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EFFECTS OF A GENERAL PRACTITIONER AT SCENES OF SERIOUS INJURY: A SYSTEMATIC REVIEW

¹Gyri Synnøve Hval Straumann*, ¹Astrid Austvoll-Dahlgren, ¹Hilde Helene Holte, ^{2,3,4}Torben Wisborg, ¹Norwegian Institute of Public Health, Oslo, Norway; ²Norwegian National Advisory Unit on Trauma, Division of Emergencies and Critical Care, Oslo University Hospital, Oslo, Norway; ³Anaesthesia and Critical Care Research Group, Faculty of Health Sciences, University of Tromsø, Norway; ⁴Hammerfest Hospital, Department of Anaesthesiology and Intensive Care, Finnmark Health Trust, Hammerfest, Norway

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Aim In Norway, each municipality is responsible for first line emergency healthcare, and has to have a general practitioner (GP) on call continuously. GPs are expected to assist patients and ambulance personnel at the site of severe injuries or illnesses. The Norwegian society invests substantial resources into emergency care, and it is desirable to find evidence to inform this practice. This systematic review aimed to examine how survival, time spent at the scene, the choice of transport destination, assessment of urgency, the number of admissions, and the number of cancellations of specialised prehospital resources were affected by the presence of a GP at the scene of a suspected severe injury.

Method This systematic review utilised systematic, transparent methods.¹ We searched published and planned systematic reviews and primary studies in Cochrane Library, Medline, Embase, OpenGrey, GreyLit and trial registries in June 2016. Two authors independently screened the references and assessed the eligibility of all potentially relevant studies. The inclusion criteria for study design was based on the Cochrane Effective Practice and Organisation of Care Group (EPOC).²

Results The search for systematic reviews and primary studies identified 5415 articles. However, no studies met the predefined inclusion criteria. Most studies were excluded because they did not investigate either the target population (severely injured) or the intervention in question (presence of a general practitioner).

Conclusion It remains uncertain how the presence of a general practitioner at the injury scene might affect the selected outcomes.

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GLOBAL RESUSCITATION ALLIANCE UTSTEIN RECOMMENDATIONS FOR DEVELOPING EMERGENCY MEDICAL SERVICES SYSTEMS TO IMPROVE CARDIAC ARREST SURVIVAL

¹N Gayathri*, ²L Tiah, ³AFW Ho, ⁴A Ajaz, ⁵HM Ohn, ⁶KD Wong, ⁷LA Wallis, ⁸BS Leong, ⁹F Lippert, ¹⁰M Castren, ¹¹MHM Ma, ¹²MJ El Sayed, ¹³PP Pek, ¹³J Overton, ¹⁴S Perret, ¹⁵T Hara, ¹⁶YY Ng, ¹⁷MEH Ong. ¹Singapore General Hospital, Department of Emergency Medicine, Singapore; ²Changi General Hospital, Accident and Emergency Department, Singapore; ³Singhealth Emergency Medicine Residency, Singapore; ⁴Addis Ababa University School of Medicine, Department of Emergency Medicine, Ethiopia; ⁵Parami General Hospital, Emergency Department, Yangon, Myanmar; ⁶Hospital Pulau Pinang, Emergency and Trauma Department, George Town, Penang, Malaysia; ⁷University of Cape Town, Division of Emergency Medicine, CapeTown, South Africa; ⁸National University Hospital, Emergency Medicine Department, Singapore; ⁹University of Copenhagen, Emergency Medical Services Copenhagen, Copenhagen, Denmark; ¹⁰Karolinska Institutet, Department of Clinical Science and Education, Stockholm, Sweden; ¹¹University of Helsinki and Helsinki University Hospital, Department of Emergency Medicine and Services, Helsinki, Finland; ¹²College of Medicine, National Taiwan University, Department of Emergency Medicine, Taipei, Taiwan; ¹³American University of Beirut Medical Centre, Department of Emergency Medicine, Beirut, Lebanon; ¹⁴International Academies of Emergency Dispatch, Salt Lake City, Utah, USA; ¹⁵Vientiane Rescue, Vientiane, Laos; ¹⁶Graduate School, Kokushikan University, Department of EMS System, Tokyo, Japan; ¹⁷Singapore Civil Defence Force, Singapore; ¹⁸Singapore General Hospital, Department of Emergency Medicine, Singapore; ¹⁹Duke-NUS Medical School, Health Services and Systems Research, Duke-NUS Medical School, Singapore

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Aim The Global Resuscitation Alliance (GRA) 10 steps were established in 2015 to improve survival for Out-of-Hospital Cardiac Arrest (OHCA). However, these 10 steps were recommended mainly for developed Emergency Medical Services (EMS) systems and implementing these steps can be challenging for developing EMS systems. We aimed to explore barriers faced by developing EMS systems and to establish pre-requisites needed to improve survival. We also developed a framework for developing EMS systems to build their emergency response capability.

Method A consensus meeting was called in Singapore on 1st and 2nd August 2017. There were 74 participants who were key stakeholders from 26 countries including EMS directors, physicians and academics. The group was subdivided into 4 groups to represent the chain of survival- community, dispatch, ambulance and hospital, with a separate group on perinatal resuscitation. Pertinent questions were given to the group for discussion, following which their answers were presented and voted upon to reach a consensus.

Results Each group's discussion points were used to construct the modified survival framework and create 11 key statements to describe the pre-requisites for achieving the GRA 10 steps. The participants then voted on the importance and feasibility of these 11 statements as well as the GRA 10 steps.

Conclusion In this paper, we propose a modified framework of survival for developing EMS systems. There are barriers for developing EMS systems to improve OHCA survival rates. These barriers may be overcome by systematic prioritisation and cost effective innovative solutions.

Conflict of interest None

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DO ORGANISATIONAL CHANGE IN OUT-OF-HOUR SERVICE INFLUENCE ON THE USE OF HELICOPTER EMERGENCY MEDICAL SERVICE? AN OBSERVATIONAL STUDY OF A NATURAL EXPERIMENT

^{1,2}DS Nystøyl*, ³HJ Breidablik, ^{1,4}J Røislien, ^{2,5}S Hunskaar, ⁶Ø Østerås, ^{2,5}E Zakariassen. ¹Department of Research, Norwegian Air Ambulance Foundation, Drøbak, Norway; ²Research Group for General Practice, Department of Global Public Health and Primary Care, University of Bergen, Norway; ³Centre of Health Research, Førde Hospital Trust, Førde, Norway; ⁴Faculty of Health Sciences, University of Stavanger, Stavanger, Norway; ⁵National Centre for Emergency Primary Health Care, Uni Research Health, Bergen, Norway; ⁶Department of Anaesthesia and Intensive Care, Haukeland University Hospital, Bergen, Norway

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Aim Over the last decades out-of-hour services in Norway have been centralised to cover larger geographical areas, resulting in longer response times for the on-call GP. Reports indicate an unintended increase in requests of helicopter emergency medical services (HEMS) as a result. We aimed to investigate alteration in the requests for HEMS and NACA-score of the patients transported.

Method In 2009 nine municipalities in the county of Sogn og Fjordane relocated all local out-of-hour services into one large casualty clinic (SYS-IKL). We included all primary HEMS requests in the county from 2004–2013 and compared missions within the area of SYS-IKL to missions in the rest of the county.

Results Preliminary data included 7310 requests. Within SYS-IKL requests were 4.4 per week in the period. Completed and cancelled requests were 3.0 and 1.3 per week before 2009 compared to 2.7 and 1.6 per week after 2009. Outside SYS-IKL requests were 8.9 per week before 2009 and 10.4 per week after 2009. Completed and cancelled requests were 5.1 and 3.4 per week before 2009 compared to 5.5 and 4.6 per week after 2009. Mean NACA-score within SYS-IKL was 3.98 and 3.87 ($p=0.115$) compared to 3.78 and 3.77 ($p=0.786$) outside SYS-IKL before and after 2009, respectively.

Conclusion Preliminary results did not confirm the hypothesised increase in use of HEMS or reduced NACA-score due to centralization of out-of-hour services. However, further statistical analyses are required.

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SATISFACTION OF PARAMEDICS AND PATIENTS IN THE USE OF METHOXYFLURANE (PENTHROX) FOR THE TREATMENT OF PAIN

^{1,2}J Karjanlahti*, ¹M Tölli, ¹V Lahola, ¹S Länkimäki. ¹Centre for Prehospital Emergency care, The Hospital District of South Ostrobothnia, Seinäjoki, Finland; ²Vocational Education Centre Sedu, Seinäjoki, Finland

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Aim The objective of this study was to evaluate the satisfaction of paramedics and patients in the use of Pentrox in pain management.

Method The material was collected by using a questionnaire between Dec 2016–Dec 2017 in the Hospital District of South Ostrobothnia. Pentrox was given to 68 patients and the paramedics recorded both their own answers and those of the patients in the questionnaire.

Results The mean satisfaction of the paramedics in the use of Pentrox was 7.85 on a scale 1–10 with a standard deviation (SD) of

2.36 ($n=61$). A total of 40% of the respondents scored their satisfaction as 8–10. The mean satisfaction of the patients was 8.04 with SD of 2.52 ($n=49$) and 51% of the patients rated the satisfaction to be 8–10. At baseline, the average pain of 65 patients was 8.09 with SD of 1.45. The average pain at 10 min after dosing was 5.42 with SD of 2.45 ($n=64$). Pain estimated at 10 min after dosing, a statistically significant difference was observed between pain at baseline ($p<0.001$). Among the adverse effects, nausea occurred in one (1.47%) and haemodynamic problems in two (2.94%) patients ($n=68$).

Conclusion Based on this study, most of the paramedics and patients were satisfied with the use of Pentrox in the treatment of pain. Pentrox relieved pain in a statistically significant manner and among the adverse effects, the occurrence of nausea and haemodynamic problems was limited.

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EMS-WIDE MULTIFACETED IMPLEMENTATION OF HEMS-PHYSICIAN PROVIDED RSI PROTOCOL

¹S Ångerman*, ²H Kirves, ¹J Nurmi. ¹Helsinki University Hospital and Department of Emergency Medicine, Finland; ²Prehospital Emergency Care, Hyvinkää hospital area, Finland

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Aim We developed a RSI protocol that standardises the prehospital process of anaesthetised patients and involved EMS crews as active team members. We recently reported the effect of the protocol on the intubation success rate.¹ The aim of the current study was to describe the methods used during implementation of RSI protocol to the EMS systems and evaluate the protocol compliance and effect on on-scene time (OST).

Method The RSI protocol was implemented to the HEMS unit and EMS systems in a three months period in 2015. The implementation of the RSI protocol consisted of spreading material, lectures, simulations, skill stations, academic detailing and cognitive aids. Over 20 lectures and discussion panels were organised throughout the collaborative EMS systems. Training video was published in YouTube (>34.000 views). The checklists are used by the EMS personnel preparing the patient for intubation, HEMS crew before the induction of anaesthesia and before starting the transportation. Data from RSI missions were gathered to a database before (201 patients in year 2014) and after the implementation of the protocol (468 patients in years 2015–2016).

Results The protocol compliance rate was 95%–97% (preoxygenation ≥ 3 min 97%, neuro-muscular blocking agent 97%, mechanical ventilation 95%). The median of OST was 31 min (IQR 23–38) before the protocol, and 28 min (IQR 22–37) after the implementation ($P 0.0495$). Reporting of complications was also improved.

Conclusion Using multifaceted implementation strategy and involving EMS crews in the protocol can significantly improve the clinical process of a HEMS unit.

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