

# Critical decisions

in emergency medicine

## Author Guidelines

### GETTING STARTED

Thank you for agreeing to contribute to ACEP's *Critical Decisions in Emergency Medicine (CDEM)*. Please review these guidelines before you begin writing.

The checklist below gives a concise overview of submission requirements. Please ensure that you have included each component. The lessons published in *CDEM* are based on the latest medical literature and are designed to:

- Address topics and issues that are leading edge
- Provide clinical updates on common problems in emergency medicine
- Serve as practical guides for integrating techniques, technologies, medications, products, or clinical methods into the daily practice of emergency medicine.

### SUBMISSION REQUIREMENTS

1. The lesson should be about 25 to 30 typewritten 8½ x 11 pages (double spaced) using any standard typeface (11-point type). Documents should be created in Microsoft Word or a compatible program.
2. The following elements should be submitted as one document, in this order:
  - Title Page (please include the authors' affiliations and contact information)
  - Front Page "Teaser"
  - Lesson Objectives
  - Critical Decisions
  - Introduction
  - Case Presentations
  - Body of the Lesson
  - Case Resolutions
  - Summary of the Lesson
  - Pearls and Pitfalls
  - References
  - Additional Readings (optional)
  - 12 CME Questions with Answer Key and Explanations
  - Figures and Tables
  - Copy of Reprint Permissions (if applicable)
3. Please e-mail your electronic file to Joy Carrico, managing editor, [jcarrico@acep.org](mailto:jcarrico@acep.org).

### LESSON COMPONENTS

#### Title Page

The title page of the lesson must include:

- Title of manuscript (including any pun suggestions you may have for your lesson)
- Date (be sure to change this on any subsequent revisions)
- Full name(s) of all contributors and their pertinent titles and affiliations
- Mailing addresses, telephone numbers, and e-mail addresses of all authors

#### Front Page "Teaser"

This short paragraph will appear on the cover of *CDEM* and should tell, very briefly, why an emergency physician should read your article. This must be accomplished in two or three sentences—about 50 words. You may wish to write the lengthier "Introduction" (see below) first, and then pull out the most important elements for this section.

#### Examples of a Front Page "Teaser"

##### Under the Skin

Necrotizing fasciitis, a life-threatening condition with high rates of morbidity and mortality, is much less common than cellulitis. However, because surgical exploration is the only way to confirm or exclude the diagnosis of necrotizing fasciitis, emergency physicians must keep a high index of suspicion and advocate for patients early in the hospital course to ensure the best outcomes.

##### Breathing Room

Neuromuscular disorders like myasthenia gravis can lead to rapidly progressive paresis, paralysis of respiratory and oropharyngeal muscles, and the inability to manage oral secretions. Because delayed intervention can lead to disastrous consequences, emergency physicians must be able to quickly recognize the features of impending respiratory failure that can arise from a myasthenic crisis.

#### Objectives

Each lesson should include between 4 and 6 behavioral objectives. Each objective should be supported by the lesson content and identify what the reader should be able to do as a result of reading your lesson.

Each objective should be clear and begin with a verb that indicates a measurable behavior, such as "identify," "state," "describe," and "demonstrate." Verbs like "understand," "know," and "learn" are too general and are not measurable.

#### Example of an Objectives section

*On completion of this lesson, you should be able to:*

1. Define cellulitis and differentiate it from other SSTIs.
2. Integrate laboratory and imaging studies to determine the severity of SSTIs.
3. Use evidence-based guidelines to select the best treatment for NF and cellulitis.
4. Dispel common dogma regarding the treatment of SSTIs using emerging evidence and guidelines.

# Author Guidelines (continued)

## Critical Decisions

Provide a list of 5 to 8 critical decisions. A critical decision is a treatment/management question that the emergency physician faces or should consider when presented with a similar situation or clinical problem. The unique quality of our publication hinges on this element. Please keep the questions on the short side.

### Example of a Critical Decisions section

- What are the subtypes of cellulitis, and how do their treatment regimens differ?
- What are the types of NF, and when should NF be suspected?
- How can physical examination and imaging findings be used to evaluate SSTIs and NF?
- What are the optimal treatment options for NF?
- What are some commonly held myths and practice patterns with SSTIs?

## Introduction

Each lesson begins with an introduction that sets the stage for the content to come. It may introduce:

- The “problem” or clinical need that the lesson is intended to address.
- Why the practicing emergency physician should consider adopting the new information/modality/technology into practice.

### Example of Introduction

Skin and soft tissue infections (SSTIs) contribute to more than 2 million emergency department visits annually.<sup>1</sup> SSTIs encompass a spectrum of conditions, ranging from simple abscesses to NF.<sup>2</sup> The 2014 practice guidelines from the Infectious Diseases Society of America (IDSA) help to categorize these conditions into two major categories — purulent and nonpurulent infections. Purulent infections include a range of abscesses, but this lesson instead focuses on the nonpurulent infections cellulitis and NF.<sup>3</sup> Given the frequency and potential severity of these conditions, it is of the utmost importance for emergency physicians to recognize cellulitis and NF and respond appropriately.

NF is a rarer illness to encounter in the emergency department, but it has a much higher mortality and morbidity in comparison to other SSTIs, with mortality rates exceeding 30%.<sup>4-6</sup> NF affects about 0.4 in every 100,000 people per year in the United States; in some areas of the world, NF is as common as 1 in every 100,000 people.<sup>7,8</sup> Thus, diligent physicians must maintain a high index of suspicion for patients presenting with findings concerning for NF, and they must be acutely aware of the immediate steps to care for these patients.

## Case Presentations (3 cases)

The case presentations, which follow the introduction, present the reader with a clinical situation related to the content of the lesson. The cases should heighten readers’ attention and serve as a springboard for the text to follow. The cases should be written in present tense, be brief, be relevant, and leave the reader with an “unresolved” situation (the case resolutions will appear later in the lesson). For style consistency (ACEP uses the *AMA Manual of Style*), we ask that you:

- Use mL instead of cc;
- Use ECG instead of EKG;
- Provide temperature in Celsius (°C) and Fahrenheit (°F);
- Always spell out emergency department, emergency physician, examination, and laboratory;
- Use generic names rather than brand names for drugs and equipment.
- When mentioning vital signs, write them like this: “Her vital signs are BP 148/92, P 105, R 22, and T 36.8°C (98.2°F); SpO<sub>2</sub> is 99% on room air.”

### Examples of a Case Presentations section

#### ■ CASE ONE

An ill-appearing elderly man from a nearby skilled nursing facility presents via EMS. The patient was in his usual state of health before he slowly became more lethargic and confused until he was no longer speaking coherently. Upon review of his records, the patient has a history of insulin-dependent type 2 diabetes mellitus complicated by bilateral below-knee amputations, hypertension, and coronary artery disease with cardiac stents. His vital signs are notable for tachycardia, hypotension, and confusion. While beginning initial resuscitation with crystalloids and broad-spectrum antibiotics, the secondary survey of the fully undressed patient reveals warm, necrotic-appearing tissue with crepitus in the perineum.

#### ■ CASE TWO

A 32-year-old woman presents with a 1-week history of an increasingly painful and enlarging patch of redness on her lower left leg. She has no significant medical history but is concerned because her leg started to swell. She asks for antibiotics. Her examination reveals normal vital signs and a warm, poorly demarcated 4 × 5 cm area of erythema on her lower left leg without fluctuance. Subcutaneous “cobblestoning” is noted on bedside ultrasound without any focal hypoechoic or anechoic region.

#### ■ CASE THREE

A 25-year-old man presents with complaints of severe lower right leg pain but is still able to ambulate. He has no significant medical history and is angry about his long wait time. He states that he took several tablets of acetaminophen and codeine from a friend, which has not helped his symptoms. The physical examination of his lower extremities is unrevealing, but needle marks are noted on the patient’s arms. When questioned, he admits to frequent intravenous drug use.

# Author Guidelines (continued)

## Body of Lesson

The body of the lesson contains the information on the lesson topic. Headings (in bold) and subheadings (in italic) should be used to differentiate among the sections within the body of the lesson.

The main sections contain the header “Critical Decision” followed by the question presented at the first of the document. The question should match the initial question it mirrors exactly. Additional headers underneath each Critical Decision section are fine. Please note that these headings and subheadings should *not* be questions.

### Example of Critical Decision in the lesson body

#### **CRITICAL DECISION**

**What are the subtypes of cellulitis, and how do their treatment regimens differ?**

Cellulitis is a nonpurulent bacterial infection of the skin involving the dermis and subcutaneous layers.<sup>3,9</sup> More than 14 million cases of cellulitis are seen annually.<sup>10</sup> The most recent available data from 2005 show nearly 3.5 million emergency department visits for cellulitis.<sup>11</sup> Cellulitis commonly presents with erythema, swelling, warmth, and tenderness over the affected area (*Figure 1*). The culprit bacteria often enter the skin at areas of compromised integrity. The lower legs are commonly affected.<sup>3</sup> Nonpurulent SSTIs are categorized as mild, moderate, and severe. The treatment for each category ranges from oral to varying degrees of parenteral antibiotics.

## Case Resolutions

The case resolution describes the management of the clinical situation introduced earlier in the case presentation, reinforcing precepts presented in the lesson.

### Example of a Case Resolution section

#### ■ CASE ONE

In addition to empiric linezolid and piperacillin-tazobactam, clindamycin was ordered along with an immediate urology and surgery consultation due to high clinical concern for Fournier gangrene. The elderly man remained hypotensive and encephalopathic after fluid resuscitation, and he required vasopressors for hemodynamic support. Due to the extent of tissue necrosis throughout the perineum, he was immediately taken to the operating room for surgical exploration and debridement. After a prolonged ICU stay requiring repeated debridements, the patient was able to return to his skilled nursing facility after 3 weeks.

#### ■ CASE TWO

The 32-year-old woman’s examination findings were concerning for simple cellulitis. Upon further discussion, she revealed that she frequently shaves

her legs and often gets small cuts and abrasions from her razor. Given her lack of medical comorbidities and normal vital signs, neither laboratory studies nor additional imaging was indicated. She was discharged home with a 5-day course of cephalexin and instructions to follow-up with her primary care physician that week. Ultimately, she demonstrated improvement and resolution without any further issues.

#### ■ CASE THREE

Due to concern for drug-seeking behavior and malingering, the 25-year-old man was discharged without any further workup or treatment. Approximately 5 hours later, the same man presented via EMS after being found unresponsive on a sidewalk 1 mile from the hospital. EMS did not notice anything suspicious at the scene but states that he groaned whenever they tried to stimulate him. His vital signs were notable for tachycardia, hypotension, and a Glasgow coma scale score of 8. Due to his rapid clinical decline, the man was intubated, resuscitated, and stabilized, and broad-spectrum antibiotics were given.

While performing the secondary survey, the nurse noted scattered bullae throughout his lower right extremity and edema that was not present on his prior presentation. The patient was not deemed stable enough for imaging studies, and surgery was consulted due to concern for NF. He was immediately taken to the operating room for debridement. In the operating room, the diagnosis of NF was confirmed. During the next week, the patient required prolonged intubation due to vasopressor requirements and septic shock, and the decision was eventually made to amputate his leg given the extensive tissue loss. After a 4-week hospital stay, he was discharged to a rehabilitation facility.

## Summary of Lesson

The summary should provide the reader with a synthesis of the information contained in the lesson. Reference to the lesson’s objectives may be helpful because the objectives identify the content that is important for the reader to know.

### EXAMPLE — Summary of Lesson

Cellulitis and NF refer to a broad spectrum of illnesses. The diagnosis of these conditions is greatly aided by careful physical examination, appropriate imaging, and clinical gestalt to guide appropriate treatment options and disposition. Given the high mortality for NF, expedited diagnosis, treatment, and disposition should be prioritized as much as possible. If the patient’s history, physical examination, and risk factors are highly suspicious for NF, then rapid support of the patient with early broad-spectrum antibiotics and surgical consultation for operating room exploration and ICU monitoring are warranted.

## Pearls and Pitfalls

These should refer specifically to the objectives and critical decisions (3 or 4 pearls and 3 or 4 pitfalls). They are brief, specific, cutting-edge tips consisting of special information that you would share with colleagues who already know the basics; they should reinforce the new information or important facts presented in the lesson.

### Examples of Pearls

- The only way to rule out NF is through surgical exploration of the fascia; no imaging modality or laboratory test has enough negative predictive value.
- In simple cellulitis without MRSA risk factors, there is no clinical benefit in supplementing standard streptococcal coverage with the addition of TMP-SMX.
- NF may present in a variety of patient populations, ranging from young and healthy to elderly with comorbidities, especially given the range of causative bacteria and routes of introduction.
- The mainstay of NF treatment is appropriate broad-spectrum antibiotic coverage, including clindamycin for toxin suppression, linezolid for toxin synthesis, or vancomycin for MRSA, and piperacillin-tazobactam.

### Examples of Pitfalls

- Failing to perform an extensive skin examination, including the sacrum and perineum, especially on altered or sick patients exhibiting appropriate concern for pain out of proportion to examination.
- Believing that all simple cellulitis requires MRSA coverage, even if the patient lacks specific risk factors or signs of systemic illness.
- Relying on laboratory work, imaging studies, or physical examination findings to rule out NF.

## References

Please cite text in the lesson with superscript numbers. List the references numbered in the order they appear in the lesson. Reference citations in the lesson should be checked carefully for accuracy through each draft. Please do not go overboard with references. In most cases, 25 should be sufficient for a lesson.

**NOTE:** Please do not use automatically formatted footnote programs such as Endnotes (they do not translate into our publishing software).

## Additional Readings (optional)

Annotated additional readings, listed alphabetically, may be included after the references.

## CME Questions

Each lesson should contain 12 multiple choice questions from which 10 will be selected for publication. At least three of the questions should be case-based. **Highlight the correct answer choice.** Include 3-4 sentences that justify the **CORRECT** answer choice, plus 2-3 sentences that explain why **EACH** FOIL is incorrect.

Multiple choice questions should be in the form of a question. Each multiple choice question should be followed by four plausible foils, which should be alphabetized, disregarding “a,”

“an,” and “the.” Foils such as “all of the above” and “none of the above” are not appropriate. There should be one (and only one) clear, correct answer.

Questions should be framed to focus positively, rather than negatively, on key information. Do not use constructions such as “All of the following are correct except:” or “Which of the following is not an appropriate treatment.”

Every question should be from the lesson. If the answer cannot be found in the lesson, rework or rewrite the question. You can also choose to flesh out the lesson with additional information so that the question is covered by the body of the lesson.

### Example of a CME Question

What is the most common bacterial pathology associated with necrotizing fasciitis?

- A. Anaerobic organisms
- B. Group A *Streptococcus*
- C. Polymicrobial organisms**
- D. *Staphylococcus aureus*

Why is C the correct answer?

- Polymicrobial NF (type I) is the most common. Polymicrobial infection involves both anaerobic and aerobic organisms (eg, *Clostridium*, *Bacteroides*, and *Peptostreptococcus*) in the former group and Enterobacteriaceae family members and *Staphylococcus aureus* in the latter group.

Why are the other choices wrong?

- In general, monomicrobial (type II) NF is less common (10%-15%); it most commonly involves group A streptococci (the “flesh-eating bacteria”) and may be complicated by toxic shock syndrome.
- The most common type of NF is polymicrobial (type I), which involves both anaerobic and aerobic organisms.
- *Staphylococcus aureus* is a common bacteria noted in NF, but it is neither the most common nor the only culprit.

**NOTE:** Please remember to include brief explanations for **ALL** answer choices, and clearly mark the correct answer for each question by highlighting the correct answer.

## Optional Lesson Components

Anything that will make your lesson more interesting or graphically represent important content is encouraged.

## FIGURES OR TABLES

Figures and tables should be used 1) to enhance the visual interest of the lesson, 2) to summarize or condense important points, and 3) to concisely represent relationships. Because these elements are processed separately from the text of your lesson, please do not embed tables or figures into the text. Place each one at the end of the lesson, on a separate page. Be sure to cite the tables or figures in the text and number them sequentially. Provide a succinct caption for each.

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rights. Please email the CDEM editorial staff at [jcarrico@acep.org](mailto:jcarrico@acep.org) for assistance. Include high resolution copies of photos along with your manuscript.

### **ORIGINAL ARTWORK (PHOTOS, X-RAYS, ECGS, ETC.)**

- Artwork is at your expense unless preapproved by ACEP.
- Digital images suitable for high-quality commercial printing are preferred. File formats accepted are: TIFF, EPS, and PDF (Photoshop PSD and Illustrator AI are preferred with all fonts converted to outlines).
- Digital image resolution should be at least 300 dpi.
- If there are recognizable individuals in the images, it is your responsibility to obtain a release from those individuals.
- Provide all images separately in the email, rather than embedding them in the Word file.

### **MDCALC**

We've partnered with MDCalc to help make it easier for readers to access the calculators and clinical decision rules relevant to each lesson. We encourage you to explore [mdcalc.com](http://mdcalc.com) or download the iOS or Android app, where you can filter your search by disease, specialty, chief complaint, organ system, or function. Please make note of any relevant tools that can be integrated into your final article with embedded links.

### **REFERENCE FORMAT**

- References should be cited in the text by consecutively numbered superscripts. The reference numbers should be typed as superscript numbers — not in parentheses — at the end of the appropriate sentence within the text.
- References listed at the end of the lesson should be numbered according to the sequence in which they are cited in the text. Please don't use the list function in Word. Instead, type the numbers 1, 2, 3, etc. before each reference, followed by a tab character.
- The reference list should include readily accessible publications (Index Medicus retrievable). Please include all the information as described in the examples.

### **Examples of References**

#### **• Journal and Magazine**

— Author(s) Last Name and Initials. Article title. *Name of Journal in Italic*. Year of publication;Volume(Issue number if journal is not consecutively numbered within a volume):Page numbers.

— Williams ME. Endocrine crises: hyperkalemia. *Crit Care Clin*. 1991;7:155-174.

#### **• Book**

— Author(s) Last Name and Initials. *Book Title in Italic*. Publisher; Year of publication.

— Polsky S. *Continuous Quality Improvement in EMS*. American College of Emergency Physicians; 1992.

#### **• Book Chapter**

— Chapter Author(s) Last Name and Initials. Chapter title. In: Editor(s) Last Name and Initials, ed(s). *Title of Book in Italic*. Publisher; Year of publication:Page numbers.

— Lehnortt DA. Government and private payer trends. In: Bishop MD, ed. *Optimizing Revenues Through Effective Reimbursement Strategies*. 2nd ed. American College of Emergency Physicians;1991:29-51.

#### **• Newsletter References**

— Author(s) Last Name and Initials. Title of article. *Newsletter Name in Italic*. Year;Volume (Number, if applicable):Page numbers.

— Bonds RG. Some inside information on recruiting physicians. *Mod Healthcare*. 1992;3:54-56.

#### **• Websites**

— Author(s) Last Name and Initials. Article title. *Name of Journal in Italic [online text]*. Year of publication or revision, if known. Accessed Month, day, year. URL

— Bush SP. Spider envenomations, widow. *EMedicine [online text]*. 2003. Accessed April 29, 2004. <http://www.emedicine.com/emerg/topic546.htm>

NOTE: If you have reference format questions not covered above, please refer to the *American Medical Association Manual of Style*.

**Thank you in advance for your hard work and contribution  
to emergency medicine education.**

### **QUESTIONS?**

**Contact Joy Carrico, managing editor  
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