Conclusion One in six ambulance conveyances to ED were deemed non-urgent. The younger population had the largest amount of preventable conveyance by ambulance with diagnoses which could be treated and discharged on-scene. Pathways and interventions would provide a larger patient benefit if they were designed around patient populations as opposed to disease specific.

Conflict of interest None

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CPR IN HOSPITAL – IS IT GOOD ENOUGH?

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Aim Data from the past three years from defibrillators located at the Odense University Hospital (OUH) indicate below standard performance of CPR by service assistants external to the emergency department (ED). ED service assistants (EDs) are trained in CPR several times a year, however CPR is also delegated to external service assistants (non-EDs) who only participate in OUH's mandatory training once every three years, besides having to pass an e-learning resuscitation program once every year.

Method To assess the quality of CPR performed at the OUH in relation to the level of training, by evaluating CPR data readouts from a test taken by OUH service assistants. Performances were evaluated in adherence to ERC guidelines (100–120 presses/min, compression depth 5–6 cm and reConflict of interest position), furthermore participants filled out an accompanying questionnaire.

Results Nine ED service assistants and thirty-eight non-ED service assistants participated. Among EDs the pressing frequency was correct in 100% of cases, among non-EDs 55%. In the ED group the applied compression was correct in 78% versus 49% of cases, while there was full reConflict of interest in 45% versus 54% of cases. Surprisingly, it was found that a large proportion of all service assistants had not completed the mandatory e-learning program.

Conclusion Non-EDs who only receive practical training once every 3 years frequently did not perform CPR to the standards of the ERC guidelines. This indicates that experience and frequent practical instruction would increase the quality of CPR at the OUH.

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AED ACCESSIBILITY AND BYSTANDER DEFIBRILLATION IN OUT-OF-HOSPITAL CARDIAC ARREST

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Aim Inaccessibility of publicly available automated external defibrillators (AEDs) is an issue recently emphasised;^{1,2} however, knowledge of the impact of inaccessibility on bystander defibrillation remains sparse.

Method We identified all public out-of-hospital cardiac arrests (OHCAs) registered by the Copenhagen Mobile Emergency Care Unit physicians (2008–2016), and all publicly available AEDs in Copenhagen (2007–2016) from the Danish AED Network. All recorded OHCAs and AEDs were geocoded, and the true route distances between OHCAs and AEDs were calculated. A covered OHCA was defined as an OHCA with an AED located ≤ 200 m and AED accessibility was assessed for every AED at the exact time of OHCA.

Results In total, 1,830 AEDs were registered in Copenhagen. Out of 643 public OHCAs, 261 (40.6%) were covered by a registered AED ≤ 200 m (median distance: 107.6 m (interquartile range [IQR]: 58.6–146.7)). Of the covered OHCAs, 156 (59.8%) occurred ≤ 200 m of an accessible AED, and in 105 OHCAs (40.2%) the AED was inaccessible. Compared with OHCAs near an inaccessible AED, OHCAs near an accessible AED were more likely to receive bystander defibrillation (25.0% vs 13.3%, $p=0.02$) and achieve 30 day survival (49.7% vs 38.0%, $p=0.08$).

Conclusion The chances of receiving bystander defibrillation nearly doubled if the OHCA was covered by an accessible AED ≤ 200 m, and the proportion of cases that achieved 30 day survival tended to be higher compared to OHCA cases covered by an inaccessible AED.

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THINKING ON SCENE: USING VIGNETTES TO ASSESS THE ACCURACY AND RATIONALE OF PARAMEDIC DECISION MAKING

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Aim Paramedics make important decisions on-scene as to whether a patient requires transport to hospital, referred, or discharged on scene. Research shows that nearly 20% of patients brought to ED by ambulance, could be treated elsewhere. This study aims to investigate the accuracy of conveyance decisions made by on-scene paramedics.

Method Individual real-patient vignettes were created using linked ambulance, ED and GP data and used in an online survey to paramedics in Yorkshire. Half the vignettes were categorised as clinically necessary attendances at the ED and the other half were categorised as clinically unnecessary. Vignettes were validated by a small expert panel. Participants were asked to determine the appropriate conveyance decision and to explain the rationale behind their decisions using a free text box.

Results 143 paramedics undertook the survey and 858 vignettes were completed. There was clear agreement between paramedics for transport decisions ($\kappa=0.63$) and for admission prediction ($\kappa=0.86$). Overall accuracy was 0.69 (95% CI: 0.66 to 0.73). Paramedics were better at 'ruling in' the ED with sensitivity of 0.89 (95% CI: 0.86 to 0.92). The specificity of 'ruling out' the ED was 0.51 (95% CI: 0.46 to 0.56). Text comments were focused on patient safety and risk aversion.

Conclusion Paramedics make accurate conveyance decisions but are more likely to over-convey than under-convey, meaning that whilst decisions are safe they are not always appropriate. Some risk-averse decisions were made due to patient and professional safety reasons. It is important that paramedics feel supported by the service to make non-conveyance decisions. Reducing over-conveyance is a potential method of reducing ED demand.

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63 USE OF THE SBARR IN HANDOVERS FROM THE AMBULANCE SERVICE TO THE EMERGENCY DEPARTMENT

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Aim One of the main causes of adverse events in the health-care chain is communication failure. Information loss from handovers could lead to a prolonged stay in the Emergency Department (ED) and reduced patient safety. Objectives in this study were to evaluate the accurate use of the SBARR and to evaluate the influence of the (appropriate) use of the SBARR on the agreement between the probable diagnosis after handover and the final diagnosis and time of stay at the ED.

Method Data on handovers were collected through observations in 4 hospitals in Amsterdam, from February until May 2017. Subsequently multiple interventions to improve the use of SBARR were implemented (education, newsletters, e-learning, posters and notebooks). This was followed by a second observation period from September until November 2017.

Results A total of 990 handovers was observed. 45 Handovers were excluded because these were transfers patients from other hospitals or patients refused to participate. Of the remaining 945 handovers, 14 (1.5%) used only one element of the SBARR and 242 (25.6%) of handovers used 2 elements. In over half of cases (567, 60%) 3 elements were used. In 107 handovers (11.3%) 4 elements were used and in 15 handovers (1.6%) all 5 elements were used. For the appropriate use of the SBARR, there were 7 handovers which didn't start with the S, 267 (28.3%) which only consisted of the S, 451 (47.7) with the SB order, 197 (20.8%) SBA, 17 handovers (1.8%) SBAR and 6 handovers (0.6%) SBARR. Other analyses are currently in progress.

Conclusion The use of the SBARR in these observations was suboptimal. With further analysis, we want to study if this also has a important effect on patient oriented outcomes, like length of stay in the emergency department.

Conflict of interest None

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DIAGNOSTIC PATTERN OF PATIENTS WITH ACUTE CHEST PAIN AND SYMPTOMS OF PATIENTS WITH MYOCARDIAL INFARCTION

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Aim Ischaemic heart diseases including acute myocardial infarction (MI) are regarded as one of the causes of chest pain. The study aimed to investigate the diagnostic pattern and aetiology of prehospital patients, either presenting with chest pain as main symptom or receiving MI as diagnosis at discharge.

Method The study was a retrospective, register-based cohort study describing prehospital patients either presenting with chest pain or diagnosed with MI in the North Denmark Region. Patients were included if they were transferred to a hospital in the region after prior contact with emergency medical services during 2011–2014.

Results Out of a total 71 870 prehospital patients, there were 10 679 patients with chest pain (14.9% of all). The diagnoses were diseases of the circulatory system (35.3%, 9.6% with MI), the respiratory system (5.2%), the digestive system (3.8%), and 'nonspecific diagnoses' (46.1%). 1365 patients (1.9% of all prehospital patients) were diagnosed with MI. These mainly presented with chest pain (75.0%), unclear problems (9.1%), and difficulty in breathing (7.3%). When comparing MI-patients presenting with chest pain and patients without chest pain (1,024 vs 341 patients), more were men (71.8% vs 59.9%), had lower mortality (4.9% vs 27.7%), and a comorbidity score of 0 (64.0% vs 44.3%). The sensitivity of chest pain as test for MI was 75.0% and the specificity was 86.3%.

Conclusion The majority of patients with chest pain had other diagnoses than circulatory diseases, and 90.4% did not have MI. However, most MI-patients presented with chest pain and these had better outcomes than the ones without chest pain.

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CAN ROUTINE BLOOD GAS SCREENING IDENTIFY PATIENTS WITH UNSUSPECTED ACID-BASE CONDITIONS AND LEAD TO OPTIMISED TRIAGE GROUP ALLOCATION?

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Aim Arterial blood gas is essential in the assessment of acutely ill patients. However, triage tools do not identify all high-acuity patients.¹ The v-TAC method can convert venous blood gas (VBG) values to arterial values (aVBG), which facilitate rapid blood gas sampling.² The aim of this study is to