Clinical Guideline

MANAGAEMENT OF PATIENTS WITH CONFIRMED OR SUSPECTED CARBAPENEMASE-PRODUCING ENTEROBACTERIACEASE (CPE)

SETTING	Trust wide
FOR STAFF	All clinical staff
PATIENTS	Any patient with suspected or confirmed Carbapenemase-producing Enterobacteriaceae (CPE)

Guidance

Background Information

Enterobacteriaceae are a large family of bacteria that usually line harmlessly in the gut of humans and animals; however these organisms are some of the most common causes of urinary react infections, intra-abdominal sepsis and blood stream infections. Examples are *Escherichia coli (E.coli), Klebsiella spp.* and *Enterobacter spp.*

Carbapenems are a valuable group of antibiotics, usually reserved for serious life threatening Gram negative bacteria including *Enterobacteriaceae.* Example are merepenem, ertapenem, and imipenem. Carbapenemase are enzymes that destroy carbapenem antibiotics and prevent them working, these enzymes are made by a small but increasing number of *Enterobacteriaceae.*

CPE is endemic in many parts of the world and certain parts of the UK, therefore any patient being admitted to hospital who has meets the risk criteria of having:

- received health care abroad, or in one of the high risk areas in the UK in the preceding 12 months
- multiple hospital admissions/treatments
- Has a known epidemiological link to a known carrier
- Are admitted into an augmented/high risk care area e.g ITU's/HDU's

should be isolated in single source isolation and screened for CPE on admission. The Infection Prevention and Control Team should be informed.

In the event of more than one patient in any clinical are being confirmed as having CPE, the Director of Infection Prevention and Control (DIPC) will declare an outbreak and any actions from these meetings will take priority over these guidelines.

Transmission in hospital can occur through

Contact:

- Via unwashed hands of healthcare workers
- Via contact with infected stools/diarrhoea
- Via patient's own hands
- Via inadequately decontaminated shared equipment

- Via inadequately cleaned environment

Some organisms can remain viable in the environment for months.

Click here for UKHSA guidelines.

Management of CPE

Standard Precaution	Actions
Isolation	Isolation in ensuite single room (door closed). Trust approved laminated colour isolation sign must be displayed on the door. A specialist ventilation isolation room with antechamber is not required for CPE unless requested by Infection Prevention and Control (IP&C) Team. Isolate patient for the duration of stay unless clinical condition requires otherwise. Discuss with IP&C Team, Infection Control Doctor or Medical Microbiologist. If not isolated the clinical risks must be documented in patient's medical notes and reviewed daily. Once admitted to a single room, the patient should not be moved or transferred to another area without first discussing this with the IP&C Team. Discuss with IP&C if patient needs to be nursed in a bay with other patients. A careful [redacted] MUST be carried out.
Patient/Visitor Information	Inform patient of a positive result when appropriate. Provide a Trust leaflet 'Being cared for in a side room or special area' and the leaflet for CPE.
Hand Hygiene	Follow Trust Hand Hygiene Policy. Staff/visitors/relatives should wash their hands with soap and water on entering and leaving the ward/unit. Alcohol gel can be used if hands are visibly clean.
Personal protective Equipment (PPE)	Disposable gloves and aprons must be used when in contact with patient and their surroundings. Aprons and gloves must be changed after each episode of contact with patient's surrounding's and disposed of in clinical waste. Long sleeved gowns must be used if touching the patient to provide care or change linen. All linen must be disposed of as infected linen. Always wash hands after removing PPE. Visitors do not require PPE unless carrying out personal care activities.
Decontamination of Equipment/Environment	Clean equipment after use with Actichlor plus. Detergent and water/detergent wipes followed by an alcohol wipe can be used if equipment will not withstand Actichlor plus. Commodes: Return to the sluice and clean with Actichlor plus between each use and apply green tape. Do not leave commodes in side rooms.

	Environment to be cleaned daily with Actichlor plus. Furniture that will withstand a bleach-based product should also be wiped over with Actichlor plus daily.
Linen	All linen must be handled as infected (red alginate bag places inside a red plastic bag).
Waste Management	All waste must be handled as infected: clinical waste stream.
Screening/Specimens	Once a patient has been identified as being at risk of, or having a previously diagnosed CPE they will require a comprehensive screen. 3 rectal swabs are required taken 48 hours apart. Please ensure that the swab contains visible faecal matter. Patients who have had a previous CPE infection should be isolated and screened on further hospital admissions.
Medway Alert	If a patient has a resistant organism, the IP&C Nurses will apply the appropriate Medway alert. Check all new patient admissions or inpatient transfers for Medway alerts.
Physiotherapy/OT	If patients need to mobilise/work with Physio/OTs then this must be facilitated while ensuring safety of other patients. Please discuss with IP&C. Patients must wash their hands with soap and water before leaving their side room. Staff do not need to wear apron and gloves when escorting a patient out of their side room unless it is likely that intimate care will need to be given or uniform may have close contact with the patient. We advise that staff carry an apron/pair of gloves with them as a precaution. If worn they must be discarded as clinical waste. If the patient is able to wash their own hands and is continent that can use an OT kitchen area. Surfaces/stair rails must be wiped thoroughly afterwards using Clinell Detergent wipes. Contact the IP&CN's to discuss individual patient requirements.
Visitors	Visitors who are fit and well are at minimal risk. Visitors should be encouraged to wash or alcohol gel their hands on entering/exiting a clinical area and after seeing a patient. Visitors should wear apron and gloves if carrying out personal care but otherwise PPE is not required.
Pregnant Staff/Visitors	There is a minimal risk of acquiring resistant organisms if fit and well.
Discharge/Transfer/ Clinical Investigations/ Theatre	Patients can be discharged home when medically fit. Discharge summary should contain details of infection/colonisation. Patients should not routinely be transferred to other facilities/ wards/departments/hospitals unless there is a clinical need.

	IP&C must be informed of any transfer and receiving area MUST be informed of resistant organism status/outstanding results and any ongoing precautions required. Patients can leave the ward/unit for investigations (e.g. x-ray). They should be taken straight to the department, the investigation performed immediately and the patient returned to isolation. Full deep clean of investigation area NOT required unless the patient has had an episode of diarrhoea while in the area, but any surfaces/equipment that the patient has come into contact with must be wiped down with a solution of Actichlor plus. Place last on investigation list of possible. For management in Theatres and other high risk areas, refer to clinical guideline 'Management of diagnosed/suspected infection in Theatre and other areas where invasive procedures are carried out'.
Deep Cleaning/HP Vaping	On discharge/transfer the ward/unit isolation room- where possibly- must be deep cleaned followed by hydrogen peroxide vaping. Clean patient equipment with Actichlor plus. Dynamic mattresses must be cleaned professionally off site. A standard mattress should have the integrity of its cover checked. It should be unzipped to check for any soiling. All external aspects of the mattress should be cleaned with a solution of Actichlor plus.
Last Offices	As per Trust Standard Infection Control Precautions Policy and Isolation, Resistant and Alert Organisms Policy. Body bag not required unless patient incontinent of faeces at time of death.

Table A

REFERENCES	NHS England- National infection prevention and control manual for England Standard Infection Control Precautions Policy- SICPs Transmission based precautions- TBC UKSHA. Framework of actions to contain carbapenemase-producing Enterobacterales. Sept 2020
RELATED DOCUMENTS AND PAGES	Hand Hygiene Policy Linen and Laundry Policy Isolation, Resistant and Alert Organism Policy
AUTHORISING BODY	Infection Control Group
SAFETY	N/A
QUERIES AND CONTACT	Contact Infection Prevention and Control Team Bristol : [redacted] Bleep [redacted] Weston: [redacted] Bleep [redacted]

Plan Elements	Plan Details
The Dissemination Lead is:	[redacted]
Is this document: A – replacing the same titled, expired SOP, B – replacing an alternative SOP, C – a new SOP:	A
If answer above is B: Alternative documentation this SOP will replace (if applicable):	NA
This document is to be disseminated to:	Replace existing SOP on DMS.
Method of dissemination:	Clinical areas informed via Newsbeat. IP&C nurses inform staff on the identification of a positive patient
Is Training required:	NO

Document Change Control

Date of Version	Version Number	Lead for Revisions	Type of Revision	Description of Revision
Feb 2023	5.1	IPC lead	Minor	Addition of **NHS England- National infection prevention and control manual for England**