Key performance indicators: can stickers improve documentation of pre-hospital cardiac arrests?

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Introduction

Essex and Herts Air Ambulance Trust (EHAAT) is a charity that provides two helicopter-based doctor-paramedic pre-hospital care teams to serve the two counties. Non-traumatic cardiac arrest (NTCA) forms a large part of our medical case load. Between 2008 and 2009, EHAAT pre-hospital care teams were tasked to around 100 NTCA. The team carries specialist equipment to improve the quality of cardiopulmonary resuscitation (CPR).

Clinical notes for all patients are recorded on a patient report form (PRF), a generic A4 pro forma document. In May 2010, we introduced an adhesive sticker listing interventions for NTCA grouped into a series of key performance indicators (KPI). The EHAAT audit standard is that a sticker is placed on all PRFs relating to NTCA, and that all KPIs are met. In addition, the sticker acts as an aide memoire for the package of interventions provided on scene.

Method

A manual search of EHAAT PRFs from October 2008 to November 2010 was performed. 95 patients with NTCA were identified. Based on the available documentation, KPIs were reviewed for each patient and the results anonymously collated in an electronic spreadsheet.

Results

Prior to the introduction of the stickers, 56% of interventions that became pre-ROSC KPIs were documented as complete and 54.4% of interventions that became post-ROSC KPIs were documented as complete. Since the introduction of the stickers, these figures have increased to 89.8% and 79.2% respectively.

Discussion

In a number of cases, there is no documentary evidence that the interventions that now make up EHAAT’s KPIs were completed in the cases attended by the doctor-paramedic team prior to the introduction of the stickers. In some cases, management steps may have been taken but not documented on the PRFs. The Impedance Threshold Device and Active Compression-Decompression CPR device were introduced to the service in 2009 but we have noticed during this audit that the teams frequently did not record their use even after their introduction to the medical kit. Explicit documentation of a working diagnosis (only 39.2% prior to use of stickers) may encourage teams to think more about the underlying cause of the cardiac arrest, allowing focused interventions and triage to the most appropriate hospital when ROSC is achieved. Reasons may exist to explain non-compliance with KPIs (usually clinical judgement). Since May 2010, all non-compliance should be clearly documented on the PRF alongside the sticker.

These results are encouraging but our new audit standard was not met because one of the sixteen PRFs documenting NTCA after May 2010 did not have a sticker attached, and in several cases, KPIs were not completed and there was no explanatory documentation. However, in the majority of cases the stickers improved documentation. There was a significant difference in the mean number of KPIs documented as completed before and after the their introduction (p<0.005). Accurate and legible medical records are essential to good quality patient care. This was one of the driving factors in the introduction of the stickers to our service.

Since the introduction of the stickers there has been an increase in ROSC rate for our patients. This may reflect a standardised evidence-based intervention package that can now be provided and documented by our doctor-paramedic pre-hospital teams. This will be the subject of ongoing audit and analysis, which will be facilitated by improved documentation.

Recommendations for future practice

- Continue with PRF stickers and monthly audit of compliance
- Introduction of KPIs for other frequently-encountered conditions
- Ongoing education and training in non-traumatic cardiac arrest