Is NEWS2 old news? A review of physiological deterioration prior to adult cardiac arrest at an acute NHS Trust in Essex, UK

Matthew Ibrahim –Lead Resuscitation Practitioner-The Princess Alexandra Hospital NHS Trust
Phillip Chandler - Resuscitation Practitioner-The Princess Alexandra Hospital NHS Trust

Aim

The National Early Warning Score 2 (NEWS2) was introduced in December 2017 as score based risk assessment to help detect early signs of physiological deterioration. The aim of this study was to look for relationships between NEWS2 scores and other measurable variables and patients that have an in-hospital cardiac arrest over a six month period at The Princess Alexandra Hospital NHS Trust.

Method

Each in-hospital cardiac arrest was reported via an electronic system. Patients notes were reviewed by a member of the Resuscitation Service within 72 hours to look at numerous parameters, adopting recommendations made by NCEPOD 2012, including the last documented NEWS2 score prior to the cardiac arrest (maximum of 2 hours before). Data was also gathered on harm events prior to the arrest in line with the Global Trigger Tool (GTT). This data was then further analysed looking for any trends, or themes relating to physiological deterioration prior to cardiac arrest.
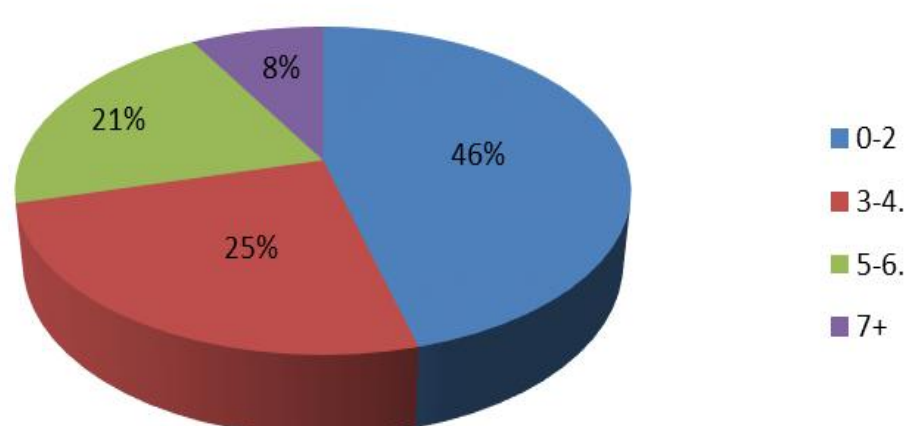
Results

The following results were seen:

46% of patients had a NEWS2 score of 0-2 prior to arrest

71% of patients had a NEWS2 score of 0-4 prior to arrest

29% of patients had a NEWS2 score of 5+ prior to arrest

38% of patients had a biochemical signs of Acute Kidney Injury (AKI) prior to arrest

17% of patients had a raised Troponin prior to arrest

Conclusion

The Trust mandates escalation of a patient once the NEWS2 reaches 5, however the data reviewed showed that 71% who arrested did not reach this number before the event occurred. What was also discovered was that signs of AKI and increased in Troponin were common antecedents. The Trust believes there is an opportunity to introduce a Cardiac Arrest Risk Index that takes into account parameters not currently considered as early warning for acute physiological deterioration. This system could work alongside and complement existing NEWS2 systems, to enhance patient safety. This system is currently being trialled at The Princess Alexandra Hospital NHS Trust

NEWS 2 score prior to cardiac arrest Q3 & Q4

Harm Events & Cardiac Arrest Correlation