Podium Session 138

Health Care III: Ergonomics, Compressed Gases, Lasers and Heavy Metal Exposures Issues

Wednesday, May 22, 2013, 5:30 PM – 8:00 PM

SR-138-01
Documenting the Amount of Manual Handling Performed by Nurses in a Hospital Setting
T. Poole-Wilson, K. Davis, N. Daraiseh, University of Cincinnati, Cincinnati, OH.

Objective: Musculoskeletal disorders (MSDs) are the most costly injuries for nurses in medical care facilities. MSDs in the low back and shoulder are the most prevalent and have been linked to patient handling activities. However, to date, patient handling activities have been observed through subjective responses by the nurses. The objective of the current study was to take direct observations of the handling of patients and other medical equipment performed by nurses during a 12-hour work shift.

Methods: Twelve nurses working 12-hour shifts at a regional teaching hospital in the Midwest were observed. The nurses were recruited from 3 units: Medical Intensive Care (MICU), Surgical Intensive Care (SICU) and Neuroscience Intensive Care (NSICU). The type of lifting performed and utilization of lifting assist devices were documented. The nurses completed a Symptom Survey – assessed current pain levels and Lifting Questionnaire – assessed nurses’ perception of lifting performed, at the conclusion of the shift. The observed lifting was compared to the perceived lifting with simple inference statistics.

Results: Based on the observations, nurses have a high prevalence of manual lifting of both patients and medical devices but limited utilization of lifting assist devices. On average, nurses handled patients and equipment 50 times per shift with less than 7% using a lift assist device. Nurses also suffered from high levels of pain at the end of the shift with greatest prevalence in the lower back (50%) and shoulder (25%).

Conclusions: Previous studies have relied upon perceptions of nurses when assessing the ergonomic stress that they endure during their work shift. Based on the current study, preliminary results indicate that these perceptions may be different than the actual work demands, underestimating actual demands. Few nurses used lift assist devices that could reduce these work demands.

CS-138-02
A Value Strategy Safe Patient Handling Case Study
C. Brigham, 1Source Safety and Health, Inc., Exton, PA.

Situation/Problem: This presentation will review a case study using the value strategy approach to convince a healthcare system of the need for a safe patient handling program. The problem was the prevention of harm to care givers and care recipients during the process of patient handling.

Resolution: The resolution required the use of a tool to demonstrate the value of a safe patient handling program. The seven-step value strategy process led to the development of the value proposition that was presented to the healthcare system. The system agreed to move forward with the development of a safe patient handling program as proposed in a tiered approach.

Results: The results were a 45% reduction in patient handling injuries to staff system wide, a reduction in patient falls, patient pressure ulcers, and other patient skin integrity events. Expansion and strengthening of the program system-wide is on-going.

Lessons Learned: The lesson learned is that the value strategy is a worthwhile tool for convincing management of the safe patient handling programs.

CS-138-03
Using the HACCP Risk Analysis Model for Compressed Gases Management at a Healthcare Facility
J. Nesbitt; D. Krageschmidt, Mayo Clinic, Rochester, MN.

Situation/Problem: Managing compressed gases at a large clinical and teaching hospital facility can be very challenging. Large volumes of compressed oxygen, as
well as various hazardous compressed gases; including hydrogen and nitrous oxides are commonplace for use by healthcare workers, maintenance personnel and researchers. In addition to employee and patient safety concerns, adhering to fire codes can be problematic.

**Resolution:** Using the hazardous analysis and critical control point (HACCP) risk analysis model, a healthcare facility developed and implemented a comprehensive risk management program for compressed gases purchasing, storage and usage. The HACCP methodology involves identifying critical control points within a facility or process at which a hazard control is assessed, corrected if necessary, and monitored. A seven-point management process is employed: 1) hazard analysis evaluation, 2) identification of critical control points, 3) establishment of critical limits, 4) establishment of a monitoring plan, 5) establishment of corrective actions, 6) procedures to document activities, and 7) establishment of procedures for program validation, verification, and reassessment.

**Results:** The benefits of a management program include: prevention of accidents to employees, contractors and patients; processes to ensure quality and coordinated decision-making and communication; efficient use of resources; and the avoidance of regulatory, litigation and associated costs.

**Lessons Learned:** This presentation will explain the need for a tested risk analysis model such as HACCP, introduce the HACCP process, and describe a case study of the risk analysis process at a large healthcare facility.

**CS-138-05**
WITHDRAWN: Heavy Metals Dust at a Joint Military Medical Center
S. Witek-Eames, Walter Reed National Military Medical Center/Walter Reed Heal, National Capital Area – Washington, D.C.; J. Gelker, J. Krantz, Uniformed Services University of Health Sciences, National Capital Area – Washington D.C.

**Situation/Problem:** Joint Medical Center – Heavy Metal Dust potential in manufactured block shielding area; in storage, transport & use for therapeutic oncology equipment; during Radioactive Isotope control in the Nuclear Pharmacy and in Radioactive Decay storage.

**Resolution:** Recommendations for adequate clean-up of dust; adequate engineering controls, administrative controls & ppe in handling; possible coating block shielding to prevent oxidation. Evaluation of heavy metal dust breathing zone exposure & dust tracking conducted for Risk Assessment process.

**Results:** Go forward with recommendations presented above.

**Lessons Learned:** Sustainment of staff training to prevent dust accumulation and tracking.