

CPR feedback dashboard or metronome). Only cases where EMS performed CPR were included. Data was uploaded to a central database and extracted to EXCEL for descriptive statistics and preliminary results.

Results EMS CPR was performed in 330 cases of which 252 were available for analysis. Mean (SD) compression depth was 5.6±1.7 centimeters, compression rate was 110±9.8 compressions/minute, release velocity was 410±125.1 milliseconds, compression quality (correct compression depth + correct compression rate) was 13.8%±15.6 and compression fraction was 69.7%±22.2.

Conclusion The quality of EMS-delivered CPR, unguided by feedback or metronome, was within recommendations for compression depth, compression rate and release velocity. CPR fraction was between ERC and AHA guidelines. Compression quality, which is not included in ERC/AHA recommendations, did not reach the manufactures recommended >60%. Further work is ongoing to evaluate the effect of adding real-time feedback to guide EMS CPR.

Conflict of interest None.

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37 CLINICAL AND ENVIRONMENTAL FACTORS ARE NOT ASSOCIATED WITH FAILED PRE-HOSPITAL INTRAVENOUS ACCESS

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Background Establishing intravenous (IV) access is a vital part of the paramedic scope of practice and in critically ill patients IV access is essential to administer fluids and/or drugs. However, in the unique pre-hospital environment several factors challenge the procedure. The aim of this study was to investigate clinical and environmental factors associated with failed IV access.

Method During a two-month period in 2018 data containing information on IV procedure characteristics, patient condition and environmental factors were obtained by paramedics operating in the Capital Region of Denmark. Data was exported to IBM's Statistical Package for the Social Sciences and a chi-square test (with Yates' Continuity Correction for 2 × 2 tables and likelihood ratio for expected count violations) was used to test for association between failed IV access and patient condition and environmental factors.

Results A total of 200 data-sets were available for analysis and revealed no significant association between first attempt access failure and presence of radial pulse (p=0.21), patient triage category (p=0.35), size of catheter (p=0.80), site of catheter insertion (p=0.11), light (p=0.26) and procedure location (p=0.31). Significant and direct proportional association was found in first attempt access failure and assessed level of difficulty (p=0.00).

Conclusion The study concludes that only the paramedics own estimation of level of difficulty can be associated with first IV access success, and thereby the only one of the selected factors that can aid the paramedic in choosing between IV or IO access.

Conflict of interest None.

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IMPROVING BYSTANDER DEFIBRILLATION IN OUT-OF-HOSPITAL CARDIAC ARRESTS AT HOME

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Background Most out-of-hospital cardiac arrests occur at home with dismal bystander defibrillation rates (1–3). We investigated the proportion of home arrests potentially reachable with an automated external defibrillator (AED) before emergency medical service (EMS) arrival according to different bystander activation strategies.

Method We identified cardiac arrests in homes (private/nursing/senior homes) and registered AEDs in Copenhagen, Denmark (2008–2016). AED coverage (distance from arrest to AED) and accessibility at the time of arrest were examined according to route distance to nearest AED and EMS response time. The proportion of arrests reachable with an AED was calculated for two-way (from patient to AED and back) and one-way (from AED to patient) bystander response scenarios.

Results Of 1879 home arrests, AED coverage ≤100 m was low (6.3%) and nearly halved due to AED inaccessibility. A two-way bystander could potentially retrieve an accessible AED (≤100 m) prior to EMS in 31.1% (n=37) of cases. If a bystander only needed to travel one-way to bring an AED (≤100 m, ≤250 m and ≤500 m), 45.4% (n=54/119), 37.1% (n=196/529) and 29.8% (n=350/1174) could potentially be reached before EMS based on current AED accessibility. Assuming 24/7 AED accessibility, the proportions increased to 76.5%, 68.6%, 47.8%, respectively.

Conclusion Few home arrests would be reachable with an AED before EMS if bystanders need to travel to fetch the AED and back to the patient. However, nearly 1/3 of arrests ≤500 m of an AED could be reached by a bystander before EMS traveling one-way to the patient, increasing to nearly half of all home arrests if all AEDs were 24/7 accessible.

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