Safe Client Handling and Power Stretcher Trial

Final Report

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Executive Summary

The safe client handling trial in Southern Health-Santé Sud Emergency Medical Services (EMS) began with funding from the Regional Health Authority and from Manitoba Health for the purchase of 17 power assist stretchers to conduct a two year trial. This trial only involved former RHA Central stations as it was initiated pre-amalgamation of RHA Central and South-Eastman.

To date, there are few published research studies on this subject with this product and all are in urban settings and different climates than Manitoba. One such study took place in Austin/Travis county EMS in Texas and revealed a marked decrease in Paramedic injury during the study period (Studnek, Crawford & Fernandez. 2012). Another study in California concluded that there was positive financial impact in claims paid post implementation of the power stretcher (Fredericks, Butt & Hovenkamp, 2009). A multi-source literature review (Medline, CINAHL and Google scholar) revealed no literature indicating negative impact of the use of power stretchers.

The trial began in 2012 with the goal of determining whether this equipment, which costs approximately double that of a standard ambulance stretcher would perform as advertised; decreasing staff injury and as a result, decrease employer costs in lost time compensation. The trial is now complete and measures indicate it has been successful. Back injuries have decreased by at least 71% in the years since implementation (total decreases were from 7 in 2010 and 6 in 2011 to 0 in 2012 and 2 in each of 2013 and 2014.) Annual total direct costs for time lost injuries overall has decreased by $112,775.00 since 2012. Compared to the equipment investment of approximately $12,500.00 each, conversion of 17 units in the former RHA Central region at a cost of $212,500.00 will be covered within the next year by savings on compensable injuries. With a lifespan of approximately 10 years per stretcher, savings will continue for 7 years after this equipment has paid for itself. It is recommended that there be consideration towards a province wide change. This report will outline the details of the program, the logic model for the program and how it is was evaluated.
Program Description

In Manitoba (MB), ambulance stretchers are purchased through the provincial fleet ambulance procurement process. As the primary funder, Manitoba Health wished to conduct a trial in rural MB to determine whether power stretchers would be of benefit to injury reduction and the costs associated with staff injury. At a cost of at least $10,000.00 each, power stretchers are approximately double the price of non-powered versions. A secondary goal included evaluating how they perform in our climate and rural geography.

The (former) RHA Central’s EMS department was chosen for this trial and granted funds towards purchase of 6 power stretchers by MB Health. The Region purchased an additional 11 in order to conduct the trial in all 14 of its stations. The safe client handling trial was rolled out in July 2012 with the mission of assessing the effectiveness and performance of the new equipment regarding reduction musculoskeletal injuries in Paramedics and, as a result, reducing lost time and workplace compensation claims.

This program incorporated two elements of change into the daily work of Paramedics:

1. The use of Stryker brand power stretchers.
2. An adapted for EMS version of the RHA’s existing Safe Client Handling and Injury Prevention Program (SCHIPP). Primarily developed for facility and home care staff this program includes education on good body mechanics, safe lifting and handling of clients and use of a variety of transfer devices such as transfer belts and patient positioning sliders. The EMS adaption included the use of specially designed folding chairs with wheels and tracks to transport patients in buildings and stairways called “stair chairs”.
**Operational Performance**

The new stretchers required a shift in the way paramedics do their jobs in part because they are not recommended to be carried up stairs into buildings, rather they should be left at ground level and the patient is to be taken to the stretcher using other equipment. RHA managers felt that the stretchers on their own would not fully prepare the paramedics or safeguard against staff and client injury. To be effective, this trial would require an operational and culture shift to include changing the way paramedics safely lift and transfer patients from where they are found to the stretcher. As a result, the RHA purchased stair chairs and adapted the SCHIPP program as an addition to the stretcher trial.

Linking the equipment with the SCHIPP training was felt to be a safer, more effective way to ensure consistent and sustainable application of the changes while working towards the program objectives of decreased injuries and related costs and long term outcome of contributing to a culture of safety.

Superintendents and paramedic peer leaders from each station were trained in SCHIPP and on the new equipment with the intent that they would in turn train the rest of the workforce. This also encourages ongoing, effective use of the safety principles and equipment because peer leaders and Superintendents will promote the practice changes in real time and support staff in not returning to old habits.
**Logic Model**

**Situation:** Southern Health-Santé Sud (former RHA Central EMS stations) is undertaking a two year trial of power assist stretchers including the use of tracked stair chairs, safe client handling and injury prevention program (SCHIPP) training and SCHIPP supported patient moving aids.

**Goal:** To determine if the equipment and training helps reduce staff injury, the costs associated with staff injury, improved client safety and ultimately contribute to a culture of safety in EMS.

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Trial Results

1. **Retrospective analysis of injury rates and workers compensation claims pre and post implementation.**

Information from the Workers Compensation Board of Manitoba (WCB) indicates that despite increases in FTE staff since 2009, WCB claims for injuries resulting in both lost time and no lost time are lower in 2012, 2013 and 2014 as compared to 2010 and 2011. Days paid and direct costs are both also trending downward since 2012. Considering the power stretchers were fully deployed to all units as of July 2012, this trending is a positive indicator that the implementation of new equipment and SCHIPP training may have had a positive impact on the department.
Source: WCB, All of the above charts are current to October 31, 2014, reporting period “year” is October to October.
2. Qualitative results of Paramedic surveys identifying end-user satisfaction, equipment performance or recommended changes.

Overall ratings of the power cot regarding ease of use, features and performance were very good. The majority of respondents feel the power stretcher has prevented injuries and all respondents stated they would not wish to go back to the conventional, non power stretcher. Comments included:

“I find that my back isn’t as sore now after shifts unlike when we used the manual stretcher.”

“I don’t have to worry about partners/students when it comes to lifting the stretcher up or down on scenes/at hospitals.”

“The power up is far superior to a manual lift to extend the wheels into the position needed to load into the ambulance and I’m sure has prevented personal injury. When 2 people are used to load the stretcher into ambulance there is no issue with handling weight”

One respondent expressed a suggestion that the weight of the stretcher itself is difficult in those scenarios when moving it through “snow or mud”.

Another stated “My only issues with the cot is if we are going over rough ground they are a bit difficult/feel heavier but are definitely more stable than the old ones. The stair chair could have better handles, longer for those on the bottom of the chair and actual handles on the top part as well.”
**Cautionary Notes**

Challenges related to the measurement of this program include the following:

- Attribution of improvements or lack thereof must be measured on the program as a whole.
- The original mission was simply to trial the power stretchers. Combining it into a comprehensive program including SCHIPP training and other equipment will result in findings which may not be attributable to the new stretchers alone. Measurement of injury rates and costs will not be isolated to one factor, rather to the total program. As noted in the staff survey, a comprehensive lifting and handling program should accompany the introduction of the new stretchers and stair chairs in order to reinforce good body mechanics and good safety habits.

**Conclusion**

The program and its measures met its goal by evaluating whether or not spending public funds on more expensive equipment and training for paramedics will result in safer client handling, reduced injury and related costs. The results show that the balance in the increased cost of the stretchers in particular as the most expensive part of the trial can be recouped by the decreased cost associated with injuries.
References

