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	CARBAPENEMASE PRODUCING ENTEROBACTERIACEAE (CPE) TRANSMISSION BASED PRECAUTION	Review Date	April 2023
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### SOP Objective

To ensure that patients colonised or infected with Carbapenemase Producing Enterobacteriaceae (CPE) are cared for appropriately and actions are taken to minimise the risk of cross-infection.

This SOP applies to all staff employed by NHS Greater Glasgow & Clyde and locum staff on fixed term contracts and volunteer staff.

### KEY CHANGES FROM THE PREVIOUS VERSION OF THIS SOP

- Minor wording changes

### Document Control Summary

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Date of Publication	23 <sup>rd</sup> April 2021
Developed by	Infection Control Policy Sub-Group
Related Documents	National IPC Manual NHSGGC Decontamination Guidance NHSGGC Hand Hygiene Guidance NHSGGC SOP Cleaning of Near Patient Equipment NHSGGC SOP Transmission Based Precautions NHSGGC SOP Twice Daily Clean of Isolation Rooms NHSGGC SOP Terminal Clean of Ward/Isolation Rooms NHSGGC Waste Management Policy
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Lead Manager	Director Infection Prevention and Control
Responsible Director	Executive Director of Nursing

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## CPE Aide Memoire

### Consult SOP and Isolate in a single room with:

- ✓ ensuite / own commode
- ✓ door closed
- ✓ IPC yellow sign on door
- ✓ dedicated equipment
- ✓ CPE Care Checklist completed daily

### Patient Assessed For Rehabilitation

Individual IPC care plan to allow rehabilitation to be undertaken in agreement with local IPCT

Once a patient is found to be CPE positive, they will have their notes tagged on Trakcare and be treated as positive for each subsequent admission

### SOP - Guidelines for patients in isolation:

**Hand Hygiene:** Liquid Soap and Water or alcohol hand rub

**PPE:** Disposable gloves and yellow apron for routine care

**Patient Environment:** Twice daily chlorine clean

**Patient Equipment:** Chlorine clean after use and at least on a twice daily basis

**Laundry:** Treat as infected

**Waste:** Dispose of as Clinical / Healthcare waste

**Incubation Period:** No specific incubation period

**Period of Communicability:** Unknown – may not be isolated but can recur due to gut carriage

**Notifiable disease:** Not notifiable to public health

**Transmission route:** Direct/Indirect Contact. CPE can be transferred on the hands of staff to other patients or the environment after contact with contaminated body fluids, wounds, etc. or on contaminated equipment/ environment.

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## 1. Responsibilities

### Health Care Workers (HCWs) must:

- Follow this SOP.
- Inform a member of the Infection Prevention and Control Team (IPCT) if this SOP cannot be followed.

### Managers must:

- Support Healthcare Workers (HCWs) and IPCTs in following this SOP.

### Infection Prevention and Control Teams (IPCTs) must:

- Keep this SOP up-to-date.
- Provide education opportunities on this SOP.
- Provide support and advice to clinical teams on management of a CPE positive patient

### Occupational Health Service (OHS) must:

- Support and coordinate staff screening during an outbreak/investigation.

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## 2. General Information on CPE/ CRO

<b>Communicable Disease / Alert Organism</b>	Enterobacteriaceae are a group of Gram negative organisms which are part of the normal human gut flora. Common organisms included in this subgroup include <i>E.coli</i> & Klebsiella species. Carbapenemase producing Enterobacteriaceae (CPE) have become a major public health issue and while the incidence in Scotland is currently low, evidence from other countries suggests that these organisms can spread rapidly and become endemic in healthcare facilities.
<b>Clinical Condition</b>	Patients may be colonised or infected with these organisms. Infections include bloodstream infections, device-related infections, pneumonia, urinary tract and wound infections.
<b>Mode of Spread</b>	<b>Contact:</b> CPE can be transferred on the hands of staff to other patients or the environment after contact with contaminated body fluids, wounds, etc. or on contaminated equipment/ environment.
<b>Incubation period</b>	No specific incubation period.
<b>Notifiable disease</b>	Not notifiable to public health.
<b>Period of Communicability</b>	Unknown – may not be isolated but can recur due to gut carriage
<b>Persons most at-risk</b>	Patients who have received in patient health care outside Scotland, for 23 hours or more in the last 12 months.

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### 3. Transmission Based Precautions for CPE/ CRO

<b>Screening on Admission / Re-admission</b>	<p>If response to CPE admission question is yes, the following specimens should be taken :</p> <ol style="list-style-type: none"> <li>1. A rectal screen (see below also)</li> <li>2. Wound swab (if present)</li> <li>3. Urine specimen (if urine collection device in place)</li> <li>4. Invasive Device e.g. CVC</li> </ol> <p>A rectal screen is preferred however, If patient refuses a rectal swab, then a stool specimen can be sent.  For paediatric patients, a stool specimen should be sent if they meet the criteria.</p> <p>Three sets of negative screens, taken 48hours apart are needed to complete the screening process.  If the patient has had healthcare outside of Scotland and is having repeat readmissions to hospital contact the local IPCT for advice on the need for ongoing CPE testing.</p> <p>If three negative screens are received, TBPs and isolation precautions can be discontinued.</p>
<b>Accommodation (Patient Placement)</b>	<p>All patients being admitted to hospital must be assessed for CPE using the Clinical Risk Assessment tool.  A single room, preferably en-suite, should be made available for all patients who have answered yes to the CRA and a CPE screen undertaken. If the results indicate that the patient is colonized/infected with CPE, the patient must remain in single room with contact TBPs in place until discharge. If a single room is not available or in instances where a patient’s clinical condition may not support placement in a single room, the IPCT should be informed and a risk assessment undertaken jointly with ward staff, on where to safely nurse the patient. This must be documented in the patient notes and reviewed daily. Doors in single rooms should be kept closed. If this is not possible, a risk assessment should be undertaken and documented in clinical notes (See also Appendix 1).</p>
<b>Clinical / Healthcare Waste</b>	<p>All non-sharps waste from patients with CPE should be designated as clinical healthcare waste and placed in an orange</p>

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	bag. Please refer to the <a href="#">NHSGCC Waste Management Policy</a> .
<b>Contacts</b>	<p>If patients are assessed at admission and immediately isolated in a single room there should be no need to screen contacts. A contact is described as another patient who has spent 8 hours or more in the same bed bay / room as a patient who is confirmed CPE positive.</p> <p>Contacts do not require to be isolated in single rooms but cohort should be considered where possible and movement should be restricted until negative screen or discharge. A contact must have weekly screens for 4 weeks, after last case was detected, to be considered negative. Once 4 negative screens have been obtained, the patient is deemed no longer a CPE contact. It is not necessary to screen staff and /or household contacts unless considered as part of an outbreak investigation.</p> <p><b>Post-discharge screening</b></p> <p>Post-discharge screening is not required if no transmission has been identified amongst in-patient contacts. If post-discharge screening is required, contacts require 3 negative screens 48 hours apart. Patient notes should be tagged to allow all screens to be achieved. Once 3 negative screens have been achieved, notes can be untagged.</p>
<b>Domestic Advice</b>	<p>Domestic staff must follow the SOP for Twice Daily Clean of Isolation Rooms. Cleans should be undertaken at least four hours apart.</p> <p>See <a href="#">NHSGGC SOP Twice Daily Clean of Isolation Rooms</a></p>
<b>Equipment</b>	<p>Where practicable, the patient should be designated their own equipment. See <a href="#">NHSGGC Cleaning of Near Patient Equipment SOP</a></p>

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<b>Hand Hygiene</b>	Hand hygiene is the single most important measure to prevent cross-infection. Hands must be decontaminated before and after each direct patient contact. Refer to the <a href="#">NHSGGC Hand Hygiene Guidance</a> .
<b>Last Offices</b>	Link to guidance in <a href="#">NIPCM</a>
<b>Linen</b>	Treat used linen as soiled/ infected, i.e. place in a water soluble bag then a clear plastic bag tied and then into a laundry bag. (Brown bag used in Mental Health areas) <a href="#">Please refer to Section 1.7, chapter 1 of the National Infection prevention and control Manual.</a>
<b>Moving between wards, hospitals and departments (including theatres)</b>	Discuss patient transfers with local IPCT prior to movement. Inform department prior to transfer, inform any receiving ward that the patient has a CPE before transfer. Contact SAS to discuss arrangements for transport
<b>Notice for Door</b>	Yellow isolation sign on door
<b>Patient Clothing</b>	If relatives or carers wish to take personal clothing home, staff must place clothing into a domestic water soluble bag then into a patient clothing bag and ensure that a <a href="#">Washing Clothes at Home Leaflet</a> is issued. <b>NB</b> It should be recorded in the nursing notes that both advice and the information leaflet has been issued.
<b>Patient Information</b>	Inform the patient / parent / guardian / next-of-kin (as appropriate) of the patient's condition and the necessary precautions. Answer any questions and concerns they may have. Provide a <a href="#">patient information leaflet</a> .
<b>Personal Protective Equipment (PPE)</b>	To prevent spread through direct contact PPE (disposable gloves and yellow apron) must be worn for all direct contact with the patient or the patient's environment/equipment. Ensure hand hygiene is performed before donning and after doffing PPE
<b>Precautions Required until</b>	A patient who is admitted to hospital and has been / is CPE positive must be accommodated in a single room with transmission based precautions as per this SOP, for the duration of this and any subsequent admissions If the patient requires rehabilitation, please contact a member of the IPCT to develop an individual care plan for that patient.
<b>Risk Assessment required</b>	Yes. Ward staff will ask CPE questions on admission to hospital and

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	record on nursing admission documentation/CPE stickers. If patient answers yes to any question, they must be isolated in a single room with transmission based precautions.
<b>Screening Staff</b>	Not required.
<b>Terminal Cleaning of Room</b>	As per <a href="#">NHSGGC SOP Terminal Clean of Wards and Isolation Rooms</a>
<b>Visitors</b>	Visitors are not required to wear aprons and gloves unless they are participating in patient care. They should be advised to decontaminate their hands on leaving the room / patient.

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#### 4. Evidence Base

<https://www.hps.scot.nhs.uk/haic/amr/resourcedetail.aspx?id=478>

[HPS Website - Toolkit for the early detection, management and control of carbapenemase-producing Enterobacteriaceae in Scottish acute settings](#)