

Reduction of Stretcher Related MSDs

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Rationale

20 month period 2012-2013

- 44% of all MSD incidents involve the use of a Stretcher
- 17% of all workplace incidents directly involve the use of a 35 X/P or Powerflexx Stretcher
- Costs of stretcher related MSD 30% of all WSIB costs
- Fredericks et al (2009): the substitution of a manual stretcher with a load assist stretcher reduced workplace injury claims by 41%, and stretcher specific claims by 69 to 96%



Timeline

- Track Stairchair implemented mid 2009
- Mercedes Sprinter ambulance Spring 2012
- First power stretcher Spring 2013
- Air Suspension (kneeling) added June 2013 (staged implementation)
- Stryker trial fall 2013; fully implemented April 2014



Power vs. Manual Cot

Ease of loading and unloading with or without a patient

Ease of use off foot end operator controls or handles

Weight

Ability to engage locks on casters

Potential for bystander assistance

Ease of patient transfer on/off the cot

Please comment on the PowerFlexx

Please rank the stretcher overall from 1 (Poor), 2 (some what poor), 3 (adequate), 4 (some what good), 5 (good)

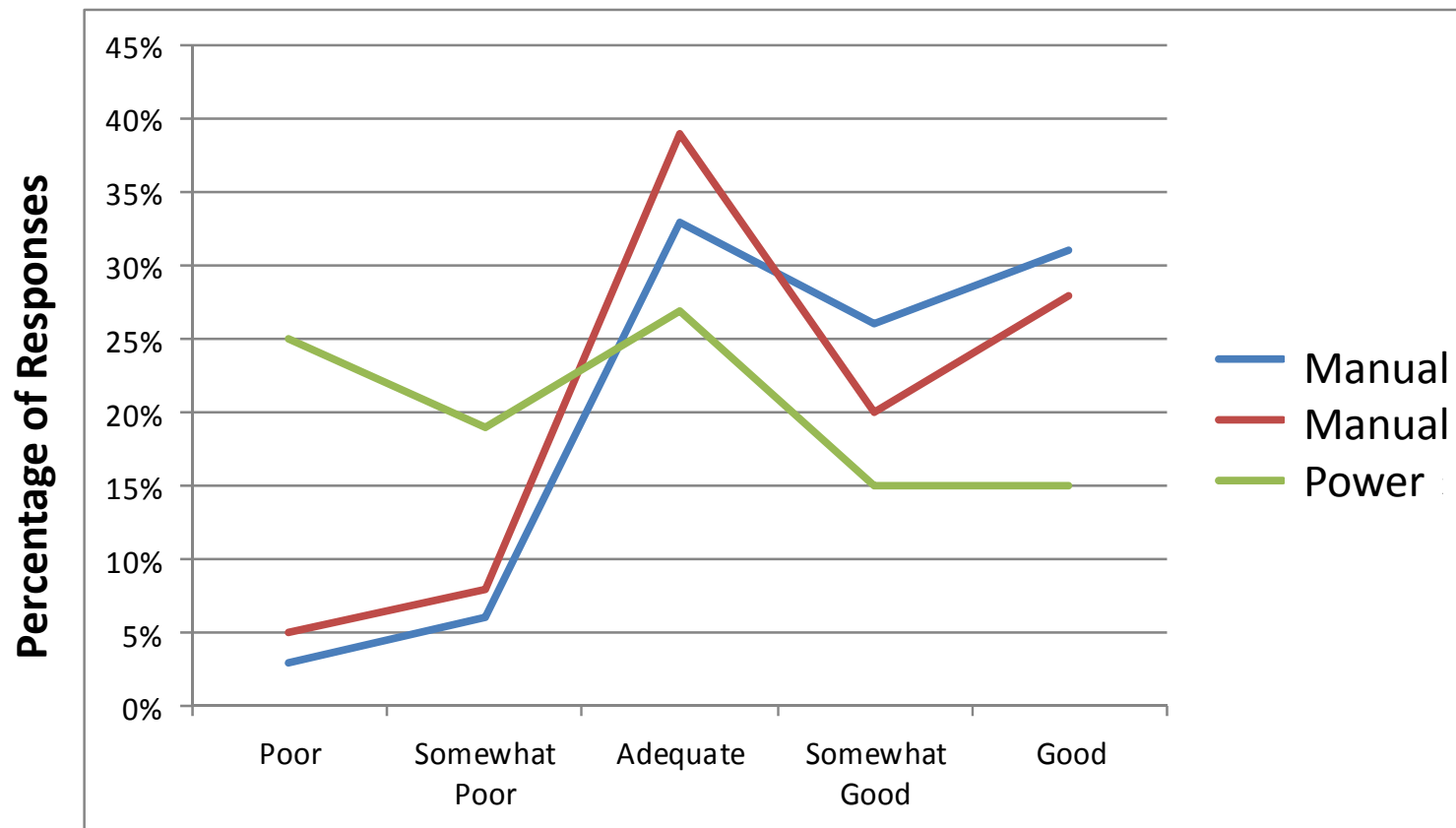
Maneuverability of the stretcher



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Power vs. Manual Stretcher Trial



Power Stretcher Comparison

- Two phase trial:
 1. Initial demonstration to all staff in the service, with feedback elicited
 2. Field trial--ambulance outfitted with this device and trained staff permitted to utilize it over a number of weeks to provide structured feedback on both units

Surveys designed with the input of the Senior Epidemiologist for Niagara's Public Health Central Support Information and Surveillance team.



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Power Stretcher Comparison

General Ease of Use	Unloading	Weight	Ease of loading cot
Stability	Raising/Lowering	Convenience of Automatic Shutoff	Ease of unloading cot
Ease of Rolling	Undercarriage Retract Speed	Other Accessories	Speed of loading/unloading cot
Intuitiveness of Power Controls	Comfort of Hand Grips	Appearance	Ease of fastening cot for transport
Backrest	Ease of Changing Battery	General ease of Use	Ease of releasing cot for unload
Knee Gatch	Ease of Changing Controls	Physical force required by operator	Placement inside of vehicle
Wheel Lock	Height Inside Ambulance	Intuitiveness of controls	Cleanability
XPS - Expandable Patient Surface	Cleanability	Manual back-up systems	Safety standards
Telescoping Head Section	Litter Surface	Intuitiveness of LED's	Bariatric assistance
Side Rail	Mattress	Inductive charging capabilities	Appearance
Loading			

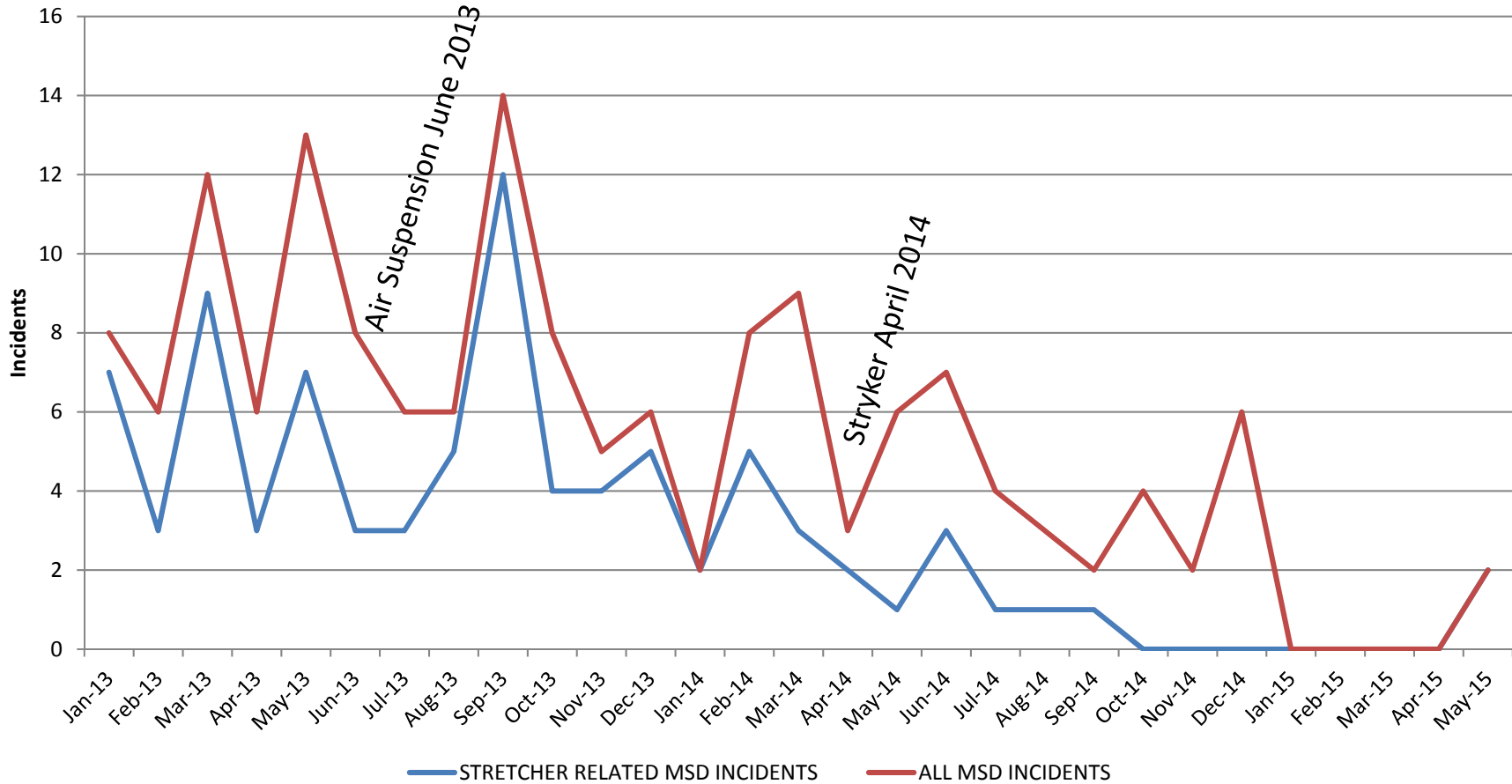




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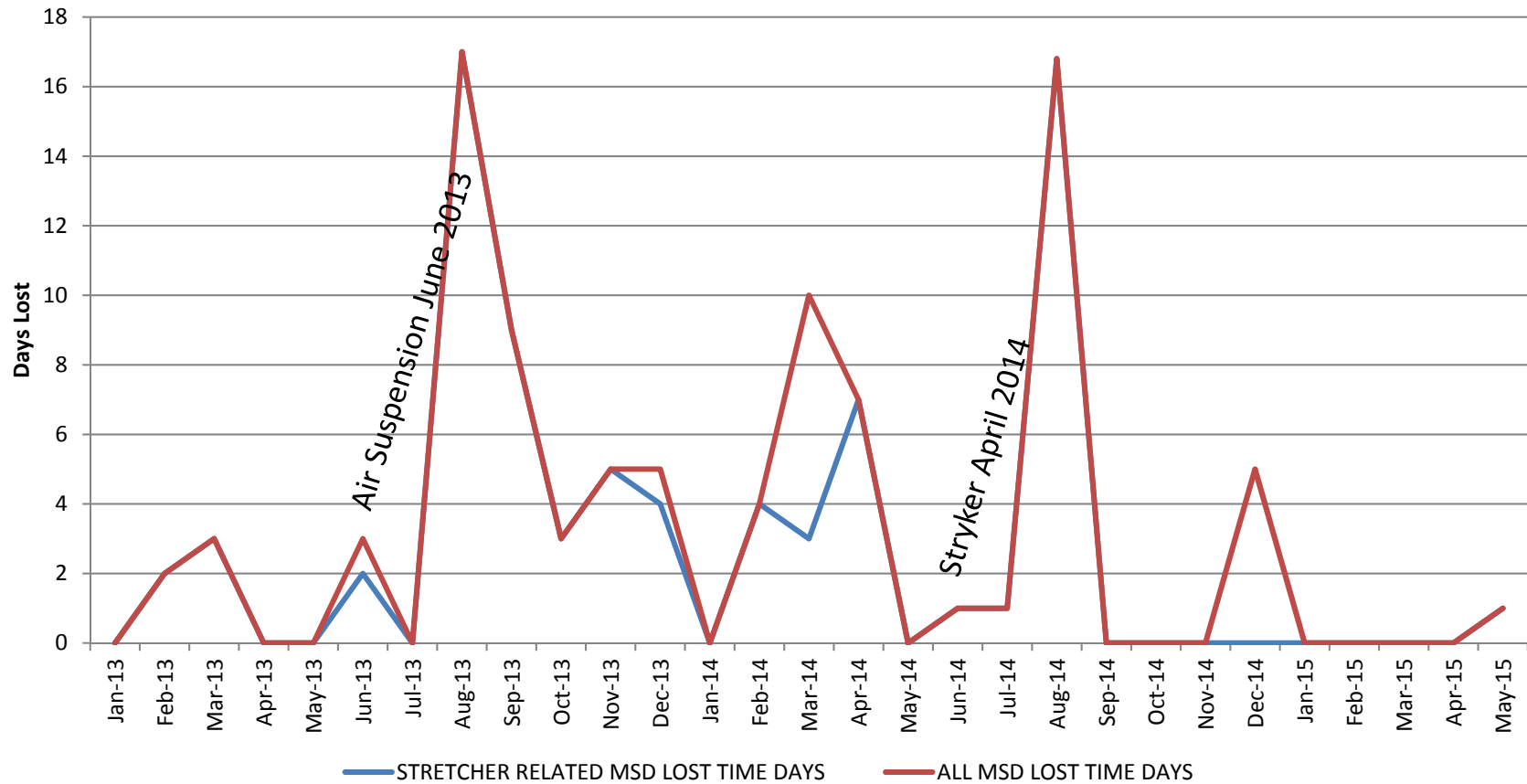
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MSD Incidents 2013-2015



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MSD Lost Time Days 2013-15



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Feedback

- Wonderful piece of equipment. Needed badly for job safety, longevity
- This changes a big aspect of our job, the load on our back and shoulders from the constant lifting was a major factor in fatigue and injury. This aspect has been completely eliminated with this system. Cannot say enough positive things. All we have to concentrate on is getting the pt safely from home and this system does the rest. Excellent!
- Both myself and my partner commented on our reduced fatigue level this late into our rotation. Normal day to day back pain and discomfort is nearly non-existent compared to how we would feel at this point in our schedule.
- The powerload system is a savior and will lengthen the careers of myself and many other medics I have no doubt. It is smooth and most pts do not even notice that they are being lifted by a machine.
- Even after a busy 4 days in Niagara falls, the combination of the Stryker Pro Power stretcher and power load has led to a much improved physical fatigue and pain level. Myself and my partner both stated how good we felt getting up this morning and maybe didn't even realize how sore we actually were after a week of constant lifting. Cannot say enough positive things about this system.
- This is amazing. It's going to lengthen careers and save WSIB issues.
- USING THIS STRETCHER HAS GREATLY REDUCED BY BACK TIGHTNESS AFTER A SHIFT
- WE LOVE IT!!



References

- Fredericks TK, Butt SE, and Hovenkamp, A (2009). The impact of gurney design on EMS personnel. Proceedings of the 21st Annual International Occupational Ergonomics and Safety Conference. Dallas, TX



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