Intra-Abdominal Infection Guideline Updates

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Diagnosis and Treatment of Intra-Abdominal Infections is complex and has evolved substantially over many years with multiple society guidelines and updates

Prior Guidelines

1. Bohnen JM, Solomkin JS, Dellinger EP, Bjornson HS, Page CP. Guidelines for clinical care: anti-infective agents for intra-abdominal infection. A Surgical Infection Society policy statement. Archives of surgery (Chicago, Ill : 1960) 1992;127(1):83-9; discussion 89.

2. Mazuski JE, Sawyer RG, Nathens AB, Dipiro JT, Schein M, Kudsk KA, Yowler C. The Surgical Infection Society Guidelines on Antimicrobial Therapy for Intra-Abdominal Infections: An Executive Summary. Surg Infect (Larchmt) 2002;3(3):161-173.

3. Solomkin JS, Mazuski JE, Bradley JS, Rodvold KA, Goldstein EJC, Baron EJ, O'Neil PJ, Chow AW, Dellinger EP, Eachempati SR, Gorbach S, Hilfiker M, May AK, Nathens AB, Sawyer RG, Bartlett JG. Diagnosis and management of complicated intra-abdominal infection in adults and children: guidelines by the Surgical Infection Society and the Infectious Diseases Society of America. Surg Infect (Larchmt) 2010;11(1):79-109.

Guideline Procedures Getting More and More Complicated

PICO questions:

- **P**opulation
- **I**ntervention
- **C**omparison
- **O**utcome

GRADE evidence:

Balance between desirable and undesirable effects, Quality of evidence, Values & preferences, Cost, Strength of recommendation.

GRADE

Quality of Evidence

- High quality
- Moderate quality
- Low quality
- Very low quality

Strength of recommendation

- Strong for - Recommends
- Weak for - Suggests
- Weak against - Suggests
- Strong against - Recommends

IDSA Started on the IAI Update in 2015

- At one point had over 30 PICO questions being developed and researched.
- Very slow process!!

First Publication OnLine, Oct 4, 2024

Bonomo RA, Chow AW, Edwards MS, Humphries R, Tamma PD, Abrahamian FM, Bessesen M, Dellinger EP, Goldstein E, Hayden MK, Kaye K, Potoski BA, Baño JR, Sawyer R, Skalweit M, Snydman DR, Pahlke S, Donnelly K, Loveless J.
2024 Clinical Practice Guideline Update by the Infectious Diseases Society of America on Complicated Intra-abdominal Infections: Risk Assessment, Diagnostic Imaging, and Microbiological Evaluation in Adults, Children, and Pregnant People. Clinical infectious diseases 2024.

Online: One long paper with 8 different detailed PICO questions & GRADE recommendations and separate shorter papers with each one.

Risk Stratification

In adults and children with complicated intra-abdominal infection, which severity of illness score for risk stratification calculated within 24 hours of hospital or ICU admission best predicts 30-day or in-hospital mortality?

Panel suggests APACHE II

WSES (World Society of Emergency Surgery) Sepsis Severity Score is an acceptable alternative

Appendicitis Imaging

In **adults** with suspected acute appendicitis, should US, CT, or MRI be obtained as the initial imaging modality?

Panel suggests obtaining an abdominal CT as the initial imaging modality to diagnose acute appendicitis

Appendicitis Imaging

In children or pregnant persons with suspected acute appendicitis, should US, CT, or MRI be obtained as the initial imaging modality?

Panel suggests start with US and move to MRI or CT if US equivocal for children or MRI for pregnant person

Cholecystitis Imaging

In adults with suspected acute cholecystitis or acute cholangitis, should abdominal ultrasound (US) or CT be obtained as the initial imaging modality?

Panel suggests start with US and move to MRI or CT if US equivocal. If concerned for cholangitis panel suggests MRI/MRCP or HIDA scan.

Diverticulitis Imaging

In adults with suspected acute diverticulitis, should CT, US, or MRI be obtained as the initial imaging modality?

In non-pregnant adults with suspected acute diverticulitis, the panel suggests obtaining an abdominal CT as the initial diagnostic modality. For pregnant pts US or MRI

Abscess Imaging

In adults with suspected acute intra-abdominal abscesses, should abdominal US or CT be obtained as the initial imaging modality?

Panel suggests obtaining an abdominal CT as the initial diagnostic imaging modality.

When CT is obtained, the use of intravenous contrast may improve visualization of the abscess wall. Because of CT's accuracy, immediate additional imaging studies beyond CT are usually not necessary.

Blood Cultures

- In adults and children with known or suspected intra-abdominal infection (uncomplicated or complicated), should blood cultures be obtained to effect a meaningful change in antimicrobial therapy?
- In adults and children with suspected intra-abdominal infections who have an elevated temperature AND: hypotension and/or tachypnea and/or delirium, OR there is concern for antibiotic-resistant organisms that would inform the treatment regimen, the panel suggests obtaining blood cultures

Abdominal Fluid Cultures

- In adults and children with known or suspected intra-abdominal infection (uncomplicated or complicated), should cultures of intra-abdominal fluid be obtained to effect a meaningful change in antimicrobial therapy?
- In adults and children with complicated intra-abdominal infection who are having a procedure for source control, the panel suggests obtaining intra-abdominal cultures to guide antimicrobial therapy

Published as of 10/5/24

1. Bonomo, et al. 2024 Clinical Practice Guideline Update by the Infectious Diseases Society of America on Complicated Intra-abdominal Infections: Utility of Blood Cultures in Adults, Children, and Pregnant People. CID 2024;79 (Suppl 3):S118-S122.

2. Bonomo, et al. 2024 Clinical Practice Guideline Update by the Infectious Diseases Society of America on Complicated Intra-abdominal Infections: Diagnostic Imaging of Suspected Acute Appendicitis in Adults, Children, and Pregnant People. CID 2024;79 (Suppl 3): S94-S103.

3. Bonomo, et al. 2024 Clinical Practice Guideline Update by the Infectious Diseases Society of America on Complicated Intra-abdominal Infections: Diagnostic Imaging of Suspected Acute Intra-abdominal Abscess in Adults, Children, and Pregnant People. CID 2024;79 (Suppl 3): S113-S117.

4. Bonomo, et al. 2024 Clinical Practice Guideline Update by the Infectious Diseases Society of America on Complicated Intra-abdominal Infections: Risk Assessment in Adults and Children. CID 2024;79 (Suppl 3): :S88-S93.

Published as of 10/5/24

5. Bonomo, et al. 2024 Clinical Practice Guideline by the Infectious Diseases Society of America on Complicated Intra-abdominal Infections: Utility of Intra-abdominal Fluid Cultures in Adults, Children, and Pregnant People. CID 2024;79 (Suppl 3):):S123-S126.

6. Bonomo, et al. 2024 Clinical Practice Guideline Update by the Infectious Diseases Society of America on Complicated Intra-abdominal Infections: Diagnostic Imaging of Suspected Acute Cholecystitis and Acute Cholangitis in Adults, Children, and Pregnant People. CID 2024;79 (Suppl 3):S104-S108.

7. Bonomo, et al. 2024 Clinical Practice Guideline Update by the Infectious Diseases Society of America on Complicated Intra-abdominal Infections: Diagnostic Imaging of Suspected Acute Diverticulitis in Adults and Pregnant People. CID 2024;79 (Suppl 3 :S109-s112.

8. Bonomo, et al. 2024 Clinical Practice Guideline Update by the Infectious Diseases Society of America on Complicated Intra-abdominal Infections: Risk Assessment, Diagnostic Imaging, and Microbiological Evaluation in Adults, Children, and Pregnant People. CID 2024;79 (Suppl 3):S81-S87.

More Coming Sometime in the Future

7 more empiric therapy and stewardship guideline questions

and

6 surgical source control guideline questions

and

3 other antimicrobial guidance questions

New IDSA Guideline Policy

IDSA said splitting guideline updates into parts is a new publishing model that will allow individual guidelines to be updated and released more quickly, ahead of publication of the full guideline.

A New Era of Targeted Clinical Guidelines: Launching the IDSA Guidelines Supplement. Shrestha NK, Heald JL, Pahlke S, Demisashi G, Weissman S. CID 2024; 79: Suppl 3: S77-80. https://doi.org/10.1093/cid/ciae404

IDSA PICO Prioritization Process

- Distinguish between questions for guidelines vs guidance.
- Develop a prioritized list of PICO questions within each guideline topic.
- Develop a single prioritized list of PICO questions across all IDSA guideline topics.

CLINICAL PRACTICE GUIDELINES

Clinical practice guidelines ("guidelines") are informed by a systematic review of the available evidence and use the GRADE process to develop evidence-based recommendations to assist practitioners and patients in making decisions about appropriate health care for specific clinical circumstances.

CLINICAL GUIDANCES

Clinical guidances ("guidance") are developed based on a comprehensive (but not necessarily systematic) review of the available evidence, coupled with the experience of clinical and research experts on the topic. They do not include a formal grading of the evidence. Over time and under certain circumstances, IDSA clinical guidance documents may be transitioned to clinical practice guideline.

Guideline vs. Guidance Criteria in Development

Not pursued *(at least one applies)*	Guidance *(at least one applies)*	Guideline ***(all should apply)***
Not aligned with IDSA's portfolio strategy	Important but not of high priority	Aligned with IDSA's portfolio strategy
Already answered in another trustworthy guideline	Not defined in PICO format	Not already answered in another trustworthy guideline
Practice is already well-established	No sufficient evidence *(based on panelists best guess/ judgment or literature search)*	Practice is not well-established
Low priority		High priority
		Well-defined in PICO format
		Sufficient evidence *(based on panelists best guess/ judgment or literature search)*

Empiric Therapy and Stewardship Questions

PICO 12. In adults and children with intra-abdominal infection (cIAI), which **empiric antibacterial regimen** (including route and duration) should be selected to initially treat infection (optimizing treatment success/failure, while considering antimicrobial stewardship) and reduce mortality and septic shock?

PICO 13a. In adults and children with IAI, should we empirically treat with therapy active against **Pseudomonas aeruginosa** vs. not empirically treat with therapy active against Pseudomonas aeruginosa?

PICO 13b. In adults and children with IAI, should we empirically treat with therapy active against **Enterococcus** vs. not empirically treat with therapy active against Enterococcus?

PICO 14. In adults and children with IAI, should we empirically treat with therapy active against ***Candida*** vs. not empirically treat with therapy active against *Candida*?

PICO 15. In adults and children with IAI, should we empirically treat with therapy active against **MRSA** vs. not empirically treat with therapy active against MRSA?

PICO 16. In adults and children with IAI, which patients should be empirically treated with antibiotic regimens active **against ESBL-producing Enterobacterales** (i.e., risk factors for ESBL-producing Enterobacterales infection)?

PICO 17. In adults and children with IAI, which patients should be empirically treated with antibiotic regimens active against **carbapenem-resistant Enterobacterales** intra-abdominal infections (i.e., risk factors for carbapenemresistant Enterobacterales infection)?

Surgical Source Control Questions

PICO 27a. In patients with **sigmoid diverticulitis**, should/can we treat with antimicrobial therapy alone vs antimicrobial therapy and source control combined?

PICO 27b. In patients with **hepatic abscesses**, should/can we treat with antimicrobial therapy alone vs antimicrobial therapy and source control combined?

PICO 27c. In patients with **non-hepatic intra-abdominal abscess, s**hould/can we treat with antimicrobial therapy alone vs. antimicrobial therapy and source control combined?

PICO 28. In adults and children with **uncomplicated appendicitis**, should/can we treat with antimicrobial therapy alone vs antimicrobial therapy and source control combined?

PICO 29. In adults and children with intra-abdominal abscess, is **image-guided (ultrasound or CT) percutaneous drainage** as effective as surgical drainage (laparoscopic or open)?

PICO 30. In adults and children with severe, diffuse peritonitis treated initially with exploratory laparotomy and source control, is there benefit to **repeat, planned relaparotomy** every 36-48 hours until the peritonitis is clearly improving and no further source control is needed?

ADDRESS AS GUIDANCE

PICO 19. In adults or children with complicated community-acquired(non-hospital associated/acquired) IAI where source control is notachieved, what is the impact of **duration** (appropriate duration) of antimicrobials (short- vs. long-term) on outcomes?

Rationale: This is a broad and complex question considering how long to treat when there is and is not source control, how long to treat in the case ofabscess, and what may trigger a stop in therapy.

PICO 25. For which patients with IAI does **serial procalcitonin** provide useful information for duration of antibiotic therapy?

Rationale: We are unlikely to find direct, comparative studies on the use of serial procalcitonin in patients with IAI. Summarize indirect evidence and offer expert opinion.

PICO 26. In patients with confirmed or suspected IAI involving a fungal pathogen, do **beta-D-glucan or Candida nucleic acid amplification tests** provide useful information for the duration or discontinuations of antifungal therapy?

Rationale: These tests are not readily available in a timely manner in many hospitals, which makes recommendations problematic. There also are not likely to be sufficient data available for a GRADE process analysis.

Also – New Surgical Infection Society (SIS) Intra-Abdominal Infection Guideline

Huston JM, Barie PS, Dellinger EP, Forrester JD, Duane TM, Tessier JM, Sawyer RG, Cainzos MA, Rasa K, Chipman JG, Kao LS, Pieracci FM, Colling KP, Heffernan DS, Lester J. The Surgical Infection Society Guidelines on the Management of Intra-Abdominal Infection: 2024 Update. Surg Infect (Larchmt) 2024. DOI: 10.1089/sur.2024.137.

I am happy to share the slides and/or answer additional questions online if you think of something after we're done.

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