

## Fact Sheet: Carbapenem Resistant *Acineobacter baumannii* (CRAB)

<p><b>WHO</b></p>	<p>Identify which patients and/or residents <u>have</u> or <u>potentially have</u> CRAB.</p>	<ul style="list-style-type: none"> <li>✓ Patients/Residents who have a culture that is positive for CRAB or a known history of CRAB infection/colonization.</li> <li>✓ Patients/Residents with a known exposure to a CRAB case.</li> <li>✓ Patients/Residents who received healthcare in an intensive care unit, nursing home or Skilled Nursing Facility (SNF), or foreign country.</li> <li>✓ Patients/Residents who have recently taken antibiotics.</li> <li>✓ Patients/Residents who have severe or chronic wounds.</li> </ul>
<p><b>WHAT</b></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"> <li>✓ Recommend Contact Precautions for patients in acute care settings.</li> <li>✓ Recommend Contact or Enhanced Barrier Precautions in LTCF depending on the situation or public health recommendations.</li> <li>✓ Recommend screening for potential contacts of CRAB cases, i.e., roommates and/or patients who resided on the same ward. (However, can depend on the local situation. If CRAB is endemic, screening might not be performed in response to an individual case.)</li> </ul>
<p><b>WHEN</b></p>	<p>Determine when additional infection prevention measures are needed.</p>	<ul style="list-style-type: none"> <li>✓ CRAB active infection and/or colonization is suspected or confirmed by definition.</li> </ul>
<p><b>WHERE</b></p>	<p>Decide where patients and/or residents should be housed once they are they are identified as colonized or infected with CRAB.</p>	<ul style="list-style-type: none"> <li>✓ A single patient room is preferred to prevent further transmission.</li> <li>✓ If a limited number of single-patient rooms are available, prioritize for people at higher risk of pathogen transmission (e.g., those with uncontained secretions or excretions, acute diarrhea, draining wounds).</li> <li>✓ Cohort with Other CRAB patients/residents or create a dedicated CRAB Unit with dedicated staff.</li> </ul>
<p><b>HOW</b></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"> <li>✓ Precautions (Contact or Enhanced Barrier) apply for the duration of healthcare stay.</li> <li>✓ Routine reassessment of colonization is not recommended.</li> </ul>

## What is CRAB?

### Overview

*Acinetobacter* is a group of bacteria that are naturally resistant to multiple antibiotics and are commonly found in the environment (soil and water). While there are other species, *Acinetobacter baumannii* is the most common cause of infections in humans. Carbapenem-resistant *Acinetobacter baumannii* (CRAB) is an opportunistic pathogen that can cause a variety of infections in patients/residents in healthcare facilities. Large outbreaks have been reported in United States hospitals and long-term care settings. 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. A subset of CRAB, carbapenemase-producing CRAB (CP- CRAB), appears to be increasing, according to the Centers for Disease Control and Prevention (CDC). Carbapenemases are a type of enzyme that disables carbapenems and other  $\beta$ -lactam antibiotics, making them ineffective for treatment. CRAB cases are defined as being resistant to any carbapenem or being documented to produce the enzyme, carbapenemase.

### Transmission and Most Affected Patient Populations

CRAB 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 also spread indirectly from a contaminated environment or surface. Additionally, it can be transmitted via the hands of healthcare workers. Individuals can be colonized with CRAB 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 the intensive care unit, have invasive devices, severe or chronic wounds, open surgical wounds, received antibiotic treatment, have a prolonged hospital stay, and/or were recently housed near a person with CRAB have a higher risk of acquiring CRAB. Additionally, inpatient medical care and invasive medical procedures outside the United States increase the risk of developing an infection with CRAB. While CRAB primarily occurs in healthcare settings, individuals with weakened immune systems, chronic lung disease, or diabetes are also more susceptible.

### 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.

*Acinetobacter* is particularly challenging in healthcare environments because it persists on surfaces including shared medical equipment, even in dry conditions. Surface cleaning and disinfection should be performed at least daily using an EPA-approved disinfectant. 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

1. [Centers for Disease Control and Prevention, National Center for Emerging and Zoonotic Infectious Diseases \(NCEZID\), Division of Healthcare Quality Promotion \(DHQP\). \*Acinetobacter\* in Healthcare Settings. 2019. Available at <https://www.cdc.gov/hai/organisms/acinetobacter.html#print>. Accessed 20 June 2023.](#)
2. Centers for Disease Control and Prevention. Antibiotic Resistance Threats in the United States, 2019. Atlanta, GA: U.S. Department of Health and Human Services, CDC; 2019.
3. Centers for Disease Control and Prevention. Carbapenem-resistant *Acinetobacter baumannii*, An Urgent Public Threat. Available at <https://www.cdc.gov/hai/pdfs/cre/CRAB-handout-V7-508.pdf>. Accessed 20 June 2023.
4. Centers for Disease Control and Prevention. Responding to New Forms of Antibiotic Resistance. Available at <https://www.cdc.gov/hai/pdfs/toolkits/Responding-to-New-Forms-of-Antibiotic-Resistance.pdf>. Accessed 9 June 2023.
5. Centers for Disease Control and Prevention. Interim Guidance for a Public Health Response to Contain Novel or Targeted Multidrug-resistant Organisms (MDROs). 2022. Available at <https://www.cdc.gov/hai/pdfs/mdro-guides/Health-Response-Contain-MDRO-508.pdf>. Accessed 9 June 2023.
6. Centers for Disease Control and Prevention. Implementation of Personal Protective Equipment (PPE) Use in Nursing Homes to Prevent Spread of Multidrug-resistant Organisms (MDROs). 2022. Available at <https://www.cdc.gov/hai/containment/PPE-Nursing-Homes.html>. Accessed 17 May 2023.
7. Centers for Disease Control and Prevention. Management of Multidrug-Resistant Organisms in Healthcare Settings, 2006. Last update February 15, 2017. Available at <https://www.cdc.gov/infectioncontrol/pdf/guidelines/mdro-guidelines.pdf>. Accessed 14 June 2023.
8. Centers for Disease Control and Prevention. 2007 Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings. Last update May 2022. Available at <https://www.cdc.gov/infectioncontrol/pdf/guidelines/isolation-guidelines-H.pdf>. Accessed 14 June 2023.