EHS CASE STUDY

GETTING TO ZERO: MSD & ERGONOMIC INJURY PREVENTION

PREPARED BY RICHER COMMUNICATIONS

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GETTING TO ZERO: AN ERGONOMIC INJURY PREVENTION CASE STUDY

November 2010 was not a good month for newly installed plant manager Mark Tucker. He had just received word that his facility had suffered its 11th lost-time injury of the year. The factory was averaging one lost-time injury per month and claim costs were spiraling out of control.

Tucker recalls, "*We were in the middle of our safety deployment session and were reflecting on our poor results. That's when the plant supervisor came to the door and had that look on his face that a manager really hates to see. You know immediately that something is bad*."

Safety Leader Todd Hudson added, "*When we had our eleventh injury in 2010, we shut the mill down and said 'listen we're not going to support a facility that continues to average one injury a month. It is just not going to happen'.*" That very day, Tucker shut down plant operations and assembled his employees to discuss the situation.

“ACCIDENTS HAPPEN” PERMEATED THE FACTORY

The recently purchased manufacturing facility had experienced 9 to 15 OSHA-reportable injuries per year over its 30-year existence. “*Injuries*,” Tucker explained, “*seemed to be met with a shrug and an ‘accidents happen’ response. I can see how that permeated the organization because it was very prevalent, having nine to fifteen injuries per year over 30 years, you just begin to believe that is the way things are*.”

The plant accounted for 40 percent of the global company’s workplace injuries while employing just 11 percent of its workforce. The injury rate averaged 5.69 percent for 258 workers compared to the company’s global injury rate of 0.4 percent for 50,000 employees. The direct and indirect costs for injury claims were in the neighborhood of $650,000 per year.

“*We had to change*,” Tucker says, “*and it was explained that we could not achieve the result of being injury free without each and every one of us engaging in and taking accountability for our own safety and our co-workers’ safety.”*

He added, “*I could tell by their body language, ‘you mean he shut this facility down to talk about this’? It was pretty clear that we weren’t there yet, at least in terms of beliefs, and that as an organization we needed a safety culture change*.”

That was the turning point for the facility. That was the day Tucker decided to steer toward a new culture focused on safe working conditions and improved productivity, “*I asked for safety committee volunteers and four of the 258 employees raised their hand. That was the day that we set the goal to become injury free.”*

The assembly line operation was experiencing repetitive strain and ergonomic injuries which are some of the most difficult to heal and had been plaguing the facility for decades. Terms such as “strains” and “sprains” are frequently used to describe an acute microtrauma or overexertion injury. Repeated episodes of sprains and strains produce a pattern of tissue inflammation that is often the precursor of chronic micro-trauma injuries and Musculoskeletal Disorders (MSDs).

Macro-trauma vs. Microtrauma Injuries

Impact or macro-trauma injuries are often the result of a safety infraction of some kind (for example, a lock-out box wasn’t used properly, safety glasses may not have been worn, a cutting tool was used in an improper manner, etc.). These injuries are of many types, but include fractures, lacerations, contusions, punctures, and amputations.

But injuries due to micro-trauma tend to be more difficult to solve using conventional safety protocols. This is not to disparage effective employee, health, and safety (EHS) programs. The reality is that most safety programs simply don’t have the tools or protocols to measure and document the critically important biophysical markers of an individual worker’s risk profile.

Overexertion and micro-trauma injuries are typically caused by work tasks that require repetitive movement or stress positioning common in manufacturing and assembly line operations. These are micro-traumatic in nature in that they may not be readily identified because of their subtle or delayed onset.

According to the Bureau of Labor Statistics (BLS), musculoskeletal disorders (MSDs) accounted for 28.8 percent of all nonfatal, lost-time occupational injury and illness cases in 2010, a four percent increase over the previous year.

Lost-time injuries related to sprains, strains, and tears accounted for 40 percent of the total cases while back injuries resulted in 11 percent of the cases. Overexertion played a role in 43 percent of injuries, according to the BLS. The body parts that were most frequently injured were the back (36%), shoulder (12%), and lower extremities such as groin, knees, and ankles (26%).

BLS - Lost-Time Injury Medians by Musculoskeletal Injury

- Median days away for all injuries – 8 days
- Median days away for MSD injuries – 11 days
- Back Injuries – 7 days
- Shoulder Injuries – 21 days
- Carpal Tunnel Syndrome – 27 days
- Fractures – 28 days

Repetitive strain and ergonomic injuries are some of the most difficult to heal and have been plaguing companies for decades. Terms such as “strains” and “sprains” are frequently used to describe an acute microtrauma or overexertion injury. Repeated episodes of sprains and strains produce a pattern of tissue inflammation that is often the precursor of chronic injury and MSDs.

REDUCING COSTS THROUGH PREVENTION

Much of the energy expended by industry today in reducing worker compensation costs is focused on controlling the costs of treatment, improving reporting mechanisms, and implementing sophisticated oversight, and auditing procedures. While these efforts clearly contribute to reducing the total expense of workers compensation, these and other measures are geared largely at reducing costs after the injury has occurred.

What's needed is a sophisticated set of tools and protocols to measure and document the biophysical markers of individual worker risk that isn't normally utilized in conventional approaches. These tools and protocols take risk management and injury prevention to a whole new level.

If a company can address an employee's micro-trauma symptoms when they first arise, then the risk of a claim or lost-time injury is significantly reduced. And if an employee can access the program within the facility, their problem can be resolved in minutes or hours rather than days, weeks, and months.

On Site Health and Wellness Services

The Employee Rehabilitation Center is designed to meet four key objectives:

1. Reduce musculoskeletal and ergonomic injuries in the workplace
2. Reduce workers compensation and related costs
3. Identify and reduce workplace health and safety risk
4. Increase worker productivity

The Employee Rehabilitation Center opened to plant and office employees on July 15th, 2011. Hudson still recalls the date, "*the ERC was installed on July 15, 2011. Our last ergonomic injury was on June 16, 2011*."

The ERC gives workers onsite access to strength and conditioning equipment for back, neck, shoulders, elbows, hands, wrists, knees, and ankles. The ERC is just over 1,000 square feet and was initially staffed with two Certified Athletic Trainers (CTA) to support the initial surge in demand. ERC services are provided during and after shifts. Co-workers are trained to operate multiple machines to cover for workers seeking treatment during their shifts, improving employee morale.

FIRST YEAR RESULTS

Zero MSD Injuries

Injury Claim Savings: $600,000

Percent of plant's workers seen in first year – 95%

Employee Rehabilitation Center Stats

Start Date: 07/16/11

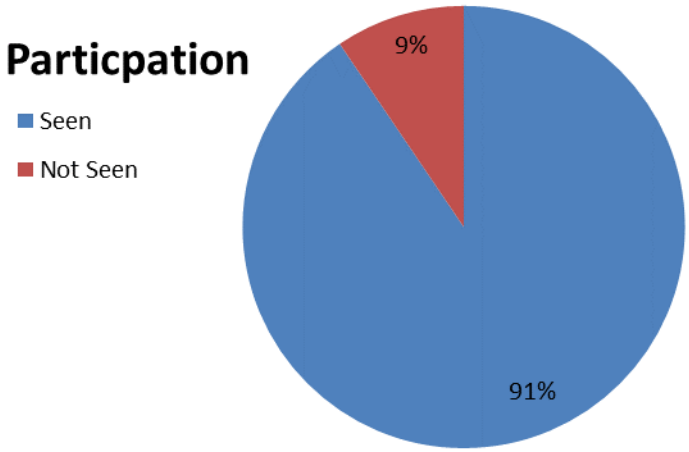
Review Date: 07/15/12

Percent of plant's workers seen in first year – 95%

Average percentage of plant's workers seen monthly – 54%

Total number of employee visits to EMC – 8,685

Total procedures provided in EMC – 23,852



Each concern or physical issue the participant expressed was related to a specific body part. The 11,192 visits that were provided to the 258 participants were spread over the following 490 body parts. With the low back, neck, shoulders, wrists, hands, and knees being the top issues.

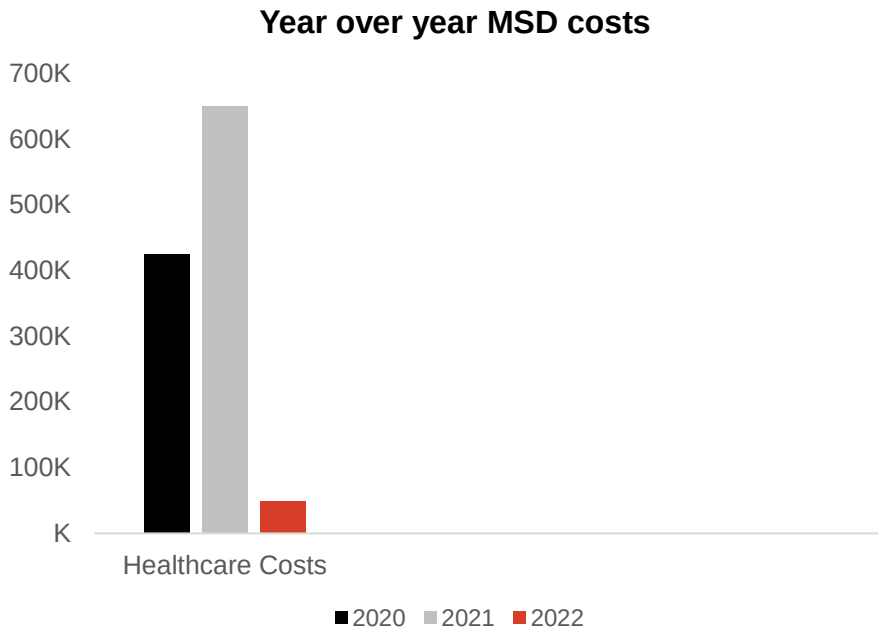
Body Part	Issues
Low Back	169
Neck	63
Shoulder R	33
Shoulder L	22
Wrist R	22
Wrist L	18
Hand R	17
Knee R	17
Knee L	15

Body Part	Issues
Elbow R	14
Hand L	14
Foot L	11
Foot R	10
Whole Body.	10
Elbow L	9
Mid Back	6
Ankle L	5
Ankle R	4

Body Part	Issues
Arm R	3
Forearm R	3
Hip R	3
Leg L	3
Upper Back	3
Back	2
Hips	2
Wrist	2
Chest	1

Body Part	Issues
Forearm L	1
Gatroc L	1
Grip	1
Hamstring L	1
Heel L	1
Hip L	1
Leg R	1
Shin R	1
Thumb L	1

On Jun 30th, 2012, the plant reached 378 days without an OSHA recordable injury and achieved 493,827 injury free hours. This is the first time the facility has ever achieved a safety milestone of this magnitude and the event culminated in a company safety award and recognition as the most improved facility.



These accomplishments were the result of a number of factors. Among them was that operations management no longer accepted that “accidents happen” or that injuries were a cost of doing business. They recognized that a transformation in culture and the introduction of preventative strategies needed to occur. This was of high importance. Had they not recognized the ERC’s role in reducing employees’ pain and making them physically fit for duty, it could have negatively impacted on this safety achievement.

Observations

- Improvements in injury rates can be accomplished by focusing on overexertion and repetitive stress. Because these types of injuries have inherently longer recovery times compared to macro trauma injuries, the payback for each injury avoided is dramatic. For example, the hard cost to treat a typical carpal tunnel case using typical treatment methodologies is $17,971.12. Avoiding that injury saves not only the hard costs, but lost worker time and productivity as well.

- An ERC can't accomplish outstanding results in isolation. The evident success of the factory implementation is due in no small part to outstanding cooperation on the part of all members of the team: plant management, safety, occupational health, and ergonomics.

- Of critical importance to the success of this strategy is a willingness on the part of the employer to allow ERC staff to become intimately acquainted with the factory floor, its employees, work processes, and job tasks. This approach to injury prevention makes the ERC concept a truly customized program. The program is not only customized for each employee who seeks service; the program is customized for each employee's specific joint and muscle groups.

- ERC staff mediated a new pipeline of communication between employees and management. Because of the relationships that develop between ERC staff and plant employees, they learn about the high-risk zones of a plant, its processes, its machinery, and job tasks. This translates into opportunities for improvement which relate directly to reductions in injuries, cost reductions, and enhanced employee satisfaction.

- Finally, it was the transformation of culture and attitudes that factored heavily in the factory reaching 365 days without an injury. It was recognized by employees as management providing a concrete, viable solution to the aches and pains plaguing them as they worked. Thus, the implementation of the ERC ultimately served as a symbol of management's commitment to creating a workplace safety culture that was serious about reducing injuries.

Author Bio

Russell Richer has 15 years experience as a B2B copywriter. A former 17-year corporate accountant, he specializes in promoting B2B products, software, SaaS, and services related to sustainable manufacturing, industrial contracting, supply chain, environmental health & safety, and business process automation. You can view his portfolio at richer-communications.com/portfolio/.