

SOURCES OF DELAYS ENCOUNTERED BY A REGIONAL CRITICAL CARE TRANSFER AND RETRIEVAL SERVICE



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Objective

To examine the sources, types and significance of transfer delays formally reported by the critical care transfer team.

Introduction

The North East London Critical Care Transfer And Retrieval (NECCTAR) Service is a regionally funded retrieval service that provides a comprehensive local, regional, and national critical care transfer capability. Transfer teams may encounter unexpected delays during all parts of a patient's journey, and from a wide variety of sources. These delays may impact the teams' ability to provide an efficient service and may heighten risk in some instances. We set out to explore the significance of crew-reported delay incidents and any lessons learnt for refining service processes.

Methods

- Each NECCTAR transfer included contemporaneous electronic capture of seven checkpoints throughout the journey, from initial tasking through to completion of the job and readiness for another tasking. Sources of delays reported by the NECCTAR team were formally recorded in full and then categorised.
- Unpaired two-tailed t-tests were used to compare the mean duration of time under NECCTAR care for transfers that had no recorded delay against cohorts of transfers with recorded delays.



19%
of transfers
experienced delays

Unit readiness and vehicle malfunction are the most significant causes of delay



Referral checklists expedited patient preparation

Delay Reason	Number of Jobs	Mean Time under NECCTAR Care (min)	Difference (min)	p-value
No delay	275	140.7	-	-
Referring site readiness	21	196.7	56	<0.0001
Receiving site readiness	12	168.0	27.3	0.05
Patient Stabilisation and Optimisation	11	161.5	20.8	NS
Vehicle malfunction	8	179.9	39.2	0.0245
Equipment-Related Malfunctions	8	162.9	22.2	NS
Organisational Delays	3	147.7	7.0	NS
Road Traffic Collision	1	140.0	(0.7)	NS

Table 1.

Results

- In the period from December 10th to August 22nd 2021, NECCTAR was tasked 382 times and completed 339 (88.7%) patient transfers. 275 completed transfers had no recorded delays. The mean time under NECCTAR care for a non-delayed job was 140.7 minutes.
- The NECCTAR team formally reported delays in 64 transfers, which are summarised in the table above.



Fig 1. Referring Site Checklist QR Code

Conclusions

Any transfer of a critical care patient is recognised to be a high-risk episode, so minimising the duration of these episodes and making the transfer process as timely as possible is of significant importance to their care [1].

Intensive care unit readiness and vehicle malfunction are the most significant sources of delay to NECCTAR's safe and efficient critical care retrieval service. We have improved our referral process to prompt referring and receiving site readiness through specific proformas and instructions (Fig. 1).

While stabilisation or optimisation time was reported as a delay in 11 episodes, this is likely an effective use of a critical care retrieval team's expertise and alternative categorisation may be more appropriate. Referral checklists have since aided in expediting preparation of appropriate patients for non-clinical transfer as the service evolved with pre- and post-intervention impact assessment planned. Delays caused by vehicle malfunction will be mitigated as the fleet of ambulances utilized by NECCTAR is due to be upgraded next year. Significance testing applied to low-incidence causes of delay is limited by the small numbers.

NECCTAR continues to capture data to analyse where delays are occurring and whether solutions are effective.

References

- 1) Foex B, Van Zwanenberg G, Ball J, et al. The Transfer of the Critically Ill Adult. Faculty of Intensive Care Medicine; Intensive Care Society 2019 https://www.ficm.ac.uk/sites/default/files/transfer_critically_ill_adult_2019.pdf (accessed 22nd August 2021)