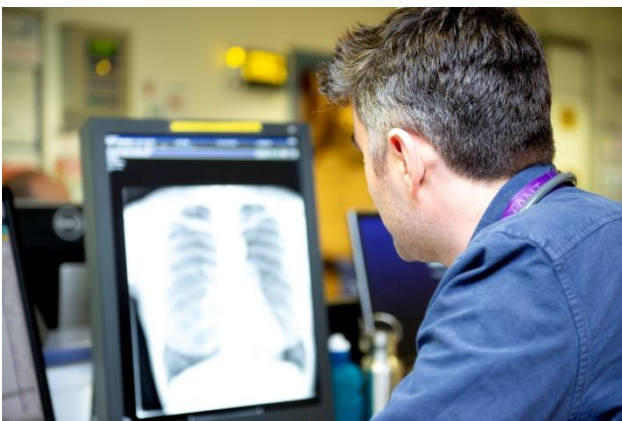




EMROx

Emergency Medicine Research Oxford

Summary of activity, infrastructure,
and strategy of the Emergency
Medicine Research group in Oxford



AUTHORS

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And contributions from

- Alexis Espinosa
- Domonique Georgiou
- Jose Martinez
- Hannah Thraves
- Elena Perez
- Rocio Fernandez Mendoza
- Alberto Sobrino Diaz
- Veronica Gallardo Sanchez

EMROx –Emergency Medicine Research in Oxford

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Introduction

Emergency Medicine Research in the UK

Emergency Medicine (EM) is a clinical specialty unparalleled in its breadth and unpredictability but it does not yet have the research capacity or infrastructure to match the clinical impact. Every year, each Emergency Department (ED) sees vast and increasing numbers of patients with an extensive range of clinical conditions, from trivial to life-threatening. Many emergency medicine interventions and systems of care are not evidence based, but rely on the evidence base generated in other disciplines using different populations. Our patients are complex and increasingly elderly, which may necessitate new diagnostic and management strategies. The solutions require disruptive innovation with a robust evidence base for change, which can only be achieved through research. The extensive and varied skill mix within the workforce offers a fertile environment for innovation and development. However, the complex case-mix and significant day-to-day operational pressures demand a highly focussed and pro-active approach to engagement with potential study participants, which in turn requires significant resources and organisation.

Emergency Medicine is still a relatively new academic specialty in the UK. The specialty was recognised in 1972, with the Emergency Medicine Research society established in 1983, and the first international conference held in 1986. Manchester appointed the first UK professor in 1990, but the Faculty of Accident and Emergency medicine, established to develop academic and training matters, was not inaugurated until 1993, with 6 parent colleges. This became the College of Emergency medicine (CEM) in 2006, gaining Royal status nine years later (RCEM). In 2017 the James Lind Alliance Research Priority Setting Partnership collaborated with RCEM for the first time to establish key national research priorities for the specialty. As outlined in the RCEM 2020 Research Strategy, research has now become a key activity of Emergency Medicine clinicians at all levels of training, with the Trainee Emergency Research Network (TERN), established in 2019, providing a forum for connection and collaboration across the country.

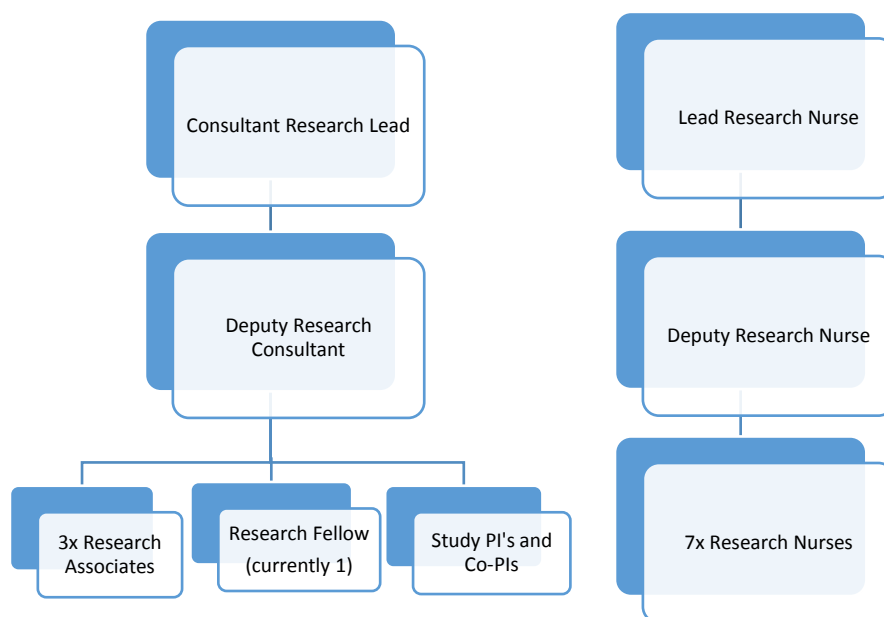
EMROx - Emergency Medicine Research in Oxford

EMROx (Emergency Medicine Research in Oxford) is the research group based in the Emergency Departments of Oxford University Hospitals NHS Foundation Trust. It was established to develop, promote and co-ordinate research in the Emergency Department through contribution and recruitment to commercial, portfolio and non-portfolio studies, collaboration with other research teams and support of research training. It is affiliated to the Nuffield Department of Orthopaedics, Rheumatology and Musculoskeletal Sciences (NDORMS) which in turn sits within Oxford University, currently ranked as the best institution in the world for medical research. The Emergency Departments are sited in two locations – the John Radcliffe Hospital (the Tertiary Referral and Major Trauma Centre in Oxford), and the Horton General Hospital (a District General Hospital located in Banbury). Together, the two departments see in excess of 130,000 patients per year, encompassing the full range of clinical settings and patient presentations associated with modern Emergency Medicine.

In this document we present an account of our developing infrastructure and activity over the past few years, and outline our future strategic goals and aspirations.

Workforce

EMROx has a small but dedicated workforce. Currently, all our staff have worked as clinicians in the OUH Emergency Departments prior to their involvement in research, which offers the team excellent clinical and operational insight into the practical and strategic challenges surrounding Emergency Medicine research. The team is continuing to expand, and a number of substantive Consultants now have CRN-funded research time via the CRN Research Fellow and Green Shoots programmes as part of their portfolio, in addition to a large increase in engagement from the wider workforce in terms of participant recruitment, and study design and implementation. The research nurse team has grown exponentially, with funding from the CRN, NIHR RCF, Oxford Biomedical Research Centre (BRC) and charities.



Currently the EMROx workforce consists of:

- 1 Lead Consultant (0.5 PA)
- 1 Lead Research Nurse (1.0 WTE)
- 8 part-time Research Nurses (6.6 WTE)
- 1 Consultant CRN Research Fellow (5 PA)
- 3 Consultants with CRN Green-shoots funding (total 2.5 PA)
- 1 Registrar with CRN Green-shoots funding (0.1 WTE)

Dr Melanie Darwent, EMROx Research Lead 2011-2020

Dr Melanie Darwent has been research lead for the past 10 years and overseen significant expansion and development of the research activity in the Emergency Department. Melanie will be stepping down as research lead as of February 2020. Thank you Melanie, for all your hard work and support.



Dr Melanie Darwent
Outgoing Research Lead

Workforce Success Stories

Investment into the EMROx workforce in the past 5 years has produced a tangible and substantial impact on the research infrastructure and output of the team.

NIHR Grants – CRN Research Fellowship

This fellowship in 2018-9 provided Alex Novak 50% paid time devoted to research. This was used to support a number of studies and infrastructure projects, including acting as Chief Investigator for E-MAGED, Principal Investigator for FORCE and REBOA trials, evaluation of the GE Critical Care Suite, lead for the Frailty Response Unit, development of TAVERN and on-going oversight/lead of the OSEM Conference. He has since obtained further NIHR RCF money through the Trust, to continue this work for a further year, while obtaining funding and confirmation of his PhD application. Alex is the incoming ED Consultant Research Lead



Alex Novak, Consultant in EM and Ambulatory Care, 2018-19
CRN Research Fellow

NIHR/HEE Internships

Dominique Georgiou and Maria Garcia were awarded Intern places on the HEE/NIHR Thames Valley Integrated Clinical Academic Programme at the University of Hertfordshire. This resulted in the development of a research proposal, and afforded them to attend further research related courses

Awards 2019

- Alex Novak and Sally Beer were recently recognised by the annual regional NIHR CRN Research Awards as Outstanding Research Champion and Outstanding Research Leader respectively.
- Alex Novak has been awarded RCEM Principal Investigator of the Year

NIHR CRN Green Shoots Funding

Successful application for Green Shoots funding yielded 10% WTE paid research time for 3 Consultants and 1 middle grade doctor, allowing them to develop research skills and experience, acting as Co-PI and Associate-PI on a number of trials, as well as taking on local lead roles with organisations such as TERN and PERUKI.



Charlotte Brown, Consultant in Emergency Medicine and EMROx Research Associate



Tanya Baron, Consultant in Emergency Medicine and EMROx Research Associate



Aqib Hafeez, Consultant in Emergency Medicine and EMROx Research Associate



Aman Paul, Registrar in Emergency Medicine and EMROx Research Associate

Fellowship in Emergency Medicine Research

EMROx developed the new post of Research Fellow in Emergency Medicine, for a 12 month period, with 25% of time dedicated to research activities. EM Registrar Vishakha Prasad was appointed, from a field of 63 applicants. The Fellowship starts in January 2020, and will allow Vishakha to devote time to a forthcoming Cochrane Review of Resuscitation and Bleeding in Major Trauma, obtain training in research methods, as well as engaging with and supporting clinical trials running within the OUH Emergency Departments.



Vishakha Erasu Prasad,
Research Fellow in Emergency
Medicine 2020-21

Research Nurse Team

The research nurse team has completed multiple courses to invest in additional skills. This has included Sally Beer completing the NIHR HEE programme in Advanced Leadership, and now progressing onto a MBA programme. Individuals have also completed courses on Planning and Managing Clinical Trials, Qualitative Research and Advanced History taking.

Investment in skills has meant that the team can now take on additional responsibilities within the research process. Jose Martinez is the Principal Investigator on the study Outcomes following Chest Trauma Score – OCTS. Posters and presentations have been accepted at both regional and international conferences including the award for best poster at OSEM 2018. The team are encouraged to attend relevant conferences, locally and abroad.



Sally Beer
Lead Research Nurse



Alexis Espinosa



Dominique Georgiou



Jose Martinez



Hannah Thraves



Elena Perez



Rocio Fernandez



Alberto Sobrino



Veronica Sanchez

Key Strategic Aims:

- **Increase total number of paid research hours, and total number of staff with paid research time by at least 50% within the next 5 years**
- **Support the development and career progression of early and mid-career researchers e.g. through more Research Fellowships**
- **Encourage our clinician researchers to become research leaders through experience and training, and the attainment of awards and relevant higher qualifications**

Expand and diversify research team to include administrative staff, e.g. Data Analyst/Statistician, Trials Manager, Grants and Finance Officer

Funding and Finances

In recent years the funding for EMROx activities has come predominantly through the NIHR CRN, which has financed the following:

- Salaries for more than 5 WTE Research Nurses
- Fellowship (50% WTE) for one Consultant 2018-19
- Green shoots 1PA funding for 3 Consultants and 1 Registrar 2019-20
- NIHR RCF funding to cover additional nursing resource and consultant salary

Further sources of income for individual projects have included:

- OUH NHSFT
- TRL
- Perspectum Diagnostics
- Abbott
- Oxford CCG

Further expansion and development of EMROx is critically dependent on increasing and diversifying revenue, and this will be a key strategy focus for the future.

Key Strategic Aims:

- **Increase average annual income from research activity by 100% over next 5 years**
- **Diversify funding streams outside of NIHR CRN, including industry, academic and charitable grants**
- **Develop a steady income base to support paid research time for Emergency Department clinicians**

Current Research Themes

EMROx research activity is organised around a number of key themes, often in collaboration with allied clinical specialties and academic institutions, as outlined below.

Major Trauma, Transfusion and Critical Care

Summary:

This has been a key aspect of the EMROx research output, accounting for a significant proportion of successful trial recruitment, with large numbers of patients recruited on time and on target. Productive working relationships have been firmly established with partners in Haematology, and the advent of flagship NIHR trials such as CRYOSTAT-2 and UK REBOA herald a new phase of collaborative research with key stakeholders across all the Major Trauma Centres.

Completed Projects:

- MP4OX – artificial blood substitute in haemorrhage (commercial study)
- CRYOSTAT1 - early high dose cryoprecipitate in major trauma (feasibility)
- E-FIT – early fibrinogen concentrate in major trauma haemorrhage
- i-TACTIC –treatment algorithms in trauma induced coagulopathy
- CRASH3 – tranexamic acid in isolated head injury
- HALT-IT, Trigger – role of tranexamic acid in Gastro-intestinal bleeding
- RE-VERSE AD - efficacy of idarucizumab in reversing dabigatran
- ORANGE - presentation/outcomes of bleeding associated with oral anti-coagulants
- AIRWAYS 2 – supra-glottic devices for airway management in out of hospital cardiac arrest
- PARAMEDIC – mechanical vs manual chest compression in out of hospital cardiac arrest
- PARAMEDIC2- role of adrenaline in out of hospital cardiac arrest ,
- SNAP-2 – critical care provision after surgery
- NOPAC – topical tranexamic acid in epistaxis

Current Projects:

- ACIT – acute coagulopathy in trauma
- CRYOSTAT 2 – early high dose cryoprecipitate in major trauma (all UK MTCs)
- UK REBOA – resuscitative endovascular balloon occlusion of the aorta
- ORIF – operative rib fixation vs supportive management
- RAIDS – Road Accident In Depth Studies
- RePHILL – resuscitation with Pre-hospital blood products

Forthcoming Projects:

- FRONTIERS
- Cochrane Review of Resuscitation in Major Trauma

Key Collaborators:

- Prof Simon Stanworth, Dr Nicola Curry (Haematology)
- Dr Susan Brunskill, Dr Lise Estcourt (Systematic Review Initiative)

- Dr Rafuddin Patel, Dr Suzie Anthony (Interventional Radiology)
- Dr Adam Bailey, Dr Vipul Jairath (Gastroenterology)
- Dr Peyton Davis (Intensive Care)

Key Publications:

- Curry N, Foley C, Wong H, Mora A, Curnow E, Zarankaite A, Hodge R, Hopkins V, Deary A, **Ray J**, Moss P, Reed MJ, Kellett S, Davenport R, Stanworth S (2018) Early fibrinogen concentrate therapy for major haemorrhage in trauma (E-FIT 1): results from a UK multi-centre, randomised, double blind, placebo-controlled pilot trial. *Critical Care* 22(1):164
- **Novak A**, Stanworth SJ, Curry N. (2018) Do we still need cryoprecipitate? Cryoprecipitate and fibrinogen concentrate as treatments for major hemorrhage — how do they compare? *Expert Review of Hematology.*; 11(5):1-10
- **Gulati D, Novak A**, Stanworth SJ. (2018) Common Haemostasis Issues in Major Bleeding and Critical Illness. *Clinical Medicine* 18(4):320-323
- Jairath V, Kahan BC, Gray A, Doré CJ, Mora A, James MW, Stanley AJ, Everett SM, Bailey AA, Dallal H, Greenaway J, Le Jeune I, **Darwent M**, Church N, Reckless I, Hodge R, Dyer C, Meredith S, Llewelyn C, Palmer KR, Logan RF, Travis SP, Walsh TS, Murphy MF (2015) Restrictive versus liberal blood transfusion for acute upper gastrointestinal bleeding (TRIGGER): a pragmatic, open-label, cluster randomised feasibility trial. *Lancet* 11;386(9989):137-44
- Perkins GD, Lall R, Quinn T, Deakin CD, Cooke MW, Horton J, Lamb SE, Slowther AM, Woollard M, Carson A, Smyth M, Whitfield R, Williams A, Pocock H, **Black JJ**, Wright J, Han K, Gates S (2015) Mechanical versus manual chest compression for out-of-hospital cardiac arrest (PARAMEDIC): a pragmatic, cluster randomised controlled trial *Lancet* 385 (9972):947-955
- **Raitt J, Norris Cervetto E, Hawksley O** (2017) A report of two years of pre-hospital blood transfusions by Thames Valley Air Ambulance *Trauma* 20 (3):221-224

Future Aims:

- **Continue strong track record of collaborative research in this area**
- **Develop consistent output with Systematic Review Initiative**
- **Enhance working relationship/output with Critical Care and other key departments within the Major Trauma Centre**



Mental health, Psychology and Wellbeing

Theme lead: Dr Melanie Darwent

Summary:

The optimal assessment and management of mental health conditions in the Emergency Department is one of the RCEM top ten research strategy priorities (see <https://www.rcem.ac.uk/docs/Research>). Over recent years, EMROx has been working with colleagues from the Department of Psychology examining the role for a simple cognitive intervention (involving computer game-play) to reduce intrusive memories after trauma (SCARTA). Subsequent studies have looked at the psychological impact of trauma in ED patients. The mental health and wellbeing of the workforce is also regarded by RCEM as a key research area, with the recent TIRED study, an RCEM TERN collaboration. A current trial looks at similar interventions as used in SCARTA to reduce psychological distress in ED staff after witnessing traumatic events at work.

Completed Projects:

- SCARTA – simple cognitive task to reduced flashbacks after RTC
- Sleep and Wellbeing – sleep and intrusive memories immediately after traumatic event
- Reactions to assault – flashbacks and psychological distress after assault in ED patients
- TIRED – need for recovery after clinical EM shifts

Current Projects:

- CALM-ED – reducing intrusive memories of work-related traumatic events in ED

Key Collaborators:

- Dr Lalitha Iyadurai
- Dr Kate Porcheret (Department of Psychiatry)

Key Publications:

Future Aims:

- Expand and strengthen links with psychology and psychiatry
- Explore research potential around hard-to-reach groups such as Frequent attenders/substance misuse
- Establish collaborative holistic research program with community services such as mental health/substance misuse/homelessness



Imaging and Early Diagnostics

Theme lead: Dr Alex Novak

Summary:

The technological diagnostic landscape is being transformed through a number of innovations, including point-of care diagnostics and Artificial Intelligence-led image analysis. Oxford has become a major world centre for medical imaging research, due to the pairing and partnership of clinical and engineering expertise with close industry links, most notably through the establishment of the National Consortium for Intelligent Medical Imaging (NCIMI) in 2018, supported by the Government's Industrial Strategy Challenge Fund. The trust has a strong track record of collaboration with companies at the forefront of Point-of-Care Testing technologies and this is a key area of inquiry, both in terms of technological capability and the impact on disease management and healthcare pathways.

Current Projects:

- E-MAGED
- GE Critical Care Suite
- Imaging in Elderly Chest Trauma
- Frailty Response Unit



Forthcoming Projects:

- Fat Attenuation Index in Coronary CT Angiography
- Artificial Intelligence Detection of Pneumothorax (AID-PTX)

Key Collaborators:

- Dr Rajarshi Banerjee (Perspectum Diagnostics)
- Dr Adam Bailey (Gastroenterology)
- Mr Zahir Soonawalla (General Surgery)
- Prof Fergus Gleeson, Dr Helen Bungay (Radiology)
- Professor Charalambos Antoniadis (Cardiology)
- Dr Lois Brand (Emergency Medicine), Dr Edward Sellon (Radiology)
- Mr Tim Lawrence (Neurosurgery)
- Prof Gail Hayward, Dr Phillip Turner, Professor Daniel Lasserson, Dr Jordan Bowen
- Professor Brian Shine, Ian Smith (Biochemistry) Dr Sachin Mandalia (Emergency Medicine)

Future Aims:

- **To establish long term industry and academic partnerships based around the development and assessment of point-of-care testing through the NIHR MIC, OAHSN and other agencies**
- **To establish a research unit based around the development and evaluation of Artificial Intelligence-enhanced imaging in acute care pathways**
- **To place EMROx at the forefront within the UK of using novel imaging techniques and point-of-care technology to improve patient experience and outcomes in the setting of the Emergency Department**

Illness and Infection

Theme lead: Tanya Baron

Summary:

The broad range of collaborations in this theme is reflective of Oxford University Hospitals' status as a tertiary referral and academic centre for a multitude of clinical specialties. Emergency Medicine has shifted and expanded considerably in past decades from its origins in Orthopaedics to encompass the early management of a broad range of medical presentations and conditions. Consequently the EMROx portfolio continues to develop close working relationships with key specialties including Respiratory Medicine and Infectious Diseases

Completed Projects:

- AWARD, RAMPP, HI-SPEC, EURODEM (Respiratory)
- LEAK
- ENCEPH UK

Current Projects:

- BIOAID (Infectious Disease)
- PAINTED (hibernating)
- ASAP (hibernating)
- GAINS2
- RAPID-I

Forthcoming Projects:

- ABRA

Key Collaborators:

- Prof Ian Pavord, Dr Mona Badfael, Dr Richard Russell (Respiratory),
- Dr Alex Mentzer (Infectious Diseases)
- Prof Liza Keating, Dr Manish Thakker, Dr Sarah Wilson (Emergency Medicine)
- Prof Julian Knight (Wellcome Centre for Genetics)
- Dr Giles Bond-Smith (Pancreatitis)

Key Publications:

- Russell R, Beer S, Pavord ID, Pullinger R, Bafadhel M. (2019). **The acute wheezy adult with airways disease in the emergency department: a retrospective case-note review of exacerbations of COPD.** *Int J Chron Obstruct Pulmon Dis.* 14:971-977
- Russell, REK & Doggett, T & Pavord, I & Pullinger, R & Beer, S & Bafadhel, M. (2016). **S68 COPD in the ED: eosinophils, treatment and outcomes, data from the pre-award study.** *Thorax* 71. A40.2-A41

Future Aims:

- **Expand the number of collaborating specialties to reflect the full range of disciplines in the acute care sector**
- **Increase number of early-phase single-site studies in key areas such as infection, airways disease**
- **Establish the Emergency Department as a significant contributor in terms of study design and conception in key research areas of interest e.g. sepsis**

Workforce and Service Design

Summary:

The systemic operational challenges facing Emergency Medicine are extensive and well documented. This area of research seeks to examine future and existing modes of service design and delivery, looking at both technical innovation and the reorganisation of existing services. Previous collaborations with the Institute for Biomedical Engineering have explored the roles and capability of technological solutions to aid in the identification of deterioration in acutely unwell patients, and a number of service-based trials are underway in the department. Emergency Medicine is a rapidly-evolving specialty, with frequent reconfigurations to meet these challenges from a national through to a departmental level, and research in this area is likely to be of paramount importance in influencing the nature of future changes.

Completed Projects:

- IPMED
- What's that Noise?
- Service Design in a Paediatric ED

Current Projects

- GPED
- GP-ED

Key Collaborators:

- Prof Lionel Tarrasenko, Prof Peter Watkinson
- Dr Rick Pullinger, Rob Way
- Prof Daniel Lasserson
- Prof Savithri Ratnapalan

Publications:

Pullinger, Richard & Wilson, Sarah & Way, Rob & Santos, Mauro & Wong, David & Clifton, David & Birks, Jacqueline & Tarassenko, L. (2017). Implementing an electronic observation and early warning score chart in the emergency department: A feasibility study. *European Journal of Emergency Medicine*. 24(6) e11-e16

J Wilson, Sarah & Wong, David & Clifton, David & Fleming, Susannah & **Way, Rob & Pullinger, Richard & Tarassenko, L. (2012). Track and trigger in an emergency department: An observational evaluation study. *Emergency Medicine Journal* 30.**

Clifton, David & Wong, David & Fleming, Susannah & J. Wilson, Sarah & **Way, Rob & Pullinger, Richard & Tarassenko, L. (2011). Novelty Detection for Identifying Deterioration in Emergency Department Patients. *Intelligent Data Engineering and Automated Learning* 6936. 220-227**

Future Aims:

- **Align research with the forthcoming NHS Same Day Emergency Care (SDEC) directives to explore ways of reorganising to shorten length of stay (LOS)**
- **Conduct research which addresses workforce challenges in terms of recruitment, performance and wellbeing**

Ageing, Frailty and End-of-life Care

Summary:

Ageing, Frailty and End-of Life Care are all significantly represented in the top ten RCEM Research Priorities, and hence represent a key area for future Emergency Medicine research. This group of patients can often be hard to reach in terms of successful study recruitment in the acute setting, yet are increasing in number and represent a significant portion of Emergency Department presentations. Future research areas will involve collaboration across the network of specialties that frequently care for elderly patients, including ambulance/prehospital providers, Acute Medicine, Geriatrics, Palliative Care and Orthogeriatrics.

Current Projects:

- SUPPORT
- Frailty Response Unit
- (See also Imaging and Early Diagnostics)

Key Collaborators:

- Dr Aoife Lowney
- Dr Lois Brand
- Dr Jordan Bowen

Future Aims:

- **To develop a cross-specialty research group able to address research questions which span the acute healthcare journeys of elderly patients**
- **To develop a research workstream based around elderly trauma as a growth sector of acute healthcare**



Paediatric Emergency Medicine

Theme Lead: Dr Charlotte Brown/Jiske Steensma

Summary:

Oxford is now an established PERUKI site (Paediatric Emergency Research UK & Ireland), successfully recruiting for a number of nationwide Paediatric clinical trials. Children and adolescents represent a potentially difficult group to recruit into clinical trials, however the EMROx team have developed a track record of managing an increasing variety of clinical trials in the Paediatric Emergency Department setting. This is a relatively new area of research for the department, but successful recruitment has taken place into large RCTs. Links have been established locally with orthopaedics and general paediatrics to enable further studies to be identified.

Completed Projects:

- CAP-IT
 - ICICLE
 - ARCHIE
- (see also Workforce and Service Redesign)

Current Projects

- FORCE

Key Collaborators:

- Dr Chris Bird
- Prof Matthew Snape
- Prof Savithri

Future Aims:

- **Establish Oxford as a leading PERUKI site in terms of recruitment**
- **Improve links with local academic Paediatric research groups to facilitate the development of original research projects**



Minor Injury

Summary:

Minor injury represents a key part of the Emergency Department workload, but evidence for key clinical practices is often scarce, and hence represents a significant opportunity for future research. The John Radcliffe Hospital is well-served by on-site academic specialties including maxillofacial surgery, ophthalmology, plastic surgery, trauma, and Ear, Nose and Throat Surgery (ENT), which offers wide potential for future fruitful collaborations in improving care of these patients

Completed Projects:

- FORCE
- VERITY,
- AIM,
- SPRAINED
- POEM

Current Projects:

- FORCE
- Utility of MRI in Suspected Scaphoid Injury

Key Collaborators:

- Dr Liza Keating, Dr Manish Thakker, Dr Sarah Wilson
- Dr Phil Hormbrey
- Prof Dan Perry, NDORMS

Key Publications:

- POEM

Future Aims:

- **Increase Emergency Nurse Practitioner involvement in the design and running of clinical trials**
- **Connect with regional Minor Injury Units to improve data sets and increase population for study recruitment in minor injury trials**
- **Establish long-term collaborative links with relevant allied specialties, including Maxillofacial Surgery, Plastic Surgery, ENT and Ophthalmology**



Partnerships and Allied Organisations

EMROx has forged a number of key relationships over the past years, reflecting both its position as a facilitator of collaborative research, and the large number of national and local institutions which act as key stakeholders in Emergency Medicine research. A number of our main collaborations are listed below, along with a brief summary of our scope of engagement:

Nuffield Department of Orthopaedics, Rheumatology and Musculoskeletal Sciences (NDORMS)

- Affiliated with NDORMS as academic locus within Oxford University
- Academic origin of several trauma-orientated trials
- Acted in advisory capacity on the development of EMROx

National Institute of Health Research (NIHR)

- Affiliated to the Thames Valley Injuries and Emergencies Study Group (IESG), now renamed Trauma and Emergency Care, part of Division 6 of the NIHR Clinical Research Network (CRN)
- Key funding source for EMROx staff – Research Nurses
- RCF funded Senior Research Fellow 2019-20
- EMROx teams represented in the Oxford Medtech and In Vitro Diagnostics Co-operative
- NIHR Emergency Medicine Incubator

Oxford Academic Health Science Network (OAHSN)

- Regular collaborator with the Patient Safety Collaborative, co-hosting regional innovation-sharing events

Royal College of Emergency Medicine

- TERN – Current representatives: Aman Paul and Surabhi Ramsundar
- Clinical Studies Group attendance/engagement

Paediatric Emergency Research in UK and Ireland (PERUKI)

- Oxford University Hospitals is a registered PERUKI site (www.peruki.org)
- Contributes to multiple paediatric emergency medicine trials, affiliated to the national organisation

TAVERN – ThAmes Valley Emergency Research Network

- TAVERN is a newly-developed collaborative research network linked with the NIHR Injuries and Emergencies Study Group, which comprises the five ED research teams from the EM-providing hospitals within the Thames Valley region – Royal Berkshire Hospital (Reading), Wexham Park Hospital, Stoke Mandeville Hospital, Milton Keynes Hospital, John Radcliffe Hospital and Horton General hospital.
- Aims to support and develop EM-related intra-regional research studies

Academic Centre for UrgenT and Emergency Care (ACUTECare)

EMROx is part of a developing collaborative of specialties within Oxford University Hospitals NHS FT looking to address the current research gap in the acute sector. This has manifested in the nascent Academic Centre for UrgenT and Emergency Care (ACUTECare), which encompasses academic activity from Acute Medicine, Emergency Medicine, Primary Care and other allied healthcare specialties, with the aim of fostering research in the urgent care setting

Other Partnerships and Affiliations

- Oxford CCG
- South Central Ambulance Service
- Thames Valley School of Emergency Medicine (Formerly known as Oxford School of Emergency Medicine)

Key Future Aims:

- **Continue to develop a dynamic and innovative research culture across a range of partnerships**
- **Strengthen and expand academic links with Oxford University and other academic institutions**
- **Create and strengthen links with other established Emergency Medicine research centres**

Education and Training

Education of the Emergency Medicine workforce is crucial to the development of Emergency Medicine as an academic specialty and is a central part of the EMROx strategy. To date this has taken place largely on an informal and opportunistic basis, however a number of interventions have been implemented in recent years to increase the engagement of ED staff in research activity and to more firmly establish the department as a training centre for clinical research. These initiatives and activities have included the following:

- Increasing senior staff engagement through the adoption of Co- and Associate Principal Investigator roles for clinical trials taking place in the department
- Increasing the engagement of staff groups not previously heavily involved in research e.g. Emergency Nurse Practitioners
- Developing Research Fellowships for training and non-training grades who wish to become more actively involved and accredited in research
- Embedding basic research activity and accreditation (e.g. GCP training) into non-training middle grade appraisal processes
- Expanding the annual Oxford School of Emergency Medicine Conference to allow the presentation of regional projects and posters, and increasing the research content of the main presentations
- Hosting Oxford Academic Health Science Network events to share innovations regionally

Key Strategic Aims:

- **Expand the proportion of Emergency Department staff actively engaged in research activity and training**
- **Support the career development of existing staff, including the attainment of higher research degrees**
- **Link closely with allied organisations (NIHR, Oxford University) to maximise the utilisation of training opportunities for the Emergency Department workforce**
- **Establish accessible ground-level educational opportunities (e.g. webinars) to engage the junior workforce**
- **Support attendance and presentations at conferences at local, national and international level**

Communication and Publicity

There have been a number of EMROx initiatives to improve research communication and publicity, both internally in the ED and externally to the Trust, allied organisations and wider public. These include:

- www.oxfordemergencymedicine.com/research a webpage to present and promote EM research activity and provide a link to useful online resources
- active engagement with Twitter (@EMROxResearch) to publicise research-related activity and engage with relevant organisations and individuals
- Strong contribution to the administration and content of the annual Oxford School of Emergency Medicine Conference (www.osemconference.com)
- 'Trials Tuesday', a weekly 10 minutes in the clinical handover session to increase awareness amongst medical staff of ongoing trials in the ED

Key Strategic Aims:

- **Establish the role of Communications Officer in the EMROx workforce**
- **Increase presence at national and international conferences, with more allocated funding to support staff attending such events**
- **Continue to develop website and increase social media profile and engagement**
- **Enhance internal communication to wider Emergency Medicine workforce and affiliated partnership specialties and organisations**

Patient & Public Involvement (PPI)

Lead: Dr Tanya Baron and Alexis Espinosa

Patient and Public Involvement (PPI) is increasingly recognised as a critical aspect of research design and implementation. EMROx has had limited formal involvement in this to date, though it has been integral to the design of a large proportion of the studies running in the department. Most governing research bodies now recommend early and sustained engagement with PPI representatives from an early stage in all study designs and grant applications.

Key Strategic Aims:

- **To place patient and public involvement at the heart of research activity in Oxford Emergency Medicine Research**
- **To establish a dedicated Emergency Medicine Research PPI group in Oxford**
- **To identify and establish links with existing PPI groups in other regions and specialties**

Future EMROx Aspirations

The previous pages give some indication of the extent and range of trials to which EMROx have contributed, so forming a large and varied body of evidence for future practice within the field of Emergency Medicine and beyond. However, the group has the potential and desire to advance further, initiating large multi-site trials, extending into new areas such as AI-enhanced or early diagnostics and becoming a major centre for EM research in the UK. In addition, more work needs to be done around involvement of patient and public involvement in EMROx research design and practice and continuing the training, support and development of all members of the EM workforce. Broad plans for the future can be summarised as below:

- **Establish Oxford as a major centre for Emergency Medicine research in the UK**
- **Expand and diversify the research workforce to maximise the efficiency and output of Emergency Medicine research in Oxford**
- **Substantially increase the turnover and expenditure for developing research capacity within the department, both in terms of workforce and infrastructure**
- **Enhance links with allied specialties and research institutions to foster interdisciplinary research which extends beyond the traditional confines of Emergency Medicine**
- **Strengthen and develop links with various departments in Oxford University to encourage the development of high-quality academic output**

Key Strategic Priorities 2020-25

- **Expand the EMROx research medical and nursing workforce and secure a funding base to support clinical staff in research activity**
- **Increase and diversify funding streams and increase research income**
- **Increase number of patients recruited to NIHR portfolio studies**
- **Increase output of publications in high-impact journals, especially first-author publications**
- **Establish and define formal affiliations with academic institutions including Oxford University**



EMROx

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