



# Who cares about the money: do health economic evaluation studies published in emergency medicine journals cut the mustard?

Suzanne Mason<sup>1</sup> · Abel Wakai<sup>2,3</sup> · Anton Pak<sup>4</sup>

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Cost-effectiveness has significantly impacted emergency medicine (EM) practice internationally. Healthcare systems worldwide face the challenge of delivering high-quality care while managing limited resources efficiently. Emergency Departments (EDs) are often at the forefront of this challenge, providing time-sensitive, acute care to a diverse patient population. Cost-effectiveness influences EM practice in many ways, including how we allocate resources, including staffing, equipment and supplies; triage and prioritization of patients—ensuring we see those with the greatest need first such that the greatest resource is allocated to the sickest patients; care pathways through ensuring testing and treatment is optimized in the most evidence-based manner; using cheaper resources where they are appropriate and available such as telephone triage and remote consultation; increasing our efforts to reduce avoidable attendances, admission and readmissions to hospital and applying quality improvement principles to evaluate our care delivery.

In this issue of CJEM, a systematic review (SR) by Chhabra and colleagues provides insight into the use of health economic evaluation (HEE) in EM research [1]. The authors conducted a SR of HEEs published in EM journals and assessed the quality of the publications using the Quality

of Health Economic Studies (QHES) instrument [2]. The authors' assessment shows that 35 out of 48 publications included in the qualitative synthesis were high-quality, with 10 out of 16 QHES items being positively reported 80% of the time or more. Here, it is important to note that while checklists and summary scores like QHES are useful in facilitating quality screening and identifying higher-quality studies, these instruments cannot adequately assess the quality and analytical rigour of HEEs. For example, the QHES instrument relies on yes/no responses instead of using a continuous scale for each of the 16 criteria. In reality, studies often only partially satisfy the individual criterion. However, assigning zero points (for 'No' responses) to them might not accurately reflect the quality linked to that criterion [2]. Another limitation specific to the QHES is that some users might not have the knowledge or experience to determine whether studies are properly characterized on the dimensions evaluated by the QHES [2]. For example, some studies state that models were constructed from the societal perspective but did not include the impact of productivity loss in either the costs or effectiveness measures. Some users might credit such studies for using the QHES since the perspective was stated clearly, although inaccurately [2]. Also, while the QHES instrument aims to discriminate the quality of studies, its theoretical basis is unclear [3].

Of particular interest are the three areas of improvement related to the analysis perspective, the time horizon, and the primary outcome—which Chhabra and colleagues highlighted in their results [1]. Firstly, the authors note that many studies did not clearly state the perspective or provide the reason for selecting the perspective of the analysis. The choice of perspective deserves a careful explanation, as it guides which types of costs and health benefits need to be included in the analysis and dictates the amount of data collection required (both in terms of scope and time horizon).

✉ Suzanne Mason  
s.mason@sheffield.ac.uk

<sup>1</sup> Centre for Urgent and Emergency Care Research (CURE) Group, School of Health and Related Research (ScHARR), University of Sheffield, Sheffield, UK

<sup>2</sup> Department of Emergency Medicine, Beaumont Hospital, Dublin, Ireland

<sup>3</sup> Emergency Care Research Unit (ECRU), Royal College of Surgeons in Ireland (RCSI), Dublin, Ireland

<sup>4</sup> Centre for the Business and Economics of Health, The University of Queensland, Brisbane, Australia

While selecting the 'broadest' societal perspective is often recommended, which reflects all costs and outcomes regardless of whom they fall, the decision on perspective is usually driven by: (i) What is the question being addressed? (ii) Who is the decision-maker, and who commissioned the economic evaluation? and (iii) Who is intended to be informed by the analysis? For example, suppose a Department of Health (DOH) considers the value of investments in new ED diagnostic testing. In that case, the DOH may be interested in comparing costs and consequences from the health system perspective. However, it is often good practice to complement the analysis by expanding it to a broader perspective and identifying significant costs and effects or differences between options in costs and outcomes, no matter where they fall. Ideally, we would measure and quantify them, but it might only be possible to describe them qualitatively.

Secondly, regarding selecting the appropriate time horizon for an HEE, the authors rightly mention that the time horizon needs to be long enough to appropriately account for and capture the main differences in costs and consequences (both intended and unintended) between intervention and alternatives [1]. However, sometimes, as with the selection of the perspective, decision-makers may influence the choice of the time horizon. For example, they may want to know whether an intervention is cost-effective using a shorter time horizon, in extreme scenarios, just one year after an intervention. In such cases, it would be important to emphasize to the decision-makers the implications and consequences of truncating or limiting the analysis to a 'shorter than needed' time horizon. If feasible, we would want to present the study's results using short and full-time horizons and highlight the differences in results and conclusions.

Lastly, the authors suggest that HEE studies in EM journals can benefit from a better justification of the primary outcome. As health outcomes are fundamental in an economic evaluation, it is important to recognize that which health

outcomes count is a normative question—one of a value judgement. This recognition is important because healthcare is not a bottomless money pit, and we have increasing decisions and choices to make when delivering healthcare in EM practice. In the case of new tests or treatment options, it is evident that improving health must be central to how we think about value. Primary outcomes should refer to health outcomes that are ultimately sought through new interventions, such as a decrease in mortality rate or an improvement in the survival rate, life years, or quality-adjusted life years (QALYs). And ultimately, we can argue that health improvement can be represented by the two aspects of health: quantity (i.e. survival) and quality of life. Being clear about the clinical impact of these decisions is obvious, but we should also consider whether we must consider the cost implications of our actions. Should we take a societal or population perspective on these decisions and an individual patient-level perspective? Being informed and aware of the cost implications of our decisions is vital.

## Declarations

**Conflict of interest** On behalf of all authors, the corresponding author states that there is no conflict of interest.

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