DIAMS
(DAILY INTEGRATION OF ANTIMICROBIAL STEWARDSHIP)

ANTIMICROBIAL & PATHOGEN MATCH QUICK GUIDE

AMS

FOR THESE ORGANISMS…..	THINK ABOUT USING…..	
ORGANISM	**PREFERRED**	**ALTERNATIVE**
GRAM-POSITIVES		
MSSA	IV: Cloxacillin / Cefazolin	
	PO: Cephalexin / Cloxacillin	
MRSA	IV: Vancomycin	IV: Linezolid / Ceftaroline / Tigecycline
	PO: Bactrim / Rifampicin + Fusidic Acid	PO: Linezolid
CA-MRSA	IV/PO: Bactrim / Clindamycin	
	PO: Fusidic Acid + Rifampicin / Linezolid	PO: Doxycycline
Enterococcus faecalis	Ampicillin	Vancomycin / Linezolid (VRE)
Enterococcus faecium	Vancomycin	Linezolid
Strep. pyogenes **(Group A)** ***Strep. agalactiae*** **(Group B)**	Penicillin	Augmentin / Unasyn / Clindamycin
Strep. pneumoniae **/ Viridans gp.**	Penicillin / Augmentin / Unasyn	Ceftriaxone / Cefotaxime
GRAM-NEGATIVES		
E. coli / ***Klebsiella pneumoniae***	IV: Augmentin / Unasyn / Cefuroxime	IV: Ceftriaxone / Tazocin / Cefepime
	PO: Cephalexin / Cefuroxime / Augmentin / Bactrim	PO: Ciprofloxacin
ESBL	IV: Ertapenem / Meropenem / Imipenem	
Pseudomonas aeruginosa *[*MDR/DTR Pseudomonas aeruginosa - To refer ID]*	IV: Tazocin / Ceftazidime / Cefepime	IV: Ciprofloxacin / Sulperazone / Meropenem / Imipenem
	PO: Ciprofloxacin *(for definitive therapy only)*	
Significant AmpC-producing organisms: (CEK) • *Citrobacter freundii* • *Enterobacter cloacae* • *Klebsiella aerogenes*	• If Cefepime MIC ≤ 2: IV Cefepime • If Cefepime MIC 4-8: IV Cefepime (non-severe) / IV Carbapenem (severe infection) • If Cefepime MIC > 8: IV Carbapenem ***[Refer to Treatment Algorithm of Resistant GNR]***	
Pan-sensitive (wild-type) ***Acinetobacter baumannii***	IV: Unasyn (*Sulbactam Component*)	
Carbapenem-resistant ***Acinetobacter baumannii*** **(CRAB)**	IV: High dose Unasyn / High dose Sulperazone / Polymyxin B / Colistin (for UTI only) IV/PO: Minocycline *(CRAB - combination therapy may be preferred, depending on the severity of the disease)* ***[Refer to Treatment Algorithm of Resistant GNR]***	
Burkholderia pseudomallei **(Melioidosis)**	IV: Ceftazidime / Meropenem [± Bactrim]	IV: Sulperazone / Imipenem [± Bactrim]
	PO (Maintenance): Bactrim	PO (Maintenance): Augmentin
Stenotrophomonas maltophilia	IV: Bactrim	IV: Levofloxacin ± Minocycline / [Ceftazidime/Avibactam + Aztreonam]
	PO: Bactrim	PO: Levofloxacin ± Minocycline

By AMS team (Izyana Munirah, Hannah, Adam Ashraf & Tan Wai Leong) & PRIC (Abby, Ang Li Min & Lee Jia Yin). Revised 19th September 2023.
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HOSPITAL SUNGAI BULOH

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FOR THESE ORGANISMS…..	THINK ABOUT USING…..	
ORGANISM	**PREFERRED**	**ALTERNATIVE**
GRAM-NEGATIVES		
***Leptospira* sp. (Leptospirosis)**	IV: Penicillin / Ceftriaxone	
	PO: Doxycycline / Azithromycin	
***Salmonella* non-typhi (Salmonellosis)**	IV: Ceftriaxone / Bactrim / Ampicillin	
	PO: Bactrim / Ciprofloxacin	
***Salmonella enterica serovar* Typhi (Typhoid fever)**	IV: Ceftriaxone	
	PO: Ciprofloxacin	PO: Bactrim
Carbapenem-resistant Enterobacterales (CRE)	**Refer to ID**	
SPM: *Serratia marcescens, Morganella morganii, Providencia spp*	**Refer to ID**	

FOR THESE ORGANISMS…..	THINK ABOUT USING…..	
ORGANISM	**PREFERRED**	**ALTERNATIVE**
MISCELLANEOUS		
Atypicals (Mycoplasma, Chlamydia, Legionella)	Macrolide (eg: Azithromycin)	Doxycycline / Fluoroquinolones (eg: Levofloxacin)
Anaerobes	IV: Metronidazole / Clindamycin / Augmentin / Unasyn / Tazocin / Sulperazone	
	PO: Metronidazole / Clindamycin / Augmentin / Unasyn	
***Treponema pallidum* (Syphilis)**	IV: Penicillin (Benzylpenicillin) or IM: Benzathine Penicillin	IV: Ceftriaxone
		PO: Doxycycline
Clostridium difficile (CDI)	PO: Vancomycin / Metronidazole	
Candida albicans / tropicalis / parapsilosis	IV/PO: Fluconazole	IV: Ampho B / Micafungin
Candida glabrata	IV: Ampho B / Micafungin	IV: Fluconazole (Susceptible-dose dependent)
Candida krusei	IV: Ampho B / Micafungin	
Candida auris	IV: Micafungin	IV: Ampho B / Fluconazole (MIC Guided)
Aspergillus sp.	IV: Ampho B / Voriconazole	
	PO: Voriconazole	
HSV/ HZV/ VZV (Chickenpox)	IV/PO: Acyclovir	
CMV (Cytomegalovirus)	IV: Ganciclovir	
	PO: Valganciclovir	

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COMMON ABX MISTAKES:		* Disclaimer: This list is not exhaustive & will be continuously beupdated
These ABX…	**Should NOT be used for…**	**Reason / Explanation…**
Daptomycin	🛇 Pneumonia	Inhibition by pulmonary surfactant.
Tigecycline & Minocycline	⚠ Bacteremia	Poor serum concentration.
	🛇 Pseudomonas	No useful activity against Pseudomonas.
Linezolid	⚠ Prolonged use for MRSA	Causes bone marrow suppression with prolonged use.
Ceftriaxone **Cefepime**	🛇 Anaerobes ⚠ Enterococci (as monotherapy)	Anaerobes: Poor anaerobic coverage. Enterococci: Enterococci are intrinsically resistant to cephalosporin, but ceftriaxone (or cefotaxime) has a role in combination therapy with aminoglycosides or ampicillin due to its synergistic activity as a cell wall-active agent.
Ertapenem	🛇 Acinetobacter, Pseudomonas, Enterococci	No useful activity against Pseudomonas, Acinetobacter & Enterococci
Aminoglycoside	⚠ Non-UTI indication as monotherapy	Poor activity and/or penetration into lungs, abscesses, and the central nervous system. May be used as monotherapy for UTI (Aminoglycoside is excreted unchanged in the urine).
Rifampicin **Fusidic Acid**	⚠ Monotherapy	Almost always combined with other active antimicrobials to prevent the emergence of resistance.

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WITH THIS…	WATCH OUT FOR THESE SIDE EFFECTS…
Beta-Lactams	GI upset, seizures
Bactrim	Allergy, hyper-K^+, hypo-Na^+, Cr ↑, myelosuppression
Macrolides	QT prolongation
Fluoroquinolones (FQ)	QT prolongation, CNS effects, tendonitis/tendon rupture, peripheral neuropathy, aortic rupture
Fluoroquinolones (FQ) / Doxycycline or Minocycline / Dolutegravir	Drug-drug / Drug-food interaction with multivalent cation* binding → reduced absorption - *Multivalent (Di/Tri-valent) Cations: Ca^{2+}, Fe^{2+}, Mg^{2+}, Al^{3+} (oral bioavailability is significantly decreased when administered with Calcium, Iron, Antacids, Milk, RT Feeding or Multivitamins) - Separate dosing from multivalent cations by 2-6 hours.
Doxycycline & Minocycline	Esophagitis, photosensitivity
Aminoglycosides	Ototoxicity, nephrotoxicity
Vancomycin	Red man syndrome, nephrotoxicity, neutropenia
Linezolid	>2/52: Thrombocytopenia, Long term: peripheral neuropathy, optic neuritis
Tigecycline	Nausea, vomiting
Rifampicin	Hepatotoxicity, thrombocytopenia, drug-drug interaction
Azoles / Protease Inhibitors	Hepatotoxicity, drug-drug interaction, drug-food interaction
Amphotericin B	Infusion reaction, Hypo-K^+, Hypo-Mg^{2+}, nephrotoxicity

CONSIDER PROLONGED INFUSION (over 3-4 hrs) (refer to DIAMS – extended infusion for further info)
High dose Ampicillin/sulbactam (Unasyn)
Piperacillin/tazobactam (Tazocin)
Ceftazidime
Cefepime
Meropenem
Imipenem
Ceftazidime-avibactam (Zavicefta)
Aztreonam

CONSIDER IV TO PO [GOOD BIOAVAILABILITY] (refer to DIAMS – IV to PO for further info)
Azithromycin
Bactrim
Ciprofloxacin
Clindamycin
Levofloxacin
Linezolid
Metronidazole
Fluconazole
Voriconazole
Minocycline

Adapted from: ID Stewardship Training Antibiotic Guide & Cheat Sheet (www.LearnAntibiotics.com)

Additional References:

1. National Antibiotic Guideline 2019, MOH
2. Sanford Antimicrobial Guide
3. Hopkins Guide: John Hopkins ABX Guide

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