



GIG
CYMRU
NHS
WALES

Iechyd Cyhoeddus
Cymru
Public Health
Wales



Llywodraeth Cynulliad Cymru
Welsh Assembly Government

Infection Prevention Model Policy/Procedure 5

Safe Management of Linen

(An element of Standard Infection Control Precautions)

Author: Welsh Healthcare Associated Infection Programme (WHAIP).

Date of Ratification: 8th March 2010 by Welsh Healthcare Associated Infections Sub-Group (WHAISG), Welsh Assembly Government

Date of Issue: 22nd March 2010.

Date of Review: March 2013.

Infection Prevention Model Policy/Procedure-Safe Management of Linen

Policy/Procedure Content

1.0 Executive summary/Key Points.....	page 3
2.0 Introduction.....	page 5
3.0 Responsibilities.....	page 5
4.0 Categorisation of linen.....	page 7
5.0 Why linen needs to be handled safely.....	page 7
6.0 Safe handling of linen.....	page 8
6.1 Storage of clean linen.....	page 8
6.2 Handling and disposing of used linen.....	page 8
6.3 Foul/infected linen.....	page 9
7.0 Safe transport of linen to and from the laundry.....	page 10
8.0 Laundry temperatures and cycles.....	page 11
9.0 Laundry requirements.....	page 11
10.0 Laundering of patients' clothes by family/friends.....	page 12
11.0 References/literature review.....	page 13

1.0 Executive Summary/Key Points.

- Safe management of linen is one of the nine elements of Standard Infection Control Precautions (SICPs) which should be applied in all healthcare settings.
- All staff have the responsibility to ensure safe practices whilst handling linen.
- All staff must receive training in the safe management of linen.
- Any incidents where inappropriate handling or disposing of linen has occurred should be reported and investigated in line with local incident reporting procedures. This includes the presence of extraneous items found in the linen.
- It is important when handling and disposing of dirty linen to ensure that it is properly segregated into different categories: used, foul/infected and heat labile.
- The safe management of linen includes storage, handling, bagging, transportation and laundering.
- Clean linen should always be stored in a clean, designated area, away from the floor. It should be separate from areas used to store used linen, and not in bathrooms or sluices.
- Appropriate personal protective equipment (PPE) must be worn when handling dirty linen.
- Staff should avoid shaking linen as this may result in the dispersal of potentially pathogenic organisms and/or skin scales into the environment.
- Staff must ensure that sharps or other extraneous items are **not** discarded into linen bags/trolleys.
- The appropriate coloured coded bags/trolleys should be as close to the point of use as possible.
- Used linen should be placed **immediately** into designated bags/trolleys, and never placed/dropped onto the floor or other surfaces.
- Used linen bags/trolleys must be appropriately closed, and then tagged for identification. Never overfill laundry bags.
- Manual soaking/sluicing of linen should never be carried out.
- Hand hygiene should be performed before handling clean linen, after handling used linen and after removal of apron and gloves.

Infection Prevention Model Policy/Procedure-Safe Management of Linen

- Full bags must be stored in a designated, safe, lockable area that has a clear cleaning schedule.
- The washing process for used/soiled/foul/infected linen should include a disinfection cycle where the temperature is maintained at 65°C for not less than 10 minutes (or preferably, 71°C for not less than 3 minutes). With both options, 'mixing time' must be added to ensure heat penetration and disinfection (4-8 minutes depending on the conditions).
- A sluice cycle must be used when dealing with foul linen.
- Clean linen must be transported under conditions that ensure cleanliness. Clean and dirty linen must be properly segregated when being transported.
- Facilities providing laundry services need to comply with National Standards.
- Patients' clothes for home laundering should be stored for collection in tied plastic bag/s to prevent leakage and contamination, and should remain in these bag/s when given to those taking it home to launder.
- It is important that staff explain the key elements of precautions required for home laundering of clothes to family/friends. Written guidance in the form of an information leaflet should also be given.

2.0 Introduction

It has been shown that used linen, within healthcare settings in particular, can harbour large numbers of potentially pathogenic microorganisms. Therefore, it is important that the appropriate precautions are taken to ensure contamination to/from linen does not occur, as this might then lead to transmission of microorganisms to people or to the environment. These precautions apply to all stages of linen management: storage, handling, bagging, transporting and laundering. Safe management of linen is one of the nine elements of Standard Infection Control Precautions (SICPs) which should be applied in all healthcare settings.

In this policy the term 'linen' refers to all articles for laundering.

This policy does not specifically cover procedures relating to uniforms.

This policy does not cover linen contaminated with radioactive materials.

3.0 Responsibilities

3.1 Managers/Clinical Directors must:

- Ensure that all staff have had instruction/education on SICPs and the safe management of linen.
- Ensure that an up-to-date evidence-based policy on safe management of linen is easily available to all staff.
- Ensure that adequate resources are in place to allow the recommended infection control measures for the safe management of linen to be implemented.
- Ensure that when purchasing linen products, or any item that requires laundering, that they can be laundered at the recommended temperatures, as per Health Service Guidance.
- Undertake a risk assessment to optimise patient/client and staff safety, consulting expert infection prevention and control guidance if/as required.
- Support staff in any corrective action or interventions if an incident occurs that may have resulted in transmission of infection.
- Ensure any staff with health concerns, or who have become ill due to occupational exposure, are referred to the relevant agency e.g., General Practitioner or Occupational Health.

Infection Prevention Model Policy/Procedure-Safe Management of Linen

3.2 All staff (providing direct care in a health or social care setting including a patient/clients own home) **must:**

- Apply the principles of SICPs and ensure all other staff/agencies apply the principles of SICPs.
- Attend induction, mandatory and update infection prevention and control education sessions, including those on the safe management of linen.
- Report to line managers any deficits in relation to knowledge of the safe management of linen/SICPs, facilities/equipment or incidents that may have resulted in cross contamination.
- Report any illness as a result of occupational exposure to their line manager.
- Consider the elements of SICPs such as the safe management of linen as an objective within staff continuing professional development and e-KSF (Knowledge and Skills Framework), ensuring continuous updating of knowledge and skills.

3.3 Infection Control Staff must:

- Provide education for staff and management on this policy, including the correct use of alginate/water soluble bags.
- Act as a resource for guidance and support when advice on the safe management of linen is required.
- Provide advice on individual risk assessments for patient/client decisions.

The source of Infection Prevention and Control advice and support should be identified by all healthcare providers.

3.4 Incident reporting

Any incidents where inappropriate handling or disposing of linen has occurred should be reported and investigated in line with local incident reporting procedures. This includes the presence of extraneous items found in the linen, and breakdown or failure of laundry equipment.

4.0 Categorisation of linen

It is important when handling and disposing of dirty linen to ensure that it is properly segregated into different categories. The recognised categories are:

- **Used linen** – this refers to all used linen, irrespective of state, except linen from infectious (or isolated) patients/clients, or those suspected of being infectious.
- **Infected linen** – this specifically applies to linen that has been used by a patient or client who is known or suspected to be carrying potentially pathogenic microorganisms. Normally, in these situations, a risk assessment will have been carried out and additional precautions will have been put in place to prevent transmission of these microorganisms and subsequent infection in others, e.g. isolation or transmission-based precautions. Local Infection Control Teams may need to give specific advice on infected linen from certain patients/clients.
- **Heat labile linen** – refers to items which need to be washed at lower temperatures, e.g. 40° C, to avoid shrinkage.

In addition, the terms ‘soiled ‘ linen and ‘foul’ linen may be used.

- **Soiled/foul linen** – these terms refer to the degree of contamination of linen with blood or other body fluids, e.g. faeces. Local policy will often determine into which category this linen will be placed e.g. used or infected. However, it is common practice to use the same procedures for foul and infected linen.

5.0 Why linen needs to be handled safely

The healthcare setting contains a diverse population of microorganisms. It has been shown that used linen within healthcare settings can harbour large numbers of potentially pathogenic microorganisms. Used linen must, therefore be safely managed in order that it does not become a hazard leading to the spread of these microorganisms to staff, to those receiving care and to the environment.

Clean linen must be handled carefully to prevent it becoming contaminated prior to use.

The transfer of microorganisms from linen to patients/clients, staff and others is primarily through contact and all stages of linen management should be considered including storage, handling, bagging, transportation and laundering.

6.0 Safe handling of linen

6.1 Storage of clean linen

- Clean linen should always be stored in a clean, designated area, preferably a (purpose built) cupboard and away from the floor, to prevent contamination with dust and/or aerosols. It should be separate from areas used to store used linen, and not in bathrooms or sluices.
- Linen should be handled as little as possible. Storing in corridors or decanting onto trolleys before placing in linen cupboards or shelves, may result in contamination.

6.2 Handling and disposing of used linen

- A disposable plastic apron should always be worn when handling used linen. Disposable gloves should be worn by laundry staff when handling all used linen, and by other staff on risk assessment e.g. when linen is wet, soiled, foul, from an infected patient or one where other precautions are in place (contact or transmission-based precautions).
- Any exposed skin lesions should be covered with a waterproof dressing.
- Always hold used linen away from yourself to avoid contaminating clothing.
- Staff should avoid shaking linen as this may result in the dispersal of potentially pathogenic organisms and/or skin scales into the environment.
- Place used linen **immediately** into a designated bag/trolley.
- Ensure that the appropriate colour coded bags/trolleys are available as close to the point of use as possible. All used linen (except foul or infected) should be placed in white coloured bags/trolleys.
- Local policy may vary slightly and should be followed. Common practice is that soiled items' are placed in a clear water soluble / alginate bag, closed with a soluble tie, and then placed in a white secondary bag/trolley. Others may state that wet linen is placed in a clear plastic bag first rather than water soluble/alginate.
- Do not wrap items of linen together when disposing of them into the designated bag/trolley. Place each individual item into the bag/trolley.
- Staff must ensure that sharps or other extraneous items are **not** discarded into linen bags/trolleys.
- Never place or drop linen onto the floor or other surfaces e.g. lockers, tables, as this could lead to contamination with microorganisms from the linen.
- Never overfill laundry bags/trolleys.

Infection Prevention Model Policy/Procedure-Safe Management of Linen

- All bags should be closed using the appropriate tie when $\frac{3}{4}$ filled. Laundry bags holding used linen should not be left untied for long periods e.g. more than 24 hours.
- Used linen bags/trolleys must be appropriately tagged for identification, particularly when generated in healthcare settings. Tagging allows inappropriate practices to be fed back and addressed at local level.
- After placing in laundry bags/trolleys, used linen must not be re-handled, separated or sorted, especially not by carers in care settings where laundry facilities are available.
- All linen bags should be disposed of (where disposable) or laundered immediately after use.
- Manual soaking/sluicing of linen should not be carried out.
- Ensure used linen and linen bags/trolleys are stored within a designated area which cannot be accessed by the public. Bags should not be placed on inappropriate surfaces e.g. those that are touched frequently and used for other purposes. Do not store bags in corridors.
- PPE should be changed, and hand hygiene performed following handling of used linen and between tasks/beds. Staff should ensure they dispose of all PPE as clinical waste.

6.3 Foul/infected linen

Common practice is to deal with foul and infected linen in the same way. However, there may be local exceptions to this general rule. In addition to the good practice steps described in section 5.3 the following additional measures are required for linen in this category.

- A disposable plastic apron and disposable gloves must be worn by all staff handling foul/infected linen.
- Foul/infected linen should be placed directly into a red water-soluble/alginate bag. This prevents any further handling and potential contamination, particularly for those performing laundering procedures. The bag should be immediately secured using an appropriate water soluble tie.

(Common practice is to use red water soluble/alginate bags for this category of linen and this will be used throughout this document. There may, however, be local exceptions to the choice of red e.g. a red stripe).

- A red coloured secondary laundry bag should be used to store/transport the water-soluble bag. This bag must be appropriately tied, and tagged for identification of area of origin. It should be disposed of (where disposable) or laundered immediately after use.
- Do not open the soluble linen bags. Foul/infected linen must not be rinsed or sorted prior to it being laundered.

Infection Prevention Model Policy/Procedure-Safe Management of Linen

- At times, when linen is heavily soiled, it may not be fit for reuse following laundering. In these instances linen should be placed in a healthcare waste disposal sack and discarded as clinical waste. This applies only in healthcare premises.
- Full bags should be stored in a designated, safe, lockable area that has a clear cleaning schedule.
- If a build-up of used/infected linen bags is noted and no pick-up is made, a call should be made to arrange this with the appropriate department/company.

7.0 Safe transport of linen to and from the laundry

- Measures should be in place to ensure that linen for use arrives clean e.g. via department or company agreements. Inspections and audits should be carried out to ensure that trolleys and vans used to transport linen are fit for purpose, and that linen arrives which is clean, dry and free from contamination.
- Clean and used/infected linen should never be transported in the same bag/trolleys/storage cage. Instead, there should be designated bags/trolleys/storage cages and, if possible, vehicles for each to ensure that clean linen is protected from contact with or seepage from used/infected linen.
- Trolleys for clean linen in transit should be covered with a washable or disposable cover. Fully enclosed and sealed containers with a lockable door may be used in preference.
- Hand hygiene should be carried out before handling clean linen, and it should be stored in a designated, clean area with minimal handling until required.
- Appropriate PPE should be worn by those transporting bags of used/infected linen, e.g. gloves.
- Bags containing used/infected linen that have not been properly secured should not be uplifted.
- Those personnel transporting used/infected linen should not open linen bags/trolleys/cages nor should they handle this linen directly.
- Hand hygiene should be performed after handling used linen bags/trolleys/cages.
- These points also apply to the transportation of linen within patient/client areas.
- Any sharps injuries sustained from extraneous items found during transport of linen should be actioned as per **Occupational Exposure Management including Needlestick injuries Policy/Procedure**. These items should be disposed of immediately into an approved sharps container.

8.0 Laundry temperatures and cycles.

- The washing process for used/soiled/foul/infected linen should include a disinfection cycle where the temperature is maintained at 65°C for not less than 10 minutes (or preferably, 71°C for not less than 3 minutes). With both options, 'mixing time' must be added to ensure heat penetration and disinfection (4-8 minutes depending on the conditions).
- A sluice cycle is necessary for foul linen.
- It is possible to aid disinfection by adding sodium hypochlorite to the penultimate rinse.
- Hypochlorites should not be used with materials treated for fire resistance.
- Heat labile items should be washed at the highest temperature possible according to the care instructions. If the item is foul/infected, it should be placed in a red, water-soluble bag and a pre-wash cycle selected, along with an appropriate disinfectant e.g. oxygen-releasing or bleaching agent added to the washing process.

9.0 Laundry requirements

Most Trusts provide their own laundry facilities. For those in the community, arrangements can be made via a contract with a Trust or commercial laundry company. For those areas of the community wishing to provide their own laundry services it is important that consideration is given to how the service is set up.

- A laundry area should be designated for that purpose only, with separate ventilation and a flow through system, so that dirty linen can arrive through one door and be decontaminated, before drying and removal through a separate exit to a clean storage area. The area designated for dirty linen should be completely separate from where clean linen is handled and stored. There should be no communication with any food storage or preparation areas.
- The laundry floor must be of a smooth, impermeable and easily cleaned material. The walls must be in sound condition and easily cleaned.
- An industrial washing machine with sluice and hot wash cycles is required. These should be professionally installed and serviced, with precautions taken to ensure the machine does not create contaminating aerosols. Ideally, the machine should have a temperature display. A service agreement which supports prompt repair or replacement of the machine is advisable.

Infection Prevention Model Policy/Procedure-Safe Management of Linen

- An industrial dryer should be used to dry all clothing and linen. It should be regularly serviced and maintained.
- A manual sluice facility or sluicing basin must not be used or situated in the laundry.
- Appropriate PPE must be available for all staff.
- There must be hand decontamination facilities for staff, including a hand hygiene basin with lever taps, and no plug or overflow, liquid soap and disposable paper towels. Alcohol-based hand rub should be available, as should a pedal operated waste bin.
- Washing powders and other substances must be kept in a locked storage cupboard. Data sheets for hazardous substances must be available for reference.
- Where a local domestic washing machine is available within a care setting for laundering, items should be cared for/managed in the same way as described throughout this policy.

10.0 Laundering of patients' clothes by family/friends

It may be necessary to ask family or friends to take home a patient's personal clothing for laundering. It is important that this is agreed with the family/friends and that staff explain the key elements of precautions required. Written guidance in the form of an information leaflet should also be given. An information leaflet for family/friends laundering patient clothes at home can be found at <http://www.wales.nhs.uk/sites3/page.cfm?orgid=379&pid=47077>.

- Patients' clothes for home laundering should be stored for collection in tied plastic bag/s to prevent leakage and contamination, and should remain in these bag/s when given to those taking it home to launder. All solid faecal matter must be removed by staff before placing in these bags.
- Those laundering the clothes must be advised to cover exposed skin lesions/ cuts on their hands and lower arms with a waterproof plaster.
- Those laundering the clothes must be advised to wear household 'rubber gloves' when opening the bag and loading the washing machine.
- The bag/s should be opened and the clothes loaded into the washing machine, without sorting if possible. Handling of the clothes should be kept to a minimum, always being held way from the body and with no shaking. The bag/s should be disposed of in the domestic waste.
- The clothes should be washed separately from other laundry that may be waiting to be done at home.

Infection Prevention Model Policy/Procedure-Safe Management of Linen

- Before removing the rubber gloves they should be washed with soap and warm water.
- Always wash hands thoroughly with soap and water after removal of rubber gloves.
- Items should be laundered using the highest temperature possible as per washing instructions on the care label. Use normal washing powder/liquid.
- Tumble dry where possible and according to the care instructions. Otherwise, thoroughly air dry.
- Once dry, iron on the hottest setting suitable for the fabric
- The laundered clothes should be returned to the patient in a clean bag.

There are now patient clothing bags available on the market which can be placed in domestic washing machines, minimizing handling of dirty laundry. Manufacturers' instructions should be followed.

There may be circumstances where it is not appropriate to send patient clothing for home laundering, especially in situations where the patient has certain infections e.g. gastrointestinal. In these instances, infection control advice should be sought. It is good practice, if patients' who have diarrhoea and are at risk of contaminating their clothing, are provided with hospital or other suitable clothing which can be laundered by the care provider.

11.0 References/literature review

This policy/procedure is supported by a full review of literature with references.

This work is based on the Model Infection Control Policies developed by Health Protection Scotland, with thanks.

Infection Prevention Model Policy/Procedure-Safe Management of Linen