

Antibiotic Appropriate Use Criteria

Antibiotic Class	Appropriate	Inappropriate
Anti-pseudomonal penicillins (piperacillin-tazobactam)	Empirical coverage of nosocomial infections to include sepsis, intra-abdominal infection, and nosocomial pneumonia for 72 hours pending culture and susceptibility results (consider cefepime/metronidazole first) Non-severe infections caused by extended-spectrum β-lactamase producing organisms Neutropenic fever (consider cefepime only first per Infectious Disease Society of America guidelines) Polymicrobial infections when covering for <i>P.aeruginosa</i>,	Double-coverage with other anaerobic agents (metronidazole) Skin and soft tissue infections EXCEPT severe diabetic foot infection (consider vancomycin if purulent, cefazolin if non-purulent) Empiric treatment for non-severe infections in patients without risk for <i>Pseudomonas</i> (example: CAP) Treatment for meningitis or endocarditis Severe infections due to ESBL-producing organisms
Carbapenems (meropenem, ertapenem)	Necrotizing pancreatitis Severe infection with history of infection/colonization in the past 6 months with a documented extended-spectrum β-lactamase (ESBL) producer Life-threatening infections due to <i>Acinetobacter</i> spp. known to be resistant to 3rd generation cephalosporins History of Type I – IgE-mediated allergy to penicillin and its derivatives Continuation of outpatient therapy	Non-IgE penicillin allergy Treatment resulting from a presumed contaminated culture A culture report demonstrating non-ESBL producing organism

Antibiotic Class	Appropriate	Inappropriate
Cephalosporin, 4th Generation (cefepime)	Neutropenic fever Empirical therapy for patients with serious infections in which <i>P. aeruginosa</i> is suspected Empiric treatment of urosepsis and hospital-acquired, catheter-associated urinary tract infections (CAUTI) when <i>Pseudomonas</i> spp. is suspected Treatment of documented infections of the urinary tract, respiratory tract, skin and skin structures, endocarditis, osteomyelitis, and infections or bacteremia caused by pathogen(s) resistant to all other standard therapies	Infections caused by Gram-negative bacteria with a ceftriaxone MIC > 1 due to higher failure rates Treatment beyond 72 hours with a definitive culture showing susceptibility to narrow-spectrum agents
Glycopeptides (vancomycin)	Serious allergies to β-lactam antimicrobials in treatment of infections caused by Gram-positive bacteria Treatment of serious infection due to Gram-positive microorganisms which are resistant to β-lactams Prophylaxis for endocarditis in high-risk patients Febrile neutropenic patients with evidence suggesting Gram-positive infection OR clinically suspected catheter-related infection OR mucositis, if fluoroquinolone prophylaxis has been given <i>Clostridioides difficile</i> (<i>C. difficile</i>) colitis infection (oral formulation only)	Prophylaxis for routine surgical procedures or patients on hemodialysis Empiric therapy for a febrile neutropenic patient without evidence of Gram-positive infection* (UNLESS admitted to a hospital with high MRSA prevalence) Treatment for coagulase-negative staphylococcus based on only 1 positive blood culture between multiple blood cultures Use of vancomycin for topical application or irrigation Prophylaxis for infection or colonization of indwelling central or peripheral intravascular catheters Continued empiric therapy when cultures are positive for β-lactam sensitive Gram-positive bacteria

Antibiotic Class	Appropriate	Inappropriate
Lipopeptides (daptomycin)	MRSA bacteremia and/or endocarditis and unable to use vancomycin (due to intolerance, MIC > 2 mg/L, infection unresponsive to vancomycin despite therapeutic concentrations, or obesity) MRSA skin/skin structure infections in patients with true, serious allergic reactions to vancomycin or linezolid VRE-confirmed bacteremia	Pneumonia (drug inactivated by lung surfactants) Empiric therapy
Oxazolidinone (linezolid)	Vancomycin-resistant <i>Enterococcus faecium</i> infections (not colonization), including those with concurrent bacteremia MRSA infections in patients unable to tolerate vancomycin therapy Serious MRSA infections, including documented MRSA hospital-acquired pneumonia Step-down therapy from vancomycin IV within 24 hours of discharge in patients who will be receiving linezolid oral as outpatients	Treatment of MRSA in patient without vancomycin allergy or documented treatment failure Empiric therapy, except under unusual circumstances, or to treat mild Gram-positive infections where other antimicrobial agents would be effective Asymptomatic catheter or non-catheter associated bacteriuria

Sources:

1. CHI Franciscan Health. Appropriate Antimicrobial Use Criteria 2014.
<https://www.chifranciscan.org/content/dam/chi-franciscan/website-files/our-services/antimicrobial-stewardship-program/Appropriate%20Antimicrobial%20Use%20Criteria%20without%20hyperlinks%202015-2015.01.19.pdf>. Accessed on 29 July 2019
2. Nebraska Medicine. Piperacillin-tazobactam Alternatives. 2018. Found at <https://www.nebraskamed.com/sites/default/files/documents/for-providers/asp/pt-alternatives.pdf>. Accessed 29 July 2019.
3. John Hopkins Medicine. Piperacillin/tazobactam (Zosyn) | Guidelines for Antibiotic Use. 2018. Found at: https://www.hopkinsmedicine.org/antimicrobial-stewardship/doc/piperacillin_tazobactam_guidelines.pdf Accessed 31 July 2019.
4. Abdallah et. al. Impact of carbapenem restriction on the antimicrobial susceptibility pattern of *Pseudomonas aeruginosa* isolates in the ICU. J Antimicrob Chemother 2017; 72: 3187–3190

5. Janssen et. al. CARBapenem utilization evaluation in a large community hospital (CARBON): A Quality Improvement Study.
6. Johnk et. al. Impact of a multicenter stewardship-targeted carbapenem justification requirement on the use of carbapenems in 23 hospitals. J Am Coll Clin Pharm.2019;2:53–57
7. CHI Franciscan Health. Appropriate Antimicrobial Use Criteria 2014.
<https://www.chifranciscan.org/content/dam/chi-franciscan/website-files/our-services/antimicrobial-stewardship-program/Appropriate%20Antimicrobial%20Use%20Criteria%20without%20hyperlinks%202015-2015.01.19.pdf>. Accessed on 23 July 2019.
8. St. Luke's Health System. Meropenem and Daptomycin Use Criteria Changes CME. Found at <https://www.saintlukeskc.org/meropenem-and-daptomycin-use-criteria-changes-cme>. Accessed on 23 July 2019.
9. John Hopkins Medicine. Cefepime | Guidelines for Antibiotic Use. 2018. Found at: [https://www.hopkinsmedicine.org/antimicrobial-stewardship/doc/cefepime%20 %20guidelines.pdf](https://www.hopkinsmedicine.org/antimicrobial-stewardship/doc/cefepime%20%20guidelines.pdf) Accessed 31 July 2019.
10. Woods, Mark. Criteria for use of Cefepime in adults. Vol 51 Feb 15 1994 Am J Hosp Pharm
11. Mahmoodian et. al. A new approach to Vancomycin utilization evaluation: A cross-sectional study in intensive care unit. J Res Pharm Pract. 2017; 6(1): 63.
12. Freifeld AG, Bow EJ, Sepkowitz KA, et al. Clinical practice guideline for the use of antimicrobial agents in neutropenic patients with cancer: 2010 update by the Infectious Diseases Society of America. Clin Infect Dis 2011; 52:e56–93
13. University of Rhode Island College of Pharmacy. Antimicrobial Guide – Empiric Therapy and Treatment Recommendations for Adult Patients. Found at https://web.uri.edu/antimicrobial-stewardship/files/CLEAN-Guide_Complete.pdf. Accessed on 29 July 2019.
14. South Shore Hospital Daptomycin Policy
15. CHI Franciscan Health. Appropriate Antimicrobial Use Criteria 2014.
<https://www.chifranciscan.org/content/dam/chi-franciscan/website-files/our-services/antimicrobial-stewardship-program/Appropriate%20Antimicrobial%20Use%20Criteria%20without%20hyperlinks%202015-2015.01.19.pdf>. Accessed on 7 Aug 2019
16. Nebraska Medicine. Piperacillin-tazobactam Alternatives. 2018. Found at <https://www.nebraskamed.com/sites/default/files/documents/for-providers/asp/pt-alternatives.pdf>. Accessed 29 July 2019.
17. John Hopkins Medicine. Piperacillin/tazobactam (Zosyn) | Guidelines for Antibiotic Use. 2018. Found at: [https://www.hopkinsmedicine.org/antimicrobial-stewardship/doc/piperacillin tazobactam guidelines.pdf](https://www.hopkinsmedicine.org/antimicrobial-stewardship/doc/piperacillin_tazobactam_guidelines.pdf) Accessed 31 July 2019.