

professionals due to different barriers. This study aims at reviewing if the use of pharmacological methods for pain provided during the emergency care of pediatric trauma patients is proper.

Method Retrospective study of 560 consecutive clinical records of trauma patients, aged from 0 to 18, assisted from March to December 2017 by Advanced Life Support Units. Minor injuries excluded.

Results Median age was 12 years (IQR 8–15). 71.8% (402) males. The most common diagnoses were upper limbs fractures and dislocations 38.4% (215), 6.3% (35) major traumas. Pain assessment scales were used in 16.6% (93). Children received analgesia in 44.1% (247), >6 years were 50.5% (221) and ≤6 210.3% (26), $p < 0.001$. Fentanyl was used in 78.5% (194) followed by Acetaminophen 20.6% (51), Ketorolac 17% (42) and Ketamine 8.9 (22). Midazolam was associated in 35.2% (84). Analgesia in major trauma was 74.3% with respect to serious wounds and brain injuries 10.8% $p < 0.001$. Intravenous route was favourite 74% (183), followed by intranasal, 20.2% (50).

Conclusion The study demonstrates that, according to international guidelines, major trauma analgesia is greater than another groups, but not generalized. Intravenous infusion opioids are the main pharmacological method. However, pain scales are insufficiently applied and there is often a pain undertreatment, particularly in the youngest. Promoting suitable pain scales and alternatives to intravenous route like intranasal could increase treatment.

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29 FEASIBILITY OF USING A DEFIBRILLATOR TO PROVIDE REAL-TIME AND POST-EVENT FEEDBACK TO PARAMEDICS ON THE QUALITY OF THEIR CPR

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Background Ambulance Victoria aimed to improve paramedic CPR performance by introducing audio-visual CPR feedback via a defibrillator with accelerometer-based technology and detailed debriefs post event.

Method We conducted an evaluation assessing the feasibility of using a defibrillator to provide real-time and post-event feedback to paramedics on the quality of their CPR. The pilot was conducted over a 6 month period between the 17th June 2017 and 17th December 2017.

Results Ambulances participating in the trial arrived first at 234 out-of-hospital cardiac arrests (OHCA). Of these cases,

teams voluntarily used the CPR Feedback Pads for 85 (36%) OHCA, however case data was only available for 70 cases. The majority (77%) of paramedics who used the CPR Feedback device found it easy to apply with the defibrillator pads, with little to no disruption to standard CPR performance. The recommended chest compression depth (>5 cm) and rate (100–120 compressions per minute) were achieved for half of cases (51% for both). The median chest compression fraction (84%) was above the recommended standard of >80%. Overall, only 26% of paramedics who received real-time feedback were able to achieve all three CPR Quality Standards. When compared to perceived performance, this statistic differed significantly, as the majority (70%) of paramedics believed their CPR was already of good quality. Most paramedics reported that they found the post-event feedback helpful (74%).

Conclusion Although utilization rates were low for the CPR Feedback device, the mismatch between perceived and actual performance highlights the need for such feedback.

Conflict of interest None.

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30 AMBULANCES ATTENDING DIABETES-RELATED EMERGENCIES IN CARE HOMES – CROSS SECTIONAL DATABASE STUDY

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Background Diabetes, affecting 1 in 5 care home residents, may lead to ambulance call-outs and hospitalisation. We aimed to investigate the epidemiology of diabetes-related emergencies involving ambulance attendances to care home residents.

Method Cross-sectional design investigating ambulance attendance to people presenting with diabetes-related emergencies in the East Midlands, UK, between 2012 and 2017. We analysed dispatch and ambulance clinical data with care home data, including call category, timing, location, care home type, clinical or physiological measures, treatments, conveyance (transport to hospital) and costs.

Results Overall 2 19 722 (6.7% of 3.3 million) ambulances attended care homes over 6 years, with 12 080 (5.5%) to diabetes-related emergencies. Of 3152 care home patients categorised as having a ‘diabetic problem’, 1957 (62.1%) were conveyed to hospital, similar to that for community residents taking into account other factors. Factors associated with conveyance included reduced consciousness (OR 0.91, 95% CI 0.87–0.95), elevated heart (1.01, 1.01–1.02) or respiratory rate (1.08, 1.06–1.10), no treatment for hypoglycaemia (0.54, 0.34–0.86) or additional medical (but not psychiatric) problems. Ambulance costs were significantly lower when a patient was conveyed, by some £18 (95% CI £11.94–£24.12), but this would be outweighed by downstream hospital care costs. For a simulation in which all trusts’ mean NHS Reference Costs were used, conveyance was no longer significant in the cost model.

Conclusion Conveyance following diabetes-related emergencies was as common for care home as for other community residents despite access to trained staff, and more likely with impaired consciousness, abnormal physiological measures or lack of treatment for hypoglycaemia.

Conflict of interest None.

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31 EXPERIENCE OF AMBULANCE WORKERS, NURSES AND DOCTORS OF HANDOVER OF PATIENTS WHO ARE TRANSPORTED BY AMBULANCES TO EMERGENCY DEPARTMENTS IN ICELAND: A QUALITATIVE INTERVIEW STUDY

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Background Adverse events healthcare are often caused by communication failure. Patient handover from ambulance personnel to specialized nurses and doctors in Emergency Departments carries the risk that that important information will be lost during the process, with consequences that may adversely affect patient well-being. The objective of this qualitative study was to analyze communication and transfer of responsibility during handover of patients arriving with ambulances in Emergency Departments in Iceland.

Method Vancouver school method of phenomenology was used. Participants were selected with a purpose sampling. Semi-structured individual interviews were conducted and supported by interview guide. The interviews were themed, followed by construction of an individual analysis model and overall analysis model.

Results A total of 17 ambulance workers, registered nurses and doctors described their experience of a patient handover in Emergency Department and the process of exchange of written and verbal information between health professionals involved in the handover of care. The main finding of the study was that structured communication and information disclosure have a great impact on the quality of patient handover. This is described in four main themes (Transfer of professional responsibility; Information dialogue; Personal and professional factors and Organizational factors) and nine sub-themes.

Conclusion Standardized handover protocol, clear procedures and education to healthcare professionals can potentially improve communication and transfer of responsibility for patients brought to emergency departments with ambulances, thus potentially improving patient safety.

Conflict of interest None.

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32 HELICOPTER EMERGENCY MEDICAL SERVICES MISSIONS TO SMALL ISLANDS AND THE MAINLAND DURING A 3-YEAR PERIOD IN DENMARK

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Background The Danish Helicopter Emergency Medical Services (HEMS) is part of the Danish Emergency Medical Services System serving 5.7 million citizens with 1% living on small islands. HEMS is dispatched based on pre-defined

criteria including severity and urgency of the case. HEMS is also sent to small islands for less urgent cases, when rapid transport is needed. The study aim was to characterize HEMS missions and the patient population focusing on differences in utilisation between small islands and mainland.

Method Descriptive study of data from the HEMS database in a three-year period from 1 October 2014 to 30 September 2017. All missions in which a patient was either treated on scene or transported by HEMS were included.

Results A total of 6551 HEMS missions were included in the study. Of those 986 (15%) were missions to islands. In total, 92% of missions to islands resulted in patients being transported by HEMS compared to 66% of missions to mainland. Patients from islands were in general older than patients from the mainland. Disease severity, measured with National Advisory Committee for Aeronautics (NACA) score, was lower: 4–7 (serious or life-threatening conditions) in 41% and 66% of missions from islands and mainland, respectively.

Conclusion HEMS missions to islands counts for a substantial part of HEMS activity. The patient population is older and have lower disease severity. More insight into the patient population and outcomes after HEMS transportation would add to the planning and prioritizing of resources.

Conflict of interest None.

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33 OHCA AND COPD, INCIDENCE, OUTCOME AND SEASONAL VARIATION

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Background In Denmark, 30 day survival from OHCA have tripled from 2001–2011, but not among COPD patients. It is known that COPD patients are less likely to have; witnessed arrest, bystander actions and a shockable rhythm. The purpose of this study is to present updated rates of incident, survival to hospital, EMS treatment and seasonal variation among OHCA in COPD patients.

Method Data was collected from the verified 2016 Danish OHCA of patients with history of COPD noted in the EMS records. Incidence rates per 100.000 inhabitants, survival rates to hospital and EMS resuscitation attempt are presented. Fisher's exact and Chi-square test was used to assess significant differences in survival rates between COPD and non-COPD OHCA victims. Monthly variations of OHCA in COPD patients are presented as percentages.

Results In 2016 there were 1480 indexed and verified OHCA in the capital region of Denmark. Preliminary data show OHCA incidence rates in COPD patients is 8.4 per 100.000 inhabitants, survival to hospital rates of 29.1%, and a seasonal variance with high incidences in winter months (range: 4% in April – 13.9% in November). There was a significant difference in termination of treatment prior to arrival at hospital (COPD: 69.5%; non-COPD: 59.6% p:0.004).

Conclusion Preliminary data show that COPD patients still have a significant worse outcome. The reported seasonal