Sepsis Bundle: Empiric Antibiotic Selection Pathway

Early initiation of appropriate therapy is associated with improved outcomes in severe sepsis and septic shock and these guidelines are intended for use in patients with these syndromes only. Antibiotic choices should be based on the clinician's assessment of the most likely source of infection. Antibiotic therapy should be narrowed to target the isolated pathogen when culture results become available. Patients who have milder forms of infection may be more appropriately treated with narrow spectrum agents and antibiotic choices in these patients should be based upon current guidelines and clinical judgment.

Suspected Source of Infection	Suggested Antibiotics
Unknown‡	Vancomycin per clinical pharmacy consult **PLUS EITHER** Piperacillin/tazobactam 3.375g IV q8h, infused over 4 hours **OR** Meropenem 500 mg IV q6h ‡Consider Micafungin 100mg IV qday in patients at high risk for invasive candidiasis. Major risk factors predicting candidemia at TNMC include: 1) Broad-spectrum antibiotics, 2) Central venous catheter, 3) Receipt of TPN, 4) Abdominal surgery, and 5) Steroid use. Presence of 2 or fewer of the risk factors suggests a 99.4% chance of **not** developing candidemia, while patients with >2 risk factors have a 4.7% risk of developing candidemia. See Institutional Guidelines for the Treatment of Invasive Candidiasis for further information.
Intra-abdominal Source	Piperacillin/tazobactam 3.375g IV q8h, infused over 4 hours **OR** Meropenem 500 mg IV q6h **OR** Metronidazole 500 mg IV q8h **PLUS** Cefepime 1g q6h hours **Note:** If risk factors for nosocomial or pseudomonas infection exist consider adding: Ciprofloxacin 400mg IV q8h or Gentamicin/tobramycin 5-7 mg/kg IV q24h
Urinary Tract	Ciprofloxacin 400 mg IV q12h **PLUS EITHER** Gentamicin 5-7 mg/kg IV single dose **OR** ceftriaxone 1g IV single dose **OR** Piperacillin/tazobactam 3.375g IV q8h, infused over 4 hours **OR** Meropenem 500 mg IV q6h **OR** Ampicillin 2 grams IV q6h **PLUS** Gentamicin 5-7 mg/kg IV qday***
Skin/Soft Tissue: Staphylococcus spp.	Vancomycin per clinical pharmacy consult **OR** Linezolid 600 mg IV q12h **OR** Daptomycin 4 mg/kg q24h **OR** Oxacillin 2 grams IV q4h **if MRSA not suspected or ruled out**
Skin/Soft Tissue: Clostridium perfringens ("Gas gangrene"), Group A Streptococcus	**Aggressive surgical debridement recommended** Penicillin G 4 million units IV q4h **PLUS** Clindamycin 900 mg IV q8h

Skin/Soft Tissue: Polymicrobial Necrotizing fasciitis	**Aggressive surgical debridement recommended** Piperacillin/tazobactam 3.375g IV q8h, infused over 4 hours **OR** Meropenem 500 mg IV q6h
Community Acquired Pneumonia – No Pseudomonas Risk Factors **Excludes nursing home patients.** (See Pneumonia Order Set)	Ceftriaxone 1 gram (2 grams if > 80 kg) IV q24h **PLUS EITHER** Moxifloxacin 400 mg IV q24h **OR** Azithromycin 500 mg IV q24h
Community Acquired Pneumonia – Pseudomonas Risk Factors (structural lung disease, >10mg prednisone/day, malnutrition) **Excludes nursing home patients.** (See Pneumonia Order Set)	Cefepime 1g IV q6h **OR** Piperacillin/tazobactam 3.375g IV q8h, infused over 4 hours **OR** Meropenem 500 mg IV q6h **PLUS EITHER**** Ciprofloxacin 400 mg IV q8h **OR** Aminoglycoside **PLUS** Azithromycin Aminoglycosides – Gentamicin/tobramycin 5-7 mg/kg IV q24h*** Azithromycin 500 mg PO/IV q24h
Nosocomial Pneumonia, includes healthcare-associated pneumonia (HCAP), hospital-acquired pneumonia (HAP), ventilator-associated pneumonia (VAP) (See Pneumonia Order Set) **Risk Factors for Multidrug Resistant (MDR) Bacteria** (definitions available at www.nebraskamed.com/asp)	**<u>Risk Factors for Multidrug Resistant Bacteria</u>** • Antimicrobial therapy in preceding 90 d • Current hospitalization of 5 d or more • Hospitalization for 2 d or more in the preceding 90 d • Residence in a nursing home or extended care facility • Home wound care • Home infusion therapy (including antibiotics) • Chronic dialysis within 30 d • Family member with multidrug-resistant pathogen • Immunosuppressive disease and/or therapy • High frequency of antibiotic resistance in the community or in the specific hospital unit. (Antibiogram available at www.preceptor.com—follow "Antibiogram" link) Vancomycin 15 mg/kg q12h* **OR** Linezolid 600 mg IV q12h **PLUS** Cefepime 1g IV q6h **OR** Piperacillin/tazobactam 3.375g IV q8h, infused over 4 hours **OR** Meropenem 500 mg IV q6h **PLUS**** Gentamicin 5-7 mg/kg IV qday*** **OR** Tobramycin 5-7 mg/kg IV qday*** **OR** Ciprofloxacin 400 mg IV q8h
Early onset HAP/VAP (<5 days) with NO known MDR risk factors	Ceftriaxone 1 gram (2 grams if > 80 kg) IV q24h **OR** Ampicillin/sulbactam 1.5 grams (3 grams if > 80 kg) IV q6h **PLUS** Moxifloxacin 400 mg PO/IV q24h **OR** Azithromycin 500mg PO/IV q24h

*Trough levels for vancomycin should be approximately 15 mg/L – Consult the pharmacist for pharmacokinetic evaluation
**If Legionella is suspected, use an aminoglycoside plus azithromycin 500 mg IV qday
***Use Hartford nomogram for dosing and obtain random level at 10 hrs – Consult pharmacist for pharmacokinetic evaluation