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California Workers' Compensation Medical Payments, Litigation and Claim Duration— A Post-Reform Report Card

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Key Findings

This report presents results of an analysis of nearly 1 million California workers' compensation claims for injuries that occurred between 1993 and 1999. The study quantifies and tracks average monthly medical payments, average total medical and medical-legal payments, the incidence of litigation, and the duration of claims during the period in which 1993 legislative mandates and subsequent regulatory and judicial decisions led to major structural changes in the California workers' compensation system. Key findings:

- Total medical payments per claim rose dramatically after the reforms, from an average of $1,639 in 1993-94 to $3,141 in 1995-96, and $5,880 in 1997-99. At the same time, medical-legal payments per claim increased from an average of $64 for 1993-94 to $143 for 1995-96, and $224 for 1997-99.
- In the 5-1/2 years following passage of the reforms, average monthly medical payments per claim (medical-only and lost time cases) jumped almost 76 percent, from $110/month to $193/month.
- The increases in average monthly medical payouts per claim ranged from 0.6 percent for services in the Radiology section of the fee schedule to 116 percent for Medicine section services. There were also large increases in average monthly payments for Surgery (+114 percent) and Physical Medicine (+96 percent).
- Claims remained open longer after the 1993 reforms. Claim duration averaged 8.5 months for 1993-94 injury claims, 12.4 months for 1995-96 injury cases, and 15.5 months for 1997-99 injury claims.
- The litigation rate also increased after the 1993 reforms. One out of ten California workers' compensation claims was litigated in 1993-94, versus one out of every eight claims in 1995-96, and more than one out of six 1997-99 claims.
- Longer claim duration was the leading contributor to the $4,241 increase in average medical costs per claim between 1993 and 1999, with almost half of the increase related to this single factor. Another 33 percent of the increase was linked to a higher proportion of open claims, while 16 percent was related to increased litigation. Changes in case mix were associated with only 1 percent of the increase in medical costs.

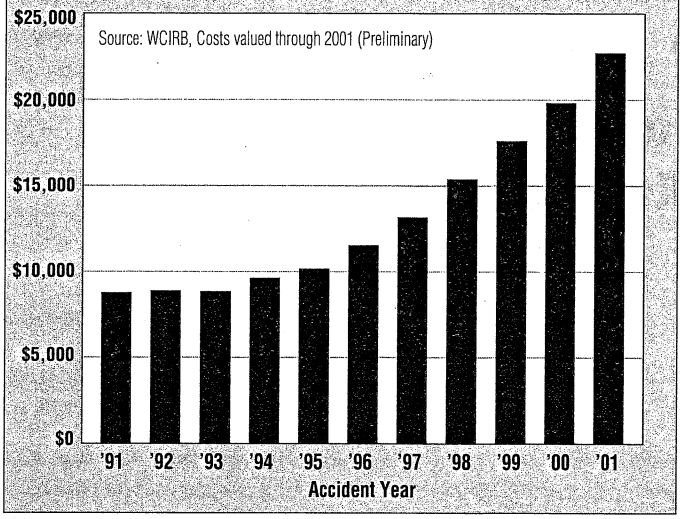
Overview

Workers' compensation was designed as a no-fault social contract between employers and employees. The system provides fixed benefits to injured workers, including medical care, temporary disability, vocational rehabilitation and permanent disability indemnity. In the California system, medical treatment is provided without most of the typical managed care cost containment mechanisms found in group health programs (e.g., co-payments, deductibles, closed physician panels and mandatory utilization review). In the late 1980s and early 1990s, California workers' compensation insurers and self-insured employers attempted to implement certain managed care approaches consistent with the statutory obligations imposed by the "reasonably required" intent of Labor Code §4600. These approaches included use of large hospital and physician networks offering discounts from the fee schedule, outpatient utilization management programs for physical medicine and chiropractic care, and sophisticated bill review systems. A growing body of empirical evidence asserted that managed care mechanisms could contain or reduce workers' compensation costs, even in a fee-for-service, first-dollar-coverage system, without compromising quality of care or access to treatment (Elam 1997, Green-McKenzie 1998, Bernacki 1998, Cheadle 1999).

Beginning in the mid-1990s, however, Workers' Compensation Insurance Rating Bureau (WCIRB)

medical loss development projections showed average treatment costs were rising at an unprecedented rate (Chart 1).

Chart 1: Estimated Ultimate Medical Costs per Indemnity Claim



Stakeholders struggled to understand the basis for these increases because unit price controls (fee schedule), utilization review, and PPO network discounts were in place and were thought to be generating savings (Johnson et al, 1999; Wickizer et al, 1999; Swedlow et al, 1992). Throughout the mid-1990s, however, California had implemented significant statutory and regulatory changes. Most of these changes were rooted in 1993 legislation that called for a major overhaul of the state's 80-year old workers' compensation program.

Catalysts of Change

Med-Legal Reporting – Prior to 1993, med-legal fees were governed by a self-escalating "usual and customary" fee schedule. Each year, allowable fees rose to the 80th percentile of charges from the prior year. The more physicians charged in one year, the higher the allowable fees the next year. There were no limits on the number or types of specialists that could be used or the number of evaluations that could be performed per claim. By 1992, the average cost of a med-legal report rose to $1,100 and med-legal costs systemwide exceeded $1 billion. In April 1993, the legislature abolished the usual and customary reimbursement approach and prohibited forensic exams until the employer knew of the claim and had a chance to investigate. Though the state imposed a new fee schedule with reduced reimbursement amounts and prohibited forensic reports until a dispute existed, it did not limit the number of reports per claim. Because price was constrained but utilization was not, claimants often sought opinions from multiple specialists for each injury and employers responded with numerous rebuttal reports, creating a system of "dueling docs."

Legislation passed in the summer of 1993 limited the number and cost of reports, and gave greater legal weight to the opinion of the primary treating physician (PTP) regarding permanent disability. Legislators thought that giving the party who relied on the PTP's opinion a "presumption of correctness" (LC§4062.9) and severely limiting the admissibility of other medical evidence[1] would cut the number of med-legal reports.

Open Rating – In the late 1990s, California employers were largely insulated from rising workers' compensation medical losses because of open rating. Implemented in 1995, open rating eliminated mandatory minimum premium rates for workers' compensation coverage set by the state. Though premium had declined sharply prior to open rating, as lower losses during the recession of the early 1990s led the legislature and the Department of Insurance to enact a series of rate reductions in 1993 and 1994, with the advent of open rating in 1995 many insurers began competing aggressively for market share. This kept premium rates low, even in the face of rising medical care costs, which more than doubled in the 1990s. Most of that growth occurred between 1995 and 2000. With rates down, medical cost increases were largely absorbed by insurers, though of all the stakeholders in the system, they had the least ability to influence medical utilization.

Minniear – Claims administrators' ability to control workers' compensation medical utilization was further eroded by a 1996 ruling (Minniear v. WCAB) that expanded the scope of the PTP presumption of correctness to all medical issues, including treatment, rather than only opinions on permanent disability, as originally intended. The Minniear decision also limited a payer's ability to rebut a PTP's opinion to cases where they could prove the opinion was erroneous, incomplete, or legally incompetent. Thus, PTP selection became paramount, as the PTP's opinion on all medical issues was nearly irrefutable, making it almost impossible for claims administrators to terminate unreasonable, unnecessary, excessive or incompetent care. (The only alternative was to petition for a change of physician, a difficult and rarely successful process.)

Measuring Post-Reform Changes

For this study, the Institute compiled medical payment transaction data and fee schedule-specific medical service utilization data from its Industry Claims Information System (ICIS). ICIS contains data on open and closed claims with 1993 to 1999 injury dates. The sample included data on 937,813 claims compiled from nine national and California-based workers' compensation insurers, representing 60 percent of statewide premium. Dates

1 Second opinions for medical evidence were only admissible if the worker did not have an attorney. If a worker was represented, the parties had to seek an Agreed Medical Evaluator or each selected a Qualified Medical Evaluator to evaluate the issue—a cumbersome, unworkable process for curbing unnecessary medical care.

of injury were fairly evenly distributed across the seven-year period. Expenditures included all payments through December 1999. Medical payments in the sample totaled $3.479 billion, or 46.4 percent of all benefit payments, a ratio comparable to that reported by the WCIRB.

The Institute categorized the data by claim type, based on the presence of specific types of benefit payments between the injury date and December 1999. Claims with only medical payments were tagged "medical-only" (61 percent of the sample); claims with temporary disability (22 percent of the sample) and/or permanent disability (17 percent of the sample) were coded "indemnity" claims, and claims in which death benefits were paid (0.1 percent of the sample) were classified "death" claims. Indemnity and death claims together accounted for about 4 out of 10 claims in the sample, but 95 percent of all benefits paid and 90 percent of all medical payments. Permanent disability claims alone accounted for 81 percent of all benefit payments and 72 percent of medical payments, with treatment payments on permanent disability claims averaging $15,873 — more than 4 times the $3,710 average for all claims.

A breakdown of the claim sample by diagnostic category (Table 1) shows the Minor Wounds category was the most common, accounting for nearly 28 percent of all claims, 18 percent of benefit payments, and 19 percent of medical expenses. However, back injuries, which represented one in five claims, consumed the most benefits—29 percent of all benefit payments and 26 percent of medical dollars.

Table 1: Claim and Benefit Distributions

Diagnostic Category	# of Claims	% of Claims	% of Total Benefits Paid	% of Total Medical Paid
Minor Wounds	261,898	27.9%	18.2%	19.4%
Backs	182,912	19.5%	29.1%	26.2%
Sprains	92,485	9.9%	6.8%	6.8%
Tendonitis	43,695	4.7%	5.8%	5.5%
Eye Disorders	36,130	3.8%	0.2%	0.3%
Fractures	31,716	3.4%	7.9%	7.9%
Other Injuries	21,990	2.3%	1.9%	2.4%
Nerve Disorders	21,084	2.2%	6.2%	5.3%
Joints	15,923	1.7%	0.3%	2.9%
Not Available	119,850	12.8%	7.6%	8.2%

The Institute assigned a litigation flag to any claim that had either an applicant or defense attorney payment or a carrier-submitted litigation indicator. A litigation flag was present on two out of three permanent disability claims, one out of 13 temporary disability claims and one out of 40 medical-only claims. Overall, litigated claims made up 15 percent of the claim sample, 69 percent of total benefits paid and 62 percent of medical payments. Total benefit payments on litigated claims averaged $37,368; almost 13 times the $2,948 average for non-litigated claims. Medical costs on litigated claims averaged $15,576, more than 9 times the $1,670 average for non-litigated claims.

The Three Phases of Reform

After reviewing post-'93 workers' compensation medical cost trends, the Institute divided the data into three phases:

1) A 2-year baseline phase (1/1/93-12/31/94) during which the state drafted and implemented reforms;

2) A 2-year adjustment phase (1/1/95-12/31/96) when regulators and courts developed legal interpretations and established precedents, including the PTP presumption and its expansion via Minniear; and

3) A 3-year post-reform phase (1/1/97-12/31/99) during which the impact of the changes became realized.

To make the three periods equivalent for the analyses, post-reform claims were limited to those with dates of injury in the first two years of the phase. To ensure that claims from each phase had the same opportunity to accrue costs, claim costs in each phase included medical treatment services only from date of injury until 36 months after the beginning of the phase. To control for claim age, regression models also employed a variable for the month of injury within a phase.

As the reforms took effect, average medical and med-legal payments, litigation, and claim duration all increased. Chart 2 shows medical payments per claim averaged $1,639 in the baseline phase, $3,141 in the adjustment phase, and $5,880 in the post-reform phase—more than tripling over the 7-year span.

Chart 2: Average Medical & Med/Legal Cost Per Claim

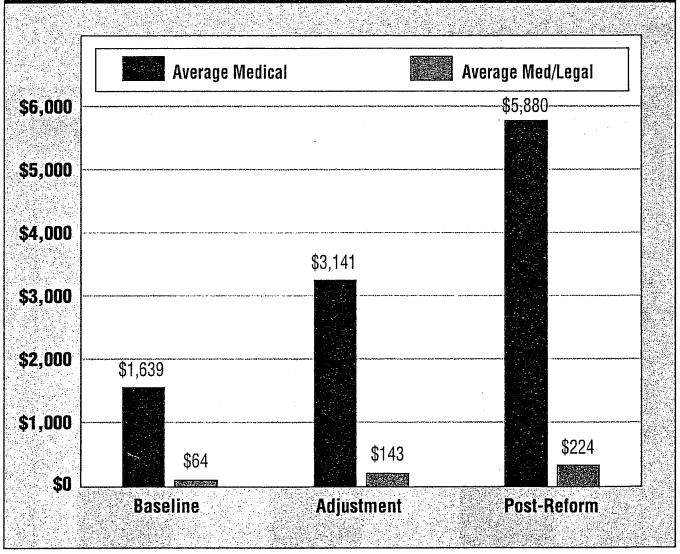
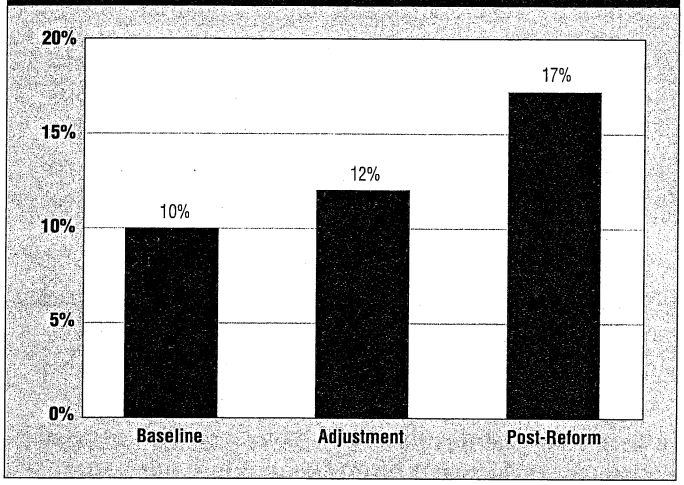


Chart 2 also documents similar growth in med-legal payouts, as total med-legal payments per claim rose from an average of $64 in the baseline phase to $143 in the adjustment phase and $224 in the post-reform phase.

Litigation also increased as the reforms took effect. The litigation rate jumped 70 percent across the three phases, rising from 10 percent of all claims (medical-only and

indemnity) in the baseline period to 12 percent in the adjustment phase and 17 percent in the post-reform phase (Chart 3).

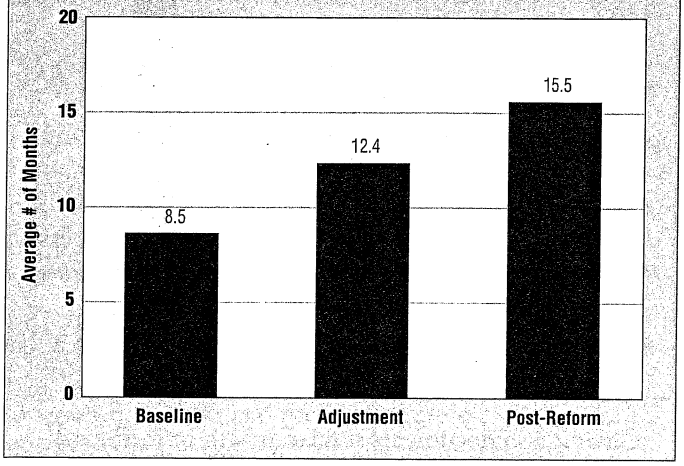
Chart 3: California WC Litigation Rate % of All Claims



Claims also began to stay open longer as the reforms took hold (Chart 4). Average claim duration increased from 8.5 months in the baseline phase to 12.4 months in the adjustment phase and 15.5 months in the post-reform phase.

Likewise, the percentage of claims open more than a year doubled from 13 percent in the baseline phase to 26 percent in the adjustment phase and post-reform phases, while the proportion of claims that were closed 36 months after the start of each phase fell from 97 percent in the baseline period to 95 percent in the adjustment phase and 83 percent in the post-reform phase.

Chart 4: Claim Duration



Monthly Medical Payments by Fee Schedule Section

The California workers' compensation system uses a fee schedule to control the unit price of medical services. The schedule assigns a relative value to each procedure, which is multiplied by a conversion factor to determine the allowable fee. Since 1987, the state has revised the fee schedule five times. The most significant revision was in 1994, when the schedule was expanded to incorporate the full inventory of Current Procedural Terminology (CPT-4) codes, including office visit codes for evaluation and management (E&M), new surgical procedures (e.g., arthroscopies and spinal fusions), and new radiology procedures (e.g., MRIs). Except for E&M services, fee conversion factors have remained unchanged since 1994.

To track changes in average monthly medical payments after the 1994 schedule revision, the Institute identified payments by fee schedule section from medical bill review data, summed all payments for a given month, and divided that total by the number of claims open in that month. Table 2 notes average monthly payments for each fee schedule section in January of each calendar year and in June 1999, and shows the percentage growth in average payments over the 5-1/2 year span. During this period, average monthly treatment payments increased nearly 76 percent overall, while increases by fee schedule section ranged from a low of 0.6 percent for Radiology services to a high of 116 percent for services in the Medicine section. Overall, treatment costs accelerated between 1996 and 1997 (the adjustment phase) and continued to rise through the end of the dataset in 1999 (the post-reform period). Wide variation in the growth of payments by fee schedule section led to a redistribution of the workers' compensation medical dollar over the 5-1/2 year span (Chart 5).

Chart 5: Monthly Medical Payment Distribution by OMFS Section

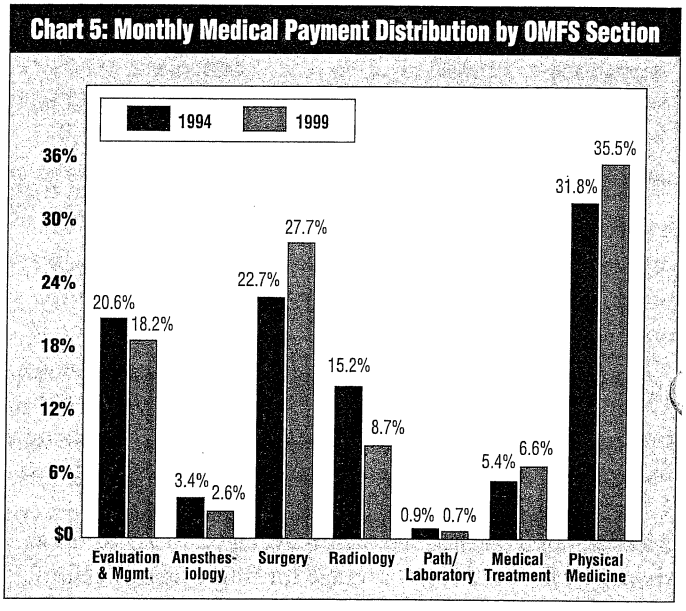


Table 2: Average Monthly Payments by Fee Schedule Section, Selected Months

Fee Schedule Section	Jan–94	Jan–95	Jan–96	Jan–97	Jan–98	Jan–99	Jun–99	% Increase Jan 94 – Jun 99
All Sections	$109.89	$115.39	$120.57	$127.63	$157.96	$180.41	$192.96	75.6%
Evaluation & Mgmt.	$22.64	$24.96	$22.78	$23.82	$27.67	$29.12	$35.06	54.9%
Anesthesiology	$3.79	$4.35	$4.48	$4.19	$4.74	$4.81	$ 5.02	32.6%
Surgery	$24.93	$26.72	$31.12	$34.56	$50.71	$54.44	$53.35	114.0%
Radiology	$16.70	$14.02	$14.25	$13.71	$16.12	$16.83	$16.80	0.6%
Path/Laboratory	$0.98	$1.17	$1.09	$1.22	$1.29	$1.63	$1.35	37.5%
Medicine (misc.)	$5.91	$7.65	$8.05	$11.85	$10.11	$11.37	$12.79	116.4%
Physical Medicine	$34.93	$36.52	$38.81	$38.29	$47.32	$62.21	$68.59	96.4%

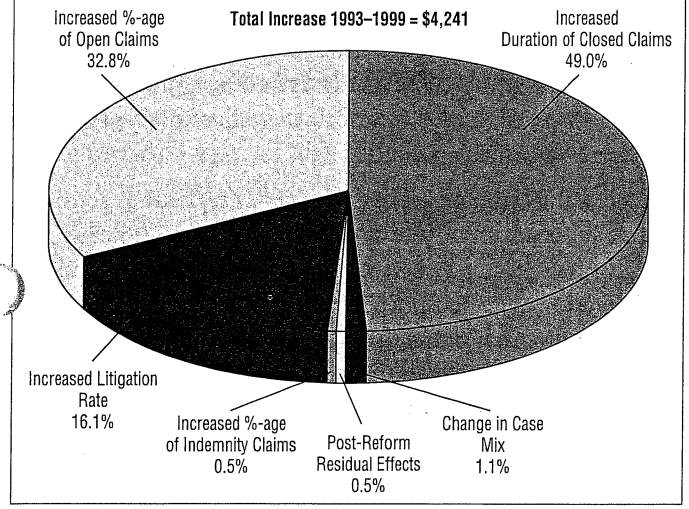
Most notably, Physical Medicine payments, which traditionally account for the largest share of workers' compensation medical costs, grew from 31.8 cents to 35.5 cents of the treatment dollar, while Surgery payments grew from less than 22.7 cents to 27.7 cents. On the other hand, Radiology services, where average monthly payments showed little change, declined from 15.2 percent of all medical payments to 8.7 percent in this same period.

Key Cost Drivers

Regression analysis provides an indication of the unique effect of each individual variable in the model by controlling for the effects of all the other variables.

The Institute ran regression analyses to identify key factors associated with the differences in cost among the three periods. The analyses isolated three key variables: open status, litigation and increased duration of closed claims. Beyond those factors, patient gender, age at injury, tenure, average weekly wage, catastrophic claim status, marital status, employment status, job class group, selected diagnoses and death status also were statistically significant, independent predictors of average medical payments. After controlling for other variables, the study also linked a small but statistically significant increase in the average medical payment to unmeasured residual effects of the adjustment and post-reform periods.

Chart 6: Impact of Key Medical Cost Drivers – Baseline to Post-Reform Periods



The Institute then performed a separate analysis to determine how much each variable contributed to the $4,241 increase in average California workers' compensation medical payments between the baseline and post-reform periods. The results (Chart 6) show that longer claim length, a higher percentage of open claims and more litigation account for all but about 2 percent of the increase. Case-mix, a composite of clinical conditions, injured worker demographics and employment characteristics, made an immaterial contribution to California workers' compensation medical cost growth between the baseline and post-reform periods.

Medical-Legal Expenditures

Average med-legal payments were higher in the adjustment period than in the baseline period, and highest of all in the post-reform period. The regression analysis found several factors associated with these increases. Presence of a litigation flag, of course, was the number one factor, though med-legal payments also were linked to indemnity status, gender, age at injury, average weekly wage, open status, widowed marital status and most categories of employment, especially retired status. Tenure was inversely related to med-legal expenditures, so these payments tended to be lower among longer-term employees. On the other hand, the study found that death status, catastrophic claim status, most job categories and two categories of employment status were not statistically significant predictors of med-legal expense. After controlling for other variables, however, the analysis found the residual effect in the adjustment period was a slight increase in med-legal payments, while the residual effect in the post-reform period was a slight decrease.

Litigation

The litigation rate was significantly higher in the adjustment and post-reform periods than in the baseline period. This regression analysis showed key variables related to litigation were claim type, open and reopen status, death status, widowhood, unemployed status, and certain diag-

noses. Other variables with statistically significant links to increased litigation included claim length, age at injury, average weekly wage, catastrophic claim status, and selected categories of marital and employment status, job type and diagnosis. Tenure was inversely related to litigation, so shorter-term employees were more likely to litigate.

Claim Duration

Claim duration, whether gauged by number of months or by the proportion of claims extending beyond one year, was significantly higher in the adjustment period than in the baseline period, and highest of all for claims in the post-reform period. The primary factors associated with extended claim duration were claim type, open status, litigation and certain diagnoses. Other variables significantly related to longer duration included patient gender, age at injury, tenure, divorced status and average weekly wage; death or catastrophic claim status; and selected categories of employment status and job class.

Claim Closure

The Institute measured the closure rate for each of the three time periods 36 months after the start of the period. Controlling for other variables and the point at which the claim started, this regression analysis found that both the adjustment and post-reform period claims had significantly lower closure rates at the end of 36 months than baseline claims. Factors significantly associated with the claim closure rate included claim type, litigation status, employment status and diagnosis.

Monthly Expenditures

In addition to the claim-level analyses, the Institute performed a set of time series regression analyses to explore changes in monthly expenditures over time and the cost drivers underlying these changes. These analyses examined average payments for each month for the entire fee schedule and for specific fee schedule sections. The independent variables consisted of the proportions or averages for each of the clinical, demographic, employment and claim characteristic variables for each particular month. (See Technical Notes for a complete list of independent variables.)

Total Fee Schedule Payments – The time series regression analysis showed a significant association between higher total fee schedule expenditures and months in which there was a rising litigation rate, an increased proportion of indemnity claims, or increases in a number of demographic characteristics, including average job tenure or the ratio of claims from females, widows and widowers, or claimants from selected job or diagnosis categories. On the flip side, this regression linked decreases in total monthly fee schedule payments to months in which the average claim length[2], claimant age or weekly wage increased; months in which the percentage of death or catastrophic injury claims jumped, and those in which the proportion of married claimants increased. Comparing total fee schedule payments across the three periods, this analysis also related a significant residual cost-increasing effect to both the adjustment and the post-reform periods, which reflects the impact of the regulatory changes net of their effect on the other variables in the model.

Evaluation and Management - Reimbursements for office visits are governed by the Evaluation and Management (E&M) section of the fee schedule. The time series regression analysis indicated significant associations between higher monthly E&M fees and months in which the litigation rate or the proportion of indemnity or reopened claims jumped, claimants' average job tenure rose, or there was an increase in the percentage of claims from widows, divorced workers, or those in selected job or diagnosis categories. On the other hand, the analysis showed significant links between lower monthly E&M payments and monthly increases in average claim length, claimant age, weekly wage, or proportion of catastrophic claims, though change in the proportion of death claims was not a significant predictor of monthly E&M expenditures. There was a small but significant residual cost-increasing effect in E&M payments associated with both the adjustment and the post-reform periods compared with the baseline period.

Surgery - The time series regression identified several variables that were significantly related to higher monthly surgery payments, most notably: months with increases in the percent of litigated, reopened or indemnity claims, or in which there was a growing proportion of widowed claimants or those from selected job or diagnosis categories. The analysis also found a relationship between lower monthly surgery payments and monthly increases in average claim length, claimant age and weekly wage, growth in the proportion of female, married or divorced claimants, and growth in the rate of catastrophic claims. Monthly changes in average job tenure or in the percent of death claims were not significant predictors of monthly surgery expenditures. The study linked a significant residual cost-decreasing trend to both the adjustment period and the post-reform periods.

Physical Medicine - This time series regression found several variables significantly related to higher monthly physical medicine payments. Months with increases in the litigation rate, the proportion of married, widowed or female claimants, jumps in the average weekly wage or a higher proportion of catastrophic cases or claims involving selected job or diagnosis categories all were associated with

2 Increasing average claim length spreads out a given quantity of care over a longer period thus tending to reduce average monthly expenditures, unless the quantity of care is increasing at rate that is higher than the increase in claim duration.

Table 4: Summary of Regression Results for Selected Predictor Variables

Factor ▼ / Effect ▶	Claim Length	Claim Closure	Litigation	Medical-Legal Costs	Monthly Costs Total	Monthly E&M Section Costs	Monthly Surgery Section Costs	Monthly Physical Med. Section Costs	Total Claim Costs
Claim Length		NA[1]	↑	↑	↓	↓	↓	↓	↑
Open Status	↑		↑	↑	NA	NA	NA	NA	↑
Litigation	↑	↓		↑	↑	↑	↑	↑	↑
Indemnity Status	↑	↑	↑	↑	↑	↑	↑	↓	↑
Period 2 (adjustment phase) Residual Effect	↑	↑	↑	↑	↑	↑	↓	NS[2]	↑
Period 3 (post-reform phase) Residual Effect	↑	↓	↑	↓	↑	↑	↓	↑	↑

1 Not Applicable 2 Not Significant

increases in monthly Physical Medicine payments. In contrast, lower monthly Physical Medicine expenditures were associated with months in which increases were noted in average claim duration, average claimant age and tenure, the indemnity claim rate, the death claim rate and the proportion of divorced claimants. There was a non-significant, residual cost-decreasing trend associated with the adjustment period, but a significant, markedly cost-increasing trend associated with the post-reform period.

Table 4 summarizes the results of the main predictor variables across all of the regressions. An upward arrow means an increase in the factor is associated with an increase in the effect. A downward arrow means an increase in the factor is associated with a decrease in the effect.

Discussion

Reforms in the California workers' compensation system in the 1990s had simple goals: contain medical treatment and medical-legal costs and neutralize the duplicative and adversarial nature of medical-legal decision making. Implementing expanded fee schedules and assigning a rebuttable presumption of correctness to the opinion of the treating physician seemed to be viable solutions, but the results of these analyses suggest that the reforms created a series of unintended consequences.

Taken together, the results show a strong relationship between the judicial, legislative and regulatory changes implemented between 1993 and 1996 and the subsequent escalation of litigation rates, claim duration and treatment costs. Total dollars, med-legal costs, the litigation rate and claim duration were all higher for claims in the adjustment period compared with the baseline period, and highest of all for claims in the post-reform period--after leveling the playing field with respect to claim characteristics. Claim closure rates were lower during the adjustment period, and lowest of all for claims in the post-reform period, compared with the baseline period.

The incidence of indemnity claims, litigation rate, the level of med-legal expenditures and the duration of claims are all indicators of problems the reform activity was intended to address. In fact, the claim-level regression of total medical costs showed that increasing claim length, increased frequency of open status and rising litigation rates contributed 49 percent, 33 percent and 16 percent, respectively, of the cost growth between the baseline period and the post-adjustment period. Surprisingly, the effect of clinical case-mix on medical treatment costs was negligible, contrary to the notion that decreases in claim frequency are fueling the increases in average costs by materially increasing the clinical severity of the claim pool.

Most of the increases in monthly costs were attributable to three main predictors: claim length, litigation and indemnity status. After accounting for these factors, however, there also were residual trends in monthly costs for evaluation and management services, surgery, and physical medicine, reflecting the influence of the regulatory changes independent of the effects of claim length, litigation or the other factors shown to contribute to cost increases.

Changes in system capacity (i.e., the number of available providers multiplied by the number of services that can be rendered by each provider) are one way to gauge the effects of regulatory actions. System capacity tends to increase when there is upward pressure on utilization. The fact that the residual changes were gradual suggests increased system capacity. Both E&M expenditures and total monthly expenditures increased gradually, consistent with a steady increase in system capacity. In contrast, physical medicine expenditures jumped sharply while surgery expenditures declined. These findings are logical, given that system capacity for physical medicine is easily expanded due to the ready supply of physical therapists and chiropractors, while system capacity for surgery cannot be expanded as easily, as the supply of surgeons is rather fixed over the short term.

The claim-level regressions and the monthly expenditure regressions clearly show a trend toward longer claim duration, more litigation and higher medical and total expenditures. Longer claim duration and lower claim closure rates were associated with higher litigation and indemnity rates, which result from costly administrative procedures required

to deal with or contest the presumption of correctness. These trends were gradual during the adjustment phase, but accelerated rapidly during the post-reform phase.

With the exception of evaluation and management services, unit prices for medical services in the Official Medical Fee Schedule have been unchanged since 1994, so any increases in treatment costs must be due to increased utilization—a finding supported by other studies. A 1993 William M. Mercer study showed that workers' compensation injuries were approximately 25 percent more costly than a case-matched sample of group health injuries and that the difference was due not to the unit price of services, but to utilization. Johnson (1996) found that workers' compensation was more expensive than group health because of the use of more health care providers and services, not patient severity differences.

Managed care, in almost all of its forms, attempts to balance clinical efficacy, unit price, access, and quality of care. The combined effects of the presumption of correctness and the expansion of authority granted by Minniear weakened the tentative checks and balances of the "reasonably required" language of Labor Code Section 4600 and created an economic incentive to increase utilization. One could argue that prior to the 1993-96 reforms, the administratively burdensome and duplicative system of "dueling docs" may even have functioned as a rudimentary form of utilization management.

This study demonstrated that legislative and regulatory activities in the 1990s affected the administrative and business processes of many facets of California workers' compensation. Follow-up analyses of 2000 and 2001 data will determine whether the upward spiral in workers' compensation medical care costs has continued. Of particular interest would be analyses of lost-time costs and disability duration, which would help determine if increasing claim duration and higher total claim costs lead to improved clinical or societal outcomes.

Technical Notes

In developing the claim level analyses, the Institute categorized the claim and payment transaction data into the baseline, implementation and post-reform phases based on the phase in which the claim had been open longest. Claims that were evenly divided between two periods were assigned to the earlier period. The claim characteristic variables used as independent variables in the analyses included claim type, claim status, claimant age, gender, marital status, tenure, average weekly wage, employment status, litigation flag, death flag, catastrophic claim flag, job class group and diagnosis group.

The monthly analyses were based on fee schedule-specific payment data because the focus was on professional service payments by type and date of service. Total monthly payments for professional services on claims were compiled for 66 months (January 1994 – June 1999). The research used January 1994 as the starting month because 1993 revisions to the Official Medical Fee Schedule updated and expanded the array of treatment procedures, many of which were unavailable or coded differently in the prior schedule. The June 1999 cut-off served as a buffer to ensure that variations in medical billing cycles or data submission from carriers would not distort calculations.

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The California Workers' Compensation Institute, incorporated in 1964, is a private, nonprofit organization of insurers and self-insured employers conducting and communicating research and analyses to improve the California workers' compensation system. Most CWCI research is based on operating data collected from member companies specifically for the Institute.

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