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#### 4 PREHOSPITAL RECOGNITION AND ANTIBIOTICS FOR 999 PATIENTS WITH SEPSIS: PROTOCOL FOR A FEASIBILITY STUDY

<sup>1</sup>Chris Moore\*, <sup>2</sup>Jenna Bulger, <sup>3</sup>Matt Morgan, <sup>1</sup>Timothy Driscoll, <sup>1</sup>Alison Porter, <sup>1</sup>Saiful Islam, <sup>4</sup>Mike Smyth, <sup>4</sup>Gavin Perkins, <sup>2</sup>Bernadette Sewell, <sup>3</sup>Timothy Rainer, <sup>5</sup>Prabath Nanayakkara, <sup>2</sup>Chukwudi Okolie, <sup>3</sup>Susan Allen, <sup>2</sup>Greg Fegan, <sup>6</sup>Jan Davies, <sup>7</sup>Theresa Foster, <sup>3</sup>Nick Francis, <sup>8</sup>Fang Gao Smith, <sup>3</sup>Gemma Ellis, <sup>3</sup>Tracy Shanahan, <sup>9</sup>Robin Howe, <sup>1</sup>Samuel Ricketts, <sup>2</sup>Helen Snooks. <sup>1</sup>Welsh Ambulance Services NHS Trust, UK; <sup>2</sup>Swansea University, UK; <sup>3</sup>Cardiff and Vale University Health Board, UK; <sup>4</sup>University of Warwick, UK; <sup>5</sup>VU University Medical Centre, Netherlands; <sup>6</sup>Patient Representative, UK; <sup>7</sup>East of England Ambulance Service NHS Trust, UK; <sup>8</sup>University of Birmingham, UK; <sup>9</sup>Public Health UK

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**Aim** Sepsis is common; it kills at least 44 000 people every year in the UK. Early recognition and management of sepsis has been shown to reduce morbidity and mortality of people with sepsis. Paramedics frequently come into contact with patients with sepsis, and are well placed to provide early treatment. This feasibility study aims to find out whether paramedics can collect blood cultures from and administer intravenous (IV) antibiotics to patients with sepsis. We will determine the feasibility, safety and acceptability of our trial design and data collection methods.

**Method** Paramedics will receive training to assist them to recognise sepsis using a screening tool, obtain blood cultures, and provide IV antibiotics. If sepsis is suspected, paramedics will randomly allocate patients to intervention or usual care using scratchcards. Patients will be followed up at 90 days using linked anonymised data to capture length of hospital admission and mortality. We will also collect self-reported health-related quality of life at this time. We will interview ten patients and hold a focus group with paramedics, to find out what they think about the intervention.

**Results** An intervention development group agreed upon the clinical protocol and training methods. Sixty paramedics have been trained. Patient recruitment will commence 1st December 2017.

**Conclusion** At the end of this study we will make a recommendation about whether a fully-powered randomised controlled trial is warranted, and if so, we will develop a proposal for further research funding to answer questions regarding safety and effectiveness for patients, and benefit to the National Health Service.

**Conflict of interest** None

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#### 5 PREHOSPITAL ECHOCARDIOGRAPHY DURING CPR IMPACTS TREATMENT DECISIONS IN A DUTCH PHYSICIAN-STAFFED HELICOPTER EMERGENCY MEDICAL SERVICE

<sup>1,2</sup>R Ketelaars\*, <sup>2</sup>C Beekers, <sup>1,2</sup>GJ van Geffen, <sup>1,2</sup>N Hoogerwerf. <sup>1</sup>Radboud university medical centre, Nijmegen, The Netherlands; <sup>2</sup>HEMS Lifeliner 3, Volkel Air Force Base, Volkel, The Netherlands

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**Aim** Patients in cardiac arrest must receive algorithm-based management such as basic life support and advanced (cardiac) life support (ALS). International guidelines dictate diagnosing and treating any factor that may have caused the arrest or

may be complicating the resuscitation.<sup>1</sup> Ultrasound is recognised to be of potential value in this process and can be used in a prehospital setting.<sup>2</sup> We aim to evaluate the use of prehospital echocardiography during CPR and its impact on treatment decisions in a Dutch helicopter emergency medical service (HEMS).

**Method** From February 2014 through November 2016 we conducted an observational study in cardiac arrest patients, of any cause, in whom the Nijmegen HEMS performed CPR with concurrent echocardiography. The physicians adhered to ALS algorithms. Echocardiography was performed simultaneously with interruptions of chest compressions to allow for heart rhythm analysis.

**Results** In 56 patients 102 ultrasound examinations were documented. Treatment decisions were impacted in 49 patients (88%) and in 62 (61%) ultrasound examinations. Overall, we found 78 changes. The changes were termination of CPR in 32 patients (57%) and continuation hereof in 21 (38%). Other changes were related to fluid management (14%), adjustment of drugs and doses (14%), and choice of receiving hospital (5%). Causes of cardiac arrest were trauma (48%), cardiac (21%), medical (14%), asphyxia (9%), and other (7%). **Conclusion** In conclusion, prehospital ultrasound during CPR in our HEMS significantly impacts patient treatment. Ultrasound images can help explain futile care to caregivers and relatives, even if the sensible decision already is to terminate CPR.

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#### 6 DEVELOPMENT AND VALIDATION OF A PRAGMATIC PREHOSPITAL TOOL TO IDENTIFY STROKE MIMIC PATIENTS

<sup>1,2</sup>G McClelland\*, <sup>2</sup>H Rodgers, <sup>3</sup>D Flynn, <sup>2</sup>C Price. <sup>1</sup>North East Ambulance Service NHS Foundation Trust, UK; <sup>2</sup>Institute of Neuroscience (Stroke Research Group), Newcastle University, UK; <sup>3</sup>Institute of Health and Society, Newcastle University, UK

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**Aim** Stroke mimics (SM) are non-stroke conditions producing stroke-like symptoms. Prehospital stroke identification tools prioritise sensitivity over specificity.<sup>1</sup> It is estimated that >25% of prehospital suspected stroke patients are SM.<sup>2</sup> Failure to identify SM creates inefficient use of ambulances and specialist stroke services. We developed a pragmatic tool to identify SM amongst suspected prehospital stroke patients.

**Method** The tool was developed using regression analysis of clinical variables documented in ambulance records of suspected stroke patients linked to primary hospital diagnoses (derivation dataset, n=1,650, 40% SM).<sup>3</sup> It was refined using feedback from paramedics (n=3) and hospital clinicians (n=9), and analysis of an expanded prehospital derivation dataset (n=3,797, 41% SM (original 1650 patients included)).

**Results** The STEAM tool combines six variables: 1 point for Systolic blood pressure <90 mmHg; 1 point for Temperature >38.5°C with