



CLEANPatch™

Medical Surface Repair Patch

MATTRESS REPAIR IMPLEMENTATION GUIDE



www.cleanpatch.ca

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Purpose

This Implementation Guide is meant to assist healthcare facilities implement an effective mattress inspection and repair program, including the appropriate use of the CleanPatch™ medical surface repair patch in, but not limited to, acute care hospitals, long term care facilities, surgical centers, and emergency services.

Introduction

Environmental cleaning is a key requirement in the prevention of transmission of infection, and is critical to stopping the spread of infection once an outbreak has occurred. Amongst several studies, it has been shown that a patient has on average a 73% higher chance of acquiring an infection if the previous room occupant was infected or colonized with the same organism. (*Carling & Bartley, 2010*). Studies have also shown that improved patient room cleaning and disinfection significantly reduces this risk of transmission (*Carling & Bartley, 2010*).

The CDC recommends that hospitals monitor cleaning performance to ensure consistent and effective cleaning and disinfection of surfaces, especially those considered high touch surfaces in proximity to

Medical Mattresses



One piece of equipment in the healthcare environment that has largely been under appreciated as a potential source of contamination is the hospital mattress. Having said this, there have been multiple studies implicating contaminated hospital mattresses in hospital outbreaks (*Creamer and Humphreys, 2008*).

A study by Huslage et al (2010) found that the bed surface was the second most frequently touched surface in the intensive care unit, and the fourth most frequently touched surface on a medical-surgical floor.

In April 2013, the FDA issued a Safety Communication stating that damaged or worn covers for medical bed mattresses can allow blood and body fluids to penetrate the mattress, posing a risk of infection to patients. There are several reasons why mattresses must be a priority for proper cleaning and maintenance:

- Patients spend the majority of their time in the hospital bed.
- Patients are the largest contributors to contamination in the bed and near-patient environment as they shed skin cells, hair, sweat, sneeze, cough, eat, may be incontinent or have draining wounds. The mattress and linen is also a primary point of contact for patients with diarrhea.
- The mattress surface is normally covered with linens and is largely invisible to the patient or clinical staff, and thus go unnoticed.
- With the discharge of a patient, the bed is required for the next patient admission. There are time pressures on the environmental services staff to clean the room and prepare the bed for the next patient in a short time frame.

Mattress Cover Design

The majority of modern healthcare mattresses have protective covers made of polyurethane coated fabric, which is waterproof, stretchable, fire resistant, and provides a moisture vapor permeable surface designed to maintain an ideal moisture balance to reduce the incidence of skin pressure ulcers.

Polyurethane coated fabrics are hydrophilic and can absorb liquids (including cleaning fluids), so that the mattress cover temporarily swells. Once the cover has been allowed to dry, the fabric returns to its previous state. During this temporary swelling the mattress cover is more susceptible to physical damage (*Callaghan and Milnes, 2013*).

Mattress covers may also be made from vinyl or nylon, although they are generally less common in acute care areas. Most mattress covers have covered zippers and welded seams to eliminate pin holes from sewing in order to prevent fluid from transferring to the inner core which is typically made of foam.

The inner core of alternating pressure or flotation mattresses may be made up of bladders containing air or fluid.

Damaged Mattresses

Damaged mattresses are a common occurrence in healthcare facilities globally. The National Health Service in the UK found that 27% of mattresses in hospitals were damaged (*Stevens, 2013*). A random sampling of mattresses across 33 patient care areas at a major Canadian teaching hospital revealed that over 40% had damage to the mattress cover (*Wong et al, 2013*).

Damaged surfaces are difficult to properly clean, and may become a break in the chain of rigorous environmental decontamination. Damaged mattress covers lose their original physical and chemical properties designed to prevent fluid penetration and microbial growth. A recent study at a US hospital revealed that 26.9% of mattresses on adult medical surgical beds showed occult damage to the interior waterproof backing (*Bradbury et al, 2014*).

Warranties for mattresses vary between manufacturers and different models, but may be as low as one year. As mattresses age and are subjected to daily use and frequent cleaning, the material weakens over time. High occupancy rates, along with frequent and prolonged exposure to high concentration disinfectant solutions, may prematurely age the cover (*Callaghan, 2013*).

Catching damage early and restoring the mattress surface to an intact state preserves its performance characteristics and cleanability (*Wong et al, 2013*).

Causes of Mattress Damage

All mattresses age and eventually wear over time, however there are many circumstances that may cause mattress covers to prematurely fail from physical or chemical causes.

Causes of Mattress Damage

Mechanical abrasions

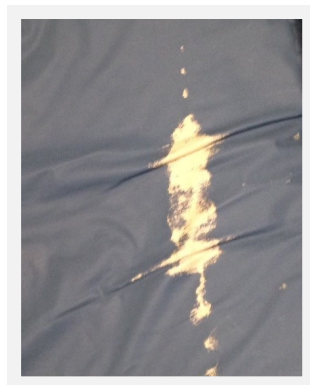
- ◆ Damage from scraping against walls, door frames, furniture
- ◆ Equipment such as monitors or pumps being placed on the bed
- ◆ Transport in moveable cages/carts, or being dragged along the floor in Receiving
- ◆ Improper storage
- ◆ The use of patient transfer devices such as sliding boards or hoists
- ◆ Sharp objects such as needles, buckles, jewelry

Damage from cleaning and disinfection

- ◆ Frequent and prolonged exposure to high concentration disinfectants
- ◆ No rinsing of disinfectant as per manufacturer instructions
- ◆ Use of disinfectants that are not validated or approved by the mattress manufacturer
- ◆ Failure to allow the surface to dry prior to manipulation or patient use
- ◆ Use of abrasive cleaning supplies

Weakening of material over time through regular wear and tear

Examples of Mattress Damage:



Chemical and
Physical Wear



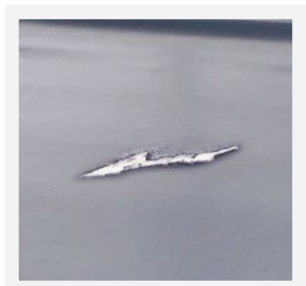
Tear



Puncture



Warping



Tear

CleanPatch™ Medical Surface Repair Patch

CleanPatch is the first medical surface repair patch to be specifically engineered for cost-effective repair of hospital mattresses and stretchers. When applied, CleanPatch returns the surface to an intact and hygienic state. CleanPatch has been tested by independent laboratories and has successfully undergone clinical testing (*Wong 2013*).

The following benefits were independently validated:

- ✓ **Durable:** CleanPatch remained fully adhered to mattresses for one year in a real hospital setting
- ✓ **Cleanable:** CleanPatch was effectively cleaned by hospital disinfectants used during routine or terminal cleaning
- ✓ **Equal:** CleanPatch did not harbor any more organisms than the mattress on which it was placed, before and after cleaning



CleanPatch has been fully tested with the following cleaning agents:

Cleaning Agent	Concentration
Hydrogen Peroxide	1%
Sodium Hypochlorite	3%
Quaternary Ammonium	2.4%
Isopropanol	17.2%
Sterri-Matt quat based detergent	proprietary

Note: CleanPatch should not be cleaned with acetone or any other cleaning agents not recommended by the mattress manufacturer.

Implementing a CleanPatch™ Mattress Repair Program

Based on the potential patient safety risks from damaged hospital mattresses and the development of CleanPatch, Surface Medical's patented medical surface repair patch, we suggest an overall mattress inspection and repair program be put in place. The program should ensure that repairs to hospital mattresses are done according to manufacturer instructions and recognized infection control principles.

The essential steps include:

Step 1 - Mattress Inspection Protocol:

Identify and classify damaged mattresses to determine a repair or replacement strategy

Step 2 - Mattress Intervention Procedure:

Appropriate repair using CleanPatch or replacement of damaged mattresses

Step 3 - Mattress Repair Tracking:

Following repairs with CleanPatch and monitoring of performance over time

Step 1: Mattress Inspection Protocol

The CDC says "in light of the evidence that transmissions of many healthcare acquired pathogens (HAP) is related to contamination of near-patient surfaces and equipment, all hospitals are encouraged to develop programs to optimize the thoroughness of high touch surface cleaning as part of terminal room cleaning at the time of discharge or transfer of patients" (*Guh, Carling, et al, December 2010*).

In the UK, mattress audits were mandated in 2010 after a Medical Device Alert was issued pertaining to damaged mattresses as a potential source of cross contamination. UK healthcare facilities perform bedside mattress audits after every patient discharge, as well as more in-depth inspections every six to twelve months.

We suggest that a bedside mattress inspection be performed whenever the mattress is cleaned between patients, and weekly (or as feasible) for long term patients who may be in bed for an extended length of time.

Secondary mattress inspections should be performed at least every twelve months (see Appendix A) or as per the manufacturer's instructions.

Mattress Inspection Protocol

Our recommended mattress inspection protocol involves a visual mattress inspection at every terminal cleaning. If damage is noted, then a bedside mattress audit is performed by staff trained to test for signs of fluid ingress using the “**Paper Towel Test.**”

Bedside Mattress Inspection Protocol: Performed during every discharge cleaning

1. Inspect the cover for any rips, tears or abrasions.
2. Clean the mattress as per hospital protocols and let completely dry.
3. Look for any signs of warping or staining which could indicate fluid ingress.

If Damage is noted:

4. Confirm if any fluid has penetrated to inner foam by folding a **Paper Towel** into 4 layers and placing over the torn area.
5. Press down with gloved hand to see if any fluid is absorbed by the paper towel
6. If the paper towel shows fluid, the foam core may be contaminated and the mattress should be immediately replaced
7. If there is no fluid, proceed to repair



Secondary Mattress Inspection: Performed Outside of Patient Areas every 6 to 12 months

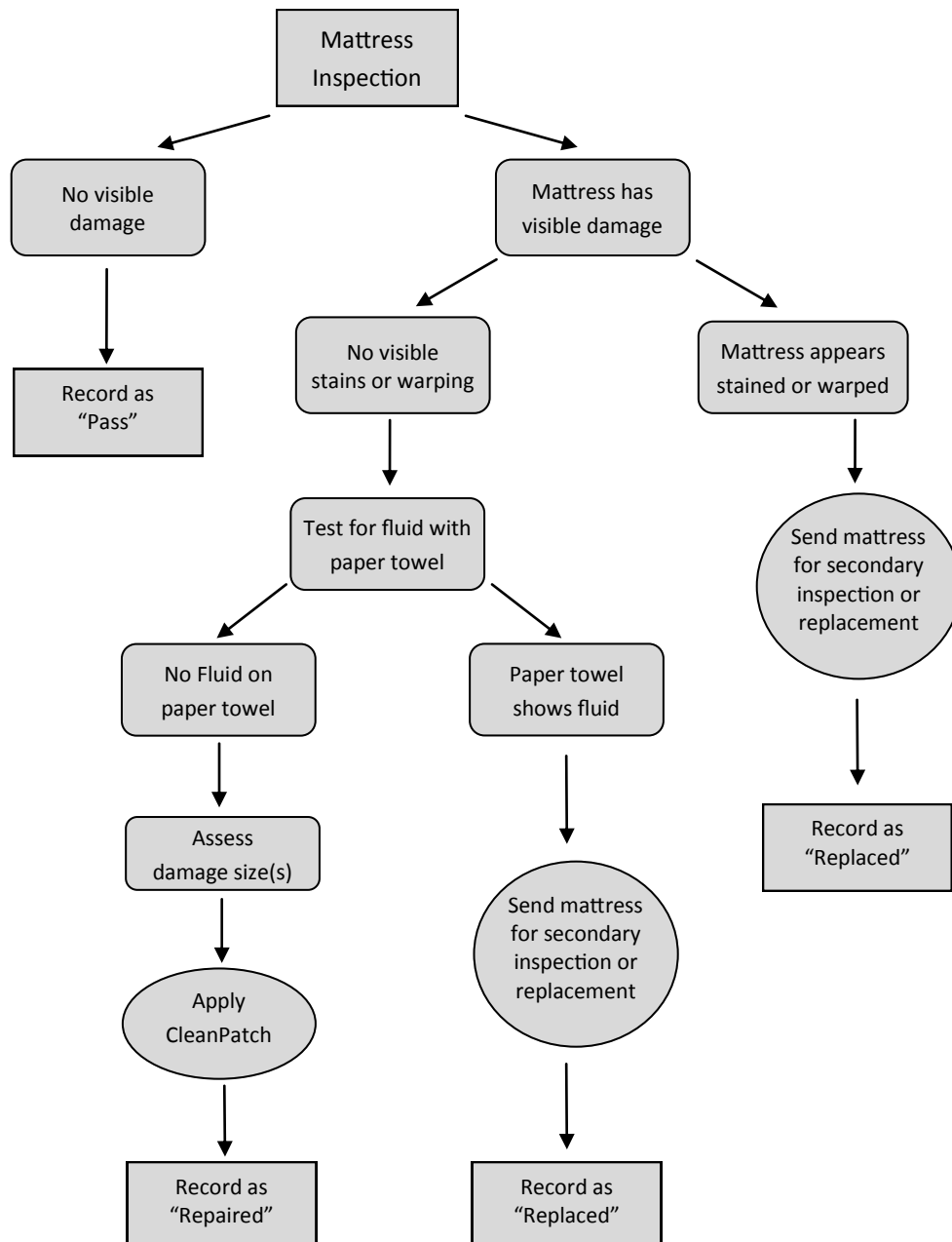
1. Inspect the cover for stains, rips, tears, warping or cracking.
2. Inspect the zippers to ensure they close properly.
3. Remove mattress cover and inspect the foam core. If the foam core is stained or has an odor, it should be decontaminated as per manufacturer's instructions or discarded.
4. Follow the mattress manufacturer's recommendations to validate the impermeability of the mattress cover (*or perform the water penetration test—see Appendix A*). If the test fails, the cover must be replaced.
5. Assess the condition of the mattress foam to ensure it provides adequate support to the patient. Test as per manufacturer's recommendation (*or perform the foam support test—see Appendix A*). If the foam is no longer supportive, the mattress should be replaced

Adapted from Aziz (2011) and Dudley and Walsall (2010)

Step 2: Mattress Intervention Procedure

Below is the suggested decision tree for bedside mattress inspection and repair using CleanPatch. The mattress should be visually inspected at the bedside for any damage or signs of potential fluid ingress such as staining or warping. If the mattress appears dry and shows no staining or warping at the damage site, then CleanPatch is applied.

If fluid is visible or can be absorbed with a paper towel, do not apply CleanPatch. The mattress must be immediately removed from service and sent for a secondary inspection or disposal.



Assess and Measure the Damage

It is important to note the size and amount of damage on the mattress prior to deciding whether to repair or replace. There may be more than one area of a mattress that requires repair, but the damaged area should be repairable by a single CleanPatch. We do not recommend using more than four to six patches on a single mattress, nor do we recommend cutting or overlapping multiple patches.

The paper towel test should be used to determine if there has been any fluid contamination to the inner core.

CleanPatch Sizing

To help measure the size of the damaged area, we have included a sizing template in the CleanPatch User Guide (available from Surface Medical and distributors). This laminated flip card booklet may be attached to house-keeping carts or other points of repair.

Follow the sizing directions to ensure that CleanPatch will cover the damaged area with sufficient margin to provide an intact, hygienic surface and long term durability.



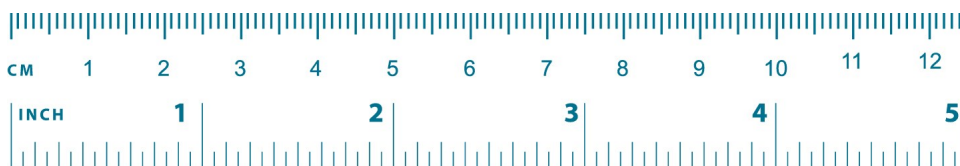
- 1**
Clean mattress and let dry
Nettoyer le matelas et laisser sécher
- 2**
Remove white bottom
Retirer le support blanc
- 3**
Apply patch from center
Appliquer le timbre à partir du centre
- 4**
Press firmly and smooth patch
Presser fermement et lisser le timbre
- 5**
Remove clear top by pulling from [arrow] to [dot]
Retirer le film transparent de [arrow] à [dot]
- 6**
Clean patch and area
Nettoyer le timbre et la zone autour

REF #10001

3.5 in x 3.5 in (8.9 cm x 8.9 cm)



Actual Size

Suitable for damaged areas up to 2 inches (5 cm) in length



Using CleanPatch™ Appropriately

The following points will help to ensure that CleanPatch is used correctly.

✓ When to Use CleanPatch	X When Not to Use CleanPatch
<ul style="list-style-type: none"> • CleanPatch will work with the majority of healthcare mattress covers made of vinyl or polyurethane materials. • CleanPatch is used only on mattresses that are still considered acceptable within their natural life span and otherwise deemed fit for use. • CleanPatch should be applied at the earliest discovery of damage, whether it be a tear, rip, puncture, or abrasion. • Repair of mattresses using CleanPatch should be considered a regular step in the process of cleaning and preparing a bed for a new admission. • A single damaged area should be completely covered by a single CleanPatch. • There may be more than one area of damage noted, but each area should be repaired separately. We recommend that a maximum of four to six areas be patched on any given mattress. 	<ul style="list-style-type: none"> • CleanPatch may not adhere properly to certain coated materials such as Teflon or nylon. • Do not use CleanPatch on mattresses that show signs of fluid ingress or have been contaminated to the inner core. • CleanPatch should not be applied if the damaged area cannot be fully covered by a single patch. There should be a minimum of 1.5 cm (0.5 inch) intact margin around the damaged area to ensure that CleanPatch adheres properly. We do not recommend layering multiple patches. • CleanPatch is most effective on flat surfaces and may not adhere well to corners or three dimensional shapes. • Do not cut CleanPatch to avoid damaging the precise edge and impacting product integrity.
	

Using CleanPatch™ Appropriately—Case Examples

Below are some examples of when it is appropriate to use CleanPatch to repair a mattress and when it is more appropriate to replace a mattress rather than repair it.



Case #1	
Bed # / Location	Asset #2012031 Interventional Radiology
Type of Damage	Tear
Size of Damage	Approx. 1 x 4 cm (0.5 x 1.5 inch)
Sign of Fluid Ingress	No
Intervention	Repair with CleanPatch

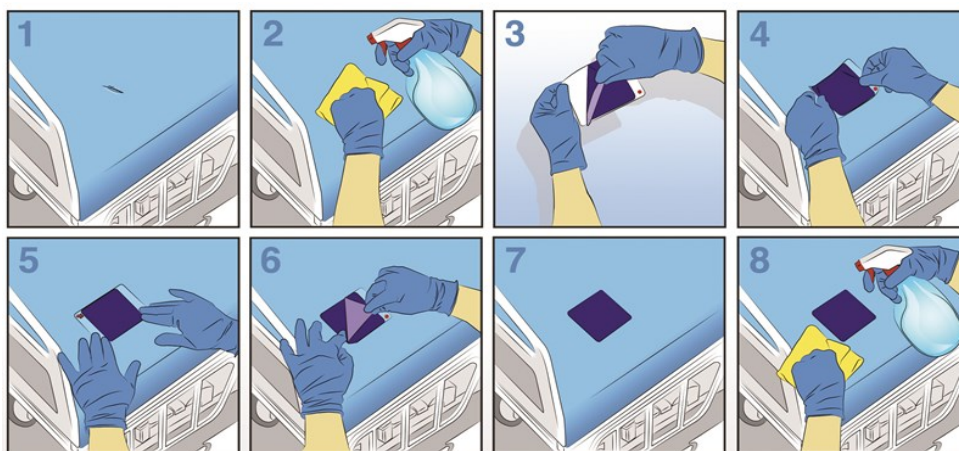


Case #2	
Bed # / Location	Bed #5 Emergency
Type of Damage	Tear and discolored area, previously covered with surgical tape
Size of Damage	Approx. 7 x 9 cm (3 x 3.5 inch)
Sign of Fluid Ingress	Yes - Obvious warping
Intervention	Immediately replace mattress



Case #3	
Bed # / Location	Bed #2013-012 / med-surg unit
Type of Damage	Abrasion and bleaching
Size of Damage	Approx. 5 x 5 cm (2 Xx 2 inch)
Sign of Fluid Ingress	No - passed paper towel test
Intervention	Repair with CleanPatch

CleanPatch Instructions for Use



Indication for Use:

CleanPatch is a medical surface repair patch for hospital beds and stretchers. CleanPatch restores damaged mattresses to an intact and hygienic state. The product is not designed, sold or intended for use except as indicated.

Precautions:

- When using CleanPatch follow applicable cleaning guidelines
- Use of CleanPatch is recommended for a tear, cut, or puncture less than 5 cm or 2 inches in length
- If tear, cut, or puncture extends beyond CleanPatch, remove immediately
- Do not use if CleanPatch is damaged or peeled back.
- Apply CleanPatch at room temperature 21-25°C / 70-77°F.
- CleanPatch is intended for one-time use only. Do not reuse or re-apply
- CleanPatch is best designed for flat surfaces. Results vary when applied to round edges
- Do not cut CleanPatch, to ensure product integrity



Directions for Use:

Before Applying CleanPatch

- Decide where to place CleanPatch (Figure 1)
- Clean the surface thoroughly using applicable cleaning guidelines (Figure 2)
- Allow the surface to dry completely

Note: unclean or wet surfaces will significantly reduce CleanPatch performance

Applying CleanPatch

- Ensure that your hands or gloves are clean during application
- Peel the white bottom liner exposing the adhesive surface (Figure 3)
- Position and center CleanPatch over tear, cut, or puncture
- Apply CleanPatch allowing for good contact with undamaged surface. (Figure 4)
- Do not stretch CleanPatch during application
- Apply pressure to CleanPatch, especially sides and corners, to enhance adhesion (Figure 5)
- Slowly remove clear top liner by pulling from  to  (Figure 6)
- Smooth CleanPatch from center towards edges using firm pressure

After Applying CleanPatch

Clean the mattress surface and CleanPatch thoroughly using applicable cleaning guidelines (Figure 8)

Cleaning Instructions

- Immediately remove and replace CleanPatch if edges are lifting or appear dirty
- Follow applicable hospital guidelines when using CleanPatch (e.g. Diluted Bleach)

Storage and Shelf Life:

For best results, store in a cool dry place. Avoid excessive heat, humidity, and direct sunlight.
For shelf life, refer to the expiration date printed on each package.

Step 3: Mattress Repair Tracking

Mattress Label or Number

As a valuable asset and continuously used Medical Device, it is recommended that all mattresses be labelled and tracked within the hospital or healthcare facility. Hospitals often have undefined and sporadic mechanisms for tracking mattresses, which has contributed to the large number of damaged mattresses in circulation (*Heller and Hicks, 2014*). Mattresses should have individual identification numbers upon deployment into the hospital so they can be tracked for:

- Age, warranty, and expected remaining life span
- Type of mattress and mattress cover materials
- Cleaning instructions
- Current condition
- Monitoring of repairs

If no formal process or identification is in place, a simple but effective identification system may be implemented using a manufacturer approved marker. For example:

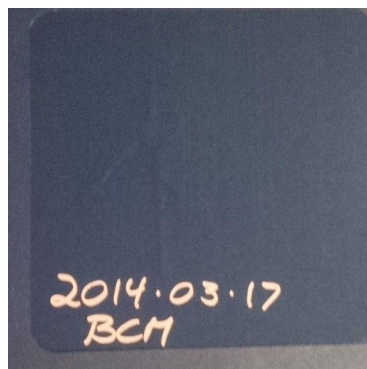
Hospital Number: *South Health Center (SHC)*
Unit or Ward: *32*
Date: *YYYY / MM / DD*

= Mattress Label: SHC-32-2014-03-17

CleanPatch Label or Number

CleanPatch may be written on with an AP-stamped (non-toxic) Sharpie® marker which allows for visual identification of the mattress without damaging the surface, as well as tracking the effectiveness of repairs done with CleanPatch. We highly recommend that CleanPatch repairs be dated, initialed, and recorded for tracking purposes.

The marking may fade over time, especially with the use of certain cleaning agents. Just re-write on the patch with an AP-stamped Sharpie® marker if necessary. If the marking must be removed, alcohol will remove the ink.



AP Stamped non-toxic Sharpie



Record Intervention

All interventions should be recorded to assist in tracking mattresses, identifying trends in mattress damage, monitoring repairs performed with CleanPatch, and understanding the economic impact.

Inspection Checklist

Those individuals who inspect and/or repair a damaged mattress should record the results on a simple Mattress Inspection Checklist (available at www.cleanpatch.ca) or as per hospital procedure.

Mattress Inspection Checklist (EXAMPLE)			
Mattress Location:		Mattress Number:	
Date:		Inspected by:	
		YES	NO
Are there any visible rips or holes in the mattress cover?			
Is there visible staining or warping around the damaged area? If YES - the mattress must be replaced			
Does the damaged area feel wet when tested with a paper towel? If YES - the mattress should be replaced			
Was the damage repaired with CleanPatch?			
Are there any previous CleanPatches visible on the mattress If YES - are they intact?			
If not intact - was the CleanPatch replaced?			

Inspection Record

The information collected on the Mattress Inspection Checklist should be transferred and documented on a master Mattress Repair Tracking Spreadsheet (available at www.cleanpatch.ca) or as per hospital procedure.

Mattress Repair Tracking Spreadsheet (EXAMPLE)					
Mattress # / Location	Date	Bedside Inspection		Intervention	
		Pass	Fail	Repaired	Replaced

The Economic Value of Using CleanPatch™

CleanPatch was developed as an early intervention device to quickly and cost-effectively address the problem of damaged mattresses before they become a potential safety risk. The value of implementing a mattress inspection and repair program with CleanPatch may be gauged both clinically and financially.

Clinical Savings

Preventing an HAI outbreak from cross contamination from mattresses would eliminate the additional costs of patient treatment, extended stay, and added environmental intervention. Estimated costs of a healthcare acquired infection range from \$18,000 to \$54,000 per patient (CUPE 2009, Rampling et al, 2001).

Financial Savings

One box of CleanPatch (20) can effectively repair up to 20 mattresses for less than the cost of replacing one mattress. To calculate actual annual savings, the healthcare facility may use the data collected from the Mattress Repair Tracking Spreadsheet to evaluate the savings from repairing damaged mattresses versus replacing them.

Example of Savings with CleanPatch

Mattress # / Location	Date	Bedside Inspection		Intervention	
		Pass	Fail	Repaired	Replaced
Mattress A	2014-03-14		✓	✓	
Mattress B	2014-04-22		✓		✓
etc	"		✓	✓	
TOTAL NUMBER DAMAGED MATTRESSES:			100	70	30
				Average Cost of Repair:	\$20*
				Average Cost of Replacement:	\$500*
Scenario 1: If all damaged mattresses were replaced:					
Cost of replacements: 100 x \$500 = \$50,000					
Scenario 2: If CleanPatch was applied to 70% of damaged mattresses and 30% were replaced:					
Cost of repairs with CleanPatch: 70 x \$20 = \$1400					
Cost of replacements: 30 x \$500 = \$15,000					
Total Cost: \$16,400					
SAVINGS FROM USING CLEANPATCH: \$33,600 = 67%					

*Actual Costs May Vary

Implementation

There are several different scenarios for those who inspect, repair and track mattress damage at the bedside. Specific assignments and processes may vary between facilities or individual clinical areas, however, the roles and responsibilities should be clearly outlined to ensure that mattresses are properly repaired with CleanPatch, or replaced, as per hospital protocols.

For the initial implementation, healthcare facilities may wish to start with a core group of trained staff (e.g. **CleanPatch Champions**) to ensure the process is running smoothly prior to expanding the CleanPatch Mattress Repair Program on a larger scale. Eventually, for example, all Environmental Services employees who perform discharge cleaning will be responsible for the inspection and repair or replacement of mattresses.

SCENARIO:	STEP 1 Mattress Inspection	STEP 2 Mattress Intervention Repair or Replace	STEP 3 Mattress Repair Tracking
#1 Environmental Services driven	<p>Damage Identification All housekeeping staff report any damage they find to the EVS Manager or designated EVS staff</p> <p>Mattress Audit The EVS Manager or trained EVS staff performs a bedside inspection and fills out the Mattress Inspection Checklist</p>	<p>Mattress can be Repaired EVS manager or trained staff repairs mattress using CleanPatch and initials the repair using an AP Sharpie</p> <p>Mattress needs to be Replaced EVS Manager or trained staff arranges replacement of mattress according to standard protocols</p>	<p>Repaired Mattress EVS Manager or trained staff brings completed Mattress Inspection Checklist to EVS Office Staff which inputs data into the Mattress Repair Tracking Spreadsheet</p>
#2 Facilities Maintenance driven	<p>Damage Identification All Front-line staff reports any damage they find to their Manager or Facilities staff on duty</p> <p>Mattress Audit Trained facilities staff performs a bedside mattress inspection and fills out the Mattress Inspection Checklist</p>	<p>Mattress can be Repaired Facilities staff repairs mattress using CleanPatch and initials the repair using an AP Sharpie</p> <p>Mattress needs to be Replaced Facilities staff arranges for mattress replacement according to standard protocols</p>	<p>Repaired Mattress Facilities brings completed Mattress Inspection Checklist form to Facilities Office Staff which inputs data into the Mattress Repair Tracking Spreadsheet</p>
#3 Nursing/ Clinical driven	<p>Damage Identification All Front-line staff are notified to report any damage they find to the Nurse Manager or trained equipment leader</p> <p>Mattress Audit Trained clinician or equipment leader performs a bedside mattress inspection and fills out the Mattress Inspection Checklist</p>	<p>Mattress can be Repaired Trained clinician repairs Mattress using CleanPatch and initials the repair using an AP Sharpie</p> <p>Mattress needs to be Replaced Nurse Manager or equipment lead arranges replacement of mattress according to standard protocols</p>	<p>Repaired Mattress Nurse Manager or equipment lead inputs data into the central Mattress Repair Tracking Spreadsheet for tracking purposes</p>

Staff Training

Training of healthcare facility staff including environmental services, facilities, infection prevention, nursing, equipment managers, or any other personnel who may use CleanPatch is highly recommended to ensure the product is used properly and in accordance with Hospital Infection and Prevention best practices.

A variety of education and implementation tools are available including:

- ✓ On-site inservicing for all designated staff
- ✓ Posters
- ✓ Laminated User Guides to attach to cleaning carts or other points of mattress repair
- ✓ Customized Mattress Tracking Spreadsheet or Decision Tree to meet specific requirements

On-line training tools are also available at www.cleanpatch.ca

- ✓ On-line training video series (see QR code)
- ✓ Mattress Inspection Checklists
- ✓ Mattress Repair Tracking Spreadsheet
- ✓ FAQ's



Link to CleanPatch video series
www.cleanpatch.ca



Troubleshooting

Problem	Cause	Solution
CleanPatch does not stick well to the repair surface during application	Mattress not clean or dry prior to application	Ensure repair surface is cleaned with hospital cleaner and fully dry before application
	Insufficient time or pressure for the CleanPatch adhesive to adhere	Exert even hand pressure over the CleanPatch surface, and run fingers around the edges to ensure adhesion
	Mattress cover is made of nylon or other coating such as Teflon	Wait one minute before pulling the top clear liner off of the patch during application
CleanPatch does not stick after one minute	Mattress not clean or dry prior to application	Ensure mattress is cleaned and fully dry before application
	Mattress cover is made of nylon or other coating such as Teflon	Use additional pressure and wait 5 minutes before pulling off clear top liner Determine the mattress cover material to ensure it is compatible. CleanPatch may not adhere to nylon or certain coatings.
There is an air bubble or wrinkle under the patch during application	Application technique	Try to apply the patch from the middle, and smooth outwards Do not squeeze the repair surface during application
CleanPatch looks discolored or wrinkled after weeks or months of use	Frequent use of harsh chemical disinfectants, lack of rinsing, or cleaner not compatible with polyurethane	Ensure mattress cover is properly cleaned as per manufacturer recommendations If the mattress is also discolored, may need to switch cleaning solutions.
CleanPatch starts to lift after cleaning or use	CleanPatch replacement needed	Completely remove and discard old CleanPatch and apply a new one immediately
Damage extends beyond the coverage of CleanPatch	Rips or tears have continued to spread below CleanPatch over time	Remove CleanPatch immediately and replace with a larger size (as available) to ensure the entire damaged area is covered, or replace the entire mattress cover

For any other problems or concerns, please call 1-888-623-7085 or email us at info@surfacemedical.ca

Appendix A - Secondary Mattress Inspection Tests

When a mattress fails bedside inspection due to extensive damage to the cover or signs of fluid ingress, the mattress may require a secondary inspection. These tests are used in the UK for routine maintenance audits every 6 to 12 months.

Note: These tests may assist to determine the performance status of hospital mattresses, but should not preclude inspection and maintenance as per the manufacturer's recommendations.

Mattress Cover Water Penetration Test:

1. Unzip mattress cover.
2. Place disposable paper towels inside the mattress, between the inner foam and the mattress cover, in the center of the mattress.
3. Press down on the center of the mattress to form a shallow well.
4. Pour some water (30 to 100 ml) on top of the mattress cover. Leave for one minute.
5. Mop up water from the surface, then remove the paper towel from inside.
6. If the paper towel shows any liquid, the mattress cover has failed the test. If the paper towel is wet, the mattress cover is not impervious and should be replaced.

Mattress Foam Support Test:

1. The mattress cover should be on and the zipper closed.
2. Stand beside the bed with the mattress at hip level.
3. Put both hands together to make a locked fist.
4. Keeping arms straight, press down on the center of the mattress using full body weight.
5. If the foam bottoms out (you can feel the base of the bed through the foam) it should be replaced.

Adapted from Aziz (2011) and Dudley and Walsall (2010)

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The contents of this Mattress Repair Implementation Guide are intended to be examples only and the CleanPatch Mattress Repair System must be used in accordance with the manufacturer's instructions, only for the specified purpose for which it was designed and always in accordance with the user's internal policies, procedures and best practices. Surface Medical Inc. and the distributors of the CleanPatch Mattress Repair System shall not be liable for any misuse of the CleanPatch product. Users are advised to consult our technicians who can supply all information pertaining the technical characteristics of our products as well as their use in conjunction with most commonly used surface materials. At all times, use of the CleanPatch Mattress Repair System must be in accordance with the mattress manufacturers polices, warranties and recommendations. Should you have any concerns or questions about the use of the CleanPatch mattress repair system on a particular surface of for a specific purpose, please contact us directly at info@surfacemedical.ca.

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