



A leading Canadian Health Region realizes significant cost savings from the use of CleanPatch® while improving the integrity and safety of patient mattresses

A Case Study – February 2016

Background

Surfaces play an important role in the transmission of healthcare acquired infections (HAI) and thorough cleaning of the patient zone is crucial to patient safety (Otter et al, 2011). Damaged patient mattresses cannot be properly cleaned and have been implicated in cross contamination and infection outbreaks (Creamer and Humphreys, 2008). It is estimated that 20% to 40% of mattresses in acute care settings are damaged as a result of physical abuse, exposure to chemical disinfectants, and general wear over time (Bradbury et al, 2014; Wong et al, 2013).

CleanPatch® is the first Health Canada and FDA registered Class 1 medical device specifically designed to restore damaged mattresses to an intact and hygienic state. CleanPatch has been extensively tested and shown to be impervious to fluids and fully cleanable with hospital disinfectants.

The Challenge

One major health provider in Canada manages over 8400 acute care beds. Prior to approving the use of CleanPatch throughout the health region, Infection Prevention and Control requested that a pilot project be undertaken in order to validate the efficacy of CleanPatch, assess protocols, and quantify the financial benefits of using CleanPatch to repair damaged patient mattresses.

This case study describes the results of the pilot project which took place at the regional repair facility. The bed shop staff is knowledgeable in the repair of all types of patient beds and stretchers, and receives 150 to 200 damaged beds each month. The beds are generally referred to the facility for mechanical reasons, yet the mattress covers are frequently found to be damaged as well. The beds must be reconditioned for clinical use prior to redeployment to the hospital, which often means replacing the mattress or mattress cover.

The Pilot Study

Over a six month period, the bed shop staff inspected the mattresses of all beds coming to the facility, and completed a survey form for every damaged mattress. The survey questions included the following:

- type and model of mattress
- type, location, and size of damage
- were there any signs of fluid ingress
- was the damage repairable and the number of patches required

Criteria were used to determine whether a damaged mattress could be repaired with CleanPatch or required replacement. The CleanPatch Mattress Inspection and Repair Guidelines were used with two additional criteria as defined by Infection Prevention and Control: only one size of CleanPatch (medium) would be used during the study, and no more than three patches could be applied to a single mattress.

At the end of the six month period, the questionnaires were tabulated and a financial analysis was done. For every mattress that was repaired with CleanPatch, the savings from repairing it versus purchasing a new mattress were calculated.

Results

A total of 73 mattresses (36 beds, 37 stretchers) had damaged covers requiring attention. Overall, 68% (50/73) of the damaged mattresses were repaired with CleanPatch, while 32% (23/73) required replacement.

The total cost to repair 50 mattresses with CleanPatch was \$1,012. The cost to replace these mattresses would have been \$30,806. Thus the overall cost avoidance was \$29,794.

**Table 1:
Savings realized over six month study**

Cost of Mattress Repair		
Total Mattresses Repaired	50	
Total Cost of Repairs with CleanPatch		\$1,012
Cost of Mattress Replacement Avoided		
Beds	24	
Stretchers	26	
Total Cost of Replacements Avoided		\$30,807
Total Savings from Repair vs Replacement		\$29,794

Mattress Damage

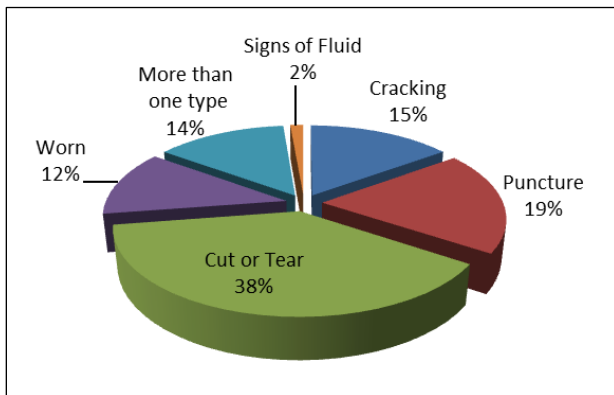
The bed shop received a total of 950 beds and stretchers over the six month period, of which 73 had damaged covers. This reflects a mattress damage rate of over 7% for beds and stretchers that presented with mechanical issues.

Table 2:
Summary of interventions during six month study

	Total Damaged	Replaced Cover	Replaced Mattress	Repaired with CleanPatch	Percent repaired
Bed	36	9	3	24	67%
Stretcher	37	0	11	26	70%
Total	73	9	14	50	68%

The most common types of damage were cuts or tears (38%), punctures (19%), followed by cracking (15%) or worn covers (12%). Several mattresses had more than one type of damage, and one mattress had visible staining to the cover which is a sign of fluid ingress.

Table 3:
Types of mattress damage seen during six month study



Financial Savings

A total of 50 bed and stretcher mattresses were repaired with CleanPatch for a total cost of \$1,012. The cost to replace these mattresses would have been \$30,806. (The average cost to replace the mattress, or cover only, depending on the bed model was \$616). Thus the bed shop achieved savings of \$29,794 over the six month study, with projected savings of \$60,000 per year.

Conclusion

The appropriate repair of damaged patient mattresses helps to ensure they are intact, fully cleanable, and safe for clinical use, while also providing significant savings compared to premature replacement.

By using CleanPatch® one bed shop in a leading Canadian health region achieved annual savings of \$60,000.

Would you like to speak to the Bed Shop referred to in this case study?

Please contact Tony Abboud, VP Business Development at Surface Medical for more information: tony@surfacedmedical.ca

References:

1. Otter, J.A., Yezli, S., French, G. The Role Played by Contaminated Surfaces in the Transmission of Nosocomial Pathogens. *Infection Control and Hospital Epidemiology*. July 2011. Vol. 32, No.7, pp. 687-99
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3. Bradbury, SL. et al. Potential bloodborne pathogen exposure from occult mattress damage. *American Journal of Infection Control*. 2014, 1-2
4. Wong, et al. University of Calgary. CleanPatch Clinical Assessment, Final Report, July 2013
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