

Analysis of effectiveness of the Redivus Health Code Blue Application

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Introduction:

Over 550,000 Americans suffered a cardiac arrest in 2016, and 83% of those events ended in death (1). Accurately following the American Heart Association (AHA) Advanced Cardiac Life Support (ACLS) guidelines can save 16.5% (over 90,000) more lives every year (2). Redivus aims to enhance provider compliance to these proven evidence-based treatments by providing step-by-step clinical guidance to doctors, nurses and paramedics during emergent code blue events. Therefore, Redivus created a mobile decision support platform that was hypothesized to increase adherence to these life-saving guidelines. In the summer of 2016, the Redivus Health code blue prototype app was tested via simulated cardiac arrest events with multidisciplinary teams of health care professionals. These simulation sessions were recorded and students in the K-State Health Care Operations (HCOR) program observed, analyzed, and scored each event. Our objective was to evaluate the ability of the Redivus Health Code Blue application to increase adherence to the AHA ACLS guidelines in comparison to conventional treatment processes and resources.

Methods:

Health care teams were recorded performing code blue simulations with their current processes and resources (paper charting, ACLS card, etc), and also with the Redivus Health app. The HCOR team observed each event video and analyzed the process the clinical team followed. Twenty-eight annotated videos (half with and half without app utilization) were then processed through a scoring spreadsheet, and each video received a single score based on adherence to the required standardized ACLS guidelines. Finally, the scores from each were analyzed and compared to identify any significant difference in ACLS guideline compliance.

Results:

During the months of June and July 2016, 11 sessions yielded 42 videos of simulated code blue events, with 28 videos that could be annotated and scored reliably.

The findings of these scores suggested that utilization of the Redivus code blue app produced higher compliance with AHA guidelines (mean score of 54.15) during the code blue simulations than utilizing conventional treatment processes and resources (mean score of 30.8).

Discussion:

The Redivus Health Code Blue app was associated with a statistically significant (p value <0.05) improvement in adherence to the AHA guidelines (54.15 compared to 30.8).

The standard deviation of the scores was significantly lower for the simulations in which the app was utilized (21.5 versus 30.6). This implies that utilization of the app provides a much more accurate and consistent treatment process.

References:

(1) http://cpr.heart.org/AHA/ECC/CPRECC/General/UCM_477263_Cardiac-Arrest-Statistics.jsp

(2) Ornato, J. P., Peberdy, M. A., Reid, R. D., Feeser, V. R., Dhindsa, H. S., & NRCPR Investigators. (2012). Impact of resuscitation system errors on survival from in-hospital cardiac arrest. *Resuscitation*, 83(1), 63-69.