










Carbapenemase-Producing Organisms (CPOs)

What are MDROs?

MDROs are organisms that are resistant to multiple antibiotics. Of particular concern are carbapenem-resistant MDROs because infections from these organisms are hard to treat and associated with high mortality rates.¹ The Centers for Disease Control and Prevention classified the following organisms as current threats in the United States based on the clinical and economic impact, incidence, transmissibility, availability of effective antibiotics, and barriers to prevention.²

Carbapenem-Resistant Enterobacteriaceae	Carbapenem-Resistant <i>Acinetobacter</i>	Multidrug-Resistant <i>Pseudomonas aeruginosa</i>
 13,100 resistant infections	 8,500 resistant infections	 32,600 resistant infections
 1,100 deaths	 700 deaths	 2,700 deaths
 Urgent threat	 Urgent threat	 Serious threat

What are carbapenemases?

Carbapenemases are enzymes that enhance resistance to almost all β -lactam antibiotics, including carbapenems. Carbapenemase-producing MDROs contain mobile resistance elements that facilitate transmission of resistance to other organisms.³ The following carbapenemases have been reported in the United States:

- Klebsiella pneumoniae carbapenemase (KPC)
- New Delhi metallo- β -lactamase (NDM)
- Verona integron-encoded metallo- β -lactamase (VIM)
- Oxacillinase-48-type carbapenemases (OXA-48)
- Imipenemase (IMP) metallo- β -lactamase

How are CPOs transmitted?

- Person-to-person– hand carriage from health care personnel
- Contact with body fluids– drainage from wound, urine, stool, saliva, blood
- Contaminated medical equipment– bed rails, bedside tables, IV poles, catheters

How can CPO transmission be prevented?

- Perform hand hygiene and wear appropriate personal protective equipment
- Keep patients with an MDRO in a single room; cohort patients with the same MDRO if a single room is not available
- Ensure effective cleaning of patient rooms and medical equipment
- Promote antimicrobial stewardship
- Follow standard and contact precautions or enhanced barrier precautions (depending on the situation)

If you have additional questions, please contact the Florida Department of Health, Health Care-Associated Infection Prevention Program at:

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Revised June 2020

