



Research and Development Annual Report

2019 to 2020

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1.0 Introduction

The East of England Ambulance Service NHS Trust (EEAST) has been research active for just over a decade now. During that time, EEAST has developed an excellent reputation for delivery of high quality research to time and target, with engaged staff throughout the Trust. Research is considered core business for the NHS, bringing benefits to patients, clinicians, and the NHS Organisation (Box 1). The NHS Long Term Plan launched in January 2019¹ highlights the need for “Research and innovation to drive future outcomes improvement” and states that “Patients benefit enormously from research and innovation, with breakthroughs enabling prevention of ill-health, earlier diagnosis, more effective treatments, better outcomes and faster recovery.” Indeed, the Care Quality Commission has recently signed off incorporation of clinical research in its Well-Led Framework².

The EEAST Research Support Service (RSS) works with academic and other health and social care partners to develop, support, and promote research as a core part of service provision. RSS has worked consistently hard to ensure that patients and staff have every opportunity to participate safely in relevant pre-hospital ambulance research.

Box 1 – Why we do research

Benefits of research

For our patients:

- Patients in clinical trials do better regardless of which treatment they are on
- Most patients want to take part in clinical research
- Taking part in clinical trials results in improved clinical care

For the NHS:

- Research findings result in better treatment for patients
- Improves use of scarce NHS resources
- Enables fair use of resources

For healthcare clinicians:

- Involvement in research increases clinical skills
- Helps clinicians to understand evidence and use this in their clinical practice
- Improves job satisfaction
- Encourages team working

For healthcare organisations:

- Involvement in research helps attract more forward-looking staff
- Increases the number of clinicians with expertise in research
- Drives the development of research relevant to the population served

This report presents an overview of clinical research activity and achievements within EEAST, during the timeframe April 2019 to March 2020. This has been another busy period, in terms of number of research studies undertaken, as well as number of participants recruited.

Such continued participation in high quality clinical research activity has demonstrated EEAST's ongoing commitment to improving the care it offers, in addition to contributing to wider health improvement. Research findings are being used to inform clinical and other service developments, where such evidence is available.

2.0 Research Policy, PID & RDOCS

A copy of the current approved Research and Development (R&D) Policy can be obtained from the Trust website within the Clinical Quality / RSS folder <http://east24/Clinical/research-supportservices.htm>. The aim of this policy is to advise the conduct of research activity within EEAST, which then complies with good research practice as detailed in the UK Policy Framework for Health and Social Care Research³.

In line with legislation, Trust performance in initiating and delivering (PID) reports (about initiating Clinical Trials and delivering Commercial Contract Clinical Trials), are published internally and externally on the Trust website within the Clinical Quality / RSS folder <https://www.eastamb.nhs.uk/about->

us/research-support-services.htm. Publication is monitored by the National Institute for Health Research (NIHR) Clinical Trials Performance Team on a quarterly basis and reported nationally⁴. It should be noted that such research activity forms a small proportion of the clinical research that EEAST undertakes.

Finally, EEAST R&D management arrangements, organisational study capabilities, and R&D interests are available via the R&D Operational Capability Statement (RDOCS), on the Trust website within the Clinical Quality / RSS folder <http://east24/Clinical/research-policy-capability.htm>. This signposts the best person to contact within EEAST for any research enquiry, for example research passports, contracts, etc.

3.0 Research Networking Activity

Clinical Research Networks (CRNs) are responsible for allocating NIHR monies to support delivery of NIHR Portfolio-adopted research activity. EEAST has maintained Partner Organisation status with CRN-Eastern throughout the reporting period, and regularly attended associated meetings. In addition, during the latter part of 2019/20 a new link was forged with CRN-North Thames to pilot the development of research opportunities in their area of the EEAST region. If successful, a business case for on-going support would be negotiated.

The National Ambulance Research Steering Group (NARSG) continued to meet bi-monthly during this reporting period, and EEAST maintained close links with this increasingly important group for pre-hospital ambulance research. The overall purpose of NARSG is to develop research capacity and capability amongst UK ambulance services. The group achieves this by working together and sharing good practice, as well as encouraging collaboration with external partners including academia, commercial organisations and other health and social care providers. NARSG is accountable to, and a sub-group of, the Association of Ambulance Chief Executives RSS team members also attended a variety of academic and research network groups, from which was sought guidance, support and linkages to researchers and other resources. Examples of such activity included, CRN Eastern Stroke Specialty group, regional Research Managers meetings, College of Paramedics events, Council of Allied Health Professionals Research group, Collaborations for Leadership in Applied

Health Research and Care (CLAHRC) events, and University of East Anglia (UEA) Health and Social Care Partners Research Groups.

4.0 Health Research Authority Approval

Health Research Authority (HRA) Approval provides a single governance approval for all research, consisting of assessments by HRA staff alongside the independent Research Ethics Committee (REC) opinion where required. NHS Trusts now need only to assess their capacity and capability to deliver HRA Approved studies, before giving permission to start if feasible. Up to date HRA guidance is available via <https://www.hra.nhs.uk/>.

RSS team members have been trained to undertake the capacity and capability assessments, ensuring all arrangements are in place to successfully deliver a study via:

- Review of costings / research contracts / agreements (as necessary)
- Liaison with required support department(s)
- Advice regarding issuing of honorary research contracts or letters of access
- Provision of guidance on HRA requirements and applications
- Review of impact of amendments to existing studies

5.0 Research Project Activity

Seven studies which commenced in previous reporting periods remained active during 2019/20. Two of these (OHCAO and RePHILL) were NIHR Portfolio projects and remain on-going. This demonstrates the time commitment sometimes required to deliver the high-quality Portfolio activity that EEAST is capable of undertaking.

RSS received a total of fourteen new research study proposals, requiring capacity and capability assessments during 2019/20. Six of these were NIHR Portfolio projects and therefore prioritised for delivery, two were high quality but non-Portfolio, and three were student-level research studies, whereby RSS offers mentorship within the Trust as secondary support to University supervisors. Following feasibility assessments, eleven new studies were given approval to proceed. Three could not be supported due to lack of RSS capacity at the time, one of which was high quality

non-Portfolio, and two being student-level studies. A summary of research projects with delivery activity in the reporting period is presented in Table 1 below. Further details about all research activity can be obtained from the Trust website within the Clinical Quality / RSS folder, or from RSS.

6.0 Recruitment of Research Subjects

During 2019/20 EEAST recruited 724 participants (patients and Trust staff) into six high quality research studies approved by a Research Ethics Committee, five of which were NIHR Portfolio pieces of work as follows:

- Resuscitation with prehospital blood products (RePHILL) n=32
- Paramedic Identification of patients with End of Life care needs (PIEOL) n=186
- Impact of Restart a Heart Day Research (RSAH) n=439
- Staff Wellbeing in Ambulance Personnel (SWAP) n=15
- Cambridge health data consent survey (CLIMB) n=27
- Staff domestic abuse research (TASC) n=25

In addition, data on approximately 3,000 cardiac arrest patients was uploaded to the OHCAO registry study, and small-scale student-level projects offered wider opportunity for research involvement (these recruitment numbers are not currently captured routinely by RSS).

Table 1. Research projects which had delivery activity in reporting period 2019 to 2020

Brief Project Title	Sponsor	Status & Notes
Out of Hospital Cardiac Arrest registry – OHCAO (NIHR Portfolio)	Warwick University	Still on-going from previous reporting period.
Resuscitation with prehospital blood products – RePHILL (NIHR Portfolio)	University of Birmingham	Still on-going from previous reporting period.

Brief Project Title	Sponsor	Status & Notes
Evaluation of advanced clinical practitioners	Anglia Ruskin University	Permission to proceed Sept 2018. Now completed.
Essex & Herts air ambulance service night flying evaluation	Anglia Ruskin University	Permission to proceed Oct 2018. Now completed.
Lifestyle factors and staff wellbeing	Liverpool John Moores University	Permission to proceed Feb 2019. Student. Now completed.
Staff sleep and fatigue research	University of East Anglia	Permission to proceed Feb 2019. Now completed.
Paramedic rescue personality research	Anglia Ruskin University	Permission to proceed March 2019. Student. Now completed.
Relationship between workplace violence, burnout & coping in ambulance workers	Coventry University	Permission to proceed May 2019. Student. On-going.
Staff Wellbeing in Ambulance Personnel – SWAP (NIHR Portfolio)	University of Lincoln	Permission to proceed June 2019. On-going.
Impact of Restart a Heart Day Research – RSAH (NIHR Portfolio)	Warwick University	Permission to proceed September 2019. On-going.
Paramedic identification of patients with End of Life care needs - PIEOL (NIHR Portfolio)	South East Coast Ambulance Service	Permission to proceed October 2019. On-going.
Cambridge Health data consent survey - CLIMB (NIHR Portfolio)	Cambridge University	Permission to proceed March 2020. On-going.

Brief Project Title	Sponsor	Status & Notes
Optimising the deployment of AEDs in the community	Warwick University	Feasibility checks commenced October 2019. Student.
Frequent caller intervention study – STRETCHED (NIHR Portfolio)	Swansea University	Permission to proceed October 2019. On-going.
Staff views of public use of emergency ambulance service	University of Sheffield	Feasibility checks commenced November 2019. Student.
Staff domestic abuse research – TASC	University of Worcester	Permission to proceed February 2020. On-going.
Variation in non-conveyance of seizure patients – VAN-Seizure study	University of Sheffield	Permission to proceed February 2020. On-going.
COVID-19 ambulance response assessment – CARA (NIHR Portfolio)	South East Coast Ambulance Service	Permission to proceed March 2020. On-going.

7.0 Impact of Research on Practice

RSS initially share the findings from high-quality research at Clinical Development and Effectiveness Group meetings, to inform recommendations for decisions about future direction of clinical practice. For example, the findings from the AIRWAYS-2 study were utilised to support the on-going development of the Trust advanced airway management strategy. The RIGHT-2 study reported that pre-hospital treatment with transdermal GTN did not seem to improve the functional outcome in patients with presumed stroke. However, it did report that it is feasible for paramedics to obtain consent and treat patients with stroke in the ultra-acute pre-hospital setting. Findings from research looking at incidence of staff suicide in the ambulance service setting has led to several staff welfare studies being developed, funded, and delivered e.g. the SWAP study. In addition, RSS surveys in the areas of hyperglycaemic patient care and the impact of the menopause transition on female staff have been used to develop competitive research grant bids during this reporting period.

8.0 Financial Support

Financial support for the RSS function was obtained from contracted income related to delivery of some of the research studies during the reporting period. Over and above such income, the Trust received funding from the CRNs amounting to approximately £80k.

CRN funds were used to maintain the full-time Research Paramedic role within RSS, to support the Head of Research role, and ensure delivery and development of NIHR Portfolio research activities. CRN-Eastern support was utilised for Local Project Management System (EDGE) training, and capacity building activities within the Trust.

9.0 Research Capacity

The RSS function consisted of 1.8 Whole Time Equivalent (WTE) staff for much of 2019/20, but this increased to 2.8 WTE on commencement of the STRETCHED study contract in November 2019.

RSS hosted its first undergraduate student paramedic research elective placement in February 2020, which was a positive experience all round. Future opportunities will be made available.

Research awareness and knowledge-raising activity throughout the Trust utilised face-to-face discussions with staff, dissemination of research findings on the website, and at Clinical Development and Effectiveness Meetings, as well as regular articles in Trust publications.

Wider dissemination of the findings from research activities has been achieved through oral and poster presentations at external peer-reviewed meetings and conferences, as well as publications in peer-reviewed journals, copies of which can be obtained from RSS.

Trust staff undertaking graduate or post-graduate studies with a research element, whether financially supported by the Trust or not, continued to be encouraged to contact RSS for mentoring and support alongside their Higher Education Institution supervision.

It is anticipated that all student paramedics within the Trust have undertaken an introduction to research training module, which requires them to complete an Introduction to Good Clinical Practice (GCP) e-learning course. Similarly, all clinicians involved in research studies are expected to successfully obtain a GCP certificate.

10.0 NIHR Research Activity League Table

As part of the NIHR CRN objectives, every ambulance Trust in England is expected to recruit participants to two or more Portfolio research studies per year. Every one of the 10 Trusts, including EEAST, has met this target for three consecutive years now.

The NIHR CRN annual league table, which includes data on how much Portfolio clinical research is happening where, in which types of Trusts, and involving how many participants will not be available for 2019/20 due to the COVID-19 Pandemic.

In the 2018/19 table, EEAST was sixth out of ten with regard number of participants (n=172; range 60-753), and joint fourth for number of Portfolio studies (n=3; range 3-8). The clinical research league table is available at www.nihr.ac.uk/nihrleaguetable.

11.0 Participant in Research Experience Survey

The national NIHR Participant in Research Experience Survey (PRES) is promoted by the CRNs as a feedback mechanism to Trusts regarding their research delivery. Identifying that the PRES was not generally suitable for pre-hospital ambulance research participants, EEAST RSS led a collaboration involving CRN-Eastern and West Midlands Ambulance Service to develop a national PRES for ambulance Trusts.

RSS ran an online pilot of PRES with PIEOL research participants, a survey-based study exploring paramedics' attitudes and experiences of end of life care needs. A total of seventeen responses were received, and overall positive research experiences were reported: e.g. 82% respondents agreed/strongly agreed they understood why they were being asked to take part in the study and what they were consenting to; and over three quarters of respondents agreed/strongly agreed to recommending taking part in an ambulance research study to others. Regarding how respondents thought research results should be made available, via email was preferred by almost all (94%), with social media also being chosen (41%). These findings are being used by RSS to improve the delivery of the PRES survey for future research studies and the communication of research findings.

12.0 The Library & Knowledge Service

EEAST subscribed to the Library & Knowledge Service for NHS Ambulance Services in England (LKS ASE) during the early part of the reporting period. The subscription provides all employed EEAST staff with access to library services including document supply, literature searching, current awareness, and guides and help on various aspects of information skills. The LKS ASE can be contacted directly by staff via email Matt.Holland@nwas.nhs.uk or by using one of the online forms on the website <https://ambulance.libguides.com/home1/home>.

13.0 Publications

EEAST: Research report 2019-2020 Version 1.0 Prothero, L.S. and Foster, T. (2020) Ambulance clinician understanding of diabetic ketoacidosis care: a survey-based evaluation. Diabetes Medicine, in press.

Foster, T., Prothero, L.S. and Winterson, D. (2020) A survey-based evaluation of the impact of the menopause transition on female

ambulance staff in one UK ambulance service. *Emergency Medical Journal*, in press.

Voss, S., Brandling, J., Pollard, K., Taylor, H., Black, S., Buswell, M., Cheston, R., Cullum, S., Foster, T., Kirby, K., Prothero, L., Purdy, S., Solway, C. and Bengler, J. (2020) A qualitative study on conveyance decision-making during emergency call outs to people with dementia: the HOMEWARD project. *BMC Emergency Medicine*, 20(6)
<https://doi.org/10.1186/s12873-020-0306-6>.

Prothero, L.S. and Wagner, A.P. (2019) Does ambulance care offer improved patient outcomes in diabetic ketoacidosis? *Diabetic Medicine*, 36 (S1), 79.

14.0 Research Presentations

KARMA2: From Paramedic to CI (2020) CRN Eastern Diabetes Research Network.

A survey-based evaluation of the impact of menopause transition on female ambulance staff in one UK ambulance service (2020) 999 EMS Research Forum.

Does ambulance care offer improved patient outcomes in diabetic ketoacidosis? (2019) East of England Diabetes Clinical Network – Highly Commended Award.

Does ambulance care offer improved patient outcomes in diabetic ketoacidosis? (2019) College of Paramedics Research Conference.

Ambulance clinician understanding of diabetic ketoacidosis: a survey-based evaluation (2019) Council for Allied Health Professions Research. The RIGHT-2 Investigators (2019) Prehospital transdermal glyceryl trinitrate in patients with ultraacute presumed stroke (RIGHT-2): an ambulance-based, randomised, sham-controlled, blinded, phase 3 trial. *The Lancet*, 393, 10175, 1009 - 1020; DOI: [https://doi.org/10.1016/S0140-6736\(19\)30194-1](https://doi.org/10.1016/S0140-6736(19)30194-1).

15.0 Research Misconduct, Fraud and Complaints

Once again, no concerns or incidences have been raised in this reporting period.

16.0 Future Direction

At a local, regional, and national level the Trust continues to drive the development of research grant applications in under-developed areas of pre-hospital ambulance research need and areas of importance to Trust patients and staff. Decisions following the submission of three high-quality applications are awaited.

Resources allowing, the Trust will maintain and improve the links it enjoys with academic institutions within and external to the region, with the explicit aim of increasing the number of grant applications for research the Trust would subsequently host.

RSS will continue to communicate opportunities for research skills development throughout the Trust, to increase research knowledge, particularly at the senior management level.

The latter part of this reporting period saw production of a Research & Innovation Enabling Strategy 2020-24 for Trust approval. The purpose of this strategy is to (a) provide a framework for the continued advancement of research and innovation, (b) to realise the research potential across the professional community in EEAST and (c) improve patient outcomes and service development through research. This strategy will be aligned and complementary to the revised Trust's education and training, clinical and corporate strategies.

17.0 References

1. Department of Health and Social Care (2019) The NHS Long-term Plan <https://www.longtermplan.nhs.uk/publication/nhs-long-term-plan/>
2. Care Quality Commission (2018) Key lines of enquiry, prompts and ratings characteristics for healthcare services <https://www.cqc.org.uk/guidance-providers/healthcare/key-linesenquiry-healthcare-services>
3. Health Research Authority (Nov 2017) UK Policy Framework for Health and Social Care Research. <https://www.hra.nhs.uk/planning-and-improving-research/policies-standardslegislation/uk-policy-framework-health-social-care-research/>
4. National Institute for Health Research (2019) Performance in Initiating and Delivering Clinical Research (PID) Submission guidelines <https://www.nihr.ac.uk/documents/performance-in-initiating-and-delivering-guidelines/19932>