Guidance relating to healthcare of people colonised or infected with Antimicrobial Resistant Organisms including Carbapenemase Producing Enterobacterales (CPE) for Healthcare Workers in the Community (excluding long-term healthcare facilities for older people)

CPE Expert Group

National Guidance Document, Version 1.0

Scope of this Guidance

This document is intended for healthcare workers who provide healthcare to people in the community. . For further information on the scope of this guidance, refer to page 5 of this document. Additional guidance or to confirm that you are using the most current version of this guidance, please go to www.hse.ie/hcai and www.hpsc.ie

Next review of this guidance document

This guidance document will be reviewed in 12 months (September, 2019).

Note. Guidance on care of people in long-term care facilities is available in the document "Guidance relating to CPE for Long-Term Care Facilities for Older People".

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Glossary of Terms

AMRO = Antimicrobial-resistant Organism

CPE = Carbapenemase Producing Enterobacterales

ED = Emergency Department

ESBL = Extended Spectrum Beta-lactamase Producing Enterobacterales

Isolation = Isolation refers to accommodation of one person in a single room

MRSA = methicillin-resistant *Staphylococcus aureus*

Person/People = the terms person/people are generally used in this document and are in general interchangeable with the terms client, service user or patient.

IPC = Infection Prevention and Control

Standard Precautions

Standard Precautions are the minimum infection prevention practices that apply to all patient care, regardless of suspected or confirmed infection status of the person, in any setting where health care is delivered. Standard Precautions include — hand hygiene, use of personal protective equipment (such as gloves, masks, and eye-wear) and other elements as outlined in national guideline available at the following link.

http://www.hpsc.ie/a-z/microbiologyantimicrobialresistance/infectioncontrolandhai/standardprecautions/

Transmission Based Precautions

Transmission-Based Precautions are the second tier of basic IPC and are to be used in addition to Standard Precautions for people who may be infected or colonized with certain infectious agents for which additional precautions are needed to prevent infection transmission. Transmission based precautions include Contact Precautions, Droplet Precautions and Airborne Precautions. In most circumstances in relation to AMRO any additional precautions required are likely to be Contact Precautions.

Contact Precautions

Contact precautions are measures taken in addition to Standard Precautions for people with known or suspected infection or colonisation with organisms that represent an increased risk for contact transmission. These include, but are not limited to, 1. Appropriate placement, 2. Use of Personal Protective Equipment, 3. Limited transport and movement of people, 4. Use of disposable or dedicated patient care equipment and 5. Prioritized cleaning and disinfection of rooms.

VRE = Vancomycin Resistant Enterococci

Definitions are based on documents from the Centre for Disease Control and Prevention available at the following links.
https://www.cdc.gov/infectioncontrol/basics/transmission-based-precautions.html

https://www.cdc.gov/oralhealth/infectioncontrol/summary-infection-prevention-practices/standard-precautions

Scope of Guidance

This document is intended for healthcare workers who provide healthcare to people in the community. This includes healthcare workers working in primary care clinics and those who deliver healthcare to people in other healthcare facilities in the community or in the person's home. This guidance does not apply to long-term healthcare facilities for older people. This document does not apply to social care settings such as services that organize social gatherings, or for staff who visit people's homes to provide social contact or deliver food.

Statement of Principle

Each person colonised or infected with an AMRO is entitled to receive the best care that the healthcare service can reasonably provide to them. In most cases this can be achieved with minimal risk of spread of AMRO provided the healthcare worker and the colonised or infected person are able to comply with some basic precautions.

Background

Antimicrobial resistance is a major challenge to healthcare delivery systems in Ireland and throughout the world. Control of antimicrobial resistance is grounded in improved use of antimicrobial agents (**antimicrobial stewardship**) and better control of the spread of antimicrobial resistant organisms (**IPC**). The website **www.antibioticprescribing.ie** is a very valuable support for appropriate antimicrobial prescribing in the community.

The most fundamental element of managing the risk of spread of microorganisms is the consistent application of **Standard Precautions** in all healthcare setting and with all people all the time. **Standard Precautions** are critical because there is no system that will immediately and consistently identify all people colonised or infected with AMRO.

Additional steps may also help to manage the risk. These include screening people to identify AMRO (including CPE) and the application of additional Transmission Based Precautions, such as Contact Precautions in relation to people who are known to have or who are considered at high risk of having colonisation or infection with AMRO. **Transmission-Based** precautions are applicable to delivery of in-patient care in the acute hospital setting. The approach taken in this acute-care

setting is not applicable in the context of delivery of care in most out-patient and day-care settings. However specific precautions in addition to Standard Precautions may occasionally be advised for staff delivering care in the community in very specific circumstances.

In all settings measures to manage the risk of transmission associated with AMRO must be balanced with the imperative of delivering appropriate care to people in a timely manner and respecting the right of people to visit relatives and friends in hospital.

For practical purposes it is useful to distinguish between skin and nose surface colonising AMRO (MRSA) and gut colonising AMRO (CPE, ESBL and VRE).

Skin and nose colonising AMRO

For those AMRO that colonise the skin and nose the risk of environmental and hand contamination is more persistently present as contact of hands with the face and nose are frequent behaviours that may be more common when the person has a respiratory tract infection or nasal drip. In many cases it may be possible to eradicate or minimise surface colonisation with MRSA through application of a decontamination protocol if there is a clinical indication for doing so.

Gut-colonising AMRO

This group of bacteria include a number of antibiotic resistant bacteria that have been a problem for many years including VRE and ESBLs. It also includes a major new concern (CPE). There is more detail on CPE below. These organisms spread from person-to-person trough the faecal-oral route, that is to say that are shed in faeces. Traces of faeces, that are often invisible, can be transferred to hands and to other surfaces by touch. The organisms can then be transferred from hand and surfaces to the mouth either directly or from contamination of food or utensils.

It follows from the above that for those with gut colonising AMRO the principal issue is about managing the risk of faecal contamination of hands and surfaces. Provided the person is continent, fully dressed, has no behavioural disturbance and is supported as necessary in performing correct hand hygiene and dressing after visiting the toilet the risk of person to person spread and environmental contamination is very low in most settings. There is no established protocol internationally for decolonisation of the gut of people with AMRO.

Regardless of known or suspected AMRO status, a person who has diarrhoea or who is incontinent of faeces must be prioritised for immediate care in the appropriate setting, to ensure dignity and respect as well as for IPC purposes.

What is CPE?

CPE is the latest major wave of antimicrobial resistant organisms that is spreading throughout the world including Ireland. At the moment spread of CPE is mainly a problem in the acute hospital setting.

The gut of every normal, healthy human contains bacteria including a group of bacteria called Enterobacterales. This group of bacteria includes *E. coli* and *Klebsiella pneumoniae*. When Enterobacterales get into the bladder, kidney or bloodstream, they can cause infection (cystitis, pyelonephritis, sepsis).

CPE is a particular variant of these common gut bacteria that have become resistant to a critical group of antibiotics, the carbapenems. They are often also resistant to many other antibiotics. Although they are resistant to antibiotics, in most other respects they are like other Enterobacterales bacteria. Like other Enterobacterales bacteria they are harmless when they are in the gut.

CPE colonisation

A person who carries CPE in the gut but who has no clinical symptoms or illness related to the CPE is said to be colonised. People may also have asymptomatic CPE colonisation of urine, leg ulcers or indwelling devices. People colonised with CPE (no clinical evidence of infection) should not be treated with antibiotics. Antibiotics do not clear the colonisation from the gut and in fact are likely to make the colonisation more intense and last longer. People who are colonised with CPE should be given a small plastic card to show to healthcare workers to tell them that are a **CPE contact**. This card is illustrated in the appendix to this document.

When people colonised with AMRO including CPE develop clinical evidence of infection more often than not the infection that they have is not caused by the AMRO. For example upper respiratory tract infection, bronchitis, pneumonia, sinusitis, skin infection, cellulitis is very unlikely to be caused by CPE even in a person colonised with CPE. In a person colonised with CPE just as in everyone else these are most likely due to viral infection (upper respiratory tract and bronchitis) or the usual bacterial suspects for pneumonia (pneumococcus) and cellulitis (*Staphylococcus aureus* or Group a Streptococcus). In most cases of people colonised with AMRO the guidance available on www.antibioticprescribing.ie remains appropriate most of the time.

CPE in the gut do not cause diarrhoea, vomiting or abdominal pain. In a small number of people colonised with CPE in the gut the CPE may cause cystitis, pyelonephritis or sepsis. In this case many of the antimicrobial agents commonly used in the community do not work, however, there are some antibiotics that are effective.

If a person colonised with CPE develops clinical evidence of infection they may need treatment directed towards the AMRO and consultation with a Consultant Microbiologist or Infectious Disease Physician may be appropriate. In that case, in so far as it is appropriate given the persons overall care plan, transfer to an acute hospital is generally appropriate. See https://www.hse.ie/eng/about/who/cspd/ncps/sepsis/

Defining what we mean by a CPE Contact?

A **CPE contact** is a term used to refer to a person who has been identified by an IPC team or public health doctor as having significant exposure to a person colonised or infected with CPE and as a result of this exposure is at higher risk of being colonized with CPE. A person is generally identified as a CPE contact because they have spent hours in the same space in a healthcare setting as someone who is colonized with CPE. Identification of a person as a CPE contact generally relates to exposure to CPE in the acute hospital setting. Being a **CPE contact** does not mean that the person is colonized with CPE but that the risk of them being colonized with CPE are higher than for other people. People who are CPE contacts should have been given a small plastic card to show to healthcare workers to tell them that are a **CPE contact**. This card is illustrated in the appendix to this document. In most cases in the community all that is required in relation to a CPE Contact is to be particularly conscious of **Standard Precautions.** When CPE contacts are admitted to an acute hospital they are offered testing for CPE and special precautions are taken in their care. Additional information on CPE including Fact Sheets is available at www.hse.ie/cpe.

Guidance on preventing further spread of AMRO including CPE

1. Basic Elements of Good Practice for all People (Standard Precautions)

1. When doing clinical work all health care workers should be bare below the elbows (short sleeves), have short finger nails and avoid wrist and hand jewellery or watches (a plain band/ring is acceptable). Nail varnish and false nails should not be worn at work.

2. Everybody delivering healthcare to people needs to carry out hand hygiene according to the WHO recommended method and opportunities ("my five moments of hand hygiene"). This includes performing hand hygiene before and after every episode of personal healthcare for all people all the time. In most healthcare settings, with hands that are visibly clean use of alcohol hand rub is the quickest and most effective method for performing hand hygiene. Alcohol hand rub should be available in all areas where clinical care is delivered. Small containers for alcohol hand rub suitable for carrying with you at all times are available and are useful. If hands are visibly soiled or have had direct contact with body fluids washing with soap and water is required. Following proper hand hygiene technique is essential when washing with soap and water thorough drying of hands after washing is essential.
3. . All people working in health care should be trained in how to carry out hand hygiene. It is best to get this training face to face but if you can't do that right away you can get on line training at www.HSEland.ie . You do not need a HSE email address to access the training
4. Gloves and plastic aprons (personal protective equipment) should be used only when doing things that involve close personal contact with the person or handling liquids (urine, blood, wet cleaning). If you use gloves or an apron, remove immediately after use, dispose of safely and promptly and clean your hands. You should do this before you go back to our desk or deal with documentation.
5. Reducing antibiotic use helps to reduce spread of AMRO including CPE. If an antibiotic is needed they should be prescribed in line with local or national guidelines both in relation to the choice of agent and the duration of treatment. Narrow spectrum agents used for the shortest effective treatment course are less likely to cause side effects (thrush, diarrhoea) than broad spectrum agents. The national guidelines are available at www.antibioticprescribing.ie

6. Frequently touched surfaces and any items that the person has been in contact with should easily cleanable, and kept clean at all times. (Follow local or national guidance in relation to cleaning and disinfection of such surfaces). Floors, walls and other similar surfaces do not require increased frequency of cleaning and decontamination. However surfaces, including walls and floor should be cleanable so that they can be cleaned and decontaminated in the event that they are soiled.

Steps 1 to 6 are the main elements of Standard Precautions. The other elements of Standard Precautions can be found at http://www.hpsc.ie/a-z/microbiologyandantimicrobialresistance/infectioncontrolandhcai/standardprecautions/File,3600,en.pdf

2. Communication regarding AMRO including CPE.

Hospital discharge correspondence should inform healthcare workers in the community if a person is colonised or infected with AMRO including CPE or if a person is a CPE Contact.

People who are colonised or infected with AMRO should be encouraged to bring this to the attention of the healthcare worker each time they present for healthcare.

When a person who is known to have colonisation or infection with AMRO presents for care the healthcare worker who first becomes aware of this should ensure that other healthcare workers are alerted discretely, so that appropriate precautions can be taken.

Communication should be discrete and on a need-to-know basis to protect the patient's privacy and dignity. Detailed guidance related to communication regarding AMRO is available in the document "Discussing HCAI and AMRO with patients" available at www.hse.ie/hcai

If a person who is colonized or infected with an AMRO needs to attend a hospital, diagnostic centre, visit another practice, or is going to a residential health care facility, it is important that the referral note should indicate that they are colonized with an AMRO.

If a person colonized or infected with an AMRO is for transfer by ambulance, the ambulance crew should know the person is colonized or infected with an AMRO.

3. Implications of AMRO including CPE for Healthcare Workers.

Regular contact with people who have colonised or infected with AMRO is part and parcel of the life of all healthcare workers. Compared to other infections those healthcare workers are exposed to (for example influenza) people who are colonized or infected with CPE pose very little additional risk to staff. The steps outlined in this guidance, especially the basic precautions (Standard Precautions) required with all people all the time and antimicrobial stewardship help to stop spread of CPE between people cared for. Standard Precautions (including hand hygiene and correct use of aprons and/or gloves when required) also help you and your colleagues to avoid picking up CPE (and other organisms). Otherwise healthy people who pick up CPE are not likely to get sick from it but they might carry it in their gut for some time. Testing of healthcare workers for CPE colonisation is generally not recommended.

4. Care delivered in the clinic setting to people colonised or infected with AMRO including CPE.

Before attending the clinic

People colonised or infected with AMRO should be scheduled for care on the same basis as other people. They should not be required to attend last at the clinic.

All people, but especially those known as colonised or infected with AMRO including CPE should be encouraged to wash their hands regularly.

Reception and Waiting Room

People colonised or infected with AMRO should not be segregated from other people at reception or in the general waiting area where they are sitting fully dressed.

People colonised with AMRO do not require segregated toilet facilities in the waiting area in community healthcare facilities. As in all healthcare settings there should be adequate toilets and they must be checked and cleaned regularly, at a minimum at the end of each day. If toilets are visibly contaminated they should be cleaned immediately.

People who have diarrhoea or who are incontinent of faeces must be prioritised for immediate care in an appropriate setting. This is necessary with respect to dignity as well as for IPC purposes. This applies also to people colonised or infected with AMRO.

Where care is delivered

People colonised or infected with AMRO including CPE can generally receive care in the same office/treatment room as other people. Segregated clinical space is not required.

Healthcare Worker Practice

All staff should follow Standard Precautions when caring for all people care for at all times. When a person is known to have colonisation or infection with an AMRO staff should be particularly careful with respect to their practice of Standard Precautions.

As with all people cared for, when a person colonised or infected with an AMRO is seen by the healthcare worker, the healthcare worker should ensure that they perform hand hygiene before and after attending to the person.

In settings where there is very limited physical contact with the person there is no requirement for the healthcare worker to wear personal protective equipment such as aprons and or gloves. Examples include brief social contact such as shaking hands.

If there is significant physical contact with the person the healthcare worker should use personal protective equipment such as a disposable apron and gloves if required. Examples of settings in which gloves and aprons are required include a catheter change, a rectal examination or other setting where contact with blood or body fluids are likely.

When gloves and apron are used they should be disposed of immediately after use. Hand hygiene should always be performed after gloves are removed.

It is not necessary to cover chairs in the examination room if the person is sitting fully clothed.

As with all people, if the person is undressed for examination, examination couches should be covered with a disposable cover that is disposed of immediately after use. There is no requirement for further cleaning of the couch between people unless there is visible contamination.

If there is no disposable cover available, contact surfaces should be cleaned and wiped with a disinfectant wipe after they leave the room, and before the next person comes in to the room.

Where re-usable equipment for example a stethoscope is used those elements of the equipment in contact with the person's skin should be decontaminated with an appropriate disinfectant immediately after use.

Unless it is likely to interfere significantly with clinical evaluation of the person's blood pressure, blood pressure cuffs should generally be applied over light clothing (such as a shirt sleeve) to minimise contamination from direct contact with skin. Where this is not possible disposable covers for the cuffs may be appropriate.

Environmental Cleaning

Any surface in a clinical area that the person has had direct contact with while undressed, should be cleaned and disinfected immediately after the person leaves the room and before it is used for another person. There is no requirement for increased frequency of cleaning of floors walls and other non-contact surfaces after an examination room is used for an AMRO colonised person unless there is visible soiling or there was a significant incident of body fluid contamination.

When delivering healthcare in the person's home or other similar setting the responsibility of the healthcare worker is to dispose of materials that they have used safely and to clean and, if necessary, decontaminate work surfaces that the healthcare worker has used or is likely to have contaminated in the course of their work.

5. Healthcare delivered in the person's home or another non-healthcare setting.

For delivery of care in the person home as for care delivered in a healthcare setting the principles of Standard Precautions apply although their practical application in this setting may require some planning. The single most important element is the performance of hand hygiene by the approved method when the circumstance requires it. This includes but is not limited to before and after contact with the person. This is generally much more practical to perform if you carry an alcohol hand rub dispenser with you.

Bring as little as possible into the house. It is preferable to avoid taking a bag containing items you may need into a person's home. If you need to take several small items with you consider using a disposable bag. If you do use a non-disposable bag or case it should be made of material that can be cleaned and decontaminated and it should be cleaned regularly.

If you provide care for a number of people colonized or infected with AMRO, and in particular CPE in your practice, it may be a good idea to have a prepared some disposable bags containing items you are likely to need if you need to do a home visit. This might include for example disposable gloves, aprons and a small container of alcohol hand rub. In any case you should have alcohol hand rub with you for all home visits. A pocket size dispenser may be convenient.

If you know before the visit that a person has diarrhoea, is incontinent of faeces or urine or has unusual behaviour that may involve soiling of self or their room, bring a full length gown and gloves with you. This should rarely be needed.

Before you enter the house or, if this is not practical, before you enter the person's room get "bare below the elbows" and check that you have an apron and gloves in case you need them. If you plan to perform a procedure, like catheter change, check that you have everything you need so that you do not have to go in and out of the house.

Use alcohol hand rub before and after contact with the person and at other opportunities as required ("my five moments of hand hygiene"). If you will have close contact with the person or their bed/bedding or are doing a procedure, wear apron and gloves as required. Dispose of apron and gloves in the house. Carry out hand hygiene according to the approved method after you remove apron and gloves.

If it happens that you find yourself dealing with a situation where a long sleeve gown is required and you do not have access to a long sleeve gown you should wear an apron and gloves and change your clothes before seeing another person. Clothes should be washed at a temperature of at least 60^{o}C or, if this is not possible, clothes should be tumble dried on a hot setting.

Where re-usable equipment for example a stethoscope is used those elements of the equipment in contact with the person's skin should be decontaminated with an appropriate disinfectant immediately after use.

Summary and Conclusion

The key message of this guidance is that following Standard Precautions with all people at all times when delivering healthcare in the community combined with good antimicrobial stewardship is the key to managing the risk of spread of AMRO including CPE. Standard Precautions are also the best way to protect staff from exposure to AMRO and other infectious agents. Applying this guidance allows for safe care of people colonised or infected with AMRO with respect for the person's care needs, privacy and dignity. If you have questions or require additional advice contact the Department of Public Health and (where available) you Community IPC Nurse.

Additional resources are available at www.hpsc.ie and www.hse.ie/hcai

Appendix: CPE Cards - Contact Patients and CPE Patients – information is for admission/reception/administration staff in hospitals, GP practices and community based services

CPE is the newest in a long line of what people sometimes call “superbugs”. When we talk about “superbugs’ we mean bacteria that are hard to kill with antibiotics. Of all the superbugs we have had so far CPE is the hardest to kill with antibiotics. We think the number of people who carry CPE in Ireland is still fairly small (probably 2000 to 3000 people). This means that if we take very good care of people who carry CPE over the next couple of years there is still time to stop CPE becoming very common.

Some patients who have already been identified as either **CPE Colonised** or as a **CPE Contact** have been given a card. There are pictures of these cards below. The purpose of the card is to help them tell healthcare workers that they are **CPE Colonised** or a **CPE Contact**. **CPE Colonised** means that they have been proven to carry CPE but it does not mean that CPE is causing an infection.

CPE Contact does NOT mean that they have been proved to carry CPE but that they are at higher risk than most people of carrying CPE because they spent some time in hospital close to a patient who was known to have CPE.

Patients who have been given these cards have been asked to show this card to staff any time they access healthcare. They may show the care to admission/reception/administration staff/doctors/nurses or other healthcare workers.

This note is to tell you what to do if you are shown a “Colonisation” card or a “Contact” card.

Contact Card

Front

Contact

HSE Logo

Back

CPE Contact

(Carbapenemase producing Enterobacterales)

Please show this card **immediately** when you arrive at the hospital or visit your GP. This will help the hospital or your GP to follow the correct procedures when treating you. Do this until you have been advised that you are no longer considered a CPE contact. Further information on CPE is available on www.hse.ie/hcai

Colonisation Card

Colonisation Information

CPE Colonisation

(Carbapenemase producing Enterobacterales)

Always show this card **immediately** when you arrive at the hospital or visit your GP. This will help you to receive the best care and assist the hospital or your GP to follow the correct procedures when treating you.

Further information on CPE is available on www.hse.ie/hcai

People who carry CPE (or any other microbe) or who have been identified as CPE Contacts have equal rights to treatment and services. Their treatment/admission should not be compromised or delayed due to concerns regarding CPE.

Non-Clinical Staff

- These patients are not a significant risk to you.
- If the patient is in a reception area or a waiting room they do not need to sit separately from other people and you should be careful not to say or do anything that cause the patient embarrassment or gives any information about the patient to patients or members of the public in the reception or waiting area.
- You should bring the card to the attention of the clinical staff who will be responsible for the patient as soon as possible.

Clinical Staff in Acute Hospitals

- **CPE Colonised** patients do not need to be segregated from others when sitting in the waiting area.
- CPE colonised patients are one of the highest priorities for rapid single room isolation when they enter the clinical care space.
- The most senior member of staff on duty who is managing patient placement should be informed promptly.
- If for any reason the patient cannot immediately be placed in a single room with en-suite facilities be scrupulous in applying **Standard Precautions** and **Contact Precautions** while waiting for a single room to become available.
- Alert the Infection Prevention and Control Team during working hours.
- **CPE Contact** patients do not need to be segregated from others when sitting in the waiting area.
- CPE Contact patients are at increased risk of carrying CPE.
- CPE Contact patients should be placed in single room isolation as soon as possible when they enter the clinical care space.
- As soon as possible collect a rectal swab for testing for CPE from the patient and send to the laboratory with a clear indication that the patient is a CPE Contact.
- The most senior member of staff on duty who is managing patient placement should be informed promptly.
- If for any reason the patient cannot immediately be placed in a single room with en-suite facilities be scrupulous in applying **Standard Precautions** and **Contact Precautions** while waiting for a single room to become available.
- Alert the Infection Prevention and Control Team during working hours.
- Additional information and guidance related to CPE are available at www.hse.ie/hcai

Clinical Staff in community services (including GP practices, public health nurses, therapy staff and dental staff)

- Take particular care to follow Standard Precautions, in particular hand hygiene, when caring for CPE Colonised or CPE Contact patients.
- If you have close physical contact with CPE Colonised patients use personal protective equipment (gloves and apron when appropriate)
- Additional information and guidance related to CPE are available at www.hse.ie/hcai
- There is expert guidance in place for all hospitals and health services to use when providing care for patients with CPE or CPE contacts. The information is accessible at www.hse.ie/hcai