

Interventions and diagnostics

289 EFFECTS OF INFORMATIVE VIDEOS TO EMPOWER PARENTS IN HANDLING ACUTELY ILL CHILDREN: A RANDOMIZED CONTROLLED TRIAL

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Background Copenhagen Emergency Medical Services (CEMS), Denmark, serves the Capital Region and receives about 200,000 out-of-hours calls/year regarding children. About 40% are referred for further assessment at hospital, but less than two thirds of these children need medical treatment. We studied if parents could be empowered in handling children with mild symptoms at home by informative videos, and thereby reduce hospital admissions.

Method A prospective randomized controlled trial was conducted from 13th October, 2020 – 2nd December, 2021. Parents who called CEMS with children aged 0.5–11.9 years were offered access to informative videos before reaching telephone triage. Parents who accepted were randomized to intervention (receiving videos only) or control (standard telephone triage). Parents could repeat call for triage. Both groups received an electronic survey including questions on self-efficacy the following day. Hospital charts were reviewed blinded to randomization for hospital referrals within 72 hours. Main outcomes were high self-efficacy score and delayed hospital admissions or deaths. Secondary outcomes were treatment, duration of hospitalization, and number of engaged users of the videos.

Results A total of 4687 children were included. Only data from preliminary analysis of the first 400 surveys is available now. The self-efficacy-score was high in 84.7% (149/176) of the intervention group and in 82.7% (167/202) of the control group ($p=0.68$). There were no delayed admissions or deaths caused by the videos.

Conclusion Preliminary results showed equally high score of self-efficacy of parents in both groups. The use of videos appeared to be safe.

Conflict of interest None.

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Cardiac arrest

293 TCPR LINK – STREAMING OF VIDEO AND CPR QUALITY FOR IMPROVED RESCUER-DISPATCHER TEAMWORK

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Background Today, most medical dispatchers are blind to what happens at the scene and have no objective data to use in rescuer coaching.

We wanted to develop a technical solution where CPR quality data and video is streamed to the dispatcher. The CPR and video allow for targeted coaching and teamwork with the rescuer, aiming to improve CPR quality.

Method We developed a single-use, accelerometer-based CPR feedback device with Bluetooth communication with a smartphone app. The credit card sized device is placed between the patient's bare chest and the rescuers hands. It measures compression depth and rate and provides visual feedback to the rescuer. The card streams CPR data real-time to the app, which provides enhanced visual feedback on CPR performance. This app further streams the CPR data and video to a server on the internet. Real time CPR feedback and video are securely made available for the dispatcher on a web solution, to use when coaching the rescuer in CPR.

Results Results from 160 simulation runs with volunteers showed that the technical solution provides real time feedback to the rescuer while streaming real time CPR data and video to the dispatcher. The dispatcher used this CPR data and video to coach quality of CPR.

Conclusion The TCPR Link system can connect less experienced CPR volunteers with more experienced dispatchers to improve teamwork and CPR performance. The system is planned to be used in a clinical trial by first responders activated by the dispatch center, in a 5M city.

Conflict of interest Birkenes, Risanger, Sorati and Myklebust are employees of Laerdal Medical. Haukland and Harbo are consultants at Laerdal Medical.

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Cardiac arrest

295 CPR PERFORMANCE WITH USE OF A CPR FEEDBACK DEVICE

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Background Quality cardiopulmonary resuscitation (CPR) correlates to out-of-hospital cardiac arrest (OHCA) survival. A real-time feedback device can guide rescuers towards delivering quality CPR. This study reports results of CPR quality during practice and during emergency use.

Method Rescuers in 17 OHCA cases used the CPRcard, a real-time feedback device, that they received/used during their CPR training. Corresponding weighted average of CPR quality measures (rate and depth) during training sessions were computed for comparison. Optimal CPR rate and depth in Singapore are 100–120cpm and 40–60mm, respectively. Paired t-tests were used for analysis.

Results There was no difference in average compression rate between practice (109.69) and emergency use (110.94);

$p=0.72$). There was a significant difference in average compression depth (practice 48.20mm vs emergency 41.42mm; $t(16)=2.24$, $p<0.05$). During emergency use, the majority depth was in the <40 mm range (practice 10.88% vs emergency 43.25%; $t(15)=-3.47$, $p<0.01$). Majority depth during practice was in the optimal range of 40–60mm (practice 83.69% vs emergency 49.13%; $t(15)=4.21$, $p<0.01$). Majority rate during practice was in the optimal range of 100–120 (practice 94.69% vs emergency 64.82%; $t(16)=3.64$, $p<0.01$). Majority rate during emergency use was above the optimal range (practice 4.0% vs emergency 23.76%; $t(16)=-2.66$, $p<0.05$).

Conclusion The CPRcard helped guide CPR performance considering that on average rate and depth were kept within standard. Nonetheless, CPR quality during emergencies slightly worsened vs. training. Fatigue induced leaning was possible as emergency CPR duration was longer (average time for practice 136.18 seconds vs emergency 351.06 seconds; $t(16)=-3.07$, $p<0.01$).

Conflict of interest None.

Funding Ministry of Health, Singapore.

Cardiac arrest

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POSITIVE SHIFTS IN KNOWLEDGE, ATTITUDES AND PRACTICE AFTER A 60-MINUTE CPR-AED TRAINING

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Background Training and motivating more laypeople to respond to out-of-hospital cardiac arrest (OHCA) is associated with improved OHCA survival rates. This study involved measuring the change in knowledge, attitudes and practice after a 60-minute CPR-AED training.

Method We administered pre-/post-training surveys to 337 participants who underwent CPR/AED training. McNemar's and paired t-tests were used to analyse responses. Compression performance was measured during 2 compression performance rounds on the same day.

Results Favourable shift in knowledge was observed in post-training survey ($p<0.001$) as follows: 'First thing to do...' (pre 48.2% vs post 90.9%, $p<0.0001$); 'Correct number to dial...' (pre 88.4% vs post 99.7%, $p<0.0001$); '...after getting dispatcher on the phone...' (pre 65.5% vs post 96.0%, $p<0.0001$); '...how deep to compress' (pre 47.0% vs post 96.4%, $p<0.0001$); '...how fast to compress' (pre 14.7% vs post 56.1%, $p<0.0001$). Attitudes improved towards CPR and AED use where 71.5% and 72.5% said 'I don't know/unlikely/very unlikely' to perform CPR and use AED at pre-training then improved to 79.5% and 82.2% would 'likely/very likely' afterwards. In CPR practice, average optimal CPR compression depth improved from 70% to 74.9% (t

(336)=-3.74, $p<0.001$); however, compressions at >120 per minute increased from 22.5% to 31.1% ($t(336)=-5.72$, $p<0.001$).

Conclusion We observed favourable shifts in knowledge, attitudes and practice for CPR-AED use amongst our participants that were likely due to undergoing the brief CPR/AED training. The increased average rate observed in the second round of compressions could be an effect of fatiguing.

Conflict of interest None.

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COVID-19

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'SEE US AS HUMANS. SPEAK TO US WITH RESPECT. LISTEN TO US.' A QUALITATIVE REPORT ON AMBULANCE STAFF REQUIREMENTS OF LEADERSHIP WHILST WORKING DURING THE COVID-19 PANDEMIC

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Background The COVID-19 Ambulance Response Assessment (CARA) study was a prospective, longitudinal survey of UK ambulance staff providing both direct and remote patient care during the first wave of the COVID-19 pandemic. CARA aimed to evaluate perceptions of preparedness and wellbeing, and to collect staff suggestions to benefit working practices and conditions.

Method Three online questionnaires were presented, coinciding with the acceleration, peak and deceleration phases of the first COVID-19 wave. Inductive thematic analysis was employed to represent 14,237 free text responses from 3,717 participants to 18 free-text questions overall.

Results A thematic framework was constructed from across the variety of questions that demonstrated participants' objectives to minimise infection risks, maintain service delivery and support their own wellbeing. Additionally, the following requirements of national and organisational leadership were identified as enablers to achieving those objectives.

Evidence-based policies, that are consistently applied, clearly communicated and accompanied by adequate training improve confidence and allay anxiety. Demonstrating learning, planning, and astute use of resources will further benefit trust in leadership and to support staff wellbeing there must also be meaningful dialogue and demonstrable empathy with further appropriate preventative and therapeutic interventions enabled.

Conclusion Inclusive, compassionate leadership will support both ambulance staff wellbeing and service delivery whilst working within pandemic conditions. New working practices should be introduced with transparency and staff experiences of implementing changes should be heeded by leadership to enable further policy development.

Conflict of interest None.

Funding College of Paramedics.