

# Managing Emergency Events in a Developing Country [Pakistan]: A New Chapter? [Letter]

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## Dear editor

The authors read the paper by Johnson AM et al with interest.<sup>1</sup> In light of the article, we would like to share our observations. With recent advancements in medical knowledge and technology, we know that damage caused by emergency conditions can be reduced if immediate care is provided.

The outcome of an injury sustained in any trauma depends on the extent of injury, early care provided at the scene, and transport to a hospital. During “golden hour”, the absence of pre-hospital care and poor inter-hospital transfer facilities may be the cause of secondary complications, leading to preventable deaths in the hospital.<sup>2</sup> This can be said for other emergency events as well.

To combat the gaping flaws in the existing medical infrastructure, countries like Sweden have taken a step in the right direction. One instance relays how a drone was used to deliver a defibrillator to a doctor in the field which allowed him to save someone from dying due to a cardiac arrest.<sup>3</sup> In third-world countries like Pakistan, where traffic plays a huge role in the delay of treatment in emergency events, drones could prove to be an insightful solution. Paired with an app, drones could be used to deliver necessary tools and medicine, like an EpiPen for an anaphylactic shock or an oxygen tank to combat CO poisoning and save time that is often lost while trying to reach a nearby hospital. The app can help users pinpoint their location for accurate delivery. In this way, defibrillators in the case of cardiac arrest, bandages, gauze in the case of traumatic injuries, and rabies immunoglobulin in the case of a dog bite can also be provided. Moreover, the app would simultaneously alert nearby hospitals with the estimated time of arrival, the ailment, and the management provided to the patient so far.

Developing a system will require a large amount of investment in a developing country. Not only this but given that there is a lack of free Wi-Fi and only 1/3rd of the population of Pakistan has access to smartphones, the app's usage across the country would be restricted.<sup>4</sup> Moreover, other factors can also contribute to the efficacy of this idea. One bystander-related issue includes the inability to recognize a medical emergency and the lack of willingness to use drones for medical equipment. Furthermore, even if there is a willingness to use the device, bystanders seldom have the information needed to manage a patient appropriately.<sup>5</sup> Therefore, it is necessary to hold nationwide BLS courses and drone awareness campaigns to increase the acceptability of drones as a helpful tool and their consequent use in our society. The app could also have in-house paramedics who are trained to guide civilians through calls and in multiple languages, on how to use the delivered equipment.

The authors believe the usage of unmanned aerial vehicles for medical emergencies holds significant potential in developing countries such as Pakistan, however in view of the current financial climate, further work is required to make these changes possible.

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