

## On-Call Orthopaedic Trauma Surgeon and the Role of the Emergency Room Physician

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The emergency department (ED) is an especially challenging environment in which to consistently make accurate and timely diagnoses, as mistaken or delayed diagnoses can produce severe adverse outcomes to the patient. In addition, missed diagnoses in the ED are of particular concern for the emergency clinician as it became one of the most prevalent type of malpractice claim in many countries [1].

Managing a patient that suffered a skeletal injury in the ED places a great demand on the treatment process because the orthopaedic trauma surgeon may be not available in the hospital all hours. In fact, in many hospitals an emergency room (ER) physician usually conducts the first evaluation of this patient, which seems to be pretty reasonable if some requests are followed.

Demarest *et al.* proved to be not absolutely necessary for the trauma surgeon to be available in the hospital all hours provided the distance to the hospital is not greater than 15 minutes and an orthopaedic resident is already in the hospital [2]. In another study, Helling, *et al.* found the presence of in-house attending trauma surgeons did not improve management or outcome of critically injured patients, giving the trauma surgeons 20 minutes as the limit to be at the hospital [3]. These results were confirmed by other authors [4,5]. More recently, Kim, *et al.* showed that 82% of level I and II centers across the United States had trauma surgeons available within 15 minutes and that 75% of orthopedic surgeons were mostly available through the on-call system [6].

However, there are some urgent musculoskeletal conditions, like severely injured patients, acute infections, joint dislocations, and older patients sustaining a fracture, that may benefit from an in-house trauma surgeon or, if not readily available in an institution, an ER physician adequately prepared for the prompt management of those patients [4]. In this context, increasing ER physician training in an attempt to mitigate patients' morbidity and mortality seems to be extremely important as an in-house call policy. Ultimately the ability of the emergency physician to diagnose the skeletal injury may substantially influence patient's outcome. In addition, the emergency team should be supported by various levels of trainee and/or staff grades.

Emergency orthopaedic care includes acute trauma care and urgent general orthopaedic care delivered in hospital emergency rooms [7]. Treatment of the seriously injured should always be considered a time-critical process. Thus, diagnosis of a critically injured patient must detect life-threatening injuries, complete the diagnostic work-up, and prepare the patient for the next phase of care (operating room or intensive care unit) as rapidly as possible [8]. For those patients, the most important factor that determines one's probability to survive is often time. Missing, ignoring, or not expediting adequate care can result in disastrous consequences, like loss of life or limb.

On the clinical side, critical skills to manage musculoskeletal injuries must be learned during emergency medicine residency training.

Gill *et al.* designed a hands-on orthopaedic rotation for emergency residents in collaboration with the emergency medicine residency program in their first post-graduate year to introduce them to the appropriate evaluation and management of common orthopaedic injuries and conditions [9]. They demonstrated that giving emergency medicine residents a similar opportunity to learn with an orthopaedic surgery resident is a useful model for musculoskeletal education for non-orthopaedic surgery residents [9]. Physicians will perform better when they are trained and interested in a specific area than those not trained, or even not having any particular interest in that specific area [10]. Going a little further, we feel it seems quite reasonable to maintain a continuing education program for the ER physician who initially addresses musculoskeletal injuries.

Lin *et al.* demonstrated that surgeons committed to the trauma service had less missed injuries in severely injured patients, and it is vital to improve patient safety and quality of care for trauma patients [10].

The overall impression of the hospital care is directly related to improved patient function and quality of life, cost-effectiveness, and reduced risk of mortality [11]. Staff training and education for assessing severely injured patients and creating an open culture with detection and reduction of the potential for error are important and effective strategies in decreasing missed injuries and improving patient safety [10-12]. Today, continuing medical education (CME) is mandated by many regulatory bodies as part of maintenance of competence, accreditation and licensure, either in form of face-to-face learning through courses, conferences, and workshops, or online learning modules [12]. From an orthopaedic perspective, the course must be intended to teach doctors to recognize limb-threatening injuries and referring these patients after resuscitation, initial wound management, and immobilization [13]. Prevention measures and interventions that increase healthcare capacity to manage injuries may be an effective way to decrease morbidity and mortality [14]. Both Quansah, *et al.* and Pringle, *et al.* recommend governments and/or international community support programs to provide.

CME in trauma care, such as ATLS (or variations) or locally developed courses in low and middle-income countries, which shown to be valuable and effective education tools to all front line trauma care providers [13,14].

Implementation of trauma care managers and nurse coordinators is the cornerstone of quality medical care [15].

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