ICU Antimicrobial Reference Tables

Downloadable reference - verify local susceptibility, formulation, dosing and current guideline context

These tables are educational starting frameworks. They do not replace the local ICU antibiogram, source control, microbiology/ID advice, organ-function dosing or patient-specific contraindications.

Comparison Matrix - Novel beta-Lactams / CRE

Agent	Best Mechanism/Role	Useful Against	Key Gaps	ICU Pearl
Ceftazidime-avibactam (Avycaz)	KPC / OXA-48-like CRE; selected DTR Pseudomonas	KPC, OXA-48-like; many DTR Pseudomonas	NDM/other MBL alone	For MBL producers, pair avibactam protection with aztreonam or use a preferred MBL-active alternative.
Meropenem-vaborbactam	KPC-producing CRE	KPC Enterobacterales	NDM/MBL; OXA-48-like not its strength	Excellent KPC option; do not generalize all carbapenemases.
Imipenem-cilastatin-relebactam (Recarbrio)	KPC and selected DTR Pseudomonas	KPC; some DTR Pseudomonas	NDM/MBL; OXA-48-like	Mechanism and susceptibility still matter.
Aztreonam-avibactam (Emblaveo)	NDM/other MBL-producing Enterobacterales	Many MBL + co-produced serine beta-lactamases	Not a universal Acinetobacter drug	FDA label is narrower than the IDSA 2026 AMR role.
Cefiderocol	MBL CRE / selected DTR Pseudomonas	Many NDM/MBL CRE; DTR Pseudomonas	Variable CRAB performance; resistance can emerge	Reserve for resistant phenotypes where its spectrum matters.
Ceftolozane-tazobactam	DTR Pseudomonas	Many difficult Pseudomonas isolates	Carbapenemase-producing CRE not its core role	One of the most important modern antipseudomonal options.
Cefepime-enmetazobactam (Exblifep)	ESBL-E / selected AmpC+ESBL	Many ESBL Enterobacterales	Not a universal CRE drug	U.S. FDA label is cUTI; IDSA guidance discusses broader selected ESBL use.

Comparison Matrix - CRAB Options

CRAB Strategy	2026 Position	Dose/Exposure Pearl	Major Limitation
Sulbactam-durlobactam (Xacduro) + carbapenem	Preferred IDSA 2026 approach for invasive CRAB	Use label renal adjustment; combine with imipenem-cilastatin or meropenem	Not active against all MBL mechanisms
High-dose ampicillin-sulbactam + another active drug	Bridge/alternative when Xacduro unavailable	Target high sulbactam exposure; specialist dosing	Not preferred when sulbactam-durlobactam is available
Minocycline	Alternative combination component when susceptible	IDSA CRAB strategy: 200 mg q12h	Susceptibility is far from universal

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CRAB Strategy	2026 Position	Dose/Exposure Pearl	Major Limitation
Tigecycline	Alternative when site and susceptibility fit	High-dose: 200 mg load -> 100 mg q12h	Avoid as preferred therapy for bacteremia/UTI
Cefiderocol	Selected alternative	Match MIC/site and optimize infusion	Clinical outcome signal in Acinetobacter has been mixed
Polymyxin B	Toxic alternative component	Use expert unit/weight protocol	Nephro/neurotoxicity; prefer safer active options

Comparison Matrix - Core ICU Antibiotics

Drug	Strength	Important Gap	ICU Pearl
Cefepime	Broad Gram-negative + Pseudomonas	No reliable anaerobic coverage	Watch neurotoxicity with accumulation.
Piperacillin-tazobactam	Pseudomonas + anaerobes + many polymicrobial syndromes	Not preferred for invasive ESBL-E when carbapenem indicated	Do not add metronidazole routinely for redundant anaerobic coverage.
Meropenem	ESBL-E, Pseudomonas, anaerobes	Not MRSA/VRE; carbapenemase resistance	Extended infusion often improves PK/PD target attainment.
Ertapenem	ESBL-E; convenient once daily	No Pseudomonas/Acinetobacter	Useful stable/OPAT option, not an antipseudomonal carbapenem.
Cefazolin	MSSA + streptococci	No MRSA/Pseudomonas	Often preferred definitive MSSA therapy over vancomycin.
Ampicillin	Listeria + susceptible E. faecalis	beta-lactamase-producing Gram-negatives	A narrow drug with high-value ICU indications.
Clindamycin	Gram-positive/anaerobes + toxin suppression	Aerobic Gram-negative bacilli	Adjunct toxin suppression, not universal monotherapy.
Aminoglycosides	Rapid concentration-dependent Gram-negative killing	Nephro/ototoxicity; weak tissue monotherapy role	Use PK/TDM rather than fixed renal intervals.

Comparison Matrix - Antifungals

Drug/Class	Best ICU Role	Major Gap	PK/Toxicity Pearl

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Drug/Class	Best ICU Role	Major Gap	PK/Toxicity Pearl
Echinocandin (anidulafungin/micafungin)	Initial candidemia in most critically ill adults	Poor urinary/CNS penetration	Few interactions; no routine renal adjustment.
Fluconazole	Susceptible Candida step-down; cryptococcal regimens	No mold activity; resistance species dependent	Excellent oral bioavailability; renal adjustment required.
Voriconazole	First-line invasive aspergillosis	No Mucorales	TDM + many CYP interactions; IV vehicle issues in renal dysfunction.
Isavuconazole	Aspergillosis or mucormycosis	Species-specific resistance	Shortens QT; major CYP3A interactions; no SBECD issue.
Posaconazole	Mold prophylaxis; selected salvage/step-down	Formulation/exposure variability	TDM often useful; avoid IV formulation in marked renal impairment when feasible due SBECD.
Liposomal amphotericin B	Mucormycosis; broad salvage therapy	Nephrotoxicity/electrolyte loss	Monitor K/Mg/creatinine; not reliable against A. terreus.