

## Acyclovir IV

IV acyclovir is used to treat a wide variety of viral infections caused by Herpes simplex virus (HSV) and Varicella-zoster virus (VZV).

### Formulation alternative

Oral acyclovir has poor bioavailability and oral valacyclovir should be used instead. Acyclovir is 45-65% bioavailable from a single dose of valacyclovir. High valacyclovir doses may achieve concentrations similar to IV acyclovir, and have been used in patients with viral central nervous system infections; however, safety and efficacy data are limited.<sup>1,2</sup> As with IV acyclovir, high doses of PO valacyclovir pose greater kidney injury risk and concomitant IV fluids during therapy may be protective.

IV acyclovir	=	PO VALacyclovir
300 – 600 mg/day	=	1,000 mg daily
600 – 900 mg/day	=	1,500 mg daily OR 500 mg three times daily
900 – 1,200 mg/day	=	1,000 mg two times daily
1,200 – 1,800 mg/day	=	1,000 mg three times daily
>1,800 mg/day	=	1,000 mg four times daily

### Therapeutic alternatives

Alternative IV antiviral medications have a higher risk of adverse events and lower quality of efficacy data compared with acyclovir for some indications. Severe HSV or VZV infections including central nervous system, ocular, and disseminated infections, particularly in immunocompromised patients may require IV therapy. Alternative IV options include:

- Ganciclovir
- Foscarnet

### References

1. Pouplin T, et al. Valacyclovir for herpes simplex encephalitis AAC 2011;55;3624.
2. Weller S., et al. Pharmacokinetics of the acyclovir pro-drug valacyclovir after escalating single- and multiple-dose administration to normal volunteers. Clin Pharmacol Ther 1993;54;595–605.

## Ampicillin-sulbactam IV

### Therapeutic alternatives

Amoxicillin-clavulanate has similar spectrum of activity to ampicillin-sulbactam and can be used as an oral alternative in most situations. Amoxicillin-clavulanate is considered to have good oral bioavailability.

Indication	Organisms covered by the drug on shortage	Therapeutic Alternatives
Community acquired pneumonia	<i>Streptococcus pneumoniae</i> , <i>Haemophilus influenzae</i> , <i>Moraxella catarrhalis</i>	Cefotaxime, ceftriaxone, levofloxacin, moxifloxacin
Bite wound infection	<i>Pasteurella</i> spp, <i>Streptococcus</i> spp, <i>S. aureus</i> (MSSA), anaerobes	Second or third generation cephalosporin (e.g. cefuroxime, ceftriaxone) + metronidazole, doxycycline + metronidazole, piperacillin-tazobactam
Head, neck, and odontogenic infections	<i>Streptococcus</i> spp (e.g. Viridans group, group A), anaerobes	Second or third generation cephalosporin (e.g. cefuroxime, ceftriaxone) + metronidazole, cefoxitin, clindamycin
Acinetobacter infection	<i>Acinetobacter</i> spp	Varies by local resistance patterns, choose alternative on susceptibility report. Do NOT use amoxicillin-clavulanate.

The therapeutic alternatives listed are intended to provide antimicrobial coverage similar to that provided by the drug on shortage. The alternatives do not necessarily represent full treatment regimens for certain indications and additional antimicrobials may be needed. Use therapy based on patient specific isolate susceptibility results when possible.

### Example alternative alert for electronic health record

Alternative Selection

**Alternative Required**

You selected:  
**Ampicillin-sulbactam IVPB: 3 g, Intravenous, Administer over 30 Minutes, Every 6 hours, First Dose today at 0900, Until Discontinued, Routine**

**Details**

Ampicillin-sulbactam is on national back order. The health system is unable to order and/or maintain reliable supply of product. Currently, there is no estimated time for resolution of this shortage. Please choose one of the alternatives below. If you require assistance related to this medication shortage situation, please contact the pharmacy.

- Pneumonia – amoxicillin/clavulanate PO or ceftriaxone IV
- Definitive therapy – please order another antibiotic from microbiology report
- Acinetobacter infections – call central pharmacy

**Alternatives**

Amoxicillin/clavulanate PO

Ceftriaxone IV

✓ Accept Alternative
✗ Remove Order

## Azithromycin IV

### Formulation alternatives

Azithromycin has high bioavailability and the enteral route should be used whenever possible. IV to PO conversion is 1:1.

### Therapeutic alternatives

Indication	Organisms covered by the drug on shortage	Therapeutic Alternatives
Community acquired pneumonia	Atypical bacteria (e.g. <i>Legionella</i> spp, <i>Mycoplasma</i> spp)	Doxycycline, levofloxacin
Exacerbation of chronic obstructive pulmonary disease	Respiratory flora	Doxycycline, ampicillin/sulbactam, cefuroxime, ceftriaxone, levofloxacin
Sexually transmitted infections	<i>Chlamydia trachomatis</i>	Doxycycline
Pelvic inflammatory disease	<i>Chlamydia trachomatis</i> , <i>Mycoplasma</i> spp	Doxycycline
Traveler's diarrhea	<i>E. coli</i> , <i>Campylobacter</i> spp	Ciprofloxacin, levofloxacin

The therapeutic alternatives listed are intended to provide antimicrobial coverage similar to that provided by the drug on shortage. The alternatives do not necessarily represent full treatment regimens for certain indications and additional antimicrobials may be needed. Use therapy based on patient specific isolate susceptibility results when possible.

### Example alternative alert for electronic health record

Alternative Selection

**Alternative Required**

You selected:  
**Azithromycin IVPB: 500 mg, Intravenous, Administer over 60 Minutes, Every 24 hours, First Dose today at 0900, Until Discontinued, Routine**

**Details**

Azithromycin IV is on national back order. The health system is unable to order and/or maintain reliable supply of product. Currently, there is no estimated time for resolution of this shortage. Please choose one of the alternatives below. If you require assistance related to this medication shortage situation, please contact the pharmacy.

- PO azithromycin has a 1:1 dose conversion with IV and should be used whenever possible.
- The following antibiotics have adequate activity against atypical bacteria
  - Doxycycline
  - Levofloxacin

**Alternatives**

Azithromycin PO

Doxycycline IV

Levofloxacin IV

✓ Accept Alternative

✗ Remove Order

## Cefoxitin

### Therapeutic alternatives

In addition to gram-positive and gram-negative bacterial coverage, cefoxitin is the only cephalosporin on the market with activity against anaerobes. Other cephalosporins should be paired with an agent with anaerobic activity (e.g. metronidazole) as needed based on infection type.

Indication	Organisms covered by the drug on shortage	Therapeutic Alternatives
Pelvic inflammatory disease	<i>E. coli</i> , <i>Neisseria gonorrhoeae</i> , anaerobes	Ceftriaxone + metronidazole, ampicillin-sulbactam
Skin, bone, joint infections	<i>Streptococcus</i> spp, <i>S. aureus</i> (MSSA), <i>E. coli</i> , anaerobes	Second or third generation cephalosporin (e.g. cefuroxime, ceftriaxone) + metronidazole
Surgical prophylaxis	Enterobacterales (e.g. <i>E. coli</i> ), anaerobes	Cefazolin + metronidazole

The therapeutic alternatives listed are intended to provide antimicrobial coverage similar to that provided by the drug on shortage. The alternatives do not necessarily represent full treatment regimens for certain indications and additional antimicrobials may be needed. Use therapy based on patient specific isolate susceptibility results when possible.

### Example alternative alert for electronic health record

Alternative Selection

**Alternative Required**

You selected:  
**Cefoxitin IVPB: 1g, Intravenous, Administer over 30 Minutes, Every 6 hours, First Dose today at 0900, Until Discontinued, Routine**

**Details**

Cefoxitin is on national back order. The health system is unable to order and/or maintain reliable supply of product. Currently, there is no estimated time for resolution of this shortage. Please choose one of the alternatives below. If you require assistance related to this medication shortage situation, please contact the pharmacy.

- Surgical prophylaxis – cefazolin 2 g + metronidazole 500 mg
- Empiric therapy – ceftriaxone 1g q24h + metronidazole 500 mg q8h
- Definitive therapy – please order another antibiotic from microbiology report.

**Alternatives**

Cefazolin

Ceftriaxone

Metronidazole

✓ Accept Alternative

✗ Remove Order

## Ceftolozane-tazobactam

### Therapeutic alternatives

Indication	Organisms covered by the drug on shortage	Therapeutic Alternatives
Hospital-acquired pneumonia, intra-abdominal infections, skin and soft tissue infections, urinary tract infections	Multi-drug resistant organisms including <i>Pseudomonas aeruginosa</i>	Ceftazidime-avibactam, imipenem-cilastatin-relebactam, cefiderocol

The therapeutic alternatives listed are intended to provide antimicrobial coverage similar to that provided by the drug on shortage. The alternatives do not necessarily represent full treatment regimens for certain indications and additional antimicrobials may be needed. Use therapy based on patient specific isolate susceptibility results when possible.

### Example alternative alert for electronic health record

Alternative Selection

**Alternative Required**

You selected:  
**Ceftolozane-tazobactam IVPB: 1.5g, Intravenous, Administer over 60 Minutes, Every 8 hours, First Dose today at 0900, Until Discontinued, Routine**

**Details**

Ceftolozane/tazobactam is unavailable globally due to manufacturing issues. Consider using ceftazidime/avibactam as an alternative if appropriate.

For help with antibiotic selection, a pharmacist is available at 555-5555.

**Alternatives**

Ceftazidime-avibactam

## Clindamycin IV

### Formulation alternatives

Clindamycin has high bioavailability and the enteral route should be used whenever possible. IV to PO conversion is 1:1. High oral doses may not be tolerated due to GI side effects.

### Therapeutic alternatives

Indication	Organisms covered by the drug on shortage	Therapeutic Alternatives
Anaerobic coverage	<i>Bacteroides</i> spp, <i>Clostridium</i> spp, <i>Peptostreptococcus</i> spp, many others	Metronidazole, ampicillin-sulbactam, piperacillin-tazobactam
Head, neck, and odontogenic infections	<i>Streptococcus</i> spp (e.g. Viridans group, group A), anaerobes	Ampicillin-sulbactam, cefoxitin, second or third generation cephalosporin (e.g. cefuroxime, ceftriaxone) + metronidazole
Skin and soft tissue infections	<i>S. aureus</i> (MRSA and MSSA), <i>Streptococcus</i> spp	vancomycin
Toxin suppression (necrotizing soft tissue infections, toxic shock syndrome)	<i>Streptococcus pyogenes</i> , <i>S. aureus</i> (MRSA and MSSA)	linezolid

The therapeutic alternatives listed are intended to provide antimicrobial coverage similar to that provided by the drug on shortage. The alternatives do not necessarily represent full treatment regimens for certain indications and additional antimicrobials may be needed.

Use therapy based on patient specific isolate susceptibility results when possible.

### Example alternative alert for electronic health record

Alternative Selection

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**Alternative Required**

You selected:  
**Clindamycin IVPB: 600 mg, Intravenous, Administer over 30 Minutes, Every 8 hours, First Dose today at 0900, Until Discontinued, Routine**

Details

Clindamycin IV is on national back order. The health system is unable to order and/or maintain reliable supply of product. Currently, there is no estimated time for resolution of this shortage. Please choose one of the alternatives below. If you require assistance related to this medication shortage situation, please contact the pharmacy.

- Oral clindamycin has excellent bioavailability and should be used whenever possible.
- Please note that oral doses are lower than IV due to GI intolerances.
- Vancomycin is an alternative for empiric MRSA activity
- Metronidazole is an alternative for anaerobic activity

**Alternatives**

Clindamycin PO

Metronidazole IV

Inpatient consult to pharmacy to dose vancomycin

✓ Accept Alternative

✗ Remove Order

## Doxycycline IV

### Formulation alternatives

Doxycycline has high bioavailability and the enteral route should be used whenever possible. IV to PO conversion is 1:1.

### Therapeutic alternatives

Indication	Organisms covered by the drug on shortage	Therapeutic Alternatives
Community acquired pneumonia	Atypical bacteria (e.g. <i>Legionella</i> spp, <i>Mycoplasma</i> spp)	Azithromycin, levofloxacin
Exacerbation of chronic obstructive pulmonary disease	Respiratory flora	Azithromycin, ampicillin/sulbactam, cefuroxime, ceftriaxone, levofloxacin
Skin and soft tissue infections	<i>S. aureus</i> (MRSA and MSSA)	Vancomycin
Sexually transmitted infections	<i>Chlamydia trachomatis</i>	Azithromycin, levofloxacin
Pelvic inflammatory disease	<i>Chlamydia trachomatis</i> , <i>Mycoplasma</i> spp	Azithromycin

The therapeutic alternatives listed are intended to provide antimicrobial coverage similar to that provided by the drug on shortage. The alternatives do not necessarily represent full treatment regimens for certain indications and additional antimicrobials may be needed. Use therapy based on patient specific isolate susceptibility results when possible.

### Example alternative alert for electronic health record

**Alternative Selection**

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**Alternative Required**

You selected:  
**Doxycycline IVPB: 100 mg, Intravenous, Administer over 120 Minutes, Every 12 hours, First Dose today at 0900, Until Discontinued, Routine**

Details \_\_\_\_\_

Doxycycline IV is on national back order. The health system is unable to order and/or maintain reliable supply of product. Currently, there is no estimated time for resolution of this shortage. Please choose one of the alternatives below. If you require assistance related to this medication shortage situation, please contact the pharmacy.

- Oral doxycycline has excellent bioavailability and should be used whenever possible
- The following antibiotics have adequate activity against atypical bacteria
  - Azithromycin
  - Levofloxacin

**Alternatives**

Doxycycline PO

Azithromycin IV

✓ **Accept Alternative**

✗ **Remove Order**

## Gentamicin

### Therapeutic alternatives

Tobramycin has similar spectrum of activity to gentamicin and can be used as an alternative in most situations.

Indication	Organisms covered by the drug on shortage	Therapeutic Alternatives
Intra-amniotic infection (chorioamnionitis)	<i>E. coli</i>	Ceftriaxone, piperacillin-tazobactam
Endocarditis synergy	<i>Enterococcus</i> spp, <i>Staphylococcus</i> spp, <i>Streptococcus</i> spp	Consult infectious diseases expert
Empiric gram-negative coverage	Enterobacterales (e.g. <i>E. coli</i> ), <i>Pseudomonas aeruginosa</i> , many others	Tobramycin, amikacin

The therapeutic alternatives listed are intended to provide antimicrobial coverage similar to that provided by the drug on shortage. The alternatives do not necessarily represent full treatment regimens for certain indications and additional antimicrobials may be needed. Use therapy based on patient specific isolate susceptibility results when possible.

### Example alternative alert for electronic health record

Alternative Selection

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**Alternative Required**

You selected:  
**Gentamicin IVPB: 500 mg, Intravenous, Administer over 30 Minutes, Every 24 hours, First Dose today at 0900, Until Discontinued, Routine**

Details \_\_\_\_\_

Gentamicin is on national back order. The health system is unable to order and/or maintain reliable supply of product. Currently, there is no estimated time for resolution of this shortage. Please choose one of the alternatives below. If you require assistance related to this medication shortage situation, please contact the pharmacy.

- For most infections, tobramycin can be used in place of gentamicin.
- For questions about bacterial susceptibility, the microbiology lab can be reached at 555-5555.
- For questions about therapeutic options, the on-call infectious diseases pharmacist can be reached at 555-5555.

**Alternatives**

Inpatient consult to pharmacy to dose tobramycin

✓ Accept Alternative

✗ Remove Order



## Metronidazole IV

### Formulation alternatives

Metronidazole has high bioavailability and the enteral route should be used whenever possible. IV to PO conversion is 1:1.

### Therapeutic alternatives

Clindamycin used to be an adequate alternative to metronidazole in terms of anaerobic activity, however, increasing resistance has been reported. Other anaerobic agents (listed below) are more reliable and should be favored over clindamycin.

Indication	Organisms covered by the drug on shortage	Therapeutic Alternatives
Anaerobic coverage	<i>Bacteroides</i> spp, <i>Clostridium</i> spp, <i>Peptostreptococcus</i> spp, many others	Ampicillin-sulbactam, piperacillin-tazobactam, meropenem
<p>The therapeutic alternatives listed are intended to provide antimicrobial coverage similar to that provided by the drug on shortage. The alternatives do not necessarily represent full treatment regimens for certain indications and additional antimicrobials may be needed. Use therapy based on patient specific isolate susceptibility results when possible.</p>		

### Example alternative alert for electronic health record

Alternative Selection

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**Alternative Required**

You selected:  
**Metronidazole IVPB 500 mg: 500 mg, Intravenous, Administer over 60 Minutes, Every 8 hours, First Dose today at 0900, Until Discontinued, Routine**

Details

Metronidazole IV is on national back order. The health system is unable to order and/or maintain reliable supply of product. Currently, there is no estimated time for resolution of this shortage. Please choose one of the alternatives below. If you require assistance related to this medication shortage situation, please contact the pharmacy.

PO metronidazole is well absorbed and considered bioequivalent to IV metronidazole

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**Alternatives**

- Metronidazole PO
- Piperacillin-tazobactam IV
- Ampicillin/sulbactam IV

## Meropenem

### Therapeutic alternatives

Meropenem is often used for its broad gram-negative activity (alternatives listed below). However, it also has activity against *Streptococcus* spp, *S. aureus* (MSSA), and anaerobes. Multiple agents may be required to achieve desired spectrum of coverage similar to that provided by meropenem.

For example, aztreonam has broad gram-negative activity, but has no appreciable activity against gram-positive or anaerobic organisms. If gram-positive and anaerobic coverage is desired, vancomycin and metronidazole should be added to aztreonam.

Indication	Organisms covered by the drug on shortage	Therapeutic Alternatives
Empiric broad gram-negative coverage	Enterobacterales (e.g. <i>E. coli</i> , <i>Klebsiella</i> spp), <i>Pseudomonas aeruginosa</i> , others	Cefepime, ceftazidime, piperacillin-tazobactam, aztreonam
Gram-negative infection requiring carbapenem therapy	Multidrug-resistant gram-negatives (e.g. ESBL <i>E. coli</i> , <i>Pseudomonas</i> spp, <i>Acinetobacter</i> spp)	Imipenem/cilastatin, ertapenem* *does not cover <i>Pseudomonas</i> spp, <i>Acinetobacter</i> spp

The therapeutic alternatives listed are intended to provide antimicrobial coverage similar to that provided by the drug on shortage. The alternatives do not necessarily represent full treatment regimens for certain indications and additional antimicrobials may be needed. Use therapy based on patient specific isolate susceptibility results when possible.

### Example alternative alert for electronic health record

Alternative Selection

**Alternative Required**

You selected:  
**Meropenem IVPB: 500 mg, Intravenous, Administer over 30 Minutes, Every 6 hours, First Dose today at 0900, Until Discontinued, Routine**

**Details**

Meropenem is on national back order. The health system is unable to order and/or maintain reliable supply of product. Currently, there is no estimated time for resolution of this shortage. Please choose one of the alternatives below. If you require assistance related to this medication shortage situation, please contact the pharmacy.

- For empiric broad spectrum Gram-negative antibiotics, use cefepime or piperacillin/tazobactam.
- For empiric carbapenem use, use imipenem.
- For imipenem non-susceptible isolates or the treatment of meningitis, please call the pharmacy department.

**Alternatives**

Cefepime

Piperacillin-tazobactam

Imipenem-cilastatin

✓ Accept Alternative

✗ Remove Order

## Neomycin PO

Oral neomycin is used as part of a prophylaxis regimen for colorectal procedures, usually in combination with oral erythromycin or oral metronidazole starting the day before the procedure following a mechanical bowel preparation. The regimen targets enteric bacteria including gram-negatives and anaerobes.

### Therapeutic alternatives

The following regimen has been studied as oral prophylaxis for colorectal surgery.<sup>1</sup> It may be used instead of a neomycin-based regimen.

Ciprofloxacin 750 mg PO x2 doses (at 1200, 0000 day before procedure)  
+  
Metronidazole 250 mg PO x3 doses (at 1200, 1800, 0000 day before procedure)

### Example alternative alert for electronic health record

Alternative Selection

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**Alternative Required**

You selected:  
**Neomycin tablet: 1 g, Oral, Every 6 hours, First Dose today at 0900, Until Discontinued, Routine**

Details

Neomycin is on national back order. The health system is unable to order and/or maintain reliable supply of product. Currently, there is no estimated time for resolution of this shortage. Please choose one of the alternatives below. If you require assistance related to this medication shortage situation, please contact the pharmacy.

- For colorectal surgery, PO ciprofloxacin with PO metronidazole is suggested as an alternative to PO neomycin. Dose, timing, and frequency is outlined below.

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**Alternatives**

PO ciprofloxacin 750 mg Q12H x 2 doses at 1200 and 0000 the night before surgery

✓ Accept Alternative

✗ Remove Order

### Reference:

- Basany EE, Solis-Pena A, Pellino G, et al. Preoperative oral antibiotics and surgical-site infections in colon surgery (ORALEV): a multicentre, single-blind, pragmatic, randomised controlled trial. *Lancet Gastroenterol Hepatol.* 2020; 5(8):729-738.

## Penicillin G benzathine, long-acting IM

### Formulation alternatives

Penicillin may be available in other parenteral formulations (intravenous, intramuscular); however, they are not directly interchangeable with penicillin G benzathine. They differ in dosage and duration and may not be appropriate for certain indications.

Penicillin is available in oral formulation but may not be appropriate for all indications (e.g. should not be used for syphilis). Oral amoxicillin has better bioavailability than oral penicillin and may be an appropriate alternative depending on indication. Dosing conversions are not 1:1 and prescribing information should be used to choose the correct dose of oral product.

### Therapeutic alternatives

There are no therapeutic alternatives to penicillin G benzathine for pregnant patients or neonates with syphilis. If limited supply is available, it should be prioritized for these populations.

Indication	Organisms covered by the drug on shortage	Therapeutic Alternatives
Streptococcal pharyngitis	<i>Streptococcus pyogenes</i> (group A)	Amoxicillin, penicillin VK (oral)
Syphilis	<i>Treponema pallidum</i>	Doxycycline

The therapeutic alternatives listed are intended to provide antimicrobial coverage similar to that provided by the drug on shortage. The alternatives do not necessarily represent full treatment regimens for certain indications and additional antimicrobials may be needed. Use therapy based on patient specific isolate susceptibility results when possible.

### Example alternative alert for electronic health record

Alternative Selection

**Alternative Required**

You selected:  
**Penicillin G benzathine injection 1.2 Million Units: 1.2 Million Units, Intramuscular, Once**

**Details**

Penicillin G benzathine is on national back order. The health system is unable to order and/or maintain reliable supply of product. If you require assistance related to this medication shortage situation, please contact the pharmacy.

Penicillin G benzathine is the recommended, first-line treatment for syphilis, and the only recommended treatment for pregnant patients or patients with contraindications to doxycycline (i.e. anaphylaxis, hemolytic anemia, Stevens Johnson syndrome)

Among non-pregnant adults with syphilis:

- Doxycycline 100 mg PO BID x 14 days is an acceptable alternative for those with primary, secondary, or early latent syphilis.
- Doxycycline 100 mg PO BID x 28 days is an acceptable alternative for those with late latent syphilis or syphilis of unknown duration.

Use of other intramuscular formulations of penicillin, including Bicillin C-R, are not acceptable alternatives for the treatment of syphilis.

**For the treatment of other infectious diseases (streptococcal pharyngitis) utilize other alternative oral antimicrobials.** In order to conserve the limited supply of product for those patients without other options, please choose one of the alternatives below for all non-pregnant patients, unless patient has a contraindication to therapy.

**Alternatives**

Doxycycline

Amoxicillin PO

Continue with:

Penicillin G benzathine

## Piperacillin-tazobactam

### Therapeutic alternatives

Piperacillin-tazobactam is often used for its broad gram-negative activity. However, it also has activity against *Enterococcus* spp, *Streptococcus* spp, *S. aureus* (MSSA), and anaerobes. Multiple agents may be required to achieve desired spectrum of coverage similar to that provided by piperacillin-tazobactam.

Indication	Organisms covered by the drug on shortage	Therapeutic Alternatives
<b>Most infections: no anti-pseudomonal coverage required (e.g. community-acquired, mild illness severity, immunocompetent)</b>		
Pneumonia	<i>Streptococcus pneumoniae</i> , <i>Haemophilus influenzae</i> , <i>Moraxella catarrhalis</i>	<ul style="list-style-type: none"> <li>• Cefotaxime</li> <li>• Ceftriaxone</li> <li>• Levofloxacin</li> <li>• Moxifloxacin</li> </ul>
Intra-abdominal infection	<i>Streptococcus</i> spp, Enterobacterales (e.g. <i>E. coli</i> ), anaerobes	<ul style="list-style-type: none"> <li>• Ceftriaxone + metronidazole</li> <li>• Fluoroquinolone (e.g. levofloxacin) + metronidazole</li> </ul>
Cellulitis (no abscess)	<i>Streptococcus</i> spp (e.g. group A)	<ul style="list-style-type: none"> <li>• Nafcillin</li> <li>• Cefazolin</li> </ul>
<b>Anti-pseudomonal coverage required (e.g. hospital-acquired, critically ill, immunocompromised)</b>		
Pneumonia	<i>S. aureus</i> (MSSA), Enterobacterales (e.g. <i>E. coli</i> ), <i>Pseudomonas aeruginosa</i>	<ul style="list-style-type: none"> <li>• Cefepime</li> <li>• Ceftazidime + vancomycin</li> <li>• Aztreonam + vancomycin</li> <li>• Meropenem</li> </ul>
Intra-abdominal infection	<i>Streptococcus</i> spp, Enterobacterales (e.g. <i>E. coli</i> ), <i>Pseudomonas aeruginosa</i> , anaerobes	<ul style="list-style-type: none"> <li>• Cefepime + metronidazole</li> <li>• Ceftazidime + vancomycin + metronidazole</li> <li>• Aztreonam + vancomycin + metronidazole</li> <li>• Meropenem</li> </ul>
Diabetic foot infection, necrotizing skin and soft tissue infection	<i>Streptococcus</i> spp, <i>S. aureus</i> (MSSA), Enterobacterales (e.g. <i>E. coli</i> ), <i>Pseudomonas aeruginosa</i> , anaerobes	<ul style="list-style-type: none"> <li>• Cefepime + metronidazole</li> <li>• Ceftazidime + vancomycin + metronidazole</li> <li>• Aztreonam + vancomycin + metronidazole</li> <li>• Meropenem</li> </ul>

The therapeutic alternatives listed are intended to provide antimicrobial coverage similar to that provided by the drug on shortage. The alternatives do not necessarily represent full treatment regimens for certain indications and additional antimicrobials may be needed.

Use therapy based on patient specific isolate susceptibility results when possible.