



Public Health  
England

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# Toolkit for managing carbapenemase-producing Enterobacteriaceae in non-acute and community settings



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## For whom is this toolkit intended?

This toolkit provides practical advice for health and social care staff working in community and non-acute healthcare settings, both with and without specialist knowledge of infection prevention and control (IP&C). It also provides advice and information for the service user and their family.

The advice in this toolkit is applicable to the NHS, the independent and adult social care sectors, in which settings many service users may reside or receive care, often following discharge or transfer from an acute care setting. These will include, but are not limited to:

- community hospitals
- community health trusts
- intermediate care settings
- hospices
- mental health trusts
- care homes (residential and/or nursing) including dementia care
- community rehabilitation
- prisons/detention centres
- domiciliary care
- primary care
- day centres

If the IP&C advice in this toolkit is not relevant to your practice, please seek further advice from your local IP&C advisor eg your community IP&C team, clinical commissioning group (CCG), IP&C nurse, medical microbiologist or 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 **Public Health England (PHE) Centre**.<sup>1</sup> A 'useful local contacts' sheet for your completion is provided in **section C4**.

**Information leaflets are provided for affected individuals, their families and carers in the annex documents.**

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<sup>1</sup> A postcode lookup for local PHE centres and Health Protection Teams is available here: <http://legacytools.hpa.org.uk/AboutTheHPA/WhatTheAgencyDoes/LocalServices/PostcodeSearch/>

## Format of toolkit – main elements

Please note that annexes A-G are separate from the main toolkit, and are available as individual downloads to facilitate use.

### **i. Flow chart (Section A1.2)**

To provide an overview for managing an individual who is colonised or infected with a carbapenemase-producing Enterobacteriaceae.

### **ii. Risk assessment guidance (Section A7)**

To enable a risk assessment to be undertaken on the safe provision of care for positive individuals, taking into account their needs and others in the same setting.

### **iii. Inter-care transfer form (Annex A)**

To inform receiving care settings and carers when transferring or discharging the individual.

### **iv. Advice and information leaflets (Annex B – F)**

To provide information for affected individuals, their family and those who care for them or who manage their environment.

### **v. Primary care quick reference guide (Annex G)**

To act as a reference for primary care practitioners, this signposts to relevant toolkit sections.

## Section A

### A1 Introduction – What is the problem?

#### 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 or bloodstream they can cause infection.

Carbapenemase-producing Enterobacteriaceae (sometimes abbreviated to CPE) are a type of bacteria which has become resistant to carbapenems, a group of powerful antibiotics. This resistance is helped by enzymes called carbapenemases, which are made by some strains of the bacteria and allows them to destroy carbapenem antibiotics. This means the bacteria can cause infections that are resistant to carbapenem antibiotics and many other antibiotics.

#### 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 bacteria can cause problems to vulnerable patients in hospitals or other settings, because there are so few antibiotics available to treat the infections they cause.

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

If a person is a carrier, they do not need to be treated. If the resistant bacteria cause an infection then treatment, including antibiotics, will be required. These infections are difficult to treat due to their resistance to carbapenem antibiotics.

#### 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. Because of this, there is a risk that the bacteria can contaminate and survive in the environment and potentially spread to other people, particularly when standards of hand hygiene and environmental cleanliness are poor. The bacteria can also be passed on by the hands of carers to others through touch.

## Who is at risk of acquiring carbapenemase-producing Enterobacteriaceae?

Individuals who have been an inpatient in a UK hospital known to have had problems with spread of carbapenemase-producing Enterobacteriaceae or those who have been an inpatient in a hospital abroad are at higher risk of acquiring carbapenemase-producing Enterobacteriaceae. Annexes B, C and D contain information leaflets which can be provided to individuals receiving care, their contacts and families of colonised individuals.

## What is the risk to those being cared for in the community?

Most people will be unaware that they are a carrier and, in general, the chance of developing an infection from the bacteria is low. However, immunocompromised individuals and those receiving complex care in the community with frequent hospital admissions, will be more vulnerable. These individuals are at greater risk of colonisation and of suffering more serious consequences should they develop an infection. Colonised individuals with devices *in situ* may be at greater risk of developing an infection.

While the level of risk for infected or colonised individuals is lower than that in acute settings, if the levels of hygiene in the care setting are inadequate, resistant bacteria may spread among individuals who congregate together eg in a care home. This may increase the risk of the spread of infection within the care setting.

## How can spread of infection be prevented?

The spread of infection can be minimised through effective hygiene practices and the use of standard precautions for all individuals receiving care. It is important that individuals who are colonised with carbapenemase-producing Enterobacteriaceae are scrupulous about their own personal hygiene, especially after using the lavatory. Soap and water should be used for hand hygiene after visiting the toilet and by staff when any faecal matter is involved. Maintenance of a clean environment is another important infection prevention and control measure.

Well-trained staff together with regular audit of infection prevention, control practices and regular feedback are essential elements of preventing the spread of infection. Induction training and routine updates for all care and domestic staff should be undertaken to enable high levels of compliance with infection prevention and control practices. Domiciliary carers should be reminded of their responsibility to maintain effective IP&C measures to prevent spread within the individual's home or to other clients on their case list. Information for contacts and family members of colonised individuals can be found in Annexes C and D.

### A1.1 Factors that increase risk of infection spread – information for managers and carers

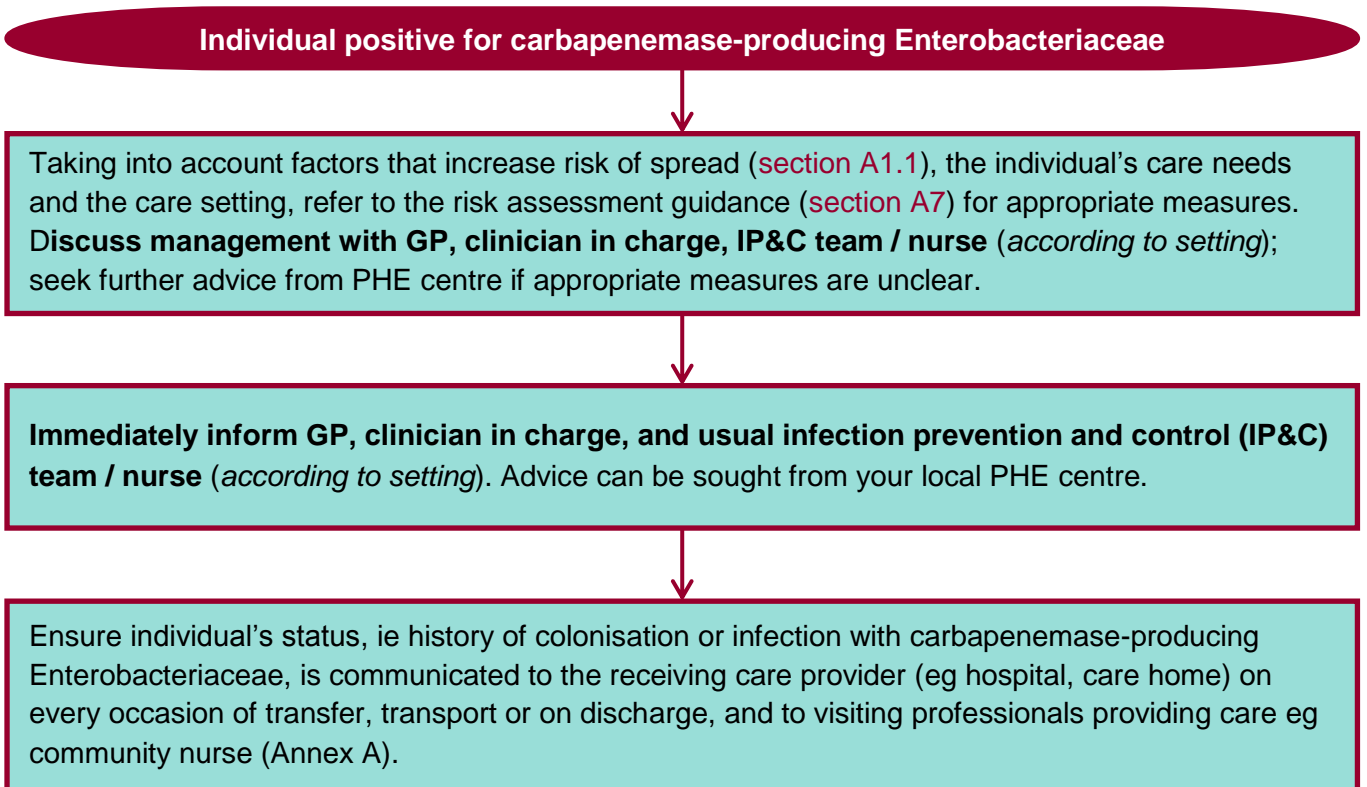
The individual:

- lives in a shared care environment where individuals are congregated and are cared for in close proximity to one another
- and their family have not yet received information on how to best manage the infection and prevent the spread of bacteria
- has a discharging wound or oozing from an infected area
- has diarrhoea or smears or protests with faeces
- is confused or has dementia
- requires physical rehabilitation or assistance with washing, dressing, going to the bathroom/using a commode or bedpan

Lack of compliance with:

- NICE **standard principles of prevention and control of healthcare associated infection in primary and community care**; a summary included in **Section C1**
- environmental cleaning and communications with staff and clients

### A1.2 Flow chart for infection prevention and control management of individuals positive for carbapenemase-producing Enterobacteriaceae (colonisation or infection)





## A2 Keeping the environment clean

It is important that cleaning of the environment is thorough and that local procedures are followed. Staff hand hygiene after contact with a colonised or infected individual is crucial. Particular attention should be given to hand touch surfaces, such as bed rails and door handles, and bathrooms. Hand hygiene measures can help prevent the contamination of unused equipment, items and the environment. Avoid having extraneous equipment or large quantities of disposable items in the individual's room.

Use a designated cleaning sink to discard patient wash water, body fluids or secretions, or when cleaning/disinfecting equipment used with a colonised or infected individual. Using a hand wash basin poses a high risk of environmental contamination.

Adherence to local cleaning policies should be monitored and audited on a regular basis to ensure standards are maintained.<sup>2</sup> For advice on disinfectants, ask your usual IP&C advisor about which to use, eg hypochlorite. Information on terminal decontamination can be found in Annex F. Should you have additional questions, consult your local IP&C team or PHE centre.

## A3 Where an individual is colonised

In a shared care environment, an individual who is colonised (a carrier) and who is not at high risk of infecting others (**Section A7**) does not need to be isolated and should be allowed to use communal facilities. Standard precautions should always be used by carers and affected individuals should be enabled to practice effective hand hygiene, especially when using the toilet. If possible, the individual should be accommodated in a single room with en-suite facilities, including toilet. If not possible, they should not share a room with an immunocompromised individual.

Where an individual is in their own home and shares a bed or bedroom with a partner or family member, consult your usual IP&C advisor to assist in making a risk assessment.

### A3.1 Where an individual has an infection

When an individual is infected with carbapenemase-producing Enterobacteriaceae they should be placed in a single room with en-suite facilities. If an en-suite room is not available, the individual should be placed in a single room with a designated commode with easy access to hand washing facilities.

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<sup>2</sup> The NHS National Patient Safety Agency has compiled guidance on setting and measuring performance outcomes in care homes for the national specifications for cleanliness; available at: <http://www.nrls.npsa.nhs.uk/resources/?entryid45=75240>

In any care setting, full attention should be given to preventing spread. A discharging wound should be secured with an impermeable dressing and any environmental contamination, from the wound or other body fluids, cleaned immediately according to your IP&C policy.

Assistance with a risk assessment (including consideration of the impact on the individual's social and psychological wellbeing) should be sought from your usual IP&C advisor or local PHE centre. Following a risk assessment, if it is decided that an individual requires short-term isolation, daily reviews and defined criteria for when isolation should end (normally when the infection has cleared)<sup>3</sup> should be considered. If isolation is not deemed possible, the reasons must be fully documented in the risk assessment and alternative measures for preventing spread of infection identified, for example providing a designated carer and instituting enhanced cleaning (see [risk assessment guidance, section A7](#)).

Care organisations and their staff should be familiar with guidance on IP&C management including factors that increase the risk of spread of infection ([section A1.1](#)). In addition to this toolkit, a number of key documents should be used to understand and embed high quality practices in community settings ([Section C4: Essential resources](#)).

Where an individual is in their own home and shares a bed or bedroom with a partner or family member, consult your usual IP&C advisor to assist in making a risk assessment.

#### **A4 Where an outbreak or cluster of cases is suspected**

Should a second individual in your care setting be identified with an infection or become colonised with carbapenemase-producing Enterobacteriaceae, immediately advise the clinician in charge of the individual or general practitioner (as appropriate to the setting) and your usual IP&C advisor. You or your IP&C advisor should also contact your local PHE Centre immediately which will assist in assessing whether spread is likely to have occurred in your care setting or from elsewhere and will be able to support management of the affected individuals. Until advised otherwise, care for the individuals affected should be provided in line with the [risk assessment guidance](#).

Your local PHE centre may request a screening test (rectal swab or faecal specimen) of individuals in the community. Screening helps the PHE centre to understand if there has been spread of carbapenemase-producing Enterobacteriaceae and what the source of this might be.

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<sup>3</sup> Should the infection fail to clear, discuss onward management with the clinician in charge of the individual's care; your local PHE centre will assist in the risk assessment

## A5 Communications

Robust inter-care communications (within and between settings and carers) are central to a successful concerted effort to prevent and control spread of carbapenemase-producing Enterobacteriaceae (see Annex A for inter-care transfer form).

It is important that individuals (and/or their families) play a role in preventing spread, having a full understanding of their status and of the infection prevention and control measures needed. Advice leaflets to assist with this can be found in Annexes B-D.

A 'patient-held' card (Annex E) may assist the individual in explaining their carrier state to health and social care staff when attending or being transferred to another setting. This is being used successfully in some areas.

Please note: There is no reason for non-acute settings to refuse admission or readmission of service users on the grounds that they are colonised with carbapenemase-producing Enterobacteriaceae.

## A6 Management advice for differing care needs

Multiple measures and interventions are required to address the variety of care needs and settings in the community. The **risk assessment guidance (section A7)** is intended to assist care providers in assessing what is required in their setting and with their individual service users. Using the guidance, you should classify the affected individual according to their care needs and then match to this the infection prevention and control measures that are most appropriate to your setting along with that care need.

### A6.1 Assessing level of management

There will be occasions where additional measures will be needed following a local risk assessment.<sup>4</sup> The '*Acute trust toolkit for the early detection, management and control of carbapenemase-producing Enterobacteriaceae*<sup>5</sup>' may be helpful on some occasions; section B3 of the acute trust toolkit includes a planning checklist for hospital IP&C teams for the management of an outbreak, suspected outbreak or cluster of cases. When in doubt you should seek further advice from your usual IP&C advisor or local PHE centre.

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<sup>4</sup> Due to the similarities between organisational structures in both acute and mental health trusts, the checklists included in section B3 of the *Acute trust toolkit for the early detection, management and control of carbapenemase-producing Enterobacteriaceae* may be helpful for planning purposes.

<sup>5</sup> <https://www.gov.uk/government/publications/carbapenemase-producing-enterobacteriaceae-early-detection-management-and-control-toolkit-for-acute-trusts>

## A7 Guidance for undertaking a risk assessment on managing individuals with a positive laboratory result for carbapenemase-producing Enterobacteriaceae

This information is designed as a guide only, and is not exhaustive advice for all settings or care needs. If the individual's care needs are not shown and you are unable to find an applicable scenario based on the examples presented, please contact your local IP&C team or PHE centre for further advice.

### At all risk levels ensure the following:

- **standard precautions are maintained at all times (Section C1)**
- **effective environmental hygiene (Annex F):** prevention of faecal and environmental contamination is crucial; remain alert to episodes that risk direct transmission to others and/or environmental contamination; ensure timely and thorough cleaning
- **hygiene advice to individual and family/contacts (Annex B-D):** it is important to inform individuals and those around them to ensure they take appropriate personal hygiene measures to prevent the spread of infection, especially when using the toilet

**Risk assessments must include consideration of the care environment**, eg nursing care setting, specialist or general rehabilitation, haemodialysis unit, EMI, dementia care unit, community hospital or hospice, mental health trust, residential care, domiciliary care or detention centre/prison.

**If the individual is colonised:** single room with en-suite facilities including toilet or designated commode is recommended; no curtailment of communal activities is required where standard precautions and effective environmental hygiene are being maintained and there is no risk of infecting others.

**If the individual is infected:** conduct a risk assessment with usual IP&C advisor and/or PHE centre to discuss possible isolation (with defined end-of-isolation criteria; [section A3.1](#)); consider the mental and physical health and wellbeing of the individual when deciding to isolate.

**Always communicate the positive status of an individual appropriately when transferring the individual between care settings (Annex A).**

CARE NEEDS	GUIDANCE for RISK ASSESSMENT
<p><b>HIGH RISK</b></p> <p>Eg patient has: diarrhoea, discharging wound, long term ventilation, confusion/dementia, device(s) in situ, undergoing invasive procedures, smearing or 'dirty protests'</p>	<ul style="list-style-type: none"> <li>• identify if there is an <b>immediate risk of infecting others</b></li> <li>• discuss management with GP/clinician in charge, IP&amp;C nurse</li> <li>• consider the mental and physical health and wellbeing of the individual</li> <li>• consider if the individual requires supervision</li> <li>• consider options to facilitate terminal cleaning and disinfection and minimise the risk of spread of infection where possible by:                             <ul style="list-style-type: none"> <li>• giving individuals an end of list appointment</li> <li>• using mobile equipment away from others</li> </ul> </li> </ul>
<p><b>MEDIUM RISK</b></p> <p>Eg patient requires: assistance with hygiene, mobility or physical rehabilitation</p>	<ul style="list-style-type: none"> <li>• <b>no immediate risk of infecting others</b> identified</li> <li>• standard precautions are maintained (<a href="#">Section C1</a>)</li> <li>• hygiene advice is provided to individual and family/contacts as appropriate (<a href="#">Annex B-D</a>)</li> </ul>
<p><b>LOW RISK</b></p> <p>Eg patient is independent and self-caring</p>	<ul style="list-style-type: none"> <li>• effective environmental hygiene (<a href="#">Annex F</a>)</li> <li>• if unsure, contact your usual IP&amp;C advisor or PHE Centre</li> </ul>

## Section B

### B1 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](mailto:hcai@phe.gov.uk)

Please note: Training and educational resources will be posted on the toolkit webpage as they are developed.

## B2 Community based scenarios

**Scenario 1:** We are a mental health Trust with a number of bedded areas and also have community services with bedded areas. We receive patients from a number of large acute hospitals and want to know what preparation is needed to receive a positive patient?

**Scenario 1 response:** Generally, care provided within a mental health setting is more akin to that of a non-acute setting. The degree of risk to service users differs between settings and the application of control measures should be adapted to the particular setting. It is important that both the physical and mental wellbeing of your service user are taken into account, and care planned accordingly.

The non-acute toolkit is probably most useful in assisting you in planning day-to-day infection prevention and control practices and associated operational activities, particularly for areas such as community housing. However, as a mental health Trust you do have similarities to acute settings in the way overarching structures and functions are managed, so you may find [section B of the acute toolkit<sup>6</sup>](#) useful, particularly in relation to preparing a plan and in the detection and management of outbreaks.

**Scenario 2:** I am a manager of a residential care home and we have had two confirmed cases of carbapenemase-producing Enterobacteriaceae, one of which was picked up in hospital. We are unsure where the other resident picked up the bacteria as the gentleman has not been outside of the home. All of our residents have single rooms but there are some shared facilities, including bathrooms and toilets. Please will you advise whether or not we need to screen all of the residents, to check whether anyone else is colonised?

**Scenario 2 response:** It is important to seek advice from your usual IP&C advisor and also communicate with your local PHE centre, which can work with you and your IP&C advisor to establish whether it is likely that there has been spread within the home. When spread is suspected, it may be decided that selective screening is recommended eg screening residents who have had closest contact with the affected individuals or who shared the same carer(s). The most common specimens for screening tests are a rectal swab or stool sample. Should more residents confirm positive on screening (or there is no obvious smaller group to select for screening) the PHE centre may recommend that all residents in the home be screened. Staff are not normally screened. In any case, the fact that you have a number of cases in the home should be communicated on every occasion to receiving care providers for all transfers and discharges of residents, and to visiting clinicians such as GPs and district nurses.

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<sup>6</sup> <https://www.gov.uk/government/publications/carbapenemase-producing-enterobacteriaceae-early-detection-management-and-control-toolkit-for-acute-trusts>



When it is suspected that spread has occurred, a thorough investigation eg root cause analysis, should be undertaken. All staff (including carers, domestics and other ancillary staff) should be gathered together to examine whether practices and procedures within the home are in line with this toolkit and other IP&C guidance as noted in [section C](#). Any lapses in best practice need to be addressed quickly and lessons learned by all, reinforcing effective IP&C practices. Compliance with best practice should be demonstrated by regular audit and feedback.

**Scenario 3:** A hospice has admitted a patient who is positive for carbapenemase-producing Enterobacteriaceae. The hospice has not developed a plan as they are unsure whether the acute trust or non-acute/community toolkit is more applicable to the setting.

**Scenario 3 response:** In the first instance, assess whether your service users and care setting would fit those generally identified in the [risk assessment guidance \(Section A7\)](#). You should work on this with your usual IP&C advisor, clinical colleagues to establish a common understanding of the risks. However, there may be organisational elements of the [acute toolkit](#), particularly in section B, which you will find helpful. If unclear, seek advice from your PHE centre, once you have a draft plan.

**Scenario 4:** A patient colonised with carbapenemase-producing Enterobacteriaceae needs to attend our stroke rehabilitation sessions with other patients. Also, they require a patient transport vehicle to transport them to and from the rehabilitation centre. Please can you advise how the individual should be managed?

**Scenario 4 response:** With some small (but important) measures, the individual should continue life as normal, including receiving transport to and from and attending their rehabilitation sessions. The individual should be advised and supported to practice good hand hygiene. Transport and rehabilitation unit staff should be advised to maintain standard precautions. Should there be any spillage of body fluids or an episode of incontinence, thorough decontamination of the affected area should be undertaken immediately, in line with the organisation's policy. As usual, should the patient develop an infection which cannot be contained, eg a discharging wound, or develop diarrhoea, they should stay away until the infection or diarrhoea has resolved.

**Scenario 5:** We are a regional neuro-rehabilitation unit and have started to decline admission of patients who are positive for carbapenemase-producing Enterobacteriaceae as we don't wish to expose other patients to the risk of spread of these bacteria eg through use of communal facilities. Do you think this is the right approach?

**Scenario 5 response:** It is important that an individual's health and wellbeing is not compromised by their positive status. Care can be provided with effective infection prevention and control measures by educated staff for an informed individual. For inpatients, it is recommended that they are accommodated in a single room with en-

suite facilities. If possible, when attending communal rehabilitation sessions (as an inpatient or an outpatient), the individual should be allocated separate equipment and receive care from an allocated member of staff. A thorough clean of the allocated area should be undertaken straight after use (and after any body fluid contamination) in line with the organisation's policy (see Annex F). As normal, staff should ensure that standard precautions are followed at all times including hand hygiene between caring for different service-users.

**Scenario 6:** An elderly lady in our community hospital has been identified as being positive for carbapenemase-producing Enterobacteriaceae six days after admission. The lady was in a six-bedded rehabilitation ward with two other elderly patient contacts. She also used shared rehabilitation facilities. Do the other two contacts need to be screened?

**Scenario 6 response:** As a community hospital is not an acute care setting, the complexity of care is generally less, so a pragmatic approach should be considered which balances the health and wellbeing of those receiving care with the risk of infection. However, as the two contacts have spent a considerable amount of time in the same bay, sharing the same facilities as the lady, screening may well be indicated. It could be that one of the contacts was actually the source of the infection.

It is important that you seek advice from your usual IP&C advisor to assist with making a risk assessment. Additionally, it is important to speak to your local PHE centre who can work with you and your IP&C advisor to jointly decide whether screening is required.

**Scenario 7:** We have recently received a prisoner into our prison, transferred directly from hospital. The microbiologist at the hospital has informed our medical staff that the prisoner is colonised with carbapenemase-producing Enterobacteriaceae. Does the prisoner need isolating?

**Scenario 7 response:** On entering the prison from hospital the prisoner does not require isolation. However, where possible, a single cell with a toilet is preferable. That said, prisoners who are carriers should not share cells with prisoners who are considered to be immunosuppressed. While prison staff are not required to take additional infection prevention and control measures, hand and environmental hygiene in line with organisational policy as would normally be adopted for any individual in a similar multi-occupied setting, should be reinforced. The prisoner should be advised to maintain effective hand hygiene, especially after using the toilet. Additionally, should the prisoner develop diarrhoea or an infection which cannot be contained, such as leaking discharge from a wound, they should be placed in a single cell with a toilet until the diarrhoea or infection has resolved.

## Section C

### C1 Summary of key points from the 'NICE standard principles [standard precautions] of prevention and control of infections in primary and community care' to support prevention of spread

*Please note: This section provides a summary only. For education and training purposes organisations should refer to the **full NICE guidance available online**.<sup>7</sup> Refer to your local organisational policies for information on cleaning and decontamination of equipment, fabrics and the environment.*

#### Hand decontamination

Educate patients and carers about:

- the benefits of effective hand decontamination
- the correct techniques and timing of hand decontamination
- when it is appropriate to use liquid soap and water or alcohol hand rub
- the availability of hand decontamination facilities
- their role in maintaining standards of healthcare workers' hand decontamination

Hands must be immediately decontaminated in all of the following circumstances:

- before and after every episode of direct patient contact or care, including aseptic procedures
- after any exposure to body fluids
- after any other activity or contact with a patient's surroundings that could potentially result in hands becoming contaminated
- after removal of gloves

Decontaminate hands by:

- using **liquid soap and water** when hands are visibly soiled or potentially contaminated with body fluids
- using **an alcohol hand rub** (conforming to current British standards), when not visibly soiled or contaminated with body fluids

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<sup>7</sup> [http://bit.ly/NICE\\_StandardPrinciples\\_PrimaryCommunityCare](http://bit.ly/NICE_StandardPrinciples_PrimaryCommunityCare)

To ensure that hands can be decontaminated carers should ensure that they are:

- bare below the elbow when delivering direct patient care including:
  - not wearing false nails or nail polish
  - not wearing a wrist-watch or hand jewellery, including stoned rings
- wedding bands are permitted
- wearing short-sleeved garments (or being able to roll up sleeves)
- making sure that fingernails are short and clean
- covering cuts and abrasions with waterproof dressings

An effective hand washing technique involves three stages: preparation, washing and rinsing, and drying.

### Use of personal protective equipment (PPE)

Selection of protective equipment depends on risk of:

- transmission of microorganisms to the patient
- contamination of the healthcare worker's clothing and skin by patients' blood, body fluids, secretions or excretions

#### Gloves

Gloves used for direct patient care must conform to current EU legislation (CE marked as medical gloves for single use) and should be appropriate for the task. Do not use polythene gloves for clinical interventions. Gloves must be worn:

- for invasive procedures, and contact with sterile sites and non-intact skin or mucous membranes
- for all activities carrying a risk of exposure to blood, body fluids, secretions or excretions, or to sharp or contaminated instruments
- as single-use items

Gloves must be put on immediately before an episode of patient contact or treatment and removed as soon as the activity is completed. Gloves must be changed between caring for different patients, and between different care or treatment activities for the same patient.

#### Aprons/gowns

- wear a disposable plastic apron if there is a risk that clothing may be exposed to blood, body fluids, secretions or excretions **or**
- wear a long-sleeved fluid-repellent gown if there is a risk of extensive splashing of blood, body fluids, secretions or excretions onto skin or clothing
- use aprons or gowns as single-use items, for one procedure or one episode of direct patient care **and** ensure they are disposed of correctly

### Face masks and eye protection:

- must be worn where there is a risk of blood, body fluids, secretions or excretions splashing into the face and eyes

### Waste disposal

Healthcare waste must be segregated immediately by the person generating the waste into appropriate colour-coded storage or waste disposal bags or containers defined as being compliant with **current national legislation** and local policies:

- healthcare waste must be labelled, stored, transported and disposed of in accordance with current national legislation and local policies
- educate clients and carers about the correct handling, storage and disposal of healthcare waste<sup>8</sup>

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<sup>8</sup> NOTE: for the purposes of this guidance, faecally contaminated waste eg incontinence pads, provided it is free from excess liquid, can be double bagged and placed in the normal domestic waste system.

## C2 Glossary

<b>Abbreviations used</b>	<p>CPE – carbapenemase-producing Enterobacteriaceae                  CPO - carbapenemase-producing organism                  CRO – carbapenem-resistant organism                  CRE – carbapenem-resistant Enterobacteriaceae                  CPC - carbapenemase-producing coliform</p>
<p>NOTE: it is recommended that a full unabbreviated version should be used to avoid confusion; ask informant to explain exactly what the individual has</p>	
<b>Carbapenemases</b>	<p>Enzymes (such as KPC, OXA-48, NDM and VIM) produced by some bacteria which cause destruction of the carbapenem antibiotics, resulting in resistance – health professionals sometimes use this enzyme abbreviation only</p>
<b>Carbapenems</b>	<p>Carbapenems are a group of powerful antibiotics, used to treat severe infections. They include meropenem, ertapenem, doripenem and imipenem</p>
<b>Colonisation</b>	<p>The presence of micro-organisms (germs) living harmlessly on the skin or within the bowel and causing no signs or symptoms of infection</p>
<b>Enterobacteriaceae</b>	<p>A group of bacteria that usually live harmlessly in the gut of humans (and animals). They include <i>Escherichia coli</i> (<i>E. coli</i>), <i>Klebsiella</i>, <i>Enterobacter</i></p>
<b>Infection</b>	<p>The presence of micro-organisms (germs) in the body causing adverse signs or symptoms</p>
<b>Invasive device</b>	<p>A device or tube that enters the body through the skin (eg intravenous drip or a percutaneous endoscopic gastrostomy [PEG] tube) or through an orifice (eg urinary catheter, endotracheal tube)</p>
<b>Standard precautions (standard principles)</b>	<p>Standard principles often better known as standard (infection control) precautions (formerly known as universal precautions) underpin routine safe practice, protecting both staff and clients from micro-organisms that may cause infection. By applying standard precautions at all times and to all clients, best practice becomes second nature and the risks of infection are minimised. See <a href="#">Section C1</a> for a summary of standard principles</p>

### C3 Useful contacts – some may not be available depending on care setting

*(For completion with local contact details)*

<b>Infection prevention and control (IP&amp;C) team</b>
<b>Practice lead for IP&amp;C / unit IP&amp;C link practitioner</b>
<b>Primary care practice / general practitioner</b>
<b>Microbiologist</b>
<b>Public Health England (PHE) centre</b>
<b>Clinical commissioning group (CCG)</b>
<b>Local authority</b>
<b>Other contact</b>

## C4 Essential resources

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

<http://pathways.nice.org.uk/pathways/prevention-and-control-of-healthcare-associated-infections/standard-principles-of-prevention-and-control-of-healthcare-associated-infections-in-primary-and-community-care>

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

[https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/214929/Care-home-resource-18-February-2013.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/214929/Care-home-resource-18-February-2013.pdf)

The Health and Social Care Act 2008: **Code of practice for health and adult social care on the prevention and control of infections and related guidance** (DH, 2011)

[https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/216227/dh\\_123923.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/216227/dh_123923.pdf)

Health Education England (2015): **Skills for Care, Skills for Health** Care certificate - IPC standard.

<http://www.skillsforcare.org.uk/Document-library/Standards/Care-Certificate/Standard%2015%20CC%20Workbook.pdf>

Department of Health (2013): **Choice framework for local policy and procedures (CFPP) 01-04: guidance about decontaminating linen used in health and social care.**

<https://www.gov.uk/government/publications/decontamination-of-linen-for-health-and-social-care>

Department for Environment, Food and Rural Affairs (2013): **Healthcare waste produced in a private household.**

<https://www.gov.uk/healthcare-waste>



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