management strategies, managing complexity and ambiguity, inter-professional relationships and fear of professional consequences. These candidate themes will continue to be developed and refined during the remaining analysis.

Conclusion Restraint decisions take place in the context of high levels of complexity and ambiguity, limited clinical management options and rely on effective communication and collaboration with partner agencies, such as the police. Paramedics are motivated by patient-centred issues including advocacy and improving outcomes, and at times experience tensions with practitioner-centric issues such as fear of adverse professional consequences.

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Pain and trauma

239   USING REAL-WORLD DATA TO PREDICT PAIN RECORDING AND PAIN SEVERITY IN THE PRE-HOSPITAL EMERGENCY SETTING – AN OBSERVATIONAL ANALYSIS OF 212,401 EPISODES OF CARE

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Background Previous studies in the prehospital setting have reported wide variation in the incidence and severity of pain, and that documentation of pain scores is poor. The aim of our study was to investigate and describe the incidence and severity of patient-reported pain that is recorded by pre-hospital emergency care patients in Ireland.

Method We used data from our electronic patient care record (ePCR) repository to perform this retrospective cohort study of all emergency care episodes recorded by National Ambulance Service practitioners during 2020. Descriptive analysis of patient and care characteristics and regression analyses for the outcomes pain recorded and severity of pain were performed.

Results Of the 212,401 patient care episodes included, 138,195 (65%) included a pain score (75,445 = no pain; 18,378 = mild pain; 21,451 = moderate pain; 22,921 = severe pain). The likelihood of pain being recorded was most strongly associated with the Glasgow Coma Score, working diagnosis, call location, and patient age. The variables showing strongest association with pain severity were transport outcome, working diagnosis, and patient age. Sensitivity analysis confirmed that all regression models performed better than chance, but that all models were relatively weak at predicting the outcomes.

Conclusion Using a large real-world dataset, we have demonstrated patient and care episode characteristics that are associated with recording and severity of self-reported pain. We have identified actionable improvements that will strengthen the prediction accuracy of routinely collected data and ultimately improve pain management for our patients.

Dispatch and triage

242   LARGE VESSEL OCCLUSION STROKE IN AN EMERGENCY CALL: A DESCRIPTIVE ANALYSIS OF EMERGENCY CALLS FOR THROMBECTOMY CANDIDATES

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Background Large vessel occlusion strokes cause most of the post-stroke disability and mortality. In this study, we aim to find out common words and phrases used in the emergency calls for paramedic-suspected thrombectomy candidates. Also, we wanted to find out how a question about conjugate eye deviation, an indicator of vast cortical ischemia, arises in the Finnish stroke dispatch protocol.

Method This was a retrospective study with descriptive analysis of emergency calls for patients with paramedic-suspected large vessel occlusion stroke. We listened to the emergency calls for 157 patients transported to a Finnish comprehensive stroke centre.

Results Speech disturbance was the most common symptom brought up in 125 (80%) calls, followed by tripping (n=63, 40%) and facial asymmetry (n=41, 26%). Suspicion of stroke was mentioned by 44 (28%) callers. Inability to speak any words was mentioned in 65 calls (52% of calls with speech disturbance). Otherwise, difficulty to speak was described, for example, as a lisp, mumble or slurred speech. Conjugate eye deviation was definitively heard in 12 emergency calls. Ten of these patients were diagnosed with large vessel occlusion.

Conclusion In the emergency calls for patients with paramedic-suspected large vessel occlusion, typical stroke symptoms were described. The severity of the stroke stood out by the patients' inability to speak any words or remain standing. It is possible to further develop stroke dispatch protocols to recognise thrombectomy candidates already during an emergency call.

Cardiac arrest

244   ABSTRACT WITHDRAWN

Miscellaneous

245   SITUATIONAL AWARENESS AMONG PREHOSPITAL PROVIDERS DURING AN ONLINE HIGH-FIDELITY SIMULATION – A NOVEL STUDY

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Background It has been suggested that prehospital providers need to be situationally aware in order to reduce human error. By reducing human error, patient outcomes may be improved. Research during the COVID19 pandemic has been difficult and while many projects were put on hold, the authors created a novel manner in which to complete this study and measure SA – through online simulation.

Method This was a mixed-methods explanatory sequential study where prehospital providers participated in an online simulation. The situational awareness global assessment technique (SAGAT) was utilized during periodic freezes in the simulation where the participants would answer questions related to the environments of the patient and the scene. Questions were focused on perception, interpretation, and prediction. Following the simulation, participants provided feedback during interviews.

Results The providers did not possess high levels of SA. Overall SA was 45% (p-value, .162), where participants performed best at perception with a steady decline to interpretation and then prediction. Those with higher levels of education did perform better, although this was not statistically significant, (p-value, .09). Those with more experience initially had higher SA but then tended to decrease with more experience (p-value, .24). Participants did feel satisfied with the online simulation and also felt that the simulation and SAGAT were beneficial to their continuing education and improving their care in the field.

Conclusion Prehospital providers are not situationally aware during online simulation. They focused on the surroundings at first, but did not focus as much on the patient. The SAGAT can be utilized in an online format and may possibly enhance overall performance. Further research is needed to determine if higher levels of education and experience play a role in prehospital SA.

Conflict of interest None.

Funding None.

Miscellaneous

246 | ARE PARAMEDICS SITUATIONALLY AWARE? A CROSS-SECTIONAL STUDY DURING EMERGENCY CALLS FOR SERVICE

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Background Previous studies have suggested that paramedics are not situationally aware during their initial prehospital education nor during online simulation. No known research has measured situational awareness (SA) of paramedics during actual emergency calls for service.

Method An observational cross section study of paramedics in a busy 911 system during emergency calls for service. Utilizing the situational awareness global assessment technique (SAGAT) paramedics were asked a short series of questions during periodic stops during the emergency calls by trained observers. The questions were based on a previously proven theoretical framework of SA for paramedicine focusing on the paramedic's ability to properly recognize events, interpret their meaning, and then predict how they may unfold in the future.

Results While observing 10 licensed paramedics, a total of 67 emergency calls for service were observed over a 4-week period. During those calls, 387 queries were asked of the paramedics during the actual emergency. Paramedics successfully answer 24% of the recognition questions, 32% of the interpretation questions, and 45% of the prediction questions. Overall SA was 34%.

Conclusion Paramedics were not situationally aware. They struggled the most with recognition questions, possibly due to high levels of stress and tunnel vision while on scene with patients. Of the events that they were able to recognize, they performed better at properly interpreting what those events meant and how those events may unfold in the future. Future studies are needed to determine if a targeted educational approach may improve SA and then, possibly, patient outcomes.

Conflict of interest None.

Funding None.

Cardiac arrest

249 | THE ASSOCIATION OF COMORBIDITIES AND SURVIVAL AFTER OUT-OF-HOSPITAL CARDIAC ARREST IN DENMARK

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Background An increase has been observed in 30-day survival of out-of-hospital cardiac arrest (OHCA) in the past 18 years from 4% to 14% in Denmark, but OHCA survival remains low. We investigated how pre-existing comorbidities affected 30-day survival and time-to-death of OHCA patients.

Method This is a retrospective registry-based study with use of nationwide registries. Data on OHCA (2001–2015) were obtained from the Danish Cardiac Arrest Registry, data on the most clinically relevant comorbidities were collected from the Danish National Patient Registry and the Danish National Prescription Registry for up to 10 years prior to their arrest. Data on time-to-death was collected from the Danish Cause of Death Registry. Analysis was performed with use of several generalised linear models.

Results OHCA patients with AMI, ischemic heart disease (IHD), arrhythmia, hyperlipidemia, and heart failure, had a 30-day survival of 7.39[6.87;7.95], 5.43[4.90;6.02], 2.87[2.66;3.09], 1.76[1.60;1.93] and 1.51[1.39;1.65], respectively, presented as odds ratios (OR). Patients with the co-existing conditions i) AMI and arrythmia or ii) arrythmia and IHD