

ICIS SAYS...

The Industry Claims Information System (ICIS) currently encompasses transaction-level data on more than 2.5 million California workers' compensation claims contributed by large and midsize national and regional insurers and self-insured employers for claims with dates of injury from 1993 through 2004. The data warehouse was built to meet the changing and expanding research and analysis requirements of the workers' compensation industry and CWCI members.

The value of data depends on its practical applications. The Institute often relies on ICIS to generate "hard numbers" that can be used to advance the public policy debate on a wide variety of workers' compensation issues and concerns. The following ICIS Says Report examines changes in the average amounts paid and the average number of visits for medical services on indemnity claims in California workers' compensation since the implementation of recent reforms.

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ICIS SAYS: *Early Returns on Workers' Comp Medical Reforms: Part 5*
Changes in Medical Utilization and Average Cost by Medical Service Type

by

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Background

Over a recent 10-year period, the average estimated cost of medical treatment for an indemnity claim in the California workers' compensation system rose almost 230 percent from \$9,381 in accident year 1994 to \$30,804 in accident 2003.¹ In response to this rapid increase in medical costs, state lawmakers passed a series of legislative reforms between 2002 and 2004 that contained several key provisions to control the growth of medical utilization and costs -- most notably, the partial repeal of the Primary Treating Physician's (PTP) presumption of correctness in matters of medical treatment. Several studies have shown associations between the PTP presumption and increasing medical utilization and cost.² Beginning in January 2004, AB 227 and SB 228, the reform package signed by Governor Davis in 2003, called for the implementation of utilization management controls featuring medical treatment guidelines (beginning with the ACOEM Guidelines), as well as 24-visit caps for physical therapy and chiropractic manipulation. Public policymakers and members of the workers' compensation community have eagerly anticipated initial data showing the changes in treatment utilization and costs in the California system since these reforms took effect.

Research Goal

The goal of this analysis is to measure changes in medical utilization and reimbursement by type of medical service at the early stages of medical claim development.

¹ WCIRB April 2004.

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, Scheduled for Publication Dec 2002.

Data

For this study, the Institute compiled data from its Industry Claims Information System (ICIS) database into a special dataset which summarized medical utilization and payments at 3, 6 and 9 months post injury.³ The final dataset contained 303,068 opened and closed indemnity claims with dates of injury between January 2001 and December 2004. Medical reimbursements on all claims in the sample totaled \$652 million. After grouping the claims by year of injury, the analysts sorted the claims into ACOEM injury categories⁴ and summarized medical service details for all claims into seven fee schedule classifications:

1. Evaluation & Management (E/M)
2. Physical Therapy (PT)
3. Surgery (excluding injections)
4. Chiropractic Manipulation
5. Medicine Section Services
6. Radiology
7. Injections⁵

For each of the seven medical service categories, the researchers calculated the average number of visits (unique dates of service) and the average total amount reimbursed per claim for services within the category at 3, 6 and 9 months from the date of injury. Calculations of average visits and payments for any of the seven categories of medical service were limited to claims with at least one date of service within that category. Claims with multiple services within a category on the same date of service (e.g. multiple physical therapy services on the same day) were counted as a single visit for the service category.

Results:

Table 1 shows the utilization of medical care by type of service and year of injury. The top line for each treatment category shows the proportion of indemnity claims that involved that type of service or procedure. Below that are breakouts showing the average number of visits and the total amount paid per claim for services within each category at 3, 6 and 9 months post injury.

³ All claims in the dataset had the opportunity to incur up to at least 9 months of medical services development. At the time of the study, the cut-off for the ICIS database was December 2004, so the study sample had more 2002 and 2003 injury claims, as there were fewer 2004 injury claims that could be valued at 9 months of development.

⁴ The authors used the methodology detailed in Harris, JS, Swedlow, A. Evidence-Based Medicine & the California Workers' Compensation System. *A Report to the Industry*. CWCI. Jan 2004

⁵ Steroid injections and other therapeutic injections were reported in the Injection category rather than as Surgery section procedures (where they are listed in the Official Medical Fee Schedule).

Table 1. Utilization by Service Type & Year of Injury, 2001- 2004 Indemnity Claims

	INDEMNITY CLAIMS				
	2001	2002	2003	2004	Total
Number of Claims in the Sample	88,338	91,260	76,305	47,165	303,068
Percentage of the Sample	29%	30%	25%	16%	100.0%
Evaluation & Management Utilization (% of All Indemnity Claims)	96.6%	97.8%	97.6%	98.7%	97.9%
Average # of E/M Visits @ 3 Months	4.7	4.9	4.7	4.8	4.8
Average # of E/M Visits @ 6 Months	7.7	8.0	7.7	7.5	7.8
Average # of E/M Visits @ 9 Months	10.5	10.8	10.6	9.8	10.6
Average Total Paid for E/M Services @ 3 Months	\$ 402	\$ 429	\$ 408	\$ 421	\$ 415
Average Total Paid for E/M Services @ 6 Months	\$ 683	\$ 726	\$ 695	\$ 662	\$ 698
Average Total Paid for E/M Services @ 9 Months	\$ 952	\$1,007	\$ 965	\$ 866	\$ 967
Physical Therapy Utilization (% of All Indemnity Claims)	63.2%	65.1%	67.4%	61.0%	64.5%
Average # of PT Visits @ 3 Months	5.5	6.2	6.3	5.1	5.9
Average # of PT Visits @ 6 Months	15.0	16.6	16.0	10.6	15.3
Average # of PT Visits @ 9 Months	25.4	27.5	25.9	15.3	25.6
Average Total Paid for PT Services @ 3 Months	\$ 294	\$ 341	\$ 352	\$ 272	\$ 320
Average Total Paid for PT Services @ 6 Months	\$ 825	\$ 926	\$ 913	\$ 583	\$ 858
Average Total Paid for PT Services @ 9 Months	\$1,415	\$1,564	\$1,484	\$ 867	\$1,448
Surgery Utilization Excluding Injections (% of All Indemnity Claims)	45.5%	48.1%	49.0%	49.7%	47.8%
Average # of Surgery Visits @ 3 Months	1.6	1.6	1.6	1.5	1.6
Average # of Surgery Visits @ 6 Months	3.1	3.2	3.2	2.8	3.1
Average # of Surgery Visits @ 9 Months	4.7	4.9	4.8	4.1	4.7
Average Total Paid for Surgery Services @ 3 Months	\$ 783	\$ 755	\$ 793	\$ 988	\$ 811
Average Total Paid for Surgery Services @ 6 Months	\$1,910	\$1,871	\$2,031	\$2,509	\$2,002
Average Total Paid for Surgery Services @ 9 Months	\$3,110	\$3,009	\$3,447	\$4,086	\$3,259
Chiropractic Manipulation Utilization (% of All Indemnity Claims)	17.7%	19.7%	21.4%	13.9%	18.6%
Average # of Chiropractic Manipulation Visits @ 3 Months	11.3	11.6	10.7	8.0	10.9
Average # of Chiropractic Manipulation Visits @ 6 Months	24.0	24.8	22.3	13.1	22.9
Average # of Chiropractic Manipulation Visits @ 9 Months	35.9	37.0	32.6	17.4	34.3
Average Total Paid for Chiropractic Manipulation Services @ 3 Months	\$ 530	\$ 540	\$ 499	\$ 348	\$ 505
Average Total Paid for Chiropractic Manipulation Services @ 6 Months	\$1,116	\$1,154	\$1,028	\$ 569	\$1,061
Average Total Paid for Chiropractic Manipulation Services @ 9 Months	\$1,675	\$1,721	\$1,488	\$ 748	\$1,586

Table 1. Utilization by Service Type & Year of Injury, 2001- 2004 Indemnity Claims (continued)

	INDEMNITY CLAIMS				
	2001	2002	2003	2004	Total
Medicine Section Services Utilization (% of All Indemnity Claims)	34.1%	37.9%	40.0%	38.4%	37.4%
Average # of Medicine Section Service Visits @ 3 Months	1.4	1.4	1.5	1.4	1.4
Average # of Medicine Section Service Visits @ 6 Months	2.9	3.0	3.0	2.8	3.0
Average # of Medicine Section Service Visits @ 9 Months	4.5	4.7	4.6	4.2	4.6
Average Total Paid for Medicine Section Services @ 3 Months	\$ 594	\$ 597	\$ 570	\$ 399	\$ 559
Average Total Paid for Medicine Section Services @ 6 Months	\$ 1,284	\$ 1,289	\$ 1,211	\$ 901	\$1,219
Average Total Paid for Medicine Section Services @ 9 Months	\$ 1,900	\$ 1,899	\$ 1,734	\$ 1,357	\$1,797
Radiology Services Utilization (% of All Indemnity Claims)	22.4%	23.0%	30.2%	37.7%	26.9%
Average # of Radiology Visits @ 3 Months	1.8	1.8	1.8	1.7	1.8
Average # of Radiology Visits @ 6 Months	3.2	3.3	3.2	3.1	3.2
Average # of Radiology Visits @ 9 Months	4.6	4.7	4.6	4.3	4.6
Average Total Paid for Radiology Services @ 3 Months	\$ 380	\$ 423	\$ 438	\$ 367	\$ 405
Average Total Paid for Radiology Services @ 6 Months	\$ 864	\$ 949	\$ 944	\$ 825	\$ 907
Average Total Paid for Radiology Services @ 9 Months	\$ 1,303	\$ 1,426	\$ 1,394	\$ 1,207	\$1,359
Injection Utilization (% of All Indemnity Claims)	10.7%	11.0%	11.1%	8.2%	10.5%
Average # of Injection Visits @ 3 Months	1.4	1.4	1.4	1.3	1.4
Average # of Injection Visits @ 6 Months	3.0	3.1	3.0	2.7	3.0
Average # of Injection Visits @ 9 Months	4.7	4.9	4.6	4.0	4.7
Average Total Paid for Injection Procedures @ 3 Months	\$ 179	\$ 209	\$ 209	\$ 158	\$ 193
Average Total Paid for Injection Procedures @ 6 Months	\$ 528	\$ 610	\$ 596	\$ 466	\$ 567
Average Total Paid for Injection Procedures @ 9 Months	\$ 943	\$ 1,076	\$ 1,032	\$ 825	\$1,003

Percentage of indemnity claims receiving medical treatment

Four of the seven medical treatment categories showed modest to significant decreases in the proportion of indemnity claims receiving a particular medical service. For example, when the Institute compared claims involving 2004 injuries (the starting point of the new UR controls), 13.9 percent of the claims received chiropractic manipulation services, down from 21.4 percent of the 2003 injury claims (a relative reduction of 35 percent). The proportion of indemnity claims receiving injections, physical therapy and the medicine section procedures also declined by 26.1, 9.6 and 4.0 percent respectively. At the same time, the study found increased utilization in three categories of services: the proportion of indemnity claims using evaluation and management services edged up from 97.6 to 98.7 percent (+1.1 percent); the proportion using radiology climbed from 30.2 to 37.7 percent (+24.8 percent) and the proportion involving surgery rose from 49.0 to 49.7 percent (+1.4 percent).

Average visits by medical treatment category

For almost all of the medical service categories, the average number of visits valued at 3, 6 and 9 months declined following the implementation of the medical utilization reforms in 2004. For example, the average number of surgical visits at 9 months of development fell from 4.8 in 2003 to 4.1 in 2004, a 14.6 percent drop. The largest percentage drop in average visits was in chiropractic manipulation services, where at 9 months of development there was a 46.6 percent reduction in visits in 2004 (17.4 visits) relative to 2003 (32.6 visits). A similar reduction (40.9 percent) was noted in physical therapy services at 9 months. The PT and chiropractic results are similar to those noted in a prior CWCI study on physical therapy and chiropractic manipulation.⁶ The average number of evaluation and management visits in the first three months increased to 4.8 for the 2004 injuries, up from 4.7 visits for 2003 injuries, (+ 2.1 percent), but the average number of E/M visits at 6 and 9 months decreased by 2.6 and 7.5 percent respectively.

Average total payments by medical treatment category

As noted above, the decline in the average number of surgical visits for indemnity claims was associated with the implementation of the utilization controls in 2004. Average total paid amounts for surgery at 3, 6 and 9 months, however, increased significantly. For example, the average total paid amount for surgical procedures at 6 months post injury rose from \$2,031 in AY 2003 to \$2,509 in AY 2004 (+23.5 percent). At 9 months of development, average total payments for surgery rose 18.5 percent from \$3,447 in AY 2003 to \$4086 in AY 2004. This tracks with prior studies that showed that the mix of surgical procedures has recently shifted to procedures with higher reimbursement levels.⁷ Other medical treatment sections registered declines in average total paid amounts ranging from low to modest reductions for evaluation and management services (5-10 percent reductions at 6 and 9 months between 2004 and 2003) to more significant reductions at 9 months for physical therapy (41.6 percent), chiropractic (49.7 percent), medicine (21.7 percent), radiology (13.4 percent) and injections (20.1 percent).

ACOEM's Low Back Soft Tissue Injury Category

After measuring changes in medical utilization and reimbursement by type of medical service across all types of indemnity injuries, the Institute recalculated average visits and payments focusing exclusively on one of the

⁶ Early Returns on Workers' Comp Medical Reforms: ICIS Says Part 2. Physical Therapy and Chiropractic Manipulation Cost and Utilization October 2005.

⁷ Early Returns on Workers' Comp Medical Reforms: ICIS Says Part 3. Physician Services Fee Schedule November 2005. CWCI will also perform a subsequent analysis in 2006 on the changing mix of procedures performed on injured workers.

most common categories of work injuries -- low back soft tissue injuries. For this analysis, the Institute isolated a subsample of 54,404 claims from AY 2001 through AY 2004 that involved low back soft tissue injuries, as defined by ACOEM. Table 2 shows the results for low back soft tissue injury indemnity claims.

TABLE 2 Utilization By Service Type: ACOEM Low Back Soft Tissue Category

	LOW BACK SOFT TISSUE INDEMNITY CLAIMS				
	2001	2002	2003	2004	Total
Number of Claims in the Sample	15,218	15,955	14,235	8,996	54,404
Percentage of the Sample	28%	29%	26%	17%	100.0%
Evaluation & Management Utilization (% of All Indemnity Claims)	96.6%	97.5%	97.9%	99.3%	97.6%
Average # of E/M Visits @ 3 Months	5.0	5.3	5.0	5.3	5.1
Average # of E/M Visits @ 6 Months	8.2	8.6	8.3	8.3	8.4
Average # of E/M Visits @ 9 Months	11.3	11.8	11.5	10.8	11.5
Average Total Paid for E/M Services @ 3 Months	\$ 396	\$ 426	\$ 408	\$ 413	\$ 411
Average Total Paid for E/M Services @ 6 Months	\$ 704	\$ 757	\$ 727	\$ 686	\$ 725
Average Total Paid for E/M Services @ 9 Months	\$ 1,005	\$ 1,074	\$ 1,029	\$ 911	\$ 1,027
Physical Therapy Utilization (% of All Indemnity Claims)	78.8%	81.0%	82.4%	78.4%	80.3%
Average # of PT Visits @ 3 Months	5.7	6.6	6.8	5.1	6.2
Average # of PT Visits @ 6 Months	16.1	18.1	17.4	10.6	16.6
Average # of PT Visits @ 9 Months	27.3	30.0	27.9	14.9	27.5
Average Total Paid for PT Services @ 3 Months	\$ 307	\$ 354	\$ 369	\$ 258	\$ 329
Average Total Paid for PT Services @ 6 Months	\$ 890	\$ 1,026	\$ 985	\$ 551	\$ 925
Average Total Paid for PT Services @ 9 Months	\$ 1,532	\$ 1,733	\$ 1,573	\$ 793	\$ 1,560
Surgery Utilization Excluding Injections (% of All Indemnity Claims)	29.6%	33.7%	34.2%	29.4%	32.0%
Average # of Surgery Visits @ 3 Months	1.6	1.7	1.7	1.5	1.7
Average # of Surgery Visits @ 6 Months	3.4	3.8	3.6	3.0	3.6
Average # of Surgery Visits @ 9 Months	5.3	5.8	5.4	4.3	5.4
Average Total Paid for Surgery Services @ 3 Months	\$ 434	\$ 427	\$ 377	\$ 318	\$ 399
Average Total Paid for Surgery Services @ 6 Months	\$ 1,407	\$ 1,332	\$ 1,330	\$ 1,483	\$ 1,360
Average Total Paid for Surgery Services @ 9 Months	\$ 2,604	\$ 2,404	\$ 2,505	\$ 2,724	\$ 2,508
Chiropractic Manipulation Utilization (% of All Indemnity Claims)	32.3%	35.0%	37.4%	26.9%	33.5%
Average # of Chiropractic Manipulation Visits @ 3 Months	11.5	11.6	10.7	7.9	10.9
Average # of Chiropractic Manipulation Visits @ 6 Months	24.9	25.7	22.6	13.2	23.4
Average # of Chiropractic Manipulation Visits @ 9 Months	37.7	38.6	33.0	17.7	35.3
Average Total Paid for Chiropractic Manipulation Services @ 3 Months	\$ 531	\$ 540	\$ 498	\$ 341	\$ 501
Average Total Paid for Chiropractic Manipulation Services @ 6 Months	\$ 1,149	\$ 1,193	\$ 1,044	\$ 568	\$ 1,079
Average Total Paid for Chiropractic Manipulation Services @ 9 Months	\$ 1,745	\$ 1,785	\$ 1,511	\$ 756	\$ 1,624

TABLE 2 Utilization By Service Type: ACOEM Low Back Soft Tissue Category (continued)

	LOW BACK SOFT TISSUE INDEMNITY CLAIMS				
	2001	2002	2003	2004	Total
Medicine Section Services Utilization (% of indemnity claims)	30.2%	36.0%	39.0%	35.5%	35.1%
Average # of Medicine Section Service Visits @ 3 Months	1.4	1.5	1.5	1.3	1.4
Average # of Medicine Section Service Visits @ 6 Months	2.9	3.2	3.2	2.7	3.1
Average # of Medicine Section Service Visits @ 9 Months	4.6	5.1	4.8	4.0	4.8
Average Total Paid for Medicine Section Services @ 3 Months	\$ 818	\$ 743	\$ 691	\$ 484	\$ 701
Average Total Paid for Medicine Section Services @ 6 Months	\$ 1,690	\$ 1,566	\$ 1,475	\$ 1,073	\$ 1,502
Average Total Paid for Medicine Section Services @ 9 Months	\$ 2,412	\$ 2,271	\$ 2,042	\$ 1,552	\$ 2,155
Radiology Services Utilization (% of all indemnity claims)	12.1%	13.7%	19.8%	24.6%	16.6%
Average # of Radiology Visits @ 3 Months	1.6	1.7	1.7	1.6	1.7
Average # of Radiology Visits @ 6 Months	3.1	3.2	3.1	2.9	3.1
Average # of Radiology Visits @ 9 Months	4.5	4.6	4.4	4.1	4.5
Average Total Paid for Radiology Services @ 3 Months	\$ 410	\$ 474	\$ 499	\$ 399	\$ 450
Average Total Paid for Radiology Services @ 6 Months	\$ 981	\$ 1,106	\$ 1,090	\$ 936	\$ 1,043
Average Total Paid for Radiology Services @ 9 Months	\$ 1,487	\$ 1,630	\$ 1,610	\$ 1,374	\$ 1,556
Injection Utilization (% of all indemnity claims)	13.5%	14.5%	14.6%	10.8%	13.6%
Average # of Injection Visits @ 3 Months	1.5	1.6	1.6	1.4	1.6
Average # of Injection Visits @ 6 Months	3.3	3.7	3.6	2.9	3.5
Average # of Injection Visits @ 9 Months	5.1	5.6	5.2	4.3	5.3
Average Total Paid for Injection Procedures @ 3 Months	\$ 336	\$ 372	\$ 349	\$ 265	\$ 341
Average Total Paid for Injection Procedures @ 6 Months	\$ 882	\$ 950	\$ 931	\$ 769	\$ 904
Average Total Paid for Injection Procedures @ 9 Months	\$ 1,446	\$ 1,554	\$ 1,487	\$ 1,341	\$ 1,480

Percentage of low back soft tissue indemnity claims receiving medical treatment

The results reveal that low back soft tissue injuries receive more treatment than the general population of indemnity claims. That result was consistent across nearly all of the medical treatment categories -- evaluation and management, physical therapy, chiropractic, medicine, radiology and injections. The exception was surgery, where the proportion of low back indemnity claims involving surgery (29.4 percent in 2004) was less than the proportion noted for all indemnity claims (49.7 percent in 2004).

Between 2003 and 2004 injury years, the study found a declining proportion of low back soft tissue indemnity claims that used physical therapy, surgery, chiropractic manipulation, medicine section services and injections. In contrast, the percentage of low back indemnity claims receiving evaluation and management services rose

from 97.9 percent to 99.3 percent (a relative increase of 1.4 percent), while the proportion of these claims involving radiology services climbed from 19.8 to 24.6 percent (+24.2 percent).

Average visits by medical treatment category for low back soft tissue indemnity claims

Changes in the average number of visits by medical treatment category for low back soft tissue indemnity claims after 2004 tracked with the changes noted for all indemnity claims. Between accident years 2003 and 2004, the average number of medical treatment visits at 9 months declined in all seven of the medical treatment categories, ranging from a 6.1 percent reduction in evaluation and management visits to a 46.6 decline in physical therapy visits.

Average total payments by medical treatment category for low back soft tissue indemnity claims. Changes in average total payments at 3, 6, and 9 months post injury among the low back soft tissue indemnity claims also tracked with the patterns noted for all indemnity claims. Once again, physical therapy (-49.6 percent) and chiropractic manipulation (-50.0) showed the largest percentage declines between 2003 and 2004. Despite a 20.4 percent reduction in the average number of surgical visits between 2003 (5.4 visits) and 2004 (4.3 visits), average surgery payments at 9 months rose by 9.7 percent from \$2,505 in 2003 to \$2,724 in 2004.

It is important to note again that the utilization and cost trends presented here represent data compiled at very early stages of claim development. The authors caution not to extrapolate these results to potential future savings on fully developed claims as several external issues may have contributed to these results:

- Immature claims: this study provides snapshots of medical utilization and payments at 3-, 6- and 9-months post injury. For many indemnity claims, this represents just a fraction of the overall medical experience that will ultimately occur within the life of the claim.
- Changes in medical billing cycles: the data call for 2004 claim detail was initiated in March of 2005. It is possible that some unknown portion of medical bills for 4th quarter 2004 dates of service had not been fully processed.
- Reimbursement for some of the profiled medical treatment services were reduced by up to 5% in 2004 with the passage of AB228.

Because workers' compensation medical costs typically develop over years, the aforementioned reforms can be altered by the courts, state regulators, the Legislature, or market forces compromising the utilization and

payment savings measured in this study as well as other findings in this series. CWCI will continue to track the data and report longer-term results in future studies.

The Research Series: Early Returns on Workers' Comp Medical Reforms – Changes in Medical Cost & Utilization

This analysis is the fifth in a six-part series in which the Institute is tracking the cost and utilization of medical services following implementation of fee schedules, utilization review, and other workers' compensation medical cost containment strategies included in the 2002–2004 legislative reforms. The series will cover the following topics:

Part 1. Outpatient Surgery Fee Schedule

Part 2. Physical Therapy and Chiropractic Manipulation Cost and Utilization

Part 3. Physician Services Fee Schedule

Part 4. Pharmacy Fee Schedule Changes

Part 5. Changes in Utilization and Reimbursement for Medical Services

Part 6. Inpatient Hospital Fee Schedule Changes

As noted above, the final report in the series will examine the changing nature of the inpatient hospital fee schedule in the California Workers' Compensation Industry.

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