
4 Early Returns on WC Medical Reforms Part 2: The Utilization and Cost of Physical Therapy and Chiropractic Manipulation in California Workers' Comp Following Implementation of Mandatory UR and 24-Visit Caps. ICIS Says, CWCI. Sept 2005.

5 Analysis of California Workers' Compensation Reforms: Medical Utilization & Reinbursement Outcomes. CWCI. Jan. 2007.

PHYSICAL THERAPY

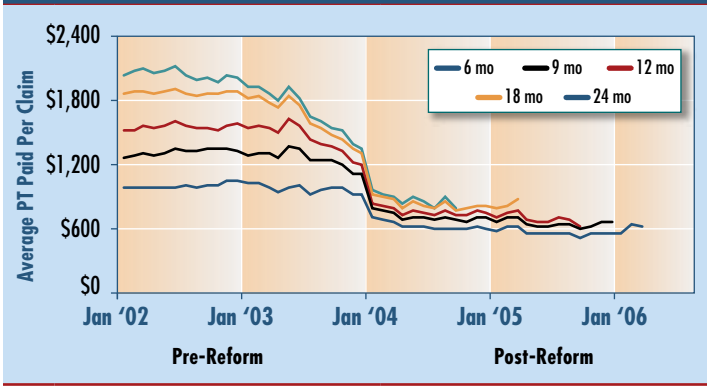
Overall, the most recent physical therapy claims – those with dates of injury at the end points of the five valuation trend lines – involved fewer physical therapy visits and lower amounts paid per claim for physical therapy services at all five valuation points. As seen in Chart 1, the trend lines show a sharp directional change at the January 2004 mark, the date associated with the implementation of the medical reform. The post-reform changes in the average number of PT visits ranged from a 47 percent reduction after 6 months to a 61 percent reduction after 24 months.

Chart 1: Average # of PT Visits @ 6, 9, 12, 18, & 24 Months
Physical Therapy Claims Only



A similar pattern was noted in the physical therapy payment trend lines. Post-reform reductions in average amounts paid per claim for PT ranged from 37 percent less at the 6-month valuation point, to 61 percent less at 24 months post injury (Chart 2).

Chart 2: Average PT Paid @ 6, 9, 12, 18, & 24 Months
Physical Therapy Claims Only



The analysis also determined the average number of visits and the average payments at each of the five valuation points across all workers' compensation claims, including those that did not involve that type of service (Table 4). The reductions in the average number of physical therapy visits among PT claims, coupled with the declining share of all claims receiving this type of treatment (Table 2), translated to dramatic reductions in the average number of physical therapy visits and associated payments for all claims. The reductions in utilization ranged from 55.5 percent fewer PT visits within 6 months of the injury to 68.6 percent fewer PT visits at the 12-month valuation point. Data on the average amount paid for PT services across all claims showed a similar pattern, with reductions ranging from 46.5 percent less ($184) in the first 6 months to 67.1 percent less ($414) at the 12-month valuation.

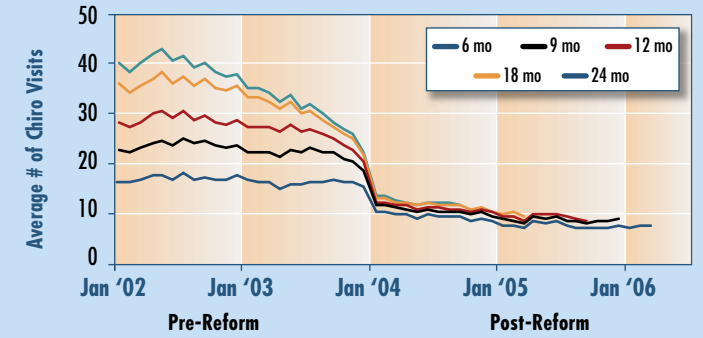
Table 4: Avg. # of PT Visits & PT Paid @ 6, 9, 12, 18 & 24 Months Post DOI
All Claims – Pre- vs. Post-Reform

	Avg. # of PT Visits			Avg. Paid/Claim for PT		
Valuation Point	1st Pre-Reform Measurement (Jan '02)	Most Recent Post-Reform Measurement	Percent Change	1st Pre-Reform Measurement (Jan '02)	Most Recent Post-Reform Measurement	Percent Change
@ 6 Months	6.17	2.75	-55.5%	$396	$212	-46.5%
@ 9 Months	8.02	3.03	-62.3%	$520	$218	-58.1%
@ 12 Months	9.41	2.95	-68.6%	$617	$203	-67.1%
@ 18 Months	11.48	3.79	-67.0%	$759	$308	-59.4%
@ 24 Months	12.60	4.25	-66.3%	$835	$281	-66.3%

CHIROPRACTIC MANIPULATION

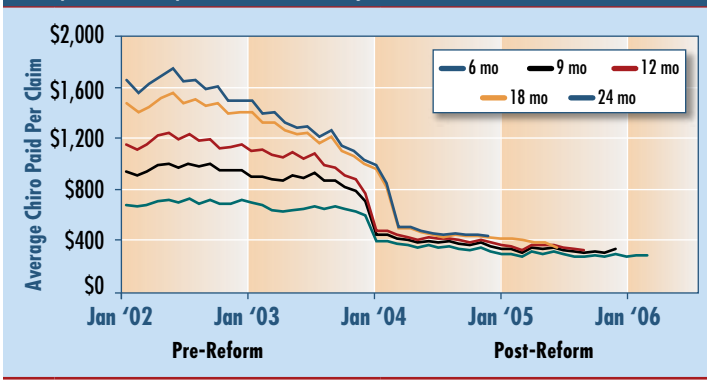
The most recent results also show that overall, chiropractic claims with dates of injury at the end points of the trend lines involved fewer chiropractic visits and lower amounts paid per claim for chiropractic services at all valuation points (Chart 3). The post-reform decline in the utilization of chiropractic manipulation begins with 8.8 fewer visits on average after 6 months (down 53 percent from the pre-reform level), while after 24 months, post-reform chiropractic manipulation claims averaged 28.4 fewer visits for these services (a 70 percent drop).

Chart 3: Average # of Chiro Manipulation Visits @ 6, 9, 12, 18, & 24 Months
Chiropractic Manipulation Claims Only



The declining utilization of chiropractic manipulation produced similar reductions in the average amounts paid per chiropractic claim for these services (Chart 4). The post-reform reductions in average chiropractic manipulation payments ranged from $392 less at 6 months post injury (down 58 percent) to $1,226 less at 24 months (down 74 percent).

Chart 4: Average Chiro Manipulation Paid @ 6, 9, 12, 18, & 24 Months
Chiropractic Manipulation Claims Only



The reduction in average chiropractic visits for claims with chiropractic services, (Chart 3), coupled with the declining proportion of all claims involving chiropractic services, (Table 2), led to sharp reductions in the average number of chiropractic visits and associated payments for all claims. Reductions in the use of chiropractic manipulation in California workers' compensation claims ranged from 83.3 percent fewer visits at the 6-month valuation to 88.2 percent fewer visits at the 18-month valuation. Data on the average amounts paid for chiropractic manipulation across all claims show a similar pattern, with the reductions in average payments following the reforms ranging from 83.9 percent less ($146) at the 24-month valuation to 89.5 percent less ($108 and $139) at the 12- and 18-month valuations.

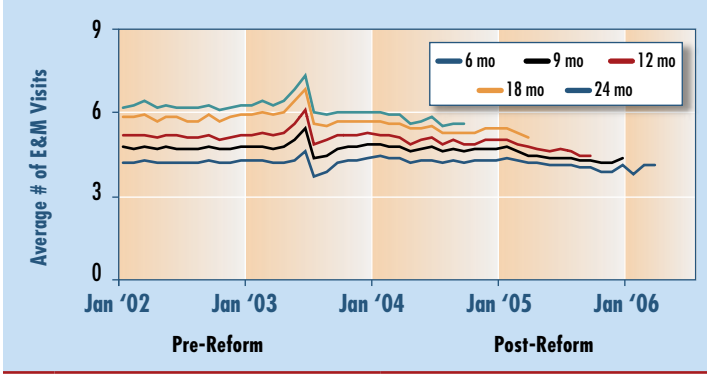
Table 5: Avg. # of Chiropractic Manipulation Visits & Chiropractic Manipulation Paid @ 6, 9, 12, 18 & 24 Months Post DOI
All Claims – Pre- vs. Post-Reform

Valuation Point	Avg. # of Chiropractic Manipulation Visits			Avg. Paid/Claim for Chiropractic Manipulation		
	1st Pre-Reform Measurement (Jan '02)	Most Recent Post-Reform Measurement	Percent Change	1st Pre-Reform Measurement (Jan '02)	Most Recent Post-Reform Measurement	Percent Change
@ 6 Months	1.75	0.29	-83.3%	$71	$10	-85.3%
@ 9 Months	2.42	0.31	-87.2%	$98	$11	-88.6%
@ 12 Months	2.96	0.35	-88.2%	$121	$13	-89.5%
@ 18 Months	3.77	0.44	-88.2%	$155	$16	-89.5%
@ 24 Months	4.24	0.78	-81.6%	$174	$28	-83.9%

EVALUATION AND MANAGEMENT

Overall, evaluation and management claims with dates of injury at the end points of the valuation trend lines averaged fewer evaluation and management visits and lower amounts paid per claim for E&M services at all valuation points except the 6-month valuation (Chart 5). The post-reform decline in the use of E&M services is first noted in the 6-month trend line, which shows a 3 percent drop in the average number of E&M visits per E&M claim. Since the reforms took effect, the biggest decline in E&M utilization has been at the 12-month valuation, where the average number of visits has fallen 14 percent from the pre-reform level.

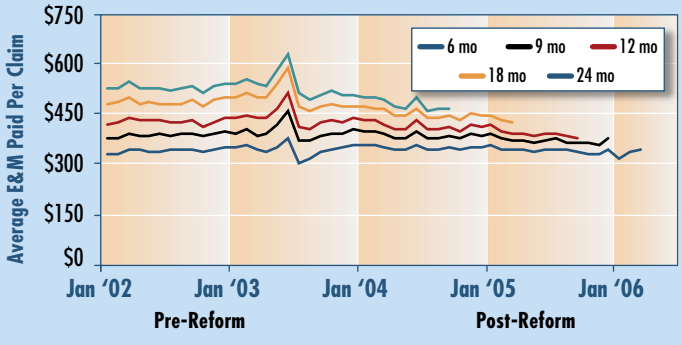
Chart 5: Avg. # of E&M Visits @ 6, 9, 12, 18 & 24 Months
Evaluation and Management Claims Only



As noted earlier, SB 228 required a 5 percent reduction in maximum allowable fees under the Official Medical Fee Schedule, as long as the reduction did not take the fee below the Medicare rate. In response, the state revised fee schedule amounts for E&M and other services to make them consistent with Medicare adjustments that took effect July 1, 2004, and the DWC continues to revise the allowable fees as the Medicare rates change.[6] Thus, beginning in 2004, any changes in average amounts paid per claim for E&M services at the various valuation points reflect the combined effect of increases in the Medicare rates, changes in the average number of E&M visits per claim, and shifts in the mix of E&M services.

Chart 6 shows that the changes in the average amounts paid for Evaluation and Management services in an E&M claim ranged from a 3.8 percent increase at 6 months post injury to an 11.9 percent decrease at the 18-month valuation point.

Chart 6: Average E&M Paid @ 6, 9, 12, 18 & 24 Months
Evaluation and Management Claims Only



Looking at the E&M visit and payment averages for all claims (Table 6), shows post-reform decreases in the average number of visits ranged from 0.7 percent fewer visits at the 6-month valuation to 11.4 percent fewer visits at the 12-month valuation, while changes in average E&M payments ranged from a 6.7 percent increase ($21) at 6 months post injury to a 9.5 percent decrease ($43) after 18 months.

Table 6: Avg. # of E&M Visits & E&M Paid @ 6, 9, 12, 18 & 24 Months Post DOI
All Claims – Pre- vs. Post-Reform

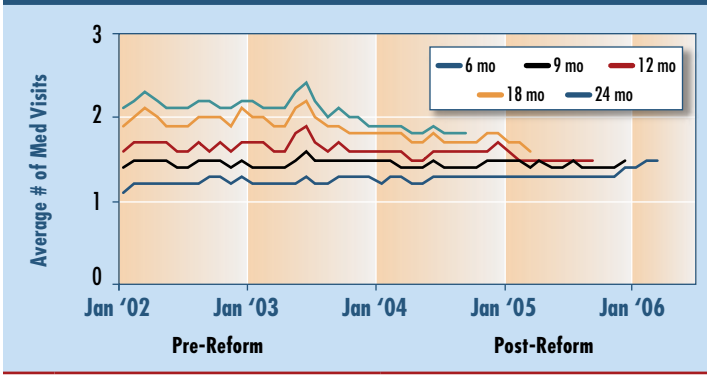
	Avg. # of E&M Visits			Avg. Paid/Claim for E&M		
Valuation Point	1st Pre-Reform Measurement (Jan '02)	Most Recent Post-Reform Measurement	Percent Change	1st Pre-Reform Measurement (Jan '02)	Most Recent Post-Reform Measurement	Percent Change
@ 6 Months	4.01	3.98	-0.7%	$313	$334	6.7%
@ 9 Months	4.51	4.28	-5.1%	$360	$364	1.3%
@ 12 Months	4.90	4.34	-11.4%	$396	$369	-6.8%
@ 18 Months	5.49	4.97	-9.6%	$454	$411	-9.5%
@ 24 Months	5.90	5.39	-8.6%	$494	$452	-8.4%

6 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

Post-reform utilization results for claims involving medicine section services show that at the initial valuation point (6 months post injury), the average number of medicine section visits increased 28 percent from 1.1 visits at the first pre-reform measurement to 1.5 visits at the final post-reform measurement. At each of the other valuation points, however, the average number of visits was either flat or declined following implementation of the reforms (Chart 7).

Chart 7: Average # of Medicine Section Service Visits @ 6, 9, 12, 18 & 24 Months
Medicine Section Service Claims Only



Despite relatively flat to slightly declining medicine section utilization trend lines for four of the five valuation periods, average amounts paid for medicine section services among claims involving those services dropped sharply after the reforms took effect. Chart 8 shows that average payments for all five valuation periods peaked in 2003 then continued to decline after January 2004. The sharp post-reform declines in the average amounts paid for medicine section services indicate a relative decrease in their unit price, due at least in part to the 5 percent reductions in the fee schedule maximums mandated by SB 228, though changes in the mix of medicine section services following the introduction of the ACOEM guidelines, mandatory utilization review, and Medical Provider Networks are also likely to have affected the payment trends.

Chart 8: Average Medicine Section Services Paid @ 6, 9, 12, 18 & 24 Months
Medicine Section Service Claims Only

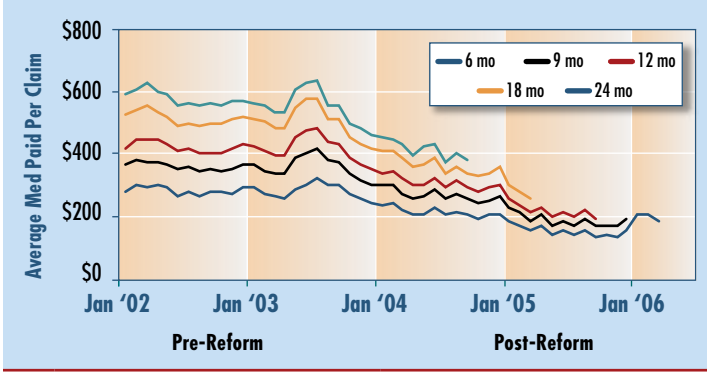


Table 7 shows similar utilization and payment patterns for medicine section services on all claims. Since the reforms, there have been slight increases in the average number of medicine section visits per claim at the 6- and 9-month valuation points, but significant reductions in the average amounts paid per claim for these services. The reductions in average amounts paid per claim ranged from 30.1 percent less ($46) at the 24-month valuation to 53.2 percent less ($58) at the 12-month valuation.

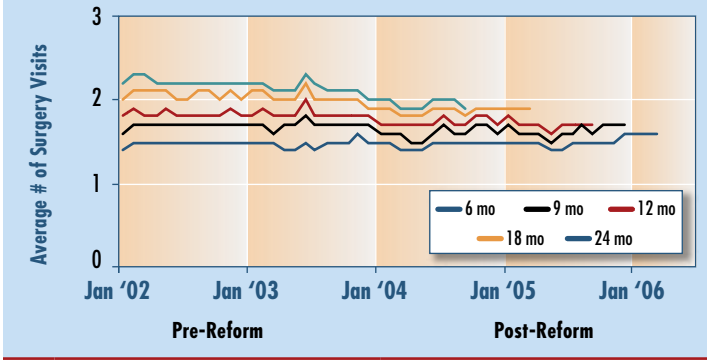
Table 7: Avg. # of Medicine Section Visits & Medicine Section Paid @ 6, 9, 12, 18 & 24 Months Post DOI
All Claims – Pre- vs. Post-Reform

	Avg. # of Medicine Section Visits			Avg. Paid/Claim for Medicine Section Services		
Valuation Point	1st Pre-Reform Measurement (Jan '02)	Most Recent Post-Reform Measurement	Percent Change	1st Pre-Reform Measurement (Jan '02)	Most Recent Post-Reform Measurement	Percent Change
@ 6 Months	0.30	0.35	15.6%	$73	$45	-39.1%
@ 9 Months	0.36	0.40	11.7%	$95	$52	-45.3%
@ 12 Months	0.41	0.39	-4.4%	$109	$51	-53.2%
@ 18 Months	0.50	0.46	-7.6%	$137	$72	-47.1%
@ 24 Months	0.55	0.50	-9.2%	$154	$108	-30.1%

SURGERY

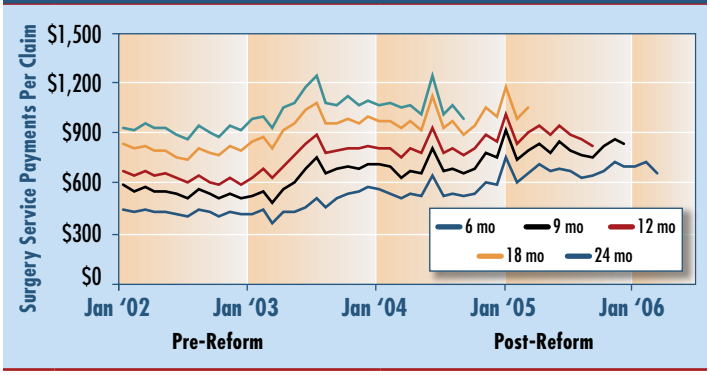
Among post-reform surgery claims, the average number of surgery visits at the 6-month valuation point was up 14 percent from the pre-reform level (Chart 9), but that was the only valuation point at which the number of visits was higher in the post-reform period. At 24 months post injury, the post-reform surgery claims averaged fewer than 2 surgery visits (down 13.2 percent from the pre-reform level).

Chart 9: Average # of Surgery Visits @ 6, 9, 12, 18 & 24 Months
Surgery Claims Only



Even though the average number of surgery visits was flat or declining at most valuation points, the average amounts paid per claim for surgery services following the reforms increased across the board (Chart 10). Increases in average surgery reimbursements per surgery claim ranged from $49 more at the 24-month valuation (up 5 percent from the pre-reform average) to $210 more at the 6-month valuation (up 47 percent). The earlier Institute analyses on post-reform medical utilization and payments noted that such increases in average reimbursements without similar increases in the number of surgery visits are consistent with a shift in the mix of workers' compensation surgery services toward more complex and higher cost procedures since the reforms took effect.[7]

Chart 10: Average Surgery Services Paid @ 6, 9, 12, 18 & 24 Months
Surgery Claims Only



Once again, similar patterns are noted for surgery visits and payments among all claims (Table 8). There was virtually no change in the average number of surgery visits among all claims under the reforms, though increases in the average amounts paid for surgery ranged from 16.8 percent more ($59) at 24 months post injury to nearly 60 percent more ($133) at the 9-month valuation.

Table 8: Avg. # of Surgery Visits Visits & Surgery Paid @ 6, 9, 12, 18 & 24 Months Post DOI
All Claims – Pre- vs. Post-Reform

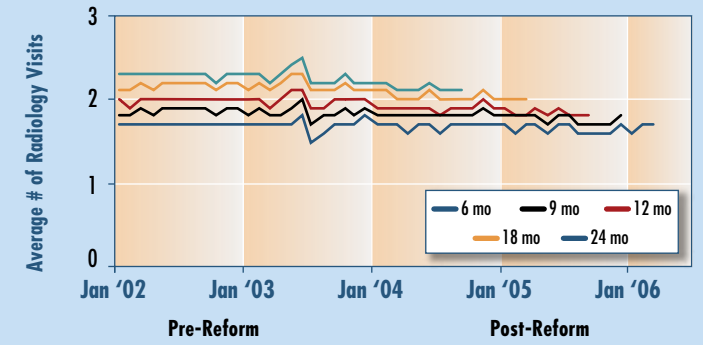
	Avg. # of Surgery Visits			Avg. Paid/Claim for Surgery Services		
Valuation Point	1st Pre-Reform Measurement (Jan '02)	Most Recent Post-Reform Measurement	Percent Change	1st Pre-Reform Measurement (Jan '02)	Most Recent Post-Reform Measurement	Percent Change
@ 6 Months	0.54	0.64	18.7%	$170	$260	53.0%
@ 9 Months	0.62	0.71	14.7%	$224	$357	59.6%
@ 12 Months	0.68	0.69	1.4%	$257	$332	29.1%
@ 18 Months	0.77	0.75	-2.7%	$315	$420	33.1%
@ 24 Months	0.83	0.80	-3.7%	$352	$411	16.8%

7 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

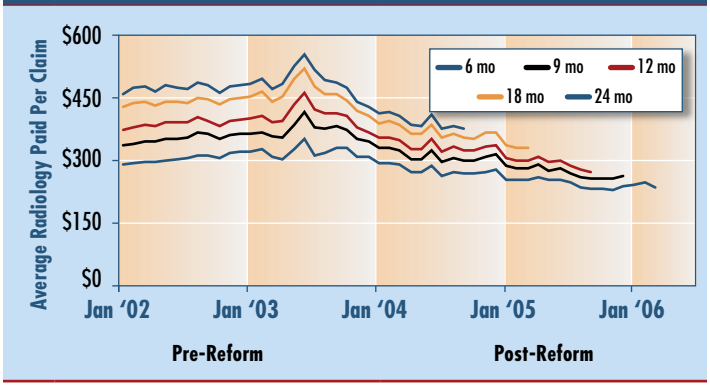
Radiology showed a pattern of average visit and average payment development similar to the pattern for medicine section services. Since the reforms were enacted, the average number of radiology visits among claims involving such services has decreased slightly at all five valuation points (Chart 11). The most notable change has been the 7 percent reduction in the average number of radiology visits at 24 months post injury.

Chart 11: Avg. Radiology Visits @ 6, 9, 12, 18 & 24 Months
Radiology Claims Only



In contrast to the slight reductions in the average number of radiology visits, average amounts paid per radiology claim for these services has declined sharply at all valuation points (Chart 12). Once again, the reductions in average amounts paid for radiology can be ascribed to decreases in the per unit price, reflecting the SB 228 fee schedule reductions, and changes in the mix of services that followed the introduction of mandatory utilization review, the ACOEM guidelines, and Medical Provider Networks.

Chart 12: Avg. Radiology Paid @ 6, 9, 12, 18 & 24 Months
Radiology Claims Only



The radiology utilization and payment patterns were similar when the average number of visits and the average amounts paid per claim were calculated for all claims (Table 9). The average number of radiology visits for all claims decreased between 6.9 percent and 16.6 percent across the five valuation points, while the reductions in the average amounts paid per claim for radiology ranged between 22.3 percent less ($61) at the 24-month valuation to 31 percent less ($69) at the 12-month valuation.

Table 9: Avg. # of Radiology Visits & Radiology Paid @ 6, 9, 12, 18 & 24 Months Post DOI
All Claims – Pre- vs. Post-Reform

	Avg. # of Radiology Visits			Avg. Paid/Claim forRadiology Services		
Valuation Point	1st Pre-Reform Measurement (Jan '02)	Most Recent Post-Reform Measurement	Percent Change	1st Pre-Reform Measurement (Jan '02)	Most Recent Post-Reform Measurement	Percent Change
@ 6 Months	0.99	0.92	-7.2%	$173	$132	-24.0%
@ 9 Months	1.08	1.01	-6.9%	$201	$149	-25.7%
@ 12 Months	1.16	0.99	-14.0%	$222	$153	-31.0%
@ 18 Months	1.27	1.06	-16.6%	$254	$178	-29.8%
@ 24 Months	1.34	1.18	-11.9%	$273	$212	-22.3%

SUMMARY

This research examines post-reform outpatient medical service utilization and payments by fee schedule section at 24 months post injury and confirms findings first observed as early returns by CWCI in 2005 (Swedlow 2005) and again in 2006 (Ireland 2006). Chiropractic manipulation continues to show the greatest and most sustained decrease in utilization. The proportion of California workers' compensation claims with any chiropractic service has decreased from 10.5 percent of AY 2002 claims to 3.3 percent of AY 2006 claims, and among those claims the average number of chiropractic manipulation visits within the first two years after injury has declined by 28 visits (more than 70 percent) from pre-reform levels.

During the post reform era, there has been considerable debate concerning the appropriate level of medical treatment required by workers to cure and relieve their work-related injuries. Although treatment guidelines have been hailed by some as a means of controlling unnecessary and inappropriate medical care of injured workers, as well as the associated costs, some have argued that the application of these guidelines now restricts an injured worker's access to care.[8] This debate has focused on many fronts, but has been particularly heated in the areas of acupuncture, pain management, and post-surgical physical medicine and chiropractic manipulation. The Division of Workers' Compensation's Medical Treatment Guideline Committee is in the process of developing and/or implementing new medical treatment guidelines in these and other areas. CWCI will continue to track the development and implementation of these new guidelines and measure their association to changes in the delivery of medical treatment and associated outcomes.

RESEARCH SERIES

The Research Update series marks the third year that CWCI has tracked changes in various aspects of the California workers' compensation system following implementation of the 2002 – 2004 legislative reforms. This analysis is the first in this year's four-part series, which once again will examine the following topics:

- **Part I: Medical Utilization & Reimbursement**
- **Part II: Temporary Disability**
- **Part III: Medical Provider Networks**
- **Part IV: Medical Cost Containment**

Part 2 of the series will analyze updated data and consider the effects the reforms have had on various aspects of temporary disability. The report will be published in early 2008.

8 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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