

## What are CPEs/CPOs?

CPE/CPO stands for Carbapenem Producing Enterobacteriaceae/ Carbapenem Producing Organism.

Enterobacteriaceae are a large group of bacteria (sometimes called coliforms), including *Escherichia coli*, *Klebsiella* spp and *Enterobacter* spp etc., which normally live in the gut, but can cause infections of the urinary tract, intra-abdominal area and bloodstream when they get into another area of the body.

Carbapenems are a powerful group of  $\beta$ -Lactam antibiotics reserved to treat serious infection caused by Gram negative bacteria, including Enterobacteriaceae, in hospital settings. They include Meropenem, Ertapenem, Imipenem and Doripenem.

## Why does Carbapenem Resistance matter?

Some of the Enterobacteriaceae bacteria have developed resistance against Carbapenems.

The resistant CPE/CPO bacteria produce an enzyme (Carbapenemase) that breaks down the antibiotic and makes it ineffective. Carbapenem resistance poses an increasing threat

due to the decreasing ability to find antibiotics to treat such resistant organisms.

## How common are CPEs/CPOs?

Over the last decade CPEs/CPOs have become a global threat with outbreaks occurring in healthcare facilities in many countries. CPEs/CPOs are more common in certain countries than others. They are relatively uncommon in Northern Ireland, however the prevalence of CPE/CPO locally is increasing and there are already areas of the UK where they are considered endemic. Outbreaks have also been reported in the Republic of Ireland.

## How do people get CPE/CPO?

Patients, who have received healthcare abroad, in countries where there is high prevalence, are at greater risk of acquiring CPE/CPO.

Patients who have already taken a lot of antibiotics are more at risk of getting CPE/CPO because microorganisms that are exposed to multiple antibiotics are more likely to develop resistance.

## How is CPE/CPO spread?

CPEs/CPOs are spread between patients either through contact with each other or by touching items or surfaces in the immediate environment of a patient with CPE/CPO. It also spreads by health care workers touching the patient with CPE/CPO and then touching another patient or the immediate patient environment.

## Regions with high prevalence of CPE/CPO

Greece, India, Ireland, Israel, Italy, Japan, North Africa, Malta, Middle East, Pakistan, South East Asia, South/ Central America, Turkey, Taiwan, USA and UK (Manchester & London). This list is not exhaustive and if in doubt check with your local Infection Prevention and Control Team.

A previous admission to an Intensive Care Unit or prolonged courses of antibiotics is also a high risk factor.

## CPE/CPO Patient Risk Assessment

1. Is the patient a known CPE/CPO carrier or do they have a history of CPE/CPO?
2. Has the individual been a hospital inpatient in the UK, Republic of Ireland or abroad (see list of regions) in the past year?
3. Has the patient had an admission to an ICU in the previous 12months?
4. Has the patient been identified as a 'contact' of a known CPE/CPO patient?

### Actions required if 'Yes' to any of the above questions:

- A. In an acute hospital setting or Trust owned facility, isolate the patient (explaining the rationale), implement contact precautions, inform your local Infection Prevention & Control (IPC) Team and screen for CPE/CPO.
- B. In a Private Care Home facility, isolate the individual (explaining the rationale), implement contact precautions and contact the Public Health Agency (PHA) and/or your local Trust for advice.

## Screening samples for CPE/CPO

Sampling for CPE/CPO will involve taking a rectal swab stained with faeces or a sample of faeces within 24hours of admission. It may also include taking swabs of sites such as IV sites, catheter sites and wounds. All samples should be labelled 'CPE/CPO SCREEN', both on the request form and electronically if applicable. Staff should refer to local guidelines on sending samples.

## Communication

- Provide the patient who is a contact of a case, with a 'Screening Information' leaflet and explain the reason for a CPE/CPO screen. Positive CPE/CPO cases should also be provided with a CPE/CPO 'Patient Information' Leaflet.
- If a patient is being transferred to another healthcare facility a full history including CPE/CPO status must be provided on a transfer form.
- For further information please contact your local IPC Team or PHA as appropriate.

# CPE/CPO Carbapenemase Producing Enterobacteriaceae/ Carbapenemase Producing Organism

## Staff Information leaflet