A Novel Approach to Reducing Workers Compensation Costs in a Multicenter Hospital System

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Objective: To evaluate the efficacy of an injury prevention and monitoring program implemented by athletic trainers to reduce workers compensation costs in a hospital system with multiple centers and locations. **Methods:** A retrospective analysis of workers compensation claims (ie, lost days, light days, and incurred costs) was performed to compare injury data from 2 years before to 2 years after the start of the program. **Results:** The program significantly reduced the organization's incurred costs by 46.7% ($P = 0.031$) and light days by 44% ($P = 0.022$). Lost days were found to decrease by 37%, however, this decrease was not statistically significant ($P = 0.078$). **Conclusions:** Athletic trainers, using their knowledge of anatomy, biomechanics, ergonomics, injury management, and rehabilitation, can effectively prevent and reduce workers compensation costs in a multicenter hospital system.

Workplace injuries are a significant burden on industry, with over 30% of all workplace injuries involving the musculoskeletal system.[1] Healthcare workers are at even greater risk of musculoskeletal injury (MSI) averaging 46% of all work related injuries in the healthcare industry.[2] The increased prevalence of MSI in the healthcare industry, is often attributed to the awkwardness of manually lifting and positioning patients.[2,3] This can be seen by the prevalence of MSIs in those healthcare workers most often associated with patient lifting such as Nurses and Certified Nursing Assistants.[2,4] The increased number of MSI in healthcare is compounded by the fact that costs associated with injured healthcare workers are also greater than other workers, when based upon the number of full time equivalents (FTEs).[3] Healthcare organizations are required to monitor and mitigate injuries, including MSI, for their workers by the Occupational Safety and Health Administration (OSHA) as it has a direct effect on worker safety and organizational costs. There have been a number of examples in the literature to describe ways to reduce MSI within the healthcare setting, which have proven to be successful.[4] These include the strict use of mechanical lifting devices for all patient handling activities, education on proper lifting mechanics, and the use of bed sheets which reduce friction when repositioning patients.[4]

In industry, the term industrial athlete has been used to describe the physical demands placed upon the worker. While this concept is not new to healthcare, this study combined the concept of the industrial athlete and proven approaches to reducing MSI injuries in the healthcare setting. The novelty of this study is using a new type of provider who is specifically trained to treat athletic MSI, the certified athletic trainer (ATC).

CLINICAL SETTING

Southcoast Health System (SHS) currently consists of three acute care hospitals, two cancer centers, multiple urgent care locations, rehabilitation facilities, labs as well as a visiting nurse program, which includes rehabilitation. SHS currently employs more than 486 medical providers within its network with more than 7000 employees and annual income of 1 billion dollars.

SHS's occupational and employee health department staff work collaboratively to provide an array of services to both the employees' of SHS as well as outside contracted companies. The staff is comprised of four providers, one medical director who is a board certified occupational health physician (MD), and three experienced nurse practitioners (NP's). The occupational health department has a clinical operations manager, who directs a staff consisting of four certified medical assistants (MAC's), six patient access representatives, one safe patient handling coordinator, and a team leader supervising a staff of one full time, and six part-time injury prevention specialists (IPS), who are licensed ATCs. Collectively the staff work as a cohesive team to provide the injury prevention and management needs for the organization, including on-boarding and pre-employment physicals as well as the immediate care and treatment of employee work related injuries, and the prevention and management of injuries for all employees and locations within the health system.

PROBLEMS THAT NEEDED TO BE SOLVED

In an effort to reduce injuries and mitigate workers compensation claims SHS began purchasing and installing safe patient handling equipment in 2007 with a goal of eliminating manual lifting throughout the organization within 5 to 10 years. Like many other healthcare organizations SHS's primary concern was the growing number of injured workers, increased OSHA recordable injuries, and an increasing number of lost days and light duty days. As workers compensation costs increased, a system was put in place to help track injury trends and expenses. Initially this system was hampered by inconsistent reporting of injuries by employees, and reporting forms were delayed in getting to the employee health (EH) nursing staff, and subsequently to the third party administrator of our worker compensation claims. The management of these claims, along with the leave of absence (LOA) claims, by the EH nurse case managers allowed little or no time for injury investigation and follow up in a timely manner. This had two negative effects on the organization. First, there was no way to efficiently monitor injured workers, allowing them to remain out of work for extended periods of time with no clear management of their case. Second, the organization was unable to identify hazards within the system which were causing the healthcare employees injuries. A system wide change was needed to address the pressing issue of rising workers compensation claims and costs.

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PROGRAM DEVELOPMENT

With the initial purchasing and installation of equipment for safe patient handling came a need for additional employee education related to the equipment and its proper use. An initial safe patient handling educator was hired in 2009 to assist in the ongoing requirements and integration of safe patient handling equipment. Working with the manager of ergonomics, the safe patient handling educator both served as the two primary resources responsible for all the patient handling activities across the SHS Network. The time required to perform these education activities decreased the time available to investigate staff injuries throughout the organization, hampering the effectiveness of the program.

ATHLETIC TRAINERS INCORPORATED INTO INJURY MANAGEMENT PROGRAM

During the initial stages of the SPH initiatives, to assist with the daily injury management needs, an ATC was hired part-time into the Occupational Health department as an ergonomic specialist. The ATC had dual responsibilities providing medical coverage for a local high school in the afternoon and ergonomic services for the hospital group in the morning. Early work focused on addressing the high number of injuries occurring within the Sonography staff. The ATC was able to track and identify the cause of injuries as well as educate the staff on how to prevent injuries. Within a few months, there was a measurable decrease in upper extremity injuries suffered by the Sonography staff, demonstrating the value of this novel approach.

With the continued exposure to workers' compensation claims on the rise, a decision was made in January of 2014, to move the ATCs working within the Rehabilitation Services department into role of IPS within the Occupational Health department. ATCs are required to be formally trained in the areas in ergonomics, industrial, and cooperate health as part of the didactic education.[5,6] Additional training on site and industry specific issues was performed to ensure competency in their new role. The initial transition into the Injury prevention roles by the ATCs did not come without some obstacles and objections. The utilization of an athletic trainer in patient units and ancillary departments where previously only nurses or therapists had roamed was a bit of a challenge due to a lack of understanding of ATC education and competencies. This misconception was rectified through the diligent efforts of the ATCs who demonstrated their knowledge and skill in providing education on injury prevention. As the ATCs worked with leadership and staff to develop programs designed to improve injury management, a level of acceptance and trust developed and any misconceptions were dispelled.

A collaborative working relationship between the employee health nurse case managers and the ATCs allowed injury trends to be quickly identified so that action plans could be created to prevent recurring injuries, especially those that were musculoskeletal in nature or related to patient handling activities. As the ATC/IPS staff gained additional knowledge of the various daily routines of the health system's numerous employees, they were able to provide ergonomic and preventative education in an attempt to further prevent injuries. As internal demand for the services of these highly trained ATCs acting as injury prevention specialists grew, it became apparent that these same individuals could be marketed to outside organizations and companies, allowing for both the expansion and enhancement of contracted services the occupational health department could offer industry in our region.

RETURN TO WORK (RTW) PROGRAM

The first step in reducing workers compensation cost was to develop a robust return to work program that included and promoted light duty assignments for injured workers. A heightened awareness of light duty opportunities combined with active monitoring of those injured allowed workers to be progressively brought back to work. Reducing the number of lost days for our employees thereby reduced the organization's costs and its workers compensation carrier's costs.

TRAIN EMPLOYEE HEALTH NURSE CASE MANAGERS

Careful analysis allowed identification of specific training areas for our EH nurse care managers. The third party administrator and workers compensation attorney were engaged to provide the needed education, enhancing their ability to perform the job efficiently and legally. Proactive measures ensured that future injuries would not result in workers being out of work for an unnecessary lengthy time, resulting in a large number of lost days.

With this proactive plan in place, focus could now be placed on the number of older claims, some of which had been going on for an extended period. A concerted effort was made to work with these individuals and their attorneys to conclude as many cases as possible. Moving forward we attempt to resolve cases in more expeditious manner.

SENIOR MANAGEMENT AND NURSING LEADERSHIP SUPPORT

Senior management supports the overall workers compensation management activities, specifically the reduction in musculoskeletal injuries and overall decreased costs. Capital funds are routinely allocated for purchasing safe patient handling devices at all of our sites. In addition, nursing leadership was involved in the decision to replace our safe patient handling coordinator with an ATC. This collaboration has been very successful and our prevention and investigation activities are seen positively.

ENCOURAGED REPORTING/COMPUTER BASED ACCESS

The key to any injury management and mitigation program is the successful and accurate capture of information pertaining to every injury sustained by a worker. This enables the facility to identify injury trends and patterns, which can then be modified so that future injuries are less likely to occur. For this reason, we needed to change the organizational culture to make employees aware that we support and encourage reporting of injuries. Concurrently, we recognized the need for accurate and appropriate coding to ensure that there was a clear understanding of the problems at hand, so patterns could be quickly identified. This had the added benefit of aiding in investigations of the root cause of injuries, identify causations and the potential remedy for them. Ultimately, the daily collaboration of employee health nurse case managers and IPS staff created an environment where the organization could proactively identify the cause of an injury and develop procedures to reduce or eliminate the possibility of another worker becoming

TABLE 1. OSHA Recordable Musculoskeletal Injury Descriptive Data

				95% Confidence Interval	
	Total	Mean	Standard Deviation	Lower	Upper
Before lost days	15,816	78.32	240.38	45.05	111.58
After lost days	9,988	46.46	107.19	32.05	60.87
Before light days	14,527	72.88	205.29	44.47	101.29
After light days*	8,161	37.96	83.71	26.71	49.21

OSHA, Occupational Safety and Health Administration.
*There was a statistically signficant reduction in light days after implementation.

TABLE 2. Change in Musculoskeletal Injury Data After Implementation

	Net Change	*P*
Incurred cost	46.7% reduction*	0.031
Lost days	2,664	0.078
Light days	6,776	0.022

*The organization has asked us to not include exact dollar amounts in this report. The net change in incurred costs has therefore been placed in percent format. Note that the *P* value is based on the exact dollar amounts as of May 1, 2017. This percentage may change as eight claims remain open from FY 2016 as of the time of this writing.

injured in the same manner. With this in place, we could effectively prevent future injuries as well as mange the costs associated with any injuries that did occur. This was further enhanced when a weekly meeting of all stakeholders was begun in October of 2016. The meeting was comprised of members from administration, employee health, ergonomics and injury prevention, risk management, safety and security, and human resources. This committee was charged with reviewing each claim and discussing any long-term implications, immediate actions necessary, and follow up action plans that needed to be put in place.

RESULTS

A one way analysis of variance was used to compare pre and post data to determine if there was a statistically significant change in cost, lost days, and light days following the adaption of this novel program. Statistical significance was set at $P < 0.05$ and power to 0.80. The descriptive data for all MSIs can be found in Tables 1 and 2. For calendar years 2013 and 2014, there were 205 reportable MSIs prior to implementation of the program. In calendar years 2015 and 2016, there were 221 reportable MSIs. Injury rates per 1000 FTE, for each year are provided in Table 3. Despite the increased number, 17, of MSIs reported there was no increase in the three variables used to determine the success of the program. All three were noted in fact to decrease with a statistically significant reduction in incurred costs by 46.7%(Financial data for calendar year 2016 are accurate as of May 1, 2017. The actual cost may increase based upon any open claims which carry over beyond May 1, 2017) ($P = 0.031$) and light days by 44% ($P = 0.022$). The 37% reduction in lost days was not statistically significant ($P = 0.078$), Fig. 1.

DISCUSSION

This approach to reducing workers compensation costs is similar to others in the industry, as it first required the development of policies, which promoted the quick and accurate reporting of incidents. This allowed injury patterns to be efficiently identified, so

TABLE 3. OSHA Recordable Musculoskeletal Injury Rate Data

Year	Injury Rate Per 1000 FTE	Total No. of OSHA Recordable Injuries	OSHA Recordable MSI	Lost Days	Light Days	Open Claims as of May 1, 2017
2013	22.95	330	96	8521	6042	4
2014	23.29	371	109	6287	9540	2
2015	22.07	394	107	6281	5002	3
2016	23.43	316	114	5863	3804	8

MSI, musculoskeletal injury; OSHA, Occupational Safety and Health Administration.

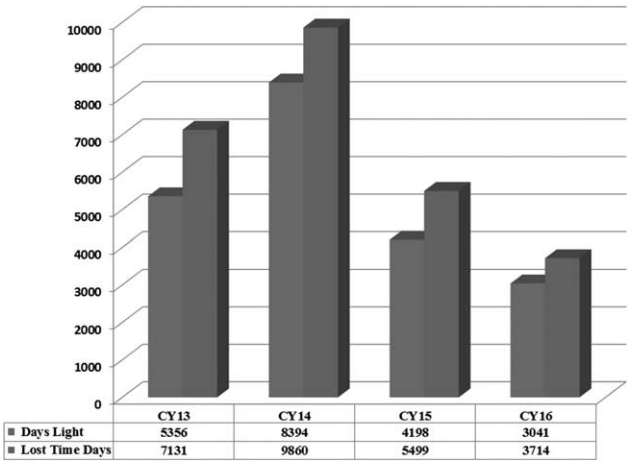

FIGURE 1. Musculoskeletal related OSHA recordable lost days and light days by year. OSHA, Occupational Safety and Health Administration.

that policies and procedures could be implemented to reduce exposures and injuries. Similarly, a comprehensive top to bottom awareness and philosophy of using modified duty (ie, light days) to prevent workers from being placed completely out of work has been accepted and promoted throughout the entire SHS organization. This may explain the increase in number of OSHA reporting injuries seen in Table 3. Weekly proactive monitoring of all cases has enabled the organization to quickly identify claims, which may be more long term in nature and expeditiously move the case to conclusion. This prevents cases from becoming extended for long periods of time by slipping through the cracks and becoming a long-term burden on the organization moving forward.

Where the program differs, is the proactive steps to eliminate as much as possible manual lifting of patients throughout the facility and the use of ATCs to perform ergonomic assessment, treatment, and management of individual cases. ATCs have been successful in many industrial settings treating injured workers,[7] however, this is the first published article to specifically discuss the efficacy of using ATCs in the healthcare setting. With a clear understanding of anatomy and the emergent care and rehabilitation of musculoskeletal injuries combined with a knowledge of biomechanics and ergonomics, the ATCs were able to demonstrate a positive effect on the safety of the workplace and a financial cost reduction for the organization.

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