

**Physical and Cognitive Skills Required for the  
Practice of Clinical Emergency Medicine  
*Policy Resource and Education Paper (PREP)***

This policy resource and education paper (PREP) is an explication of the policy statement  
“Defining the Job Description of an Emergency Physician”

Emergency medicine is a high-intensity specialty with both cognitive and physical demands, which distinguishes it from other fields of medicine. Unique to the specialty is the frequency of time-sensitive actions and the critical nature of decisions; therefore, the emergency physician must be capable of utilizing a wide skill set.

By the nature of their practice, emergency physicians must see many patients per hour. Patients are unscheduled, background information and prior histories are often unavailable, and most importantly, the patient is undifferentiated, meaning that the cause of their distress is unknown. The emergency physician is required to make an almost immediate decision as to the possible causes and must be ready to provide life-saving care without confirmatory laboratory tests. The complexity of the cases is not controllable; there is no such thing as an ‘easy’ place to work. Even small volume emergency departments with a low average number of patients per hour can have many simultaneous, critical patients and are subject to mass casualty events. And unlike an office practice, patients cannot return the next day or be rescheduled. Emergency medicine is a time-sensitive specialty.

Most of the decision-making is heuristic or pattern recognition. The physician must be able to access the knowledge gained in the past through training, education (lectures, publications, etc.), and clinical experience and then rapidly determine whether the current situation fits the pattern. In doing so, they must rapidly assess for inconsistencies, ensure against cognitive bias, and, at the same time, avoid an error. When the pattern does not fit, the physician must call on deductive decision-making, assessing the underlying physiology to determine possible diagnoses. While this process is used by nearly all physicians, the emergency physician is required to perform these executive functions faster and with less baseline information than other specialties.

The emergency physician must also be able to multitask or, more properly termed, employ task switching. In fact, the Accreditation Council for Graduate Medical Education cites task-switching as a core competency for emergency physicians. Emergency physicians must care for a number of patients simultaneously and therefore are required to switch quickly between patients as their conditions demand. To do so requires an intact executive function and sound, if not enhanced, working memory. It has been noted that working memory is generally limited to two to seven facts. Emergency physicians must be able to ‘chunk’ items to increase working memory beyond this intrinsic barrier in order to provide care safely to multiple patients simultaneously.

Added to this are interruptions, which are more common in emergency departments than in other practices and work settings. Emergency physicians are interrupted an average of 10 times per hour.<sup>1</sup> These interruptions require immediate task switching, with the ability to immediately return to the original task

and to maximize working memory. The requirements for these cognitive activities have been shown to be greater for emergency physicians than for office-based practices.<sup>2</sup>

In addition to an intact working memory, it goes without saying that long-term memory must also be intact. While there are aids available for issues such as drug doses, there may not be time to confirm such facts, even with the use of mobile databases and references. Therefore, the emergency physician must have a large number of facts that can be recalled quickly, spanning nearly every specialty of medicine.

Inherent to emergency care is the availability of care 24/7/365. This nearly always requires working shifts with different/rotating start times. While some reduction in night shifts may be possible, complete elimination of shift changes is almost impossible in most settings. The standard shift length is from 8 to 12 hours, requiring sustained cognitive and physical performance over the course of the shift.

Like all physicians, the emergency physician must be good at communication and building instant rapport with a diverse set of patients. In just a few seconds, the emergency physician must gain the confidence of complete strangers and must maintain that confidence over the duration of the visit.

Emergency medicine is a very physical specialty. The physician takes, on average, nearly 600 steps per hour during their shift.<sup>3</sup> Further, the physician will likely be standing for at least 50% of the time and is required to stand for serious, complicated cases for well over an hour at a time. The emergency physician often does not have the option of taking a scheduled break or leaving the care area during a shift. The nature of the field requires a near-constant level of attention to patient care. Additionally, patients are not brought to an exam room where the physician waits for them, rather the emergency physician must go from room to room to evaluate and care for the patient. Furthermore, many, if not most, emergency departments have cramped patient care areas with restricted physical access. In smaller hospitals, the emergency physician is often required to respond to all emergencies in the hospital, even those outside the emergency department. Many emergency departments, especially those with single physician coverage, cannot make accommodations to allow disabled physicians to safely practice.

Emergency medicine is also a procedural specialty requiring intact vision, hand-eye coordination, fine motor skills, strength, and hearing. Many procedures require the ability to stand while simultaneously using both hands to manipulate the patient and/or equipment, for example, laryngeal intubation or reducing a hip dislocation. In fact, for difficult intubations, it may be necessary for the physician to stand on a chair or the back of the bed and lean over the patient with the patient in a semi-recumbent position. While some accommodations can be made in other specialties, such accommodations are more complicated and often less successful in emergency medicine. Many patients in an emergency department cannot wait until another physician can respond. The physician must instantly recall procedures that are rarely performed and often have not been performed on a patient for years or decades. They must understand the procedure, but also the indication, contraindication, risk, and benefit of the procedure. Some of the necessary procedures for an emergency physician to be able to perform are detailed in the “Model of Emergency Medicine.”<sup>4</sup> They must also, at times improvise, because there are no established procedures for some of the disorders seen in the emergency department – removing a child’s leg that is trapped in a ceramic pipe or improvising an airway in a patient with an obstruction. In such cases, the physician must combine deductive reasoning, anatomical knowledge, and executive functioning, adapting procedural skills to fit the task at hand.

Although some emergency physicians have non-clinical administrative or teaching positions, they must be capable of practicing clinical medicine effectively. Most administrative and teaching positions require the ability to practice clinical medicine as a condition or pre-requisite to the administrative or teaching position.

In summary, emergency medicine is a demanding and unique specialty with respect to the physical and mental abilities needed to safely care for undifferentiated patients.

References:

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