

Fact Sheet: Carbapenem-resistant Enterobacterales (CRE)

<p>WHO</p>	<p>Identify which patients and/or residents <u>have</u> or <u>potentially have</u> CRE.</p>	<ul style="list-style-type: none"> ✓ Patients/Residents who have a culture that is positive for CRE or a known history of CRE infection/colonization. ✓ Patients/Residents with a known exposure to a CRE case. ✓ Patients/Residents who received healthcare in an intensive care unit, nursing home or Skilled Nursing Facility (SNF), or foreign country. ✓ Patients/Residents who have recently taken antibiotics. ✓ Patients/Residents who have severe or chronic wounds.
<p>WHAT</p>	<p>Define what additional measures need to be implemented for the actual or suspected cases in addition to hand hygiene, standard precautions, and cleaning/disinfection.</p>	<ul style="list-style-type: none"> ✓ Recommend Contact Precautions for patients in acute care settings. ✓ Recommend Contact or Enhanced Barrier Precautions in nursing homes or Skilled Nursing Facilities (SNF) depending on the situation or public health recommendations. ✓ Recommend screening for contacts of CRE cases, i.e., roommates and/or patients who resided on the same ward prior to identification. ✓ Recommend 2% Chlorhexidine bathing for patients in high-risk settings, e.g., ICUs.
<p>WHEN</p>	<p>Determine when additional infection prevention measures are needed.</p>	<ul style="list-style-type: none"> ✓ CRE active infection and/or colonization is suspected or confirmed by definition.
<p>WHERE</p>	<p>Decide where patients and/or residents should be housed once they are they are identified as colonized or infected with CRE.</p>	<ul style="list-style-type: none"> ✓ If a limited number of single-patient rooms are available, they should be prioritized for people at higher risk of pathogen transmission (e.g., those with uncontained secretions or excretions, acute diarrhea, draining wounds). ✓ Cohort with Other CRE patients/residents or create a dedicated CRE Unit with dedicated staff.
<p>HOW</p>	<p>Establish how long the additional infection prevention measures remain in place for the patients and/or residents.</p>	<ul style="list-style-type: none"> ✓ Contact Precautions apply for the duration of healthcare stay in acute care facilities. In nursing homes, if Contact Precautions are being used, only use for a limited duration and transition to Enhanced Barrier Precautions. ✓ Routine reassessment of colonization is not recommended.

What is CRE?

Overview

Carbapenem-resistant Enterobacterales (CRE) is a type of gram-negative bacteria that can cause fatal invasive infections in patients/residents in healthcare facilities. Some strains are resistant to all available antibiotics. Since carbapenems are the last line of antibiotic treatment for serious multidrug resistant organisms, curing infections caused by these types of organisms is very difficult. In the United States, approximately, 2-3% of Enterobacterales that are associated with a healthcare setting are resistant to carbapenems. A subset of CRE, carbapenemase-producing CRE (CP-CRE), is the cause for rapid global spread. Carbapenemase is the enzyme that disables carbapenems and other β -lactam antibiotics, making them ineffective for treatment. Common species of Enterobacterales include *Escherichia coli*, *Klebsiella pneumoniae*, *Enterobacter cloacae*, *Citrobacter freundii*, and *Serratia marcescens*. CRE are defined as being resistant to any carbapenem or being documented to produce a carbapenemase enzyme. For bacteria that are usually resistant to imipenem (e.g., *Morganella morganii*, *Proteus spp.*, *Providencia spp.*), demonstration of resistance to additional carbapenems is required to meet the definition.

Transmission and Most Affected Patient Populations

CRE can be transmitted in healthcare settings and cause outbreaks. It is spread through direct contact with a patient or resident who has the germ on their body. It can spread indirectly from a contaminated environment or surface. It can also be transmitted via the hands of healthcare workers. Sink drains and toilets can also serve as a reservoir that facilitates transmission of CRE due to infected stool, urine, and other bodily fluids. Patients can be colonized with CRE for months and/or years.

Hospital patients and long-term care facility residents are at an increased risk for infection. Those who are treated in an intensive care unit, have invasive devices, severe or chronic wounds, recent antibiotic treatment, and were recently housed near a person with CRE have a higher risk of acquiring CRE. Additionally, inpatient medical care and invasive medical procedures outside the United States increase the risk of developing an infection with CRE.

Prevention & Treatment

Standard Precautions plus Contact Precautions are indicated as protocol in acute care facilities. Enhanced Barrier Precautions may be used in nursing homes when Contact Precautions do not apply. Decisions regarding the use of practices to prevent the spread of MDROs, including when to use Enhanced Barrier Precautions or Contact Precautions, can be determined in conjunction with public health. These strategies may differ depending on the prevalence or incidence of the MDRO in the facility and region and the experience of the facility with using Enhanced Barrier Precautions. Implement a method to identify cases at future admissions such as flagging the chart so appropriate precautions are implemented

immediately upon admission. Surface cleaning and disinfection should be performed at least daily using an EPA-approved disinfectant that is effective against CRE. Clean high-touch surfaces frequently, i.e., twice per day. Dedicate equipment and use disposable items when possible. Clean and disinfect shared medical equipment after each use.

Consult with an infectious disease physician to determine treatment.

References

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