Unit 4 MOS 5101

Name

[Affiliations with Institutions]

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**Calculate the combined incidence rate of MSDs and CTDs for the facility for each 100 fulltime workers per year. Compare the rate to the industry rate of 1.5/100 workers/year. Do you believe the incidence rate for Acme Industries is a problem?**

Number of cases of carpal tunnel syndrome in last one year= 35

Number of cases of lower back strain in last one year= 15

**Formula used**

Incidence rate= Number of injuries and illnesses x 200,000/ Employee hours worked rate

The 200,000 in the above formula denotes the 100 employees that work 40 hours per week and 50 weeks per year. This provides a standard base for the incidence rate.

Total number of cases of MSDs and CTDs= 50

Incidence rate= 50\*200000/850,000=11.76

**Comparison**

The industry rate is 1.1/100 workers per year, whereas, the combined incidence rate for MSD and CTD is 11.76/100 workers/year. The incidence rate is greater than the industry rate. The incidence rate of combined MSDs and CTDs is a serious problem as the value is above the industry rate.

**Describe how you would conduct a worksite analysis of ergonomic issues related to the MSDs and CTDs present at the facility. Make sure you list the risk factors that you believe are related to the injuries. Include a discussion of how you would determine if stress is a risk component in the injuries and illnesses.**

Ergonomics is defined as a scientific discipline that is related to the understanding of the interaction among humans and other system elements. It is also concerned with the understanding of a profession that applies principles, theory, methods, and data to optimize overall system performance and human wellbeing.

Worksite analysis of ergonomic issues related to the CTDs and MSDs present at the workplace will be conducted as follows:

* Cases of MSD and CTD at the workplace will be identified. Severity rates of each illness will be determined.
* Facility ergonomics risk assessment will be conducted based on reported issues of CTD and MSDs.
* Reviewing the worker compensation and incidence report of MSD and CTD
* Worksite evaluation will be carried out to determine the ergo indicators and stressors.
* Documentation of significant hazards of MSD and CTD will be done.
* Analysis and review of illness and injury records will be carried out
* Ergonomic checklist will be used that comprises of components such as vibration, force, posture, and different upper extremity factors.
* Work positions will be identified that put employees at high risk of developing CTD and MSD.

**Risk Factors**

The risk of these injuries depends on work posture, how often the work task is performed, how long the task lasts and the level of required effort. The common risk factors that are related to injuries include repetitive motion, contact stresses, high forceful exertion, hand-arm vibration, and awkward posture. According to the Center for Disease Control and Prevention, 42 out of every 10,000 manufacturing employees experience the musculoskeletal disorder. Stress is related to the increased risk of development of MSD and CTD. Different studies have been conducted in which a positive correlation is found between job stress perception and risk of developing MSD and CTD (Chiasson, Imbeau, Major, Aubry, & Delisle, 2015).

**Finally, recommend some strategies that you believe could be used to address the MSDs and CTDs at this facility. Which regulation, standard, or guideline would you use to address the issues?**

By improving workplace ergonomics, many of the root causes of CTD and MSD can be addressed. A comprehensive approach will provide a baseline for implementing effective ergonomics improvements. The guidelines developed by the OSHA will be used to formulate strategies that help to reduce incidence of CTD and MSD (Lin, Catalano, & Dennerlein, 2016). Following are some strategies that will be used to address the issue of CTD and MSD.

* Based on the initial assessment, suitable safety equipment should be provided to employees that help in lifting heavy items and encourage safe postures. The safety equipment includes machines and carts to assist in moving heavy objects, ergonomically designed chairs, cushioned floor mats, and knee pads. Height adjustable equipment should be provided to ensure that employees are working in a comfortable and safe posture.
* Educating employees and supervisors about the risk factors of ergonomics and potential harms to them. Awareness regarding repetitive movement and the use of protective equipment will have a positive impact on reducing incidents leading to injuries.
* Coordinating and recommending the reporting of ergonomic risk factors, mechanism of case tracking, and early reporting of signs and symptoms of MSD and CTD.
* Training of supervisors and employees about the different methods to report signs and symptoms of musculoskeletal disorder.
* Prioritize the evaluation of ergonomics based on the data of incidence, severity, and prevalence such as worker compensation, discomfort survey, and the first report of injury.
* Establishing analysis of job hazard and control processes that help to eliminate hazards of musculoskeletal disorder.
* Establishing different ways to evaluate control measures to assure their effectiveness.

**References**

Chiasson, M.-E., Imbeau, D., Major, J., Aubry, K., & Delisle, A. (2015). Influence of musculoskeletal pain on workers' ergonomic risk-factor assessments. *Applied ergonomics, 49*, 1-7.

Lin, M. Y., Catalano, P., & Dennerlein, J. T. (2016). A psychophysical protocol to develop ergonomic recommendations for sitting and standing workstations. *Human factors, 58*(4), 574-585.

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