Feasibility of Time Motion Study Methodology for Paediatric Critical Care Stabilisation

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Introduction and Aims

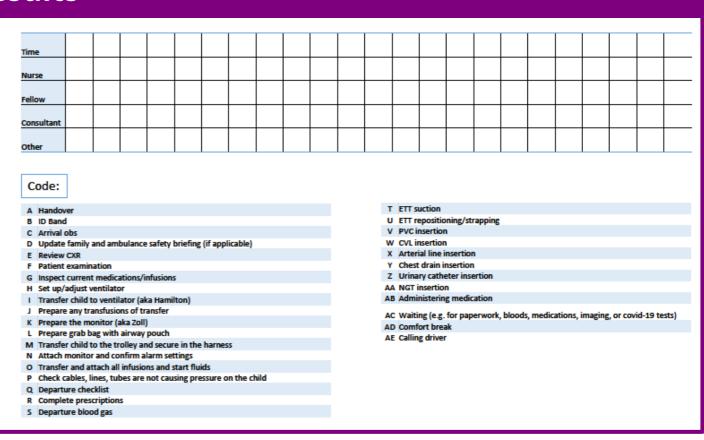
Paediatric Critical Care Transport teams (PCCT) were developed to stabilise and safely transport critically ill children from local hospitals into regional Paediatric Intensive Care Units. WATCh (Wales and West Acute Transport for Children) delivers this service to South West England and South Wales, an area of 23000 km² with some of the longest transport times in the UK. Service efficiency can be improved by reducing the time to stabilise and prepare a child for transport in the referring centre. In 2017, an NHS England review found that WATCh had longer stabilisation times than other PCCT. In time motion studies (TMS) an external observer collects detailed data on timing and movements required to accomplish a specific task with the aim of improving efficiency. We aimed to establish the feasibility of using a TMS for paediatric critical care stabilisation.

Methods

Using an iterative PDSA (plan-do-study-act) process, we designed a paper form to record the time spent by transport team members during the stabilisation process. We refined the form and the process of observation and feedback using medical students as external observers.

Results

The final document included rows for team members and a key allocating short codes for different tasks. Collecting the data was challenging – team members sometimes multi-tasked and repeated processes. We found there was a significant "learning curve" for the students and, although the form enabled effective data collection, this was generally only possible once the observer had undertaken the process several times.





Conclusion

We have developed a TMS data collection tool for PCCT and demonstrated feasibility in principle. However, for robust collection the observers must be suitably trained and experienced. The tool could be further improved by translation into an app or online document which is more editable than the paper version.



