British Journal of Hospital Medicine

Br. J. Hosp. Med. (Lond) **2026**; 87(7): 54690
https://doi.org/10.31083/BJHM54690

Editorial

Research in Emergency Medicine Is Not Optional - Why We Must Generate Our Own Evidence

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Academic Editor: Mike Jones
Submitted: 8 June 2026 Revised: 19 June 2026 Accepted: 25 June 2026 Published: 24 July 2026

1. Emergency Medicine Is Different

Emergency medicine (EM) occupies a uniquely challenging position within hospital care. It is the point of first contact for undifferentiated illness, where decisions are made rapidly, often under conditions of incomplete information and diagnostic uncertainty. Patients do not arrive with established diagnoses; they arrive with symptoms, often early in their disease trajectory, and frequently at the most unstable point in their illness course.

Despite this, and until recently, much of the evidence that informs emergency care practice is generated outside the emergency department (ED). This creates a tension between evidence development and evidence application. In many cases, as emergency clinicians, we are asked to apply guidelines derived from highly selected populations, often in inpatient or specialty settings, to patients who are fundamentally different at the point of presentation. This mismatch affects safety, effectiveness, and efficiency in emergency care.

2. The Emergency Department Is a Distinct Research Environment

The emergency department (ED) is not simply a location within the hospital; it is a distinct environment. It is high volume, high risk, and highly time sensitive. It is also characterised by frequent interruptions, shift-based working, and system pressures such as crowding and corridor care [1,2]. More importantly, it is a setting defined by uncertainty. Clinical presentations are undifferentiated, histories may be incomplete, examination findings evolve, and competing diagnoses are common. The emergency clinician is required to make early decisions in the diagnostic pathway, often before the disease process is clear.

This is fundamentally different from most specialty environments, where patients are filtered through prior assessment, diagnosis is more secure, and guidelines typically begin from a position of diagnostic clarity; this difference matters. Evidence generated in stable, diagnostically secure populations does not always translate to the ED front door, where uncertainty is not an exception but the norm.

3. Why External Evidence Often Fails in EM

A recurring problem in emergency care is the assumption that evidence is portable across clinical settings. In practice, this is frequently not the case. Many specialty-led guidelines begin from the point where a diagnosis is already established or strongly suspected. For example, pathways for conditions such as cauda equina syndrome often assume prior clinical suspicion and a filtered patient population [3]. However, in emergency care, patients present with non-specific symptoms such as back pain or urinary disturbance, where the challenge is to determine whether such a diagnosis should be considered at all.

Similarly, 'treat-at-home' or ambulatory management pathways for conditions such as chronic obstructive pulmonary disease (COPD) exacerbations [4] are often developed in inpatient respiratory populations. These assume diagnostic certainty and exclusion of alternative diagnoses. In the ED, the reality is different; shortness of breath may reflect pulmonary embolism, heart failure, infection, or a combination of yet disentangled processes. When such pathways are applied uncritically at the ED front door, they risk inefficiency at best and inappropriateness at worst. The problem is not that the evidence is poor. The problem is that it is derived from a different clinical reality.

4. The Consequence: Others Define EM Practice

If EM does not generate its own evidence base with EM-led and EM-collaborative research, other specialties will inevitably define its practice. While this is often well intentioned, it carries a clear risk, and guidance derived from downstream care will become embedded in our decision-making. This is not merely a question of professional ownership; it is a question of validity and applicability. Without our guidelines being based on research done in the ED, we risk our decision-making being founded on research from settings where the diagnosis is clear and established, where patients have been physiologically stabilised and where alternative diagnoses have been excluded. Reliance on guidelines that do not hold in our environment leads to inefficiencies in care delivery, inappropriate investigations, and interventions that fail.

5. Why EM Is Uniquely Suited to Lead Research

Paradoxically, the very features that make EM challenging also make it an exceptionally powerful environment for clinical research. Firstly, EM is high volume; large numbers of patients pass through EDs every day, [5] creating substantial opportunities for recruitment, observational studies, and pragmatic trials. Second, it is high risk; outcomes matter, and the clinical stakes are often immediate and significant. Third, it is rich in diagnostic uncertainty and therefore inherently where most clinical error occurs, but also where improvements in diagnostic strategy can yield substantial benefit. Finally, EM provides access to early disease presentation; this is vital as interventions applied earlier in a patient's disease trajectory often have a greater potential impact than those delivered later in their disease pathway. Taken together, these features make EM not only a feasible setting for research but potentially one of the most informative environments for studying diagnostic and therapeutic interventions.

6. Research Is Already Changing Emergency Care

There is now clear evidence that EM-led and EM-collaborative research has the potential to impact clinical practice [6,7,8,9,10]. The National Institute for Health and Care Research (NIHR) Trauma and Emergencies Research Delivery Network [11] has demonstrated that high-quality research is both deliverable and generalisable within emergency care settings. Importantly, this work is not confined to academic centres but, in many EDs, is embedded within routine frontline clinical care. The impact of such research extends far; patients participating in clinical studies frequently report improved engagement with their care, better understanding of their condition, and a greater sense of involvement in decision-making. In some cases, participation in research provides reassurance during what are often distressing and disorientating clinical encounters [12]. There is little evidence to suggest harm from well-designed participation in emergency care research. On the contrary, there is growing evidence of patient benefit, both in terms of experience and outcomes [13].

7. Research Is Not an Optional Extra

Research is a core component of all mature specialties and a key part of good clinical care. The view that it is an isolated pursuit for those with a specific academic interest is no longer acceptable. Research is a fundamental pillar of healthcare quality and is the mechanism by which EM defines what 'good care' looks like in its own environment. Without it, we are reliant on extrapolation from other specialties. With it, we generate evidence that reflects the realities of emergency care delivery. At a systems level, research is also a mechanism for improvement. It enables refinement of pathways, reduction of unnecessary variation, and identification of interventions that genuinely improve outcomes. Evidence consistently demonstrates that patient outcomes are superior in hospitals that are research-active [13].

Research activity is also closely linked to better staff satisfaction and retention. Clinicians working in research-active environments report feeling more engaged with their specialty and more empowered to improve patient pathways. The Care Quality Commission (CQC) has recognised that research is a primary metric of institutional health, now reviewing clinical research activity during hospital inspections. Research-active institutions also benefit from a culture of inquiry, where clinical decisions are scrutinised and updated according to the latest data. In this sense, research is not separate from service delivery; it is one of the primary ways in which service quality is improved at scale.

8. The Challenge Ahead

The central question is no longer whether EM should be research-active; this position is already justified on scientific, clinical, and ethical grounds. The more relevant question is how research can be embedded as a daily core function of ED care rather than as an 'add-on'. To achieve a culture in which research is genuinely everybody's business and to avoid EM becoming a consumer of evidence rather than a producer of it, several commitments are required;

Sustainable research networks must continue to be strengthened across EDs and hospitals. There must be investment in ED research capacity; EDs should have a named EM research lead, in keeping with established practice in many international EM systems, enabling widespread clinician engagement in study design and delivery. These EM research leads should have allocated programmed activity (PA) time and appropriate infrastructure support, embedded within research networks supporting sustained recruitment to NIHR Portfolio studies. Such activity should be recognised and assessed by the CQC, with stronger emphasis placed on research engagement and the diversity of recruited patient populations, recognising research activity as a core component of clinical excellence.

Research must be integrated into routine clinical workflows. National Health Service (NHS) Trusts must consistently support research delivery within consultant job plans and incentivise involvement through local recognition and awards. Given that lack of time remains a major barrier to academic engagement in EM, Training Programme Directors (TPDs) in EM should have a better understanding of the barriers faced by academic trainees, including the practical difficulties in securing and protecting research time, and trainees with an academic interest should be supported with protected research time within their weekly rota.

9. Conclusion

EM occupies a unique position within healthcare, providing care for patients who present with undifferentiated symptoms under conditions of uncertainty, urgency, and

complexity. While these characteristics present challenges for both clinical care and research, they also create opportunities to answer questions that cannot readily be addressed elsewhere. Despite significant growth in academic EM over recent decades, much of the evidence guiding emergency care continues to originate from other specialties. Generating high-quality research within emergency care settings is therefore critical to ensuring that clinical practice reflects the realities of the ED and the needs of our patients.

Key Points

• Emergency medicine (EM) requires its own evidence base because the emergency department (ED) is fundamentally different from most specialty settings, with patients presenting with undifferentiated symptoms, diagnostic uncertainty, and time-critical illness, meaning evidence generated in downstream specialty populations may not always be applicable at the point of first presentation.

• Failure to generate EM-led research risks inappropriate practice because, without evidence developed for its own clinical environment, emergency care may increasingly be shaped by guidelines and evidence from other specialties that may have limited validity or effectiveness in the ED.

• The ED is uniquely suited to high-impact clinical research because high patient volumes, early disease presentation, clinically important outcomes, and diagnostic uncertainty create opportunities for pragmatic trials, diagnostic studies, and evaluations of therapeutic interventions.

• EM-led and EM-collaborative research benefits patients, clinicians, and healthcare systems by changing clinical practice, improving patient outcomes, increasing staff engagement, and strengthening cultures of quality improvement within research-active organisations.

• Research should be embedded in routine emergency care because it is a core function of modern emergency medicine that requires investment in research infrastructure, protected clinician time, dedicated EM research leadership, and integration of research into everyday clinical workflows.

Availability of Data and Materials

Not applicable.

Author Contributions

All elements of the manuscript and subsequent write-up were carried out by the author [MJR]. The author read and approved the final manuscript. The author has participated sufficiently in the work and agreed to be accountable for all aspects of the work.

Ethics Approval and Consent to Participate

Not applicable.

Acknowledgment

Not applicable.

Funding

MJR is supported by an NHS Research Scotland Career Researcher Clinician award.

Conflicts of Interest

This article is inspired by a talk given by the author to the Royal College of Emergency Medicine (RCEM) 2026 Annual Conference on 28 April 2026. MJR is Chair of the RCEM Research Committee. All views and opinions expressed in this article are those of the authors alone and do not necessarily reflect the positions or policies of their affiliated organisations, employers, or any associated institutions.

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