Situation

The Hospital Consumer Assessment of Healthcare Providers and Systems survey (HCAHPS) has become an increasingly important facet to healthcare facility market share, and also has a significant impact on their level of reimbursement from the Centers for Medicare and Medicaid. Public access to these scores has empowered patients to choose their hospital with more of a consumer-based approach, which has driven hospitals to focus on a positive patient experience. Hospitals invest heavily on hotel-like aesthetics, with single patient rooms, modern decor and often carpeted flooring. Recent research highlights the positive impact of physical environment on both caregiver and patient alike. While carpeted flooring may promote a hotel-like environment, this aesthetic update to hospitals can make transporting patients on a traditional stretcher more difficult for caregivers, contributing to spinal loading. Repetitive spinal loading is of particular concern because it has been shown to influence the potential of lower back injuries.

Rationale

Acknowledging an increase in hospital renovations that included carpeted flooring, Stryker designed a mobility solution that would reduce lumbar compression force during patient transports on carpet. Applying advanced engineering practices alongside biomechanical science, Stryker developed the Zoom® Motorized Drive System. Zoom is designed to virtually eliminate the strenuous pushing and pulling when transporting heavy patients, even on challenging carpeted flooring.

Methodology

With the objective of determining the extent to which mobility design impacts spinal loading on a Healthcare Professional (HCP), independent ergonomic experts compared Stryker’s Zoom Motorized Drive System to the standard fifth wheel system. Participants were outfitted with a Lumbar Motion Monitor to record trunk position and were observed pushing each stretcher with a 225 lb. load along a corridor and carpeted eight degree incline.

Results

Stryker’s Zoom Stretcher reduced the mean L4/L5 spinal disc compression force by 42% on incline transition, and an average of 39% throughout the task when compared to the standard fifth wheel.

Conclusion

Stretcher design can impact the well-being of HCPs when transporting patients on a carpeted surface. Implementing Stryker’s Zoom Motorized Drive System reduces spinal loading and ultimately contributes to the goal of reduced caregiver injury rates.

References