

CRE-MSD Client/Patient Handling CoP Webinar

Continuous Trunk Posture Measurement and Analysis in Long Term Care Nursing

Presented by: Peter Keir

- Other work in Hamilton hospital settings for syringe work in chemotherapy
- Nurses and nursing aides have high incidents of back injuries (38.9% reported new incidents of back pain on the job)
- Overhead patient lift evaluation study to encourage use of ceiling lifts
 - o 7 long term care facilities
 - o 1-6 nurses/facility (20 total)
 - o Events recorded using Pocket Observer software (Noldus, VA, USA)
 - Point events: type of lift (manual, ceiling, floor, sit to stand)
 - State events: types of transfers
 - o Manual lifts exceeded lifts with assistive aids (255:120)
 - Twice the amount of manual lifts happening
 - Faster to use manual method
 - Despite availability of assists, manual lifts were still used
 - o Standing and patient adjustments were more frequent than lifting
 - Standing/walking about 35% of time
 - Patient care: 26%
 - Misc.: 24%
 - Lifts/transfers: 4%
- Measured trunk angle with inclinometer via harness
 - o 70% of time spent in trunk flexion
 - o 30% of day spent flexed greater than 20 degrees
 - o 1st hour of shift involved heavy workload: more back flexion
 - o Greater flexion in manual lifts than using assists
- Calculated spine loading
 - o Joint compression and shear forces calculated
 - o Estimated % of patient weight dependent on tasks
 - Mean patient mass = 68.2kg
 - o Highest peak joint loading = 1 person manual lift
 - o Highest cumulative joint loading = Patient care and adjustment
- Total cumulative loading is similar to working in automotive manufacturing industry
- Cumulative loading is more related to patient care and misc. tasks

- Recommendations:
 - Don't only focus on peak loading to the spine, look at cumulative effects of non-neutral back postures throughout the day.
 - Fatiguing effect throughout the shift
 - Using devices at end of shift to mitigate risk with lifts/transfers after cumulative exposure throughout the day
 - Conference reflection on patient handling: Facilities with highest injury rate reduction focused on building culture of safety within organization

Jack Callaghan:

- Asked about problems in assessment of patient handling
- Email for more suggestions