investigate the proportion of patients with acid-base outlier values in triage groups and investigate if patients could benefit from altered triage group allocation.

Method Patients admitted to the emergency department were allocated to green, yellow, orange and red triage groups based on vital signs. VBG samples were collected and converted to aVBG with v-TAC software. Using hierarchical clustering, patients with combined outlier values of pH, pCO2 and bicarbonate, were identified in green, yellow and orange triage groups.

Results In this study 586 patients were included. In green, yellow and orange triage groups 26 of 222 (11.7%), 36 of 191 (18.8%) and 18 of 155 (11.6%) patients, respectively, were identified with combined pH, pCO2 and bicarbonate outlier values, compared to the specific triage group norm. Although, congruency was observed between severity of acid-base conditions and triage score, some patients presented acid-base abnormality that required more expedient treatment than the allocated triage group suggested.

Conclusion Substantial proportions of patients with outlier values of pH, pCO2 and bicarbonate was clearly identified using routine aVBG analysis. Some patients with severe acid-base conditions could benefit from altered triage group allocation.

REFERENCES

Conflict of interest None
Funding None

Regional Variations in AED Deployment, Accessibility and Early Defibrillation: A Nationwide Study

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Aim Current resuscitation guidelines recommend early defibrillation by publicly accessible automated external defibrillators (AEDs). However, little is known on regional variations in AED deployment, 24/7 accessibility and bystander defibrillation on a nationwide level.

Method We identified all publicly available AEDs registered in the Danish AED network (2007–2016). AED density, type of location, 24/7 accessibility and bystander defibrillation were examined according to regional differences in Denmark.

Results Of 17,106 AEDs registered nationwide (=297.7 AEDs/100,000 inhabitants), the largest quantity and density of AEDs were in The Capital Region (n=5,120, 29.9%), 110.8 AEDs/100,000 inhabitants/1000 km2, followed by Southern Denmark (n=4,082, 23.9%), 27.4 AEDs/100,000 inhabitants/1000 km2, Central Jutland (n=3,644, 21.3%), 21.5 AEDs/100,000 inhabitants/1000 km2, Zealand (n=2,269, 13.3%), 37.8 AEDs/100,000 inhabitants/1000 km2 and Northern Jutland (n=1,991, 11.6%), 43.0 AEDs/100,000 inhabitants/1000 km2. Northern Jutland had the highest proportion of 24/7 AED accessibility (50.2%), followed by Southern Denmark (47.5%), Zealand (44.5%), Central Jutland (41.0%) and The Capital Region (29.1%). The corresponding public defibrillation rates were 12.5%, 23.5%, 9.7%, 13.5% and 11.8%, respectively. "Companies/offices" were the most frequent location for AED placement in all five regions, however, with a low 24/7 accessibility ranging from 11.4% to 31.3%.

Conclusion In Denmark, we found a marked difference in regional AED density ranging from 21.5 to 110.8 AEDs/100,000 inhabitants/1000 km2, as well as 24/7 accessibility ranging from 29.1% to 50.2%. The most frequent location of AED placement for all regions was "Companies/offices", which generally had low 24/7 accessibility. Finally, public OHCA defibrillation rates ranged from 9.7% to 23.5%.

Conflict of interest None
Funding The Danish AED Network and The Danish Cardiac Arrest Registry are funded by The private Foundation Tryg-Fonden with no commercial interest in the field of cardiac arrest.

Self-rated Worry Predicts Hospitalisation in Out-of-hours Services Telephone Triage

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Aim Telephone-triage poses a challenge in estimating urgency and determining the best response in acute health care. Lack of visual cues, vague symptom description, interpretation of symptoms, and spoken word contribute to the complexity. The aim of the study was to include information that would enrich the telephone-triage with a measure of the callers' subjective feeling of urgency defined as 'degree-of worry' (DOW). We tested the hypothesis that high DOW would be associated with hospitalisation within 48 hours.

Method A prospective cohort study was performed between 24.01–9.02 2017. Callers rated their DOW on a 1–5 scale (1=minimum worry, 5=maximum worry) before transferred to a call-handler. Length of hospital stay was obtained from National Patient Register. The association between DOW and hospitalisation was assessed using logistic regression.

Results Of 11 413 calls to the helpline, 581 individuals (5.1%) were hospitalised. Most of the hospitalised individuals (n=374, 64.4%) presented a high DOW (DOW 4–5). A high DOW had an odds ratio for being hospitalised of 5.38 (95% CI: 4.05 to 7.15) compared to those with a low DOW (DOW 1–2). Medium DOW (DOW 3) had intermediate odds ratio of 2.24 (95% CI 1.65 to 3.06). We observed this in all age groups, both genders, all levels of comorbidity, regardless if the caller was the patient or a close relative/friend.
Conclusion A high DOW increased the odds for hospitalisation five-fold. DOW could be beneficial in supporting assessment and clinical decision-making in telephone-triage as well as directly involving the caller in the decision-making process.

REFERENCE

Conflict of interest None
Funding Trygfonden, Danish Nurses Association and Laerdal Foundation.

68 RISKS AND BENEFITS USING A MOBILE-PHONE POSITIONING SYSTEM TO ACTIVATE LAY VOLUNTEERS TO OUT-OF-HOSPITAL CARDIAC ARRESTS

Aim The ‘HeartRunner’-system is a mobile-phone positioning system that activates lay volunteers (heart-runners) to retrieve a publicly accessible automated external defibrillator (AED) and start resuscitation in out-of-hospital cardiac arrests (OHCA). We investigated the risks and benefits of the HeartRunner-system.

Method In cases of suspected OHCA, the Emergency Medical Dispatch Centre activates the HeartRunner-system which automatically alerts heart-runners<1,100 m from the OHCA. After the alarm, all activated heart-runners receive an electronic survey regarding system functionality and physical and psychological impact of the experience. Data was collected from September 1st to December 31st 2017.

Results In 273 cases, 1215 heart-runners were activated and received the survey. The response rate was 94.5%. Of 672 accepting the alarm, 69.6% (n=468) arrived at the OHCA. Of those, 32.3% (n=151) arrived prior to the ambulance, which was in 36.3% (99/273) of all cases. In 14.3% (n=39/273) of the cases, a heart-runner applied an AED, and in 28.2% (n=11/39) defibrillated the patient. Only 0.4% (n=3) reported minor physical injuries, and 0.7% (n=5) reported severe psychological distress. They were subsequently debriefed by health care professionals and screened for post-traumatic stress symptoms; one person showed signs of moderate distress.

Conclusion Using a mobile-phone positioning system, heart-runners were able to arrive prior to the ambulance in one third of all cases. Of those, every fourth applied an AED of which 28.2% defibrillated the patient. It seems physically and psychologically safe for heart-runners to attend in OHCA resuscitation.

Conflict of interest None
Funding None

70 THE DIGITAL AMBULANCE: ELECTRONIC PATIENT CLINICAL RECORDS IN PREHOSPITAL EMERGENCY CARE

Aim Electronic Records in Ambulances (ERA) is a two-year study examining the opportunities and challenges of prehospital implementation of electronic patient clinical records (ePCR) in the UK. National policy encourages digitisation of health services, but this transition may not be straightforward.

Method A telephone survey of progress implementing ePCR in all 13 UK ambulance services explored systems, implementation processes, perceived value and future plans. Interviews with information managers were thematically analysed. Case