RISE UP: THE CASE FOR CEILING LIFTS

Manually lifting patients is a high-risk activity for nurses and other healthcare workers. Mechanical ceiling lifts can lower injury rates and elevate job satisfaction.

Musculoskeletal injuries (MSI) are the major source of work-related disability among nurses and other healthcare workers. The risks of MSI in hospital and healthcare environments are well documented in the literature and in workers’ compensation claims throughout the world. Research studies have found that nurses with frequent and direct physical contact with patients have been shown to have higher incidence of back injuries than those who infrequently work with patients. Most nurses who have been injured commonly report types of manual patient handling, including lifting patients, transferring patients from one surface to another (such as from a stretcher to a bed), and repositioning patients in bed as a major cause of the injury.

Biomechanical analysis of spinal compressive and shear forces involved in moving patients and nurses’ perceptions of the amount of effort required suggest that manually lifting and transferring tasks are high-risk activities. The combination of high MSI incidence and the corresponding high estimates of biomechanical stress during manual handling procedures have spurred extensive efforts to develop safer methods for moving patients.

MECHANICAL CEILING LIFTS

One such method is the introduction of mechanical ceiling lifts to lift and transfer patients and to reposition them in their beds. A ceiling lift consists of a ceiling-mounted track, an electric motor and a patient sling. Weight capacity for ceiling lifts can range from 400 lbs. to 1,000 lbs., to support different patient populations, including bariatric patients. However, the general weight capacity for ceiling lifts is in the 500- to 600-lb. range.

Ceiling lift tracks can be configured in numerous arrangements to accommodate many patient beds within a single room, or even in multiple rooms. The two most common track configurations are straight track and X-Y gantry. With a straight track, a patient has to be in a specific spot to be lifted and transferred. The X-Y gantry has the added benefit of being able to move the patient in multiple directions in a room.

FACTORS TO CONSIDER

Studies examining the effectiveness of implementing ceiling lifts have found decreases in injury rates, decreases in workers’ compensation claims, perceived decreases in the risk of injury, and improved morale with a decrease in absenteeism. For hospitals and healthcare facilities planning to install ceiling lifts, there are several factors that must be considered. The first step is to under-

Prior to the introduction of mechanical ceiling lifts, it is important to have input from the staff who will be operating the equipment, and from maintenance staff. Locations of light fixtures, vents, sprinkler heads and other items may have an impact on track placement.
stand the needs of the patient population and the amount of patient-handling activities occurring in the area. With frail elderly patients, individuals suffering from dementia or other cognitive impairments, and bariatric patients, there may be other factors affecting their ability to move. Areas within hospitals or other healthcare facilities that typically have high patient-handling activity rates include residential care facilities, inpatient medical/surgical wards, rehabilitation departments, operating rooms, intensive care units, radiology (X-ray, CT, MRI, etc.), physical therapy clinics, and morgues.

The second step is to understand architectural capabilities of the rooms and departments where ceiling lifts will be installed. Depending on the patient population to be lifted, the structural ceiling must be able to handle a load of 400 to 1000 lbs., and there must be a minimum of nine feet from the top of ceiling lift track to the floor to allow enough space to lift a patient off the bed in the sling. Other considerations include the locations of light fixtures, vents, sprinkler heads, televisions, X-ray equipment, overhead medical lights, booms/headwalls, outlets/power sources, windows and columns. Any of these may impact the location and configuration of the ceiling lift track.

GETTING THE RIGHT INPUT
Throughout the design process, it is important to have input from the staff who will be operating the ceiling lift, and from maintenance staff. By working with these individuals the design team can further understand the patient handling tasks/procedures completed, types of patients moved, and requirements for cleaning and ongoing maintenance. This communication is key to ensure that the design of the ceiling lift and track configuration will meet the caregivers’ needs and contribute to the creation of an environment that is healing for the patient and ergonomically supportive for the staff. | CFM&D

RESOURCES
Association of Canadian Ergonomists: www.ace-ergocanada.ca

REFERENCES

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