compare their characteristics and diagnoses with one-time users. Additional knowledge about repeated users may help identify appropriate alternative interventions.

Methods Population-based cohort study on patients to whom an emergency ambulance was dispatched after an emergency call in the North Denmark Region (5 80 000 inhabitants), 2012–2013. Each patient was included at first ambulance dispatch and followed one year. One-time users (one ambulance dispatched) were compared to repeated users divided into: moderate (2–4), frequent (5–9), and super users (≥10). Hospital diagnoses according to ICD-10 were retrieved.

Results We identified 36 210 patients corresponding to 46 203 emergency ambulances dispatched within the one-year follow-up. The results below are presented according to the four groups: one-time, moderate, frequent, and super users. Percentage of patients (ambulances): 83.2% (65.2%), 15.8% (28.9%), 0.9% (4.2%), 0.1% (1.7%). Male gender: 53%, 56%, 59%, 62%. Median age (interquartile range): 55 (29–72), 61 (41–77), 55 (40–71), 52 (37–68). Charlson comorbidity index ≥3: 3%, 12%, 16%, 13%. Percentage diagnosed with mental disorders (ICD-10 chapter 5; n=2,149): 4%, 6%, 12%, 19%. Respiratory diseases (ICD-10 chapter 10; n=3,033): 5%, 9%, 14%, 25%. Injuries, poisoning, and external causes (ICD-10 chapter 19, n=11,709): 33%, 20%, 15%, 9%.

Conclusion Repeated EMS users constituted 16.8% of patients (34.8% of ambulances). Compared to one-time users, repeated users were more often male, had higher comorbidity, were more often diagnosed with mental and respiratory illnesses, and less often with injuries, poisoning, and external causes.

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35 MANUAL VERSUS SEMI-AUTOMATIC RHYTHM ANALYSIS AND DEFIBRILLATION FOR OUT-OF-HOSPITAL CARDIAC ARREST

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Aim Although manual and semi-automatic external defibrillation (SAED) are commonly used in the management of cardiac arrest, the optimal strategy is not known. We hypothesised that SAED would reduce the time to first shock and increase survival compared to a manual strategy.

Methods Between 2005 and 2015, we included adult out-of-hospital cardiac arrests (OHCA) of presumed cardiac aetiology. On October 2012, a treatment protocol utilising SAED was introduced following years of manual defibrillation by paramedics. The effect of SAED implementation on patient outcomes was assessed using adjusted interrupted time series models.

Results Of the 14 776 cases, 10 224 (69.2%) and 4552 (30.8%) occurred during the manual and SAED protocols, respectively. After adjustment for arrest confounders and temporal trend, the odds of delivering the first shock within 2 min of arrival increased under the SAED protocol (adjusted odds ratio [AOR] 1.72, 95% CI: 1.32, 2.26; p<0.001). Despite this, the SAED protocol was associated with a reduction in return of spontaneous circulation (AOR 0.81, 95% CI: 0.68, 0.96; p=0.01), event survival (AOR 0.74, 95% CI: 0.62, 0.88; p=0.001) and survival to hospital discharge (AOR 0.71, 95% CI: 0.55, 0.92; p=0.009) when compared with the manual protocol. Although SAED reduced the time to first shock, there was no improvement in the rate of successful first shock cardioversion (AOR 0.73, 95% CI: 0.51, 1.06; p=0.10).

Conclusion Although SAED improved the time to first shock, this did not translate into higher rates of successful cardioversion or survival for OHCA patients. Advanced life support providers should be trained in a manual defibrillation protocol.

Conflict of interest None declared.

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EMERGENCY MEDICAL DISPATCHERS’ PERCEPTION OF BARRIERS IN HANDLING EMERGENCY CALLS. A QUALITATIVE STUDY

Aim Medical dispatching is a highly complex procedure and has an impact upon patient outcome. It includes handling emergency calls, prioritisation of resources and the provision of guidance and instructions to callers. Whilst emergency medical dispatchers play a key role in the process, their perception of the process is rarely reported. We explored emergency medical dispatchers’ perception of their role in emergency call handling and their perception of barriers.

Methods An explorative qualitative interview study was designed. Modified grounded theory was used for the data analysis.

Results A total of 5 paramedics and 6 registered nurses were interviewed. A model of the emergency call handling process was drawn based on the data. The analysis of barriers resulted in themes relating to the callers and the medical dispatchers, from whom four and three respective themes were identified. For callers, the motive for calling, the situation, the perception and presentation of the problem was influencing factors. For the dispatchers the expertise, teamwork and organisation influenced the process.

Conclusion The results indicate factors influencing the medical dispatch process, as perceived by medical dispatchers. Callers lack knowledge about best utilisation of the emergency number and the medical dispatching process, which can be improved by public awareness campaigns and incorporation of knowledge in first aid courses. For medical dispatchers the most potent modifiable factors were based upon the continuous professional development of the medical dispatchers and the system that supports them.

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