Category 4: Written or electronic notification within 1 month of diagnosing by private and public health laboratories.

CARBAPENEM-RESISTANT ENTEROBACTERALES (PREVIOUSLY ENTEROBACTERIACEAE)

Disease epidemiology	Who must notify	What to notify		Confirmed case definition		
Carbapenem-resistant Enterobacterales (CRE) and/or carbapenem-producing Enterobacterales (CPE) are a group of Gram-negative bacteria that are resistant to the carbapenem class of antibiotics. CRE or CPE can produce enzymes that are able to break down carbapenems and survive if patients are treated with these antibiotics. Carbepenems are considered the last line of treatment against Gram-negative bacteria and they are categorized as reserve group of antibiotics	Laboratory making the diagnosis	Laboratories are to se with clinical specimen include isolates when confirmatory method microdilutions test, o IMP, VIM, GES, etc. d Resistance should be inhibitory concentrat guidelines.	end monthl ns where a n resistance ds, including or PCR (OXA etected). based on in cions accorc	A patient with an Enterobacterales that is resistant to either of the carbapenem (ertapenem, imipenem, meropenem or doripenem) cultured from any clinical specimen. Each CRE pathogen isolated from the same patient will be counted as a distinct case. A 30-day period will be used to deduplicate patients with more than one of the same CRE isolated.		
by the World Health Organization. In patients with		2021 guidelines for E				
organism resistant to carbapenems alternative		Antibiotic	Resistance			
treatment is substandard and is difficult. People		(MICs in μg/mL)				
are receiving health care in any setting (e.g.		Enter en ene		EUCASI		
hospitals and long-term care facilities dialysis		Ertapenem	22	>0.5		
contros atc.) and received antibiotic therapy		Meropenem	24			
previously CPE can cause many types of infections		Weropenem (CSF)	-	>2		
including bloodstream infections urinary tract		Imipenem ≥4 >4				
infections surgical site infections, unnary tract		Doripenem ≥4 >2				
meningitis. People often get colonised first from coming into contact with contaminated medical devices, healthcare workers hands and/or	*These guidelines are s reporting should always recommendations.	ubject to cha s be in line w				
equipment, and get infected following breaks in		In addition, laborator	ries are req			
their skin or other tissue.		number of patients for	or which a r			
		test was done. If a pa	itient has m			
	same specimen, they should be counted once. Similarly, if					
	s done for r	nultiple speci	men type,			

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Disease epidemiology	Who must notify	What to notify			Confirmed case definition	
Glycopeptide-resistance Enterococci (GRE) are Gram- positive bacteria that have developed the ability to survive in the presence of the glycopeptide antibiotics (such as vancomycin), normally used to treat people who are infected with Gram-positive bacteria. Enterococci are present in the human intestines and in the female genital tract without causing harm. They are also found in the environment, including in healthcare settings. GRE typically affect people who are ill (particularly those who have weakened immune systems) and admitted to hospitals, and those receiving treatment that may be weakening their immune system.	Laboratory making the diagnosis	Laboratories an patients with c isolated. Only i determined us including Etest (vanA, vanB, va Resistance sho minimum inhit EUCAST or CLS 2021 guideline Antibiotic Vancomycin Teicoplanin * These guidelin therefore report most recent reco In addition, lab the total numb microbiologica has multiple cu they should be has cultures do should be cour	re to send r linical spec include isoling a confir , broth mic anC1/vanC2 uld be base bitory conce I guidelines s for Enter Resistance (MICs in p 232 ≥ 32 es are subjecting should a borratories a per of patient I culture te iltures from counted o pone for mulated once	nonthly line li imens where ates when res matory methor rodilutions tes 2, etc. detected ed on interpre- entrations acc ococci* e criteria ug/mL) EUCAST >4 >2 ct to change an lways be in line ns. re requested nts for which a st was done. In the same sponce. Similarly, tiple speciment	sts of all a GRE was sistance was ods, st, or PCR d). tation of ording to uually and with the to report a f a patient ecimen, if a patient n type, they	A patient with an Enterococci that is resistant to vancomycin (±teicoplanin) cultured from any clinical specimen. When multiple <i>Enterococcus</i> species are isolated from the same patient, each will be counted as a distinct case. A 30-day period will be used to deduplicate patients with more than one of the same Enterococci pathogen isolated.

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GLYCOPEPTIDE-RESISTANT STAPHYLOCOCCUS AUEUS

Disease epidemiology	Who must notify	What to no	tify		Confirmed case definition	
Staphylococcus aureus is a common Gram-positive bacterium that causes healthcare-associated infections. Patients with Staphylococcus aureus infections that are resistant to first line antibiotic treatment (methicillin) are mainly treated with glycopeptides, another class of antibiotics. Although uncommon, resistance to glycopeptides can occur in patients who have prolonged stays in hospital stays and prolonged treatment with glycopeptides. Vancomycin resistance is uncommon is seldom through the pathogen acquiring the vanA gene. A few cases of vancomycin resistant Staphylococcus aureus infection have been reported globally.	Laboratory making the diagnosis	Laboratories ar with clinical spo Staphylococcus when resistance methods, inclu (vanA, vanB, va should be base concentrations 2021 guideline Antibiotic Vancomycin Teicoplanin *These guideline reporting should recommendation In addition, lab number of pati was done. If a p specimen, they	re to send to ecimens w aureus was aureus was e was dete ding Etest, anC1/vanC d on interp according s for Stapl Resistant (MICs in CLSI ≥ 16 ≥ 32 es are subject always be in s. oratories a ents for w patient has y should be	monthly line li here a glycope as isolated. Or ermined using broth microd 2, etc. detected oretation of m to EUCAST or hylococcus au ce criteria µg/mL) EUCAST >2 ct to change and n line with the p are requested hich a microbi is multiple cultion	sts of all patients eptide-resistant ily include isolates confirmatory ilutions test, or PCR d). Resistance inimum inhibitory CLSI guidelines reus* 	A patient with <i>Staphylococcus aureus</i> that is resistant to vancomycin (±teicoplanin) cultured from any clinical specimen. A 30-day period will be used to deduplicate patients with multiple subsequent pathogens isolated.
		should be cour	ited once.			

Category 4: Written or electronic notification within 1 month of diagnosing by private and public health laboratories. COLISTIN-RESISTANT PSEUDOMONAS AERUGINOSA

Disease epidemiology	Who must notify	What to no	otify			Confirmed case definition
<i>Pseudomonas aeruginosa</i> is a Gram-negative bacterium found everywhere in the environment and usually causes infections in people who are sick and are hospitalised. This bacterium can cause many types of infections, including bloodstream infections, surgical site infections and others. This bacterium can easily develop resistance to many classes antibiotics such as carbapenems, aminoglycosides and fluoroquinolones. When resistance to many antibiotic classes occurs at the same time, the bacteria is said to be multi-drug resistant or MDR. People who are infected with MDR <i>Pseudomonas aeruginosa</i> are often treated with colistin, but this bacterium is now developing resistance to colistin and patients in hospitals are increasingly infected with colistin-resistant <i>Pseudomonas aeruginosa</i> .	Laboratory making the diagnosis	Laboratories an patients with o resistant <i>Pseud</i> Only include is determined us microdilutions detected). Resistance sho minimum inhit EUCAST or CLS 2021 guideline Antibiotic Colistin * These guideline therefore report recent recommend In addition, lat total number of culture test wa cultures from to counted once. done for multi counted once.	re to send r clinical spec domonas ac olates when ing confirm test or PCR ould be base oitory conce I guidelines es for Pseud Resistand (MICs in p CLSI ≥ 4 res are subjecting should a endations. opratories a of patients f as done. If a the same sp Similarly, if ple specime	monthly line lis imens where a cruginosa was n resistance was atory methods (mcr1, mcr2, ed on interpret entrations acco a domonas aerug te criteria ug/mL) EUCAST >2 ct to change anr lways be in line re requested to or which a mice patient has mo pecimen, they se a patient has sen type, they se	ts of all colistin- isolated. as s; broth mcr3, etc., ation of ording to ginosa * uually and with the most o report the crobiological ultiple should be cultures hould be	A patient with <i>Pseudomonas aeruginosa</i> that is resistant to colistin cultured from any specimen type. A 30-day period will be used to deduplicate patients with multiple subsequent pathogens isolated.

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COLISTIN-RESISTANT ACINETOBACTER BAUMANII

Disease epidemiology	Who must notify	What to notify				Confirmed case definition
Acinetobacter baumannii is a Gram-negative bacterium that cause infections in hospitalised patients. It can cause serious infections such as pneumonia, sepsis, urinary tract infection and wound infections. Patients who are in intensive care units or those who have undergone surgery or those who have received antibiotic treatment have a higher risk of developing infections with this bacterium. Acinetobacter baumannii has developed antibiotic-resistance to many antibiotic classes, including carbapenems. Colistin is the antibiotic that is usually used for patients who have infections with multi-drug resistant Acinetobacter baumannii. Unfortunately, increased use of colistin has led to Acinetobacter baumannii developing resistance to it. Up to 40% of patients with colistin-resistant Acinetobacter baumannii infections may die.	Laboratory making the diagnosis	Laboratories a patients with o colistin-resista isolated. Only determined us microdilutions etc., detected) Resistance sho minimum inhil to EUCAST or o 2021 guideline Antibiotic Colistin * These guideline the most recent	re to send i clinical spec nt Acinetol isolates wh sing confirm test or PCF build be base bitory conc CLSI guideli es for Acine (MICs in CLSI ≥4 nes are subje eporting sho recomment	monthly line lis imens where a pacter bauman en resistance w hatory methods (mcr1, mcr2, ed on interpret entrations acconnes. tobacter baum ce criteria µg/mL) EUCAST >2 ct to change annuld always be in lations.	its of all nii was vas s; broth mcr3, cation of ording nannii *	A patient with Acinetobacter baumannii that is resistant to colistin cultured from any specimen type A 30-day period will be used to deduplicate patients with multiple subsequent pathogens isolated.

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CLOSTRIDIOIDE (CLOSTRIDIUM) DIFFICILE

Disease epidemiology	Who must notify	What to notify	Confirmed case definition
<i>Clostridioide</i> (previously <i>Clostridium</i>) <i>difficile</i> is a Gram-positive bacterium that produces toxins that can cause disease in humans. This bacterium is the commonest cause of healthcare-associated infections globally and commonly affects patients who are receiving antibiotics for other infections. <i>Clostridioide difficile</i> lives in the gut and can cause mild to severe diarrhoea in patients who receive antibiotics. All antibiotic classes have been shown to cause infections with <i>Clostridioide difficile</i> . Patients with <i>Clostridioide difficile</i> . Patients with <i>Clostridioide difficile</i> infections can shed spores of this bacterium which can spread to other patients resulting in outbreaks in hospitals. The spores can be difficult to remove from the environment making outbreaks difficult to control. Some patients may develop severe infections such as toxic megacolon and die from this infection.	Laboratory making the diagnosis	Laboratories are to send monthly line lists of all patients with stool specimens were a toxin- producing <i>Clostridioide difficile</i> was isolated. Only toxin-producing <i>Clostridioide difficile</i> confirmed with one of the following tests should be sent: GDH antigen and toxin test OR Real-time PCR test for toxigenic <i>Clostridioide difficile</i> In addition, laboratories are to send the total number of stool tests for <i>Clostridioide difficile</i> (positive and negative). Only one test per patient should be counted in a 30-day period.	Patient with a stool specimen positive for toxigenic <i>Clostridioide difficile</i> . Only one positive test per patient in a 30-day period will be reported.