

OREGON PUBLIC HEALTH DIVISION REPORTING FOR CARBAPENEM-RESISTANT ENTEROBACTERIACEAE (CRE)

Local health department information

For a list of local health department phone numbers go to www.healthoregon.org/diseasereporting.

Background

Infection with carbapenem-resistant *Enterobacteriaceae* (CRE) is a growing health care challenge. To date in the United States, CRE have mainly caused health care-associated infections, usually affecting those with compromised immune systems, chronic medical conditions, frequent or prolonged stays in health care settings, invasive medical devices (e.g., ventilators or intravenous catheters), or a history of taking antibiotics for long periods. CRE can cause a wide variety of infections, including pneumonia, bacteremia, urinary tract and surgical-site infections. CRE are resistant to most, and in some cases, all available antibiotics.

In the health care setting, patients may carry CRE on the skin or in body secretions such as sputum, urine or stool. Transmission to others may occur via the hands of health care workers, contaminated environmental surfaces and medical devices or equipment.

To spare patients from toxic antibiotics and untreatable infections, aggressive control measures must be taken before CRE become established in our hospitals and long-term care facilities.

If CRE are identified in your laboratory

- Submit a report to the local health department in the county of residence of the patient **within one working day**, either electronically or by calling or faxing the local public health authority (OAR 333-018-0015). Website link to phone and fax numbers for local health departments: <http://bitly.com/reportdisease>
- Send *E. coli*, *Klebsiella* spp., or *Enterobacter* spp. isolates that meet the Oregon Public Health Division (PHD) CRE case definition to the Oregon State Public Health Laboratory (OSPHL; 503-693-4100) for further testing. Submission of isolates other than *E. coli*, *Klebsiella* spp., or *Enterobacter* spp. that meet the PHD CRE case definition may be requested by PHD on a case-by-case basis.
- Alert infection prevention and clinical staff at the facility where the laboratory specimen was obtained.

CRE case definition for Oregon laboratories as of 7/1/2015

Bacteria of the *Enterobacteriaceae* family (see list below) that are:

- Resistant to any carbapenem including doripenem, ertapenem, imipenem¹ or meropenem using the current M100-S25² CLSI breakpoints³; OR
- Positive for a carbapenemase⁴ gene sequence by a nucleic acid amplification test; OR
- Positive for carbapenemase production by Carba NP on any *Enterobacteriaceae* or by Modified Hodge if the isolate is an *Escherichia coli* or *Klebsiella* spp.

Carbapenems	Current breakpoints (µg/mL) (M100-S25) ²		
	Susceptible	Intermediate	Resistant
Doripenem	≤1	2	≥4
Ertapenem	≤0.5	1	≥2
Imipenem	≤1	2	≥4
Meropenem	≤1	2	≥4

Carbapenems	Current disk diffusion zone diameters (mm) (M100-S25) ²		
	Susceptible	Intermediate	Resistant
Doripenem	≥23	20–22	≤19
Ertapenem	≥22	19–21	≤18
Imipenem	≥23	20–22	≤19
Meropenem	≥23	20–22	≤19

FOOTNOTES

1. *Proteus* spp. *Providencia* spp. and *Morganella* spp. are excluded if isolates are resistant only to imipenem and no other carbapenem (e.g., isolate tests ertapenem-susceptible but imipenem-resistant).
2. CLSI. Performance standards for antimicrobial susceptibility testing: Twenty-fifth informational supplement. CLSI document M100-S25. Wayne, PA: Clinical and Laboratory Standards Institute; 2015.
3. Laboratories still using breakpoints prior to the June 2010 CLSI update should use the updated CLSI MIC cutoffs to determine reporting to public health, independent of the susceptibility interpretation [e.g., an isolate with an MIC of 8 to meropenem (“intermediate” by pre-2010 CLSI interpretation, but “resistant” by CLSI guidelines starting in 2011) should be reported to OHA and submitted for further evaluation].
4. Examples are KPC, NDM, IMP, VIM, OXA-48

The *Enterobacteriaceae* family of bacteria includes these genera and groups:

<i>Averyella</i>	<i>Leminorella</i>	<i>Tatumella</i>
<i>Budvicia</i>	<i>Morganella</i>	<i>Trabulsiella</i>
<i>Buttiauxella</i>	<i>Moellerella</i>	<i>Xenorhabdus</i>
<i>Cedecea</i>	<i>Pantoea</i>	<i>Yersinia</i>
<i>Citrobacter</i>	<i>Photorhabdus</i>	<i>Yokenella</i>
<i>Cronobacter</i>	<i>Plesiomonas</i>	Enteric Group 58
<i>Edwardsiella</i>	<i>Pragia</i>	Enteric Group 59
<i>Enterobacter</i>	<i>Proteus</i>	Enteric Group 60
<i>Escherichia</i>	<i>Providencia</i>	Enteric Group 63
<i>Ewingella</i>	<i>Rahnella</i>	Enteric Group 64
<i>Hafnia</i>	<i>Raoultella</i>	Enteric Group 68
<i>Klebsiella</i>	<i>Salmonella</i>	Enteric Group 69
<i>Kluyvera</i>	<i>Serratia</i>	Enteric Group 137
<i>Leclercia</i>	<i>Shigella</i>	

Oregon
Health
Authority

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