

CLEANPatch®

Medical Surface Repair Patch

Restores damaged mattresses to an intact and hygienic state

Mattress Repair Implementation Guide



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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 the patient *(Guh & Carling, 2010)*.



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 goes 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 before their expected life span.

Mechanical abrasions

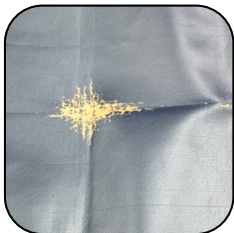
- Damage from scraping against walls, door frames, furniture
- Equipment such as monitors or pumps being placed on the bed
- Transport in moveable cages/carts, or being dragged along the floor in Receiving
- Improper storage
- The use of patient transfer devices such as sliding boards or hoists
- Sharp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

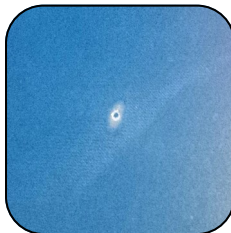
Examples of Mattress Damage



Chemical and
Physical wear



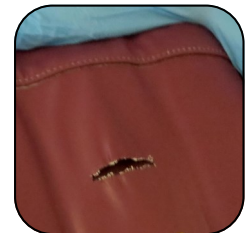
Cut



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*).

- ✓ **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 | Active Concentration | Parts per Million |
|----------------------------------|----------------------|-------------------|
| Hydrogen Peroxide | 1% | 10,000 ppm |
| Sodium Hypochlorite | 3% | 28,500 ppm |
| Quaternary Ammonium | 2.4% | 24,000 ppm |
| Isopropanol | 17.2% | n/a |
| Sterri-Matt quat based detergent | proprietary | n/a |

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 - Inspection:

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

Step 2 - Intervention:

Appropriate repair using CleanPatch or replacement of damaged mattresses

Step 3 - 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: Performed during every discharge cleaning

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

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

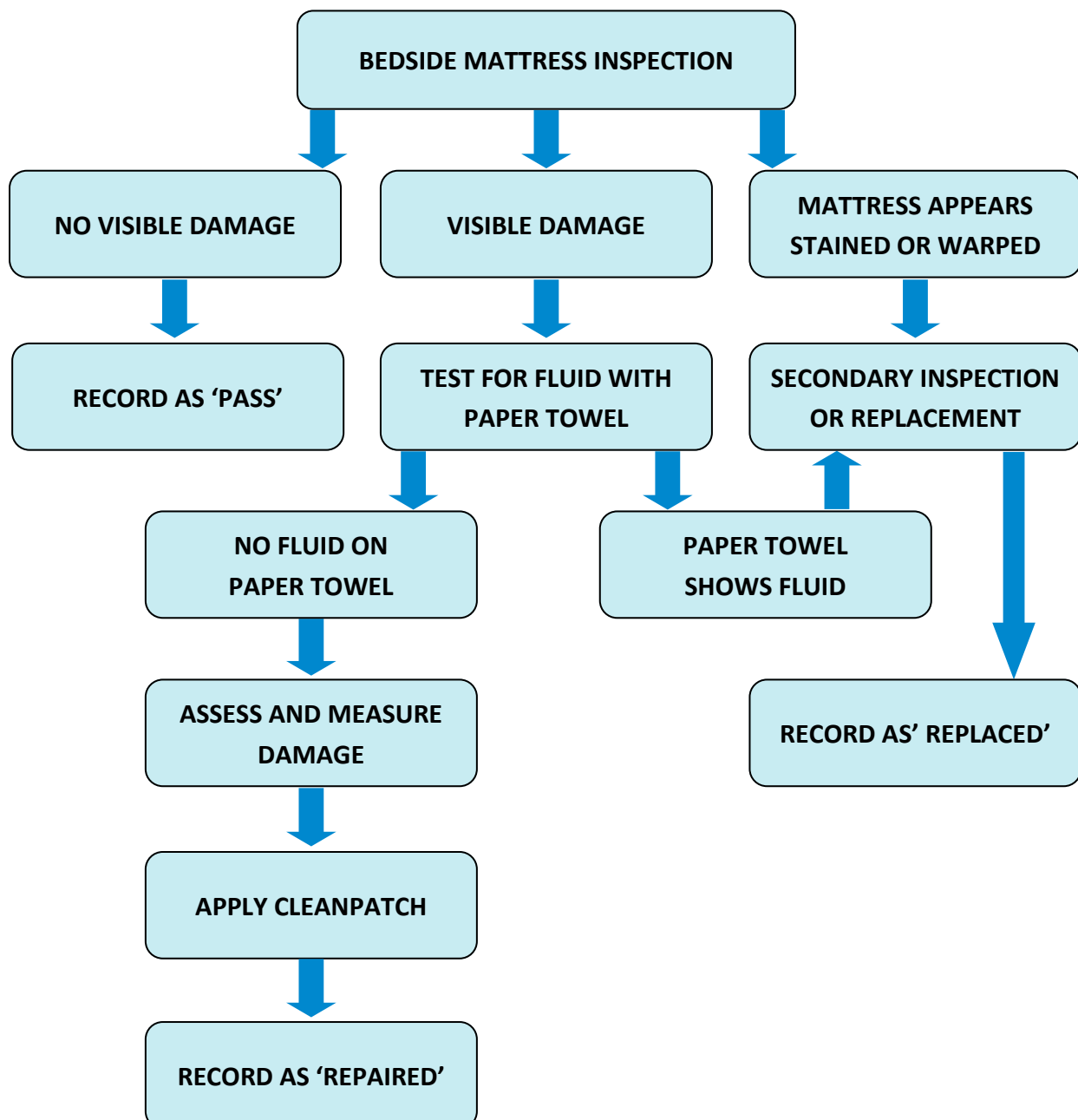
1. Inspect the cover for stains, rips, tears, warping or cracking.
2. Inspect the zippers to ensure they close properly.
3. Remove mattress cover and inspect the foam core. If the foam core is stained or has an odor, it should be decontaminated as per manufacturer's instructions or discarded.
4. Follow 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

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.

CleanPatch® Sizing

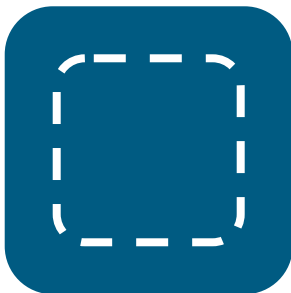
To help measure the size of the damaged area, we have included a sizing template in the CleanPatch User Guide (*available from Surface Medical and distributors*). This laminated flip card booklet may be attached to house-keeping carts or other points of repair. Follow the sizing directions to ensure that CleanPatch will cover the damaged area with sufficient margin to provide an intact, hygienic surface and long term durability.

| CleanPatch List # | Shape | Size | Damage Size |
|-------------------|-----------|-------------------------------|-------------------------|
| #11001 (30/box) | Round | 2 inch diameter (5 cm) | Up to 1/2 inch (1.3 cm) |
| #10001 (20/box) | Square | 3.5 x 3.5 inch (8.9 x 8.9 cm) | Up to 2 inches (5 cm) |
| #12001 (10/box) | Rectangle | 3.5 x 6 inch (8.9 x 15 cm) | Up to 4 inches (10 cm) |

Measure the Damage

Important:

- Do not use CleanPatch if the rip or tear is larger than indicated for the patch size
- To ensure product integrity, **do not cut** CleanPatch
- Do not overlap multiple patches
- There must be sufficient intact margin (at least 1/2 inch) from the edge of the patch to ensure adhesion



Using CleanPatch® Appropriately

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

✓ When to Use CleanPatch

- CleanPatch will work with the majority of healthcare mattress covers made of stretch polyurethane or vinyl
- 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.



✗ When Not to Use CleanPatch

- CleanPatch may not adhere properly to some low friction or coated materials such as Teflon.
- 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 1.3 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 |

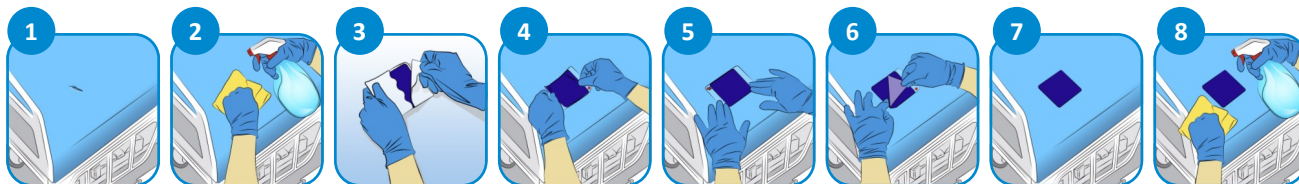


| Case #2 | |
|-----------------------|---|
| Bed # / Location | Bed #5 Emergency |
| Type of Damage | Tear and discolored area, previously covered with surgical tape |
| Size of Damage | Approx. 7 x 9 cm (3 x 3.5 inch) |
| Sign of Fluid Ingress | Yes - Obvious warping |
| Intervention | Immediately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



| Case #3 | |
|-----------------------|--------------------------------|
| Bed # / Location | Bed #2013-012 / med-surg unit |
| Type of Damage | Abrasion and bleaching |
| Size of Damage | Approx. 5 x 10 cm (2 x 4 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 an appropriate size of CleanPatch to allow sufficient margin around the damage.
- 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.
- 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 repaired area 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:

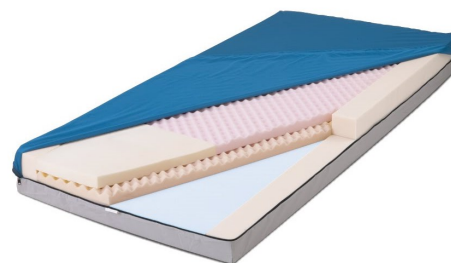
For best results, store in a cool dry place. Avoid excessive heat, humidity, and direct sunlight. For shelf life, refer to the 'use by' date printed on each package.

What is Repairable with CleanPatch®?

CleanPatch was designed to repair the majority of patient bed and stretcher mattresses made of vinyl, polyurethane, and polyurethane-coated nylon. It may not adhere to some low friction coatings, especially if they contain Teflon.

Standard Patient Mattresses

Most patient bed mattresses contain a foam core, with one or more sections of foam, or a combination of gel and foam. The covers are generally made of polyurethane or nylon. CleanPatch may be used to repair the top, bottom, or sides on the majority of these mattresses.



Air-filled Mattresses

Some patient mattresses are comprised of air filled tubes to provide alternating pressure as they inflate and deflate.

Low air loss mattresses contain a series of air bladders to provide support, and also provide air flow across the surface of the mattress which prevents moisture build-up on the patient's skin.

CleanPatch may be used to repair the covers of these mattresses.



Stretcher Mattresses

Stretchers are frequently used and moved in health care settings, and tend to become damaged more often than inpatient beds. They are used for patient transport between clinical departments, but may also be occupied by patients for extended periods of time in areas such as the emergency department.



Operating Tables

Most Surgical Suites have a variety of operating tables with adjustable segments, as well as accessories that are frequently added or removed according to the types of surgeries performed. These are often damaged.



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

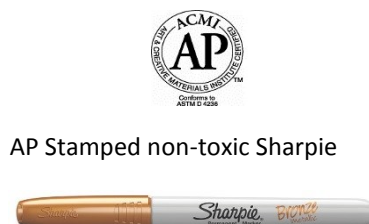
If no formal process or identification is in place, a simple but effective identification system may be implemented using a manufacturer approved marker. For example:

Hospital Number: *South Health Center (SHC)*
Unit or Ward: *32*
Date: *YYYY / MM / DD*
= Mattress Label: SHC-32-2014-03-17

CleanPatch® Labeling

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.



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), EVS cleaning checklist, or as per hospital procedure.

| Mattress Inspection Checklist <i>(example)</i> | | | |
|--|--|--|----------------------------|
| Mattress Location: | | | Mattress # or description: |
| Date: | | | Inspected by: |
| | | | YES |
| | | | NO |
| Is there any visible damage to the mattress cover? (circle as applicable) Tear Cut Puncture Cracking Scratching Other | | | |
| Is there any visible staining or warping? 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? If YES, please note the number and size(s) of CleanPatch applied | | | |
| Are there any previous CleanPatch 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 <i>(example)</i> | | | | | |
|---|-----------------------|--------------------|------|--------------|----------|
| Date: | Mattress # / location | 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 Repair Tracking Spreadsheet (example) | | | | | |
|--|-------------------------------|--------------------|------|--------------|----------|
| Date | Mattress # / location | Bedside Inspection | | Intervention | |
| | | Pass | Fail | Repaired | Replaced |
| 2014-03-14 | ER bed 5 | | ✓ | ✓ | |
| 2014-04-22 | Diagnostic imaging, stretcher | | ✓ | | ✓ |
| 2016-05-08 | Unit 54, bed A | | ✓ | ✓ | |
| TOTAL NUMBER DAMAGED MATTRESSES: | | | 100 | 70 | 30 |
| Number of mattresses repaired | | | | | 70 |
| Average cost of repair | | | | | \$20* |
| TOTAL COST OF REPAIRS: | | | | | \$1400 |
| Number of mattresses repaired versus replaced | | | | | 70 |
| Average cost of replacement: | | | | | \$500* |
| REPLACEMENT COSTS AVOIDED: | | | | | \$35,000 |
| SAVINGS FROM USING CLEANPATCH: | | | | | \$33,600 |

*Actual Costs May Vary

Implementation

There are several different scenarios for those who inspect, repair and track mattress damage at the bedside. Oversight of the mattress inspection and repair program may be facility wide or done on a unit by unit basis, but is generally driven by one of these groups:

- 1) Environmental Services or Housekeeping
- 2) Facilities Management
- 3) Nursing or Clinical

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 | Damage Identification All front line staff are notified to report any damage they find to their Manager or EVS staff Mattress Inspection Trained EVS staff perform bedside mattress inspection during every terminal cleaning. Any damage noted is recorded on the terminal cleaning checklist or mattress inspection checklist | Mattress can be Repaired Trained EVS staff repairs mattress using CleanPatch, and dates/initials the repair. Mattress needs to be Replaced Trained EVS staff arranges replacement of mattress according to hospital protocol. | EVS staff submits completed checklist to EVS admin staff for input into the Mattress Repair Tracking Spreadsheet. |
| #2 Facilities Maintenance driven | Damage Identification All front line staff are notified to report any damage they find to their Manager or Facilities staff Mattress Inspection Trained facilities staff performs a bedside mattress inspection and fills out the Checklist | Mattress can be Repaired Trained Facilities staff repairs mattress using CleanPatch and dates/initials the repair Mattress needs to be Replaced Trained Facilities staff arranges for mattress replacement according to hospital protocols | Facilities staff completes checklist and inputs data into the Mattress Repair Tracking Spreadsheet. |
| #3 Nursing/ Clinical driven | Damage Identification All Front-line staff are notified to report any damage they find to their manager or equipment lead Mattress Inspection Trained clinicians performs a bedside mattress inspection and fills out the Checklist | Mattress can be Repaired Trained Clinician repairs Mattress using CleanPatch and dates/initials the repair Mattress needs to be Replaced Nurse Manager or equipment lead arranges replacement of mattress according to hospital protocol | Nurse Manager or equipment lead inputs data into the Mattress Repair Tracking Spreadsheet |

Getting Started

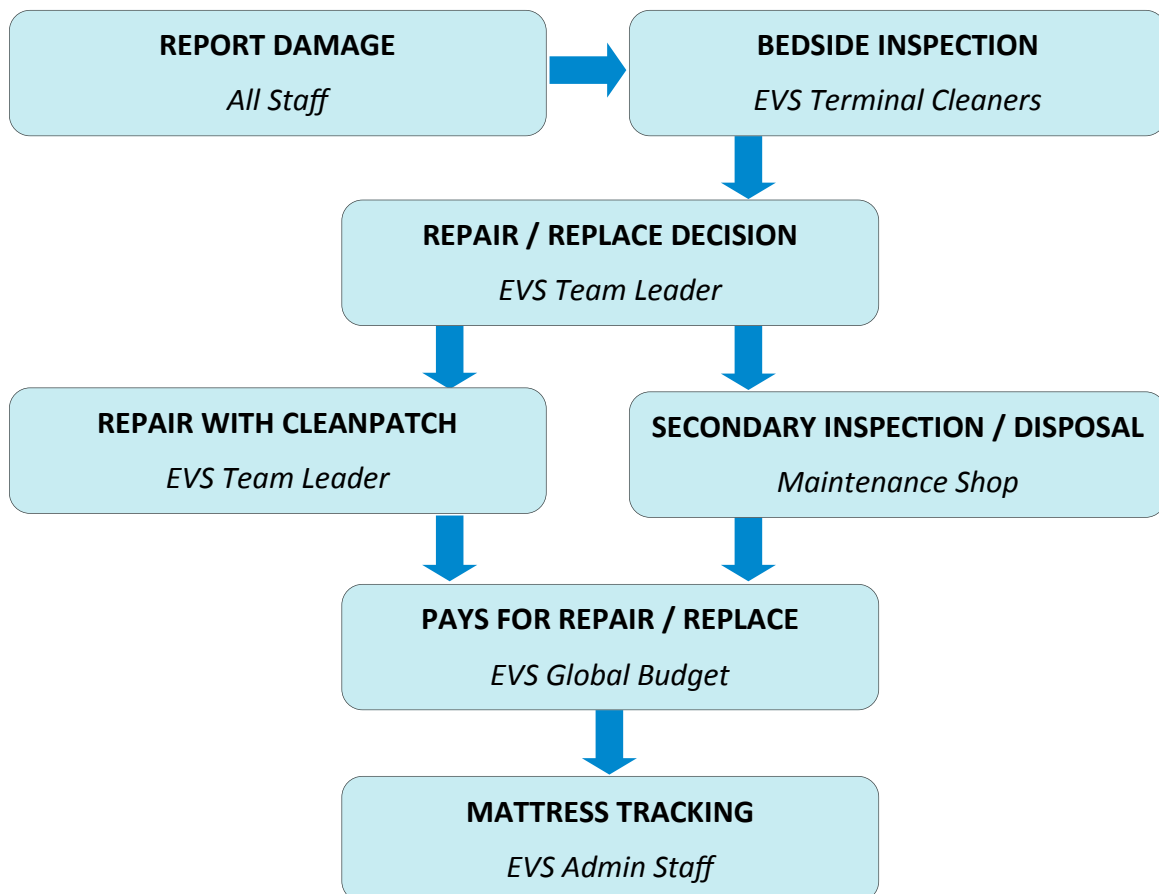
Before implementing a mattress inspection and repair program, it is important to answer these seven questions in order to ensure the process runs smoothly:

1. Who reports damage, and how is this communicated?
2. Who performs bedside mattress inspections?
3. Who makes the decision whether to repair the mattress with CleanPatch, or replace the mattress?
4. Who does the repair?
5. Where does a mattress go for secondary inspection?
6. Who pays for the repair or replacement - Who owns the budget?
7. Who keeps track of the repairs or replacements and the cost savings?

Once these questions have been answered, it is easy to create a flow chart so that all parties can see who owns each step of the process. There may be a single flow chart for a facility-wide process, or there may be separate charts for individual units.

MATTRESS INSPECTION AND REPAIR PROGRAM FLOW CHART

Example of a Facility-wide Process Driven by Environmental Services

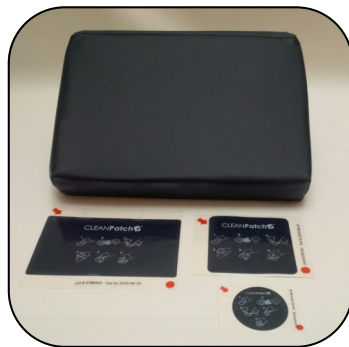


Staff Training

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.

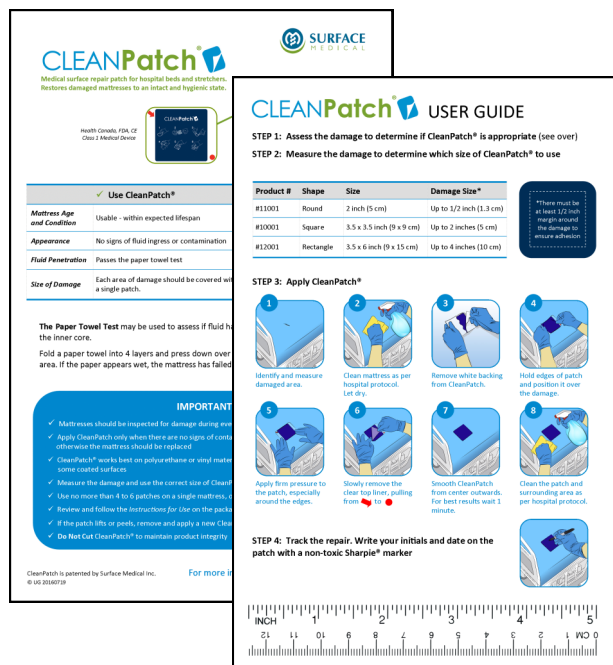
A variety of education and implementation tools are available including:

- ✓ On-site in-servicing for all designated staff
- ✓ Posters
- ✓ Case studies
- ✓ Implementation Flow Charts
- ✓ Implementation Planning Checklists



- ✓ Mini mattresses for practice application and demonstration

- ✓ Plastic User Guides to attach to cleaning carts or other points of mattress repair



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



Please refer to Appendix B for an example of an Implementation Planning Checklist with training tools and key points to cover.

Troubleshooting

| Problem | Cause | Solution |
|--|--|--|
| CleanPatch does not stick well to the repair surface during application. | <p>Mattress not clean or dry prior to application.</p> <p>Insufficient time or pressure for the CleanPatch adhesive to adhere.</p> <p>Mattress cover may have a very low friction coating.</p> | <p>Ensure repair surface is cleaned with hospital cleaner and fully dry before application.</p> <p>Exert firm hand pressure over the CleanPatch surface, and run fingers around the edges to ensure adhesion.</p> <p>Wait one minute before pulling the top clear liner off of the patch during application.</p> <p>CleanPatch may not stick to certain coatings such as Teflon.</p> |
| Cannot remove the paper backing from patch prior to application. | Adhesive confusion between the liners and patch material. | Firmly squeeze or press down on all 3 layers at the corner (red arrow) prior to removing the paper liner. |
| Cannot remove clear top liner from patch during application. | Adhesive confusion between the liners and patch material. | Firmly press around the edges of the patch after applying to mattress surface, and <u>slowly</u> peel off clear liner. |
| There is an air bubble or wrinkle under the patch during application. | Application technique. | <p>Try to apply the patch from the middle, and smooth outwards.</p> <p>Do not squeeze the repair surface during application.</p> |
| CleanPatch looks discolored after weeks or months of use. | Frequent use of harsh chemical disinfectants, lack of rinsing, or cleaner is not compatible with polyurethane. | <p>Ensure mattress cover is properly cleaned as per manufacturer recommendations.</p> <p>If the mattress is also discolored, may need to switch cleaning solutions.</p> |
| CleanPatch starts to lift after cleaning or use. | CleanPatch replacement needed. | Completely remove and discard old CleanPatch and apply a new one. |
| 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. If unable to remove CleanPatch, cover the existing patch and entire damaged area with a larger patch, 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 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)

Appendix B - CleanPatch® Implementation Planning Checklist

| Example of an Implementation Planning Checklist: Facility Wide Lead by EVS and Infection Prevention | | | | | |
|--|---|---|--|--|---------|
| Role | Who | Tasks | Training / Key Points | Tools | Date |
| Reports Damage | All Clinical staff | Increase awareness | Dangers of damaged surfaces Who to report damage to | - Damage awareness posters - Email all managers | ✓ 06/08 |
| Bedside Inspection | Terminal cleaning staff | Perform bedside inspection during each terminal cleaning | How to do a bedside inspection Incorporate mattress inspection on cleaning checklists | - Online video - On-site inservicing - User Guide - Mattress inspection checklists | |
| Repair or replace decision | EVS team leader Infection Prevention | Establish core group of CleanPatch super users Approve/implement CleanPatch protocols | Understand when and when not to use CleanPatch | - Implementation Guide - User Guide - Case Studies | |
| Repairs with CleanPatch | EVS Team Leader | Perform proper application of CleanPatch | Hands on practice Ensure CleanPatch and tools are available at point of repair (e.g. carts) | - Online video - Mini mattress - Order product Attach User Guides and Sharpie pens to carts | |
| Secondary Inspection | Facilities and Maintenance | Perform secondary mattress inspections Repair still-viable mattresses Dispose of condemned mattresses | As per mattress manufacturer recommendations and/or: - Mattress water test - Foam support test | Implementation Guide | |
| Pays for repair/ replacement | Global bed budget | Materials management brings CleanPatch into inventory | EVS orders CleanPatch from stores EVS pays for mattress replacements | Inventory code | |
| Mattress tracking | EVS Manager | Record all mattress repairs or replacements Analysis of financial savings | Ensure data from cleaning and inspection checklists are collected - Monitor mattress damage trends - Share data with IPC and Unit Managers | Mattress tracking spreadsheet | |

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or e-mail us at info@surfacemedical.ca

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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 policies, 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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