

# The Time Is Now to Use Clinical Outcomes as Quality Indicators for Effective Leadership in Trauma

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To the Editor:

We read with interest the comprehensive review by Ford et al.,<sup>1</sup> which was published in August 2016 issue of the *Western Journal of Emergency Medicine*. The authors aimed to review the best available evidence regarding the effect of leadership and teamwork in trauma and resuscitation on patient care and how effective leadership can be measured.

Presence of a trauma team leader (TTL) in the trauma team is associated with positive patient outcomes in major trauma.<sup>2</sup> Consistent with other authors, Ford et al.<sup>1</sup> highlighted that strong leadership and teamwork can improve processes of care in trauma by improving the compliance with primary and secondary surveys. Nowadays, in major trauma centres the trauma team is led by a designated TTL; nevertheless, what is the compliance rate with primary and secondary surveys in major trauma centres?

Compliance with the primary and secondary survey components of Advanced Trauma Life Support (ATLS) has been variable across different trauma centres. We conducted a retrospective data analysis of 93 adult trauma patients admitted to our centre, a Level I major trauma centre in England, to assess the compliance with secondary survey examinations recommended by ATLS guidelines.<sup>3</sup> The compliance with secondary survey was significantly poor ranging from 1% for examination of perineum to 62% for examination of chest and limbs. In our centre the management of all trauma cases is led by designated TTLs, most of whom have instructor role in various trauma leadership training programs. So, it remains unclear why knowledge and skills developed in leadership training programs do not necessarily translate to improved clinical outcomes, such as compliance rate with trauma surveys, or missed injuries.<sup>3</sup>

As highlighted by Ford et al.,<sup>1</sup> evidence about most effective tool to measure effective leadership in trauma is lacking. The time is now to move away from non-clinical tools toward clinical outcomes to train leaders and to measure effective leadership in trauma. The current state of literature

in trauma should value clinical outcomes as the most effective measures for effective leadership. Missed injuries are considered as an important issue in trauma patients and can lead to significant morbidity and even mortality; therefore, they should serve as a quality indicator in TTL performance and should remain the outcome of interest for future studies.

Who should lead the trauma team? Considering the ongoing evolution of care in trauma management and the training of nonsurgical specialties in trauma care, the composition of many trauma teams has changed. The necessity of routine surgical leadership in the resuscitative component of trauma care has been questioned by some authors due to lack of objective evidence in favour of mandatory surgical leadership of trauma teams.<sup>4-6</sup> In view of a controversy about who should lead the trauma team, we conducted a systematic review of the literature and meta-analysis of reported outcomes associated with surgeon versus non-surgeon TTLs in management of trauma patients.<sup>7</sup> Our analysis of 2,519 adult major trauma patients showed that there was no difference in survival (odds ratio [OR]: 0.82, 95% confidence interval [CI] [0.61-1.10], P=0.19) and length of stay when trauma team was led by surgeon or non-surgeon TTLs; however, fewer injuries were missed when the trauma team was led by a surgeon (OR: 0.48, 95% CI [0.25-0.92], P=0.03). However, the best available evidence was mainly from a limited number of retrospective cohort studies and high quality randomised controlled trials are required to provide more robust evidence.

In conclusion, we know from available evidence that effective leadership is associated with positive patient outcomes in major trauma; however, the current non-clinical leadership tools do not necessarily translate to improved clinical outcomes. Clinical outcomes, such as missed injuries, should be the main focus in leadership training programs, should serve as a quality indicator in TTL performance, and should remain the outcome of interest for future studies.

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## Reply: “The Time Is Now to Use Clinical Outcomes as Quality Indicators for Effective Leadership in Trauma”

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Thank you for the opportunity to respond to the letter from Drs. Shahab Hajibandeh and Shahin Hajibandeh. Their letter introduces some excellent points into this review and discussion of the role of leadership in trauma resuscitations. Identifying a leader prior to patient arrival is critical to proper team functioning and is associated with more complete primary and secondary surveys. However, non-compliance with ATLS does not necessarily equate to poor leadership skills. It is well established that some aspects of ATLS are invasive, uncomfortable and unnecessary. In fact, ATLS has been incrementally modified to reflect this reality.

The letter authors assert that clinical measures and outcomes are the future of training and studying leadership in trauma. However, while we believe that clinical outcomes are important to assess, they cannot be the only measure of leadership. We do not know if leadership behaviors have a direct impact on patient outcomes, or if they do, if other factors such as technical skill, medical knowledge, system resources or illness severity confound or mediate this proposed relationship. A physician with great leadership skills may lead the whole resuscitation in the wrong direction, to the detriment of patient care. Understanding which area of performance by a physician is flawed is important in order to correct these areas. Leadership must be directly measured in addition to clinical outcomes so that these different components can be examined individually. We identified the Leader Behavior Description Questionnaire (LBDQ) as the best validated measure of leadership based on prior literature. Furthermore, further research is needed to determine if the LBDQ or other measures of leadership correlate with improved processes of care and/or better patient outcomes.

The letter authors also bring into question who should be the identified resuscitation leader. Prior work by Leeper (2013, *Journal of Trauma and Acute Care Surgery*) has indicated that trauma surgeons may miss fewer minor injuries than emergency physicians, particularly in patients who have other severe injuries; however, this is a single-center study limited by a retrospective

design. We believe that whether an emergency physician or a trauma surgeon is best suited to lead the initial resuscitation is not yet settled by the evidence. The ideal leader may be institution dependent and depend on the volume of significant trauma a particular center receives. In our own institution, we work collaboratively between the department of surgery and the emergency department, with the senior emergency resident serving as leader under the direct supervision of both the emergency attending and the attending trauma surgeon. We agree that regardless of who is leading the trauma resuscitation, the identified leader should have the best possible training in leadership and teamwork in order to improve processes of care. Anecdotally, there is often no formal leadership component to residency and fellowship training in the United States, and which leadership skills and behaviors are most important to teach is yet to be elucidated.

We thank the letter authors for the time they put into reading our manuscript and preparing their letter. We look forward to future studies by the Hajibandehs and other authors to clarify this exciting area.

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