Adult Empiric Antibiotic Practice Guidelines

These guidelines are designed to support physicians and other healthcare providers in clinical decision-making by outlining generally accepted evidence-based approaches to the management and prevention of commonly encountered infections in the hospital setting. These guidelines are not intended to encompass all appropriate methods of care, nor do they exclude alternative approaches that may be reasonably employed to achieve similar outcomes. Ultimately, the responsibility for patient care rests with the treating physician, who must exercise clinical judgment based on the individual circumstances of each case.

Infection	Suspected Pathogens	Recommended Drugs for Empiric Therapy	Special Considerations
Respiratory Infection			
Community Acquired Pneumonia (*CAP*)	*S. pneumoniae* *H. influenzae* *M. catarrhalis* *C. pneumoniae* *Legionella spp.* *M. pneumoniae*	[1]Ceftriaxone 1 gm IV q24h + Azithromycin 500 mg IV/PO q24h May consider adding MRSA or pseudomonas coverage if: • Recently hospitalized and received IV antibiotics within the last 90 days • Previous history of MRSA or Pseudomonas from sputum cultures within the last year. MRSA nasal swab: • Order only if patient empirically started on vancomycin. The MRSA nasal swab has a >98% negative predictive value for MRSA pneumonia. If MRSA nasal swab is negative, vancomycin can be discontinued in patients for which this agent was started empirically.	Concern for MRSA: ADD Vancomycin per pharmacy protocol Concern for Pseudomonas: Replace ceftriaxone with: Zosyn 4.5 gm IV q6h OR Cefepime 2 gm IV q8h for [2]PCN allergy Concerns for QT prolongation: [1]Ceftriaxone 1 gm IV q24h + Doxycycline 100 mg IV/PO Cannot tolerate cephalosporins and/or macrolides: Levofloxacin 750 mg IV/PO q24h Oral Step Down: Augmentin 875 mg PO BID Cefpodoxime 200 mg PO BID
Community Acquired Aspiration	Oral flora	[1]Ceftriaxone 1 gm IV q24h	Expanded **anaerobic coverage is not recommended** unless abscess/empyema suspected: Unasyn 3 gm IV q6hr OR [1]Ceftriaxone 1 gm IV q24h + metronidazole 500 mg IV/PO BID
Hospital or Ventilator Acquired	*S. pneumoniae* GNRs *S. aureus* (*including MRSA*)	Zosyn 4.5 gm IV q6hr +/- Vancomycin per pharmacy protocol **Respiratory culture should be collected to help tailor antibiotics accordingly**	Anti-MRSA Coverage: Consider withholding empiric vancomycin in patients with negative MRSA nares culture within the previous 7 days [2]PCN allergy: Cefepime 2 gm IV q8h +/- Vancomycin per pharmacy protocol
Urinary Tract Infection			
Uncomplicated (*cystitis in the absence of systemic symptoms*)	GNRs Enterococci	Ceftriaxone 1 gm IV q24h Consider previous urine culture data within the past 6 months for empiric therapy	Oral step down: Nitrofurantoin 100 mg PO BID if CrCl > 30 mL/min Trimethoprim/sulfamethoxazole 1 DS tab PO BID Enterococcus Faecalis: Ampicillin 2 g IV q6h OR Amoxicillin 500 mg PO q8h
Complicated (*infection outside of the bladder +/- systemic symptoms*)	GNRs Enterococci	[1]Ceftriaxone 1 gm IV q24h Risk factors for MDROs • FQ use in the past year • Resistant isolate within the past 6 months Consider previous urine culture data within the past 6 months for empiric therapy	Risk factors for MDROs: Cefepime 2 gm IV q8h OR Zosyn 4.5 gm IV q6h If recent history of ESBL: Ertapenem 1 gm IV q24h (*in absence of PsA*) Meropenem 1 gm IV q8h (*if history of PsA and/or critically ill*)
Intra-abdominal Infection			
Community Acquired	GNRs *B. fragilis*	[1]Ceftriaxone 1 gm IV q24h + Metronidazole 500 mg IV/PO BID	Dual anaerobic coverage is **not** recommended: Cannot tolerate ceftriaxone: Ciprofloxacin 400 mg IV q12h + Metronidazole 500 mg IV/PO BID *Avoid Unasyn empirically (*antibiogram <80% susceptible to E. coli*)
Healthcare Associated	GNRs (*including MDRO*) *B. fragilis*	Zosyn 4.5 gm IV q6h MRSA risk factors Confirmed colonization of MRSA or previous MRSA infection within past year Enterococcus risk factors Post-operative infection, recent treatment failure with cephalosporin, immunocompromised state	[2]PCN allergy: Cefepime 2 gm IV q8h + Metronidazole 500 mg IV/PO BID (*does not cover enterococcus*)‡ Risk for MRSA: ADD Vancomycin per pharmacy protocol Risk for Enterococcus: Zosyn 4.5 gm IV q6h OR ‡ADD Vancomycin per pharmacy protocol
Skin & Soft Tissue Infection			
Cellulitis (*non-purulent*)	Streptococci spp.	Cefazolin 2 gm IV q8hr	Oral Step Down: Cephalexin 1 gm PO TID
Cellulitis (*purulent*)	Staphylococci (MSSA/MRSA) β-hemolytic Streptococci	Vancomycin per pharmacy protocol Drainage of abscess is an important component of clinical cure. Obtain I&D culture to guide therapy.	Oral Step Down: Trimethoprim/sulfamethoxazole (*5 mg/kg/day TMP*) PO divided q8h to q12h Linezolid 600 mg PO q12h Doxycycline 100 mg PO BID + amoxicillin 500 mg PO TID Doxycycline 100 mg PO BID + cephalexin 1 gm PO TID
Necrotizing Fasciitis (*including Fournier's gangrene*)	Group A Streptococcus, *S. aureus*, Clostridium spp.	Vancomycin per pharmacy + Zosyn 4.5 gm IV q6h + Clindamycin 900 mg IV q8h Alternative: Linezolid 600 mg IV q12h + Zosyn 4.5 gm IV q6h	**Urgent surgical consultation is advised** Obtain culture for directed therapy [2]PCN Allergy: Cefepime 2 gm IV q8h + Metronidazole 500 mg IV q12h + Linezolid 600 mg IV q12h
Central Nervous System Infection			
Bacterial Meningitis	*S. pneumoniae* *N. meningitidis* *H. influenzae* *Listeria monocytogenes*†	Ceftriaxone 2 g IV q12h + Vancomycin per pharmacy protocol Listeria risk factors‡ Age >50, Immunocompromised	Risk of Listeria‡: ADD Ampicillin 2 gm IV q4hr [2]PCN allergy **AND** Listeria risk factors Meropenem‡ 2 gm IV q8h + Vancomycin per pharmacy protocol

1. Increase ceftriaxone dose to 2 gm if BMI >30 or albumin <2.5.
2. Selection of penicillin allergy alternatives depends on reaction severity and patient history. Risk stratification should be used to determine acceptable alternatives, especially in severe cutaneous adverse reactions (*SCARs*) such as SJS/TEN/DRESS/AGEP.

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