

Back and Shoulder EMS Lifting Injuries
Stryker Power-Pro Cot & Stryker Power-Load System
Preliminary Risk Analysis

Injury Type – Back and shoulder injuries to EMS personnel resulting from stretcher lifting, loading and unloading.

Potential Risk Reduction Measure – Use of motorized power stretchers vs. conventional manual stretchers and motorized loading systems to load and unload stretchers into and out of ambulances.

Injury History – Shoulder strains and injuries sustained while lifting are some of the most costly types of workers compensation injuries incurred within the Fire Department and across the Village of Lombard. Between 2008-2012, there were eight workers compensation injuries within the Village of Lombard with incurred costs exceeding \$100,000. Five of these eight most costly claims involved back or shoulder strain injuries resulting from lifting, pushing or pulling a person or training dummy.

In fact, between 2008 to the present, the Village has had experienced four workplace injuries of fire department personnel directly related to the lifting of stretchers. The incurred costs of Village stretcher related indemnity claims since 2008 range from \$127,500 to \$282,677 and total more than \$624,000. The above costs do not include additional costs for overtime to cover lost work days, a portion of PEDAs expenses and PSEBA costs.

Risk Assessment - Based upon Village of Lombard past claims experience, the likelihood of recurrence of this type of injury is generally high and the potential impact of future injuries can be classified as catastrophic. Accordingly, mitigation of this type of risk should be classified as a high priority or critical.

		Impact				
		Very Low	Low	Medium	High	Very High
Likelihood	Very High					X
	High					X
	Medium					
	Low					
	Very Low					

Risk Reduction Measure – The Lombard Fire Department has recently explored and tested two types of motorized stretchers as well as a motorized stretcher loading system. Based on internal testing and external evaluations, the Stryker Power-Pro powered stretcher and Stryker Power-LOAD System have been advanced as desired systems to mechanize certain manual lifting aspects of patient transport and loading via stretcher.

Stryker Power-PRO Cot – The Stryker Power-Pro Cot is a battery-powered ergonomic stretcher system which raises and lowers patients hydraulically with the push of a button. Use of the system reduces the physical load on the spine from repetitive lifting, lowering, carrying and bending and can prevent potential traumatic injuries.

Stryker Power-LOAD System – The Power-LOAD cot fastener system hydraulically lifts and lowers the power cot into and out of ambulances. The Power-LOAD system hydraulically lifts patients weighing up to 700 lbs. through the use of a button. The load system supports the patient and cot during the loading and unloading process, reducing cumulative load on medics and preventing traumatic injuries.

Evaluation

Considerations - Power stretchers and power loaders are designed to eliminate the repetitive cumulative physical manual load on EMS personnel during patient transport. Such systems reduce repetitive or cumulative physical stress on personnel and may avoid traumatic injury in certain cases. These systems are also particularly useful in the care and service of overweight or bariatric patients that can be a higher risk service population for EMS providers.

The proposed Stryker power stretchers and/or power lifts are currently in use within the following local agencies: Addison FD, Wood Dale FD, Superior Ambulance, A-Tec Ambulance, Lisle-Woodridge FPD, La Grange FD, Downers Grove FD, Glen Ellyn FD, Schaumburg FD, Elk Grove Village FD, Hoffman Estates FD and Glenside FPD.

The Illinois Public Risk Fund, one of Illinois' largest workers compensation pools for public entities is currently incentivizing their membership to purchase Stryker power cots and power load systems as a qualified safety product eligible for their internal safety grants. This endorsement by a well-established workers compensation pool supports the risk reduction attributes of these particular products.

Stryker offers a limited guarantee on the implementation of their power stretchers guaranteeing a 50% reduction in cot-related raising or lowering injuries after one year of full implementation that has not been exercised by any of their clients to date. The limited guarantee is somewhat impractical and largely symbolic, but represents a testament to the manufacturer's confidence that their product will result in certain injury and cost reductions.

Weight - A feature of power stretchers worth noting is their increased weight. The power battery and lift system add additional weight over traditional manual stretchers. The additional weight must be considered as part of training and established work rules if heavier stretchers are to be implemented within the department.

Cost - The total investment for power stretchers and loaders is significant relative to the purchase and installation of their manual counterparts (\$35,360 total cost for each ambulance). The Village Manager has recommended the purchase and installation of at least one system in the current budget year concurrent with a pending ambulance re-chassis. Total cost for the purchase and installation of Stryker systems in each of the four remaining ambulances in service would amount to \$141,440.

Caveat - Finally, purchase and implementation of power stretchers and loaders does not eliminate patient lifting and loading by EMS personnel completely. Patients must still be transported up and down staircases and to and from stretchers, leaving opportunities for workplace injuries. While not eliminating the risk of injury completely, the implementation would serve as more of a risk reduction measure for those injuries which might have otherwise been sustained resultant from repetitive physical stress or traumatic injuries pertaining to manual lifting, lowering, loading and unloading of patient stretchers. The cost of implementation will be recovered if a single PSEBA claim can be avoided over the implementation lifetime. In future years however, it may be difficult to quantify or prove conclusively that a single catastrophic injury or PSEBA claims was, in fact, avoided.

This information is a preliminary analysis prepared for the purposes of discussion as a supplement to the independent analysis of Fire Department in regards to the same.