Procedure for the Management and Control of Carbapenemase-producing Enterobacteriaceae (CPE)

Infection Prevention and Control Policy: Appendix 21

Version 2

| Summary: | Defines the actions and management, to be taken by SHFT if any service users’ are identified as colonised or infected with CPE in regards to early detection, prevention, spread of infection and control into our health care settings. This procedure focusses on Carbapenemase – producing Enterobacteriaceae (CPE) and not all, carbapenemase – producing organisms (CPO). Please NB: This policy incorporates information from PHE toolkit for managing CPE in acute settings (Dec 2013) and non-acute and community settings (June 2015). |
| Keywords (minimum of 5): (To assist policy search engine) | CPE, CRE, Carbapenemase, resistant micro-organism |
| Target Audience: | All staff of all disciplines working for SHFT in healthcare settings, non-executive directors', governors' and contractors and volunteers' |
| Next Review Date: | August 2020 |
| Approved & Ratified by: | Infection Prevention and Control Group

Date of meeting: 4th November 2016 |

Date issued: November 2016 |

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**Version Control**

**Change Record**

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<tr>
<th>Name</th>
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<th>Version Reviewed &amp; Date</th>
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<td>Theresa Lewis</td>
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<td>28.8.2014 version 1</td>
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<tr>
<td>Helen Chesterfield</td>
<td>Consultant microbiologist (Advised to adhere to PHE community guidance with the exception of LNFH. Produce separate guidance for LNFH in line with acute PHE toolkit.)</td>
<td>V2 6.7.16 &amp; 4.11.16</td>
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<tr>
<td>Wessex: Public Health England (PHE)</td>
<td>PHE advisor</td>
<td>4.11.16 V2 final draft</td>
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<td>Nurse Facilitator primary care and IPC</td>
<td>4.11.16 V2 final draft</td>
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<td>All members of IPC group</td>
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<td>Authors: Angela Roberts &amp; Theresa Lewis</td>
<td>IPCT</td>
<td>24.8.16</td>
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<td></td>
<td>Combined acute and community guidance to compile CPE management and risk factor quick reference tables.</td>
<td>4.11.16 final draft ratification</td>
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**Procedure for the Management and Control of Carbapenemase-producing Enterobacteriaceae**

Version: 2

November 2016
Quick Reference Guide: Carbapenemase-producing Enterobacteriaceae (CPE)
For quick reference, this page defines CPE and summarises the actions required by this policy. This does not negate the need to be aware of and to follow the further detail provided within this policy.

What are carbapenemase-producing enterobacteriaceae (CPE)?
Enterobacteriaceae are bacteria that usually live harmlessly in the gut of humans, this is called colonisation. Carbapenemase-producing Enterobacteriaceae (CPE) are a type of bacteria which have become resistant to carbapenem antibiotics, this resistance is helped by enzymes called carbapenemases found in some strains of bacteria which can destroy carbapenem antibiotics. If the bacteria get into the wrong place, such as the bladder or bloodstream it can cause an infection.

CPE is spread via contact with contaminated, hands, equipment or the environment.

Risk factors for acquisition of CPE: Can be found on page 8 of this policy.

What are Carbapenem antibiotics?
They are broad spectrum intravenous antibiotics with reliable activity against a variety of drug-resistant gram negative bacteria (including Enterobacteriaceae). These antibiotics are often considered ‘last resort’ antibiotics. These include, Meropenem, Imipenem, Ertapenem and Doripenem.

For CPE risk assessment of all community in-patient settings (except Lymington New Forest Hospital): refer to table 5.3 page 9 of this policy.

For CPE risk assessment at Lymington New Forest Hospital (LNFH): refer to table 5.5 on page 10 of this policy. LNFH patients are managed differently because:-
- They may have multiple interventions of care which may restrict their activities of daily living.
- They may be concentrated together with many other vulnerable patients.

For CPE management when visiting patients’ in their own home/residential care: refer to points 6.15 & 6.16 on page 16 of this policy.

If Screening for CPE is required (in-patient settings): Follow guidelines for screening and acting on results found on page 11 of this policy in addition to table 5.3 and 6.1 as appropriate to the care setting.

For IPC management of confirmed/suspected cases in ALL in-patient settings including Lymington New Forest Hospital: Refer to pages 12 – 16 of this policy. Should a second individual in the same care setting be identified with an infection or colonisation with CPE contact IPCT. An outbreak incident meeting may be convened at the request of Public Health England (PHE) if an outbreak is suspected. Refer to appendix 2. CPE case(s)/contact spreadsheet page 21.

Complete inter-care transfer form: For use with discharge/transfer planning, Appendix 1 page 19.

For information leaflets for patients, carers and relatives: refer to Appendices 3 - 6 at the back of this policy from page 22.

To contact the IPCT for advice
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## Appendices

- **Appendix 1:** CPE Inter-healthcare transfer form
- **Appendix 2:** CPE Case / Contact spreadsheet
- **Appendix 3:** CPE Patient Information leaflet (in-patient)
- **Appendix 4:** Patients at home information leaflet (community)
- **Appendix 5:** Family of a carrier information leaflet
- **Appendix 6:** Staff – frequently asked questions
Procedure for the Management and Control of Carbapenemase-producing Enterobacteriaceae (CPE).

1. Introduction

1.1 What are carbapenemase-producing Enterobacteriaceae (CPE)?

Enterobacteriaceae are a family of bacteria that usually live harmlessly in the gut of Humans, this is called colonisation. If this bacteria spreads it can cause infections of the bladder, bloodstream and chest. Examples of these bacteria are E coli, Klebsiella species, Salmonella species.

Carbapenemase-producing Enterobacteriaceae (CPE) are a type of bacteria which have become resistant to carbapenem antibiotics, this resistance is helped by enzymes called carbapenemases found in some strains of bacteria which can destroy carbapenem antibiotics.

1.2 Why does carbapenem resistance matter?

Doctors rely on carbapenem antibiotics to successfully treat certain complicated infections when other antibiotics have failed. The spread of these resistant CPE bacteria can cause problems to vulnerable service users’ in hospital or other care settings, because there are limited antibiotics to treat the infections they cause.

Internationally many countries are reporting high prevalence of healthcare-associated Carbapenemase-producing Enterobacteriaceae (CPE) in regions of their country. These include China, Cyprus, Greece, Ireland, Italy, Japan, South/Central America, North Africa, India and Turkey. Please note this list could change / be expanded through the life expectancy of this policy.

In the UK, there has been a rapid increase in the incidence of infection and colonisation by multi-drug resistant carbapenemase-producing organisms. Identification of CPE in England by the Public Health England (PHE) national reference laboratory has risen from less than 5 patients in 2006, to over 600 in 2013 (HPA 2014). Although numbers of CPE are rising, the numbers are not as great as those being seen internationally. A number of clusters and outbreaks have been reported in England, some of which have been contained, providing evidence that, when the appropriate control measures are implemented, these clusters and outbreaks can be managed effectively.

This procedure addresses the management of carbapenemase-producing Enterobacteriaceae (CPE) rather than all carbapenemase-producing organisms (CPO). Organisms other than Enterobacteriaceae, such as Pseudomonas and Acinetobacter also demonstrate carbapenemase activity and therefore can also pose a significant risk in healthcare. For the management of patients infected or colonised with CPO and other multi-drug resistant gram negative organisms the IPCT will contact the consultant microbiologist and seek further advice from PHE. Each species merits individual consideration based on an understanding of how it spreads.

1.3 How do carbapenemase-producing Enterobacteriaceae spread?

Individuals who have these bacteria living in their gut can contaminate their hands when they go to the lavatory. This bacteria can contaminate and survive in the environment and on equipment (e.g. commode) and potentially spread to other patients, particularly if standards of hand hygiene and environmental cleanliness are poor or breeches occur.
The bacteria can be transmitted on the hands of carers to others through touch.

1.4 Who is at risk of acquiring carbapenemase-producing Enterobacteriaceae (CPE)?
- Individuals who have been an in-patient in a UK hospital known to have problems with spread of CPE
- Individuals who have been an in-patient in a hospital abroad are at higher risk of acquiring CPE

1.5 Patient Safety Alert:
In 2013 PHE published an Acute trust toolkit for the early detection, management and control of CPE.

On 27th Feb 2014, the Medical Director of NHS England and Director for Health Protection (PHE) wrote a letter to all Chief Executives asking for support to implement and embed the acute toolkit for detection and management of CPE (PHE 2013).


The alert was acted on by SHFT IPCT with further advice obtained from our Microbiologist and brought to the attention of our DIPC and Medical Director.

In June 2015 the PHE published a toolkit for non-acute and community settings to provide practical advice for health and social care staff and information for the service user and their family.

SHFT IPCT, have adapted both the acute and non-acute toolkits into this procedure according to the service users’ acuity of care to advise on the management and control of CPE to help prevent rising trends and outbreaks.

1.6 All Inpatient Areas (Physical Health, OPMH, MH and LD) except LNFH:
In these inpatient settings, patients identified with CPE will be managed in accordance with the PHE guidelines for non-acute and community settings (toolkit embedded above).

1.7 Lymington New Forest Hospital (LNFH):
At LNFH patients may have:
- Multiple interventions of care which may restrict their activities of daily living.
- They may also be concentrated together with many other vulnerable patients.

This policy recommends that we manage CPE at LNFH in accordance with the PHE acute toolkit guidance (embedded above).
2. **Scope**

2.1 This procedure has been written to provide advice on the detection and management of colonisation or infection due to carbapenemase-producing Enterobacteriaceae and to prevent or reduce their spread into (and within) in-patient settings.

2.2 It provides practical advice for our SHFT staff working in community settings.

2.3 It provides advice and information for the service user and their family.

3. **Definitions**

3.1 *Enterobacteriaceae* are a large family of gram negative bacteria that usually live harmlessly in the gut of all humans and animals. However, these organisms are also some of the most common causes of opportunistic urinary tract infections, intra-abdominal and bloodstream infections. They include species such as *Escherichia coli*, *Klebsiella spp.* and *Enterobacter spp.* (Public Health England 2013).

3.2 **Carbapenem antibiotics** include, meropenem, imipenem, ertapenem and doripenem. They are broad spectrum intravenous antibiotics with reliable activity against a variety of drug-resistant gram negative bacteria (including *Enterobacteriaceae*). These antibiotics are often considered 'last resort' antibiotics, when the patient is critically ill.

3.3 **Carbapenemases** are enzymes that destroy carbapenem antibiotics conferring resistance. There are different types of carbapenemase enzymes, the most common ones found on microbiology testing are:- KPC, OXA-48, NDM and VIM.

3.4 **CPE** is a carbapenemase-producing *Enterobacteriaceae*: An Enterobacteriaceae bacteria that destroys carbapenem antibiotics by producing enzymes.

3.5 **CRE** is a carbapenem-resistant *Enterobacteriaceae*: The bacteria from the *Enterobacteriaceae* family has developed resistance to Carbapenem antibiotics which makes them ineffective to treat the infection. Types of CRE are sometimes known as:- KPC (Klebsiella pneumonia carbapenemase) and NDM (New Delhi Metallo-beta-lactamase). Both of these enzymes have also been reported in *Pseudomonas* bacteria. (CDC accessed 1.11.14)

3.6 **CPO** is a carbapenemase-producing organism:
Other organisms besides (*Enterobacteriaceae*) e.g. *Pseudomonas* and *Acinetobacter* demonstrate carbapenemase activity by producing enzymes.

3.7 **Multi Resistant Gram negative bacteria**: Are resistant to multiple drugs and are increasingly resistant to most available antibiotics. These bacteria have built in abilities to find new ways to be resistant and can pass along genetic materials that allow other bacteria to become drug resistant as well. (CDC accessed 7.11.14)
4. **Duties / Responsibilities**
Refer to over-arching IPC policy (SH CP 10), which can be found on the staff intranet.

5. **Risk assessment to manage CPE in non-acute and community settings.**

5.1 **Risk of developing CPE infection in the community**
Most people will be unaware that they are a carrier of CPE and “in general, the chance of developing an infection from the bacteria is low” (PHE 2015).

- Exception as follows:-
  - Immunocompromised
  - Complex care in the community with frequent hospital admissions

These individuals are at greater risk of colonisation and of suffering more serious consequences should they develop an infection.

Colonised individuals with invasive devices in situ or wounds, may be at greater risk of developing an infection.

PHE (2015) report that the level of risk for infected or colonised individuals is lower in the community setting compared to acute setting.

The spread of infection will increase if standards of hygiene are inadequate.

5.2 **Factors that increase transmission of CPE (ref: PHE 2015)**

**Patient factors:**
- Lives in a shared care environment, where individuals are congregated and cared for in close proximity to one another e.g. in-patient, residential care
- Has a discharging wound or oozing from an infected area
- Has diarrhoea or smears, or protests with faeces
- Incontinence (urine and faeces)
- Medical devices in situ
- Is confused or has dementia (wanders)
- Requires physical rehabilitation or assistance with washing, dressing, going to the bathroom / using commode or bedpan
- If managed in own home, the family / carers have not yet received information on how to manage the infection and prevent the spread of bacteria
- Respiratory ventilator support requirements

Additionally consider:
- Risks posed from inadequate decontamination of equipment where there is high contact with body fluids e.g. endoscopes
5.3 CPE risk assessment table for all community in-patients settings (except Lymington New Forest Hospital)

<table>
<thead>
<tr>
<th>STATUS</th>
<th>RISK FACTORS</th>
<th>RISK</th>
<th>ACTIONS REQUIRED</th>
</tr>
</thead>
</table>
| Known CPE prior to transfer or following admission to SHFT. | Does your patient have any of the following:-  
- Diarrhoea  
- Faecal smearing/dirty protests  
- Discharging wounds/known infection  
- Invasive device  
- Undergoing invasive procedure | High | • Contact IPCT  
- ISOLATE ideally with en-suite facilities / designated commode  
- Standard precautions (including strict staff hand hygiene with soap & water or alcohol hand sanitiser)  
- Enhanced cleaning daily with Actichlor Plus  
- Designated medical equipment  
- Patient to be advised to practice hand hygiene especially after using the toilet |
| | | | |
| Does your patient require assistance with:-  
- Personal hygiene  
- Mobility  
- Physical rehab  
And  
There is no known or suspected infection present (colonised).  
**If infection present treat as high risk.** | Medium | • Contact IPCT  
- Place patient in a side room with en-suite facilities or designated commode  
- Standard precautions (including strict staff hand hygiene with soap & water or alcohol hand sanitiser)  
- Enhanced cleaning daily with Actichlor Plus  
- Designated medical equipment  
- Patient to be advised to practice hand hygiene especially after using the toilet  
- All personal care and wound care to take place within this room  
- With exceptions noted above the patient can mobilise freely around the ward e.g. day room room/dining room/therapy at end of list. |
| • Patient is independent and self-caring  
And there is no known or suspected infection present, (Colonised)  
**If infection present treat as high risk.** | Low | • Advice as per medium risk above. |
| Contact(s) of known CPE on this hospital admission. | Has your patient/s been:-  
- In an open bay or ward with a confirmed CPE case for 24 hours or longer | Will vary depend on risk factors | • Contact IPCT  
- Close the bay to admissions/transfers  
- Standard precautions (including strict staff hand hygiene with soap & water or alcohol hand sanitiser)  
- Enhanced cleaning daily with Actichlor Plus  
- Designated medical equipment  
- Patient to be advised to practice hand hygiene especially after using the toilet  
- IPCT will discuss with PHE if contact screening is required.  
**NB:** Household contacts and Health care staff are not classified as contacts. |
5.4 CPE risk assessment for Lymington New Forest Hospital (LNFH)

Early detection of patients who may be colonised or infected with CPE on admission to LNFH.

- Does the patient have a known recent laboratory confirmed case of carbapenemase-producing Enterobacteriaceae (CPE) infection / colonisation, i.e. during this admission episode or confirmed at a transferring healthcare facility [UK facility only].
- Has the patient been transferred from a UK hospital with a high incidence of CPE e.g. London or Manchester

OR
- Has the patient been an in-patient in a hospital abroad in the last 12 months and admitted directly into a SHFT health care facility.

If the answer is YES to one of the above, the service user is considered to meet the criteria for being a suspected case of carbapenemase-producing Enterobacteriaceae colonisation or infection. Refer to table below for management advice.

5.5 CPE risk assessment table for LNFH

<table>
<thead>
<tr>
<th>STATUS</th>
<th>RISK</th>
<th>ACTIONS REQUIRED</th>
<th>CPE Screening</th>
</tr>
</thead>
<tbody>
<tr>
<td>Known CPE case prior to transfer / admission</td>
<td>High</td>
<td>Contact IPCT</td>
<td>Known case: Isolate for duration of in-patient stay. No further CPE screening required.</td>
</tr>
<tr>
<td>If result confirms CPE after admission</td>
<td></td>
<td>Ensure patient’s notes are flagged with this result (clearly documented)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>ISOLATE in single room with en-suite facilities or into a single room and dedicated commode</td>
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<tr>
<td></td>
<td></td>
<td>Standard precautions (including strict staff hand hygiene with soap &amp; water or alcohol hand sanitiser)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Enhanced cleaning daily with Actichlor Plus</td>
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<tr>
<td></td>
<td></td>
<td>Designated medical equipment</td>
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<td></td>
<td></td>
<td>Patient to be advised to practice hand hygiene especially after using the toilet</td>
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<td></td>
<td></td>
<td>All the above plus</td>
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<td></td>
<td></td>
<td>Arrange terminal clean of previous bedspace</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Actichlor Plus any communal areas e.g. bathrooms, toilets, dining area.</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>Decontaminate any previously used medical equipment</td>
<td></td>
</tr>
<tr>
<td>Contact of a confirmed case.</td>
<td>High</td>
<td>Actions as above, and</td>
<td>If positive:- Isolate for duration of in-patient stay. No further CPE screening required. If negative:- Take 2 further specimens 48 hours apart. (total 3 screens)</td>
</tr>
<tr>
<td>Please NB: Household contacts and Health care staff are not contacts.</td>
<td></td>
<td>Close the bay to admissions</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Screen all contacts that occupied the same bay for greater than 24 hours (rectal swab or stool spec)</td>
<td></td>
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<tr>
<td></td>
<td>Please NB: Should any contacts screen positive: Contact IPCT and consider screening the whole ward plus discharged service users who occupied the bay / ward at the same time as the CPE case. (after consultation with PHE</td>
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<td></td>
</tr>
<tr>
<td>A Medical transfer from overseas with no reported risk factors at time of admission</td>
<td>Medium</td>
<td>As above and</td>
<td>If positive:- Isolate for duration of in-patient stay. No further CPE screening required. If negative:- Take 2 further specimens 48 hours apart. (total 3 screens)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Take a rectal swab or stool spec</td>
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### 5.6 CPE screening

**Screening should only be undertaken following consultation with IPCT.**

If screening is required please follow the guidelines below:

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Obtain consent from patient – provide a patient information leaflet (Appendix 4)</td>
</tr>
<tr>
<td>2</td>
<td>Either: Take a rectal swab (using a blue-lidded MC&amp;S bacteriological swab type, same swab used for MRSA screening) – this is the best sample type to achieve speedy results. There must be visible faecal matter on the swab to ensure detection of the organism. <strong>OR</strong> collect a stool sample</td>
</tr>
<tr>
<td>3</td>
<td>Send to laboratory as soon as possible, marking on the request form: ‘Possible carbapenemase-producing Enterobacteriaceae ‘colonisation or infection’ or ‘exposure’ if a contact. Inform the laboratory that the swabs are being sent</td>
</tr>
<tr>
<td>4</td>
<td>Include any swabs from wounds or invasive devices.</td>
</tr>
</tbody>
</table>

#### Acting on results

**POSITIVE on screening**

1. Isolate patient, preferably for duration of hospital stay
2. Service users, and family (as appropriate), must be informed of positive result and factsheet provided (refer to Appendix 4)
3. Service users notes must be flagged with positive result
4. Information about positive result must be included on all transfer/admission documents (if moved to another healthcare setting or referred for community care)
5. Inform Public Health England

**Removing previously positive CPE patients from isolation**

A patient with an infection should not be removed from isolation as experience from other areas in the UK/abroad has shown that, on some occasions, an apparently cleared carbapenemase-producer can re-grow to a detectable level in the gut flora.

A previously positive individual with subsequent negative screening results can revert to a positive state, especially after a course of antibiotics (PHE 2013)

**Contacts and/or transfers from over-seas who screen NEGATIVE**

1. Keep patient isolated until 3 negative screens taken 48 hours apart, day 0 being the initial sample, day 2 and day 4 (the further samples). Once achieved they can be removed from isolation with no further screening required.
2. The patient should be advised/supervised to practice good hand hygiene.
6.0 IP&C Management of confirmed / suspected cases in ALL in-patient areas (including LNFH)

6.1 Treatment

Treatment of CPE infection:
Needs to be discussed with a consultant microbiologist. Antibiotic treatment will be guided by susceptibility results.

Treatment of CPE Colonisation
There is no recommended decolonisation treatment for patients who are carriers of CPE. If the patient goes on to develop an infection, please discuss with a consultant microbiologist.

Decolonisation is NOT advised for the following reasons:
- Skin decolonisation – not advised as these bacteria generally colonise the gut rather than the skin
- Gut decolonisation (by prescribing antibiotics) – not advised as although antibiotics may provide some benefit, there is concern that their use would contribute to increasing resistance in the longer term.
- Advise patient of the need for good hand hygiene, especially if they develop loose stools or diarrhoea (for any reason).

6.2 Isolation: In a single room with en-suite facilities or single room with a dedicated commode as per risk assessment made (tables 5.3 and 5.5 within this policy and IPC advice).

6.3 Apply standard precautions - to prevent possible spread of CPE in all care settings.

Hand hygiene:
- **Staff**- with soap and water or alcohol hand sanitiser as per Hand Hygiene policy SH CP12.
- **The patient** - should be advised to practice good hand hygiene especially after using the toilet using soap and water. The patient should be asked to avoid touching any medical devices e.g. urinary catheter or intravenous drip, particularly at the point where it is inserted into the body/skin.
- **Visitors** - will be asked to perform hand hygiene with soap and water or alcohol hand sanitiser on entering and leaving the room and to wear a disposable plastic apron and gloves.

PPE: Apron / long sleeved gown, gloves. Wear face/eye protection if risk of splash injury. Where any part of the staff uniform not protected by an ordinary apron, is expected to come into contact with the patient, a long sleeved disposable gown should be used (refer to Standard Precautions and PPE policy SH CP19)

Waste disposal
- Discard all waste from isolation room/area into orange infectious waste bag (Waste (England and Wales) Regulations 2011).
- Double bagging not required.
- Ensure bags are securely tied (using swan neck tie), labelled and disposed of when ¾ full.
- Bins MUST be lidded, foot operated and in good working order and fire-retardant.
Body Fluid Management

- Ideally a toilet should be dedicated for the service users’ sole use. If this is not available a separate bedpan/urinal/commode should be labelled and left in the service user’s room.
- Decontaminate toilets and commodes using a chlorine based disinfectant whilst an in-patient.
- Gloves/aprons must be worn when handling body fluids (e.g.) urine, excreta, secretions and blood, (refer to Standard Precautions & PPE policy SH CP19).
- No hand sluicing/chemical decontamination of bed pans or urinals is recommended, they should be placed directly into the washer disinfector or pulp into the macerator.
- Bedpans / vomit bowls / urinals, must always be covered before leaving the room and the nurse must wear a disposable yellow plastic apron and disposable gloves. The bedpan / vomit bowl / urinal must be disposed of immediately in the macerator/washer. When this is done the nurse can remove protective clothing and dispose of as hazardous waste and decontaminate hands.
- Spillage of blood and blood stained body fluid must be promptly and safely decontaminated (refer to Standard Precautions & PPE policy SH CP19).

Note: Loose stools or diarrhoea (for any reason), increase the risk of spread of the CPE bacteria from the gut, therefore observe strict IPC measures and provide assistance to those service users where their effective hand hygiene is in doubt.

Laundry management

- Appropriate segregation and storage prior to laundering.
- Treat linen as infected, place linen in an alginate bag and then a white outer bag at the point of removal.
- Careful handling of linen e.g. remove with care and do not shake sheets. Do not ‘hug’ linen to the body or put on the floor.
- PPE – wear a disposable apron and gloves for contact with infected linen.
- Hand hygiene after removal of PPE.

Safe disposal of sharps
Follow Sharps and Inoculation Management policy (SH CP14).

6.4 Dedicated equipment for each individual case of CPE

- Keep equipment to a minimum/essential items only to reduce the risk of cross-infection.
- Whenever possible use disposable items or items that are non-porous and easily decontaminated.
- If dedicated equipment cannot be used, contact the IPCT.
- Staff should not use their own personal equipment in isolation rooms e.g. stethoscopes.

Diagnostic test procedures e.g. Xray:
If these cannot be undertaken in the patient’s single room they should be planned at the end of the day’s list and the room and the equipment terminally cleaned after use.

6.5 Environmental cleaning & decontamination of isolation areas:

- Daily barrier cleaning using Actichlor Plus 1000ppm of available chlorine with particular attention to those surfaces that may have had patient and staff hand contact.
• Yellow colour coded cleaning equipment (refer to Isolation policy SH CP32 & Decontamination of Medical Devices policy SH CP100) for more detailed instructions for daily cleaning of isolation rooms.

6.6 Mattresses cleaning
Mattresses are of particular importance:

| Conventional Mattress – hospital bed | Mattresses should be enclosed in a waterproof cover and routinely inspected for damage. Staff should make mattress checks at any time they consider that they may be factors which might impair the mattress in any way e.g. needs of the patient that might lead to other wear and tear or damage.

Isolation room: If mattress used in an isolation room clean on discharge with Actichlor Plus (1000ppm of av. Chlorine). If blood contamination clean as for airflow mattress below.

For longer term patients (over 2 months): If the patient is not being discharged staff need to carry out regular mattress check minimum every 8 weeks.

On Service User Discharge: On service user discharge unzip (if zipped) the mattress and check for ingress of bodily fluid / blood and that the cover is intact. Replace mattress if cover no longer impermeable. Re-zip and wipe cover with a Clinell sanitising wipe on service user discharge.

| Mattress-airflow eg Nimbus, Xcell | If mattress used in an isolation room use Actichlor Plus (1000ppm of av. Chlorine). If cover contaminated with blood use Actichlor (10,000ppm of av. Chlorine). If ingress of bodily fluid / blood found through the cover and into the mattress itself, arrange a deep clean via a dedicated decontamination service e.g. Huntleigh Health Care, Biorite.

6.7 Endoscopy cleaning if required
There are no extra decontamination requirements for endoscopes above our normal organisational procedures. Any attached cameras / equipment which cannot be steam sterilised, should be protected using a single-use covering and thoroughly chemically disinfected between patients once the covering has been removed.

6.8 Infectious Terminal Clean of isolation room/bay
Cleaning is essential when the service user no longer requires isolation nursing. The room, bed and other fixtures and fittings must be thoroughly cleaned after discharge of an infectious service user or if the service user no longer needs isolation precautions. (Refer to Isolation policy SH CP32) for further information on the final Infectious Terminal Clean of an Isolation room / bed space and the documentation that must be signed by both Housekeeping staff and nursing staff.

6.9 Visiting other departments for further diagnostic tests
Service users’ who are colonised or have an infection and require a diagnostic test or procedure which cannot be undertaken in the patient’s room, should be planned at the end of the day’s list and the room and equipment terminally cleaned after use (refer to point 5.6).

If surgical patient: previously colonised or infected, refer to CPE risk assessment table for LNFH 5.5. Inform surgeon and IPCT. A risk assessment to be made with the microbiologist.
6.10 Outpatients
Known CPE positive outpatients should be planned at the end of the day’s list.

6.11 Visitors
- Visitors should report to nursing staff before entering isolation rooms if they have not received advice about preventing the spread of infection.
- Visitors need to be advised to wash their hands/ use alcohol hand gel before entering and leaving the service users room.
- Visitors will be requested to wear a disposable apron and gloves.
- If they are visiting more than one service user in the hospital, they should visit non infected service users first, refer to the Infection Control Team for advice.
- Where possible, visitors should be restricted to a minimum whilst isolation is in progress.
- Discourage visiting by the very young, elderly or immunocompromised where possible.
- Inform the patient and relatives with patient's permission of a CPE result or your suspicions whilst awaiting results, and verbalise your management plan.
- Provide patient and relatives with information leaflets (refer to Appendices 3-5 within this policy from page 22).

6.12 Last Offices
- In the event of death observe the same infection control precautions taken while the service user was alive.
- Requirements of body bag depends on the infection – refer to the Care of the Deceased – Last Offices policy SH CP23 for precautions after death. Lymington New Forest Hospital uses a body bag for all their deceased.
- Inform the Senior Mortuary technician to ensure the body is handled correctly.

6.13 Communication and documentation on medical transfer / discharge
Refer to Appendix 1 page 19 within this policy for the CPE Inter-healthcare transfer form.

To The patient so that they understand on discharge:-
Their current CPE status (e.g. infection cleared but may still be a carrier), and the need to maintain good hand hygiene.
No special measures or treatment are required; any infection will have been treated prior to the patient discharge. They should be advised to carry on as normal, and if they have any concerns to contact their GP for further advice.
Should a close contact be admitted to hospital / healthcare setting for any reason, they need to inform healthcare staff of their previous exposure.

Before the patient leaves hospital, the doctor or ward nurse should ensure that the patient is issued with a discharge letter advising the GP of the infection / colonisation with carbapenemase-producing Enterobacteriaceae.

To Internal colleagues
- The IP&C team to remind ward staff (including domestic and visiting staff) of IP&C measures within your Carbapenemase-producing Enterobacteriaceae Management Procedure.
- Ward staff to inform laboratory personnel at nearest acute trust where results will be sent for processing of possible CPE colonisation, infection or contact.

To Healthcare colleagues:
- IP&CT to contact Public health England (PHE) for any additional advice support required.
• PHE/IPCT: To contact any neighbouring healthcare trust, other SHFT community hospital, residential / care home, where the patient was previously an in-patient.
• Ward doctor / IPCT to contact the patient’s GP to update their medical records and any other relevant care provider along the patient pathway.
• Ward staff to inform any trusts where the patient is likely to be transferred to and document on the inter-trust transfer from one unit to another (Appendix1 page 19).

Other Key partners will be informed via PHE or as per their advice.
• Clinical Commissioning Groups (CCGs)
• The local Director of Public Health
• The local Health and Wellbeing Board

Note: There is no reason for discharge to be delayed once an infection has been resolved even if the patient is still colonised.
Good communication will prevent unnecessary anxiety, misunderstanding or confusion for the family or healthcare facility receiving the patient.

6.14 Outbreak or cluster of cases
Should a second individual in the same care setting be identified with an infection or colonisation with CPE, contact IPCT where further advice will be obtained from PHE. An outbreak incident meeting may be convened at the request of PHE if an outbreak is suspected.

6.15 Looking after an individual with CPE in their own home
Staff visiting a patient at home must adhere to:-
• Try to roster this visit last on your list if possible.
• Adhere to standard and contact precautions.
• Hand hygiene with soap and water or alcohol sanitiser.
• Designated equipment for the sole use of the patient, to be left in the home.
• Avoid stock piles of disposable items / equipment in the individuals’ room.

Patient advice:
• Educate patient and carers about hand hygiene, particularly after using the toilet
• Patient should be asked to avoid touching any invasive device e.g. urinary catheter at the point where it is inserted.
• Where an individual is in their own home and shares a bed or bedroom with a partner or family member, consult your IPCT / GP / PHE to assist in making a risk assessment. (PHE community toolkit page 9), embedded on page 6 of this policy).

6.16 Looking after an individual with CPE in residential care
If the service user is colonised but not at high risk of infecting others’ then the service user does not need to be isolated and should be allowed to use communal facilities. (PHE 2015 pg 9, community toolkit – see page 6).
Own bedroom is recommended for the delivery of personal care / wound care to take place and preferably bedroom to have en-suite or designated toilet / commode facilities.

ICT Staff:
• Try to roster this visit last on your list if possible.
• Adherence to standard precautions.
• Hand hygiene with soap and water or alcohol sanitiser.
• Avoid stock piles of disposable items / equipment in the individuals room.
Patient:
- Educate patient and carers about hand hygiene particularly after using the toilet.
- Patient should be asked to avoid touching any invasive device e.g. urinary catheter at the point where it is inserted.

Residential Care home:
- Effective environmental hygiene practices to be maintained, prevent faecal and environmental contamination.
- Environmental cleaning with particular attention given to hand touched surfaces e.g. bed rails, door handles, bathrooms.
- Do not dispose of patients' wash bowl contents/bodily fluid in a hand wash sink as poses a high risk of environmental contamination, identify designated outlet.

6.17 Staff advice
Please refer to frequently asked questions (Appendix 6 page 28) of this policy.

7. Training Requirements:
Refer to the Trust Training Needs Analysis (TNA) in the overarching IP&C Policy, which can be found on the staff intranet.

8. Monitoring Compliance
This document will be reviewed by the IPCT in the following circumstances:-
- When current acute guidance changes that may affect this procedure.
- When current community guidance changes that may affect this procedure.
- When newly published evidence demonstrates the need for change to current practice.
- Every 4 years routinely.

9. Surveillance

<table>
<thead>
<tr>
<th>Element to be monitored</th>
<th>Lead</th>
<th>Tool</th>
<th>Frequency</th>
<th>Reporting arrangements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assess each case for source of infection.</td>
<td>IPCT Microbiologist</td>
<td>Root cause analysis (RCA) investigation</td>
<td>As per case</td>
<td>IPC Group meeting</td>
</tr>
<tr>
<td>Assess whether colonisation or infection.</td>
<td>PHE support</td>
<td></td>
<td></td>
<td>Local governance</td>
</tr>
<tr>
<td>In an outbreak situation convene an incident / outbreak control team meeting.</td>
<td>IPCT lead DIPC Microbiologist</td>
<td>SIRI</td>
<td>As identified</td>
<td>Refer to appendix 8 Outbreak of infection &amp; Major outbreak procedure of over-arching IPC policy.</td>
</tr>
</tbody>
</table>
10. **Supporting References**

Department of Health (2013): *Prevention and control of infection in care homes – an information resource*


NICE: *Standard principles of prevention and control of healthcare-associated infections in primary and community care* (a summary is provided in section C)


SHFT appendices of over-arching IPC policy (SH CP10) as follows:-
Appendix 5 Standard precautions: SHCP 19
Appendix 6 Hand hygiene: SHCP 12
Appendix 9 Isolation: SHCP 32
Appendix 10 Sharps and Inoculation management: SHCP 14
Appendix 12 Decontamination of medical devices: SHCP 100
**Appendix 1:**

Inter-care transfer form – notification of an individual carrying or infected with a carbapenemase–producing Enterobacteriaceae or other multidrug-resistant organism

*(For use in conjunction with full discharge / transfer planning)*

<table>
<thead>
<tr>
<th>Patient / Client details: (insert label if available)</th>
<th>Consultant Name:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name: patient name in full</td>
<td></td>
</tr>
<tr>
<td>Address:</td>
<td>Consultant Contact No:</td>
</tr>
<tr>
<td>Address line 1</td>
<td>GP Name:</td>
</tr>
<tr>
<td>Address line 2</td>
<td>GP Contact No:</td>
</tr>
<tr>
<td>City</td>
<td></td>
</tr>
<tr>
<td>Postcode</td>
<td></td>
</tr>
<tr>
<td>Date of birth:</td>
<td></td>
</tr>
<tr>
<td>NHS No:</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Transferring facility:</th>
<th>Receiving facility:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facility name / details (eg care home, community hospital, hospice, district nurse, GP)</td>
<td>Facility Name / details (eg care home, community hospital, hospice, district nurse, GP)</td>
</tr>
<tr>
<td>Contact Name:</td>
<td>Contact Name:</td>
</tr>
<tr>
<td>Contact No:</td>
<td>Contact Number:</td>
</tr>
</tbody>
</table>

Diagnosis: (confirmed organism)

| Infection: Yes | No |

Infection prevention and control precautions required / in place:
<table>
<thead>
<tr>
<th>Question</th>
<th>Yes</th>
<th>No</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Has the ambulance service been informed?</td>
<td></td>
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</tr>
<tr>
<td>This should be done when booking the transfer</td>
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</tr>
<tr>
<td>If no please document reason below:</td>
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<tr>
<td>Is the patient/client aware of their colonisation/infection status?</td>
<td></td>
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<tr>
<td>If no, please document reason below:</td>
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<tr>
<td>Has the patient received information about their status?</td>
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<tr>
<td>(Patient leaflet)</td>
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<td></td>
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<tr>
<td>Name of staff member completing form:</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Contact number:</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Date completed:</td>
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</tbody>
</table>
## Appendix 2: CPE Case / Contact Spreadsheet (template for local adaptation)

<table>
<thead>
<tr>
<th>Date first case identified:</th>
<th>Trust / Hospital name and address:</th>
<th>Key Contact details:</th>
</tr>
</thead>
</table>

| Tally of cases (colonised or infected) as of ___/___/____(insert date) |
|-----------------|-----------------|------------------|------------------|------------------|------------------|
| Total number of presumptive (locally confirmed) cases | Total number of cases confirmed by reference laboratory | Total number of deaths | Total number (suspected) and remaining as inpatients | Comments |

### Case details

<table>
<thead>
<tr>
<th>Name</th>
<th>DOB</th>
<th>Sex</th>
<th>Ward</th>
<th>Status Alive (A) Died (D)</th>
<th>Criteria for suspected case (see key below)</th>
<th>Result plus Infection (I) or Colonised (C)</th>
<th>Number of contacts screened</th>
<th>Number of contacts positive for same strain as case</th>
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</tbody>
</table>

### Contact details

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**Key**

- Abroad – hospitalised abroad in last 12 months
- UK Hospital – hospitalised in a UK hospital (with known transmission problems) in last 12 months
- Case – history of being a confirmed case (colonised or infected) in last 12 months
- Contact - contact with a known case (whether colonised or infected) in last 12 months
Appendix 3: CPE Patient information leaflet

Carbapenemase-Producing Enterobacteriaceae (CPE) - Information for patients and carers.

What is CPE?
Enterobacteriaceae are a group of bacteria (germs) which normally live in your gut. We all have them and they are not usually very resistant to antibiotics. However, if the bacteria get into the wrong place such as the bladder, bloodstream or chest they can cause infection.
CPE stands for Carbapenemase-Producing Enterobacteriaceae.
CPE are a type of Enterobacteriaceae (bacteria) that have become resistant to many antibiotics, including a group of antibiotics called carbapenems.
CPE have become more common in recent years.

Why does carbapenem resistance matter?
Carbapenem antibiotics can only be given in hospital directly into the bloodstream. Until now, doctors have relied on them to successfully treat certain 'difficult' infections when other antibiotics have failed to do so. Therefore, in hospital where there are many vulnerable patients, spread of resistant bacteria can cause problems.

How is CPE spread?
To get an infection, you must come into contact with the CPE bacteria. They are usually spread person to person by contact with the skin, wounds, or faeces of someone who is:
- Infected by CPE or
- Colonised by CPE (where they have the germ in or on their body but they do not have an infection).
You can also pick up the bacteria by coming into contact with their immediate surroundings.

How do you find out if someone has CPE?
Because CPE live mainly in peoples gut, we take a sample of their faeces (stool) or a swab from their rectum (back passage) and check this in a laboratory to see if it contains the germ. This is called screening. Sometimes we find CPE in other samples such as urine or wound swabs.

Do I need to be screened?
Screening is usually only recommended if people are admitted to hospital and they have either been admitted from a foreign hospital or a hospital in the United Kingdom where CPE has been found previously. Patients who are already in hospital on a ward where it is found may be screened during that admission. Further screening is not normally necessary after they have been discharged.

Does carriage of carbapenemase-producing Enterobacteriaceae need to be treated?
If a person is a carrier of carbapenemase-producing Enterobacteriaceae, they do not need to be treated. As mentioned, these bacteria can live harmlessly in the gut. However, if the bacteria have caused an infection then antibiotics will be required.

Who is most likely to get an infection with CPE?
If you are healthy you do not usually get CPE infections. People who are in hospital, particularly if they stay in for a long time because they have a severe illness, are more likely to be affected.
I have been told that I may have been in contact with someone with CPE. Do I need to take special care?
If you are in hospital when you are told about the CPE then screening swabs will be taken and you will be told of the results. When in hospital you may be cared for in a single room and staff will wear gloves and aprons when they care for you.
If you are at home when you are told, or when you go home, you do not need to take any special precautions with normal daily life. You may receive a letter from your hospital telling you that you are a contact of someone with CPE.
You should continue to have good standards of hygiene including washing your hands after using the toilet and before preparing food.
It is however very important that you tell healthcare staff that you may have been in contact with CPE because they will be caring for many other patients and they need to ensure they practice very high standards of hygiene. We usually suggest that you follow this advice until the hospital tells you to stop.

I am visiting someone with CPE. Do I need to take special care?
Healthy people are unlikely to have problems with CPE. But if you are looking after someone with CPE, you must take special steps, which staff will explain to you. This is to prevent the CPE spreading to other patients who are at risk of infection.

- You may be asked to wear an apron and gloves when you enter the patient’s room. Before leaving the room you should remove the gloves and apron and wash your hands thoroughly with soap and water.
- Wash your hands with soap and water after contact with people with CPE or people who are being cared for in a ward where CPE has been found. This is very important if you come into contact with faeces, such as changing nappies, or helping someone to use the toilet.
- Patients’, carers’ and staff should wash their hands with soap and water before and after contact with wounds or when accessing devices such as Hickman lines or feeding tubes.
- Do not visit other patients in the hospital. If you have more than one visit to make visit the patient who doesn’t have any infection risk first.
- Do speak to the Nurse in Charge to discuss any other requirements before visiting.

Where can I get further information?
If you would like further information you can contact the Infection Prevention and Control Team on:- Monday – Friday 8.30 am – 4.30pm tel no: 02380 87 4658 or 02380 87 4291
You can leave a message on the answerphone outside these hours.
Appendix 4: Advice for individuals receiving care at home who have an infection with or are colonised by Carbapenemase-producing Enterobacteriaceae (CPE)

**What are ‘carbapenemase-producing Enterobacteriaceae’?**

Enterobacteriaceae are bacteria that usually live harmlessly in the gut of humans. This is called ‘colonisation’ (a person is said to be a ‘carrier’). However, if the bacteria get into the wrong place, such as the bladder, bloodstream or chest, they can cause infection.

Carbapenemase-producing Enterobacteriaceae (sometimes abbreviated to CPE) are Enterobacteriaceae which have become resistant to carbapenems, a group of powerful antibiotics. The resistance is helped by carbapenemases, enzymes made by some strains of bacteria, which allow them to destroy carbapenem antibiotics and so becoming resistant to them and most other penicillin-like antibiotics.

**Why does carbapenem resistance matter?**

Carbapenem antibiotics can only be given in hospital directly into the bloodstream. Until now, doctors have relied on them to successfully treat certain ‘difficult’ infections when other antibiotics have failed to do so. Therefore, in a hospital or other care setting, where there are many vulnerable patients, spread of these resistant bacteria can cause problems.

**Does carriage of carbapenemase-producing Enterobacteriaceae need to be treated?**

If you are a carrier of carbapenemase-producing Enterobacteriaceae, you do not need to be treated. As mentioned, these bacteria can live harmlessly in the gut. However, if the bacteria have caused an infection then antibiotics will be required. Please do ask your doctor or healthcare worker to explain your situation to you in more detail.

**How can the spread of carbapenemase-producing Enterobacteriaceae be prevented?**

The most important measure you can take is to maintain effective hand hygiene, washing your hands well with soap and water, especially after going to the toilet. You should avoid touching any medical devices if you have any, (such as your urinary catheter tube or other medical tubes), particularly at the point where it is inserted into the body or skin.

As you are receiving care in your own home, you should not restrict your lifestyle in any way; however a few sensible measures will prevent spread to others. As well as effective hand hygiene, keeping toilet and bathroom areas clean, and using separate towels, are the best ways to prevent spread. You should expect that visiting healthcare workers will clean their hands on arrival, before and after providing direct care, and on leaving. They will use gloves and an apron when caring for you.

**What about family and visitors?**

There is no need for you to advise visitors that you are a carrier or have an infection, as long as hygiene measures are adequate. If you have an infection, it is important to work with your healthcare worker to ensure that any discharge from a wound, for example, is contained within an appropriate dressing to prevent contamination of clothes or soft furnishings.

Your doctor or nurse may give you a letter or card advising that you have had an infection or been colonised with carbapenemase-producing Enterobacteriaceae. This will be useful for the future and it is important that you make healthcare staff aware of it. Should you or a member of your household
be admitted to hospital or other healthcare facility, you should let the hospital staff know that you are, or have been, a carrier and show them the letter / card.

Where can I find more information?
If you have any concerns or queries you may wish to speak to your healthcare worker or contact your GP for advice. Alternatively, if you would like any further information the Public Health England website is another source:

Appendix 5: Advice for the family of a person who is a carrier of a Carbapenemase-producing Enterobacteriaceae (CPE)

What are ‘carbapenemase-producing Enterobacteriaceae’?
Enterobacteriaceae are bacteria that usually live harmlessly in the gut of humans. This is called ‘colonisation’ (a person is said to be a ‘carrier’). However, if the bacteria get into the wrong place, such as the bladder, bloodstream or chest, they can cause infection.

Carbapenemase-producing Enterobacteriaceae (sometimes abbreviated to CPE) are Enterobacteriaceae which have become resistant to carbapenems, a group of powerful antibiotics. The resistance lies in carbapenemases, enzymes made by some strains of bacteria that enable them to destroy carbapenem antibiotics and so becoming resistant to them and most other penicillin-like antibiotics.

Why does carbapenem resistance matter?
Carbapenem antibiotics can only be given in hospital directly into the bloodstream. Until now, doctors have relied on them to successfully treat certain ‘difficult’ infections when other antibiotics have failed to do so. Therefore, in a hospital, where there are many vulnerable patients, spread of bacteria resistant to carbapenems can cause problems.

Does carriage of carbapenemase-producing Enterobacteriaceae need to be treated?
If a person is a carrier of carbapenemase-producing Enterobacteriaceae (sometimes called CPE), they do not need to be treated. As mentioned, these bacteria can live harmlessly in the gut. However, if the bacteria have caused an infection then antibiotics will be required.

How are carbapenemase-producing Enterobacteriaceae spread?
In a hospital or healthcare setting where a patient is carrying this bacterium, the environment can become contaminated and the bacterium can spread to others through direct or indirect contact. Staff work hard to ensure that the environment is kept clean; you will see staff cleaning their hands. If you have any concerns please speak to the staff or your carer.

Are the family at risk of contracting carbapenemase-producing Enterobacteriaceae?
Carbapenemase-producing Enterobacteriaceae are not a risk to healthy people. The most important measure family members can take is to maintain good personal hygiene, including washing hands with soap and water, especially after going to the toilet. Good hygiene, such as keeping toilet and bathroom areas clean and using separate towels are the best ways to prevent the spread. Clothes and laundry in the household should be washed normally at the hottest temperature advised on the label.

Will the close family have to be screened for carbapenemase-producing Enterobacteriaceae if admitted to hospital?
If admitted to hospital, tell a member of hospital staff that a member of your household is or has been a carrier of carbapenemase-producing Enterobacteriaceae. You may be screened for carbapenemase-producing Enterobacteriaceae as part of the admission procedure.
Where can I find more information?
If you have any concerns or queries you may wish to speak to your healthcare worker or contact your GP for advice. Alternatively, if you would like any further information the Public Health England website is another source:

Appendix 6: Staff - Frequently asked questions

Frequently asked questions

For managing carbapenemase-producing Enterobacteriaceae why do you advise a different approach for the community to that for acute trusts?

Patients in an acute care setting often have multiple intensive interventions which restrict daily life and are concentrated together with many other vulnerable patients. In contrast, most individuals in the community are in their own home or another community setting. Generally, but not always, they are more likely to be more mobile and undergo fewer procedures or interventions.

Risk of spread in the community setting is low. To maintain a low level of risk, effective hygiene practices should be maintained by all, service users and staff; particularly for staff when assisting positive individuals with toileting, undertaking dressings, and managing or changing urinary catheters and other devices. It is crucial that the affected individual is encouraged or assisted to practice good hand hygiene after visiting the toilet and that advice in this toolkit on management of diarrhoea and leaking wounds is followed.

Why is screening of individuals suspected of being a carrier recommended for acute Trusts but not for other care settings?

There is a higher risk of spread between patients in an acute setting. To manage patients effectively, acute trusts need to have a full understanding of the patient’s positive or carrier status, achieved through screening. This will allow them to plan the care for that individual and those around them in a safe and effective manner.

Are staff at risk of taking this home to their families? I have a vulnerable relative at home. If I care for this individual will I put my relative at risk?

Like any other bacteria that staff come into contact with routinely, effective hand hygiene and adherence to standard precautions, as described in this toolkit, are the most effective ways to prevent indirect spread to others, including family members. Staff should carry on as normal at home without any changes to their activities of daily living.

In order to alleviate their concerns, organisations should ensure that all staff have appropriate education, training and knowledge about carbapenemase-producing Enterobacteriaceae and measures aimed at preventing their spread.
Should staff caring for individuals colonised or infected with carbapenemase-producing Enterobacteriaceae be screened to see if they have become a carrier themselves?
Currently, there is no evidence to support screening of staff as part of routine infection prevention and control measures. Adherence to standard precautions in the workplace and effective hand hygiene at all times are the key measures to prevent spread.

What happens if the individual needs to go into hospital or to another care home?
When transferring an affected individual to another care setting, senior staff should ensure that the destination hospital or setting has been supplied with a completed copy of the inter-care transfer form – notification of an individual carrying or infected with a carbapenemase–producing Enterobacteriaceae or other multidrug-resistant organism (Annex A) to inform the receiving facility of the individual’s positive status.

Direct verbal communication of the individual’s status to the receiving staff and the IP&C team may be helpful in assisting them to make an appropriate risk assessment (as long as confidentiality requirements can be maintained). A ‘patient-held’ card (Annex E) may be useful for the individual to present to staff if they attend another health or social care setting.

How long does a person carry the bacteria?
There is no definitive answer to how long a person may carry the bacteria. The length of time could be anything from a few days to indefinitely. Treatment with certain antibiotics (for any infection) may also affect length of carriage. Effective hygiene practices and the use of standard precautions for all individuals receiving care will minimise the transmission of carbapenemase-producing Enterobacteriaceae.

What about family members or visitors who are pregnant?
The placenta is an effective barrier in preventing bacteria such as carbapenemase-producing Enterobacteriaceae from crossing from the mother to the baby, therefore the unborn baby is not at risk in the womb. The affected individual should practice effective hand hygiene, especially after visiting the toilet (as this bacteria is mainly carried in the gut) to minimise transmission of carbapenemase-producing Enterobacteriaceae. Similarly, effective hygienic practices by those who live with and care for the individual, including adherence to standard precautions by carers, are important.

The affected individual wants to know if it is safe for them to share a bed with their partner?
There is a chance that the bacteria could be passed onto the partner, particularly if the affected individual has a discharging infected wound. This would need to be contained within an impermeable dressing and regular laundering of bedding encouraged. Advice can be sought about individual cases from your usual IP&C advisor, the individual’s GP or the local PHE centre.
When ambulance staff transport a patient, are any extra precautions required?
In a similar way to transporting any patient, standard precautions should be adopted and routine cleaning of trolleys and equipment between patients undertaken. If there is any contamination from a leaking wound or faecal contamination, terminal cleaning of the vehicle will be required.

What about affected individuals who have companion animals?
Companion animals, for example cats, dogs and horses, can become colonised or infected with carbapenemase-producing Enterobacteriaceae. There is some evidence to suggest the transmission of carbapenemase-producing Enterobacteriaceae from affected humans to companion animals, and rare evidence of transmission between companion animals in veterinary hospitals. Further research is required to understand the risk that colonised companion animals pose to human health. Effective hand hygiene using soap and water when handling companion animal faeces, before handling food for companion animals and maintaining a clean environment can minimise the risk of transmission.

If the toolkit does not cover the scenario we are dealing with, where can we get further advice?
If the advice in this toolkit is not relevant to your situation, please seek further advice from your usual advisor – community or CCG IP&C team/nurse, medical microbiologist, the individual’s general practitioner (according to which service is appropriate and available). Alternatively, you may obtain further advice and signposting, particularly in relation to making a risk assessment, through your local PHE centre. The Public Health England website is another source of information: https://www.gov.uk/government/collections/carbapenem-resistance-guidance-data-and-analysis or email us directly at hcai@phe.gov.uk
Please note: Training and educational resources will be posted on the toolkit webpage as they are developed.