**Abstracts**

**19** PRE-HOSPITAL OXYGEN THERAPY AND CO2 RETENTION IN PATIENTS ADMITTED THROUGH THE EMERGENCY DEPARTMENT

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**Aim** Patients with severe COPD are at risk of CO2 retention, due to uncontrolled oxygen administration. In Denmark, emergency medical service (EMS) care only offers respiratory support with 100% oxygen and treatment with fractionated oxygen is limited. In this retrospective study we sought to clarify the extent at which patients with hypercapnic acidosis, due to excessive pre-hospital oxygen therapy, were admitted through the emergency department (ED).

**Methods** Patients admitted through the ED were divided according to triage score. Venous blood samples were collected from all patients and arterialised using the venous to arterial conversion (v-TAC) software. All admissions of patients with CO2 retention (pCO2>6.0 kPa) and acidosis (pH<7.35) were identified. Patient records and EMS journals were reviewed to determine out-of-hospital saturation and vital signs.

**Results** 125 admissions were registered concerning respiratory issues. 11 patients had CO2 retention and acidosis. Mean pre-hospital saturation was 83.6% at first patient contact. Saturation increased to 95.0% upon arrival at the ED, and when triage took place in-hospital, saturation decreased to 91,1%. Blood gas revealed mean pH 7.29, pCO2 8.72 kPa, and pO2 10.2 kPa. But pCO2 values as high as 11 kPa were registered. All blood samples were drawn as part of the triage.

**Conclusion** Although few patients were identified with CO2 retention, results indicated that the cause most likely was high oxygenation pre-hospital. Studies exploring optimised pre-hospital oxygen therapy for patients with CO2 retention tendencies are required.

**Conflict of interest** None declared.

**Funding** None declared.

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**20** HYGIENE IN THE EMERGENCY MEDICAL SERVICES (EMS) CALLS FOR ATTENTION

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**Aim** Contaminated environmental surfaces are known to provide an important potential source for transmission of healthcare associated pathogens and prehospital treatment appears related to increased risk of infection. Nevertheless, few studies present and discuss prehospital hygiene, resulting in limited knowledge and understanding of related challenges. Our aim was to assess microbial contamination and influencing factors.

**Methods** A nationwide, semi-blinded, cross-sectional study conducted in Denmark from August to November 2016. Using a combined swab/agar method, samples from environment, equipment and personnel were randomly collected from 80 ambulances and crew, in-between patient courses, after cleaning. Focus was colony forming units (cfu) and healthcare associated pathogens. In addition, explanatory variables e.g. hours from last thorough cleaning, area of service (rural/city) and number of patient courses within the shift, were collected and used in bivariate analyses.

**Results** 800 sites, showed an average of 11.3 cfu/cm² (environmental sites 5.01 cfu/cm², hands 11.1 cfu/cm² and uniforms 30.6 cfu/cm²). Staphylococcus aureus, Enterococcus and Enterobacteriaceae were found on 10, 3.4 and 0.5% of the imprints, respectively. One imprint was MRSA, two were VRE but none was ESBL, and we found no correlation between the explanatory variables and the degree of microbial burden.

**Conclusion** Microbial contamination and related challenges in the EMS calls for further attention. Several sites were contaminated with healthcare associated pathogens, but neither time from cleaning, number of patients nor area of service were of influence on the degree of contamination. Future research on hygienic challenges and routes of transmission is recommended.

**Conflict of interest** H. S. Vikke and M. Giebner, is employed by Falck Denmark A/S H. J. Kolmos has no conflicts of interest.

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**21** PREHOSPITAL NATIONAL EARLY WARNING SCORE (NEWS) DOES NOT PREDICT ONE DAY MORTALITY

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**Aim** National Early Warning Score (NEWS) has been shown to be the best early warning score to predict in-hospital mortality. A single study also supports its use in a prehospital setting. The aim of the current retrospective cohort study was to investigate the association of prehospital NEWS and mortality using large population based databases.

**Methods** We analysed prehospital electronic patient record data to calculate NEWS values and compared these to national mortality data. We included all patient records for patients 18 years or older with sufficient prehospital data to calculate NEWS from 17 August 2008 to 18 December 2015 encountered by the emergency medical services (EMS) in the Hospital District of Helsinki and Uusimaa, Finland. The primary outcome measure was death within one day of EMS dispatch.

**Results** 35 845 cases were included. Mean age of patients was 65.8 years (SD 19.9 years). 47.5% of patients were male. Median NEWS was 3 (IQR 1 – 5). The primary outcome of death within one day of EMS dispatch occurred in 441 (1.2%) cases. The AUROC for primary outcome of death within one day was 0.502.

**Conclusion** In our retrospective cohort study, prehospital NEWS did not predict mortality within one day of EMS dispatch.