Health Policy Review

BMJ Publications on Interventional Techniques Do Not Meet Appropriateness Criteria of Conducting a Rapid Review: A Comprehensive Review

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Background: A recent surge of publications on interventional techniques has questioned their effectiveness, based on a rapid review and network meta-analysis of randomized trials. This was followed by releasing a clinical practice guideline recommending a global ban on these techniques. Understandably, such recommendations have raised significant concern worldwide. Interventional techniques are widely used in chronic pain management, yet their effectiveness has been debated, with longstanding concerns about overuse, misuse, fraud, and abuse.

Objectives: To provide a comprehensive review and critical analysis of the *BMJ* rapid reviews and associated guidelines, with particular attention to the application—or absence—of basic appropriateness criteria published in the same journal, and the improper incorporation of such evidence into guideline recommendations.

Methods: A review of the available literature was conducted to assess the appropriate criteria for rapid reviews and guideline development.

Results: The absence of established appropriateness criteria led to an inadequately conducted rapid review and poorly developed guidelines. These, in turn, resulted in sweeping, globally applicable recommendations that lack a sound evidentiary basis.

Conclusion: A thorough examination of *BMJ* publications and related literature demonstrates that the BMJ's rapid reviews and subsequent guidelines on interventional techniques fail to meet recognized appropriateness criteria for conducting rapid reviews and developing consequential clinical guidelines based on such reviews.

Key words: Interventional techniques, low back pain, neck pain, lumbar radiculopathy, cervical radiculopathy, epidural injections, facet joint interventions, sacroiliac joint interventions

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"There you go again", a phrase famously spoken by Republican presidential candidate Ronald Reagan to incumbent President Jimmy Carter during the second presidential debate of 1980, has been used in many contexts. It is fitting to apply it here to the recent *BMJ* publications on interventional techniques, which, in effect, recommend eliminating the entire specialty of interventional pain management worldwide. These recommendations are based on an inappropriately conducted rapid review characterized by poor methodological rigor and apparent conflicts of interest, culminating in the publication of guidelines (1-3).

The cornerstone of this series was a systematic

review and network meta-analysis of randomized trials evaluating standard interventional procedures for chronic noncancer spine pain (1). This highly complex, often tangential, and largely difficult-to-follow document spans a compact 15-page main text with 78 references, supplemented by 205 pages of appendices containing 65 tables (only one of which appears in the main text) and 12 figures (7 in the appendix, 5 in the main text). The volume and disjointed presentation of material left many readers struggling to connect the text, figures, and tables.

The authors reported selecting randomized controlled trials (RCTs) comparing commonly used interventional procedures with sham procedures, usual care, or other interventional techniques. Of 132 eligible studies, 81 RCTs involving 7,977 patients and 13 interventional procedures (or combinations thereof) were included in the meta-analysis. While the authors performed an appropriate methodological assessment, this evaluation was not meaningful to the evidence synthesis.

Their conclusion, that the network meta-analysis provided low-to-moderate-certainty evidence suggesting that, compared with sham procedures, commonly performed interventional techniques for axial or radicular chronic noncancer spinal pain may offer little to no relief, was flawed. Notably, only four studies involved epidural steroid injections versus sham procedures, and only three studies examined dorsal root ganglion radiofrequency versus sham, a rarely performed intervention. This selective evidence base undermines the validity of their sweeping conclusion.

Relying on this inadequately executed rapid review, the same authors published guidelines calling for a global ban on interventional techniques (2). This was followed by an editorial (3) posing whether negative findings necessitate immediate action.

Chronic Pain

The overwhelming majority of interventional techniques addressed in the guidelines (1,2) would, if implemented, eliminate nearly all procedural options for chronic pain management. Chronic pain is highly prevalent and is associated with significant disability and substantial healthcare expenditures (4-15).

According to a recent report from the Centers for Disease Control and Prevention (CDC) on chronic pain among U.S. adults (4), 24.3% of adults experienced chronic pain in the past year, with 8.5% reporting high-impact chronic pain. This reflects an increase from 2021, when prevalence was estimated at 21% for chronic pain and 6.9% for high-impact chronic pain (4). Annual United States (U.S.) expenditures related to pain, encompassing direct medical costs and lost wages, may exceed the combined costs of cancer, heart disease, and diabetes (5). Dieleman et al (6) described that low back and neck pain represent the leading category for healthcare spending in the U.S. Despite substantial investments and various cost-control measures, disability associated with chronic pain continues to rise (16,17).

Among the interventional techniques most frequently employed for chronic spinal pain are epidural procedures, facet joint interventions, and sacroiliac joint interventions (13-28). Utilization trends have fluctuated considerably, with periods of rapid growth followed by notable declines, most recently, a 28.9% reduction in Medicare patient utilization between 2019 and 2022. In the U.S., multiple guidelines have been issued by Medicare and other payers to encourage appropriate utilization and curb inappropriate or unnecessary interventions (29-34). Nevertheless, overall healthcare spending continues to climb.

Supporters of interventional pain management cite extensive evidence demonstrating the clinical and cost-effectiveness of these procedures, including data from RCTs, systematic reviews, cost-utility analyses, real-world evidence, and clinical practice guidelines (4,12-44). However, the field remains divided: critics question the efficacy of many of these interventions, while proponents contend that negative conclusions often stem from flawed evidence synthesis and conflicts of interest (4,16,17,45-51).

Rules of Evidence Synthesis and Recommendation

In evidence synthesis, systematic reviews are conducted, and guidelines are developed by integrating the findings from these reviews and multiple other considerations (13-18,45,52-76). A systematic literature review compiles and evaluates all available studies on a specific topic, offering a high level of evidence. To ensure quality and objectivity, authors of systematic reviews must follow a predetermined plan that includes defining the research question a priori, identifying the sources to be searched, applying clear inclusion criteria to select relevant studies, and outlining the methodology for summarizing the findings (52-76).

The rigor and transparency inherent to systematic reviews are intended to make them the most reliable form of literature review, providing a comprehensive and objective summary of the evidence for a given topic

(52-70). However, the process is resource-intensive, tedious, and time-consuming, and despite these efforts, the validity and value of systematic reviews have been questioned (13-17,45-57,71).

Similarly, guideline development requires additional steps beyond the systematic review process, making it equally resource-intensive and methodologically demanding (55-79). Numerous established frameworks exist for developing guidelines and validated instruments for evaluating their quality (55-57). Among these, the Institute of Medicine (IOM) standards (52,56) for conducting systematic reviews and producing trustworthy guidelines are critical. These standards outline processes and steps to ensure systematic reviews and the resulting guidelines are methodologically sound and clinically appropriate (55-79).

Ongoing Discordance

Interventional pain management techniques have been in practice since 1901. Their utilization patterns have been extensively scrutinized, with numerous systematic reviews, often exceeding the number of RCTs, and multiple guidelines published over the years (13-25,45-51,80-87). Despite this extensive literature, discussions remain contentious, as evidenced by the ongoing publication of inappropriate guidance. This pattern dates back to 1995, when Koes et al (80) published the first systematic review of epidural injections, acknowledging that a local anesthetic injection may have specific therapeutic effects and should not be considered a placebo.

Chou et al (45,46) published a systematic review and meta-analysis as part of an Agency for Healthcare Research and Quality (AHRQ) technology assessment. In a subsequent critique, Manchikanti et al (47) demonstrated that the authors conflated facts with personal opinions and value-based judgments, leading to prejudicial conclusions unsupported by sufficient or rigorously examined evidence. Multiple methodological issues were also identified in their analysis.

Following this, Oliveira et al (48) published a Cochrane review on epidural injections for lumbar radiculopathy or sciatica. However, three subsequent evaluations (49-51) highlighted significant methodological flaws and biases in the Cochrane review process.

Despite these negative publications, originating from both a U.S. government-funded authority (AHRQ) (45) and Cochrane reviews (48), numerous Local Coverage Determinations, as well as official medical policies from Medicare, Medicaid, and commercial insurers, have continued to cover interventional techniques. Opposing viewpoints have also been repeatedly published (29-34).

In addition, a substantial body of evidence, including systematic reviews, guidelines, RCTs, and other evaluations (13-25,47,49-51,80-94), has been overlooked by these authors, further contributing to the persistent discordance in the interpretation and application of evidence surrounding interventional pain management techniques.

Rapid Literature Reviews

With the substantial increase in newly published data and the growing demand for timely analysis, rapid literature reviews have been proposed and widely used, or, in some cases, misused (53,54,95-107). Rapid reviews lack the methodological depth of full evidence synthesis, as specific components of the systematic review process may be omitted. Rapid reviews often employ restricted scopes and narrow search strategies to make the process more manageable within a shorter timeframe, aiming to reach conclusions quickly (54).

In their systematic review of the definition and methodology of rapid literature reviews, Smela et al (95) noted that a formal definition was only developed in 2021. Methodologically, rapid reviews are intended to be completed more quickly than systematic literature reviews, using streamlined procedures while maintaining transparency and minimizing bias. Core components should include a clearly defined research question, a documented search protocol, and a simplified but structured approach to study selection, data extraction, and quality assurance. However, no universal consensus remains on the formal definition or optimal methods for conducting rapid reviews. Evidence-based best practices are still evolving; further work is needed to establish robust and standardized approaches (95).

Multiple organizations, including *BMJ* (101) and Cochrane (103,104), have developed recommendations for rapid reviews. Notably, many of the same authors contribute across these initiatives, shaping ideology, protocols, appropriateness criteria, and quality assessment methods for systematic reviews and guidelines, often revising them over time. For example, various iterations of the Consolidated Standards of Reporting Trials (CONSORT) and Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines have been created to address different popula-

tions and incorporate principles of diversity, equity, and inclusion (DEI).

In Introduction to *BMJ Rapid Communications*, Siemieniuk et al (101) observed:

> "Find a committee. Add evidence, opinion, politics, and money in varying measures, and a murky set of recommendations can emerge."

BMJ's recent systematic review and guideline development fit this description closely. The same authors also noted:

> "To those on the outside, guideline production may seem like a black box, and, unless it is carefully and transparently managed, loss of trust, patient suffering, waste, and over and under-treatment can occur."

Unfortunately, these issues are evident in preparing the current *BMJ* guidelines.

Systematic reviews are most often performed using conventional meta-analysis or single-arm meta-analysis. In the case of active-controlled trials, other methods exist, including network meta-analysis, which remains insufficiently studied but was used in *BMJ*'s rapid review (1). Guidelines, however, must be developed in accordance with established standards. For interventional techniques, the standards set by the IOM and the National Guideline Clearinghouse Extent Adherence to Trustworthy Standards (NEATS) were followed (13-18,52-79).

The NEATS instrument, created and validated by trained staff at the AHRQ National Guideline Clearinghouse (NGC), evaluates guideline adherence to key standards (52,55,56). This ensures that guidelines meet the highest benchmarks for reliability and evidence-based practice. Guideline development also requires full disclosure of funding sources, financial conflicts of interest management, and appropriate selection of guideline panel members. Evidence review must include grading of the evidence, assessment of the methodological quality of systematic reviews, RCTs, and observational studies (when applicable), and grading of recommendation strength using the Grading of Recommendations, Assessment, Development, and Evaluation (GRADE) framework. Recommendations should be derived from both GRADE certainty ratings and NEATS assessments.

Finally, Introduction to *BMJ Rapid Communications* (101) disclosed that the rapid recommendation team from MAGIC (www.magicproject.org) was directly involved with *BMJ*, underscoring the close integration between these organizations in developing such guidelines.

Appropriateness of Conducting a Rapid Review

While the Introduction to *BMJ Rapid Recommendations*, developed in collaboration with MAGIC, was published in 2016 (101), the interim guidance for reporting rapid reviews did not appear until 2025 (102). Updated recommendations for Cochrane rapid review methods, specifically for effectiveness reviews, were released in 2024 (103), and guidance on assessing the appropriateness of conducting a rapid review (104) was not published until February 2025. Additional literature search guidance was issued in December 2023 (105).

In contrast, *BMJ*'s systematic review and network meta-analysis of randomized trials, accompanying guidelines, and editorial (1-3) were all published in early 2025, with acceptance on October 11, 2024. The submission date is unknown, but the data review appears to conclude in January 2023. As a result, the authors of these publications had no access to, and therefore could not have incorporated, the more recent methodological publications on the appropriateness and conduct of rapid reviews.

Stevens et al (102), which shares authorship with multiple other rapid review publications, explicitly recommend that rapid reviews include a comprehensive assessment and that authors indicate whether the findings warrant a full systematic review. In this case, the topic, interventional techniques, has already been the focus of numerous systematic reviews and guidelines, including those from primary sources such as Cochrane and AHRQ (45-48).

Garritty et al (103) provided updated recommendations for Cochrane rapid reviews in 2024, after the initiation of the *BMJ*'s review and guideline process. They emphasized that best practices should be "user-informed" and "evidence-informed" when applying abbreviated methods to rapid reviews. In this instance, however, there was no demonstrated need for a fast review on interventional techniques, and proper criteria for such a review were not met.

Further, Klerings et al (105), in their rapid review method series, offered literature search guidance that grants substantial discretion to review teams, suggesting they should select search approaches that "best fit their project" rather than prioritizing evidence transparency or the appropriateness of methodological

decisions. Without adherence to strict standards, this flexibility risks producing conclusions that lack methodological rigor and reliability.

Regardless of the indication, criteria, or scenario, the appropriateness of conducting a rapid review should be determined by the specific context and the urgency of the decision or inquiry, as outlined below (Table 1):

1. ***Urgent decision-making:***
   - Rapid responses are valuable when policymakers, healthcare providers, or public health authorities face urgent decisions, such as responding to disease outbreaks, natural disasters, or emerging health threats, and require evidence to guide immediate actions (108-114).

   BMJ publications: Do not meet the criteria.
   - They can also guide clinical care decisions by synthesizing available evidence for healthcare professionals who need timely information for direct, time-sensitive patient care (115-117).

   BMJ publications: Do not meet the criteria.

2. ***Informing guidelines:***
   - Rapid responses can inform the rapid development or updating of clinical practice guideline recommendations, ensuring that healthcare practices reflect the most current evidence (118-120).

   BMJ publications: Do not meet the criteria.

3. ***New or emerging technologies and interventions:***
   - Appropriate when evaluating evidence on recently introduced medical technologies, interventions, or diagnostic tools with potential clinical implications (121).

   BMJ publications: Do not meet the criteria.

4. ***Rapidly evolving research areas:***
   - Suitable for synthesizing up-to-date evidence in fast-moving fields such as infectious diseases, biotechnology, or digital health interventions (122).

   BMJ publications: Do not meet the criteria.

5. ***Identify evidence gaps:***
   - Useful for pinpointing areas where evidence is limited or absent, guiding future research priorities (123).

   BMJ publications: Do not meet the criteria.

6. ***Justify or inform new primary research:***
   - Appropriate when informing the design of new studies in situations with limited resources (124).

   BMJ publications: Do not meet the criteria.

7. ***Resource constraints:***
   - Valuable in low-resource settings or when timelines and funding are restricted, offering a concise but evidence-based alternative to a full systematic review (125).

   BMJ publications: Do not meet the criteria.

8. ***Time-sensitive opportunities:***
   - Expedites the provision of timely evidence to support proposals or initiatives in situations with critical deadlines, such as short-term

Table 1. *Appropriate & inappropriate criteria for rapid review.*

Appropriate Criteria for Rapid Review	BMJ Publications Do Not Meet Criteria	Lack of Appropriateness to Conduct a Rapid Review	BMJ Publications Meet Inappropriate Criteria
Urgent decision-making	X	Perception of ease	X
Informing guidelines	X	Quick publication	X
New or emerging technologies and interventions	X	Duplicative efforts	X
Rapidly evolving research areas	X	Academic purposes	X
Identify evidence gaps	X		
Justify or inform new primary research	X		
Resource constraints	X		
Time-sensitive opportunities	X		
Rapid precursor to systematic reviews	X		
Assist researchers and decision-makers	X		

funding opportunities or urgent policymaker requests (112).

BMJ publications: Do not meet the criteria.

9. ***Rapid precursor to systematic reviews:***
   - Can provide initial insights to determine whether a full systematic review is necessary to validate findings (104).

   BMJ publications: Do not meet the criteria.
   - This context-dependent approach should be guided by a specific research question.

   BMJ publications: Do not meet the criteria.

10. ***Assist researchers and decision-makers:***
    - Can help determine whether additional evidence gathering through systematic reviews or primary research is warranted, particularly when existing proof is scarce, outdated, or not directly applicable to the population or context.
    - May also support grant applications for systematic reviews or primary research.

    BMJ publications: Do not meet the criteria.

Lack of Appropriateness to Conduct a Rapid Review

In some situations, conducting a rapid review is not justified and may, be inappropriate. These include:

1. ***Perception of ease:***
   - When researchers lack sufficient experience conducting systematic reviews, they choose a rapid review simply because it is perceived as easier. In reality, rapid reviews can be equally, if not more, challenging, and researchers must be aware of the potential biases introduced by accelerated methods (126).

   BMJ publications: Meet the criteria for inappropriate conduct of a rapid review.

2. ***Quick publication:***
   - When the primary motivation for conducting a rapid review is to achieve quick publication, under the assumption that it requires less work, this approach can compromise the rigor and comprehensiveness of the review process. Concerns also arise when the decision is driven by cost-saving motives, despite the topic having significant clinical or policy implications that demand a thorough, evidence-based evaluation (126).

   BMJ publications: Meet the criteria for inappropriate conduct of a rapid review.

3. ***Duplicative efforts:***
   - When up-to-date, full systematic reviews exist on the specific topic, a rapid review may duplicate existing work without adding meaningful value to the evidence base.

   BMJ publications: Meet the criteria for inappropriate conduct of a rapid review.

4. ***Academic purposes only:***
   - When a rapid review is conducted solely for academic purposes, without immediate practical application, it should be avoided unless it is intended to address an evidence gap of urgent importance. Even in such cases, careful consideration should be given to whether a complete, comprehensive review would be more appropriate and reliable.

   BMJ publications: Meet the criteria for inappropriate conduct of a rapid review.

Discussion

Based on the above, it is evident that the present BMJ reviews and guidelines fail to meet the established criteria for conducting an appropriate rapid review and embody the very disadvantages described in Introduction to *BMJ Rapid Recommendations* (101). To paraphrase, these publications have taken a topic with no valid indication for a rapid review, intertwined it with the opinions and politics of different specialties, and produced a murky set of flawed recommendations.

Although the authors of these *BMJ* and MAGIC publications appear to have "clean" disclosures, the actual conflicts, or more accurately, the confluence of interest remain largely undisclosed. Conflicts or confluences of interest are critical considerations in any publication (52,127). While no overt financial conflicts are reported in these works, there is clear evidence of a significant confluence of interest.

The IOM (52,56) has extensively outlined the role of bias and conflicts of interest, emphasizing the need to minimize them. The IOM defines conflict of interest as "a set of circumstances that creates a risk that a secondary interest will unduly influence professional judgement or actions regarding the primary interest." While financial conflicts are well recognized, the IOM notes that secondary interests, such as pursuing professional advancement, securing future funding, gaining recognition, or

doing favors for colleagues, can equally compromise objectivity. Past examples have demonstrated the presence of such hidden conflicts not only among academicians but also within agencies that advise policymakers and prepare systematic reviews (128,129).

Similar, the Institute for Translational Medicine and Therapeutics (ITMAT) (127) has described confluence of interest as a complex ecosystem in which bias can be introduced through motivations beyond financial gain. They note that while disclosure policies traditionally focus on economic interests, the allure of fame or influence in academia may be even more compelling than monetary reward.

We strongly believe that the *BMJ* reviews and guidelines are substantially compromised by intellectual bias and undisclosed conflicts of interest, casting doubt on the credibility of both the publications and the organizations involved. For example, the senior author of the guidelines and systematic review, and the first author of the guidelines, Busse, has been involved in developing opioid guidelines that provoked widespread criticism internationally (13,130-132). These guidelines were controversial enough that the U.S. Department of Health and Human Services (HHS) appointed a special committee and issued coverage policies for interventional techniques, including opioid prescribing (132). The CDC subsequently revised its opioid guidelines multiple times before issuing an updated set, which continues to generate debate. Evidence suggests that these guidelines were based on misconceptions and did not produce measurable reductions in opioid-related deaths despite reduced prescribing (13,133,134).

In the case of the *BMJ* publications, it is worth note of the primary source of funding for the study was the Canadian Veteran Health Administration. As such health administration organizations highly prioritize cost containment of provided services, they cannot be completely devoid of bias toward limitation of provided services.

Furthermore, multiple authors are epidemiologists and physicians for whom interventional pain management constitutes only a minor component of their practice.

Taken together, we believe that issues related to confluence and of interest fundamentally undermine the validity of the *BMJ* reviews and guidelines.

The Cochrane Collaboration is a British-based international charitable organization dedicated to synthesizing medical research findings to support evidence-based decision-making by health professionals, patients, and policymakers (135). Although Cochrane has produced numerous reviews over the years, its presence in the U.S. was revitalized in the past decade by establishing the Cochrane U.S. Network (136).

Despite its reputation, the Cochrane Collaboration has faced multiple controversies concerning the value of its work, the quality of its systematic reviews, and potential biases within its processes (137-140). Among the many systematic reviews Cochrane has published on interventional techniques (48,141-144), the recent evaluation by Oliveira et al (48) on epidural injections has been particularly contentious. This publication has drawn criticism for potential systematic bias, inaccurate estimation of treatment effects, selective inclusion of studies in the literature review, and biased interpretation of the results from the studies analyzed (49-51,145,146). Publications from the AHRQ (45,46) have likewise faced similar criticisms (47).

Interventional pain management is a distinct specialty recognized by the Centers for Medicare and Medicaid Services (CMS) and all other payers in the U.S. It is "the discipline of medicine devoted to the diagnosis and treatment of pain related disorders principally with the application of interventional techniques in managing subacute, chronic, persistent, and intractable pain, independently or in conjunction with other modalities of treatment".

Interventional pain management techniques are defined as, "minimally invasive procedures including, percutaneous precision needle placement, with placement of drugs in targeted areas or ablation of targeted nerves; and some surgical techniques such as laser or endoscopic diskectomy, intrathecal infusion pumps and spinal cord stimulators, for the diagnosis and management of chronic, persistent or intractable pain"

Pain medicine training in the U.S. requires completing a one-year fellowship following board certification in an eligible specialty. This pathway entails approximately 4 years of undergraduate education, 4 years of medical school, 4 years of residency, and 1–2 years of fellowship training.

There are more than 7,000 board-certified physicians in pain medicine and interventional pain management in the U.S. In addition, an estimated 5,000 specialists from related fields—such as anesthesiology, physical medicine and rehabilitation, neurology, and interventional radiology, practice interventional pain management. Comparable regulatory and training standards exist in other countries.

Evidence-based medicine aims to apply the best

available evidence in determining clinical care for individual patients and populations. Achieving this requires reliable research data on the benefits and harms of specific interventions, actions, or strategies. Systematic reviews and meta-analyses are expected to synthesize high-quality research to guide these decisions (147,148). Importantly, identifying inappropriate or poor-quality research remains a critical function of systematic reviews, ensuring that flawed studies are not misrepresented as reliable evidence (149).

Multiple organizations contribute to evidence assessment through systematic reviews, meta-analyses, and, more recently, comparative effectiveness research.

The preceding discussion has outlined the appropriateness criteria for conducting a rapid review and the conditions under which such reviews are inappropriate. It further demonstrates that inappropriate rapid reviews should not be used as the basis for guideline development or publication.

Conclusion

The *BMJ* reviews (1-3) failed to meet the very criteria they themselves have established, producing inappropriate evaluations.

Author Contributions

The review was designed by LM, MRS, and ADK.

All authors contributed to the preparation of the article, reviewed, and approved the content with the final version.

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Conflicts of Interest

Dr. Soin has several patents in non-opioid pain pharmaceuticals and neuromodulation (SCS and PNS) and artificial intelligence, has stock options with Neuros Medical, has received equipment, materials, drugs, medical writing, gifts or other services from Avanos for research and has different financial or nonfinancial interests with Alyea Therapeutics, Neuros Medical, Neuronoff, and Avanos. Dr. Abd-Elsayed is a consultant for Medtronic, Curonix, Avanos, and Averitas. Dr. Dennis received consulting fees from Abbott for physician and device representative education. Dr. Hirsch receives grants or contracts from Neiman Health Policy Institute, is a Medtronic, Relievant, and Sanofi consultant, and is the Chair of CSMB of neurovascular studies for Balt: Rapid Medical. All other authors certify that he or she, or a member of his or her immediate family, has no commercial association (i.e., consultancies, stock ownership, equity interest, patent/licensing arrangements, etc.) that might pose a conflict of interest in connection with the submitted article.

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