

Analysis of California Workers' Compensation Reforms

Part 4: Post-Surgical Physical Medicine & Chiropractic Manipulation – Preliminary Results

by John Ireland, MHSA and Alex Swedlow, MHSA

EXECUTIVE SUMMARY

Recent studies of the 2003 – 2004 California workers' compensation medical reforms have documented associations between the reforms and significant changes in the delivery of medical care to California's injured workers. The most dramatic of these changes has been the declining number of physical therapy and chiropractic manipulation visits, which the first report in this research series¹ identified as primary cost drivers in the system prior to the legislative changes. Since reform implementation, however, some stakeholders have expressed concern that utilization review, treatment guidelines and caps on physical medicine visits are too restrictive, especially for injured workers with surgery requiring post-surgical rehabilitation. During the 2007 legislative session, this led to the introduction of a bill (AB 1073, Nava) to remove the 24-visit cap on chiropractic, occupational and physical medicine for post-surgical visits.

This analysis follows a sample of 49,173 California workers' compensation surgery claims and measures the use of pre- and post-surgical physical medicine and chiropractic manipulation before and after the implementation of the medical reforms in 2005. The analysis found:

- **A Declining Share of Surgical Claims Involving Physical Medicine and Chiropractic Manipulation Treatment:** Prior to the introduction of the 24-visit caps in 2005, 93.4 percent of surgical claims also involved at least one physical therapy visit at some point during the life of the claim. In the first post-reform year, 2005, the percentage of surgical claims involving physical medicine fell to 88.1 percent - a relative decline of 5.7 percent from the pre-reform level.

The percentage of surgical claims that involved at least one chiropractic manipulation visit at some point in the life of the claim declined from 22.1 percent prior to the reforms to 9.9 percent after the reforms took effect – a relative decline of 55.2 percent.

- **A Declining Share of Surgical Claims With Physical Medicine or Chiropractic Manipulation Visits Following the Surgery:** Among surgical claims with physical medicine there was only a marginal reduction in the percentage involving post-surgical physical medicine visits. Prior to the reforms, 92.7 percent of the surgical claims with physical medicine had at least one post-surgical physical medicine visit; after the reforms the percentage was 91.1 percent.

¹ "Analysis of California Workers' Compensation Reforms, Part 1: Medical Utilization & Reimbursement Outcomes," CWCRI Research Update, January 2007.

The decline in post-surgical chiropractic manipulation was much more notable. Prior to the implementation of the caps, 60.9 percent of all surgical claims with chiropractic manipulation involved post-surgical chiropractic treatment. In the first year after the caps were in place, that proportion declined to 47.5 percent.

- **A Reduction in the Average Number of Post-Surgical Physical Medicine and Chiropractic Manipulation Visits:** The average number of post-surgical physical medicine visits declined 53 percent from 36.1 visits in the pre-reform period to 16.9 visits in the post-reform period.

At the same time, the average number of post-surgical chiropractic manipulation visits fell 66.8 percent from 28.3 visits in the pre-reform period to 9.4 visits in the post-reform period.

- **A Declining Proportion of Surgical Claims Involving More Than 24 Physical Medicine and Chiropractic Manipulation Visits:** The percentage of all surgical claims involving more than 24 physical medicine visits over the course of the claim was nearly cut in half, declining from 70.3 percent prior to reform to 37 percent in the post-reform period.

The percentage of claims with more than 24 physical medicine visits in the first 12 months after surgery declined from 53.8 percent prior to the reforms to 19.0 percent after the reforms were in place, a relative decline of nearly 65 percent.

The percentage of surgical claims with more than 24 chiropractic visits over the course of the claim declined from 52.0 percent in the pre-reform period to 7.5 percent in the post-reform period – a relative decline of 85.6 percent.

The percentage of claims with more than 24 chiropractic manipulation visits in the first 12 months following the surgery declined from a pre-reform rate of 41.0 percent to a post reform rate of 5.8 percent, a relative decline of 85.9 percent.

The results of this analysis confirm prior research that showed sharp reductions in the use of physical medicine and chiropractic manipulation following the implementation of medical reforms. The analysis cannot link the observed changes to any one aspect of reform, and it is likely that the changes are related to the phased-in implementation of several different aspects of reform. These include the elimination of the primary treating physician's presumption of correctness in favor of evidence-based medicine guidelines²; the 24-visit caps, the advent of medical provider networks, and the introduction of new return-to-work incentives.

2 California workers' compensation reform established a new medical utilization schedule based on high-grade medical evidence. The ACOEM 2nd edition medical treatment guidelines, California's primary reference in establishing its workers' compensation system's medical treatment standard, provides limited evidence in regard to the appropriateness and effectiveness of passive and active physical medicine for post-surgery care. Also, the ACOEM evidence base notes that while moderate use of chiropractic manipulation is appropriate for medical back injuries, there is virtually no high-grade evidence to support chiropractic manipulation for low back injuries with spinal cord involvement or post-surgical care.

BACKGROUND ON WORKERS' COMPENSATION MEDICAL REFORM

Prior to 2003, there were virtually no limits on the number of medical visits that an injured worker in California was allowed as part of their treatment plan. While the number of services per visit could be limited in some situations by the Official Medical Fee Schedule ground rules, the number of visits was usually unlimited. A prior Institute study showed that the average number of visits for these services grew significantly between 1995 and 2002, with little change in the underlying claimant or injury characteristics to warrant the increase in utilization.³

In 2003, state lawmakers enacted SB 228, which limited medical visits in two ways.⁴ To ensure that injured workers received effective treatment consistent with high-grade medical evidence, the legislation granted the presumption of correctness to a Medical Treatment Utilization Schedule approved by the Administrative Director of the Division of Workers' Compensation, and until its adoption, the treatment guidelines of the American College of Occupational and Environmental Medicine (ACOEM). Treatment was subject to review in accordance with utilization review standards, and as of March 22, 2004 the ACOEM Guidelines were given the presumption of correctness on the issue of the extent and scope of medical treatment, regardless of the date of injury. In addition, for injuries on or after January 1, 2004, SB 228 set 24-visit caps for chiropractic and physical medicine, permitting additional visits for these services only with written authorization. In April 2004, state lawmakers enacted SB 899, which extended the 24-visit cap to occupational therapy visits.

The first report in this series of reform analyses explored changes to medical utilization following the enactment of SB228, including changes in physical medicine and chiropractic manipulation treatment patterns. That study concluded the following:

- Use of physical medicine and chiropractic manipulation fell sharply after SB 228 took effect in January 2004. The physical medicine utilization rate declined from about 40 percent of all pre-reform (AY 2002-2003) claims to less than one-third of post-reform (AY 2005) claims, while the chiropractic manipulation utilization rate fell from about 11 percent to 4 percent.

- During this period, the percentage of physical medicine claims that exceeded 24 physical medicine visits within 12 months of injury fell from 30 percent in AY 2002 to less than 10 percent in AY 2004 (a relative decline of 68 percent). The decline in the use of chiropractic manipulation was even more pronounced. In AY 2002, 44 percent of claims involving chiropractic manipulation had more than 24 chiropractic visits in the first year; after the caps and utilization review took effect in 2004, that proportion dropped to less than 7 percent.
- Among physical medicine claims, both the average number of physical medicine visits and the average amount paid per claim for those services at 18 months post injury fell about 58 percent. Similarly, among chiropractic manipulation claims, the average number of visits for those services declined 67 percent, reducing the average amount paid per claim for chiropractic manipulation visits by 72 percent.

POST-SURGICAL UTILIZATION OF PHYSICAL MEDICINE AND CHIROPRACTIC MANIPULATION

The post-reform medical treatment patterns noted in the first report of this series clearly show the sharp declines in the use and frequency of chiropractic and physical medicine visits, as well as the significant reductions in the average amounts paid per claim for those services. Since the implementation of the SB 228 reforms in January 2004, however, some medical providers, attorneys, and injured worker advocates have asserted, based on anecdotal information, that injured workers are now routinely denied necessary treatment, particularly as a result of the caps on physical medicine and chiropractic manipulation.

The ACOEM guidelines, which now carry the presumption of correctness in terms of California workers' compensation medical treatment, conclude that soft tissue injuries are often best served by conservative treatment that includes a brief period of treatment, home exercise, a timely return to routine daily activities (often including return to work) and minimal invasive intervention. The guidelines also recommend regular monitoring of progress, followed by an adjustment to the treatment regimen.

3 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.

4 For more information see Labor Code Section 4604.5 (d)

In general, the guidelines advise that more invasive treatments (including surgery) should not be considered until the conservative course of action has been fully explored and has failed to alleviate or resolve symptoms. Some stakeholders who assert that 24-visit caps on physical therapy, chiropractic care and occupational therapy are too restrictive argue that by the time surgery is performed in such cases, the caps have been reached or exceeded, and that additional visits necessary for post-surgical rehabilitation may not be approved. In 2007, these assertions led to the introduction of legislation, which would remove the 24-visit cap on chiropractic, occupational and physical medicine for post-surgical visits.

The goal of this study is to expand on the results of the initial study in this research series and advance the debate over post-surgical physical therapy and chiropractic manipulation beyond the realm of anecdote by using actual claims data to determine the following:

1. The percentage of surgical claims that involve physical medicine and chiropractic manipulation visits, pre- and post-surgery;
2. For the surgical claims that involve such services, the average number of physical medicine and chiropractic manipulation visits, pre- and post-surgery;
3. The percentage of surgical claims with physical medicine and chiropractic manipulation visits at or above the 24-visit cap; and
4. The percentage of surgical claims with post-surgical physical medicine and chiropractic manipulation visits at or above the 24-visit cap.

DATA AND METHODS

This study compares medical data from 49,175 open and closed California workers' compensation surgical claims from accident years 2000 through 2004 to determine if implementation of the 24-visit caps is associated with reductions in the use of post-surgical chiropractic and physical medicine. The Institute derived the claim sample from its Industry Claims Information System (ICIS) database, with all claims in the

sample involving 2001-2005 dates of service for one of the following five surgical procedures:

- Arthroscopy
- Carpal Tunnel
- Spinal Fusion
- Laminectomy
- Partial/Total Knee Replacement

Using the medical treatment procedure (CPT) codes from this surgical claim sample, the Institute summarized all physical medicine and chiropractic manipulation visits associated with these claims through December 2006, identifying a total of nearly 2.9 million physical medicine visits and more than 500,000 chiropractic manipulation visits.⁵

Table 1 shows the CPT medical procedure code ranges that were used to identify the physical medical and chiropractic visits.

Table 1: Physical Medicine & Chiropractic Manipulation CPT Code Ranges⁶	
	Procedure Codes
Physical Medicine	97010 – 97799
	97804 – 97998
	98000 – 98778
Chiropractic Manipulation	98940 – 98943

After sorting the medical treatment data by date of service, the analysts classified the physical medicine and chiropractic visit data for the surgical claims into three periods:

1. **Pre-reform period** (AY 2000-2003 claims with 2001-2004 surgery dates)
2. **Transition period** (AY 2000-2003 claims with 2005 surgery dates)
3. **Post-reform period** (AY 2004 claims with 2005 surgery dates)

Table 2 summarizes the number and distribution of surgical claims and the associated physical medicine and chiropractic visits across the pre-reform, transition and post-reform periods.

5 A table of the CPT surgical procedure codes is posted as an appendix to the electronic version of this report posted in the ICIS section of the CWCI website at www.cwci.org.

6 More information on physical medicine and chiropractic procedure codes is in the technical appendix of Analysis of WC Reforms--Part 1: Medical Utilization & Reimbursement, and ICIS Says Research Study at www.cwci.org

Table 2: Surgical Claims: Pre- Vs. Post-Reform Physical Medicine & Chiropractic Manipulation Visit Distribution

Study Period	# of Claims	Percent of Claims	# of Physical Medicine Visits	Percent of Physical Medicine Visits	# of Chiropractic Manipulation Visits	Percent of Chiropractic Manipulation Visits
Pre-Reform	36,613	74.5%	2,299,440	79.6%	414,289	76.5%
Transition Period	8,508	17.3%	505,055	17.5%	121,910	22.5%
Post-Reform	4,052	8.2%	83,052	2.9%	5,146	1.0%
Total	49,173	100.0%	2,887,547	100.0%	541,345	100.0%

Table 3 displays the distribution of the surgical claims across the five surgical categories during the pre-reform, transition, and post-reform periods.

Table 3: Surgical Claims by Study Period

Type of Surgery	Pre-Reform	Transition Period	Post-Reform	Total
Arthroscopy	22,047	4,455	2,587	29,089
Carpal Tunnel	7,519	1,908	725	10,152
Fusion	2,914	879	146	3,939
Laminectomy	3,954	1,177	586	5,717
Partial/Total Knee Replacement	179	91	8	278
Grand Total	36,613	8,510	4,052	49,175

To gain a sense of the timing of physical medicine and chiropractic manipulation visits in surgical claims, and the extent to which 24-visit caps may have limited the use of these services after surgery, the authors calculated:

- 1) the average number of pre- and post-surgical physical medicine or chiropractic manipulation visits for all surgical claims that involved such services at any point within the life of the claim; and
- 2) the average number of physical medicine and chiropractic manipulation visits for those claims that only received these services after the surgery date.

The authors calculated the average number of post-surgery visits at 12 months after the surgery date to assure comparable data for each of the five years studied.

RESULTS

Physical Medicine Use for Injured Workers with Surgery

Table 4 displays the percent of surgical claims from the study sample that involved physical medicine visits either before or after the surgery.

Table 4: Physical Medicine Utilization: California Workers' Compensation Surgical Claims

Type of Surgery	Percentage Change				
	Pre-Reform	Transition Period	Post-Reform	Pre-Reform to Transition	Pre-Reform to Post-Reform
Arthroscopy	94.5%	95.4%	93.2%	1.0%	-1.4%
Carpal Tunnel	90.0%	91.9%	86.9%	2.1%	-3.4%
Fusion	96.1%	96.0%	90.4%	-0.1%	-5.9%
Laminectomy	92.0%	94.7%	66.6%	2.9%	-27.6%
Partial/Total Knee Replacement	92.7%	95.6%	87.5%	3.1%	-5.6%
Total	93.4%	94.6%	88.1%	1.3%	-5.7%

Among the pre-reform surgical claims (AY 2000-03 claims with 2001-2004 surgery dates), 93.4 percent involved at least one physical medicine visit, while among the transition period claims (AY 2000-03, 2005 surgery dates), the proportion edged up to 94.6 percent -- a 1.3 percent increase. During the first post-reform year (AY 2004 claims with 2005 surgery dates), the physical medicine utilization rate fell to 88.1 percent of the surgical claims, 5.7 percent below the pre-reform level.

Breaking out the results by type of surgery showed the largest percentage change between the pre-reform and the post-reform periods was a 27.6 percent drop in the physical medicine utilization rate for laminectomy claims, which followed a 2.9 percent increase during the transition period. In contrast, the smallest net change was in arthroscopy claims, where the physical medicine utilization rate fell only 1.4 percent between the pre- and post-reform periods. Among partial

or total knee replacement claims, the proportion of claims with physical medicine visits climbed 3.1 percent between the pre-reform and transition periods, but then dropped off in the post-reform period, resulting in an overall decrease of 5.6 percent from the pre-reform level.

Table 5 displays the percentage of surgery claims with physical medicine in which at least one of the physical medicine visits occurred after the surgery, with results broken out across the five surgical categories.

Table 5: Percent of Surgery Claims with Physical Medicine Involving Post-Surgical Physical Medicine Visits

(Pre-Reform, Transition and Post-Reform Periods)

Type of Surgery	Percentage Change				
	Pre-Reform	Transition Period	Post-Reform	Pre-Reform to Transition	Pre-Reform to Post-Reform
Arthroscopy	94.4%	92.0%	92.2%	-2.5%	-2.3%
Carpal Tunnel	90.4%	86.4%	90.3%	-4.4%	-0.1%
Fusion	88.9%	82.2%	84.8%	-7.5%	-4.6%
Laminectomy	89.6%	84.3%	87.2%	-5.9%	-2.7%
Partial/Total Knee Replacement	94.6%	92.0%	100.0%	-2.7%	5.7%
Total	92.7%	88.7%	91.1%	-4.3%	-1.7%

Between the pre-reform and transition periods, the use of physical medicine following surgery declined from 92.7 percent to 88.7 percent of all surgical claims with physical medicine (-4.3 percent). However, the post-surgical physical medicine utilization rate then increased to 91.1 percent of surgical claims in the post-reform period, a rate that was just 1.7 percent below the pre-reform level. Partial and total knee replacement surgical injuries registered the only increase in post-surgical physical medicine utilization (+5.7 percent between the pre- and post-reform periods). Meanwhile, the most notable decrease over the same period was the 4.6 percent decline in the proportion of back fusions claims involving post-surgical physical medicine.

Table 6 shows the change in the average number of physical medicine visits on surgical claims in which there was at least one physical medicine visit.

Table 6: Average Number of Physical Medicine Visits Surgery Claims with Physical Medicine

(Pre-Reform, Transition and Post-Reform Periods)

Type of Surgery	Percentage Change				
	Pre-Reform	Transition Period	Post-Reform	Pre-Reform to Transition	Pre-Reform to Post-Reform
Arthroscopy	65.4	59.7	23.6	-8.7%	-63.9%
Carpal Tunnel	63.9	53.4	21.9	-16.4%	-65.7%
Fusion	82.6	81.3	26.9	-1.6%	-67.4%
Laminectomy	72.2	75.2	21.8	4.2%	-69.8%
Partial/Total Knee Replacement	62.8	59.6	23.0	-5.1%	-63.4%
Total	67.2	62.7	23.3	-6.7%	-65.3%

Among surgery claims that involved physical medicine, the average number of visits for such services fell from 67.2 visits in the pre-reform period to 62.7 visits during the transition period (-6.7 percent). However, that average fell sharply in the post-reform period, declining to 23.3 visits, or 65.3 percent below the pre-reform average. Among the five surgery categories in the study, laminectomies showed the greatest reduction in the average number of physical medicine visits, decreasing from 72.2 visits per claim in the pre-reform study period to 21.8 visits in the post-reform period, down nearly 70 percent.

Table 7 displays the average number of post-surgical physical medicine visits valued at 12 months after the date of surgery for the five surgery categories included in the study.

Table 7: Average Number of Physical Medicine Visits in 1st 12 Months Post Surgery Surgery Claims with Physical Medicine

(Pre-Reform, Transition and Post-Reform Periods)

Type of Surgery	Percentage Change				
	Pre-Reform	Transition Period	Post-Reform	Pre-Reform to Transition	Pre-Reform to Post-Reform
Arthroscopy	36.5	26.0	16.9	-28.8%	-53.7%
Carpal Tunnel	35.4	22.4	16.4	-36.7%	-53.7%
Fusion	36.7	23.6	22.3	-35.7%	-39.2%
Laminectomy	34.8	25.1	16.3	-27.9%	-53.2%
Partial/Total Knee Replacement	36.0	27.0	21.1	-25.0%	-41.4%
Total	36.1	24.9	16.9	-31.0%	-53.2%

The results reveal the significant declines in the average number of first-year post-surgical physical medicine visits that occurred between the pre-reform period and the transition and post-reform periods. Overall, the average number of first-year post-surgical physical medicine visits fell from 36.1 visits in the pre-reform period to 24.9 visits in the transition period (-31 percent), then continued to decline in the post-reform period, dropping to 16.9 visits (-53 percent from the pre-reform level). Injured workers with arthroscopy and carpal tunnel surgeries showed the largest declines in first-year post-surgical physical medicine visits between the pre-reform and post reform periods.

Chiropractic Manipulation Use for Injured Workers with Surgery

Table 8 displays the percent of surgical claims from the study sample that involved chiropractic manipulation visits either before or after the surgery.

Table 8: Chiropractic Manipulation Utilization Rates Among Surgical Claims
(Pre-Reform, Transition and Post-Reform Periods)

Type of Surgery	Pre-Reform	Transition Period	Post-Reform	Percentage Change	
				Pre-Reform to Transition	Pre-Reform to Post-Reform
Arthroscopy	20.3%	26.6%	9.9%	31.0%	-51.2%
Carpal Tunnel	18.6%	22.0%	8.1%	18.3%	-56.5%
Fusion	31.1%	39.8%	13.0%	28.0%	-58.2%
Laminectomy	32.3%	40.4%	11.8%	25.1%	-63.5%
Partial/Total Knee Replacement	12.3%	15.4%	NA ⁸	25.2%	-
Total	22.1%	28.7%	9.9%	29.9%	-55.2%

Among the pre-reform surgical claims (AY 2000-03 claims with 2001-04 surgery dates), 22.1 percent involved at least one chiropractic manipulation visit, but among transition period claims (AY 2000-03 claims with 2005 surgery dates), the chiropractic manipulation utilization rate rose to 28.7 percent of all surgical claims -- a relative increase of nearly 30 percent from pre-reform levels. In the first year after the reforms were implemented, however, the percentage of surgical claims with chiropractic manipulation plunged to 9.9 percent of the post-reform claims (AY 2005 claims with 2005 surgery dates) -- down 55.2 percent from the pre-reform levels.

During the pre-reform, transition and post-reform periods, utilization rates for chiropractic manipulation varied by type of surgery. The biggest increase in the chiropractic manipulation utilization rate between the pre-reform and the transition periods was the 31 percent increase noted for arthroscopy claims. On the other hand, the biggest pre-reform to post-reform reduction was the 63.5 percent drop in the chiropractic manipulation utilization rate noted for injured workers who underwent laminectomies.

Table 9 displays the percentage of surgery claims with any chiropractic manipulation visits in which at least one of those visits occurred after the surgery, with results broken out for the five surgical categories included in the study.

Table 9: Percent of Surgery Claims with Chiropractic Manipulation Involving Post-Surgical Chiropractic Manipulation Visits
(Pre-Reform, Transition and Post-Reform Periods)

Type of Surgery	Pre-Reform	Transition Period	Post-Reform	Percentage Change	
				Pre-Reform to Transition	Pre-Reform to Post-Reform
Arthroscopy	67.1%	55.3%	47.8%	-17.6%	-28.8%
Carpal Tunnel	64.2%	46.3%	55.9%	-27.9%	-12.9%
Fusion	40.7%	29.4%	57.9%	-27.8%	42.3%
Laminectomy	49.9%	34.7%	36.2%	-30.5%	-27.5%
Partial/Total Knee Replacement	54.5%	57.1%	NA	4.8%	-
Total	60.9%	46.1%	47.5%	-24.3%	-22.0%

The percentage of all surgical claims with chiropractic manipulation that involved at least one post-surgical chiropractic manipulation visit fell from a pre-reform level of 60.9 percent to a post-reform level of 47.5 percent, a relative decline of 22.0 percent.

While there were no post-reform knee replacements involving chiropractic manipulation in the study sample, a comparison of pre- and post-reform results found the post-surgical chiropractic manipulation utilization rates declined in three of the four remaining surgical claim categories, ranging from a 12.9 percent reduction among carpal tunnel claims to a 28.8 percent reduction among arthroscopy claims. The only increase was noted in claims involving spinal fusions, where the proportion of claims with at least one post-surgical chiropractic manipulation visit climbed from 40.7 percent in the pre-reform period to 57.9 percent in the post-reform period -- a relative increase of 42.3 percent.

8 There were no partial/total knee replacement claims that involved chiropractic manipulation visits in the post-reform claim sample.

Table 10 shows the change in the average number of chiropractic visits on surgical claims in which there was at least one chiropractic manipulation visit.

Table 10: Average Number of Chiropractic Manipulation Visits Surgery Claims with Chiropractic Manipulation
(Pre-Reform, Transition and Post-Reform Periods)

Type of Surgery	Pre-Reform	Transition Period	Post-Reform	Percentage Change	
				Pre-Reform to Transition	Pre-Reform to Post-Reform
Arthroscopy	50.5	47.9	12.9	-5.1%	-74.5%
Carpal Tunnel	48.5	42.0	12.1	-13.4%	-75.1%
Fusion	56.1	59.4	11.6	5.9%	-79.3%
Laminectomy	53.3	54.6	13.4	2.4%	-74.9%
Partial/Total Knee Replacement	49.0	55.9	NA	14.1%	-
Total	51.2	49.9	12.8	-2.5%	-75.0%

Before the 2002-04 medical reforms, surgical claims that involve chiropractic manipulation averaged 51.2 visits for that type of treatment. That figure declined slightly (-2.5 percent) to 49.9 visits in the transition period, then fell 75 percent from the pre-reform level to an average of 12.8 visits in the first year after the reforms took full effect. A look at the data broken out by type of surgery shows that during the transition period, the average number of chiropractic manipulation visits in spinal fusion cases increased 5.9 percent, and in laminectomy claims the average increased 2.4 percent, though those increases were short-lived. In the post-reform period, the average number of chiropractic visits declined for all types of surgery, ranging from a 74.5 percent reduction in arthroscopy claims to a 79.3 reduction in fusion claims.

Table 11 shows the average number of post-surgical chiropractic manipulation visits within 12 months of the date of surgery for the five surgery categories included in the study.

Table 11: Average Number of Chiropractic Manipulation Visits in 1st 12 Months Post Surgery Surgery Claims with Chiropractic Manipulation

(Pre-Reform, Transition and Post-Reform Periods)

Type of Surgery	Pre-Reform	Transition Period	Post-Reform	Percentage Change	
				Pre-Reform to Transition	Pre-Reform to Post-Reform
Arthroscopy	28.7	19.2	9.2	-33.1%	-67.9%
Carpal Tunnel	26.6	16.2	8.7	-39.1%	-67.3%
Fusion	28.6	18.2	7.0	-36.4%	-75.5%
Laminectomy	28.7	16.5	12.4	-42.5%	-56.8%
Partial/Total Knee Replacement	22.6	18.5	NA	-18.1%	-
Total	28.3	18.2	9.4	-35.7%	-66.8%

In the pre-reform study period, the number of post-surgical chiropractic manipulation visits in the first 12 months after the surgery date averaged 28.3 visits per surgical claim. During the transition period, the average number of chiropractic visits in the first year after surgery declined nearly 36 percent to 18.2 visits; while in the post-reform period, the average dropped to 9.4 visits – down 66.8 percent from the pre-reform level. The biggest decline was in back fusion surgery claims. Among these cases, the average number of first-year post-surgical chiropractic manipulation visits fell from 28.6 visits to 7 visits (a 75.5 percent reduction) between the pre- and post-reform periods.

Percent of Claims Over the 24-Visit Caps

As mentioned previously, part of the rationale for AB 1073 was the anecdotal impression that the prior reforms (SB228) created hard caps that completely prohibited more than 24 physical medicine and chiropractic manipulation, regardless of the severity of the claim, including those with surgical intervention. Table 12 displays the percentage of surgical claims with more than 24 visits for physical medicine within the life of the claim and within the first 12 months following surgery.

During the pre-reform period, 70.3 percent of all surgical claims had more than 24 physical medicine visits over the course of the claim, and that proportion showed virtually no change during the transition period. After the reforms were fully implemented, however, the proportion of surgical claims involving more than 24 physical medicine visits within the life of the claim was nearly cut in half, falling to 37 percent.

Table 12: Percentage of Claims with More Than 24 Physical Medicine Visits

Type of Surgery	Within Life of the Claim			Within 1st Year Post Surgery		
	Pre-Reform	Transition Period	Post-Reform	Pre-Reform	Transition Period	Post-Reform
Arthroscopy	70.2%	71.2%	38.5%	54.7%	40.7%	19.5%
Carpal Tunnel	66.6%	62.6%	33.5%	50.9%	34.7%	17.4%
Fusion	78.3%	74.3%	35.6%	56.3%	35.9%	22.3%
Laminectomy	71.7%	73.3%	34.4%	52.4%	36.1%	17.4%
Partial/Total Knee Replacement	75.3%	66.7%	42.9%	58.0%	41.3%	28.6%
Total	70.3%	69.9%	37.0%	53.8%	38.4%	19.0%

In contrast, the percentage of claims with more than 24 physical medicine visits in the first 12 months after surgery began to decline in the transition period, falling from 53.8 percent of all surgery claims prior to reform to 38.4 percent of the surgery claims in the transition period. That proportion then continued to drop in the post-reform period, when 19.0 percent of all surgery claims involved more than 24 physical medicine visits in the first year after the surgery.

Table 13 shows the percentage of surgical claims that involved more than 24 chiropractic manipulation visits within the life of the claim and within the first 12 months following surgery.

Just over half (52.0 percent) of all surgical claims in the pre-reform study period involved more than 24 chiropractic

manipulation visits over the course of the claim, while in the transition period, that proportion rose slightly to 54.5 percent. After the reforms were fully in place, however, the percentage of surgical claims with more than 24 chiropractic manipulation visits during the life of the claim fell to just 7.5 percent, a relative decrease of 85.6 percent from the pre-reform level.

At the same time, the percentage of all surgical claims with more than 24 chiropractic manipulation visits in the first 12 months following surgery started at 41 percent prior to the reforms, dropped to 26.6 percent during the transition period, then fell to just 5.8 percent of the post-reform surgery cases – a relative decline of 85.9 percent from the pre-reform level.

Table 13: Percentage of Claims with More Than 24 Chiropractic Manipulation Visits

Type of Surgery	Within Life of the Claim			Within 1st Year Post Surgery		
	Pre-Reform	Transition Period	Post-Reform	Pre-Reform	Transition Period	Post-Reform
Arthroscopy	51.8%	55.9%	5.9%	41.9%	29.1%	4.9%
Carpal Tunnel	50.9%	44.9%	10.2%	37.7%	22.7%	3.0%
Fusion	54.1%	59.4%	10.5%	40.9%	25.2%	9.1%
Laminectomy	52.0%	55.8%	10.1%	41.5%	22.4%	12.0%
Partial/Total Knee Replacement	68.2%	50.0%	N/A	50.0%	25.0%	-
Total	52.0%	54.5%	7.5%	41.0%	26.6%	5.8%

SUMMARY

Assertions that the 24-visit caps on chiropractic care, occupational medicine and physical medicine included in California's 2004 workers' compensation reform bill are overly restrictive inspired the introduction of Assembly Bill 1073, a measure that among other things, would eliminate the caps for post-surgical visits. Some stakeholders are concerned that the caps deny necessary treatment to injured workers -- most notably, those who had already received 24 treatment visits prior to surgery.

The two-pronged approach of the medical reforms – the creation of a utilization management schedule based on high-grade medical evidence, and the 24-visit caps – was largely inspired by the perceived excesses in medical utilization, most notably in the areas of physical medicine and chiropractic care. The ACOEM 2nd edition medical treatment guidelines, which now serve as California's primary reference in establishing its workers' compensation system's medical treatment standard, provide limited evidence in regard to the appropriateness and effectiveness of passive and active physical medicine for post-surgery care. Also, the ACOEM evidence base notes that while moderate use of chiropractic manipulation is appropriate for medical back injuries, there is virtually no high-grade evidence to support chiropractic manipulation for low back injuries with spinal cord involvement or post-surgical care.

This study reveals that following full implementation of the 2004 reforms, almost 9 out of 10 surgical claims in the California workers' compensation system received post-surgical physical medicine, a modest 1.7 percent decline from pre-reform activity. At the same time, the average number of post-surgical physical medicine visits on these claims declined 38 percent, from 36.1 visits to 16.9 visits.

The reductions in the use of chiropractic manipulation were more pronounced. The study noted that once the reforms were in place, the proportion of claims involving post-surgical chiropractic treatment declined 22 percent from the pre-reform level, while the average number of post-surgical chiropractic visits declined by 2/3 from 28.3 visits prior to the reforms to 9.4 visits after the reforms took effect.

These results show clear associations between the medical reforms enacted in 2004 and reductions in the use of physical therapy and chiropractic manipulation, but there is no conclusive proof that a "hard cap" exists. To the contrary, the data show that among the post-reform surgical claims, 19 percent of those receiving physical therapy, and 5.8 percent of those receiving chiropractic manipulation involved more than 24 visits for those services within the first year after the surgery, suggesting some flexibility and discretion on the part of claims and utilization review professionals in implementing the medical reforms.

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.



California Workers' Compensation Institute

1111 Broadway, Suite 2350 • Oakland, CA 94607 • (510) 251-9470 • www.cwci.org

Copyright 2007, California Workers' Compensation Institute. All rights reserved.

APPENDIX A. SURGICAL CATEGORIES AND RELATED PROCEDURES

Surgical Group	Procedure Code	Description
Arthroscopy	23420	Reconst chronic complete shoulder cuff avulsion're
Arthroscopy	27407	Primary REP torn LIG &/or capsule knee, cruciate
Arthroscopy	27409	Prim REP collateral & cruciate LIG/capsule, knee
Arthroscopy	29804	Arthroscopy, temporomandibular joint, surgical'tmj
Arthroscopy	29805	Arthroscopy, shoulder, diagnostic w or w/o syn biop
Arthroscopy	29807	Arthroscopy, repair of SLAP lesion
Arthroscopy	29815	Arthroscopy, shoulder, diagnostic'dxtic shldr arth
Arthroscopy	29826	Surg should arthroscopy w decomp & acromioplasty'e
Arthroscopy	29870	Diagnostic knee arthroscopy'dxtic knee arthroscopy
Arthroscopy	29871	Surg knee arthroscopy for infect/lavage/drainage'e
Arthroscopy	29874	Surg knee arthroscopy for removal FB/loose body
Arthroscopy	29875	Surg knee arthroscopy w limited synovectomy'endo k
Arthroscopy	29876	Surg knee arthroscopy w major synovectomy'endo kne
Arthroscopy	29877	Surg knee arthroscopy w debride/shave cartilage'kn
Arthroscopy	29879	Knee arthroscopy w abras arthroplasty/mult drill
Arthroscopy	29880	Surg knee arthroscopy w MED & lat meniscectomy
Arthroscopy	29881	Surg knee arthroscopy w MED or lat meniscectomy
Arthroscopy	29882	Surg knee arthroscopy w MED or lat meniscus REP
Arthroscopy	29883	Surg knee arthroscopy w MED & lat meniscus REP
Arthroscopy	29884	Surg knee arthroscopy w lysis adhesions'knee arthr
Arthroscopy	29885	Surg knee arthroscopy w drilling for OCD & graft
Arthroscopy	29886	Surg knee arthroscopy w drilling for intact OCD
Arthroscopy	29887	Surg knee arthroscopy w drilling/int fix for OCD
Arthroscopy	29888	Arthroscopically aided ACL REP/augment/reconst
Carpal Tunnel	29848	Surg wrist endoscopy w rel trans carpal Lig'arthsc
Carpal Tunnel	29848	Surg wrist endoscopy w rel trans carpal Lig'arthsc
Carpal Tunnel	64721	Neuroplasty/transpos median at carpal tunnel'neuro
Fusion	22532	Arthrodesis, lateral extracavitary technique; disk
Fusion	22533	lateral extracavitary technique; lumbar
Fusion	22534	Arthrodesis, lateral extracavitary techn;addl lumb
Fusion	22548	Arthrodesis, anterior technique, clivus-C1-C2'ant

Surgical Group	Procedure Code	Description
Fusion	22554	Arthrodesis, anterior interbody technique; C3-C7'a
Fusion	22556	Arthrodesis, anterior interbody technique; thor'an
Fusion	22558	Arthrodesis, anterior interbody technique; lumb'an
Fusion	22585	Arthrodesis, ant interbody technique; each ADDL
Fusion	22590	Arthrodesis, posterior technique; craniocervical'p
Fusion	22595	Arthrodesis, post technique; atlas-axis (C1-C2)
Fusion	22600	Arthrodesis, post technique, snl level; C3-C7'pos
Fusion	22610	Arthrodesis, post technique, snl level; thor'post
Fusion	22612	Arthrodesis, post technique, snl level; lumbar'po
Fusion	22614	Arthrodesis, post technique; each ADDL vert SEG
Fusion	22630	Arthrodesis, post interbody tech, single; lumbar'p
Fusion	22632	Arthrodesis, post interbody tech, snl; ea ADDL
Fusion	22840	Posterior non-segmental instrumentation
Fusion	22841	Internal spinal fix by wiring spinous processes'in
Fusion	22842	Post segmental instrumentation; 3-6 vert segment'p
Fusion	22843	Post segmental instrumentation; 7-12 vert SEG
Fusion	22844	Post segmental instrumentation; >12 vert segment'p
Fusion	22845	Anterior instrumentation; 2-3 vertebral segments'a
Fusion	22846	Anterior instrumentation; 4-7 vertebral segments'a
Fusion	22847	Anterior instrumentation; >7 vertebral segments'an
Fusion	22848	Pelv fix (caudal end of instr) oth than sacrum'pel
Fusion	22849	Reinsertion of spinal fixation device'reinsert spi
Fusion	22850	Removal posterior nonsegmental instrumentation'rmv
Fusion	22851	Appl prosth device to vert defect or interspace
Fusion	22852	Removal of posterior segmental instrumentation'rmv
Fusion	22855	Removal of anterior instrumentation'rmvl ant instr
Laminectomy	22100	Part exc post vert component, snl segment; cerv'p
Laminectomy	22101	Part exc post vert component, snl segment; thor'p
Laminectomy	22102	Part exc post vert component, snl segment; lumb'p
Laminectomy	62351	Impl/rev tunneled lt/epidural cath w laminectomy'i
Laminectomy	63001	Cervical spinal cord decomp, 1 or 2 vert SEG
Laminectomy	63003	Thoracic spinal cord decomp, 1 or 2 vert SEG
Laminectomy	63005	Lumbar spinal cord decomp, 1 or 2 vert SEG

Surgical Group	Procedure Code	Description
Laminectomy	63010	Removal Of Spinal Lamina
Laminectomy	63011	Sacral spinal cord decomp, 1 or 2 vert segments'de
Laminectomy	63012	Lumbar laminectomy for spondylolisthesis'lumbar la
Laminectomy	63015	Cervical laminectomy of more than 2 vert segment'c
Laminectomy	63016	Thoracic laminectomy of more than 2 vert segment't
Laminectomy	63017	Lumbar laminectomy of more than 2 vert segmentmb
Laminectomy	63020	Laminotomy w nerve root decomp 1 cerv interspace'1
Laminectomy	63021	Neck Spine Disk Surgery
Laminectomy	63030	Laminotomy w nerve root decomp 1 lumb interspace'1
Laminectomy	63031	Low Back Disk Surgery
Laminectomy	63035	Laminotomy w nerve root decomp, each ADDL
Laminectomy	63040	Cervical laminotomy w decomp for re-exploration're
Laminectomy	63041	Thorax Spine Disk Surgery
Laminectomy	63042	Lumbar laminotomy w decomp for re-exploration're-e
Laminectomy	63044	Posterior Extradural Laminotomy;addl lumbar
Laminectomy	63045	Cerv laminectomy w decompression, single segment'c
Laminectomy	63046	Thor laminectomy w decompression, single segment't
Laminectomy	63047	Lumb laminectomy w decompression, single segment'l
Laminectomy	63048	Laminectomy w decompression, ea ADDL vert SEG
Laminectomy	63170	Myelotomy (Bischof/DREZ); cerv, thor, thorlumb
Laminectomy	63172	LAM w drain INmedullary cyst to subarach space
Laminectomy	63180	LAM w section cerv dentate ligaments, 1-2 SEG
Laminectomy	63182	LAM w section cerv dentate ligaments, >2 SEG
Laminectomy	63185	Laminectomy w rhizotomy; 1 or 2 segments'rhizotomy
Laminectomy	63190	Laminectomy w rhizotomy; >2 segments'rhizotomy >2
Laminectomy	63191	Laminectomy w section of spinal accessory nerve'la
Laminectomy	63194	LAM w unilateral cordotomy, 1 stage, cervical
Laminectomy	63195	LAM w unilateral cordotomy, 1 stage, thoracic
Laminectomy	63196	LAM w bilateral cordotomy, 1 stage, cervical
Laminectomy	63197	LAM w bilateral cordotomy, 1 stage, thoracic
Laminectomy	63198	LAM w bilateral cordotomy, two stage, cervical
Laminectomy	63199	LAM w bilateral cordotomy, two stage, thoracic
Laminectomy	63200	LAM w release tethered spinal cord, lumbar

Surgical Group	Procedure Code	Description
Laminectomy	63250	Laminectomy w exc/occl AVM cervical spinal cord
Laminectomy	63251	Laminectomy w exc/occl AVM thoracic spinal cord
Laminectomy	63252	LAM w exc/occl AVM thoracolumbar spinal cord
Laminectomy	63265	LAM w exc/evac cerv INspnl Xdurl les X neoplasm
Laminectomy	63266	LAM w exc/evac thor INspnl Xdurl les X neoplasm
Laminectomy	63267	LAM w exc/evac lumb INspnl Xdurl les X neoplasm
Laminectomy	63268	LAM w exc/evac sacr INspnl Xdurl les X neoplasm
Laminectomy	63270	LAM w exc/evac cerv INspnl INdurl les X neoplasm
Laminectomy	63271	LAM w exc/evac thor INspnl INdurl les X neoplasm
Laminectomy	63272	LAM w exc/evac lumb INspnl INdurl les X neoplasm
Laminectomy	63273	LAM w exc/evac sacr INspnl INdurl les X neoplasm
Laminectomy	63275	LAM for Bx/exc cerv intraspinal extradural neopl
Laminectomy	63276	LAM for Bx/exc thor intraspinal extradural neopl
Laminectomy	63277	LAM for Bx/exc lumb intraspinal extradural neopl
Laminectomy	63278	LAM for Bx/exc sacr intraspinal extradural neopl
Laminectomy	63280	Bx/exc INspnl neoplasm; INdurl, Xmedullary, cerv
Laminectomy	63281	Bx/exc INspnl neoplasm; INdurl, Xmedullary, thor
Laminectomy	63282	Bx/exc INspnl neoplasm; INdurl, Xmedullary, lumb
Laminectomy	63283	LAM for Bx/exc INspnl neopl; intradural, sacral
Laminectomy	63285	Bx/exc INspnl neoplasm; INdurl INmedullary, cerv
Laminectomy	63286	Bx/exc INspnl neoplasm; INdurl INmedullary, thor
Laminectomy	63287	Bx/exc INspnl neoplasm; INdurl INmedul, thorlumb
Laminectomy	63290	Bx/exc INspnl neoplasm; intradural-extradural
Laminectomy	63300	Vert corpectomy for exc extradural cerv les, one'c
Laminectomy	63301	Transthoracic CORP for exc extradural thor les
Laminectomy	63302	Thoracolumb CORP for exc extradural thor lesion
Laminectomy	63303	Periton corpectomy for Xdurl lumb/sacr les exc'per
Laminectomy	63304	Corpectomy for exc intradural cerv les, one SEG
Laminectomy	63305	Transthor corpectomy for exc intradural thor les't
Laminectomy	63306	Thoracolumb CORP for intradural thor lesion exc
Laminectomy	63307	Transperiton CORP for intradural lumb lesion exc
Laminectomy	63308	Vert corpectomy for intraspinal les exc, ea ADDL
Laminectomy	63600	Creation spinal cord lesion by PERC stereotaxis

Surgical Group	Procedure Code	Description
Laminectomy	63610	PERC stereotactic spinal cord stimulation
Laminectomy	63615	Stereotactic Bx, asp, les exc, spinal cord'sp ster
Laminectomy	63650	PERC implant epidural neurostim electrode array
Laminectomy	63655	LAM for impl epidur neurostim elec, plate/paddle
Partial/Total Knee Replacement	27445	Arthroplasty, knee, hinge prosthesis'knee arthrpl
Partial/Total Knee Replacement	27446	Arthroplasty condyle/plateau, medial or lateral're
Partial/Total Knee Replacement	27447	Arthroplasty condyle/plateau, medial or lateral're

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.



California Workers' Compensation Institute

1111 Broadway, Suite 2350 • Oakland, CA 94607 • (510) 251-9470 • www.cwci.org