



RESEARCH & DEVELOPMENT ANNUAL REPORT

2020 to 2021

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1.0 Introduction

The East of England Ambulance Service NHS Trust (EEAST) has 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 incorporated clinical research enquiries into 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. This reporting period incorporated the start of the COVID-19 pandemic resulting in an unprecedented surge in research activity. RSS worked consistently hard to ensure that patients and staff continued to have every opportunity to participate safely in relevant pre-hospital ambulance research, as well as supporting COVID-19 vaccine trials within the Trust region.

Box 1 – Why we do research

Benefits of research

For our patients:

- Improved health outcomes for all patients not just those participating in research
- Most patients want to take part in clinical research for new knowledge
- 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 and reduces inequalities

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 2020 to March 2021. Such continued participation in high quality clinical research activity has demonstrated EEAST's on-going 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, Strategy, 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, [Research policy and capability](#). 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.

The Research and Innovation Enabling Strategy 2020-2024 was Trust approved in June 2020. Its principal aim is to provide a credible and ambitious direction to the EEAST research function. A copy is available within the Clinical Quality / RSS folder, [Research policy and capability](#).

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, [Research policy and capability](#). 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, therefore nil returns are common.

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, [Research policy and capability](#). This document signposts interested parties to the best person to contact within EEAST for differing research enquiries, for example capacity & capability assessment, research passports, contracts, and so forth.

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 Partner Organisation status with CRN-Eastern, and regularly attended associated meetings throughout the reporting period. In addition, the link forged with CRN-North Thames during 2019/20 to develop research opportunities in their area of the Trust region proved successful and was continued through 2020/21.



The National Ambulance Research Steering Group (NARSG) continued to meet bi-monthly during this reporting period, and EEAST maintained active involvement 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 COVID-19 Vaccine delivery hub & regional meetings, CRN Eastern Stroke Specialty group, regional Research Managers meetings, College of Paramedics events, Council for Allied Health Professions Research East Anglia group, and several University of East Anglia (UEA) Health and Social Care Partners Research and Management Groups.

4.0 Health Research Authority Approval

Health Research Authority (HRA) Approval provides a single governance approval for all NHS research, consisting of assessments by HRA staff alongside the independent Research Ethics Committee (REC) opinion where required. NHS Trusts 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

Due to the impact of the COVID-19 pandemic the HRA paused review of student-level research to concentrate on Urgent Public Health Research studies.

5.0 Research Project Activity

This reporting period has been the busiest since the Trust became research active. Seven studies which commenced in previous reporting periods remained active during 2020/21. Five of these 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 21 new research study proposals, requiring capacity and capability assessments during 2020/21. Of the 8 given approvals to proceed with the Trust as a site, 3 were NIHR Portfolio projects and therefore prioritised for delivery, 2 were high quality but non-Portfolio, and 3 were student-level research studies, whereby RSS offers mentorship within the Trust as secondary support to university supervisors.

In addition, RSS supported 7 Urgent Public Health research studies related to the COVID-19 pandemic as a Participant Identification Centre (PIC), whereby RSS signpost the study to potential participants, but the Trust does not act as a recruiting site. These were predominantly staff related projects for which the opportunity for involvement was considered important. The PIC studies were:

- Staff caring for COVID-19 patients trial (COPCOV)
- Impact of policy on healthcare workers caring for COVID-19 patients
- Oxford AstraZeneca staff vaccine development trial
- Genetic analysis of people that have had COVID-19 (GenOMICC)
- COVID-19 antibody research (SIREN)
- Ethnicity and COVID-19 outcomes (UK-REACH)
- COVID-19 national diagnostic research and evaluation (CONDOR)

Six COVID-19 pandemic-related studies could not be supported due to lack of capacity at the time, either due to RSS resource or competing participants required between trials. All of these were high quality non-Portfolio research.

A summary of research projects with delivery activity in the reporting period is presented in Table 1 below. Further details can be obtained from the Trust website within the Clinical Quality / RSS folder, or from RSS directly.

Table 1. Research projects which had delivery activity in reporting period 2020 to 2021

Brief Project Title	Sponsor	Status & Notes
Resuscitation with prehospital blood products – RePHILL (NIHR Portfolio)	University of Birmingham	On-going from previous reporting period. Recruitment completed.
Staff Wellbeing in Ambulance Personnel – SWAP (NIHR Portfolio)	University of Lincoln	On-going from previous reporting period. Recruitment completed.
Cambridge Health data consent survey -CLIMB (NIHR Portfolio)	Cambridge University	On-going from previous reporting period. Await final report.
Frequent caller intervention study – STRETCHED (NIHR Portfolio)	Swansea University	On-going from previous reporting period. Recruitment on-going.
Staff domestic abuse research – TASC	University of Worcester	On-going from previous reporting period. Await final report.
Variation in non-conveyance of seizure patients – VAN-Seizure study	University of Sheffield	On-going from previous reporting period. Await final report.
COVID-19 ambulance response assessment – CARA (NIHR Portfolio)	South East Coast Ambulance Service	On-going from previous reporting period. Recruitment completed.
Ambulance COVID-19 psychosocial response study	University of York	PhD Student. Opened April 2020.
Triage of 999 calls for management of COVID-19 patients – TRIM (NIHR Portfolio)	Swansea University	Urgent Public Health funded research. Commenced July 2020.

Counter terrorism in the ambulance service	University of Essex	MSc Student. Opened August 2020. Completed Dec 2020.
Developing leadership opportunities in healthcare Trusts	Anglia Ruskin University	MSc Student. Opened Dec 2020. Await final report.
Impact of menopause on female ambulance staff – CESSATION	East of England Ambulance Service	Funding awarded Dec 2020. Will be NIHR Portfolio adopted.
Ketone Meter use feasibility study – KARMA2	East of England Ambulance Service	Funding awarded Dec 2020. Will be NIHR Portfolio adopted.
End of Life Care in Care Homes	University of Stirling	Commenced March 2021
Impact of C-19 on EMS resuscitation – COMPARE (NIHR Portfolio)	South West Ambulance Service	Commenced March 2021
Advanced mobile stroke unit	East of England Ambulance Service	Commenced March 2021

6.0 Recruitment of Research Subjects

During 2020/21 EEAST recruited 1,167 participants (patients and Trust staff) as a site into 7 high quality research studies approved by a Research Ethics Committee, a big increase on the previous year. Six of the 7 were NIHR Portfolio pieces of work as follows:

- COVID-19 Ambulance Response Assessment Study (CARA), n= 708
- STRategies to manage Emergency ambulance Telephone Callers with sustained High needs - an Evaluation using linked Data (STRETCHED), n=150
- Cambridge health data consent survey (CLIMB), n=25
- Blue Light Emergency Services Wellbeing Feasibility Study (BLS), n=10

- What TRIage model is safest and most effective for the Management of 999 callers with suspected Covid-19 – a linked outcome study (TRIM), n=5
- Resuscitation with prehospital blood products (RePHILL), n=9
- Staff Wellbeing in Ambulance Personnel (SWAP), n=260

EEAST also hosted 3 smaller-scale student level projects being undertaken by Trust staff and external parties and acted as a PIC for 7 other studies, however recruitment to such activity is not routinely captured.

7.0 Impact of Research on Practice

Previous RSS surveys in the areas of hyperglycaemic patient care and the impact of the menopause transition on female ambulance staff have resulted in RSS submitting successful research grant bids to Diabetes UK and the College of Paramedics respectively. Both of these studies will be Portfolio adopted and commence recruitment in the new financial year. In addition, RSS survey activity looking at EEAST staff knowledge of Vitamin D was completed, with the findings reported, and subsequent business case presented to Trust Charitable Funds for consideration of funding further research activities during 2021/22.

RSS usually share the findings from high-quality research at Clinical Best Practice Group (CBPG) meetings, to inform recommendations for decisions about future direction of clinical practice. Due to the COVID-19 pandemic more frequent Clinical Directorate meetings were held as well.

Trust staff and patient welfare during the pandemic was prioritised, therefore much RSS resource was devoted to reviewing emerging literature for best evidence about handling of COVID-19 issues. Reliable sources of information were as follows:

[Home - Johns Hopkins Coronavirus Resource Center \(jhu.edu\)](#)
[WHO | World Health Organization](#)

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 £95k.

CRN funds were used to maintain a full-time Advanced Research Paramedic role, as well as part of the time of Research Paramedic and Head of Research roles within RSS, to facilitate 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

During 2020/21 the substantive RSS function consisted of 2.0 Whole Time Equivalent (WTE) staff, supported during the year by seconded Research Paramedic roles on fixed-term contracts for delivery of the STRETCHED, TRIM and COVID-19 vaccine studies. One member of the team was re-deployed for 3 months to assist frontline operations during the pandemic.

Research awareness and knowledge-raising activity throughout the Trust involved dissemination of research findings on the Trust website, discussion at CBPG, Medicine Management and Clinical Directorate 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. Similarly, all

clinicians involved in research studies are expected to successfully obtain an appropriate Good Clinical Practice certificate.

10.0 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 recently led a collaboration involving CRN-Eastern and West Midlands Ambulance Service to develop a national PRES for ambulance Trusts. The pilot proved successful, and the resulting survey was made available for use in 2020/21.

RSS resources during the pandemic limited capacity to undertake PRES activity. However, RSS ran an online PRES targeted at staff involved with the Oxford AstraZeneca vaccine trial and the CARA study. A total of 16 responses were received, and overall positive research experiences were reported around understanding of why they were being asked to take part in the study and what they were consenting to. Regarding how respondents thought research results should be made available, email and social media were preferred. These findings will inform RSS practice.

11.0 Research Involvement Group

As set out in the Research and Innovation Enabling Strategy 2020-2024, a Research Involvement Group (RIG) has been formed to ensure that the Trust is receiving on-going objective feedback about the research that it wishes to undertake and deliver. The inaugural meeting in December 2020 included training on patient and public involvement (PPI) in research, and the RIG terms of reference were agreed at the second meeting in March 2021. Due to the COVID-19 pandemic both meetings have been held remotely, but in-person opportunities are proposed when restrictions allow. It is intended that the RIG will convene 3-4 times per year, and the impact of the group will be reported in future annual Research Reports.

Thus far, RIG members have given valuable feedback to three researchers developing bids for funding and have volunteered to provide on-going PPI support to two studies being delivered within the Trust.

12.0 The Library & Knowledge Service

EEAST continued to subscribe to the Library & Knowledge Service for NHS Ambulance Services in England (LKS ASE) during 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 Research Newsletter

As set out in the Research and Innovation Enabling Strategy 2020-2024 to improve communication about research activity in the Trust, a dedicated Research Support Services Newsletter was launched Trust-wide in Summer 2020. The intention was to showcase current and future studies open to recruitment, deliver key findings from recent research activity, as well as inform staff about the LKS and RSS contact details. This bi-annual newsletter was produced by RSS and cascaded to all Trust staff using Need to Know and the Clinical App. The second edition was circulated in Spring 2021, and copies can be obtained by contacting RSS.

14.0 Publications

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*, Volume 37, Issue 10.

Prothero, L.S. and Foster, T. (2020) Ambulance clinician understanding of diabetic ketoacidosis care: a survey-based evaluation. *Diabetes Medicine*, 37(S1), P493.

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*, 37 (10) e6-e7.

Grunwald, I., Phillips, D., Sexby, D., Wagner, V., Lesmeister, M., Bachhuber, M., Mathur, S., Guyler, P., Fisher, J., Perera, S., Helwig, S., Schottek, A., Ewart, I., Menon, N., Ul Hag, M., Daniel Grun, D., Merzou, F., Howard, C., Mapplebeck, S., Dommett, D., Alam, S., Chakrabarti, A., Gerry, S., Wiltshire, C., Bailey, M., Bertsch, T., Foster, T., Davis, T., Reith, W., Fassbender, K., Walter, S. (2020) Mobile Stroke Unit in the UK Healthcare System: Avoidance of Unnecessary Accident and Emergency Admissions. *Cerebrovascular Diseases*, 49, 388-395.

Clark, L.V., Fida, R., Skinner, J., Murdoch, J., Rees, N., Williams, J., Foster, T. and Sanderson, K. (2021) Mental health, well-being and support interventions for UK ambulance services staff: an evidence map, 2000 to 2020. *British Paramedic Journal*, 5(4), 25–39.

Aslam, R.W., Cole, R., Diethart, B., Edwards, A., Edwards, B.M., Evans, B.A., Foster, T., Fothergill, R., Gripper, P.C., Hughes, H., John, A., Khanom, A., Petterson, R., Philips, C.J., Porter, A., Rees, N., Rosser, A., Scott, J., Tee, A., Watkins, A., Snooks, H. (2021) Co-design of a logic model describing components, mechanisms of change and potential impacts of case management for people who frequently call ambulance services, *Emergency Medical Journal*, in press.

Mochrie, T., Prothero, L., Foster, T. and South, N. (2021) The experiences and attitudes of ambulance staff towards the counter-terrorism “PREVENT” training: a survey-based service evaluation. *Emergency Medical Journal*, in press.

Prothero, L.S., Foster, T., Dhatariya, K., Lake, A., Boyle, A., Rayman, G., Williams, J. and Sampson, M. (2021) Use of capillary blood ketone meters to improve ambulance service care of hyperglycaemic patients: protocol for a stepped-wedge, controlled feasibility study (KARMA2) *Emergency Medical Journal*, in press.

Prothero, L.S. and Foster, T. and Winterson, D. (2021) Menopause affects us all...’ Menopause transition experiences of female ambulance staff from a UK ambulance service: a survey-based service evaluation. *British Paramedic Journal*, in press.

Prothero, L.S. and Foster, T. (2021) A survey-based evaluation of ambulance staff awareness of vitamin D and risk of deficiency in a UK ambulance service. *British Paramedic Journal*, 6(2), in press.

Snooks, H., Bell, F., Brady, M., Carson-Stevens, A., Duncan, E., England, L., Evans, B., Foster, T., Gallanders, J., Gunson, I., Harris-Mayes, R., Hird, K., Kingston, M., Lyons, R., Miller, E., Newton, A., Porter, A., Quinn, T., Rosser, A., Siriwardena, N., Spaight, R., Watkins, A. (2021) 999 emergency ambulance response during COVID 19 pandemic 1st wave: what triage models were used? *Emergency Medical Journal*, in press.

15.0 Research Presentations

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

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

Menopause transition experiences of female ambulance staff from a UK ambulance service: a survey-based service evaluation (2020) Council for Allied Health Professions Research East Anglia Event.

Ambulance staff awareness of vitamin D and risk of deficiency in a UK ambulance service: a survey-based evaluation (2020) Council for Allied Health Professions Research East Anglia Event; College of Paramedics National Research Conference.

The experiences and attitudes of ambulance staff towards the counter-terrorism "PREVENT" training: a survey-based service evaluation (2021) Poster: 999 EMS Research Forum.

Use of capillary blood ketone meters to improve ambulance service care of hyperglycaemic patients: protocol for a stepped-wedge, controlled feasibility study (KARMA2) (2021) Poster: 999 EMS Research Forum; Council for Allied Health Professions Research East Anglia Annual Conference; East of England Diabetes Clinical Network; Group for Research and Clinical Experience in Diabetes.

16.0 Research Misconduct, Fraud and Complaints

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

17.0 Future Direction

The Research & Innovation Enabling Strategy 2020-24 and corresponding action plan provide a framework for the advancement of research within the Trust. Whilst some areas of development have been delayed against intended milestones, they remain the direction of travel. For instance, the COVID-19 pandemic and changes in key personnel and roles at Executive level and in key departments have caused delays to actions related to RSS infrastructure discussions, research skills training and links with HEIs, but these actions will commence as soon as resources allow.

RSS aim to increase staff engagement in research activity through ongoing communications and delivery of research workshops in the operational areas of the Trust.

Increasing PRES activity has been set as a High Level Objective by CRN for 2021/22 onwards, therefore identification of appropriate studies from which to approach participants will be a priority in the new financial year.

At a local, regional, and national level, the Trust will continue to attract high quality studies, and 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.

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

18.0 References

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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-lines-enquiry-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-standards-legislation/uk-policy-framework-health-social-care-research/>
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