MICHIGAN MEDICINE
UNIVERSITY OF MICHIGAN

CRITERIA RESTRICTED ANTIMICROBIALS IN PATIENTS ON ADULT SERVICES

Use of certain antimicrobial agents is restricted at Michigan Medicine. Agents are classified as Tier I or Tier II agents depending on whether Antimicrobial Stewardship Team (AST) approval is required prior to dispensing.

TIER II RESTRICTED ANTIMICROBIALS

Use of the following agents (i.e., Tier II agents) do not require approval prior to dispensing but is restricted to the criteria below. Even for the indications listed below, approved use is often limited to specific situations, such as drug allergy or certain risk factors. Other use requires approval from AST (pager #30780) or ID. Please consult appropriate treatment guidelines

Note: The below indications generally refer to appropriate EMPIRIC use. When cultures are available, antibiotic therapy should be escalated/de-escalated as appropriate based on organism and susceptibility. Restricted agents should only be utilized if narrower-spectrum agents are resistant or otherwise inappropriate. When cultures are not available, please refer to individual treatment guidelines for appropriate definitive therapy strategies.

UMHHC Policy 07-01-015 ("Use of Infectious Diseases Restricted Antimicrobials")

All treatment guidelines are available on the Antimicrobial Stewardship page

Restricted Med	Approved Reasons for Use

Aztreonam
 	
NOTE: in the listed indications, aztreonam is always reserved as an alternative for patients with life-threatening PCN/Cephalosporin allergy
	• Surgical prophylaxis as per "Surgical Antimicrobial Prophylaxis Guidelines"
	• Treatment of Bacterial Meningitis
	• Treatment of Bone and Joint Infections
	• Treatment of Pneumonia
	  ○ Community-acquired: Alternative in ICU patients
	  ○ Patients with risk factors for drug-resistant pathogens
	• Treatment of Urinary Tract Infections
	  ○ Complicated Lower Urinary Tract Infection Without Sepsis or Bacteremia
	  ▪ In patient who cannot take orals, alternative IV option
	  ▪ Alternative in patients with history of resistant Gram-negative bacteria OR Not responding to PO antibiotics
	  ○ Complicated Urinary Tract Infection with Sepsis or Bacteremia, Complicated Pyelonephritis, Pyelonephritis in Pregnancy, or Perinephric Abscess
	• Treatment of Intra-Abdominal Infections
	  ○ Community Acquired, High Risk or Severe OR Healthcare- Associated
	  ○ Spontaneous Bacterial Peritonitis
	  ▪ Alternative in patients receiving fluoroquinolone prophylaxis
	  ○ Acute Necrotizing Pancreatitis in patients with hemodynamic instability, persistent/worsening SIRS criteria after 7-10 days off antibiotic therapy, or s with Proven Infection
	• Treatment of Vertebral Osteomyelitis, Discitis, and Spinal Epidural Abscess
	• Treatment of Skin and Soft Tissue Infections
	  ○ Necrotizing fasciitis
	  ○ Superficial surgical site infection
	  ▪ Empiric therapy for patients with superficial SSI following operations of the axilla, gastrointestinal tract, perineum, or female genital tract
	  ○ Deep tissue surgical site infection or any SSI complicated by sepsis/septic shock
	  ○ Traumatic wound infections of extremity
	  ▪ In patients with sepsis and traumatic wound infection or development of infection > 5 days after injury or significant water exposure
	  ○ Diabetic foot infection
	  ▪ In hemodynamically unstable patients or those with risk factors for gram-negative infection
	  ○ Complicated SSTI without osteomyelitis
	• Treatment of Ocular Infections
	  ○ Periorbital Cellulitis
	  ○ Orbital Cellulitis
	  ○ Orbital Cellulitis with Intracranial extension
	• Treatment of Odontogenic Infections
	  ○ Suppurative (pyogenic) orofacial odontogenic infection in:
	  ▪ Severely immunocompromised patients
	  ▪ Patients who have severe sepsis and/or septic shock
	  ▪ Patients who had in-hospital surgical procedure in the past 90 days
	• Treatment of Obstetric/Gynecologic Infections
	  ○ Post-operative intra-abdominal abscess or peritonitis after gynecologic surgery
	  ○ Chorioamnionitis with severe sepsis OR septic shock
	• Treatment of Neutropenic Fever in Hematology and BMT patients

Cefepime
 	
Note: Cefepime is generally reserved as an alternative to piperacillin/tazobactam in patients with non-severe PCN allergy. Cefepime is preferred as initial therapy in appropriate patients with meningitis, neutropenic fever, endocarditis, bone and joint infections, and surgical prophylaxis, as per those respective guidelines.
	• Surgical prophylaxis as per "Surgical Antimicrobial Prophylaxis Guidelines"
	• Treatment of Bacterial Meningitis
	  ○ Penetrating trauma
	  ○ Post neurosurgery
	  ○ Presence of CSF shunt
	• Treatment of Bone and Joint Infections (throughout document)
	• Treatment of Obstetric/Gynecologic Infections
	  ○ Post-operative intra-abdominal abscess or peritonitis after gynecologic surgery in patients with non-severe PCN allergy
	  ○ Chorioamnionitis with severe sepsis OR septic shock in patients with non-severe PCN allergy
	• Treatment of Infective Endocarditis (Native and Prosthetic valve)
	  ○ Early prosthetic valve endocarditis (empiric therapy)
	  ○ Culture-negative, early (definitive therapy)
	• Treatment of Intra-Abdominal Infections
	  ○ Community Acquired, High Risk or Severe OR Healthcare- Associated, in patients with non-severe PCN allergy
	  ○ Acute Necrotizing Pancreatitis in patients with hemodynamic instability, persistent/worsening SIRS criteria after 7-10 days off antibiotic therapy, or with Proven Infection, all in patients with non-severe PCN allergy
	• Treatment of Ocular Infections
	  ○ Bacterial Endophthalmitis
	• Treatment of Odontogenic Infections
	  ○ Suppurative (pyogenic) orofacial odontogenic infection in patients with PCN allergy without anaphylaxis, angioedema, or urticaria AND:
	  ▪ Severely immunocompromised
	  ▪ Patients who have severe sepsis and/or septic shock
	  ▪ Patients who had in-hospital surgical procedure in the past 90 days
	• Treatment of Pneumonia
	  ○ Patients with risk factors for drug-resistant pathogens and PCN allergy without anaphylaxis, angioedema, or urticaria
	• Treatment of Skin and Soft Tissue Infections
	  ○ Necrotizing fasciitis, in patients with mild PCN allergy
	  ○ Deep tissue surgical site infection or any SSI complicated by sepsis/septic shock, in patients with non-severe PCN allergy
	  ○ Traumatic wound infections of extremity
	  ▪ In patients with sepsis and traumatic wound infection or development of infection > 5 days after injury or significant water exposure, in patients with non-severe PCN allergy
	  ○ Diabetic foot infection
	  ▪ In hemodynamically unstable patients or those with risk factors for gram-negative infection, with non-severe PCN allergy
	  ○ Complicated SSTI without osteomyelitis, with non-severe PCN allergy
	• Treatment of Urinary Tract Infections
	  ○ Complicated Urinary Tract Infection with Sepsis or Bacteremia, Complicated Pyelonephritis, Pyelonephritis in Pregnancy, or Perinephric Abscess
	  ▪ Critically ill, septic shock, healthcare-or-hospital-acquired, with non-severe PCN allergy
	• Treatment of Vertebral Osteomyelitis, Discitis, and Spinal Epidural Abscess
	  ○ Alternative in patients with suspected or Documented Pseudomonal Infection
	• Treatment of Neutropenic Fever in Hematology and BMT patients

Ceftazidime	• Exacerbation of pneumonia in patients with cystic fibrosis for organisms resistant to Cefepime

Ceftriaxone	• Surgical prophylaxis as per "Surgical Antimicrobial Prophylaxis Guidelines"
	• Treatment of Bone and Joint Infections
	  ○ Vertebral Osteomyelitis
	  ○ Septic Arthritis
	  ▪ At risk for gonorrhea
	• Treatment of Bacterial Meningitis
	  ○ Community-Acquired
	  ○ Basilar skull fracture
	• Treatment of Ocular Infections
	  ○ Periorbital Cellulitis in patients with PCN allergy without anaphylaxis, angioedema, or urticaria
	  ○ Orbital Cellulitis in patients with PCN allergy without anaphylaxis, angioedema, or urticaria
	  ○ Orbital Cellulitis with Intracranial extension
	• Treatment of Odontogenic Infections
	  ○ Mandibular Osteomyelitis in patients with PCN allergy without anaphylaxis, angioedema, or urticaria
	• Treatment of Pneumonia
	  ○ Community-acquired: Alternative in patients with PCN allergy without anaphylaxis, angioedema, or urticaria, or in patients with alcoholism with aspiration
	• Treatment of Infective Endocarditis (Native and Prosthetic valve)
	• Treatment of Urinary Tract Infections
	  ○ Uncomplicated Pyelonephritis
	  ○ Complicated Urinary Tract Infection with Sepsis or Bacteremia, Complicated Pyelonephritis, Pyelonephritis in Pregnancy, or Perinephric Abscess
	  ○ Epididymitis
	• Treatment of Intra-Abdominal Infections
	  ○ Spontaneous Bacterial Peritonitis
	• Treatment of Vertebral Osteomyelitis, Discitis, and Spinal Epidural Abscess
	  ○ Empiric Initial Treatment

Ciprofloxacin	• Surgical prophylaxis as per "Surgical Antimicrobial Prophylaxis Guidelines"
	• Treatment of Infective Endocarditis (Native and Prosthetic valve)
	  ○ Alternative if due to HACEK group organisms
	• Treatment of Intra-Abdominal Infections
	  ○ Community-acquired, mild-moderate severity
	  ▪ Anaphylactic PCN/Cephalosporin Allergy
	  ○ Spontaneous Bacterial Peritonitis
	  ▪ Alternative in patients with severe PCN allergy NOT receiving fluoroquinolone prophylaxis
	  ▪ Prophylaxis
	• Treatment of Urinary Tract Infections
	  ○ Uncomplicated Pyelonephritis
	  ▪ Alternative in patients with anaphylactic PCN/cephalosporin allergy
	  ○ Prostatitis

Clindamycin	• Surgical prophylaxis as per "Surgical Antimicrobial Prophylaxis Guidelines"
	• Treatment of Skin and Soft Tissue Infections
	  ○ Non-purulent cellulitis
	  ▪ Alternative to cefazolin/cephalexin for patients with life-threatening PCN allergy)
	  ○ Necrotizing fasciitis
	• Treatment of Obstetric/Gynecologic infections
	  ○ Pelvic inflammatory disease
	  ▪ Alternative in patients with anaphylactic PCN/cephalosporin allergy and 1st line oral step-down in patients with tubo-ovarian abscess)
	  ○ Obstetrical Infections (Post-partum Endometritis)
	  ▪ Alternative in patients with anaphylactic PCN/cephalosporin allergy)
	  ○ Chorioamnionitis
	  ▪ Alternative in patients with anaphylactic PCN/cephalosporin allergy)
	• Treatment of Animal Bites
	  ○ Dog Bites
	  ▪ Alternative to amoxicillin-clavulanate for patients with PCN allergy)
	  ○ Human Bites
	  ▪ Alternative to amoxicillin-clavulanate for patients with PCN allergy)

Levofloxacin	• Surgical prophylaxis as per "Surgical Antimicrobial Prophylaxis Guidelines"
	• Treatment of Animal Bites
	  ○ Alternative in Dog Bites with PCN allergy
	  ○ Alternative in Human Bites with PCN allergy
	• Treatment of Pneumonia
	  ○ Community-acquired, non-ICU:
	  ▪ Alternative in patients with severe PCN/cephalosporin allergy
	  ▪ Oral therapy step-down in patients who do not tolerate cephalosporins
	• Treatment of Ocular Infections
	  ○ Bacterial Endophthalmitis in patients with Severe PCN or cephalosporin allergy (anaphylaxis/angioedema/hives)
	• Treatment of Odontogenic Infections
	  ○ Suppurative (pyogenic) orofacial odontogenic infection in patients with severe PCN or cephalosporin allergy (anaphylaxis, angioedema, hives)
	• Treatment of Urinary Tract Infections
	  ○ Epididymitis
	  ▪ Men > 35 yo and men who practice insertive anal intercourse
	• Prophylaxis in Hematology patients
	  ○ ALL/Burkitt's: re-induction/salvage therapy
	  ○ AML: re-induction/salvage therapy
	• Prophylaxis in BMT patients
	  ○ During peri-transplant period: Autologous, Allogeneic, Unrelated donor and Cords
	  ○ Post-transplant: Acute GVHD on high dose steroids, late onset neutropenia, if required by protocol

Moxifloxacin	• Nocardia in patients with sulfa allergy • Atypical mycobacteria infections • Endophthalmitis prophylaxis in patients with penetrating trauma to the globe of the eye (x48 hours) • Odontogenic Infection Guidelines • Mandibular osteomyelitis in patients with severe PCN or cephalosporin allergy (anaphylaxis, angioedema, hives)
Oxacillin IV *Note: Oxacillin is preferred to Nafcillin in Adult patients*	• Documented or suspected meningitis involving staphylococci • Documented or suspected endocarditis (Native and Prosthetic valve) involving staphylococci • Vertebral Osteomyelitis ○ Known MSSA colonization or infection

Vancomycin IV
 	
Note: In empiric therapy scenarios, vancomycin allowed for 72 hours while culture results are pending. Absence of resistant gram-positives requiring vancomycin at that point should result in discontinuation.
	• Surgical prophylaxis as per "Surgical Antimicrobial Prophylaxis Guidelines"
	• Treatment of Bacterial Meningitis
	• Treatment of Bone and Joint Infections (throughout document)
	• Treatment of Obstetric/Gynecologic Infections
	  ○ Post-operative intra-abdominal abscess or peritonitis after gynecologic surgery in patients with non-severe PCN allergy
	  ▪ Anaphylactic Reaction to PCN
	  ▪ Critically ill patients with non-life- threatening PCN allergy
	  ○ Obstetrical Infections (Post-partum Endometritis)
	  ▪ Anaphylactic PCN/cephalosporin allergy
	  ▪ Severe Sepsis OR Septic Shock OR Persistent fevers for 48 hours after starting 1st line therapy
	  ○ Chorioamnionitis with severe sepsis OR septic shock
	  ▪ Anaphylactic PCN/cephalosporin allergy
	• Treatment of Infective Endocarditis (Native and Prosthetic valve)
	• Treatment of Intra-Abdominal Infections
	  ○ Community Acquired, High Risk or Severe OR Healthcare- Associated
	  ▪ Anaphylactic Reaction to PCN
	  ▪ Critically ill patients with non-life- threatening PCN allergy
	  ○ Spontaneous Bacterial Peritonitis
	  ▪ Severe PCN allergy and receiving fluoroquinolone prophylaxis
	  ○ Acute Necrotizing Pancreatitis in patients with hemodynamic instability, persistent/worsening SIRS criteria after 7-10 days off antibiotic therapy, or with Proven Infection
	  ▪ Anaphylactic Reaction to PCN
	  ▪ Critically ill patients with non-life- threatening PCN allergy
	• Treatment of Ocular Infections
	  ○ Periorbital Cellulitis
	  ○ Orbital Cellulitis
	  ○ Orbital Cellulitis with Intracranial extension
	  ○ Bacterial Endophthalmitis
	• Treatment of Odontogenic Infections
	  ○ Suppurative (pyogenic) orofacial odontogenic infection in:
	  ▪ Severely immunocompromised patients
	  ▪ Patients who have severe sepsis and/or septic shock
	  ▪ Patients who had in-hospital surgical procedure in the past 90 days
	• Treatment of Staphylococcus aureus bacteremia
	• Treatment of Pneumonia
	  ○ Patients with risk factors for drug-resistant pathogens
	  ○ Community-acquired, ICU patients:
	  ▪ Severe PCN and cephalosporin allergy
	  ▪ High clinical suspicion for CA-MRSA
	• Treatment of Skin and Soft Tissue Infections
	• Treatment of Urinary Tract Infections
	  ○ Complicated Urinary Tract Infection with Sepsis or Bacteremia, Complicated Pyelonephritis, Pyelonephritis in Pregnancy, or Perinephric Abscess
	  ▪ Critically ill, septic shock, healthcare-or-hospital-acquired, with PCN allergy
	• Treatment of Vertebral Osteomyelitis, Discitis, and Spinal Epidural Abscess
	• Treatment of Neutropenic Fever in Hematology and BMT patients
	  ○ Anaphylactic PCN/Cephalosporin allergy
	  ○ Clinically unstable
	  ○ Soft tissue infection
	  ○ Severe mucositis
	  ○ Concern for meningitis
	  ○ Indwelling catheter that appears infected
	  ○ Cultures positive for GPCs

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