

A STUDY ON AMBULANCE RESPONSE TIME IN THREE SELECTED HOSPITALS IN MALAYSIA: DO WE REALLY NEED A DEDICATED PRE HOSPITAL PARAMEDIC?

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Introduction

Ambulance service is the nerve of pre hospital care system. Inappropriate delay in response may result in worsening outcomes to patients. It is believed that having a dedicated pre hospital paramedic will improve the quality of care but whether it will reduce the response time may be questionable.

Materials and methods

A cross sectional study was conducted at three selected tertiary hospitals in Malaysia namely Hospital Kuala Lumpur (HKL), Hospital Tuanku Ampuan Rahimah (HTAR), Klang and Hospital Raja Perempuan Zainab (HRPZII), Kota Bharu from June 2012 to July 2012 to determine the association between those hospitals with dedicated pre hospital and multitasking paramedic with Ambulance Response Time (ART) in Malaysia.

Discussion / Conclusion

The ambulance service performance evaluation is based on its response time, thus study on the ambulance response time is deemed necessary. Ambulance response time longer than 15 minutes is unacceptable (De Silva, 2006). According to statistic by Asian One Health, 2008, the twenty six (26) MECC in Malaysia manage to reduce ambulance response time to 30 minutes. Report from Road Safety Department in Malaysia stated that the current average response time of ambulance is 30-40 minutes, compared to the international standard of 7-10 minutes (The Star Online, 2008). These showed that although ambulance response time is improving but failed to achieve the international standard.

Hospital Name	Median (min)	Interquartile range (min)
HKL	0.19	(0.14, 0.25)
HTAR	0.19	(0.13, 0.26)
HRPZ II	0.20	(0.15, 0.28)

TABLE 1. Ambulance Response Time (ART) in three selected hospital.

Table above shows the median of ambulance response time in three selected hospital. HKL and HTAR had median of 0.19 while HRPZ II had median of 0.20.

Mohd Shaharudin Shah et al, 2005, identified several factors that significantly cause prolonged ambulance response time and among them are traffic congestion, inadequate public education, location of patient (whether on ground level or high rise) and distance from the emergency. At present, the similar factors remain an obstacles for improving ART in Malaysia.

HOSPITAL WITH PARAMEDIC TEAM	MEDAN (min) Interquartile Range	Z score	P score
YES (HKL, HTAR)	0.19 (0.14, 0.26)	-0.995	0.320
NO (HRPZ II)	0.20 (0.14, 0.28)		

TABLE 2. Ambulance Response Time (ART) and availability of dedicated paramedic

Table above showed the median of ambulance response time based on availability of paramedic team. The hospital with paramedic team had median of 0.19 minutes while the hospital without paramedic team had median of 0.20 minutes. The Z-score was – 0.995 while P-value was 0.320.

The two median of ambulance response time in hospital with paramedic team and hospital without paramedic team are not significantly different. In contrast to, Nik Hishamudin et. al., (2007), the poor quality of Emergency medical services ambulances may be resulted from poor pre hospital services, long ambulance response time, untrained ambulance personnel and paramedic team and poor public cooperation. He conclude that, availability of paramedic team was very important to reduce the ambulance response time.

However, in three (3) selected hospitals HKL, HTAR and HRPZ II, the ambulance response time is similar weather there was a present of dedicated paramedic team or multitasking responsibilities. Even though, the paramedic in HRPZ II is doing multitasking clinical job it seems that the strategy of paramedic response deployment is effective. Therefore, ART may be improve by having appropriate ambulance call alert system and ready-to-roll equipment with strategic roster arrangement for job coverage and is as efficient as having a dedicated paramedic for ambulance response.

TYPE OF CASES	MEDIAN (MIN)	INTERQUARTILE RANGE (MIN)	P- value
Critical	0.19	(0.14,0.26)	0.205
Semi Critical	0.20	(0.15,0.27)	
Non Critical	0.19	(0.13,0.25)	

TABLE 3. Ambulance response time based on severity of cases

Table above shows the median of ambulance response time based on severity of cases. The critical and non critical cases had median of 0.19 minutes while semi critical cases had median of 0.20 minutes. The P value was 0.205. The three median of ambulance response time based on type of cases are not significantly different.

The ambulance response time in three selected tertiary hospital in Malaysia namely HKL, HTAR and HRPZII are below the international standard.

Our study showed that multitasking paramedic performed equally as compared to dedicated paramedic in relation to ART. There were no statistically significant differences and association between ambulance response time and availability of paramedic team. By having a dedicated pre hospital paramedic, it is perceived as delivering a better ART. However our studies do not support that perception and we believe there are many other factors that contribute to ART. However, there is a need to look into stress level among multitasking paramedic as persistent high level of service delivery may lead to burnout syndrome that may compromise the well-being of the personal. More importantly, it will compromise the level of care given to patient and grave outcome may be the ultimate end.

Results

HKL and HTAR had median of 0.19 while HRPZII had median of 0.20. The hospital with dedicated pre hospital paramedic team had median of 0.19 minutes while the hospital without paramedic team had median of 0.20 minutes (Z-score - 0.995, P-value 0.320).

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