

Livewell Southwest

The Management and Control of Resistant Gram-Negative Bacteria (Extended-spectrum Beta-Lactamase (ESBL), Klebsiella, Serratia, Enterobacter, Acinetobacter, Pseudomonas Aeruginosa, Carbapenemase-producing Enterobacteriaceae (CPE)).

Version No. 2.6

Review: September 2017

Notice to staff using a paper copy of this guidance

The policies and procedures page of Intranet holds the most recent version of this guidance. Staff must ensure they are using the most recent guidance.

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2		2/12/08	Infection Control Committee	
2:1		October 2011	Infection Control Nurse	Reviewed, no changes.
2:2	Extended	November 2013	PRG Secretary	Extended no changes.
2:3	Minor amend	January 2014	PRG Secretary	Title of policy amended.
2:4	Major changes	July 2014	Infection Control Nurse	Major changes throughout due to change of title, (Carbapenemase-producing Enterobacteriaceae (CPE) added.
2:5	Minor changes	July 2015	Infection Control Nurse	Updating to reflect SystemOne, updating localities.
2.6	Minor changes	November 2016	Infection Prevention and Control Manager	LSW recently had two transfers from PHNT who had been in contact with a patient with confirmed CPE. There was confusion about CPE contact screening. We have therefore reviewed the policy to ensure this does not happen again.

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The Management and Control of Resistant Gram-Negative Bacteria (Extended-spectrum Beta-Lactamase (ESBL), Klebsiella, Serratia, Enterobacter, Acinetobacter, Pseudomonas aeruginosa, Carbapenemase-producing Enterobacteriaceae (CPE)).

Summary

- Appropriate use of antibiotics will greatly reduce the selection pressure for colonisation and infection with resistant gram-negative bacteria. Prescribers should adhere to the LSW's Antimicrobial Treatment Guidelines.
- Advice on the clinical management of patients with infections due to resistant gram-negative bacteria should be obtained from an On-call microbiologist, who will advise on the appropriate specimens to send and the type and duration of antibiotic therapy.
- The most effective means of preventing cross infection and colonisation with resistant gram-negative bacteria is good hand hygiene, patient isolation and implementation of standard contact precautions.
- Daily cleaning of the patient environment and decontamination of equipment should be performed. Terminal environmental cleaning with a detergent/bleach solution should be performed on patient discharge.

1. Policy objectives and scope

This policy aims to:

- 1.1 Ensure that patients colonised or infected with resistant gram-negative bacteria receive effective and appropriate care.
- 1.2 Minimise the risk of transmission of resistant gram-negative bacteria.
- 1.3 This policy is designed to cover any gram-negative bacteria that show unexpected or extensive antibiotic resistance and will typically include the following bacterial species:
 - a) Extended-spectrum Beta-Lactamase (ESBL)-producing coliforms.
 - b) Carbapenemase-producing Enterobacteriaceae (CPE).
 - c) Klebsiella spp.
 - d) Serratia spp.
 - e) Enterobacter spp.
 - f) Acinetobacter spp.
 - g) Pseudomonas aeruginosa.

2. Background

2.1 Gram-negative bacteria are usually found as part of the normal gut flora or in moist environments, and are usually harmless to fit, healthy people. They are an important cause of nosocomial infection, particularly in vulnerable patients who are ventilated, have complex medical/surgical problems, wounds, or intravascular or urinary catheters. These bacteria have the potential for cross-infection and by far the most important route of transmission is via the hands of healthcare workers. Contamination of hands is particularly likely when handling urinary catheters or respiratory secretions of an infected patient. Because of their survival capabilities, transmission can also occur via contaminated equipment (such as commodes and wash bowls) or an environmental source.

2.2 Gram-negative bacteria have a tendency to develop resistance to multiple antibiotics, making infections due to these bacteria more difficult to treat. Antimicrobial resistance is a particular problem in hospitals due to the widespread use of antibiotics and because secondary spread is also more likely within healthcare settings. Common strains are able to persist within healthcare settings due to selective antibiotic pressure, patient colonisation, environmental contamination and patient-to-patient transmission.

3. Antibiotic Policies

3.1 A major contributor to the rise in infections due to resistant gram-negative bacteria in acute NHS Trusts in the UK has been the widespread use of broad-spectrum antibiotics. Appropriate and prudent use of antibiotics will greatly reduce the selection pressure for colonisation and infection with resistant gram-negative bacteria. Prescribers should adhere to Livewell Southwest (LSW's) Antimicrobial Treatment Guidelines.

4. Clinical management of infections due to resistant gram-negative bacteria

4.1 Advice on the clinical management of patients with infections due to resistant gram-negative bacteria should be obtained from the on-call Microbiologist, who will advise on the appropriate specimens to send and, the type and duration of antibiotic therapy.

4.2 Whenever possible, urinary catheters should be removed or replaced from patients with urinary tract infection due to resistant gram-negative bacteria.

4.3 For patients requiring surgical intervention, additional antibiotic prophylaxis effective against the resistant gram-negative bacteria may need to be added to the usual peri-operative regimen as outlined in the surgical prophylaxis policy. Advice on the choice of antibiotic should be sought from an On-call microbiologist.

5. Identification of carriers of ESBL -producing coliforms

- 5.1 Recently, there has been a nationwide increase in the number of urinary tract infections due to ESBL producing coliforms. Some microbiology results may identify AmpC resistance which is very similar to ESBL and these are generally grouped together, their management is the same. Although many of these have been isolated from samples submitted from the community, an increasing number are being found in hospital patients. Importantly, a proportion of these patients present acutely unwell with urosepsis which will not respond to many commonly used first-line antimicrobial agents.
- 5.2 Patients known to carry an ESBL-producing coliform or CPE- producing coliform will be identified by a Clinical Alert on their electronic records (SystemOne). Other Gram-negative bacteria may be alerted as deemed appropriate by the Infection Prevention and Control Team (IPCT).
- 5.3 Staff responsible for the admission of patients should check the Clinical Alerts on SystemOne for evidence of previous colonisation with an ESBL OR CPE producing coliform or other resistant Gram negative bacteria (Appendix A). If these are present, the IPCT should be informed and a risk assessment for standard isolation precautions performed. Screening of the patient (e.g. urine or perineal/rectal swab) may be considered appropriate, for example if the patient is to undergo invasive procedures or is to continue on antibiotics. After taking the appropriate diagnostic samples, advice on treatment of suspected sepsis due to an ESBL or CPE producing coliform **should be sought from an On-call microbiologist**. Most local ESBL-producing coliforms are only susceptible to meropenem, ertapenem and gentamicin.
- 5.4 Clinical Alerts should only be added or removed by the IPCT and will be considered on an individual patient basis.
- 5.5 The IPCT will undertake future, directed surveillance of resistant gram-negative bacteria and feedback the results the relevant stakeholders.

6. Tests for colonisation with resistant gram-negative bacteria

- 6.1 Patient with a recent history of medical care in a foreign country or region within the UK reported high prevalence of healthcare-associated are particularly at risk of carrying carbapenemase producing Gram-negative bacteria. Patients admitted to any hospital abroad or a hospital within the UK with known problems with CPE should be screened for carriage CPE (Appendix B). These patients should be screened on admission for carriage of CPE and should remain in isolation and kept under surveillance until screening results are known. The management of such patients should be discussed with the IPCT or an on-call microbiologist.
- 6.2 In general, Screening for carriage of other resistant Gram-negative bacteria is not routinely performed, therefore samples must be labelled correctly if specific screens are required. Under certain circumstances, such as the investigation and control of

outbreaks or in response to specific incidents, tests for colonisation may be undertaken.

6.3 Under exceptional circumstances, staff may be required to submit screens for carriage of resistant gram-negative bacteria. Those identified as being colonised will be managed on a case-by-case basis the Occupational Health and Wellbeing and the IPCT.

7. Prevention of spread of infection between patients

The main means of spread is on the hands of staff and this can be interrupted by good hand hygiene measures. Secondary modes of transmission include via the environment and patient equipment. The following procedures are intended to minimise transmission.

7.1 Hand Hygiene

- a) Prevention is based on rigorous hand hygiene before and after contact with patients and their potentially contaminated environments/equipment.
- b) In addition, hands should be washed with liquid soap and water at the start and end of clinical duties, when hands are visibly soiled or potentially contaminated and following the removal of gloves. Routine periodic hand decontamination with alcohol-based rub should be performed between every patient contact, or between each activity for the same patient, when hands are not visibly soiled.

7.2 Isolation

- a) A risk assessment of the potential for cross-infection should be performed by the Ward Manager and Locality Manager. When there is increased risk of transmission, for example in a patient who is sputum-positive and has a productive cough, source isolation in a side room is required (see Appendix C). The reasons for isolation must be explained to the patient and their visitors.
- b) Patients colonised with the same resistant organism may be nursed in the same cohort bay. This should only be considered on the advice of the IPCT. On occasion, when isolation is not possible, patients colonised with resistant gram-negatives should not be nursed next to patients who have urinary or intravascular catheters, open wounds, a history of transplantation or who are immunosuppressed.

Isolation precautions should only be discontinued on the advice of the IPCT.

7.3 Standard Contact Procedures

- a) Standard contact procedures reduce hand and clothing contamination and are intended for all staff having contact with colonised or infected patients and their immediate surroundings. Meticulous hand hygiene and contact precautions must be employed not only when in contact with patient but also their surroundings.

b) The following procedures are particularly high risk:

- Draining urinary catheter bags. Particular attention is required when caring for patients with urinary catheters. Please see Policy on the Management of Urinary Catheters.
- Dressing wounds.
- Draining surgical drains.
- Manipulating vascular cannulae.
- Manipulating tracheostomies.

c) Standard source isolation refer to Appendix C

- **Death.** No special precautions are required when handling the deceased

In general, other than observing good hand hygiene practice, visitors do NOT need to follow the same precautions unless they have certain conditions (e.g. open and suppurating wounds) or if they are assisting with the nursing care of a patient.

Standard infection control precautions should only be discontinued on the advice of the IPCT.

7.4 Cleaning

- a) All clinical equipment must be cleaned according to manufacturer's recommendations and in line with LSW Decontamination Guidelines and Procedures (Cleaning and Disinfection).
- b) Clean all 'patient-touch' surfaces, including bed frames, with detergent solution daily. Gram-negative bacteria survive well in a moist environment, so special care and cleaning is essential for wash bowls, nebuliser equipment etc. All items must be stored dry.
- c) On discharge, there should be a deep environmental clean with detergent/bleach solution (see Appendix F) and the Ward Manager and Hotel Services must assess the cleanliness of the terminal clean.

8. Admissions, discharges and transfers

8.1 Admission of patients colonised with resistant gram-negative bacteria

- a) Patients who are known to be colonised or infected should undergo a risk assessment of the potential for cross-infection. This should be performed by the Ward Manager and IPCT. Where there is an increased risk of transmission, source isolation in a side room is required. A special note must be placed on the individuals' clinical record. (SystmOne).

8.2 Discharge of patients colonised with resistant gram-negative bacteria

- a) Ward staff must ensure that all relevant staff are aware of the patient's status on discharge (e.g. General Practitioners, District Nurses, Residential/Nursing Home staff).
- b) Patient with a recent history of medical care in a foreign country or region within the UK reported high prevalence of healthcare-associated CPE are particular at risk of carrying carbapenemase producing Gram-negative bacteria. Patients admitted to any hospital abroad or a hospital within the UK with known problems with CPE should be screened for carriage CPE (Appendix B). These patients should be screened on admission for carriage of CPE and should remain in isolation until screening results are known. The management of such patients should be discussed with the IPCT or an on-call microbiologist.
- c) Reference to the patient's status should be made in the discharge notes/letter by the doctor in charge of the patient.
- d) If discharged to a nursing/residential home, the home's senior nursing staff should be made aware of the patient's status by the Ward Manager. Rarely should this hamper the patient discharge. For CPE- colonised or infected patients, the IPCT will communicate with their colleagues at the receiving organisation, to ensure continuity of infection prevention and control precautions are maintained.

8.3 Transfer to another hospital or long-term care facility

- a) It is the responsibility of the Ward Manager to inform the receiving ward's nursing and ambulance staff of the patient's status and the medical staff to inform the receiving doctors or General Practitioner. This should be documented in the referral notes.
- b) Surfaces that come into direct contact with the patient during transfer, such as stretchers, must be cleaned with detergent and water after use. Ambulance staff are not required to take specific precautions over and above normal contact precautions and good hand hygiene.
- c) For CPE-colonised or infected patients, the IPCT will communicate with their colleagues at the receiving hospitals, to ensure continuity of infection control precautions.

8.4 Transfer of colonised/infected patients within the hospital

- a) Transfer of patients colonised or infected with resistant gram-negative bacteria should be avoided if at all possible. Such patients should be transferred to an isolation facility in the receiving ward.
- b) Infected/colonised patients may attend clinical service departments for necessary investigations or treatments.

- c) There should be clear communication between departments about the patient's status and transfer should only proceed when the receiving area are fully prepared.
- d) Measures to reduce the risk of transmission should be taken. The colonised patient should be last on any list and there should not be excessive waiting in the Department. Exposed sites of colonisation, such as pressure sores and skin ulcers, should be covered with an occlusive dressing before leaving the ward. Surfaces exposed to the patient or their potentially contaminated secretions must be wiped after use with water and detergent.

9. Responsibilities

9.1 Responsibilities of all staff

- a) This policy relies heavily on staff taking responsibility for infection control and accepting that they are the principle route of transmission. All staff must accept responsibility for maintaining a high standard of Infection Control in their practices and reminding others of their responsibilities. These are as follows:
 - All staff must be familiar with the practices referred to in this policy, including standard isolation procedures.
 - All staff must be familiar with LSW policy on hand decontamination as described in the 'Hand Hygiene Policy'.
 - Complete and insert a Care Plan (Appendix D, which can be found on SystmOne) in the patient's nursing notes.
 - If there is any doubt about infection control procedures staff must consult their line manager or a member of the IPCT.
 - Staff must ensure they are up to date with infection control training by attending Mandatory Training sessions provided by the IPCT. If more training would be helpful the Team should be contacted.
 - Staff responsible for the admission of patients should check the Clinical Alerts on the patient's notes and electronic record (SystmOne) for evidence of previous colonisation with an ESBL-producing coliform or other resistant Gram-negative bacteria. If these are present, a risk assessment for standard isolation precaution should be performed and the IPCT informed.
 - Under exceptional circumstances, staff may be required to submit screens for carriage of resistant Gram-negative bacteria. Those identified as being colonised will be managed on a case-by-case basis the Occupational Health and Wellbeing and the IPCT.

- To inform Occupational Health & Wellbeing if they have been diagnosed with colonisation or infection due to a resistant Gram negative bacteria.

9.2 Responsibilities of the Infection Prevention Control Team

- Whenever possible, all newly identified cases will be visited by the IPCT.
- Communicate results of colonisation or infection to the ward staff and the patient, if required. An information leaflet must be given to the patient. The IPCT will also be available to discuss the result with relatives and visitors if requested.
- Ensure staff are aware of and comply with this policy.
- Audit and assess the effectiveness of this policy and infection control practices in general.
- Undertake prospective, targeted surveillance of resistant gram-negative bacteria and feedback the results the relevant stakeholders.
- Assist ward staff in patient risk assessment for the use of standard isolation or contact precautions.

9.3 Responsibilities of the Ward Manager

a) The Ward Manager/Nurse in charge is responsible for ensuring that all members of staff, patients and visitors adhere to good infection control procedures and as such must:

- Emphasise the need to maintain good hand hygiene and support initiatives to improve compliance with hand hygiene policy (e.g. Clean**your**hands campaign).
- Ensure staff attend infection control training sessions.
- Support the ward Infection Control Link Practitioner and, whenever possible, allow them two hours of protected time per week to perform infection control-related duties.
- Ensure staff check all admissions for Clinical Alerts on the patient's notes and electronic record (SystemOne) for evidence of previous colonisation with an ESBL-producing coliform or other resistant Gram-negative bacteria. If these are present, a risk assessment for standard isolation precautions must be performed and the IPCT informed.

Inform the IPCT of patients with a recent history of medical care in a foreign country or region within the UK with reported high prevalence of healthcare associated CPE.

- Comply with this policy and ensure patients are risk assessed and isolated as appropriate.
- Ensure staff observe standard infection control precautions when attending the patient or their immediate surroundings.
- Inform relevant hospital staff of the colonisation status.
- Ensure the patient receives therapeutic treatments as prescribed or advised by the IPCT or medical staff.
- Liaise closely with the IPCT with regards to the ongoing management of colonised patients.
- Adhere to admission, transfer and discharge protocols.
- Ensure the patient has access to appropriate patient information leaflets, downloadable from the intranet.
- Communicate the colonisation status of individual patients on discharge to district nursing, community hospital nursing or nursing home team as appropriate.

9.4 Responsibilities of doctor in charge of patient

- Medical staff responsible for the admission of patients should check the Clinical Alerts on the patient's notes and electronic record for evidence of previous colonisation with an ESBL producing coliform or other resistant Gram negative bacteria.
- Inform the IPCT of patients with a recent history of medical care in a foreign country or region within the UK with reported high prevalence of healthcare associated CPE.
- Assist the Ward Manager in assessing the risk the patient poses to others and isolate as appropriate.
- Practice good infection control procedures as laid down in this and associated policies.
- Inform the patient of the situation and provide information regarding its management as required.
- Inform relevant hospital staff of the colonisation status.
- Prescribe therapeutic antibiotics as advised by an On-call microbiologist.

- Prior to transfer of a colonised/infected patient to another hospital, notify the receiving clinician at the receiving hospital.
- On transfer back to primary care inform the patient's General Practitioner of the patient's colonisation status and advise on further management.

9.5 Responsibilities of Occupational Health and Wellbeing

- a) The management of members of staff who are colonised or infected with resistant Gram-negative bacteria is the responsibility of Occupational Health and Wellbeing.
- b) The Occupational Health and Wellbeing will:
 - Accept referrals of staff being considered to be colonised or infected with resistant Gram-negative bacteria.
 - Manage these patients on a case-by-case basis with the IPCT and an On-call microbiologist.
 - Conduct follow-up screening of staff and advise the IPCT if appropriate.
 - Ensure staff have access to appropriate patient information leaflets, available to download from intranet.

9.6 Responsibilities of relatives and visitors

- a) Relatives and visitors should be encouraged to visit patients. Those who wish to discuss issues related to infection status and isolation care should be referred to the IPCT who will meet with them and/or provide appropriate written information.
 - Visitors are expected to comply with good infection control practice and are encouraged to practice hand decontamination as outlined in the Hand Hygiene Policy.
 - For patients nursed under Standard Isolation, visitors must decontaminate their hands before and after contact with the patient, their immediate surroundings and on leaving the room.
 - The wearing of gloves and apron is not required unless relatives and visitors are assisting with the nursing of the patient or visiting other patients on the same day.
 - Patients and visitors may challenge staff about hand decontamination. They should be able to do this without concern that it will adversely affect their clinical management or relationships with staff.

10. Specific recommendations for Carbapenemase-Producing Enterobacteriaceae (CPE)

- a) Carbapenemase Producing Enterobacteriaceae (CPE) pose a risk to individuals as these organisms are potentially resistant to all carbapenem antibiotics. Patients who are at risk are those who been an inpatient abroad in a foreign country **OR** region within the UK with reported high prevalence of healthcare-associated CPE **OR** previously been colonised or had an infection with CPE or close contact (sharing the same room/hospital bay) with a person who has. These patients should have a Clinical Alert sticker on their patient record.

10.1 Early recognition of individuals with laboratory-confirmed CPE or who may be colonised/have an infection

- a) **See Appendix A and B for a patient admission check list and flow chart.**
- b) **Patient with a recent laboratory-confirmed case of CPE infection or colonisation during their admission or confirmed at a transferring healthcare facility should be isolated immediately and treated as a positive case.**
- c) All patients admitted to LSW should all be risk assessed on admission for CPE (Appendix A). Any patient answering yes to one or more of these questions will meet the criteria for being a suspected case of CPE colonisation or infection **And** will require immediate isolation, screening and assessment for appropriate treatment. The CPE flow chart must be followed and adhered to until it can be discontinued (Appendix B).
- d) Risk assessments must include consideration of the care environment, e.g. dementia care unit, mental health unit, general rehabilitation (Appendix G).

10.2 Early Isolation of Laboratory-confirmed and suspected cases.

- a) The following actions should be taken for laboratory-confirmed and suspected cases:
- Inform the patient (and relatives if appropriate) and provide a patient leaflet information leaflet which can be found on the intranet
 - Immediate isolation in a single room with en suite facilities (or dedicated commode if no on suite). All suspected patients should remain in isolation until screening results are known.
 - Implementation of strict standard precautions.
 - Screening to assess current status for colonisation or infection.

- There should be communication of the situation to all staff with patient contact in order to raise awareness and ensure appropriate responses.
 - Assessment for appropriate treatment.
- b) For laboratory-confirmed cases and suspected cases whose screen result is positive:
- An incident ward meeting with relevant staff will take place on the ward. The minutes of this meeting should be circulated to relevant senior management and Public Health England.
 - An investigation to identify the likely source of the CPE should be led by the IPCT.
 - The patient should remain in isolation until a risk assessment involving the IPCT has been performed.
 - Strict standard IPC precautions should continue.
 - The IPCT should review the CPE Management Plan and consider appropriate escalation.
 - Good communication should be implemented to raise awareness and ensure appropriate responses.
 - Further screens may be recommended by the IPCT (e.g. Weekly) to monitor the patients status.
- c) For a suspected case whose screen result is negative, a further two negative samples taken 48 hours apart from each other need to be achieved and, a risk assessment undertaken by the IPCT before removing from isolation.

10.3 Screening of contacts.

- a) A rectal swab/stool sample should be obtained (there should be visible faecal material on the swab). If the patient has been hospitalised in a healthcare organisation with a reported high prevalence of CPE, samples must also be submitted from any wounds and device-related sites. The request form must indicate that screening for CPE is required.
- b) Laboratory-confirmed cases should be screened on a regular basis (e.g. weekly) during their hospital stay to determine their ongoing carriage status.
- c) Following the identification of a case, you must implement active surveillance for early detection of colonised patients and apply vigorous infection control measures that are associated with reducing secondary transmission. All patients with epidemiologic links to index and secondary cases should be screened and isolated to determine the extent of secondary transmission.
- d) Screening of patient contacts from a positive case should be undertaken if the case had been in an open ward or bay before their positive result. Any contact that screens positive should be managed in the same way as a case. In general:

- Contacts should be allocated a single room with on suite facilities or their own commode and, enhanced cleaning must be implemented while awaiting screening results. If more than one contact has been identified these patients can, if appropriate, be cohorted together.
 - All contacts should be screened on a weekly basis for a period of 4 weeks after the last case was detected.
 - Screening for contacts should be restricted to patients remaining in hospital but, should any contact screen positive. Screening of discharged patients should be discussed with your local Public Health England Centre (PHE).
- e) Screening of patients in the same setting is not usually required if the case was identified on admission and isolated immediately. Although screening of household contacts and healthcare workers is generally not required, under exceptional circumstances this may be advised by PHE or the IPCT.

10.4 Effective treatment – antibiotics and decolonisation.

- a) The treatment of the patient with an infection caused by CPE should be guided by susceptibility results and be undertaken under the advice of the on-call microbiologist.
- b) Decolonisation of patient is generally not advised. Under exceptional circumstances this may be considered and again should only be undertaken under the advice of the on-call microbiologist.

10.5 Early detection of effective infection prevention and control measures.

- a) These include the implementation of strict standard precautions outlined in this and other policies, and to include:
- Good Hand Hygiene.
 - Use of appropriate Personal Protective Equipment (PPE), a long sleeved disposable gown should be used (e.g. when assisting movement for a dependant patient).
 - Environmental cleaning and decontamination, with an enhanced focus on frequent cleaning of hand contact areas and mattresses (see section 10.6).
 - Aseptic non-touch technique, safe use of sharps, linen management, management of medical devices (particularly catheters) and waste disposal (especially faeces).
 - A care plan should be issued and reviewed.
 - Any patient requiring diagnostic testing or procedures should have these at the end of the list, and the room and equipment should be terminally cleaned after use. This also applies to positive outpatients and those undergoing haemodialysis.

- Dedicated or single-patient use equipment is preferable. Stringent decontamination of re-useable equipment is required after use with an effected patient (see LSW Decontamination Guidelines and Procedures (Cleaning and Disinfection)).

10.6 Early communication including on discharge and transfer of patients

- a) Confirmed cases of CPE will be reported as a Serious Untoward Incident to relevant organisations, including the relevant Clinical Commissioning Group and Public Health England.
- b) Information about the positive result should be included on all transfer and discharge documents. Good communication with neighbouring healthcare providers and receiving organisations, including those in the community and the patient's own GP, should be maintained. Communication should preferably begin prior to a patients transfer or discharged. If appropriate, neighbouring laboratories should be alerted to a potential problem.
- c) Patients colonised or infected with CPE should be given a LSW information leaflet and details of their results.
- d) The family and/or care facility to which the patient is to be discharged should be provided with an accurate advice and an opportunity for questions. It is important that should a close contact be admitted that they inform healthcare staff of their exposure.
- e) A clinical Alert for CPE should be placed on the patient records.

11. Monitoring Compliance

11.1 All Infection Prevention & Control policies are reviewed every 3 years and ratified through the Infection Control Committee and signed off by the Director of Infection Prevention & Control and Executive Director for Infection Control. Due consideration is given to clinical expert opinion and relevant government documents, and includes duties, process for enabling all relevant permanent staff groups, as identified in the training needs analysis, to complete Infection Prevention & Control training and details the process for monitoring the effectiveness and compliance. This information is included in the Quarterly Reviews and Annual Report provided by the Director of Infection Prevention & Control through the Infection Control Committee and LSW Board.

All policies are required to be electronically signed by the Lead Director. Proof of the e-signature is stored in the policies database.

The Lead Director approves this document and any attached appendices. For operational policies this will be the Locality Manager.

Signed: Director of Infection Prevention & Control.

Date: 06 October 2014

Appendix A



Carbapenemase Producing Enterobacteriaceae Admission Assessment for all wards

Has the patient been an inpatient abroad/Ireland in the last 12 months **OR** an inpatient in the UK known to have problems with the spread of CPE (North west especially Manchester/London) **OR** previously been colonised **OR** had an infection with CPE **OR** close contact with a person who has (sharing the same room/hospital bay)? (These patients should have an alert on their patient records)

Yes/ No → No further action is required



If one or more of these applies the patient is considered to meet the criteria for being a suspected case of CPE colonisation or infection

And requires immediate isolation/screening/assessment for appropriate treatment

Has the patient been put into isolation and infection prevention control measures implemented? Yes/No - (If not why not?)

.....
.....
.....

Have isolation precautions and the procedure been explained to the patient? Yes/No

Has the patient given informed consent for a rectal sample? Yes/No (If the patient has refused to give a rectal sample a stool sample may be obtained)

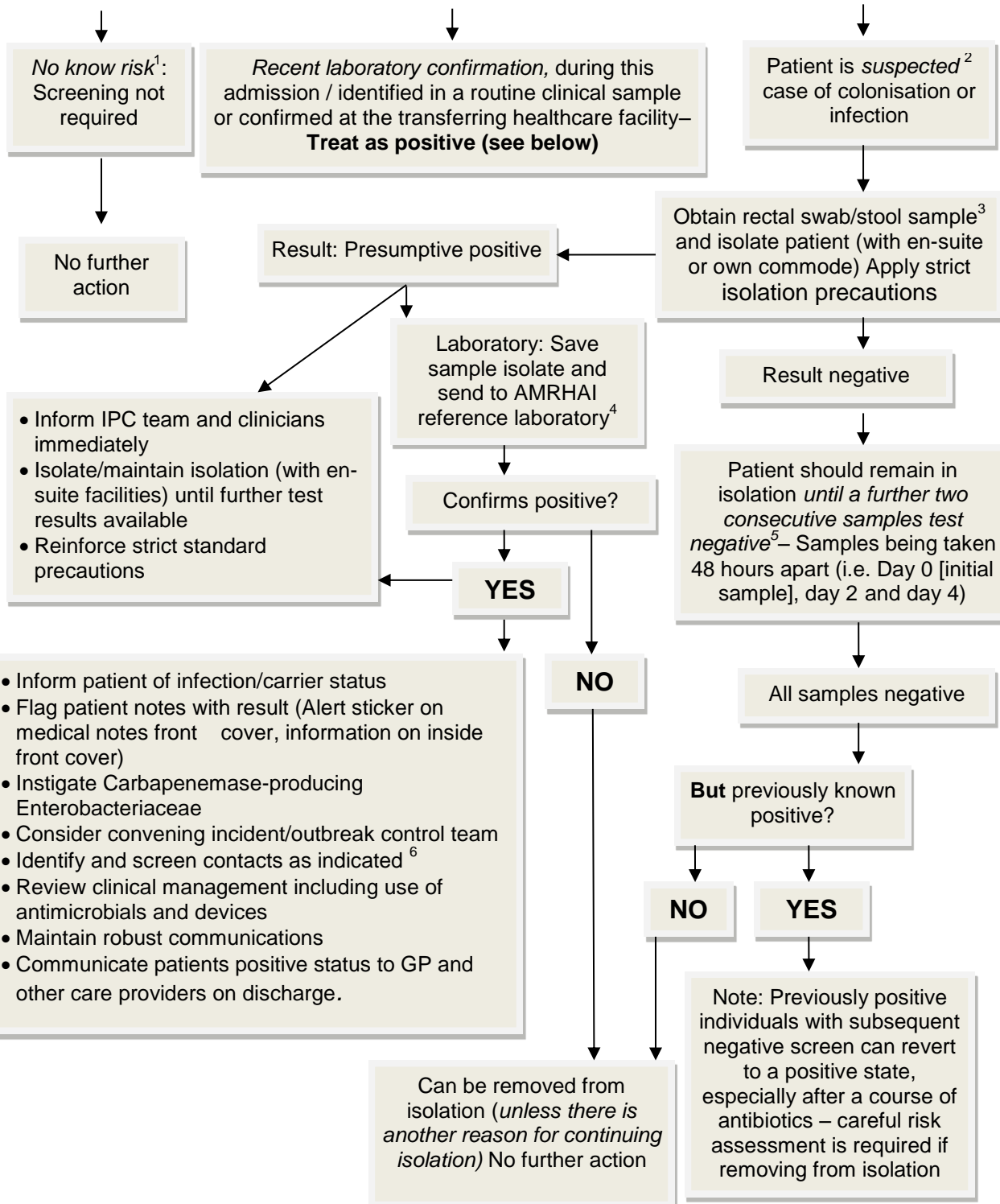
Has the sample been obtained? Yes/No Rectal Stool (please circle)

(Please refer to: The Management and Control of Resistant Gram-Negative Bacteria

Policy, which can be found on the intranet for the patient admission flow chart and further guidance)

Appendix B Patients Admission Flow Chart for CPE

As part of routine admission procedure, assess all patients on admission
For Carbapenemase-producing Enterobacteriaceae status



- 1) Already screened from previous admission and no risk identified
- 2) A suspected case is defined as a patient who, in the last 12 months, has been (a) an inpatient in a hospital abroad or (b) an inpatient in a UK hospital which has identified problems with spread of Carbapenemase – producing Enterobacteriaceae.
- 3) There should be visible faecal material on the swab. An alternative is a stool sample.
- 4) Except if it is a repeat sample of same form with same antibiogram (Antimicrobial resistance and healthcare associated infections reference laboratory)
- 5) Should any sample test positive, treat as positive
- 6) Screen any current inpatient contacts who shared an open ward/ bay with non-isolated case

Appendix C

Standard Source Isolation

Accommodation

A single-bedded room is generally suitable, unless directed otherwise by the Infection Prevention and Control Team. When several patients are affected, as in an outbreak, cohort nursing in one or more bays or an entire ward may be appropriate.

Visitors

Visitors should seek permission of the nurse-in-charge before entering and should be encouraged to wash hands on entry and exit of the isolation room. In general visitors of patients isolated in Standard Isolation do not need to take any specific precautions providing they are not visiting other clinical areas. Visitors do not need to wear PPE unless they are helping to provide personal care.

Patients

Patients are advised not to leave this area without permission.

Visitors and staff should observe these rules:

Door	Keep closed (an external window may be opened).
Plastic Aprons*	Wear when in the room. Dispose as clinical waste.
Masks*	Not necessary.
Gloves*	Wear for all body fluids contacts. Dispose as clinical waste.
Hand washing	Staff must decontaminate hands after patient contact (as Per Five Moments), patient environmental contact and after removal of gloves Visitors must receive guidance on hand hygiene.
Food and Drink	Food and drink should be served last in relation to other non- infected patients
Crockery & cutlery	Crockery and cutlery is paced straight into the dishwasher. not soaked or rinsed in a bucket or bowl.

Excreta	If the room has no toilet, provide a bedpan, urinal or commode exclusively for the patient and wear disposable apron and gloves when handling it. If the ward bedpan washer disinfects satisfactorily or disposable bedpans are in use, dispose of excreta by these means. If a commode has been used, ensure the frame is thoroughly cleaned with detergent/disinfectant before moving out of the area. Contact the IPCT if further advice is needed.
Linen	Change bed linen daily and treat as infectious, place in soluble bags and then place in red linen bags.
SDU equipment	Return to SDU in a sealed yellow bag with a blue return Bag clearly labelled with a 'Danger of Infection' label.
Equipment	Dedicated equipment or single-use items are preferred when possible. Check mattress and pillows weekly.
Medical equipment for Maintenance	Inform Maintenance Department (MEMs) before return and attach decontamination certificate.
Pathology requests	Put "Danger of Infection" label on request form and specimen. Use leak proof containers and send specimen and form in a sealed polythene specimen bag.

Queries: Contact a member of the Infection Prevention and Control Team on 434167.

Appendix D Care Plan For Resistant Gram-Negative Bacteria

Date Care Plan Commenced:/...../..... Signature.....

Patients Name: Ward:

Date of Birth: Speciality:

Hosp. No NHS no.?: Consultant:

Date specimen sent:/...../..... Date of specimen result:/...../.....

Result:.....

Infection Prevention and Control measures for staff:

- Isolate the patient following risk assessment
- Ensure dedicated equipment is kept in the room at all times.
- Patient must have a dedicated commode or en suite facility. Although not advisable, if a patient has to use a ward toilet please clean with detergent wipes after use.
- Equipment to be cleaned as per Cleaning and Decontamination Policy
- Inform Hotel Services for twice daily enhanced clean of the isolation room. (avoid the storage of consumables).
- Display isolation poster outside of room.(Outbreak pack Appendix I & M) Door to be kept closed at all times.
- Wear gloves and apron at all times. Gloves and aprons must be removed before leaving the isolation room.
- Use disposable jugs for emptying urine. The use of a gelling agent is recommended to solidify urine prior to transportation to the dirty utility.
- Staff must decontaminate as per Five Moments.
- Visitors must receive guidance on hand hygiene.
- Please maintain isolation until advised by the Infection Prevention and Control Team.

Obtain appropriate treatment advice from On-call microbiologist and clinical team.

Infection Prevention and Control measures for patients:

Hands must be washed after using the toilet and before meals using running water and liquid soap.

All measures are in place: Date...../...../.....

Signature.....Print name..... Designation.....

Date isolation discontinued/...../.....

Signature..... Print name.....Designation.....

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A full terminal clean must be carried out once the patient has been discharged. No other patients can be admitted into this area/room until a deep clean has been completed.

Nurses Responsibility

- The IPCT should be contacted for advice as to whether Estates should visit and clean all vents in the room before the terminal clean is started.
- Resistant gram-negative bacteria, particularly *Acinetobacter* spp., can contaminate stock items stored in a patient's room. Following a patient's departure, any such items in a room must be disposed of.
- All unused disposable items such as packets of unopened gloves, needles etc, must be discarded.
- Following patient discharge all items of equipment must be cleaned with neutral detergent and bleach. This should be followed with a damp cloth to remove any residue. Care should be taken when using bleach on metal surfaces (if using specialist equipment please refer to the manufactures instructions)
- Special attention should be paid to the decontamination of ventilator circuits, suction units and humidifiers.
- Pillows and mattresses should be inspected for any signs of damage and disposed of if any has occurred. Cleaning should take place as detailed above. Special mattresses must be cleaned after patient use according to manufacturers' instructions.

Hotel services Responsibility

- The isolation room should be thoroughly cleaned with hot neutral detergent followed by bleach; this should be followed with a damp cloth to remove any residue. Special attention should be paid to horizontal surfaces and dust-collecting areas, curtain rails, beds, tables, sinks, doorknobs, and telephones.
- Change the curtains and either dispose of or send for laundering.

The Ward Manager is responsible for assessing the thoroughness of the terminal clean.

Ward Manager signature..... Print name.....Date...../...../.....

Appendix E

Information for Staff – Multi-resistant Acinetobacter spp.

What is Acinetobacter?

Acinetobacter is a group of bacteria that can be isolated readily from the many sources in the environment, including drinking and surface waters, soil, sewage, various different types of foods and inanimate objects. Approximately 25% of healthy people carry these bacteria on their skin as harmless colonisers. However, some strains of Acinetobacter can cause infections in hospital patients who are already unwell. It may be spread by contact with hands and inanimate objects.

What illnesses are caused by Acinetobacter?

Infections caused by Acinetobacter in the community are very rare. In hospitals, some strains of Acinetobacter, particularly Acinetobacter baumannii, can cause infections such as pneumonia, bacteraemia, skin, wound or urinary tract infections.

How is Acinetobacter infection treated?

Many strains of Acinetobacter are easily treated with common antibiotics. However, some of the strains found in hospitals are already resistant to many antibiotics ('multi-resistant') and are therefore much more difficult to treat.

Who is at risk of Acinetobacter infection?

The people most likely to be infected are those who are already unwell and have been admitted to a hospital. Those at particular risk include patients staying in intensive care units and burns units for prolonged periods. Acinetobacter does not pose a risk to hospital staff or to family members or close contacts of an affected patient.

Infection Control Precautions required:

- Patients who are Acinetobacter positive should be nursed in a single side room.
- Strict hand washing with soap and water/alcohol hand gel (on visibly clean hands) should occur before and after each patient contact.
- The patient must have a designated nurse for the duration of the shift who should not care for other patients during this period.
- Essential clinical staff only to be involved with direct patient care. Visiting teams, e.g. medical students, to be kept to absolute minimum.
- Clean disposable aprons must be worn for each patient contact and changed between clinical activities.
- Nursing staff and those with prolonged close physical patient contact, e.g. physiotherapists, should ideally change into clean theatre scrubs, or if these are not

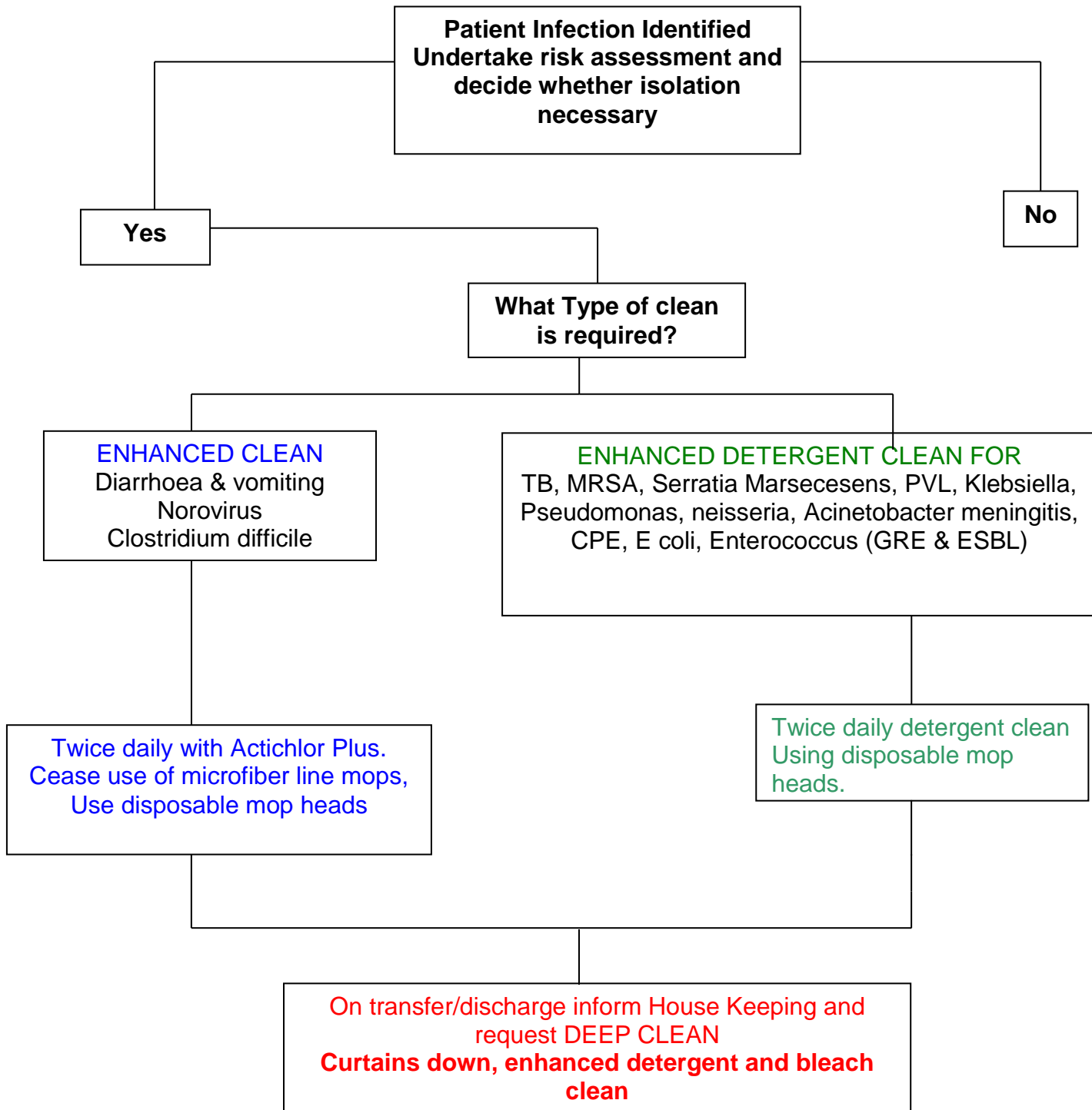
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available full theatre gowns for the period of patient care. Scrubs must not be taken home but laundered through the hospital system.

- Gloves must be worn for invasive procedures or if hands are likely to become contaminated with blood/body fluids.
- Linen should be treated as infected and disposed of into a water-soluble alginate bag followed by a red laundry bag.
- Equipment needed should be designated as single patient use. All equipment must be thoroughly decontaminated prior to further patient use.
- Following patient discharge all items of equipment must be cleaned with neutral detergent and hot water followed by bleach. This should be followed with a damp cloth to remove any residue. Care should be taken when using bleach on metal surfaces. All consumable items (e.g. boxes of tissues, gloves, wipes etc.) must be thrown away.
- Disposable hoist slings are recommended. These must be disposed of following the patient stay or before if soiled with blood/body fluids.
- The side room should be thoroughly cleaned daily with neutral detergent followed by bleach. The routine daily Hotel services clean should continue but should be undertaken after all other patient areas have been cleaned.
- Curtains must be changed on patient discharge.
- Hotel Services must be contacted to carry out a full terminal clean prior to another patient being admitted into that room.

Appendix F Bed Space Cleaning

Infection Prevention and Control Bed Space Cleaning



NB: For cases of Klebsiella, Serratia, pseudomonas, neisseria, meningitis, enterococcus, CPE, Acinetobacter contact Estates (52058) to arrange for cleaning of vents and radiators prior to deep clean

Appendix G Environmental Risk Assessment

Risk	CARE NEEDS	GUIDANCE for RISK ASSESSMENT
High	E.g. patient has diarrhoea, discharging wound, long term ventilation, confusion/dementia, device(s) in situ, undergoing invasive procedures, smearing or dirty protests.	Identify if there is an immediate risk of infecting others Discuss management with GP/clinician in charge, IP&C nurse Consider the mental and physical health and wellbeing of the individual Consider if the individual requires supervision Consider options to facilitate deep cleaning and disinfection and minimise the risk of spread of infection where possible by: <ul style="list-style-type: none"> • Giving individuals an end of list appointment • Using mobile equipment away from others.
Medium	E.g. patient requires: assistance with hygiene, mobility or physical rehabilitation.	No Immediate risk of infecting others identified <ul style="list-style-type: none"> • Standard IPC precautions are maintained • Hygiene advice is provided to individual and family/contacts as appropriate (use separate towels, Good personal hygiene as well as good HH measures, especial after using the toilet, keep bathrooms and toilets clean) • Effective environmental hygiene is implemented. Enhanced clean and deep clean on discharge If unsure contact the IP&C team
Low	E.g. patient is independent and self-caring.	No Immediate risk of infecting others identified <ul style="list-style-type: none"> • Standard IPC precautions are maintained • Hygiene advice is provided to individual and family/contacts as appropriate (use separate towels, Good personal hygiene as well as good HH measures, especial after using the toilet, keep bathrooms and toilets clean) • Effective environmental hygiene is implemented. Enhanced clean and deep clean on discharge If unsure contact the IP&C team