Provisional Guidance relating to CPE for General Practice. May 26 2017.
Issued by the HSE Health Care Associated Infection and Antimicrobial Resistance Response Team.

What is CPE (Carbapenemase Producing *Enterobacteriaceae*)

CPE means a type of bacteria that lives in the gut and is resistant to almost all antibiotics. If CPE stay in the gut they are mostly harmless. This is called colonisation and this should not be treated with antibiotics. Even if CPE gets into urine or leg ulcers they are mostly harmless and should be left alone (colonisation).

CPE is not like MRSA. There is no known effective way to clear the colonisation but it might go away or at least reduce to a very low level over time especially if the patient does not take antibiotics for a long time. The less antibiotics a CPE person gets the better but of course sometimes antibiotic treatment is needed.

How Does CPE Spread ?

CPE is in faeces – it comes out the back passage of people who carry it and it spreads when tiny traces of this faeces is swallowed by other people. So it is the responsibility of all health care workers to stop the faeces of one person getting swallowed by another person. That may sound easy but it is not. Faeces is very sticky and gets into all sort of cracks and creases on hands, equipment and environment. Even when things look clean there is often still enough faeces to carry CPE to another person.

We probably have to accept that it may be impossible to stop all spread of CPE so it is important not to feel that efforts are wasted if there are occasional cases of spread. If we can make sure that on average people with CPE spread the bacteria to less than one other person in their lifetime then we are slowly winning. This is a marathon not a sprint. We also need to allow for the fact that there will be people who carry CPE but we don't know that they have it. One of the reasons CPE is so important right now is that it is still fairly uncommon. This means that there is still time to stop it becoming so widespread that we no longer have any hope of controlling it.

Guiding Principles of CPE Advice

(A) A CPE colonised person has the same right to access health and social care as everyone else and should not be made suffer significant delays in transfer between home, nursing home and hospitals simply because they are colonised with CPE.

(B) Anything that is practical should be done to limit spread of CPE (and other bacteria) in all health care settings while respecting the need of patients for dignity and privacy.

Clinical Impact of CPE

CPE does not cause diarrhoea. If a patient who is carrying CPE has diarrhoeas this is most likely caused by norovirus, *C. difficile* (foul smell/recent antibiotics) or one of the other

common viruses or bacteria that do cause diarrhoea. Although CPE does not cause diarrhoea, diarrhoea in a patient carrying CPE greatly increases the risk that they will spread CPE.

If a person with CPE gut colonisation develops clinical evidence of infection more often than not the infection will not be caused by the CPE. For example upper respiratory tract infection, bronchitis, pneumonia, sinusitis, skin infection, cellulitis are very unlikely to be caused by CPE even in an 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). If the infection is viral then antibiotics are more likely to do harm than good.

The urinary tract is very vulnerable to colonisation with gut bacteria including CPE. This is especially so in older people and those with urinary catheters. In patients with urine that is colonised with CPE, just as in other patients, it is best not to send urine samples for microbiology culture unless there is good clinical evidence of cystitis, pyelonephritis or sepsis. Do not send urine cultures in patients just because they are dipstick positive for nitrite of white cells. Positive urine culture results are common in older people and mostly just mean colonisation. It is best not to treat this because it is more likely to do harm (diarrhoea, thrush, skin rash) than good.

When patients colonised with CPE have clinical evidence of cystitis, pyelonephritis or sepsis it is important to consider that CPE may be the cause. CPE are sometimes sensitive to nitrofurantoin or fosfomycin so depending on the particular CPE that the patient is carrying these drugs may work for cystitis. In patients with CPE who have clinical evidence of pyelonephritis or blood stream infection CPE is one likely cause. Oral nitrofurantoin or fosfomycin will not work for pyelonephritis or sepsis. For patients with pyelonephritis or sepsis suspected to be related to CPE and if it is appropriate in the context of the patients overall care and expectation of life such patients should be transferred urgently to an acute hospital.

Preventing Further Spread of CPE

Getting the Basics Right. (Standard Precautions, Hygiene & Avoiding Antibiotics).
These rules should apply to all patients care all the time.

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 caring for patients needs to carry out hand hygiene according to the WHO recommended method including before and after every episode of personal care for all residents all the time. There needs to be enough alcohol hand rub all the time to do this and you need to use enough to properly wet the both hands all over. If hands look dirty or the resident has diarrhoea use soap and water again using the proper method and drying hands completely after wash. 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 there is good information at this website http://www.hse.ie/eng/about/Who/healthwellbeing/Infectcont/Sth/resources/Hand_Hygiene.html and you can get on line training at www.HSEland.ie . You do not need a hse email address to access the training
3. Gloves and plastic aprons should be used only when doing things that involve close personal contact or handling liquids (urine, blood, wet cleaning). You need to take of aprons and gloves and put them in a bin after caring for any patient where you need to use them. You should do this before you go back to sit at your desk. They cannot be reused. You should carry out hand hygiene immediately after you take gloves off – before you go back to our desk.
4. Reducing antibiotic use across the board helps to reduce spread of CPE and related bacteria. If an antibiotic is needed narrow spectrum agents are less likely to cause side effects (thrush, diarrhoea) than broad spectrum agents. The national guidelines will help. www.antibioticprescribing.ie
5. It is important that floors walls and furniture are cleanable and clean at all times. If you can limit the amount of stuff on your desk and in your consulting room to bare essentials this will make cleaning easier. It is probably best to think of the office as more like another treatment room that as an ordinary office.

Extra Care for known CPE Patients. (Contact Precautions).
These measures help to stop spread of most other bacteria also (like MRSA, VRE and ESBL).

1. The first step is that everyone in the practice who needs to know does know if you have patients colonised with CPE. The hospital should tell your practice immediately about any patient carrying CPE discharged to our care. Most of these patient will simply be colonised so that the CPE is not bothering them but it is still important to know that they are carrying CPE and to take a few extra precautions in your practice to prevent onward spread.
2. While the basic precautions outlined above are important for every patient they are especially important when caring for patients carrying CPE.
3. If patients carrying CPE have issues that can be addressed without the need for a visit to the surgery this reduces risk of spread in the practice. Patients with diarrhoea are the highest risk for spread so if it is possible to provide good care without the patient visiting the surgery this should be encouraged.

4. Where it is possible and practical it is helpful if all patients carry out hand hygiene immediately on arrival at the surgery but it is especially important for patients carrying CPE. Alcohol hand rub should be available for this purpose at reception. To the greatest extent possible surgery visits should be scheduled so that the patient carrying CPE spends little or no time in the waiting area. If patients carrying CPE have to use the general waiting are there is no need for them to be segregated/sit apart as this is likely to be upsetting and is unlikely to add anything if they have carried out hand hygiene.
5. Patients carrying CPE should inform staff if they need to use the toilet while at the surgery. The toilet should be flushed and the contact surfaces of the toilet should be cleaned and disinfected immediately after they use it and before the next patient uses the toilet.
6. Equipment used in caring for patients with CPE that makes contact with their skin should ideally be disposable but this is often not practical. Stethoscopes should be wiped with alcohol (you could us an alcohol swab). Blood pressure cuffs are hard to clean and it is best to use a barrier of some kind whenever possible (ideally a disposable cover) if a blood pressure cuff is used.
7. If you need to perform a procedure (for example a catheter change or a rectal examination) on a patient with CPE use a plastic apron and gloves and dispose of these into a bin immediately after use. Then carry out hand hygiene before returning to your desk.
8. If a patient who is carrying CPE needs to undress any surface that they are in contact with while undressed should be clean and wiped with a disinfectant wipe after they leave the room and before the next patient comes in to the room.
9. If a patient who is carrying CPE 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 carrying CPE.
10. If a patient carrying CPE is for transfer by ambulance the ambulance crew should know the patient is carrying CPE.
11. People carrying CPE should not be denied access to health care services because they are carrying CPE. Most people who carry CPE became carriers of CPE in the health care system. It is not their fault and we all have a role in advocating to ensure that are not be made to suffer for it.

Home Visits /Nursing home visits for patients known to be carrying CPE.

1. Bring as little as possible into the house. If you have a patient carrying CPE in your practice it may be a good idea to have a specific CPE bag as distinct from your general bag. The CPE bag might contains basic things you might need in the house. This bag should be suitable for wipe down with disinfectant.
2. Make sure you have access to alcohol gel in the house. A pocket size dispenser may be convenient.

3. Before you enter the house or if this is not practical then before you enter the patient room get "bare below the elbows" and check that you have an apron and gloves in case you need them. If you have to do a procedure like catheter change check that you have everything you need so that you do not have to go in and out.
4. Use alcohol hand rub before and after contact with the patient. If you will have close contact with the patient or their bed/bedding or are doing a procedure wear apron and gloves. Dispose of apron and gloves in the house if at all possible. Carry out hand hygiene according to the approved method after you remove apron and gloves.
5. If you use your stethoscope or any other reusable equipment wipe with alcohol (you could use an alcohol swab).
6. If you know before the visit that a patient 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 with you if this is available. This should rarely be needed in most circumstances. If it happens that you find yourself dealing with this situation and you do not have a long sleeve gown you should try to change your clothes before seeing another patient and hot wash the clothes you were wearing.

Implications of CPE for Staff.

Regular contact with infection is part and parcel of the life of GPs and all healthcare workers who work in GP practice. Compared to other things we deal with contact with people who are carrying CPE is not a big risk to staff. The steps outlined in this guidance, especially the basic measures with all patients all the time, (hand hygiene, cleaning and gloves and aprons when needed) not only help to stop spread of CPE between patients they also help you and your colleagues to avoid picking up CPE (and other things). Otherwise healthy people who pick up CPE are not likely to get sick from it but the might carry it in their gut for some time. It is almost always a bad idea to test healthcare workers from CPE colonisation.

Note: This Provisional Guidance is issued from the National Health Care Associated Infection and Antimicrobial Resistance Team in a 'rapid response' way, to help address issues that have been identified as being of a very pressing concern.
Provisional Guidance may be modified or changed in response to feedback and/ or new information. Please send comments and suggestions for improvement to hcainational.lead@hse.ie. Please remember that if something is unclear to you, it is probably unclear to many other people and we would like to hear from you.