Healthcare Happenings:
Infection Prevention and Control Highlight

Carbapenem-Resistant *Acinetobacter baumannii* (CRAB)

WHAT IS IT?

Acinetobacter is a genus of gram-negative bacteria commonly found in the environment in soil and water. While there are many *Acinetobacter* species, the most common cause of human infections is *Acinetobacter baumannii*. *A. baumannii* can cause infections in the blood, urine, wounds, or lungs. It can also colonize mucosal surfaces, especially in the respiratory tract, and open wounds.

In 2020, carbapenem-resistant *Acinetobacter* (CRAB) caused an estimated **7,500 infections** in hospitalized patients and **700 estimated deaths** in the United States.

In 2019, 34.5% of *Acinetobacter* isolates tested in Pennsylvania were resistant to carbapenem antibiotics. This is an increase from 24% in 2018. So far in 2022, 4 cases of **pan-drug resistant** *A. baumannii* have been reported in Philadelphia.

TRANSMISSION

In the U.S., *Acinetobacter* infections typically occur among people in healthcare settings. People at highest risk include hospitalized patients, especially those who:

- Have invasive medical devices, such as catheters and tracheostomy tubes
- Have open wounds, such as from surgery
- Are in intensive care units
- Have prolonged hospital stays

Acinetobacter can live for long periods of time on environmental surfaces and shared equipment if not properly cleaned. It can spread from one person to another through healthcare worker hands, if hand hygiene is not performed appropriately, or contact with contaminated surfaces and equipment.

In the United States, *Acinetobacter* infections rarely occur outside of healthcare settings. However, people who have weakened immune systems, chronic lung disease, or diabetes may be more susceptible.

TREATMENT

Acinetobacter infections are generally treated with antibiotics. Unfortunately, many *Acinetobacter* infections are becoming highly resistant to antibiotics, including carbapenems. Increasingly, pan-drug resistant *Acinetobacter* isolates are being identified.

Healthcare providers should base treatment decisions on the susceptibility profile for the organism and reevaluate empiric regimens as soon as susceptibility results are available. Patients colonized with CRAB who are not showing active signs of infection do not need to be treated.

Improper antibiotic use drives the development of resistance – judicious antibiotic use is essential to prevent further resistance!

Table 1. Percentage of carbapenem resistance among CRAB isolates by carbapenem drug, stratified by carbepenemase gene detection, 2019 (CDC)*

	Carbapenem Drug	# of Isolates	% Not Susceptible
Carbapenemase gene not detected	Doripenem	160	86%
	Imipenem	155	81%
	Meropenem	160	89%
Carbepenemase gene detected (KPC, NDM, OXA-23, OXA 24/4, or OXA-58)	Doripenem	820	100%
	Imipenem	814	100%
	Meropenem	830	100%

* This data is not intended to provide any information to assist with clinical decision making

REPORTING

Pan-drug resistant isolates of *Acinetobacter baumannii* that exhibit non-susceptibility to ALL antibacterial agents tested through routine antimicrobial susceptibility testing (AST) assays are reportable in the City of Philadelphia. All positive results should be reported to PDPH **within 24 hours**, either by using this form and faxing it to 215-238-6947 or by calling 215-685-6748 during business hours.

IPC RECOMMENDATIONS

To prevent the spread of CRAB infections, all healthcare workers should:

- Perform hand hygiene with **alcohol-based hand sanitizer (ABHS)** or use soap and water:
  - Particularly before and after caring for wounds or touching a medical device
- Clean and disinfect the environment rigorously (e.g., patient rooms and shared equipment) using products that are effective against the organism
  - Dedicate equipment to patients on precautions where appropriate
- **Clearly communicate** the resident's MDRO status upon transfer to any health care facility and to ancillary service providers (e.g., dialysis, podiatry) so proper precautions can be taken in those settings.

References:
Carbapenem-Resistant Acinetobacter. Centers for Disease Control and Prevention. https://www.cdc.gov/drugresistance/pdf/threats-report/acinetobacter-508.pdf
Carbapenem-resistant *Acinetobacter baumannii* (CRA): An urgent public health threat in United States healthcare facilities. https://arpsp.cdc.gov/story/cra-urgent-public-health-threat
2022 Special Report: COVID-19 US Impact on Antimicrobial Resistance. https://www.cdc.gov/drugresistance/pdf/covid19-impact-report-508.pdf