Antimicrobial Resistant Phenotype Definitions

NHSN Analysis Reports for AR Option data

Note: The phenotypes defined here are for the AR Option only and may not match phenotype definitions used in other NHSN Modules. Additionally, the drug classes listed below are specific to laboratory testing and, in some cases, do not match to the specific class defined in the AU Option. The drugs included in each phenotype definition are specific to those included in the reportable drug panel for that organism. Please refer to Appendix F of the AUR Module Protocol for the complete list of drug panels for each organism.

Phenotype Name	Phenotype Code	Phenotype Definition[a]
Methicillin-resistant *Staphylococcus aureus*[b]	MRSA_AR	*Staphylococcus aureus* that has tested Resistant (R) to at least one of the following: oxacillin or cefoxitin
Carbapenem-resistant Enterobacterales (expanded)	CREexpanded_AR	Any *Citrobacter amalonaticus, Citrobacter braakii, Citrobacter freundii, Citrobacter freundii* complex*, Citrobacter koseri, Citrobacter youngae, Enterobacter* spp., *E. coli, Klebsiella aerogenes, Klebsiella oxytoca, Klebsiella pneumoniae*, and *Serratia marcescens* that has tested Resistant (R) to at least one of the following: imipenem, meropenem, doripenem, ertapenem, meropenem/vaborbactam, or imipenem/relebactam OR Any *Proteus mirabilis, Proteus penneri, Proteus vulgaris,* and *Morganella morganii* that has tested Resistant (R) to at least one of the following: meropenem, doripenem, ertapenem, or meropenem/vaborbactam
Carbapenem-resistant Enterobacterales[b] (*E. coli, Klebsiella,* or *Enterobacter*)	CREall_AR	Any *Escherichia coli, Klebsiella aerogenes, Klebsiella oxytoca, Klebsiella pneumoniae, or Enterobacter* spp. that has tested Resistant (R) to at least one of the following: imipenem, meropenem, doripenem, ertapenem, meropenem/vaborbactam, or imipenem/relebactam
Carbapenem-resistant *E. coli*	CREecoli_AR	Any *Escherichia coli* that has tested Resistant (R) to at least one of the following: imipenem, meropenem, doripenem, ertapenem, meropenem/vaborbactam, or imipenem/relebactam

Phenotype Name	Phenotype Code	Phenotype Definition[a]
Carbapenem-resistant *Enterobacter* spp. and *Klebsiella aerogenes*	CREenterobacter_AR	Any *Enterobacter* spp. or *Klebsiella aerogenes* that has tested Resistant (R) to at least one of the following: imipenem, meropenem, doripenem, ertapenem, meropenem/vaborbactam, or imipenem/relebactam
Carbapenem-resistant *Klebsiella pneumoniae/oxytoca*	CREklebsiella_AR	Any *Klebsiella oxytoca* or *Klebsiella pneumoniae* that has tested Resistant (R) to at least one of the following: imipenem, meropenem, doripenem, ertapenem, meropenem/vaborbactam, or imipenem/relebactam
Carbapenem-non-susceptible *Pseudomonas aeruginosa*	carbNS_PA_AR	*Pseudomonas aeruginosa* that has tested either Intermediate (I) or Resistant (R) to at least one of the following: imipenem, meropenem, doripenem or imipenem/relebactam
Extended-spectrum cephalosporin-resistant Enterobacterales[b]	ESCEall_AR	Any *Escherichia coli, Klebsiella aerogenes, Klebsiella oxytoca, Klebsiella pneumoniae, or Enterobacter* spp. that has tested Resistant (R) to at least one of the following: cefepime, ceftriaxone, cefotaxime, ceftazidime, ceftazidime-avibactam, or ceftolozane-tazobactam
Extended-spectrum cephalosporin-resistant *E. coli*	ESCecoli_AR	Any *Escherichia coli* that has tested Resistant (R) or Intermediate (I) to at least one of the following: cefepime, ceftriaxone, cefotaxime, ceftazidime, ceftazidime-avibactam, or ceftolozane-tazobactam
Extended-spectrum cephalosporin-resistant *Klebsiella pneumoniae/oxytoca*	ESCklebsiella_AR	Any *Klebsiella oxytoca* or *Klebsiella pneumoniae* that has tested Resistant (R) or Intermediate (I) to at least one of the following: cefepime, ceftriaxone, cefotaxime, ceftazidime, ceftazidime-avibactam, or ceftolozane-tazobactam
Fluoroquinolone-resistant Enterobacterales[b]	FQE_AR	Any *Escherichia coli, Klebsiella aerogenes, Klebsiella oxytoca, Klebsiella pneumoniae, or Enterobacter* spp. that has tested Resistant (R) to at least one of the following: ciprofloxacin, levofloxacin, or moxifloxacin
Fluoroquinolone-resistant *Pseudomonas aeruginosa*[b]	FQPA_AR	*Pseudomonas aeruginosa* that has tested Resistant (R) to at least one of the following: ciprofloxacin or levofloxacin

Phenotype Name	Phenotype Code	Phenotype Definition[a]
Multidrug-resistant *Pseudomonas aeruginosa*[b]	MDR_PA_AR	*Pseudomonas aeruginosa* that has tested either Intermediate (I) or Resistant (R) to at least one drug in at least three of the following six categories[c]: 1. Extended-spectrum cephalosporin (cefepime, ceftazidime, ceftazidime-avibactam, ceftolozane-tazobactam) 2. Fluoroquinolones (ciprofloxacin, levofloxacin) 3. Aminoglycosides (amikacin, gentamicin, tobramycin) 4. Carbapenems (imipenem, meropenem, doripenem, imipenem/relebactam) 5. Piperacillin/tazobactam 6. Cefiderocol
Carbapenem-non-susceptible *Acinetobacter* spp.	carbNS_Acine_AR	Any *Acinetobacter* spp. that has tested either Intermediate (I) or Resistant (R) to at least one of the following: imipenem, meropenem, or doripenem
Multidrug-resistant *Acinetobacter* spp.	MDR_Acine_AR	Any *Acinetobacter* spp. that has tested either Intermediate (I) or Resistant (R) to at least one drug in at least three of the following seven categories[c]: 1. Extended-spectrum cephalosporin (cefepime, ceftazidime, ceftriaxone, cefotaxime) 2. Fluoroquinolones (ciprofloxacin, levofloxacin) 3. Aminoglycosides (amikacin, gentamicin, tobramycin) 4. Carbapenems (imipenem, meropenem, doripenem) 5. Piperacillin/tazobactam 6. Ampicillin/sulbactam 7. Cefiderocol
Vancomycin-resistant *Enterococcus faecalis*	VREfaecalis_AR	*Enterococcus faecalis* that has tested Resistant (R) to vancomycin
Vancomycin-resistant *Enterococcus faecium*	VREfaecium_AR	*Enterococcus faecium* that has tested Resistant (R) to vancomycin

Phenotype Name	Phenotype Code	Phenotype Definition[a]
Vancomycin-resistant *Enterococcus*[b]	VREgeneral_AR	Any *Enterococcus* spp. that has tested Resistant (R) to vancomycin
Fluconazole-resistant *Candida albicans/auris/glabrata/parapsilosis/tropicalis*	FR_Candi_AR	Any *Candida albicans, Candida auris, Candida glabrata, Candida parapsilosis,* or *Candida tropicalis* that has tested Resistant (R) to fluconazole
Drug-resistant *Streptococcus pneumoniae*	DR_SP_AR	*Streptococcus pneumoniae* that has tested either Intermediate (I) or Resistant (R) to at least one of the antimicrobials listed in the NHSN AR Option defined drug panel

[a] Adapted from CLSI M100

[b] A SRIR is available for these phenotypes.

[c] The category names are for grouping purposes and are not inclusive of all drugs in that drug class.