RESEARCH UPDATE

# Analysis of California Workers' Compensation Reforms

## Part 2: Medical Provider Networks and Medical Benefit Delivery AY 2002 – 2007 Experience

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## EXECUTIVE SUMMARY

A key aspect of SB 899, the workers' compensation reform legislation signed by Governor Schwarzenegger in April 2004, was the introduction of Medical Provider Networks (MPNs). Under this reform, employers that offer group health care to their employees can establish an MPN which, unless an employee has predesignated a personal treating physician, allows the employer to control the injured employee's medical treatment for the life of the claim.

Public policymakers, as well as many in the workers' compensation community, expected that MPNs, along with other medical reforms such as the expansion of utilization review, the removal of the primary treating physician's presumption of correctness, and the adoption of a medical treatment utilization schedule, would not only contain costs, but encourage appropriate types, levels and quality of care, and improve the efficiency and coordination of treatment. To determine the success of the effort, state lawmakers also required that the effects of these reforms be monitored. Toward that end, the Workers' Compensation Insurance Rating Bureau asked the Institute to assist in an ongoing study to measure key aspects of workers' compensation medical benefit delivery, including network utilization rates, following the introduction of MPNs in January 2005. The Institute used its Industry Claims Information System (ICIS) database to derive first-year medical visit data for a large sample of pre- and post-MPN services, then measured the changes in the network utilization rates both overall, and for services broken out across six major sections of the Official Medical Fee Schedule.

The results of that analysis, published in February of this year, indicated that pre-reform Preferred Provider Organization networks, as well as post-reform MPNs, played an increasing role in California workers' compensation medical service delivery from 2002 through 2006.[1] That analysis showed that overall, the network utilization rate in California workers' compensation increased from 32 percent of first-year outpatient medical care visits for accident year (AY) 2002 claims to just under half of the first-year visits on AY 2004 claims; then continued to grow following the introduction of MPNs, climbing to nearly 62 percent of first-year outpatient treatment visits on AY 2005 claims – nearly double the level noted just two years earlier.

The earlier study also found significant increases in network utilization for services in each of the six fee schedule sections. Because MPNs allowed employers to extend their medical control from the pre-reform 30-day timeframe to the life of the claim, the authors also measured changes in the proportion of visits to network providers within and beyond 30 days of injury. The results showed that in all six categories, the increase in network utilization was

1 Swedlow, A., Ireland, J. Analysis of California Workers' Compensation Reforms Part 3: Medical Provider Networks and Medical Benefit Delivery. CWCI February 2008.

greatest for visits beyond the first 30 days post-injury, suggesting a strong link between the growth in network visits during the first year of treatment and the expansion of medical control afforded by MPNs. However, because MPNs were still relatively new, and the earlier analysis only included data on claims with injury dates through mid-2006, the issue was marked for future study as more developed data became available.

This current analysis extends the timeline of medical network analysis through December 2007. The study documents growth in the network utilization rate for first-year physician-based treatment visits in the following areas:

1) **Workers' compensation medical care overall:** The use of network providers was on the rise prior to reform, increasing from one-third of physician-based first-year treatment visits in AY 2002 to nearly half of these visits in AY 2004. The growth in the network utilization rate for treatment continued following the introduction of MPNs, with networks accounting for 63 percent of the first-year physician-based treatment visits in AY 2006.

2) **Evaluation and Management:** Prior to reform, the network utilization rate for evaluation and management services increased from about 57 percent of E&M visits in AY 2002 to 62 percent in AY 2004, then accelerated following the reforms. By AY 2006, network providers accounted for just under 73 percent of injured workers' E&M visits.

3) **Surgery:** The network utilization rate for first-year surgery services grew from just over half of the visits in AY 2002 to two-thirds of the visits in AY 2006 – a relative increase of 24 percent -- primarily driven by the increased use of networks after the first 30 days, most of which occurred after MPNs were introduced in 2005.

4) **Radiology:** Use of networks for radiology services grew only slightly in the pre-reform period of AY 2002 to AY 2004, with networks accounting for just under half of the radiology visits until MPNs began to operate in 2005, at which point the network utilization rate rose to about 55 percent in AY 2005 and to nearly 58 percent in AY 2006.

5) **Medicine Section Services:** The network utilization rate for Medicine section services rose from 41.1 percent in AY 2002 to 64.4 percent in AY 2006 – a relative increase of 57 percent across the 5-year period. About half of that increase occurred between 2004 and 2005 -- the first year MPNs were introduced.

6) **Physical Therapy:** The percentage of network visits for physical therapy jumped from less than 25 percent in AY 2002 to more than 38 percent in AY 2004. The shift toward network providers continued following the introduction of MPNs in 2005, when the percentage of physical therapy visits associated with network providers climbed to 49 percent.

7) **Chiropractic Manipulation:** The network utilization rate for chiropractic manipulation increased from less than 9 percent in AY 2002 to 11 percent in AY 2004. MPNs are required to have chiropractors in their networks, and the network utilization rate for chiropractic care rose sharply after MPNs became operational, rising to 48 percent by AY 2006 – more than five times the rate noted just four years earlier.

As in the earlier analysis, the increase in the network utilization rate was greatest for visits beyond the first 30 days following an injury. However, the AY 2007 data show a spike in MPN provider utilization among visits within the first 30 days after injury. This suggests more comprehensive implementation of MPN programs from the earliest stages of claim development, resulting in a growing proportion of injured workers who initiate their treatment with a designated network provider.

## BACKGROUND

During the past 30 years, the use of medical provider networks to deliver medical treatment to injured workers has fueled an ongoing debate. The debate pits the right of injured workers to seek medical care from a physician of their choice against the right of employers to direct employees to physicians who they feel will help control the quality and the cost of care associated with work-related injuries. In large part, the debate has centered on the perceived efficacy of medical treatment and the impact of that treatment on related disability outcomes. After all, physicians not only have a direct impact over the medical care provided to injured workers, they also have significant impact on other elements of the workers' compensation system, including benefit management, return to work, temporary disability and permanent disability.

Prior to 1976, employers in California had the right to select physicians to provide medical treatment for injured workers. Often, employers established close working relationships with

a set of medical providers familiar with the needs of their particular population of injured workers. Critics of employer direction suggested that this model represented a "company doctor" relationship in which the physician considered the cost concerns of the employer before the medical concerns of injured workers.

In response to the concern that employer-selected physicians did not always have the best interest of the injured worker as their first priority, in 1976 California lawmakers limited the period in which employers could control their employees' medical care in a workers' compensation claim to the first 30 days following the injury. After the initial 30-day period, an injured worker had the right to select any physician to continue treatment and, furthermore, had the right to change treating physicians an unlimited number of times. Although this change addressed concerns regarding the "company doctor" model, this new system of physician selection tended to fragment medical treatment and complicate communications between physicians and claims administrators.

This system of physician selection also impacted the dispute resolution process associated with disability determination. In cases before an administrative law judge, both plaintiffs and the defense would engage physicians to support their contentions regarding the level of disability. For complex injuries involving multiple body parts, this could involve a variety of physician specialists with conflicting opinions supported by community practice or individual experience. It was left to the administrative law judge to sort out the facts of each case and determine disability levels. This process became known as the "dueling doctor" phenomenon. In 1993, state lawmakers enacted reforms that shifted the presumption of correctness for medical-legal reporting to the primary treating physician in an attempt to reduce the "dueling doc" effect. An appeals court decision in Minniear vs. Mt. San Antonio Community College District further strengthened the physician's clinical autonomy provided by the presumption of correctness by ruling that the treating provider's findings could only be rebutted by a preponderance of medical opinion. This ruling also extended the presumption to all issues related to medical care.

The 1993 reform legislation also attempted to curb the soaring cost of workers' compensation medical care by allowing treatment to be rendered through Health Care Organizations (HCOs). HCOs were representative of a movement in workers' compensation medical care toward a managed care model, reflective of systems developed in the general health care market. Rather than being limited to 30 days of medical control, employers with HCOs were allowed to control the choice of their injured workers' medical provider for anywhere from 90 to 365 days after the injury, depending on the level of health benefit offered to the employee and their employment status. HCOs were obligated, as part of their licensure, to establish a network of providers sufficient to provide treatment to the population of workers enrolled in the HCO. Injured workers were directed to providers within the HCO network, and were allowed to change primary treating physicians up to three times during the course of the HCO medical control period – but always within the established network and in cooperation with the HCO. In 2003, the 365-day period was reduced to 180 days.

Although HCOs are still active in California, they represent a marginal share of the workers' compensation market and do not provide a broad solution to rising costs in the workers' compensation system.

Legislation passed in 2002 (AB 749) repealed the primary treating physician's presumption of correctness as of January 1, 2003. For injuries occurring on or after this date, a preponderance of medical opinion could rebut the primary treating physician's presumption of correctness. Subsequent legislation (SB 228) passed in 2003, mandated the use of a medical treatment utilization schedule, which used the American College of Occupational and Environmental Medicine (ACOEM) guidelines or other evidence-based guidelines until the state developed its own utilization schedule. These two decisions radically limited the treating provider's independence. Critics of the guidelines claim that they limit individual providers' clinical autonomy to determine the appropriate course of treatment, while proponents argue that the guidelines reduce unnecessary and ineffective care by standardizing treatment and requiring clinical evidence that the recommended course of treatment has been shown to be effective for the specific type of injury.

In 2004, SB899 enabled Medical Provider Networks (MPNs). Under an approved MPN program, a self-insured employer, insurance carrier, state department or joint powers authority has the right to establish a network of physicians that provide the exclusive remedy to cure and relieve work injuries. As with HCOs, these networks must meet defined access standards, but in addition, 25 percent of the physicians in an MPN must be medical providers who do not primarily treat injured workers. An injured worker has the right to choose any MPN

physician within reasonable geographic proximity to work or home, and may change physicians within the MPN any time after the first visit. However, the injured worker must procure medical treatment from a physician within the MPN network for the life of the claim. The MPN model attempts to incorporate the sometimes competing factors of:

1) cost reductions associated with a defined provider network;
2) an injured worker's right to choose a physician (unlimited physician choice within the network); and
3) the streamlined communications and administration associated with continuity of care (life time control of medical treatment).

The California Division of Workers' Compensation has approved more than 1,400 medical provider networks since January 2005, and the large majority of them remain approved. Provider networks range in size from the small (fewer than 1,000 providers) to very large (more than 50,000 providers).

## DATA & METHODS

This analysis measures changes in the percentage of injured worker outpatient treatment visits to network providers (network utilization rate) by timeframe and by type of medical service. The study examines provider-based medical treatment data from AY 2002 through AY 2007 claims, with "visits" identified through a unique combination of the billing provider tax ID number and the date of service. The analysis generates the following:

- Network utilization rates for visits within the first 30 days of injury
- Network utilization rates for visits after the first 30 days of injury
- Overall utilization rates for three pre-reform accident years (2002 - 2004) and three post-reform accident years (AY 2005 - 2007); and
- Network utilization rates by type of service, with results broken out across six fee schedule categories: Evaluation and Management, Surgery (excluding injections), Radiology, Medicine Section services, Physical Therapy and Chiropractic Manipulation.

### Claim Sample

For this analysis, the authors used CWCI's Industry Claim Information System (ICIS) database to compile medical transaction data from 1,084,992 California injured workers with 2002 through 2007 dates of injury. These claims involved more than 23.1 million medical visits for outpatient, provider-based medical treatment and more than $2.2 billion in payments. Table 1 shows the distribution of claims and associated medical visits and payments across the six accident years used in the analysis, with AY 2002 – 2004 representing the pre-reform period, and AY 2005 – 2007 representing the post-reform period.

To assure comparable treatment utilization data from the six different accident years, visits for each claim were truncated at 12 months post date of injury.[2] The medical visit data also were grouped into four categories based on network versus non-network providers and by service date (whether the treatment was rendered within the first 30 days after injury or more than 30 days after injury.)

**Table 1:** Distribution of Claims, Visits & Payments – Network Study Sample

| Year of Injury | Number of Claims | Percent of Claims | Number of Visits | Percent of Visits | $ Paid | Percent of Payments |
|---|---|---|---|---|---|---|
| 2002 (Pre-Reform) | 267,401 | 24.7% | 7,066,685 | 30.5% | $616,934,320 | 27.6% |
| 2003 (Pre-Reform) | 221,653 | 20.4% | 5,779,913 | 25.0% | $524,954,640 | 23.4% |
| 2004 (Pre-Reform) | 225,105 | 20.8% | 4,068,674 | 17.6% | $410,217,916 | 18.3% |
| 2005 (Post-Reform) | 181,044 | 16.7% | 3,086,006 | 13.3% | $332,277,210 | 14.8% |
| 2006 (Post-Reform) | 127,684 | 11.8% | 2,126,303 | 9.2% | $241,544,549 | 10.8% |
| 2007 (Post-Reform) | 61,405 | 5.7% | 1,014,592 | 4.4% | $113,276,586 | 5.1% |
| **Total** | **1,084,292** | **100.0%** | **23,142,173** | **100.0%** | **$2,239,205,221** | **100.0%** |

2 Because medical visit data in the data set was current through December 2007, the 2007 sample of claims was limited to claims with dates of injury from January 1 to June, 2007.

## Network Identification

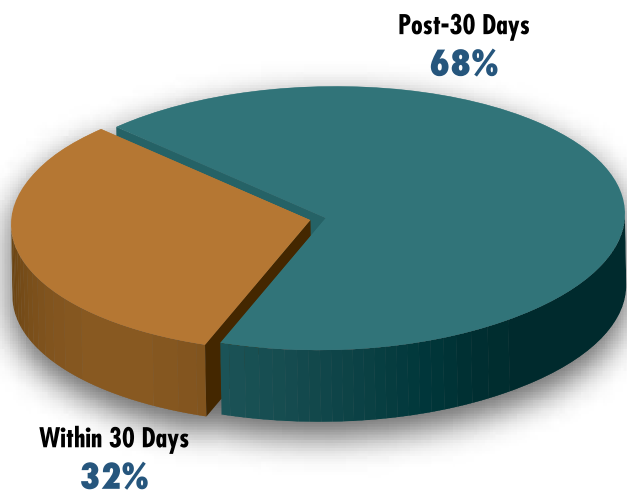
The dataset of medical services was compiled from claims information submitted by national and regional workers' compensation insurance carriers and large self-insured organizations. Each data contributing organization used a PPO network in the 2002 – 2004 timeframe, as well as an MPN in years 2005 through 2007.

# RESULTS

## Visits Within 30 Days of Injury and Post 30 Days of Injury

One of the key reform components brought about through the introduction of medical provider networks in California workers' compensation was the extension of payor control over medical treatment. As mentioned above, before MPNs, a payor's ability to channel patients to physicians was limited to the first 30 days post injury (or up to 180 days for HCOs), but under SB 899, payors with MPNs can direct care for the life of the claim. Chart 1 shows the percentage of first-year outpatient physician-based treatment visits[3] from the AY 2002 – 2007 claim sample that took place in the first 30 days following the injury, and the percentage that occurred after the first 30 days.

**Chart 1:** Timing of 1st Year Physician-Based Treatment Visits
Percent Within 30 Days of Injury vs. Post 30 Days




One third of all first-year physician-based medical service visits from the claim sample occurred within 30 days of the injury, while two thirds occurred between the 31st day and one year post injury. This result is consistent with findings from the 2007 study.

## Network Use

Table 2 compares pre-reform PPO (AY 2002 – 2004) and post-reform MPN (AY 2005 - 2007) network utilization rates and breaks out the results to show the proportion of visits that took place within and beyond 30 days of the injury date.

**Table 2:** Pre- Vs. Post-Reform Network Utilization Rates
1st-Year Physician-Based Outpatient Visits

| | Pre-Reform | | | Post-Reform | | |
|---|---|---|---|---|---|---|
| **Accident Year** | **2002** | **2003** | **2004** | **2005** | **2006** | **2007** |
| **% Visits <=30 Days** | 63.3% | 64.8% | 67.5% | 68.2% | 69.2% | 74.6% |
| **% Visits >30 Days** | 23.2% | 23.7% | 35.7% | 53.2% | 58.7% | |
| **% All 1st-Year Visits** | 33.4% | 33.6% | 48.5% | 60.1% | 63.1% | |

Aggregate results compiled from all six treatment categories included in the study show that overall, the use of network providers to treat injured workers in the first year after injury rose sharply during the pre-reform period, climbing from about one third of the visits for AY 2002 claims to just under half of the visits for AY 2004 claims, then continued to rise after MPNs were in place, increasing to 63.1 percent of the AY 2006 visits. Table 2 also reveals that most of the early post-reform MPN increase in network utilization during the first year resulted from greater use of networks for visits beyond the first month. The network utilization rate for post-30 day visits more than doubled from 23.2 percent in AY 2002 to 58.7 percent in AY 2006. Meanwhile, the network utilization rate for treatment visits in the first 30 days following an injury grew gradually from AY 2002 through AY 2006 but spiked to 74.6 percent in AY 2007.

These findings suggest that, during early implementation of the MPN program, focus was placed on exercising the extended medical element of the program. In this next phase of implementation, MPN programs may be focusing more on channeling injured workers to network providers from the outset of claims.

Table 3 shows the proportion of payments for first-year visits that were made to network providers for each of the six accident years studied. The payment results are also broken out for services rendered within and beyond 30 days of the injury date.

3 Labor code 3209.3. Definition of a "physician" includes physicians and surgeons holding an M.D. or D.O. degree, psychologists, acupuncturists, optometrists, dentists, podiatrists, and chiropractic practitioners licensed by California state law and within the scope of their practice as defined by California state law.

**Table 3:** Percent of 1st Year Physician-Based Outpatient Service Payments to Networks: Pre- Vs. Post-Reform

| | Pre-Reform | | | Post-Reform | | |
|---|---|---|---|---|---|---|
| **Accident Year** | **2002** | **2003** | **2004** | **2005** | **2006** | **2007** |
| **% Payments For Visits <=30 Days** | 56.3% | 57.3% | 56.8% | 57.5% | 58.0% | 65.2% |
| **% Payments for Visits >=30 Days** | 24.7% | 24.0% | 29.6% | 44.6% | 49.1% | |
| **% Payments for All 1st Year Visits** | 32.0% | 31.3% | 38.5% | 49.5% | 52.2% | |

Percentage changes in network payments between 2002 and 2007 are consistent with the growth pattern for network utilization. Overall, payments to network providers climbed from about one third of all reimbursements for first-year visits on AY 2002 claims to more than half of all dollars paid for first-year visits on AY 2006 claims. Once again, early in the post-reform MPN era, that increase was primarily driven by the growing use of network providers for services beyond the first 30 days. Networks accounted for less than one quarter of the payments for AY 2002 visits that took place more than a month after injury, but that percentage climbed to 29.6 percent in AY 2004, then grew to 49.1 percent in AY 2006. In contrast, throughout the first five years of the study, networks consistently accounted for about 56 to 58 percent of all payments for visits within the first 30 days of injury, with a spike to 65.2 percent of dollars paid in 2007.

The percentages of payments to network providers are consistently below the corresponding levels for visit volume. This pattern could be explained by discounts frequently offered by network providers, but might also be a result of the mix of services provided.

## NETWORK VISITS BY FEE SCHEDULE SECTION

The most recent post-reform MPN data on first-year treatment of injured workers show that network providers now account for three out of four visits for physician-based services within the first month of injury and well over half of the visits beyond the first 30 days, for an overall network utilization rate of 63 percent. However, the use of networks varies by type of service. To gauge the extent to which networks are being used for various types of treatment and how that has changed since the introduction of MPNs, the authors calculated the network utilization rates for the six treatment categories included in the study across each of the six accident years. The following sections compare the pre- and post-reform network utilization rates and track changes in the proportion of payments to networks for each of the six treatment categories.

## EVALUATION & MANAGEMENT

Evaluation & Management (E&M) treatments are typical office visits for new and established patients that range from brief to extended patient encounters. Table 4 shows the network utilization rates for E&M visits during the first 12 months after the date of injury for AY 2002 through AY 2007 claims.

**Table 4:** Percentage of 1st Year E&M Visits to Network Providers -- Pre- vs. Post-Reform

| | Pre-Reform | | | Post-Reform | | |
|---|---|---|---|---|---|---|
| **Accident Year** | **2002** | **2003** | **2004** | **2005** | **2006** | **2007** |
| **% Visits <=30 Days** | 72.4% | 73.9% | 74.2% | 72.3% | 72.7% | 76.7% |
| **% Visits >=30 Days** | 43.5% | 42.5% | 49.3% | 68.5% | 72.9% | |
| **% All 1st Year Visits** | 57.2% | 56.2% | 62.0% | 70.52% | 72.8% | |

Network utilization for E&M services rendered to injured workers during the first 30 days following an injury has been consistently high. Table 4 shows that for E&M visits within the initial 30 days of the injury, the network utilization rate edged up from 72.4 percent in AY 2002 to 74.2 percent in AY 2004, then increased slightly to 76.7 percent for AY 2007, the most recent post-reform measurement. The most pronounced increase was from AY 2006 to AY 2007 when network utilization rose from 72.7% to 76.7%, a relative increase of 5.5 percent.

The use of networks for E&M visits after the first 30 days showed more significant growth, increasing from 43.5 percent in AY 2002 to 49.3 percent in AY 2004, then climbing to 68.5 percent once MPNs began operations in AY 2005 and continuing up to 72.9 percent in AY 2006. As a result, the overall network utilization rate for first-year E&M visits grew from 57.2 percent in AY 2002 to 72.8 percent in AY 2006 – a relative increase of 27 percent.

Table 5 tracks the changes in the proportion of evaluation and management payments to networks over the same period.

**Table 5:** Percentage of 1st Year E&M Visit Payments to Network Providers Pre- vs. Post-Reform

| | Pre-Reform | | | Post-Reform | | |
|---|---|---|---|---|---|---|
| Accident Year | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 |
| % Payments For Visits <=30 Days | 66.3% | 67.9% | 66.6% | 66.8% | 67.3% | 72.9% |
| % Payments for Visits >=30 Days | 36.5% | 35.1% | 41.2% | 65.7% | 70.0% | |
| % Payments for All 1st Year Visits | 49.3% | 48.2% | 53.9% | 66.3% | 68.6% | |

E&M payment patterns to network providers were similar to the visit patterns, but the relative percentages were consistently lower. This suggests that network providers are paid less on a per visit basis, which likely reflects discounts often accepted by network providers, although these results also could be impacted by changes in the mix of E&M services across the different accident years.

## SURGERY

The study included a wide range of services found in the Surgery section of the Official Medical Fee Schedule, though surgical injections were excluded from the study sample. Table 6 shows the network utilization rates for surgical visits.

**Table 6:** Percentage of 1st Year Surgery Visits to Network Providers --Pre- vs. Post-Reform

| | Pre-Reform | | | Post-Reform | | |
|---|---|---|---|---|---|---|
| Accident Year | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 |
| % Visits <=30 Days | 68.0% | 69.3% | 67.0% | 70.3% | 68.3% | 74.8% |
| % Visits >=30 Days | 37.1% | 37.8% | 41.2% | 57.5% | 61.0% | |
| % All 1st Year Visits | 52.5% | 53.0% | 56.1% | 65.2% | 65.1% | |

The network utilization rate for surgery visits in the first 30 days fluctuated only slightly (ranging between 67 percent and 70 percent) prior to the introduction of MPNs. After MPNs took effect, the rate increased only slightly to 70.3 percent in AY 2005 but jumped to 74.8 percent in AY 2007. The use of networks for surgery visits after the first 30 days showed small increases during the pre-reform period, with network utilization ranging between 37 and 41 percent for accident years 2002 to 2004, before climbing sharply to 57.5 percent in AY 2005 and 61.0 percent in AY 2006. Thus, the overall network utilization rate for first-year surgery services grew from just over half of the visits in AY 2002 to nearly two-thirds of the visits in AY 2006 – a relative increase of 24 percent -- primarily driven by the increased use of networks after the first 30 days, most of which occurred after MPNs were introduced in 2005.

Table 7 shows the changes in the proportion of surgery payments to networks across the pre- and post-reform periods.

**Table 7:** Percentage of 1st Year Surgery Visit Payments to Network Providers – Pre- vs. Post-Reform

| | Pre-Reform | | | Post-Reform | | |
|---|---|---|---|---|---|---|
| Accident Year | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 |
| % Payments For Visits <=30 Days | 41.8% | 42.5% | 38.0% | 42.6% | 42.7% | 49.6% |
| % Payments for Visits >=30 Days | 35.5% | 30.6% | 29.2% | 40.8% | 44.3% | |
| % Payments for All 1st Year Visits | 37.2% | 33.4% | 31.8% | 41.4% | 43.8% | |

Fluctuations in network reimbursements for surgery services deviated slightly from the network utilization pattern for these services. While the percentage of payments to networks for surgery visits within 30 days of injury moved in tandem with changes in utilization, (fluctuating slightly from AY 2002 to AY 2006, then increasing in AY 2007), the percentage of payments to networks for surgery visits after 30 days decreased from 35.5 percent in AY 2002 to 29.2 percent in AY 2004, then jumped to 44.3 percent in 2006 with the advent of MPNs in 2005. This same pattern was noted in the payments for all first-year surgery visits, where the percentage going to networks declined steadily from 37.2 percent in AY 2002 to 31.8 percent in AY 2004, then climbed to 43.8 percent in AY 2006 – a relative increase of 37.7 percent during the first two years after MPNs were implemented.

The relative difference between the percentage of surgery visits and percentage of surgery payments associated with network providers (33 percent) is wider than the comparable difference

among E&M services (6 percent) and wider than all medical treatment (17 percent). This is indicative of the wide array of surgical services that comprise this fee schedule section, but could also reflect deeper discounts among network surgeons compared to providers in other types of medical services.

## RADIOLOGY

Radiology services include medical imaging technologies such as x-rays, CT scans, and MRIs used to diagnose and treat injuries. Table 8 shows the network utilization rates for pre- and post-reform radiology services.

**Table 8:** Percentage of 1st Year Radiology Visits to Network Providers -- Pre- vs. Post-Reform

| | Pre-Reform | | | Post-Reform | | |
|---|---|---|---|---|---|---|
| **Accident Year** | **2002** | **2003** | **2004** | **2005** | **2006** | **2007** |
| **% Visits <=30 Days** | 62.0% | 63.2% | 62.3% | 60.8% | 60.5% | 67.4% |
| **% Visits >=30 Days** | 31.7% | 31.3% | 32.2% | 46.6% | 54.1% | |
| **% All 1st Year Visits** | 47.7% | 47.4% | 49.3% | 55.1% | 57.8% | |

The network utilization rate for radiology services in the first 30 days following an injury has been stable, even after the introduction of MPNs, until the most recent study year. From AY 2002 through 2006, network utilization ranged from 62.0 percent in AY 2002 to 60.5 percent in AY 2006. Network use jumped to 67.4 percent in 2007, an 11.4 percent relative increase from the previous year. In contrast, the use of networks for radiology after the first 30 days increased only marginally in the three years prior to the introduction of MPNs, but then climbed from about one third of the visits to 46.6 of the visits once the MPNs began to operate in 2005 and increased to 54.1 percent in 2006. Likewise, the network utilization rate for all first-year radiology visits showed only modest increases between AY 2002 and AY 2004, with networks accounting for just under half of the radiology visits until MPNs began to operate in 2005, at which point the network utilization rate rose to 55.1 percent in 2005 and then 57.8 percent in 2006.

Table 9 tracks the changes in the percentage of payments to networks for first-year radiology visits across the pre- and post-reform periods.

**Table 9:** Percentage of 1st Year Radiology Visit Payments to Network Providers – Pre- vs. Post-Reform

| | Pre-Reform | | | Post-Reform | | |
|---|---|---|---|---|---|---|
| **Accident Year** | **2002** | **2003** | **2004** | **2005** | **2006** | **2007** |
| **% Payments For Visits <=30 Days** | 52.2% | 52.5% | 51.9% | 47.8% | 48.5% | 55.7% |
| **% Payments for Visits >=30 Days** | 21.2% | 20.5% | 19.9% | 28.6% | 37.5% | |
| **% Payments for All 1st Year Visits** | 29.5% | 28.8% | 29.8% | 35.8% | 41.5% | |

Once again, payments to network providers showed a similar development pattern to the percentage of visits to network providers, but with significantly lower percentages (with a magnitude of difference similar to the difference observed among surgical services). Throughout the pre- and post-reform MPN periods, networks received just over half of the payments for radiology services rendered during the first month following an injury, but with a significant increase in AY 2007 to 55.7 percent. During the pre-reform PPO period, the networks accounted for about 21 percent of the payments for radiology visits that occurred after the first month, but that proportion climbed to 28.6 percent in AY 2005 and to 37.5 percent in AY 2006. Similarly, the networks' share of the payments for all first-year radiology visits held steady at around 30 percent until the MPNs took effect in 2005, at which point the networks' share increased to 35.8 percent – a relative increase of 20 percent – and then continued up to 41.5 percent in AY 2006.

## MEDICINE SECTION SERVICES

Table 10 shows the pre- and post-reform network utilization rates for services covered in the Medicine section of the Official Medical Fee Schedule.

**Table 10:** Percentage of 1st Year Medicine Section Visits to Network Providers -- Pre- vs. Post-Reform

| | Pre-Reform | | | Post-Reform | | |
|---|---|---|---|---|---|---|
| **Accident Year** | **2002** | **2003** | **2004** | **2005** | **2006** | **2007** |
| **% Visits <=30 Days** | 69.3% | 71.09% | 72.3% | 68.6% | 72.3% | 77.9% |
| **% Visits >=30 Days** | 24.8% | 24.9% | 31.2% | 50.8% | 56.4% | |
| **% All 1st Year Visits** | 41.1% | 40.9% | 50.1% | 60.8% | 64.4% | |

The network utilization rate for Medicine section services within the first 30 days of injury showed a pattern of development similar to the Radiology services. From AY 2002

through 2005, network utilization ranged from 69.3 percent in AY 2002 to 72.3 percent in AY 2004. But network use jumped to 77.9 percent in AY 2007. On the other hand, the network utilization rate for Medicine section visits after the first 30 days increased from about a quarter of the visits in 2002 and 2003 to nearly one third of the AY 2004 visits, then following the introduction of the MPNs, the rate climbed to 56.4 percent in AY 2006. That fueled an increase in the overall network utilization rate for first-year Medicine section services, which rose from 41.1 percent in AY 2002 to 64.4 percent in AY 2006 – a relative increase of 56.7 percent across the 5-year period, about half of which occurred between 2004 and 2005 -- the first year MPNs were introduced.

Table 11 shows the changes in the percentage of payments for first-year Medicine section services during the five-year span of the study.

**Table 11:** Percentage of 1st Year Medicine Section Visit Payments to Network Providers – Pre- vs. Post-Reform

| | Pre-Reform | | | Post-Reform | | |
|---|---|---|---|---|---|---|
| **Accident Year** | **2002** | **2003** | **2004** | **2005** | **2006** | **2007** |
| **% Payments For Visits <=30 Days** | 46.0% | 50.5% | 53.6% | 56.3% | 59.2% | 66.0% |
| **% Payments for Visits >=30 Days** | 18.7% | 18.6% | 20.5% | 40.7% | 46.0% | |
| **% Payments for All 1st Year Visits** | 21.3% | 21.4% | 24.4% | 43.5% | 48.2% | |

The growth trends in network payments for Medicine section services tracked with the utilization trends, though again, the percentage of payments to network providers was less than the corresponding percentage of visits. The proportion of Medicine section dollars flowing to networks increased only slightly in the pre-reform years, then climbed sharply with the introduction of the MPNs in 2005. The most notable increase was in the payments for Medicine section services rendered after the first 30 days, where the percentage of payments to networks more than doubled from 20.5 percent in AY 2004 to 46.0 percent in AY 2006. This, in turn, drove up the overall percentage of first-year Medicine section payments to networks, which increased from about 21 percent in AY 2002 to more than 48 percent in AY 2006.

## PHYSICAL THERAPY

Physical therapy (PT) is the most common medical service in California workers' compensation medical care, though prior studies have documented significant reductions in the use of these services since the implementation of the 2004 reforms, which included not only MPNs, but utilization review requirements, the adoption of a medical treatment utilization schedule, and 24-visit caps on physical therapy and chiropractic care. Table 12 shows the pre- and post-reform network utilization rates for Physical Therapy.

**Table 12:** Percentage of 1st Year Physical Therapy Visits to Network Providers -- Pre- vs. Post-Reform

| | Pre-Reform | | | Post-Reform | | |
|---|---|---|---|---|---|---|
| **Accident Year** | **2002** | **2003** | **2004** | **2005** | **2006** | **2007** |
| **% Visits <=30 Days** | 53.5% | 55.2% | 60.6% | 65.3% | 67.3% | 74.3% |
| **% Visits >=30 Days** | 20.6% | 20.9% | 31.4% | 43.3% | 47.8% | |
| **% All 1st Year Visits** | 24.8% | 25.2% | 38.3% | 49.0% | 52.3% | |

During the pre-reform PPO period, the use of network providers for PT services in the first 30 days increased from 53.5 percent of all visits in AY 2002 to more than 60 percent of the visits in AY 2004. After MPNs began operations, the trend toward network providers continued to grow, with networks accounting for 2 out of 3 first-month PT visits in AY 2005, and 74.3 percent of the first-month visits by AY 2007. Even sharper increases were noted in the growth of network utilization for PT visits beyond 30 days post injury. The pre-reform data show the use of networks for these visits climbed from about 1 in 5 visits in AY 2002 and 2003 to nearly 1 in 3 visits in AY 2004, then increased again to 43.3 percent after the opening of MPNs in AY 2005 and to 47.8 percent of visits in AY 2006.

Overall, the percentage of total first-year PT visits to network providers increased from about a quarter the visits in AY 2002 and 2003 to 38.3 percent of the AY 2004 visits. In 2005, PT visits associated with network providers again increased significantly to 49.0 percent and continued to increase in AY 2006 to 52.3 percent.

Table 13 tracks the changes in the proportion of first-year physical therapy payments to networks across the pre- and post-reform MPN periods.

**Table 13:** Percentage of 1st Year Physical Therapy Visit Payments to Network Providers – Pre- vs. Post-Reform

| | Pre-Reform | | | Post-Reform | | |
|---|---|---|---|---|---|---|
| **Accident Year** | **2002** | **2003** | **2004** | **2005** | **2006** | **2007** |
| **% Payments For Visits <=30 Days** | 56.0% | 57.9% | 62.6% | 66.3% | 66.9% | 74.9% |
| **% Payments for Visits >=30 Days** | 21.4% | 21.4% | 30.7% | 40.5% | 42.6% | |
| **% Payments for All 1st Year Visits** | 25.7% | 25.9% | 38.0% | 46.8% | 48.0% | |

Reimbursement to networks grew to 66.9 percent of all payments for PT services within the first month for AY 2006, 42.6 percent of the payments for PT services beyond the first 30 days, and 48 percent of the payments for PT visits in the first year following injury. The growth in payments to network providers has followed the network utilization pattern, with similar relative percentages in each year and for every category of payment and visit. For AY 2007, payments for PT services within the first 30 days after injury increased to 74.9 percent tracking with the growth in network visits (74.3 percent).

The relative difference between the percentage of physical therapy visits and percentage of physical therapy payments associated with network providers (8 percent) is narrower than the comparable difference noted for surgery services (33 percent), but not as narrow as E&M services (6 percent). This is indicative of the relatively uniform complexity of physical therapy services within this fee schedule section, but could also indicate that network physical therapists provide less frequent or smaller discounts compared to providers of other types of services.

## CHIROPRACTIC MANIPULATION

Concerns regarding the over-utilization of chiropractic care in treating injured workers led state lawmakers to include a 24-visit cap on chiropractic treatment in SB 899. Earlier Institute studies have shown that this, along with the introduction of MPNs and the other medical reforms included in the 2004 reform bill, led to dramatic reductions in the average number of chiropractic manipulation visits. The 2007 MPN analysis published by CWCI noted that prior to the introduction of MPNs, only a small percentage of chiropractic manipulation visits involved network providers.[4] That percentage increased sharply after MPNs began operations in 2005 because MPN regulations adopted by the state following enactment of SB 899 required the networks to provide access to a number of medical specialists, including chiropractors. Table 14 displays the results of this study, showing the updated figures on pre- and post-reform network utilization rates for chiropractic manipulation.

**Table 14:** Percentage of 1st Year Chiropractic Manipulation Visits to Network Providers -- Pre- vs. Post-Reform

| | Pre-Reform | | | Post-Reform | | |
|---|---|---|---|---|---|---|
| **Accident Year** | **2002** | **2003** | **2004** | **2005** | **2006** | **2007** |
| **% Visits <=30 Days** | 15.5% | 15.8% | 17.8% | 35.9% | 44.8% | 55.0% |
| **% Visits >=30 Days** | 7.9% | 7.6% | 9.4% | 35.8% | 48.8% | |
| **% All 1st Year Visits** | 8.5% | 8.2% | 11.0% | 35.9% | 48.0% | |

During the pre-reform PPO period, networks accounted for between 15 and 18 percent of the chiropractic manipulation visits within the first 30 days on an injury, though that proportion doubled to more than one third of all visits in AY 2005, after MPNs took effect, increased to 44.8 percent in AY 2006, and has increased again to 55.0 percent in AY 2007. Likewise the pre-reform PPO network utilization rate for chiropractic manipulation visits after the first 30 days was between 8 and 10 percent, but that rate more than tripled to nearly 36 percent of all post-30 day visits in AY 2005 and approached almost half of all post-30 day visits in AY 2006.

Overall, the network utilization rate for chiropractic manipulation increased from 8.5 percent of the first-year visits in AY 2002 to 11.0 percent in AY 2004, then tripled to 35.9 percent after MPNs were introduced in AY 2005 and continued to increase in AY 2006 to 48.0 percent. The development of network provider involvement in the first 30 days, the post-30 day period, and overall 1st year visits have mirrored each other during the study period. It is reasonable to anticipate that visits to network providers after 30 days and overall visits in AY 2007, once data is available, will increase by a magnitude comparable to the first 30-day increase observed in AY 2007.

Table 15 notes the changes in the proportion of first-year chiropractic manipulation payments to networks across the pre- and post-reform periods.

4 Swedlow, A., Ireland, J. Analysis of California Workers' Compensation Reforms Part 3: Medical Provider Networks and Medical Benefit Delivery, page 9. CWCI February 2008.

**Table 15:** Percentage of 1st Year Chiropractic Manipulation Visit Payments to Network Providers – Pre- vs. Post-Reform

| | Pre-Reform | | | Post-Reform | | |
|---|---|---|---|---|---|---|
| **Accident Year** | **2002** | **2003** | **2004** | **2005** | **2006** | **2007** |
| **% Payments For Visits <=30 Days** | 16.5% | 16.0% | 16.2% | 33.7% | 43.9% | 51.9% |
| **% Payments for Visits >=30 Days** | 9.0% | 7.8% | 9.2% | 34.4% | 46.3% | |
| **% Payments for All 1st Year Visits** | 9.6% | 8.5% | 10.5% | 34.3% | 45.8% | |

In a pattern similar to physical medicine, the reimbursements to network providers for first-year chiropractic manipulation visits tracked with the changes in network utilization across each of the years and each of the visit time frames. Payments to networks for first-month chiropractic manipulation visits doubled from about 16 percent in the pre-reform PPO period to nearly one third of the payments in AY 2005 (33.7 percent) then continued to increase, climbing to 51.9 percent of the payments in AY 2007. The growth in the proportion of chiropractic manipulation payments for visits after the first 30 days, as well as the overall growth rate in payments to networks for all first-year chiropractic manipulation visits, was equally dramatic, increasing from less than 10 percent of total reimbursements in AY 2002 to one third of the payments after MPNs took effect in AY 2005, and to about 46 percent in AY 2006.

## SUMMARY

The analysis of changes in network use in the California workers' compensation system suggests that pre-reform PPO networks as well as post-reform MPNs played an increasing role in medical service delivery between accident years 2002 and 2007. For many segments of medical care delivery, use of PPO networks increased between accident years 2002 and 2004. With the onset of medical provider network (MPN) reform in 2005, network use increased in all observed areas of provider-based outpatient medical treatment and the increase in network utilization continued to grow in AY 2007. The increase in network utilization since the advent of MPNs has been greatest for visits beyond the first 30 days after injury. Given that MPNs extended employer medical control from 30 days to the life of the claim, the use of networks for treatment beyond 30 days from the date of injury clearly offered the greatest opportunities to affect the course of treatment and produce savings, and the results of this analysis confirm that that is where the networks are having the greatest impact.

This analysis also shows a recent increase of network provider utilization within the first 30 days of injury among the most recent claims in the sample. This may indicate a maturation of the MPN program, with more comprehensive and careful direction of injured workers to network providers, and an increased likelihood that a network provider will render treatment beginning with the first visit following an injury.

## RESEARCH SERIES

This research update is part of an annual series of analyses initiated by CWCI in 2006 to track changes in various aspects of the California workers' compensation system following the implementation of the 2002-2004 legislative reforms. The current 4-part series is based on AY 2002-2007 claims data, and this is the second report in the series. The complete series will cover the following topics:

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

Part III of the series is scheduled to be released in early 2009, and as noted above, will examine updated data and present new findings on issues surrounding temporary disability.

## ABOUT CWCI

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

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