

globally. We developed a mobile application-based real-time CPR training solution named HEROS-Remote, which combines instructors, learners, training contents, and CPR feedback in just one app. In this study, we investigated the usability, acceptability, and feasibility of the HEROS-Remote CPR training solution among community lay people.

**Method** From August to November 2021, HEROS Remote pilot study was conducted in Seoul, Korea. During the study period, 164 learners participated in 22 HEROS-Remote sessions. Before the training, CPR training material, including Little Anne QCPR manikin, was delivered to the individual learner. After one-hour chest compression-only HEROS Remote online training, the learners participated in-depth survey on their experiences of HEROS Remote online training.

**Results** A total 152 learners (92.7%) responded to the survey. Overall, 88.1% of the learners were satisfied with the HEROS Remote training and 85.5% responded that they would recommend online training to others. Majority of the learners (37.3% strongly agree; 41.3% agree) also agreed with the easiness of using the HEROS Remote app. Manikin delivery service was highly satisfactory (97%). However, major challenge for this online solution was that the quality of the training highly depended on internet connectivity.

**Conclusion** This study provides evidence of the feasibility and acceptability of a novel online, real-time CPR training solution. Further research is needed to investigate the effectiveness of online CPR training versus face-to-face training.

**Conflict of interest** SYJK, HM, TSB are employees of Laerdal Medical.

**Funding** Seoul Metropolitan Government.

## Interventions and diagnostics

### 328 NASOPHARYNGEAL TEMPERATURE IN SPONTANEOUSLY BREATHING PATIENTS – RELIABLE METHOD TO MEASURE CORE TEMPERATURE?

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**Background** There is no reliable, minimally invasive, and fast method to measure core temperature in a pre-hospital-care. Nasopharyngeal temperature probe (NPTP) would allow continuous temperature monitoring while treating a patient, but its reliability on spontaneously breathing patients remains unclear.

The study aims to evaluate, whether NPTP monitoring for core temperature is reliable with spontaneously breathing patients, in different environments.

**Method** 47 healthy, ambulatory volunteers were recruited for the study. We measured ear and nasopharynx temperatures using a standard ear thermometer and nasopharyngeal temperature probe. Ear temperature was used as a reference due to its practicality and noninvasiveness. Ear and nasopharyngeal temperatures were measured in 5 different scenarios: room temperature (+22 °C), cold environment (-5 °C) after 5, 10 and 15 minutes of exposure and in a hot environment (+65 °C) after 15 minutes of exposure.

We used Bland-Altman-analysis to compare measurements.

**Results** We gathered a total of 235 ear temperature values and 235 nasopharynx temperature values. Due to a thermometer malfunction, 7 (3.0%) ear temperature values were excluded, leaving a total of 228 temperature value pairs for final analysis.

Bland-Altman-analysis showed a clinically significant positive bias between ear thermometer and NPTP, in all the environments. In room temperature mean difference was 1.90 with limits of agreement -0.00 to 3.81, in cold 3.20 (-0.62 to 7.03), and in hot 1.81 (0.55 to 3.07).

**Conclusion** According to our findings, nasopharynx temperature is not a reliable method to measure core temperature in spontaneous breathing patients.

**Conflict of interest** None declared.

**Funding** None declared.

## Quality improvement and organization

### 330 THE IMPACT OF SPECIALIST PRACTITIONERS WITHIN AN ENGLISH AMBULANCE SERVICE

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**Background** Specialist Practitioners were introduced to East Midlands Ambulance Service in September 2020. Three Cohorts of SP's have been introduced who have undertaken additional training and education in order to assess minor illness and injuries which may reduce the need for a visit to accident and emergency department.

**Method** Analysis of the clinical analytics data suite matched to the Call data sets and compared with wider cohorts of paramedics to understand the impact of each of the three cohorts since their introduction to the Trust.

**Results** Specialist Practitioner(SP) n=37 have attended (n=16,557) conveyed 36.73% (n=6082) EMAS 44.41% SP variance -7.68%, cohort 1 (CH1) commencement date 28/09/20 n=12 (n=7731) conveyed 33.07% CH1 variance -11.34%, Category 1 calls 48.93% (EMAS 56.88% Variance -7.95%) Category 2 calls 38.66% (EMAS 57.95 Variance -19.29) Category 3 calls 22.41% (EMAS 32.31% Variance -9.90) Cohort 2(CH2) commencement date 19/10/20 n=12 have attended (n=6103) conveyed 42.08% (n=2568) SP variance -2.33, Category 1 calls 57.22% (Variance +0.32) Category 2 calls 50.16% (EMAS 57.95 variance -7.79) Category 3 calls 30.12% (EMAS 32.31 variance -2.19). Cohort 3(CH3) commencement date 20/07/21 n=13 have attended (n=2716) conveyed 35.20% (EMAS 44.41 variance -9.21) Category 1 calls 52.97% (Variance -3.91) Category 2 calls 39.51% (Variance -18.44) Category 3 calls 22.99% (variance -9.32). SP Cohort all category variance (33.07 – 42.08).

**Conclusion** The initial three cohorts have all provided significant impact on the conveyance rate of the patient's seen. As this role becomes more embedded the true benefits will be seen through reduced conveyance and support for other crews on the front line.

**Conflict of interest** None.

**Funding** Internal.