

The Role of Fast Tracks on Length of Stay in Emergency Departments

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Abstract

Overcrowding in emergency departments (EDs) is a national crisis affecting hospitals. It has led to an association with poor patient outcomes and is a threat to public safety. Fast tracks (FTs) in the ED are one strategy that has been implemented to alleviate overcrowding while still ensuring quality of care. To evaluate if FTs are effective, length of stay (LOS) was investigated relative to the implementation of FTs across a variety of hospitals. Nurses are an integral part of the triage, assessment, and care that are central to the system of FTs. This review provides an in-depth look at the nurse's role in FTs, the effects on patient outcomes, and decreasing the LOS in EDs.

Pubmed was used as the search database. The keywords searched were *length of stay* or *throughput*, a synonymous term, and *fast track* or *fast tracking* or *streamlining*, other synonymous terms. A total of 884 studies were found and were further narrowed down to the 20 research articles expressed in this review. In each of the studies identified where a FT was implemented, the LOS was reduced. Based on the reviewed literature, it is suggested that FTs are efficacious and that nurses play a vital role in their function.

The Role of Fast Tracks on Length of Stay in Emergency Departments

According to the Institute of Medicine (2006), overcrowding is considered to be a national crisis affecting hospitals. Specifically within emergency departments (EDs), it has been associated with poor patient outcomes and is considered to be a threat to public safety (Carter, Pouch, & Larson, 2014; Trzeciak & Rivers, 2003). New strategies should be implemented to ensure quality of care without adding additional costs (Cremonesi, di Bella, Montefiori & Persico, 2015). Nurses are directly affected by this issue as they are an integral part of the triage assessment and care that will be provided. An approach of reducing ED overcrowding is to implement strategies that decrease the length of stay (LOS; Yoon, Steiner, & Reinhardt, 2003).

Fast track (FT) triaging is defined as prioritizing less acute patients to be seen first and has been supported by literature dating as far back as 1996 (Fernandes, Christenson, & Price, 1996; Smithson, Twohey, Watts, & Gratton, 2016). FT triaging may reduce LOS and be a valuable means to reduce overcrowding in EDs (Oredsson et al., 2011). The use of a FT may seem counterintuitive to nurses that have not been informed about this topic, therefore education on the potential that FTs have to reduce overcrowding and LOS in the ED is needed. Education on this topic will enable nurses to play an important role in curbing ED overcrowding, in the development of policy at their respective facilities, and potentially have a pronounced impact on the delivery of health care.

Length of Stay

Four studies were identified in which the authors focused on the implementation of FTs (Aksel et al., 2014; Copeland & Gray, 2015; Khalifa & Zabani, 2016; Tucker & Bernard, 2015).

Amongst the studies, reduction of LOS ranged from 15 to 240 minutes and from 8.1% to 47.5% (see Table 1). The studies were performed in a diverse range of settings from domestic to abroad, large to small facilities, and urban to rural. A fifth study, performed at a large American hospital, found that the modification of a pre-existing FT further improved the average LOS of those discharged from the ED by 9 minutes or 5.9% (Arya et al., 2013). Together these findings suggest that FTs reduce the ED LOS, although the degree to which it is reduced varies. Future studies should control for factors including the size of the hospital, population density, and country of origin to better refine the understanding of how effective FTs are in reducing LOS.

Table 1

Change in LOS After the Addition of a FT in an ED

Study	Country	Study Design	LOS Metric	LOS (minutes)			Percent Reduced
				Non-FT	FT	Time Reduced	
Aksel et al. (2014)	Turkey	prospective cross-sectional	median	80	42	38***	47.5%
Copeland & Gray (2015)	Canada	retrospective cohort	median	158	143	15***	9.5%
Khalifa & Zabani (2016)	Saudi Arabia	retrospective cohort	average	1200	720	240 ^a	40%
Tucker & Bernard (2015)	USA	retrospective cohort	average	225	206.7	18.3 ^a	8.1%

Note. Studies were limited to those that were published within the last five years. The included studies did not previously use any form of a FT. The superscript ()^a indicates that there was no statistical significance indicated by the respective authors; the data may or may not be significant.

*** indicates statistical significance of $p > 0.001$.

Overcrowding

Reduction of LOS was the primary focus of this review with the intent to bring further understanding to the more complex issue of overcrowding. Casalino et al. (2013) analyzed data across multiple hospitals to find that FTs are correlated with both shortened LOS and lessened overcrowding. Aksel et al. (2014), also identified that the addition of a FT reduced overcrowding directly in one hospital. Together these results indicate that the implementation of FTs led to shortened LOS and therefore may be a causative factor in reducing overcrowding.

Expanded Applicability

FTs are commonplace in American EDs. In a survey of ED physicians, 79 % reported using a FT in their respective hospitals as a strategy to utilize *vertical patient flow*, the use of segmenting patients who can be seen outside of a traditional ED room (Liu, Hamedani, Brown, Asplin, & Camargo, 2013). Recent studies have focused on further expanding the use of FTs to new settings. Arya et al. (2013) demonstrated that FTs can reduce LOS in large urban hospital settings. On the contrary, it has been shown that a FT can work in a small rural hospital with single physician coverage (Copeland & Gray, 2015). Also, rather than the usual triage nurse and physician in a FT, it is possible to have a triage nurse practitioner and nurse practitioner as the FT provider with benefits to LOS and other ED metrics (Tucker & Bernard, 2015). Hence, mid-level providers may be useful and cost effective when using FTs in an ED.

FTs may become more common amongst specific subsets of ED patients. Examples of populations that are beginning to be studied include mental health FTs, obstetrics FTs, FTs in pediatric hospitals, and FT protocols specifically for the elderly (Dinah, 2003; Kim et al., 2012;

Okafor et al., 2016; Smithson et al., 2016). Currently, the existing literature on these populations do not provide clear findings for FT efficacy, particularly for the metric of LOS. Future studies may continue to show that FTs not only function in conventional settings, but can be used in various circumstances.

Gaps in the Literature

Over the course of researching FTs in the ED, some gaps in the existing literature were identified. One issue is that the majority of studies were conducted at medium to large size urban hospitals. Larger urban hospitals may face more overcrowding in the ED than small hospitals and have more funding to conduct studies on the topic. Research at larger urban hospitals may not be applicable to smaller or rural hospitals. Another gap is the lack of evidence on whether further shortening the LOS for the average person is ethical, as doing so may come at a cost to patient well-being. Although there is a gap about the ethical use of FT, Khalifa and Zabani (2016) identified no changes in mortality when a FT was implemented.

Implications for Nursing

There are a wide range of implications for nurses when it comes to the use of FTs in the ED. Triage is primarily a nursing role, and the nursing role is central to FT function. In triage, nurses rely on their assessment skills and knowledge to judge the acuity of patients. The use of FTs allow more patients to be seen in less time which may lead to a decrease in the amount of nurse-patient time. This decreased amount of time with patients may change the nurse-patient relationship. Another implication of decreased time with individual patients is the possibility that important information about the patient may be omitted or missed. Due to FTs decreasing

the LOS and overcrowding, the role of nurses in the triage setting may change.

Conclusion

Overcrowding is an issue concerning the ED. FTs may mitigate this problem by reducing LOS, a crucial component of ED efficiency. The LOS in the ED was consistently reduced from the pre-intervention groups although the amount of time varied from studies conducted by Askel et al. (2014), Copeland and Gray (2015), Khalifa and Zabani (2016), and Tucker and Bernard (2015). The implementation of this strategy in facilities will enable nurses to play an integral part in this overcrowding intervention. Upon decreasing LOS there were other positive patient outcomes related to FTs. Wait time was reduced and fewer patients left without being seen (Khalifa & Zabani, 2016). Another positive outcome thought to be related to reduced LOS is that patient satisfaction increased with the addition of FTs, especially when nurse practitioners were utilized in the FT (Hwang, Lipman, & Kane, 2015; Lutze, Ross, Chu, Green, & Dinh, 2014). As nurses become more informed on the research, and how FTs can improve the overall quality of care in the ED, they can help in the development of policy changes in their facilities. The information in the identified literature provides support that FT triaging decreases LOS and is a valuable triage method to reduce overcrowding.

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