

Impact of Traffic Patterns on Trauma Response Prenotification [Response to Letter]

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Dear editor

We thank the opinion of M. Zaenul Muttaqin on our work.¹ Prior research has shown that estimated times of arrival (ETA) from emergency medical services (EMS) is often not accurate.² While traffic might be speculated to be the cause of the discrepancies between ETA and actual time of arrival, there is little data to support this. In our paper “Traffic Patterns and Emergency Medical Services Prenotification Transport Estimates in Trauma Activations”, we attempted to demonstrate the fact that there is not much data to confirm or deny whether traffic can affect ETA.

We acknowledge the limitations of our work mentioned by Muttaqin; however, these findings could still inform present practice and future research.¹ While many studies have shown that GPS solutions can improve response time in resource-limited environments, EMS may not be able to implement GPS solutions due to sparse satellite coverage of a region or for financial reasons.^{3–5} In more populous areas, EMS providers may also have a difficult time incorporating traffic data into their estimates. Therefore, in more populous and often more resource-rich environments, our data puts forward a strong case for incorporating GPS-based solutions to improve ETA reports. One note of caution here, though, would be that while GPS can give relatively accurate estimates for vehicles traveling without lights and sirens, it might reroute vehicles to unsuitable roads or longer routes to avoid traffic.^{6,7} GPS also does not take into account the use of lights and sirens, which could result in earlier arrival times than the GPS-generated ETA.

Finally, as pointed out by Muttaqin, it is interesting to see if the results of this incorporation of GPS into EMS systems to improve ETA will affect outcomes.¹ Faster transport times do not necessarily result in improved patient outcomes. In fact, the body of evidence currently indicates that using lights and sirens decreases time of transport but does not affect patient outcomes.⁸ However, regardless of the transport time, more accurate ETAs could give hospitals more time to prepare for incoming critical patients without wasting time standing idle. One study, for example, demonstrated that physicians’ medical direction for prehospital treatment plan would have been different if the ETA had been more accurate.⁹ Other work has demonstrated that inaccurate ETAs can contribute to incomplete hospital team preparedness upon patient arrival.¹⁰ Our own team’s work in trauma has additionally shown that giving an accurate estimated time of arrival and thereby allowing trauma teams to adequately prepare for incoming patients helps improve team performance.¹¹ This may also improve patient outcomes, though more research into these measures is needed. Nevertheless, it is crucial that EMS ETAs are as accurate as possible to help hospitals prepare for critically ill patients.

Disclosure

The authors report no conflicts of interest in this communication.

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