MEMORANDUM Sharp Grossmont Hospital

Double Anaerobic Coverage

Anaerobic bacteria are normal GI flora (gram-negative *rods Bacteroides fragilis, Prevotella melaninogenica*, and Fusobacterium) and mouth flora (gram-positive pathogens Peptococcus and Peptostreptococcus). Anaerobic coverage may be indicated in various infections including but not limited to intra-abdominal infections, aspiration pneumonia, diabetic foot infections/osteomyelitis, and gynecologic infections.

Gram-positive oral anaerobes are covered by most beta-lactams including penicillin. The following antibiotics have good-excellent coverage of anaerobic gram-negative bacilli such as *B. fragilis*. Use of any combination of the agents below is considered double-anaerobic coverage, which is not necessary.

Antibiotics with anaerobic coverage

Ampicillin/sulbactam	Metronidazole
Piperacillin/tazobactam	Clindamycin
Cefotetan	Tigecycline
Cefoxitin	Moxifloxacin *(non-formulary)*
All Carbapenems (meropenem, ertapenem, imipenem)	

Guidelines as well as susceptibility and **clinical data DO NOT SUPPORT double-anaerobic coverage**. *B. fragilis*, the most common pathogenic anaerobe, has resistance rates of <1-5% to most beta-lactams including <1% to piperacillin/tazobactam, carbapenems, and metronidazole. Guidelines for intra-abdominal and gynecological infections **recommend anaerobic coverage with a single agent**. Adding metronidazole for anaerobic coverage to antibiotics already with anaerobic activity **HAS NOT** been shown to improve clinical outcomes in patients.

Conclusions: Use of multiple antibiotics with anaerobic activity is not recommended and increases patient risk for adverse drug effects from exposure to unnecessary drugs. **Please refrain from using multiple agents with anaerobic coverage except for the following clinical scenarios:**

EXCEPTIONS:

- Metronidazole can be added for the treatment of C. difficile
- Clindamycin can be added for anti-toxin effects in the treatment of necrotizing fasciitis

References:
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2. Solomkin JS, Mazuski JE, Bradley JS, et al. Diagnosis and management of complicated intra-abdominal infection in adults and children: guidelines by the Surgical Infection Society and the Infectious Diseases Society of American. Clin Infect Dis. 2010; 50:133-64
3. Centers for Disease Control and Prevention. Sexually Transmitted Diseases Treatment Guidelines 2010. MMWR 2010;59: RR-12
4. Adlund C, Sabouri S, Nord CE. Comparative in vitro activity of BAY 12-8039 and five other antimicrobial agents against anaerobic bacteria. Eur J Clin Microbiol Infect Dis. 1998; 17:193-5