RESTRICTED ANTIMICROBIALS-ANTI-INFETICIVES 2014

Category 1: To obtain a restricted antimicrobial in this category, the prescriber **must contact the Infectious Disease (ID) Fellow or Staff/Attending on call for the ID approval**. He/She will contact the staff pharmacist and give verbal approval. The prescriber is responsible for writing the order for the medication, including the drug name, dose, route and frequency of administration. **The prescriber must indicate "approval by Dr. XXX (Name of ID specialist)" after obtaining the verbal authorization of the ID specialist**. If the prescriber is an ID specialist, please indicate that on the order and clearly write name and physician number. If the prescriber is an intern/resident rounding with ID team and writing orders on behalf of your team, **you must indicate the name of ID fellow**. To contact the ID specialist on-call, call the operator.

Category 1 Medications

DRUG	ADULT DOSE	COST/ DAY	APPROVED INDICATIONS
Liposome (Ambisome®)	3 to 5 mg/kg/day IV Qday	$$$$	Patients who have amphotericin-induced renal toxicity, severe reaction or failure to respond to conventional amphotericin therapy
Micafungin (Mycamine®)	Candidiasis of the Esophagus: 150mg IV Qday Otherwise: 100mg IV Qday	$$	Refractory invasive *aspergillosis* and *Candida* infections (acute disseminated candidiasis abscesses and candidemia)
Daptomycin (Cubicin)	4 mg/kg - 6mg/kg IV Qday	$$$	For documented vancomycin-resistant enterococcus (VRE). Not indicated for pneumonia.
Imipenem-cilastatin (Primaxin®)	500mg IV Q6h Max: 1gm IV Q6h	$$$	Intra-abdominal Infection, nosocomial sepsis, fever in neutropenic patients (single agent)
Linezolid (Zyvox®)	600mg IV Q12h or 600mg PO Q12h	$$$(IV) $$ (PO)	Serious, systemic infections caused by vancomycin-resistant enterococcus (VRE) (both *E. faecalis* & *E. faecium)*
Televancin (Vibativ®)	10mg/kg IV over 60 minutes every 24 hours		For complicated skin and skin structure infections as well as nosocomial not responding to vancomycin/linezolid.
Tigecycline (Tygacil®)	LD:100mg IV MD: 50mg IV Q12h	$$$	Complicated skin Infections, Complicated intra-abdominal infections. Not indicated for *Pseudomonas* species
Voriconazole (Vfend®)	**IV**: LD: 6mg/kg Q12h x 1day MD: 3-4 mg/kg Q12h **PO**: LD: 200-400mgQ12hx1 day MD: 100-200 mg Q12h	$$$$ (IV) $$(PO)	Serious infections caused by *Aspergillus* sp., disseminated Candida and serious fungal infections refractory to other therapy

ALL RESTRICTIONS WILL BE STRICTLY ENFORCED BY THE PHARMACY

Operator: **UH Campus:** **903-3000**
Pharmacy: **UH Campus:** **903-3017**

First Dose Rule:
If the ID Specialist (Fellow or Staff) cannot be contacted, a **first dose may be dispensed when a physician writes a clear indication and reason** to choose Category 1 medication. Subsequent doses can ONLY be released after ID specialist gives approval.
Example: 1st dose ofpipercillin/tazobactam can be dispensed ifpatient with unstable renal function orfails to respond to vancomycin.

Category 2: To obtain a restricted medication from this group you *must write the correct indication on the order sheet along with the drug* name, dose, route and frequency of administration. Unapproved indications must have ID approval as Category 1 medications. A substitute dose will be dispensed without ID approval.

Category 2 Medications

DRUG	ADULT DOSE	COST /DAY	APPROVED INDICATIONS
Ceftriaxone	Dose **greater than** 1 gm IV Q24h	$$	Doses of 2gm or more are restricted to "sepsis" or "SBP" (2gm Q24h) & "meningitis (2gm Q12h) A dose of 1gm Q24h will be substituted unless the order indicates above conditions
Piperacillin/ Tazobactam (Zosyn®)	Dose **greater than** 4.5gm IV Q8h or 3.375gm IV Q6h	$$$	Skin and soft tissue infections in diabetic patients or patients with peripheral vascular disease, clenched fist injuries, head and neck injuries, intra-abdominal & nosocomial infections**.** For suspected or documented *Pseudomonas* pneumonia, 4.5gm Q6h is recommended.
Vancomycin (IV)[1]	Dose **greater than** 15mg /kg Q12h or 2gm Q12 h	$	MRSA infections; gram (+) cocci infections in patients with a documented penicillin allergy; therapeutic failures (e.g. on cephalosporins and/or pencillins); Empiric therapy (< 72 hours) when a high suspicion of MRSA or MRSE is present

1. Doses of Vancomycin > 2gm q12h in adult patients MUST BE APPROVED by an ID Specialist or a Clinical Pharmacist (Clinical Pharmacokinetic Consult).

AUTOMATIC IV TO PO SUBSTITUTION

The pharmacist will review all orders for the desired IV antibiotics and determine if the patient is eligible to be switched to PO. The pharmacist will automatically substitute the oral formulation for the following intravenous formulation.

IV to PO Antibiotics

Medication	Bioavailability	IV to PO Ratio	Equivalent IV to PO Dose
Azithromycin	34-52%	1:1	500mg IV=500mg PO
Ciprofloxacin	60-80%	NA	200mg IV = 250mg PO 400mg IV = 500mg PO
Fluconazole	90%	1:1	200mg IV=200mg PO
Linezolid	100%	1:1	600mg IV=600mg PO
Metronidazole	100%	1:1	500mg IV=500mg PO
Levofloxacin	99%	1:1	500mg IV = 500mg PO

GUIDELINES FOR USE OF ORAL VANCOMYCIN

1. -IV preparation will be used for oral use
2. -Normal dose is 125-250 mg q6h
3. -Approved indication: Pseudomembranous colitis in documented metronidazole failure or resistance

AUTOMATIC THERAPEUTIC SUBSTITUTIONS

The following antibiotics are Therapeutic Substitutions:

- **Ceftriaxone for cefotaxime** in all patients ***except neonates or infants (<13 months)***. The ***maximum dose for sepsis is 2 GMper day. The maximum dose for meningitis is 4 GMper day.***

- **Cefepime for ceftazidime** in all patients except infants and neonates (< 2 months of age) or if used as an ophthalmic preparation (ONLY for Ophthalmology and EENT specialists). All other ceftazidime orders will be substituted with cefepime.
  Cefepime 1 gm Q12h is equivalent to Ceftazidime 1 gm Q8-12h

- **Pipercallin-tazobactam for Ampicillin-sulbactam**

- **Nafcillin for Oxacillin** in all patients (no exceptions).
  Nafcillin 2 gm Q6h is equivalent to Oxacillin 2gm Q6h

GUIDELINES FOR USE OF FLUCONAZOLE

Loading/Induction Dose: 200-800mg IV or PO (doses > 400mg may be split)
Maintenance Dose: 200-400mg Qday
UTI: 100mg PO Qday x 5 days
Vaginitis: 150mg PO x one dose
Indications: Hepatosplenic candidiasis; Oral or vaginal candidiasis unresponsive to nystatin or clotrimazole; Cryptococcal infections and secondary prophylaxis for Cryptococcal meningitis in immunosuppressed patients; Febrile ICU patients with TWO sites positive for yeast or yeast in the urine (limit to 5 days)

Interim LSU Hospital – New Orleans Antibiogram 2015 (Reflective of 2014 Antibiotic % Susceptibility Data for Selected Organisms) pg. 1 of 1

Antibiotic / Pathogen		No of Isolates	Penicillin	Oxacillin	Ampicillin	Piperacillin/ Tazobactam	Cefazolin	Ceftriaxone	Cefepime	Ertapenem	Imipenem	Meropenem	Aztreonam	Gentamicin	Tobramycin	Amikacin	Linezolid	Ciprofloxacin	Levofloxacin	Nitrofurantoin[1]	Tetracycline	TMP/SMX	Vancomycin
GRAM NEGATIVE	Acinetobacter species	54						7	74		81		4	89	96			80		0		83	
	Citrobacter koseri	42				100	100	100	100		100		100	100	100	100		98		88		100	
	Enterobacter aerogenes	48				85		88	100		98		92	98	98	100		98		6		94	
	Enterobacter cloacae	117				89		90	100		99		89	96	96	100		98		28		93	
	E. coli	941			37	93	82	93	96		100		95	87	88	100		72		95		61	
	Klebsiella pneumonia	264				89	88	91	92		98		91	93	91	97		91		22		89	
	Proteus mirabilis	185			86	100	96	99	99	100			99	97	98	100		90		0		86	
	Pseudomonas aeruginosa	189				93			90		85	93	79	97	98	100		83					
	Serratia marcescens	39				100		100	100	100			97	95	79	100		90		0		92	
	Stenotrophomonas maltophilia	34																	88			97	
GRAM POSITIVE	Enterococcus faecium[5]	57			11												93			7			26
	Enterococcus faecalis[5]	301			100												98			99			98
	Staph aureus	572		53										99			100				95	95	99
	Staph epidermidis[2]	118		30										77			100					36	100
	Streptococcus pneumoniae	63	49[4]					92[3]											95				

1 Nitrofurantoin reported on **URINE** isolates **ONLY**
2 Number of *Staphylococcus epidermidis* tested, more were isolated
3 Ceftriaxone vs. *S. pneumoniae* data is using break points for non-meningitis therapy
4 Penicillin vs. *S. pneumoniae* data is using break points for non-meningitis, oral therapy.
5 Susceptibility to high level gentamicin indicates synergy with a beta-lactam is likely: *E. faecium* 95% susceptible, *E. faecalis* 75% susceptible
6 Overall VRE rate is 13%