

USMLE Step 2 Antibiotics and Treatments Practice Exam (Sample)

Study Guide



Everything you need from our exam experts!

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Introduction

Preparing for a certification exam can feel overwhelming, but with the right tools, it becomes an opportunity to build confidence, sharpen your skills, and move one step closer to your goals. At Examzify, we believe that effective exam preparation isn't just about memorization, it's about understanding the material, identifying knowledge gaps, and building the test-taking strategies that lead to success.

This guide was designed to help you do exactly that.

Whether you're preparing for a licensing exam, professional certification, or entry-level qualification, this book offers structured practice to reinforce key concepts. You'll find a wide range of multiple-choice questions, each followed by clear explanations to help you understand not just the right answer, but why it's correct.

The content in this guide is based on real-world exam objectives and aligned with the types of questions and topics commonly found on official tests. It's ideal for learners who want to:

- Practice answering questions under realistic conditions,
- Improve accuracy and speed,
- Review explanations to strengthen weak areas, and
- Approach the exam with greater confidence.

We recommend using this book not as a stand-alone study tool, but alongside other resources like flashcards, textbooks, or hands-on training. For best results, we recommend working through each question, reflecting on the explanation provided, and revisiting the topics that challenge you most.

Remember: successful test preparation isn't about getting every question right the first time, it's about learning from your mistakes and improving over time. Stay focused, trust the process, and know that every page you turn brings you closer to success.

Let's begin.

How to Use This Guide

This guide is designed to help you study more effectively and approach your exam with confidence. Whether you're reviewing for the first time or doing a final refresh, here's how to get the most out of your Examzify study guide:

1. Start with a Diagnostic Review

Skim through the questions to get a sense of what you know and what you need to focus on. Your goal is to identify knowledge gaps early.

2. Study in Short, Focused Sessions

Break your study time into manageable blocks (e.g. 30 - 45 minutes). Review a handful of questions, reflect on the explanations.

3. Learn from the Explanations

After answering a question, always read the explanation, even if you got it right. It reinforces key points, corrects misunderstandings, and teaches subtle distinctions between similar answers.

4. Track Your Progress

Use bookmarks or notes (if reading digitally) to mark difficult questions. Revisit these regularly and track improvements over time.

5. Simulate the Real Exam

Once you're comfortable, try taking a full set of questions without pausing. Set a timer and simulate test-day conditions to build confidence and time management skills.

6. Repeat and Review

Don't just study once, repetition builds retention. Re-attempt questions after a few days and revisit explanations to reinforce learning. Pair this guide with other Examzify tools like flashcards, and digital practice tests to strengthen your preparation across formats.

There's no single right way to study, but consistent, thoughtful effort always wins. Use this guide flexibly, adapt the tips above to fit your pace and learning style. You've got this!

Questions

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1. When is prophylaxis with amoxicillin recommended for mouth surgery?

- A. If there is a high-risk cardiac condition**
- B. If the patient has a recent viral infection**
- C. For all patients undergoing any surgery**
- D. If the patient has a strong family history of bleeding disorders**

2. What type of antibiotics are known as the 'big gun' antibiotics?

- A. Cephalosporins**
- B. Glycopeptides**
- C. Aminoglycosides**
- D. Macrolides**

3. What is the treatment for disseminated *Mycobacterium avium* complex (MAC) infection?

- A. Azithromycin and Ethambutol**
- B. Vancomycin and Ceftriaxone**
- C. Fluconazole and Amphotericin**
- D. Doxycycline and Rifampin**

4. Which antibiotic is known for causing *C. difficile* infection as a side effect?

- A. Azithromycin**
- B. Vancomycin**
- C. Clindamycin**
- D. Levofloxacin**

5. Which medication is recommended for treatment of photophobia in uveitis?

- A. Topical steroids**
- B. Myotic agents**
- C. Carbonic anhydrase inhibitors**
- D. Antibiotics**

6. What is the initial treatment for acute multiple sclerosis (MS)?

- A. Immunosuppressants**
- B. Antivirals**
- C. Steroids**
- D. Plasmapheresis**

7. For severe Parkinson's disease, what is considered the most effective treatment?

- A. Ropinirole**
- B. Levodopa/Carbidopa**
- C. Benztropine**
- D. Amantadine**

8. For what purpose is Gentamicin used in combination with Vancomycin in infective endocarditis?

- A. To treat viral infections**
- B. To enhance the overall therapeutic effect**
- C. To minimize side effects**
- D. To act as a stand-alone treatment**

9. Which medication is the first-line treatment for malaria?

- A. Primaquine**
- B. Quinine**
- C. Chloroquine**
- D. Atovaquone**

10. Which of the following antibiotics should be avoided in patients with a history of C. difficile infection?

- A. Vancomycin**
- B. Clindamycin**
- C. Azithromycin**
- D. Moxifloxacin**

Answers

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1. A
2. B
3. A
4. C
5. A
6. C
7. B
8. B
9. C
10. B

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Explanations

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1. When is prophylaxis with amoxicillin recommended for mouth surgery?

- A. If there is a high-risk cardiac condition**
- B. If the patient has a recent viral infection**
- C. For all patients undergoing any surgery**
- D. If the patient has a strong family history of bleeding disorders**

Prophylaxis with amoxicillin is specifically recommended for patients undergoing certain dental or mouth surgical procedures if they have a high-risk cardiac condition. This practice is based on the need to prevent bacterial endocarditis, which can occur when bacteria from the mouth enter the bloodstream during invasive procedures. Patients with conditions such as prosthetic heart valves, a history of infective endocarditis, certain congenital heart defects, or heart transplant recipients with valve disease are at increased risk. The use of antibiotics is not indicated for patients with recent viral infections, as these do not significantly increase the risk of bacterial endocarditis. Additionally, it is not a blanket recommendation for all surgical procedures, as many surgeries may not involve a risk that necessitates antibiotic prophylaxis. Similarly, a strong family history of bleeding disorders is not a criterion for needing antibiotic prophylaxis during mouth surgery, as this relates more to coagulation risks rather than infection prevention. Hence, the recommendation for amoxicillin prophylaxis is focused on those identified high-risk cardiac patients.

2. What type of antibiotics are known as the 'big gun' antibiotics?

- A. Cephalosporins**
- B. Glycopeptides**
- C. Aminoglycosides**
- D. Macrolides**

The term 'big gun' antibiotics is commonly used to refer to glycopeptides, which include well-known agents such as vancomycin. These antibiotics are particularly effective against serious Gram-positive infections, including those caused by methicillin-resistant *Staphylococcus aureus* (MRSA). Glycopeptides work by inhibiting cell wall synthesis, making them potent options for treating resistant bacterial infections. The use of glycopeptides is typically reserved for more severe infections or in cases where other antibiotics may not be effective, primarily due to their ability to combat resistant strains. This characteristic further solidifies their status as 'big gun' antibiotics in the clinical setting. In contrast, the other classes of antibiotics have their roles but are generally considered first-line or less potent compared to glycopeptides when tackling resistant Gram-positive infections. Cephalosporins are broad-spectrum antibiotics that can be effective, but they may not be reliable against certain resistant bacteria. Aminoglycosides have specific applications, particularly against Gram-negative organisms, while macrolides primarily target atypical pathogens and are less suited for serious resistant infections. This distinction highlights why glycopeptides are recognized as the 'big guns' in the antibiotic arsenal.

3. What is the treatment for disseminated *Mycobacterium avium* complex (MAC) infection?

- A. Azithromycin and Ethambutol**
- B. Vancomycin and Ceftriaxone**
- C. Fluconazole and Amphotericin**
- D. Doxycycline and Rifampin**

The treatment for disseminated *Mycobacterium avium* complex (MAC) infection primarily involves the use of specific antibiotics that are effective against mycobacterial organisms. Azithromycin is one of the key components of the therapy for MAC, as it has good activity against this type of infection. It is often used in combination with another agent, such as Ethambutol, which helps enhance the effectiveness of the treatment and reduce the risk of developing drug resistance. The rationale behind using this combination is that it targets the mycobacterial cell wall and inhibits the growth of the organism, leading to a better clinical outcome for patients with disseminated infections, particularly in those who are immunocompromised, such as individuals with advanced HIV/AIDS. This dual therapy approach has been established as a standard for managing MAC infections, making it the preferred choice in clinical practice. The other options listed involve antibiotics that are not effective against MAC, which is why they would not be suitable for treating this specific type of infection.

4. Which antibiotic is known for causing *C. difficile* infection as a side effect?

- A. Azithromycin**
- B. Vancomycin**
- C. Clindamycin**
- D. Levofloxacin**

Clindamycin is well recognized for its association with *Clostridioides difficile* (*C. difficile*) infections. This antibiotic can disrupt the normal gut flora, allowing for an overgrowth of *C. difficile* bacteria, which can lead to antibiotic-associated diarrhea and more severe colitis. The mechanism behind this is the alteration of the intestinal microbiome due to the antibiotic's effect, which diminishes the diversity of bacteria in the gut, making it easier for opportunistic pathogens like *C. difficile* to thrive. Other antibiotics listed may have a lesser association with *C. difficile*, but they are not as prominently linked. For example, while vancomycin is often used to treat *C. difficile* infections, it may also cause such infections when used inappropriately or in certain situations. Azithromycin and levofloxacin have different mechanisms of action and generally do not have the same level of association with *C. difficile* infections as clindamycin does. Therefore, the specific reputation of clindamycin for causing this complication highlights its potential risk when used, especially in patients who are elderly, have had prior antibiotic use, or have underlying health issues.

5. Which medication is recommended for treatment of photophobia in uveitis?

- A. Topical steroids**
- B. Myotic agents**
- C. Carbonic anhydrase inhibitors**
- D. Antibiotics**

Topical steroids are recommended for the treatment of photophobia in uveitis because they help to reduce inflammation within the eye. Uveitis is characterized by inflammation of the uveal tract, which can lead to various symptoms, including photophobia, redness, pain, and visual disturbances. Inflammation in the eye increases sensitivity to light, making patients experience discomfort in bright environments. By utilizing topical steroids, the inflammatory response is mitigated, which in turn alleviates the symptoms associated with uveitis, including photophobia. Steroid therapy effectively decreases the prominence of inflammatory mediators, thereby addressing both the underlying condition and its related symptoms. In contrast, other options such as myotic agents, carbonic anhydrase inhibitors, and antibiotics do not primarily target the inflammation causing photophobia. Myotic agents can constrict the pupil but may not alleviate the inflammation responsible for discomfort. Carbonic anhydrase inhibitors primarily reduce intraocular pressure and are not indicated for uveitis management. Antibiotics are typically used for infectious causes of uveitis rather than for inflammatory management or for addressing symptoms like photophobia.

6. What is the initial treatment for acute multiple sclerosis (MS)?

- A. Immunosuppressants**
- B. Antivirals**
- C. Steroids**
- D. Plasmapheresis**

The initial treatment for acute exacerbations of multiple sclerosis (MS) typically involves the use of steroids, specifically corticosteroids. This approach is directed towards reducing inflammation and accelerating recovery from relapses. During an acute attack of MS, inflammatory processes contribute to the demyelination and nerve damage experienced by the patient. Corticosteroids such as methylprednisolone are effective in decreasing the duration and severity of these exacerbations by suppressing the immune response. While other treatments exist for MS, they are either used for long-term management (such as immunosuppressants) or for different clinical contexts. Antivirals are not indicated in MS, as the condition is not caused by a viral infection. Plasmapheresis may be considered in cases where patients show severe disability and do not respond to steroids, but it is not the first-line treatment for acute exacerbations. Thus, corticosteroids are the cornerstone of initial therapy for managing acute attacks of MS, making this choice the most appropriate for the situation described.

7. For severe Parkinson's disease, what is considered the most effective treatment?

- A. Ropinirole**
- B. Levodopa/Carbidopa**
- C. Benztropine**
- D. Amantadine**

Levodopa/Carbidopa is considered the most effective treatment for severe Parkinson's disease due to its ability to significantly alleviate motor symptoms. Levodopa is a precursor to dopamine, which is crucial since Parkinson's disease is characterized by a deficiency of dopamine in the brain. When administered, Levodopa is converted to dopamine, helping to restore the balance of neurotransmitters and improve motor function. Carbidopa is included in the combination to prevent Levodopa from being converted to dopamine outside the brain, which enhances its effectiveness and minimizes side effects such as nausea and vomiting. The combination allows more Levodopa to reach the brain and results in a more stable and effective response to treatment. While other options like Ropinirole, a dopamine agonist, and Benztropine, an anticholinergic, have roles in managing Parkinson's disease, they are not as effective as Levodopa/Carbidopa for patients with severe disease. Amantadine may provide some benefits in certain cases but does not have the same efficacy in managing severe symptoms as the Levodopa/Carbidopa combination does. Therefore, the paired use of Levodopa with Carbidopa remains the cornerstone of treatment for advanced Parkinson's disease,

8. For what purpose is Gentamicin used in combination with Vancomycin in infective endocarditis?

- A. To treat viral infections**
- B. To enhance the overall therapeutic effect**
- C. To minimize side effects**
- D. To act as a stand-alone treatment**

Gentamicin is used in combination with Vancomycin in the treatment of infective endocarditis primarily to enhance the overall therapeutic effect. This combination therapy takes advantage of the synergistic action of the two antibiotics against certain organisms, particularly in cases of endocarditis caused by enterococci or *Staphylococcus aureus*. Vancomycin, a glycopeptide antibiotic, is effective against gram-positive bacteria, including MRSA (methicillin-resistant *Staphylococcus aureus*) and various enterococci. When combined with Gentamicin, an aminoglycoside, the treatment can achieve better bactericidal activity due to the different mechanisms of action and target sites within the bacterial cells. Gentamicin works by interfering with protein synthesis, which, when combined with Vancomycin's cell wall synthesis inhibition, leads to a more effective eradication of the infecting organisms. This treatment strategy is often employed, especially in cases of prosthetic valve endocarditis or infections caused by resistant organisms, where a combination of antibiotics is crucial to effectively fight the infection and improve patient outcomes.

9. Which medication is the first-line treatment for malaria?

- A. Primaquine
- B. Quinine
- C. Chloroquine**
- D. Atovaquone

Chloroquine is recognized as the first-line treatment for malaria, especially for uncomplicated cases caused by *Plasmodium falciparum* in regions where the parasite has not developed resistance. Chloroquine functions by interfering with the parasite's ability to detoxify heme, leading to the accumulation of toxic heme and ultimately causing the death of the parasite. Available for many decades, chloroquine remains a critical drug in the management of malaria due to its efficacy, safety profile, and relative cost-effectiveness. However, it's important to note that resistance to chloroquine has emerged in some areas, particularly in Southeast Asia and sub-Saharan Africa, which may require alternative treatments in those regions. While primaquine is effective for treating the liver stage of *Plasmodium vivax* and *Plasmodium ovale* infections and is used to prevent relapses, it is not used as a first-line treatment for uncomplicated malaria. Quinine is an effective treatment as well, particularly for severe malaria but is not preferred for uncomplicated cases due to its side effects and requirement for intravenous administration in more severe instances. Atovaquone, although it can be effective in combination regimens, is not the first-line treatment alone. Thus, chloroquine remains the quintessential first-line

10. Which of the following antibiotics should be avoided in patients with a history of *C. difficile* infection?

- A. Vancomycin
- B. Clindamycin**
- C. Azithromycin
- D. Moxifloxacin

Clindamycin is often associated with a higher risk of *Clostridium difficile* infection (CDI). This antibiotic disrupts the normal gut flora, which can allow for the overgrowth of *C. difficile* and lead to gastrointestinal complications, including severe colitis. Patients with a history of CDI are particularly vulnerable to recurrence, and clindamycin's mechanism of action makes it a less favorable choice in such cases. Therefore, avoiding clindamycin in patients with a past *C. difficile* infection is appropriate to mitigate the risk of recurrence and ensure safer management of their infections. While vancomycin is actually used to treat CDI, and both azithromycin and moxifloxacin have a lower association with CDI, clindamycin's potent impact on gut flora makes it the antibiotic that should be avoided in this specific scenario.

Next Steps

Congratulations on reaching the final section of this guide. You've taken a meaningful step toward passing your certification exam and advancing your career.

As you continue preparing, remember that consistent practice, review, and self-reflection are key to success. Make time to revisit difficult topics, simulate exam conditions, and track your progress along the way.

If you need help, have suggestions, or want to share feedback, we'd love to hear from you. Reach out to our team at hello@examzify.com.

Or visit your dedicated course page for more study tools and resources:

<https://usmlestep2antibioticstreatments.examzify.com>

We wish you the very best on your exam journey. You've got this!

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