Appendix:

72 Hour Broad-Spectrum Antibiotic Pharmacist Review

Broad-spectrum antibiotics will be reviewed for opportunities of de-escalation, dose optimization, and/or discontinuation (all providers included). The antibiotics being reviewed initially include daptomycin, ertapenem, and meropenem. The following antibiotic-specific tips will aid in the assessment for appropriateness and guidance for successful interventions.

Daptomycin

- Assessment for appropriateness
  - VRE positive culture documented in EPIC or recent history of VRE
  - True vancomycin allergy (must be documented in EPIC, please follow-up to ensure it is **NOT** Red man syndrome, if it is slow down the infusion) with MRSA positive culture or suspicion
  - Receiving daptomycin prior to admission
  - Should **NOT** be utilized for treatment of pneumonia (inactivated by lung surfactant)
- Dose optimization: based upon indication
  - Indication-specific dosing
    a. Skin and soft tissue infection: 4 mg/kg/day
    b. VRE UTI: 4 mg/kg/day
    c. Bone and joint infection: 6 mg/kg/day
    d. Intra-abdominal infection: 6 mg/kg/day
    e. MRSA bacteremia and/or endocarditis: 8 mg/kg/day
    f. VRE bacteremia: 10 mg/kg/day
  - Body weight for dosing
    a. Non-obese patients: use actual body weight (ABW)
    b. Obese patients (>20% IBW): use adjusted body weight (AdjBW)
       i. IBW Males = 50 + 2.3 (inches over 5 ft.)
       ii. IBW Females = 45.5 + 2.3 (inches over 5 ft.)
       iii. AdjBW = IBW + 0.4 (ABW – IBW)
  - Renal dose adjustments: refer to package insert recommendations
- Monitoring
  - If baseline CK is not ordered, call to recommend ordering a baseline CK
  - If baseline CK is normal and not on concomitant medications to cause a rise in CK (e.g. statins), repeats may only need to occur once weekly; repeat q48h if symptomatic

Ertapenem

- Assessment for appropriateness
  - Septic shock with concern for ESBL-producing infection
  - Positive culture or recent documented history of ESBL-producing Enterobacteriaceae (such as *E.coli*, *Proteus* spp., *Klebsiella* spp., etc.)
  - Should NOT be utilized for a penicillin allergy in all cases, especially if reaction is undocumented or mild-moderate (e.g. rash).
    a. Follow-up with patient or family to clarify allergy.
    b. **Please be sure to document the reaction**

- Should NOT be utilized for non-necrotizing pancreatitis
- Should NOT be utilized for treatment of *Pseudomonas aeruginosa*
    a. Can utilize piperacillin/tazobactam, cefepime, or meropenem if a carbapenem is necessary (ertapenem does **NOT** have coverage against *P.aeruginosa*)
- Should NOT be utilized for surgical prophylaxis.
    a. Literature has shown it is equally efficacious and tolerated in CRS as ceftriaxone and metronidazole without the detrimental carbapenem resistance concerns.
- Should only be used as targeted therapy for Enterobacteriaceae infections resistant to:
    a. Cefazolin
    b. Ceftriaxone
    c. Cefepime
    d. Fluoroquinolones
    e. Piperacillin/tazobactam
    f. Urine isolates also resistant to ampicillin/sulbactam

Meropenem

- Assessment for appropriateness: same assessment as ertapenem except those listed below
    - Has coverage for *P.aeruginosa*, unlike ertapenem
- Dose Optimization
    - Refer to the Meropenem Extended Infusion Dosing Protocol for dosing and renal adjustments
    - Dosing dependent on severity of infection, location of infection, and type of organism
        a. Usual dosing: mild/moderate infection
        b. Middle doses: moderate/severe infection in neutropenic patients and patients admitted to ICU based upon clinical instability due to infection
        c. Higher doses: severe infection in patients with CNS infection, eye infections, MDRO (resistant to $\geq$ 3 classes of antibiotics), MIC > 4, and obese patients (BMI > 30)