CME Article #2

The Effect of a Health Care Management Initiative on Reducing Workers' Compensation Costs

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Learning Objectives

- Identify recent trends in workers' compensation (WC) cases and the use of managed care in this setting.
- Describe the cost control and health care management measures introduced in an attempt to control WC expenses.
- Distinguish between the changes in WC costs growing out of changes in health care management and those effected by cost control measures.

Abstract

The effect of both a cost control and health care management initiative (HCMI) on Workers' Compensation costs at a self-insured University Hospital was assessed. Seven cohorts of injured workers were studied. Cost control measures started in 1993 included early return to work and injury prevention programs, internal administration of legal cases, and utilization of modified duty assignments. The health care management initiative fully in place in 1997 included aggressive case management and preferred provider panel utilization. Workers' Compensation indemnity costs and lost workdays incurred by each cohort were compared. A 41 to 59% reduction in indemnity payments and 46 to 67% reduction in lost time cases were realized after the health care management initiative was fully in place. During this time, accepted claims were reduced by 10 to 15%. The quality of the provider panel, as measured by academic credentials, experience and board certification, did not change. Cost control measures, without comprehensive case management, did not decrease these parameters significantly. The health care management initiative realized reductions in lost time cases and Workers' Compensation indemnity costs. (J Occup Environ Med. *2002;44:1100–1105*)

Workers' compensation (WC) coverage is mandatory for most employers. One of the objectives of the workers' compensation system is to reduce injuries and provide wage-loss and medical benefits to employees who become ill or injured through the course of their employment so they can heal and return to the workforce.[1] A great deal of attention has been focused on reducing costs associated with work-related injuries and illnesses over the past three decades as these costs increased dramatically during this period. National health care costs grew at an average annual rate of about 10% from 1985–1992, and workers' compensation costs grew at an average annual rate of nearly 15%. Even when adjusting for level of employment, workers' compensation medical costs grew at an annual rate of almost 13%.[2] Workers' compensation cash indemnity and medical benefit payments increased[3–6] despite nationally declining prevalence rates of work disability.[7] The estimated costs of worker's compensation cash and medical benefits paid to workers were $27.3 billion in 1987 and $45.7 billion in 1992. These costs experienced a modest 5-year decline between 1993–1997, and then rose again. The biggest single year percentage increase since 1992 occurred in 2000 where total benefits rose by 6.4% from $43.1 in 1999 to $45.9 billion in 2000.[8]

Many states made concerted efforts to address spiraling workers' compensation costs.[5] Cost contain-

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ment techniques have been increasingly used especially since 1991.[9] Managed care strategies which have been used by group health insurance companies, adopted by both public and private employers as a means of controlling costs[5] are increasingly being incorporated into the workers' compensation arena. The use of managed care in workers' compensation has increased by 150% since 1991.[9] Seventy-five percent of employers who use health maintenance organizations, preferred provider organizations or other managed care networks found them to be effective in controlling costs.[9]

After nearly a decade of poor results, inroads into cost containment have been made.[7] As medical care is only one factor affecting an injured worker's ability to recover from an injury and resume work many initiatives have focused on non-clinical aspects of care. Employers have responded with proactive measures from prevention and preparedness plans to return-to-work initiatives. Cost moderators have included legislative efforts, rate relief, improved anti-fraud programs, systems reform, medical fee schedules, and lower overall medical inflation, enhanced safety measures, safety/ergonomic programs, early return to work programs (ERTW programs), improved case management and the use of managed care programs.[3,7] Other cost containment strategies also used by corporations to control increases in WC costs include utilization review/management programs, risk management programs, and rehabilitation programs for injured workers.[10,11] Attempts at reducing the incidence of injuries including loss control activities such as safety engineering efforts and ergonomic controls have met with some success.[4,12]

Green-McKenzie et al described a 6-year experience where a three pronged approach featuring an on-site case management team, a preferred provider organization, and safety engineering efforts and ergonomic controls used proactively to aggressively identify and abate workplace hazards, realized a 50% reduction in total expenditures. One of the limitations of that university hospital based study was that there was no published database that would allow comparison of these results, nor were there other self-insured programs in the state that covered populations with similar classification codes.[13] There are wide gaps in the published literature on the economic consequences of occupational injury and illness, and on the costs and benefits of managed care techniques, regulation and hazard prevention.[14] Although managed care efforts abound nationwide in an attempt to control costs, this area is understudied and data documenting their use and effect on patient satisfaction are scant.

This study investigates whether a health care management initiative concentrating on case management strategies can realize substantial reductions in worker's compensation indemnity costs and lost time cases. It also examines whether the introduction of cost control measures affected these parameters. Indemnity payments and the number of compensated cases with lost time were compared for each year (1993–1998).

Methods and Materials

Background

The setting for this study is an urban university hospital covered by a self-insured workers' compensation plan administered by the WC Office. All aspects of the claims process including medical treatment and legal representation are handled through this office. All workers who suffer a work-related injury or illness are required to present to the WC clinic for evaluation and treatment. The WC clinic is the sole provider of care for injured and ill workers.

Study Population

The study population comprises all hospital workers covered by the WC Plan ($n \sim 6000$) who incur a new work related injury or illness during calendar years from 1993 to 1998. A case is defined as an injured worker who files a claim with the WC office and is provided medical care in the WC clinic.

Workers' Compensation Management

Cost control measures (CCM) were started in 1993 and consisted of the institution of in-house administration of all legal cases in lieu of hiring an outside firm to handle these cases, and institution of accommodation of modified duty. In addition, an ERTW program was implemented where; employees whose injuries precluded them from returning to their regular employment were assisted in finding another position within the health system where their work limitations would not affect their ability to carry out the essential functions of the job. These CCM measures also featured a one-time injury prevention program where, in 1993, an outside firm was hired to evaluate departments that incurred a high incidence of injuries. Recommended preventive measures were instituted.

The health care management initiative (HCMI) was started in the summer of 1997 and was fully instituted by the winter of 1997. One full-time, on-site nurse case manager previously in place, was trained by the director of clinical practice and assigned to all Hospital cases. The case manager's role included facilitating patient return to work in a safe and timely manner. Providers (physicians and nurse practitioners) were also trained regarding facilitation and support of case management in its' expanded role. The specific features are described below.

Communication was improved between Occupational Medicine (OM) Providers and relevant parties. More specifically, communication was improved with the WC office allowing more timely and effective use of modified duty and of the ERTW

TABLE 1
The Number of Covered Employees (1996–1999)

Year	# Covered employees (FTE)
1996	6,110
1997	6,446
1998	6,816
1999	6,831

program. In addition, communication was improved with supervisors allowing more effective use of the modified duty program. Furthermore, to enhance communication with the physical therapy staff (PT), monthly meetings were instituted between PT staff and the case manager to discuss the cases undergoing therapy. Relevant information was relayed to the OM providers. Telephonic communication improved such that the therapists were readily accessible for telephone conferences about patients as necessary. Finally, communication was improved with specialists to include timely feedback on worker restrictions and types of modified duty available. Indeed, the referral panel was tailored to specialists conversant with and interested in workers' compensation cases. Feedback from specialists regarding diagnosis and treatment of patients referred to them was given within 24 hours. The case manager also tracked specialty referrals.

As the employers' ability to offer transitional or light duty is known to affect outcome[15] modified duty was used wherever appropriate. If injured workers were not accommodated in full capacity, every attempt was made to accommodate them in a modified capacity. The case manager, providers and the WC administrators, in conjunction with the supervisors all worked together to ensure that this program was utilized to its' fullest. The OM providers and case manager had access to job descriptions, verbal or written. The OM providers and case manager were informed by the supervisor of the essential functions of the job as well of what other possible jobs may be available. Also, the OM provider or case manager may interface with the supervisor regarding cases and possible accommodation

A "missed appointment/rescheduling protocol" was instituted where all employees who were out of work and failed to keep a scheduled appointment were rescheduled within 48 hours. The case manager executed this system. Workers being followed by a specialist were also seen in OM at least once per month. This allowed the OM primary care provider to continue to follow the progress of the worker. Case management software, previously available, was now used to track lost time cases. The case manager played an important role in coordinating the process and was relied upon to help coordinate the flow of information between providers and supervisors, specialists, workers' compensation administrators, as well as physical therapists. This process, which started in July 1997, was complete by December 1997.

Data Collection and Analysis

Data items include the number of employees at risk, indemnity payments and the number of lost time cases. Secondary annual compensation data are acquired from the Hospitals' self-insured WC program. Information on the number of claims for each year and indemnity cost of WC is obtained. The loss data is based on actual expenses paid for each year. In other words, these data only look at costs incurred for cases opened that year and incurred during that year. It does not reflect the tail of indemnity payments from injuries that occurred in previous years, nor does the subsequent year reflect the tail of indemnity payments of cases opened the previous year. Adjustments are not made for inflation. Employees who sustained a work related injury or illness in calendar years 1993 to 1998 that resulted in a filed workers' compensation claim are included. Costs incurred are compared by rates and percentage decreases.

Given the difficulty of measuring Quality of Care (QOC), surrogates of care are used. These include reviewing credentials, faculty appointments, board certification and experience of occupational medicine and specialty providers each year. The results of a patient satisfaction survey conducted in 1997 and 1998 by an outside national firm are used to assess patient satisfaction.[16]

Results

Table 1 shows the number of employees at this university hospital increased gradually from 1996 to 1999, with a mean of 6551 with a range of 6110 to 6831. Table 2 shows that the number of lost time cases fluctuated between 162 and 234 during the CCM years (first 4 years). The number of lost time cases initially increased but decreased by the fourth year. The overall decreased from 1993 to 1996 was 20% (42). The indemnity payments also fluctuated (range = $435,135 and $538,305). While the overall frequency of cases increased after the initial 2 years (1994, 1995), they decreased by the fourth year. However, indemnity payments at the fourth year were still higher than in the year when CCM were first instituted (1993) by 2.4% ($10,274).

After the introduction of the HCMI in the summer of 1997, which was fully in place by the winter of 1997, indemnity payments as well as the number of cases with lost time

TABLE 2
Lost Time Cases and Indemnity Payments (1993–1998)

Year	# Total cases	Cases which lost time # (%)	Total indemnity payments	Change in indemnity payments	Indemnity payments per FTE	Indemnity payments/ case with lost time
1993	1,024	204(20)	$435,135			$2,133
1994	1,089	234(21)	$459,928	$ 24,793		$1,966
1995	969	220(23)	$538,305	$ 78,377		$2,447
1996	1,013	162(16)	$445,409	−$ 92,896	$73	$2,749
1997	971	124(13)	$323,233	−$122,176	$50	$2,607
1998	875	67 (8)	$191,992	−$131,241	$29	$2,866

TABLE 3
Comparison of Workers' Compensation Losses Before and After the Health Care Management Initiative

Year	# Covered employees (FTE)	Total cases # (%)	Cases which lost time # (%)	Indemnity payments	Indemnity payments per FTE	Indemnity payments/ case with lost time
1997	6,446	971(15)	124(13)	$323,233	$ 50	$2,607
1998	6,816	875(13)	67 (8)	$191,992	$ 28	$2,866
Difference	370	−96	−57	−$131,241	$ 22	$ 259
%Change	6	−10	−46	−41	−44	10

TABLE 4
Comparison of Workers' Compensation Losses in Years Using cost Control Initiative (average 1993–96) and Health care Management Initiative (1998)

Year	Total cases # (%)	Cases which lost time # (%)	Indemnity payments	Indemnity payments/ case with lost time
1993–96 (avg)	1,024	205(20)	$469,694	$2,324
1998	875	67(8)	$191,992	$2,866
Difference	−149	−138	−$277,702	$ 542
% Change	−15	−67	−59	23

decreased. (Table 2) Indeed, despite the fact that the number of employees increased somewhat (Table 1), by the time the HCMI was fully in place, the number of lost time cases had decreased by 46% and the indemnity payments had decreased by 41%. This was so even though indemnity payments per case with lost time increased. The total number of claims decreased by approximately 10% (Table 3) The level of care was maintained over the two-year period in that the credentials of the OM and specialty providers did not change. All of them were licensed physicians and nurse practitioners. A patient satisfaction survey conducted by a national outside firm evaluating providers, the clinic, and ancillary staff revealed that ratings did not decrease.[16]

Table 4 compares outcomes from the years of the CCM (first 4 years) to 1998, the year after the HCMI was fully in place (post-HCMI). A comparison of the average of the outcomes from the CCM years (first 4 years) to the post-HCMI year (1998) indicates that the number of cases with lost time decreased by 67%. This is a greater decrease than the 46% decrease seen when comparing the year during which the HCMI was being instituted but not yet fully in place (1997) to the post-HCMI year (1998). Similarly, the indemnity payments decreased by 59% in the CCM years compared to the post-HCMI. This is a greater decrease than the 41% decrease seen when comparing the year in which the HCMI was being instituted to the post-HCMI year. The indemnity payments per case with lost time increased by 23% from the CCM years to the post-HCMI years as compared to a 10% increase from the year in which the HCMI was being instituted to the post-HCMI year.

Discussion

This study shows that this health care management initiative was effective in reducing indemnity costs and cases with lost time while maintaining the same level of patient care. The data show that after the HCMI was fully in place (1997), the number of cases decreased post-HCMI (1998) by approximately 10%. However, both the number of cases with lost time and the indemnity payments decreased by more than 40% over this same period. Furthermore, when comparing the average of the outcomes seen in the CCM years (1993–1996) to the post-HCMI year (1998) the decrease is even more dramatic. The number of cases with lost time decreases by almost 70% and the indemnity payments decrease by about 60%. The total number of cases during these two periods, that is, CCM (1993–1996) and post-HCMI (1998), decreased by 15% as compared to a 10% decrease from 1997–1998. The CCM instituted over the previous 4 years did not realize a substantial decrease in indemnity payments or lost time cases.

It is unlikely that the decrease in the number of cases with lost time was because of injured workers seeking care outside the system as all new injuries are captured, and all injured employees are required to report to the OM clinic for treatment and evaluation. Supervisors are instructed to direct employees with work-related injuries and illnesses to the OM clinic. Furthermore, the clinic is located on-site making for easy access by workers. Injured workers do not have to wait for an appointment as they are seen on a walk-in basis. This reduction is probably because of the introduction of the health care management initiative.

Indemnity costs increased from 1993, the year cost control measures were instituted, until 1995. The real gains were seen starting in 1997 and were especially obvious in 1998 when the HCMI was fully in place. The data indicate that 1996 merely achieved the indemnity costs of 1993, which is the year that the cost control measures were instituted. Although the number of cases with lost time decreased modestly the year before the HCMI was in place (1996) and the indemnity payments also decreased in this period. These parameters still remained high. Indeed, there was a downward trend from 1996, the year the HCMI was in place.

Indemnity costs probably decreased because of the aggressive use of modified duty. Having injured workers RTW decreased indemnity payments, as wages did not have to be replaced by the worker's compensation system. The ERTW program was available to capture those workers whose injury precluded them from ever going back to work in their previous capacity. Once the patient reached maximal medical improvement, they would be placed in the ERTW program, effectively removing them from the worker's compensation system.

The data also indicate that indemnity payments per case with lost time steadily increased from 1993 to 1998. Upon closer examination of the data, we note that while the indemnity costs per case with lost time increased 10% from the year that the HCMI was being instituted to the post HCMI year, these costs increased 23% from the CCM years (average) to the post-HCMI year. This increase in indemnity costs probably reflects the success of the modified duty program. Cases amenable to modified duty do not lose time as they are accommodated at work. Cases with lost time now represent the more severe injuries for which modified duty is not available and would necessitate being out of work for a longer period of time and hence be more expensive. The case managers, providers and WC administrators, in conjunction with the supervisors all work together to ensure this program is utilized to its fullest.

This system has the advantage of a dedicated and well-trained case manager who uses a well-developed tracking system for employees out of work hence capturing all cases. The OM software allows a computerized database of our patients. The "missed appointment protocol" allows for rescheduling patients with an early follow-up appointment, often the next day and certainly within the week. Those who are being followed by a specialist are also seen in OM at least once per month. This allows the OM primary care provider to continue to follow the progress of the worker and has added benefits. First, the patient will be aware that the OM provider is still interested in his care and, as such, he will not feel abandoned. Second, the OM provider will remain conversant with the medical progress of the patient. If the OM primary provider, well versed with RTW issues, feels that the patient is ready for modified duty he may conference with the specialist to expedite this outcome. Third, the patient is less likely to become lost to follow-up because he is being actively followed by OM and if he misses an appointment, the missed appointment protocol is invoked.

No temporal trends are identified. Indeed, the General Provisions of Act 57 of 1996, Title 34-labor and Industry, which capped the duration of indemnity benefits to 500 weeks or 4 years so claims could be settled via compromise and release,[17] does not bias the results because this study follows cases over a 12-month period. Only the cases that have been opened in the year in question, and only costs incurred in the study year are followed. Costs incurred in subsequent years are not. As such, the costs captured here do not reflect the tail of indemnity payments from injuries that occurred in previous years.

There are limitations to this study. It is an interventional study, not experimental. This restricts the conclusions that can be drawn about cause and effect. The period studied after

the introduction of the health care management initiative is limited in that it is only 2 years. It is possible that there was a downward trend in indemnity costs and this needs to be examined further. The results stand, however, in that cases with lost time and indemnity costs decreased following the institution of the HCMI without any other apparent explanation. Another limitation is that medical costs are not reported. However, medical costs would be particularly difficult to capture, as the OM clinic does not bill the hospital individually for the employees who are treated in the OM clinic. The OM providers are paid a salary. Another limitation is that there is no comparison group for this study. This area is understudied and available data on such changes is not widely published. As such, benchmark and outcomes data are not readily available. However, a study of this type is important in relaying information regarding the outcome of such interventions.

In conclusion, this health care management initiative was effective in reducing indemnity costs and cases with lost time in this setting. The theory behind the OM health care management initiative introduced in 1997 is that high quality medical care delivered in an efficient and timely manner will not only reduce lost time associated with workplace injuries, but also reduce indemnity costs. Having a dedicated case manager and OM primary providers who are all well versed in RTW issues and who are committed to returning patients to work in a safe and efficient manner are essential to the success of such a program. Communication among all parties; the OM provider, case manager, workers compensation administrators, specialists and physical therapists also plays a vital role in the success of this process. Workers' compensation costs promise to continue to be an issue of some import in the near future. In sharing interventions and outcomes the status of our current system may be improved.

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