

## Infection Prevention and Control Assurance - Standard Operating Procedure 12 (IPC SOP 12)

### Procurement, Cleaning, Replacement and Audit of Beds, Mattresses and Pressure Cushions

**Why** we have a procedure?

The Health and Social Care Act 2008: Code of Practice for the NHS for the Prevention and Control of Healthcare Associated Infections (revised January 2015) stipulates that NHS bodies must, in relation to preventing and controlling the risk of Health Care Associated Infections (HCAI), have in place appropriate core policies/procedures, including procedures for the decontamination of equipment e.g. beds and mattresses, examination couches etc. Implementation of this procedure will contribute to the achievement and compliance with the Act.

**What** overarching policy the procedure links to?

- This procedure is supported by the Infection Prevention and Control Assurance Policy

**Which** services of the trust does this apply to? **Where** is it in operation?

Group	Inpatients	Community	Locations
Mental Health Services	✓	✓	all
Learning Disabilities Services	✓	✓	all
Children and Young People Services	x	✓	all

**Who** does the procedure apply to?

This document applies to all staff employed by or working on behalf of the Black Country Partnership NHS Foundation Trust who uses beds and mattresses when caring for patients in all in-patient areas as part of their role and job description this includes housekeeping staff.

The sharing of mattresses between patients/clients can be a potential source of infection as they can become contaminated by dust or bodily fluids and mattresses have been implicated in outbreaks of infection.

**When** should the procedure be applied?

When patient trollies, beds and mattresses are required for use in any in-patient environment within Trust premises or premises used by Trust employees.

**How** to carry out this procedure

**Additional Information/ Associated Documents**

- Infection Prevention and Control Assurance Policy
- Hand Hygiene Policy
- Medical Devices Policy and Associated Procedures
- Infection Prevention and Control Assurance - Standard Operating Procedure 1 (IPC SOP 1) - Standard Infection Control Precautions
- Infection Prevention and Control Assurance - Standard Operating Procedure 7 (IPC SOP 7) - Decontamination (Cleaning, Disinfection and Sterilisation)

### Aims

- To provide guidance in order to establish safe and effective procedures to minimise the risks of transmission of micro-organisms when using beds and mattresses in in-patient units as part of service delivery
- To provide advice on cleaning and maintenance of beds and mattresses
- To ensure that mattresses are replaced as soon as they become non-compliant and provide guidance on the procedure for mattress replacement
- To ensure all beds and mattresses for use within the Trust are clean and fit for use
- To ensure beds and mattresses are audited/checked regularly for signs of damage and wear and tear

NB This procedure relates to all mattresses e.g. trolleys, couches and hospital beds.

### Definitions

<b>Audit</b>	<ul style="list-style-type: none"> <li>• A system used to monitor and record the condition of beds and mattresses</li> </ul>
<b>Cleaning</b>	<ul style="list-style-type: none"> <li>• A process that physically removes contamination but does not necessarily destroy microorganisms</li> </ul>
<b>Condemned Mattress</b>	<ul style="list-style-type: none"> <li>• Mattress that is no longer fit for purpose due to strikethrough / staining of the foam, the foam being wet or bottoming out of the foam, whereby the bed base can be felt through the foam</li> </ul>
<b>Disinfection</b>	<ul style="list-style-type: none"> <li>• A process used to reduce the number of microorganisms but may not destroy bacteria spores or some viruses but is considered to reduce the number to a level that is safe</li> </ul>
<b>Wear and Tear</b>	<ul style="list-style-type: none"> <li>• Damage that naturally and inevitably occurs as a result of normal wear or aging</li> </ul>

### Key Principles

Proper care, maintenance and cleaning of beds, mattresses, cushions and covers can minimise the risk of healthcare associated infections. It is recommended that auditing of the mattress and bed frames should occur every 12 months (MHRA, 2010). When cared for correctly a hospital mattress is effective for 5-6 years. These principles apply to all mattresses and pressure cushions.

- All mattresses/cushions should be enclosed in a waterproof cover.

- Mattresses and covers should be dated and numbered when put into use and replaced to a pre-determined schedule according to the manufacturer's instructions.
- Mattress covers, zip fasteners and mattresses should be regularly inspected for damage (**Appendix 1 and 2**).
- If the cover is stained, soiled, worn or torn, the mattress core should be examined and the mattress cover replaced immediately (**Appendix 1 and 2**).
- If the mattress core is wet or stained it should be withdrawn from service and condemned.
- All surfaces that come into contact with patients must be decontaminated appropriately.
- Mattress covers should be cleaned between service users and immediately if visibly soiled.
- Following cases of infection or soiling with body fluids, the cover must be cleaned and disinfected using a chlorine solution of 1,000 PPM [see **Infection Prevention and Control Assurance - Standard Operating Procedure 7 (IPC SOP 7) - Decontamination - Cleaning, Disinfection and Sterilisation**].
- Following contamination with blood, the cover must be cleaned and disinfected using a chlorine solution of 10,000 PPM [see **Infection Prevention and Control Assurance - Standard Operating Procedure 7 (IPC SOP 7) - Decontamination - Cleaning, Disinfection and Sterilisation**].

#### **Purchase and Procurement** (This section does not relate to rented beds/mattresses)

- Mattresses purchased should be from an identified and approved supplier as agreed by the Procurement Department and the Infection Prevention and Control Team to ensure compatibility with bed frames and agreed minimum standards.
- A rolling replacement programme should be established at local level to replace mattresses that are not fit for purpose; generally hospital mattresses have a lifespan of 5-6 years.
- On delivery to the unit all new mattresses should be marked with the date of purchase with a permanent marker pen. This is necessary to validate the warranty and will provide a way of indexing the mattress for audit purposes (e.g. Abbey/02/16/01 = Unit/ month/ year/ mattress number). As one mattress is replaced the new mattress will have the same mattress number but the month/date of commission will be different so each ward mattress numbers will always equal the number of beds. Bedframe numbers should match mattress numbers for auditing purposes.
- A mattress audit **MUST** be maintained on the unit so that on-going monitoring can take place, this will ensure the life of the mattress is audited and provides documented evidence.

#### **Care of Mattresses**

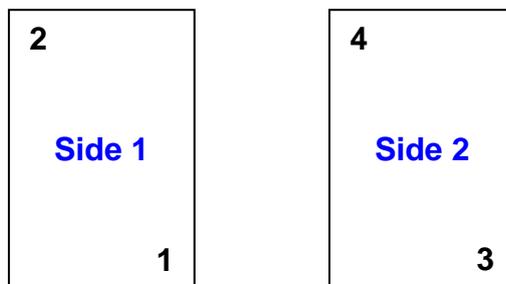
##### **Turning Procedure**

- Many new mattresses do not require turning, so always **refer to manufacturer's instructions**. Those mattresses that do require turning to extend the life and efficacy of the mattress should be turned as per the manufacturer's instructions, mattresses that require turning will have this marked on the cover.

- The instructions on the mattress should be followed and the turning chart completed (**Appendix 1**). This should occur when the mattress is being cleaned on the patient's discharge.
- In areas where patients stay over one week, mattresses should be cleaned/turned weekly when making the patient's bed and the turning chart completed appropriately. (**Appendix 1**)

### Suggested Turning Procedure

- Mark mattress cover on 'Side 1' as shown below.
- Turnover and mark 'Side 2' as shown.
- Turn mattresses regularly using a pre-determined pattern from 1-4.
- When the mattress has been turned / rotated correctly, the current week should be displayed in the bottom left-hand corner of the mattress. Once turned the audit document for each mattress should be completed and retained (**Appendix 1**).
- Therefore in week 1 the mattress should show 1 in the bottom left-hand corner of the mattress, week 2 will show 2 in the bottom left-hand corner of the mattress, week etc.



### Cleaning Foam Mattresses and Cushions

- Staff must consult the manufacturer's recommendations before cleaning the mattress / cushion cover.
- All mattresses/cushions **MUST** be cleaned between each patients use. The way in which the mattress/cushion is cleaned depends upon the contamination type and the susceptibility of the patient.
- In the absence of gross contamination or unusual risk, wash cover with a solution of neutral detergent/water or use disposable detergent wipes. Allow to air dry or dry with disposable paper roll if required
- Bed frames **MUST** always be cleaned between each patient use.
- To prevent mould growth, avoid over wetting and dry thoroughly before turning, remaking the bed or storing the mattress (if the bed is un-occupied apply a decontamination (Clinell) label dated/signed).
- **After each care episode inspect** the inner and outer surfaces of covers and their zip fasteners for signs of damage.
- If the cover is stained, soiled or torn the foam core **MUST** be examined.
- Damaged/soiled covers and mattresses must be reported to the Unit Manager/Matron & replaced as necessary.

N.B. Alcohol wipes/solutions and Chlorhexidine should NOT be used as it causes break down of the waterproof cover and can be toxic to both staff and patient.

## Cleaning Dynamic Mattress Replacement and Overlay Systems

N.B. Always follow the manufacturer's guidance but generally:

- Always ensure that the mains power supply to the pump has been disconnected from the mains electricity supply before starting to clean.
- During general use the mattress and internal air cells may be wiped down using disposable wipes moistened with a mild solution of general purpose detergent and water.
- Where there is staining or body fluids on the mattress, cells or tubing, wash thoroughly then wipe with a cloth impregnated with a solution of chlorine diluted to 1000 ppm (e.g. Haz-Tabs one 4.5g tablet diluted with 2.5 litres of tepid water).
- Where necessary, mattress covers can be removed for laundering at a temperature of 71°C and then tumble dry on a low setting.
- Clean the pump using disposable wipes moistened with a mild solution of general purpose detergent and water, then wipe with a cloth impregnated with a solution of chlorine diluted to 1000 ppm (e.g. Haz-Tabs one 4.5g tablet diluted with 2.5 litres of tepid water).
- DO NOT use phenols, abrasive compounds or cleaning pads when cleaning mattresses and pumps.
- Items suitable for laundering must be laundered in preference to the use of manual cleaning and disinfection procedures.

### Additional Cleaning Measures

- Following cases of infection or soiling with body fluids, the cover must be cleaned and disinfected using a chlorine solution of 1,000 PPM [see **Infection Prevention and Control Assurance - Standard Operating Procedure 7 (IPC SOP 7) – Decontamination - Cleaning, Disinfection and Sterilisation**]. Following contamination with blood, the cover must be cleaned and disinfected using a chlorine solution of 10,000 PPM [see **Infection Prevention and Control Assurance - Standard Operating Procedure 7 (IPC SOP 7) – Decontamination - Cleaning, Disinfection and Sterilisation**].
- If uncertain seek guidance from the Infection Prevention and Control Team.

### Incidents

Any incidents where there are failures in the mattress, care and/or issues with cleaning products should be reported, via DATIX

### Disposal of Used/Soiled/Infected Mattresses

- Used mattresses do not normally need to be disposed of as infectious waste. They must be socially clean i.e. cleaned with detergent/warm water and have a decontamination certificate attached (See **Medical Devices Policy and Procedures**), prior to being disposed of as household waste (removal/collection can be arranged by contacting the Estates and Facilities Helpdesk).
- Any mattress that is known or thought to be infected or is heavily soiled should be disposed of as clinical waste. The mattress must be placed in a yellow clinical waste mattress disposal bag, securely sealed and labelled. Provision of bags and the removal/collection can be arranged by contacting the Estates and Facilities Helpdesk.

## **Mattresses to be Returned to Loans or other Suppliers**

Once the decontamination process has been completed as per the manufacturer's instructions a decontamination certificate should be completed and attached and the mattress should be stored in a clean area awaiting collection (See **Medical Devices Policy and Procedures**).

## **Auditing of Beds/Mattresses and Pressure Relieving Cushions (Appendix 3)**

- Mattress audits are to be completed at least every 6 months in all in-patient units by the Infection Prevention Champions and Matrons. This is to ensure that every patient has a clean and intact mattress to prevent the spread of infection and minimise the risk of cross-infection.
- The assessment of the mattress/cushion covers are core are key components to safe and effective management, this is in line with the MHRA Medical Device Alert 2010 (see **Appendix 2**).
- The audit tools are available on the Trusts Infection Prevention and Control Intranet pages.
- Covers and zip fasteners (if present) should be checked regularly. If the cover is stained, soiled or damaged the foam core of the mattress should be examined. If the core is wet or badly stained, it **MUST** be removed from the ward area and withdrawn from service.

## ***Where do I go for further advice or information?***

- Infection Prevention and Control Team
- Your Service Manager, Matron, General Manager, Head of Nursing, Group Director and Physical Health Matron
- Your Group Governance Staff

## **Training**

Staff may receive training in relation to this procedure, where it is identified in their appraisal as part of the specific development needs for their role and responsibilities. Please refer to the Trust's Mandatory and Risk Management Training Needs Analysis for further details on training requirements, target audiences and update frequencies.

Information on the cleaning of beds and mattresses is to be cascaded to staff during their local induction process in all in-patient units.

## **Monitoring / Review of this Procedure**

In the event of planned change in the process(es) described within this document or an incident involving the described process(es) within the review cycle, this SOP will be reviewed and revised as necessary to maintain its accuracy and effectiveness.

## **Equality Impact Assessment**

Please refer to overarching policy

## **Data Protection Act and Freedom of Information Act**

Please refer to overarching policy

### Appendix 1 - Weekly Record of Mattress Cleaning and Turning 2016-17

- **Code: TP** = In the correct turned position; **VC** = visually clean; **S** = Stained/marked/ripped or odorous **R** = Replace
- **When the mattress is turned correctly, the current week should be displayed in the bottom left-hand corner of the mattress**
- **Please identify the condition of the mattress cover and core foam with a tick ✓ if achieved/complaint or X if not on the chart**

Site:		Ward/Dept.:				Mattress Identifier Code:			
Week	Date <small>dd/mm/yy</small>	TP	VC	S	R	Reported to who?	Comments	Auditors Name/Sign	
1									
2									
3									
4									
5									
6									
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12									
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19									
20									
21									
22									

Week	Date dd/mm/yy	TP	VC	S	R	Reported to who	Comments	Auditors Name/Sign
23								
24								
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# Don't judge a mattress by its cover

## Calm surface



- Inspect the exterior surface of each mattress cover for signs of damage, such as holes or cuts.
- Remove the cover and inspect its inside surface and the mattress core for staining or contamination.
- Safely dispose of any covers showing signs of damage or staining
- Arrange for contaminated mattress cores to be cleaned and decontaminated in accordance with the manufacturer's instructions or safely disposed of.
- Ensure that a frequent inspection regime is established for all mattresses.

## What lies beneath



Do the user instructions for the mattress properly describe how to inspect, clean and decontaminate it?  
If not, tell us about it by reporting it as an adverse incident.

Report adverse incidents online [www.mhra.gov.uk](http://www.mhra.gov.uk)  
or on email [aic@mhra.gsi.gov.uk](mailto:aic@mhra.gsi.gov.uk)  
or telephone 020 7084 3080

**Appendix 3**

**Infection Control Audit Tool - Mattress and Pressure Cushions**

Instructions for checking a mattress or cushion and covers
<p><b><u>Hand Compression Assessment (Bottoming out Test)</u></b></p> <ol style="list-style-type: none"> <li>1. Wear appropriate Personal Protective Equipment (PPE).</li> <li>2. Adjust the height of the bed so that it is at the same level as the tester's hip (if possible)</li> <li>3. Link hands to form a fist and place them on the mattress.</li> <li>4. Keep elbows straight and lean forward, applying the full body weight to the mattress.</li> <li>5. Repeat the hand compression along the entire length of the mattress.</li> <li>6. If you can feel the base of the bed at any point along the mattress the mattress has failed.</li> <li>7. The mattress should be removed from use and disposed of as per policy if it is found to 'bottom out'</li> </ol>
<p><b><u>Water Penetration Test (for mattress and cushion covers with a zip)</u></b> used to check if the cover is permeable to fluids</p> <ol style="list-style-type: none"> <li>1. Gather equipment – 100 ml of tap water, paper towels, gloves and apron</li> <li>2. Wash hands, put on gloves and apron</li> <li>3. Remove bedding</li> <li>4. Using the fist, press the mattress/cushion cover to form a shallow well in the centre of the mattress/cushion where it would have high usage or any areas of concern.</li> <li>5. Pour on a small volume of tap water (50-75 ml) in the well and agitate the area for about one minute.</li> <li>6. Visually inspect for loss of water/water penetration which indicates failure of the mattress.</li> <li>7. Dry with the paper towel</li> <li>8. With a clean paper towel again press firmly over the well and inspect for any evidence of strike-through which also confirms failure of the mattress.</li> <li>9. Clear away equipment, remove PPE and wash hands</li> <li>10. Re-make the bed as necessary</li> </ol>
<p><b><u>Water Penetration Test (for sealed mattress or cushion covers without a zip)</u></b> used to check if the cover is permeable to fluids</p> <ol style="list-style-type: none"> <li>1. Gather equipment – 100 ml of tap water, paper towels, gloves and apron</li> <li>2. Wash hands, put on gloves and apron</li> <li>3. Remove bedding</li> <li>4. Unzip the cover and visually inspect the mattress core for staining</li> <li>5. Place clean dry paper towels on top of the centre of the mattress core but beneath the cover then loosely replace cover (leaving unzipped)</li> <li>6. Using the fist, press the mattress cover to form a shallow well in the centre of the mattress where it would have high usage or any areas of concern.</li> <li>7. Pour on a small volume of tap water (50-75 ml) in the well and agitate the area for about one minute.</li> <li>8. Visually inspect for loss of water/water penetration which indicates failure of the mattress.</li> <li>9. Dry with the paper towel</li> <li>10. Inspect the mattress core for signs of wetness.</li> <li>11. With a clean paper towel again press firmly over the well and inspect for any evidence of strike-through which also confirms failure of the mattress.</li> <li>12. Clear away equipment, remove PPE and wash hands</li> </ol>
<p><b><u>Turning Mattresses</u></b></p> <ul style="list-style-type: none"> <li>• Many new mattresses DO NOT require turning, however, if the mattress does require turning, this should be carried out in accordance with the manufacturer's instructions and documented as/when completed. All records should be retained for at least 6 months for inspection</li> </ul>
<p><b><u>Pillows</u></b></p> <ul style="list-style-type: none"> <li>• All pillows should be impermeable to body fluids and inner cover should free from stains and in a good state of repair.</li> <li>• All bedding should be clean and fit for purpose</li> </ul>

## Mattress and Pressure Relieving Cushions Audit Tool

This audit tool aims to identify mattresses and mattress covers in poor condition. Mattresses and covers in a poor condition are known to be a source of healthcare associated infection. **ALL PAGES TO BE RETAINED ON THE UNIT**

<b>WARD/DEPT:</b>	<b>MANAGER:</b>
<b>DATE:</b>	<b>MATRON:</b>
<b>TIME:</b>	<b>AUDITOR:</b>
<b>Total no of beds:</b>	<b>PRESENT:</b>
<b>Total no of pressure relieving cushions:</b>	

**Standard:** All mattress covers should be of an appropriate thickness and covered with a stretchable vapour permeable material, which will be waterproof and capable of being washed with water, detergents and disinfectants.

<b>Criteria for Mattress Covers</b>		<b>Yes</b>	<b>No</b>	<b>N/A</b>	<b>Comments</b>
1.	Is it fitted with a waterproof mattress cover?				
2	Is it free of stains?				
3	Is the mattress cover intact e.g. not torn or damaged?				
4	<i>Removable mattress covers:</i> is the zip or any other fastening device in a good state of repair and did it pass the water penetration test?				
5	<i>Non-removable mattress covers:</i> did the cover pass the water penetration test?				
6	The mattress cover is free from any soiling that cleaning cannot remove?				
<b>If the answers to any of the above questions are No, the mattress cover has failed and must be replaced</b>		Pass		Fail	
<b>Criteria for Mattresses (foam core)</b>		<b>Yes</b>	<b>No</b>	<b>N/A</b>	
8	Undo removable cover (if present) is the mattress core free from soiling and stains?				
9	Is the mattress core free from offensive odour?				
10	Did the mattress pass the hand decompression assessment (see instruction notes on pg. 1)				
<b>If the answers to any of the above questions are No, the mattress has failed and must be replaced</b>		Pass		Fail	
<b>Mattress and Mattress cover labelling</b>		<b>Yes</b>	<b>No</b>	<b>N/A</b>	
11	Is the mattress and cover labelled with a unique identification number and dated when the mattress was put into use?				
12	Turning mattress only: is the mattress cover numbered to facilitate the mattress turning procedure and there is evidence that the mattress is turned weekly?				
<b>If the answers to any of the above questions are No, the unit has failed and must put an action plan in place to be completed within 4 weeks</b>		Pass		Fail	
<b>Beds and Bedframes</b>		<b>Yes</b>	<b>No</b>	<b>N/A</b>	
13	Is the bed frame in a good state of repair?				
14	If a mechanical/electric bed is their evidence on regular planned maintenance?				
15	Is the bed frame/base free from soiling that cleaning cannot remove?				
16	Are all parts e.g. brakes, backrest etc. in good working order (if applicable)?				
<b>If the answers to any of the above questions are No, the unit has failed and must put an action plan in place to be completed within 4 weeks</b>		Pass		Fail	

Continue over the page

## Bed, Mattress and Pressure Relieving Cushions Audit Tool 2016/17

This audit tool aims to identify mattresses and mattress covers in poor condition. Mattresses and covers in a poor condition are known to be a source of healthcare associated infection. **Only this page to be returned to Infection Control**

<b>WARD/DEPT:</b>	<b>MANAGER:</b>
<b>DATE:</b>	<b>MATRON:</b>
<b>TIME:</b>	<b>AUDITOR:</b>
<b>Total no. of beds on unit:</b>	<b>PRESENT:</b>
<b>No. of pressure relieving cushions:</b>	
<b>No. of pillows</b>	

Bed room No	Unique Bed Number	Pass or Fail	Date all Actions completed	Unique Mattress Number	Pass or Fail	Comments and Date Condemned	Date mattress replaced	Print Name
1								
2								
3								
4								
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Please use the opportunity to also check the condition of pillows and replace as required – all pillows should be impermeable to body fluids

Please give details:	Numbers:
Number of mattresses checked:	
Number of mattresses condemned <i>(if applicable)</i>	
Number of mattress covers replaced:	
Number of pressure cushions checked:	
Number of cushions condemned: <i>(if applicable)</i>	
Number of mattresses/cushions for disposal as clinical waste:	
Number of examination couch/chairs checked:	
Number of couches/chairs condemned:	
Number of pillows condemned:	
<i>N.B. Mattress disposal bags (clinical waste) are available from Estates and Facilities (call helpdesk)</i>	
Comments:	

## Standard Operating Procedure Details

<b>Unique Identifier</b> for this SOP is	BCPFT-COI-POL-05-12
State if SOP is <b>New</b> or <b>Revised</b>	Revised
<b>Policy Category</b>	Control of Infection
<b>Executive Director</b> whose portfolio this SOP comes under	Executive Director of Nursing, AHPs and Governance
<b>Policy Lead/Author</b> Job titles only	Infection Prevention and Control Team
<b>Committee/Group Responsible for Approval of this SOP</b>	Infection Prevention and Control Committee
<b>Month/year consultation process completed</b>	n/a
<b>Month/year SOP was approved</b>	June 2019
<b>Next review due</b>	June 2022
<b>Disclosure Status</b>	'B' can be disclosed to patients and the public

### Review and Amendment History

Version	Date	Description of Change
1.1	Feb 2019	Policy reviewed – no changes required
1.0	Jan 2016	New Procedure established to supplement Infection Control Assurance Policy