

# EMERGE

## ANNUAL REPORT

2021-2022



# DIRECTOR'S STATEMENT

It has been another hugely successful year in EMERGE, with almost 5000 Emergency Medicine patients again this year being offered the opportunity to participate in research. At a time when COVID19 is still very much in the front of our minds, this is an amazing achievement and represents not only recruitment to hugely important COVID19 research (3266 patients have been recruited to COVID studies since the start of the pandemic in 2019), but also a non-COVID19 research portfolio that is larger and more extensive than ever before. We currently have 35 studies recruiting or in set up, and many more planned or at pilot stage over the next few years.

Our cerebrovascular and neurosurgery portfolio led by Allan MacRaid, renal team led by Emily Godden, and commercial team led by Caroline Blackstock, have continued to flourish as have our EMERGE SJH team comprising Stephen Lynch, Claire Cheyne, Jennifer Carruthers, Rebecca Lidstone-Scott, and Angie McGeough, who over the last two years have worked tirelessly to embed Emergency Medicine research at St John's Hospital. Now that the Royal Hospital for Children and Young People (RHCYP) has moved to the Little France site, one of our key aims for 2022-23 is to now develop EMERGE paediatrics under the leadership of Jen Browning. We have recently recruited a research nurse and clinical trials assistant to support this endeavour which we hope will bring large clinical and commercial trials to the paediatric ED and build on the department's long tradition of excellent research training and education.

November 2021 saw EMERGE 13, our first face to face Annual Meeting since 2018, and featured key invited speakers and collaborators from across the UK discussing some of the work which will occupy our time over the next 12 months. It was fantastic to be able to meet again in this way and the day was a huge success and one which we hope will be repeated annually now that the pandemic shows signs of settling.

Our biggest news this year though is undoubtedly the departure of our research manager Miranda Odam. Miranda joined EMERGE in 2013 and through her professionalism, commitment, dedication, excellence, and leadership, has overseen the expansion and development of EMERGE into one of the leading clinical research groups in the UK. Miranda leaves us to work with Kenneth Baillie's group where she will oversee the development of the international arm of the Genomic study. We are so grateful to Miranda for all her hard work over the last 8 years, she will be hugely missed. Rachel O'Brien, who has been with EMERGE since January 2012, will bring her wealth of experience within EMERGE to the research manager role, and will continue to drive the team forwards towards our goal of ensuring Emergency Medicine research becomes embedded in clinical care.

*Matt Reed*

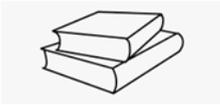
**Dr. Matt Reed**  
**RCEM Professor & EMERGE Director**



# 2021/2022 AT A GLANCE

## Aims of EMERGE

- To support the individual researcher and project, in order to improve the quality of the research, audit or service improvement.
- To co-ordinate the departmental research activity, in order to facilitate and optimise research and minimise disruption to normal clinical practice,
- To raise the local and national profile of Emergency Medicine research

<p><b>25</b> nursing, administrative and support staff</p> 	<p><b>35</b> publications</p> 	<p><b>35</b> studies actively recruiting and in setup</p> 
<p><b>RAPID CTCA</b> study has been <b>published</b></p> 	<p><b>IPED</b> Impletion in <b>NICE Guidelines</b></p> 	<p><b>5,285</b> participants recruited overall</p> 
<p>New <b>EMERGE Paediatrics team</b> established</p> 	<p><b>EMERGE St. John's Hospital</b> team grown</p> 	<p><b>Departure</b> of our research manager <b>Miranda Odam</b></p> 

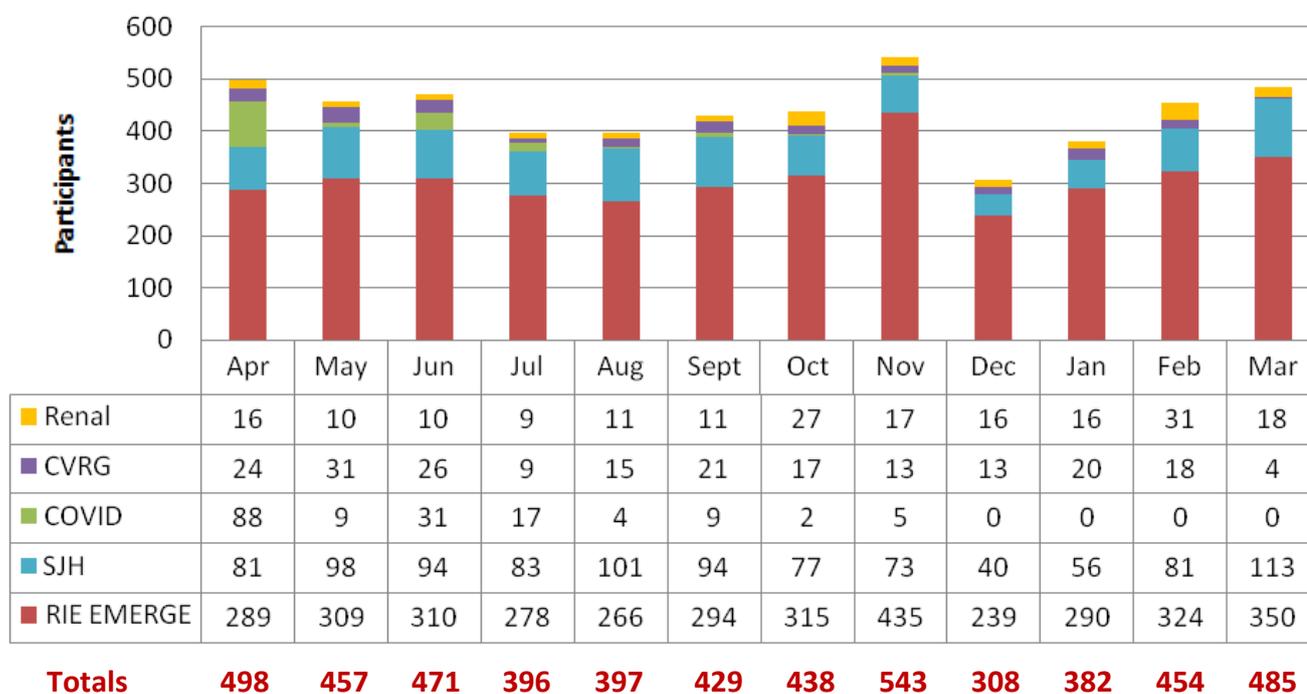


# RECRUITMENT FIGURES 2021-2022

EMERGE participated in over 43 studies in 2021/2022 including:

- **Non-CTIMP:** BRAINED-TBI, CAIRS, CoSTED, DENS, EMBOL, INFERENCE, IONA, KRAKIL, LINCHPIN, MAPP2, NOVEL, OCTANE, REACT, RELIEF, SIREN, TARGET
- **CTIMP:** ABC-Sepsis, ATTEST2, LACI-2, PRECIOUS, PROHIBIT-ICH, RECOVERY

## Total Recruitment Figures 2021-2022



Recruitment Numbers

# EMERGE STAFFING

Over the last year opportunities for staff development have resurfaced. Despite COVID19, education has continued thanks to online learning and even some face to face meetings. We managed to hold an in-person for our annual meeting in November 2021. Having everyone in the same room proved to be very powerful, it provided clearer communication to connect with colleagues, form stronger relationships with our collaborators and brought some much needed energy to the room. In addition to this, some staff members were able to virtually attend the Royal College of Emergency Medicine (RCEM) conference, the Scottish College of Emergency Medicine (SCEM) conference, and the Trainee Emergency Research Network(TERN)

COVID19 studies began to wind down towards the end of 2021 which allowed us to re-focus our attention on site initiation visits (SIV) for non-COVID19 research. SIVs for the LumiraDX commercial studies; EMBOL and REACT were rolled out followed by academic and drug trials; ACUTE, ABC sepsis, MIS-ABC Sepsis and the Trainee Emergency Research Network (TERN) study; SHED. We have also commenced the CoSTED study, a smoking cessation study, funded by the National Institute of Health Research (NIHR). In addition to this we have 13 studies in set-up which we hope to open to recruitment in the coming year. EMERGE colleagues from the Cerebrovascular Research Group (CVRG) and Renal have also been able to initiate 10 new studies between them and continue to increase staffing within their teams. Since April 2021/2022 we have enrolled 5,285 participants in total. Our expanding portfolio of studies has led us to increase our admin team to an additional Band 4 0.5 WTE. We have also replaced two Band 6 Research Nurses with the Stroke team. Changes within the current team include Rachel O'Brien replacing Miranda Odam as the Band 8 Research Nurse Manager and Caroline Blackstock replacing Rachel as the Band 7 Lead Research Nurse.

We have also continued to expand at St John's Hospital (SJH) and have introduced 4 more studies there in addition to the 4 that commenced in the previous year. With the increase in the number of studies, this has led to two new additional staff members, including a Band 6 WTE Research Nurse and a Band 3 WTE Clinical Trial Assistant (CTA) bringing the staffing total to 4 full and part time staff. In light of the Royal Hospital for Children and Young People (RHCYP) moving on site, we saw this as the perfect opportunity to formally establish EMERGE Paediatrics, led by Dr Jen Browning. This follows on from a previous PERUKI study conducted in the Emergency Department (ED) at the old Royal Hospital for Sick Children (RHSC). To build this new and exciting collaboration we have recently employed a Band 6 WTE Research Nurse and a Band 3 WTE CTA and with this we have expanded our portfolio with LumiraDX to initiate the INFORM study. We plan to continue to collaborate with PERUKI to strengthen this entity and continue to grow and expand at this site.

**Julia Grahamslaw**  
**EMERGE Lead Research Nurse**



# SUPPORTING RESEARCH OPPORTUNITIES

## Trainee Emergency Research Network (TERN)

Research opportunities within EMERGE continue to grow. The EMERGE TERN Fellowship will advertise again in April 2022 for a new fellow to start in August 2022. Our current TERN Fellow, Rory Anderson, continues his excellent work delivering the SHED study, with Edinburgh currently the lead recruiting site ([tinyurl.com/ternshedmap](https://tinyurl.com/ternshedmap)), as well as being an NIHR Associate PI for the COSTED study and UK Chief Investigator for the EUSEM SEED study. Raj Chatha who finished his EMERGE TERN Fellowship in February 2022 leads the ED UK Crowding and Training (EDUCATe) Study, a mixed methods study designed to answer the question of how crowding affects training in the UK. During his EMERGE fellowship, Raj founded the Virtual Journal Club which was initially a local venture which dissected a paper and offered gems of research methodology, but later through his role as education lead on the UK TERN committee has now become a regular feature with RCEM Learning along with the TERN top paper articles which aim to summarise recent evidence for trainees by trainees. This latter content has received high levels of readership and has developed its own network, recruiting authors from across the UK and Ireland. A remarkable achievement in his 12-month fellowship.

We have offered all six Acute Care Common Stem; ACCS (EM) trainees this year an opportunity to spend a week with EMERGE and have been asked to extend this programme to new EM ST4 trainees joining the region, from August 2022. In 2022, we also look forwards to three overseas research fellows Chiara Colaizzi, Roberto Pizzi and Lorenzo Zucchelli joining us from Milan continuing our excellent Italian collaborations. We have also had a further SJH Researcher in residence this year, Aakash Gupta, working with EMERGE to deliver the SHED study at SJH along with some pilot Aortic Dissection research work, and we have continued to recruit to our academic FY2 programme which allows applicants either weekly dedicated research time or a 4-month research block at FY2 level.

## Academic Lunchtime Meeting Series

The EMERGE Academic lunchtime meeting series was a new venture for this year, starting in summer 2021, and featuring an invited speaker, either face-to-face in Seminar Room G6109 within the radiology dept back corridor (and also available live on the Edinburgh EM Research General TEAMS page), or pre-recorded on the EMERGE website in the Academic lunch time meeting series section most Thursdays from 12.15 to 1pm. Staff are encouraged to bring their lunch and take advantage of this excellent educational opportunity. For our ED trainees, also within the Edinburgh EM Research TEAMS pages, are details of all the latest research opportunities available through EMERGE, and the Suggest a Paper channel, which is an excellent resource featuring the latest relevant Emergency Medicine paper. For our undergraduates, the SSC5a research programme continues to be successful with demand for places is high and EMERGE continues to support University of Edinburgh's intercalated BMedSci programme.



**Academic Lunchtime Meetings**

# EMERGE / CVRG & NEUROSURGERY

The EMERGE/CVRG collaboration has continued to flourish over the past year, recruiting 211 participants. The team deliver an extensive portfolio of studies and trials within the disciplines of Stroke, Neurosurgery and Interventional Neuroradiology. There are clear links between all three specialities and as ever a large proportion of our patient demographic present via the Emergency Department. The EMERGE model of pooled staffing and supportive collaboration enables us to offer research opportunities to potential participants and their families from the start of their patient journeys in acute care.

## Stroke

The stroke caseload ranges from observational studies to CTIMPs and is a mix of both academic and commercial activity. Notable achievements include completion of recruitment to two Edinburgh-led studies, LACI-2 and LINCHPIN, and highest Scottish recruiters to a Bristol Myers Squibb commercial trial, Axiomatic-SSP.

The studies highlighted above are good examples of the complexities within the stroke portfolio. Co-ordination of additional imaging, IMP management and accountability, cognitive assessments and significant blood sampling and processing are all features of these studies and demand a varied and experienced skill set in order to deliver. The team are proud to have facilitated these to such a high standard and look forward to analysis and reporting in the coming months



## Neurosurgery

This aspect of CVRG activity also contains a varied portfolio. The biomarker studies have continued to recruit to target via both the Emergency Department and Department for Clinical Neurosciences. The NIHR funded Duration of External Neck Stabilisation (DENS) Study opened to recruitment locally in September and new sites are being opened nationally on a regular basis. The Tessa Jowell Brain Matrix study is performing well with Edinburgh playing a significant role in the national recruitment effort.

## CVRG

## Interventional Neuroradiology

A range of post-market clinical evaluation studies from commercial sponsors provide the current workload though this is set to diversify over the coming year with plans to support upcoming CTIMPs.

The team feel fortunate and energised by their dynamic portfolio. They look forward to continuing to support trials and studies, fostering links with the clinical team and supporting service development.

**Allan MacRaid**  
**Lead Research Nurse**  
**EMERGE - Cerebrovascular Research Group**



# EMERGE RENAL RESEARCH

The position of a renal clinical research nurse was embedded into the EMERGE team in 2019 and has supported the growing portfolio of renal studies. Emily Godden was appointed to the position and has been responsible for co-ordinating and developing this exciting branch of research, recruiting 192 participants in the last financial year.

Since August 2019, over 400 participants have been recruited to an array of Renal research studies. The portfolio is growing and to reflect that, the team plans to expand. Funding has been secured for a second Renal Senior Research Nurse and it is hoped that a successful candidate will be appointed in the upcoming months.

The speciality offers research opportunities for people living with both acute and chronic kidney disease and addresses some of the major problems that people living with kidney disease face. For example, the KRAKIL project (Kidney Recovery after Acute Kidney Injury - Longitudinal) aims to better understand why some patients go on to develop chronic kidney disease after an acute kidney injury so that we can help prevent this from happening in the future.

Another on-going Renal study is the OCTANE (Optical Coherence Tomography and Nephropathy) study. This study, led by Dr. (Bean) Neeraj Dhaun and co-ordinated by Emily, looks at the assessment of retinal vasculature using optical coherence tomography in health, hypertension and Kidney disease. Data analysed so far is showing that this imaging technique can indeed identify changes in the eye's blood vessels in line with kidney disease. The project is growing to encompass a variety of kidney patient groups, including kidney transplant donors and recipients, and more recently haemodialysis patients. Emily has been supervising two biomedical science students, Sofia and Aleks, who have been doing their dissertation project on OCT in dialysis. This cohort have not been studied within the project before, but thanks to a new portable OCT machine, we can now see how dialysis, dialytic fluid shifts and toxin removal affect OCT metrics as to ascertain what this may mean for this cohort, we can then see if there is potential for results found to aid with individualising dialysis in the future.

The hope is that in the in the future this quick, non invasive, novel imaging technique, which can be done at high street opticians, may provide a robust platform to reliably assess kidney injury. Analysed data was recently presented at Kidney Research UK's Med tech "Dragon's Den" competition, whose ethos is to accelerate the development and availability of transformational technologies to improve the lives of kidney patients. The project was successful and the team were awarded funding for two representatives to attend the 'academy programme'. Emily, along with OCT imaging specialist Charlene, are very much looking forward to developing the project with what they learn from the academy!

Renal research is becoming an ever more robust specialty within the EMERGE team; this is highlighted by both the expanding team and the growing nature of the projects. It is evident that renal research is a valuable asset to both research in NHS Lothian and to the renal patient group.

**Emily Godden**

**Senior Research Nurse - Renal/Acute Medicine**





# RESUSCITATION RESEARCH GROUP

## Group Summary 2021/22:

· The group coordinated the writing and launch of Scotland's Strategy for Out of Hospital Cardiac Arrest 2021-2026 which is available for viewing here: <https://www.gov.scot/publications/scotlands-out-hospital-cardiac-arrest-strategy-2021-2026>.

· Our first two interns Gary McLean and Ally Lloyd were employed in partnership with Inclusion Scotland to bring the disabled community into the Chain of Survival.

## Four peer reviewed publications included:

- Socioeconomically equitable public defibrillator placement using mathematical optimization. Resuscitation 2021.
- Developing a behavioural intervention to increase lay-people's intentions to initiate CPR in the event of Out-of-Hospital Cardiac Arrest (OHCA). European Journal of Cardiovascular Nursing 2021.
- Incidence, Characteristics and Outcomes of out-of-Hospital Cardiac Arrests in Patients with Psychiatric Illness: A Systematic Review. Resuscitation Plus 2022.
- Theorising survivorship after intensive care: A systematic review of patient and family experiences. Journal of Clinical Nursing 2021.

## Grants awarded funded research projects including:

- PADmap - a publicly available resource to guide the optimal placement of PAD
- Behavioral research into mechanisms for reducing the spread of COVID-19 in health care settings
- Development of a 'minimum viable product' for CPR familiarisation
- Investigation of the wellbeing of survivors and rescuers after OHCA in the Scottish Highlands

We continue to attract a number of research students with a current cohort of 4 postgraduate students, 2 academic foundation doctors and 3 undergraduate projects.

## Save a Life for Scotland (SALFS):

- Throughout the COVID-19 pandemic, Scotland's bystander CPR rates remained unchanged at 66% which is an impressive feat as other parts of the UK reported drops in bystander CPR rates. Despite a drop in the ability to learn CPR face-to-face, bystander CPR rates continue to hold firm.
- We have taken forward the Heartstart programme after the British Heart Foundation gave notice that they intended to close the programme which reaches a large number of primary and secondary schools, communities and hard to reach communities in all geographical areas of Scotland. Work to date has included the creation of a national Heartstart key coordinator group to review materials, processes and plan for the restarting of schools and communities programmes of work.
- MECOPP - In February 2022, SALFS led an online train-the-trainer session for key workers on CPR awareness. The health workers are members of the Gypsy/Traveller community, building buy-in with this hard-to-reach group. We are using CPR tote bags for CPR familiarisation in this context. Health Visitors are able to use these bags as a tool to demonstrate basic compressions as well as leave as a health promotion tool with the families they work with. We continue to be a part of the National G/T Action Plan.



# 2022/2023 PLANNING

One of our key aims for 2022-23 is to develop EMERGE paediatrics under the leadership of Jen Browning. With a research nurse and clinical trials assistant soon to start and with a green light in place for the LumiraDX commercial INFORM study evaluating a point of care device for the detection of respiratory viruses and several NIHR portfolio studies in the pipeline, there is now a great opportunity to embed large clinical and commercial emergency medicine research at the RHCYP.

Our partnership with LumiraDX has been vital to ensure the stability of our group's funding and has allowed us to develop both EMERGE SJH and EMERGE paediatrics. We are always looking to develop both academic and commercial collaborations and this is one area that we are looking to develop in the next 12 months. Our world class clinical and academic expertise, track record of delivering seamless industry, biomarker, data and novel technology research, strong collaborations with the University of Edinburgh, Dataloch and Lothian NRS Bioresource as well as experience of commercial trials and in house sample storage and centrifuge facilities, make us more attractive to collaborators. Our work in ambulatory ECG monitoring led to both a large BHF grant for the ASPIRED trial, and the recommendation of the KardiaMobile by NICE Medtech Innovation for the ambulatory detection of atrial fibrillation, largely through our work on the IPED study and its subsequent integration into a successful clinical service.

I have previously discussed the role of EMERGE in supporting research opportunities and the development of medical and nursing experts in academic emergency medicine. This has never been more important as it is now. Although academic emergency medicine continues to develop in the UK, there are challenges to the specialty with NHS service delivery pressures, research delivery challenges and issues around workforce fatigue. It is important that we continue to champion the benefits, rewards, and satisfactions of a career in academic emergency medicine. We must continue to expose the team and EM undergraduates and to the work of EMERGE, advertise the educational and research opportunities available, inspire potential future academics, support projects such as TERN which generate interest, engagement, training, experience in EM research, and offer support and opportunities to individuals who wish to train in both academic nursing, allied health professionals and medical research.



# ACKNOWLEDGMENTS

2021-22 has brought lots of change which as always has been received incredibly well by all of the team who never fail to surprise at their adaptability and excellent work ethic. This has allowed for another rise in recruitment figures which is remarkable given the challenging environment in which EMERGE conducts research.

I would like to congratulate Julia Grahamslaw, Caroline Blackstock and Fiona McCurrach for all being nominated for the Scottish Research Nurse of the Year Award and all being highly commended.

Team members and previous staff who have been supported by EMERGE to undertake further study have completed qualifications. Jessica Teasdale completed a Post Graduate Certificate and previous staff, Mary Morrissey and Bernadette Gallagher have completed Masters in Public Health.

Emma Moatt has also successfully gone on to be offered a Trial Manager position with York Clinical Trials Unit after starting with EMERGE in 2019 with no research experience. Adam Lloyd has successfully been appointed the first Research Manager with the Scottish Ambulance Service. Adam started his research career with EMERGE as a student. Rebecca Trainer has also left the team to go on to start her nursing studies.

I would also like to acknowledge the ED trainees who have been working with the team to design and deliver research. In particular, Jack Cafferky and Andrew Ferguson for their MIS ABC study. This involved them obtaining a grant and designing, then implementing the project from concept with great success. I would also like to acknowledge Raj Chatha and Rory Anderson for their great TERN work. I have been very impressed with them all.

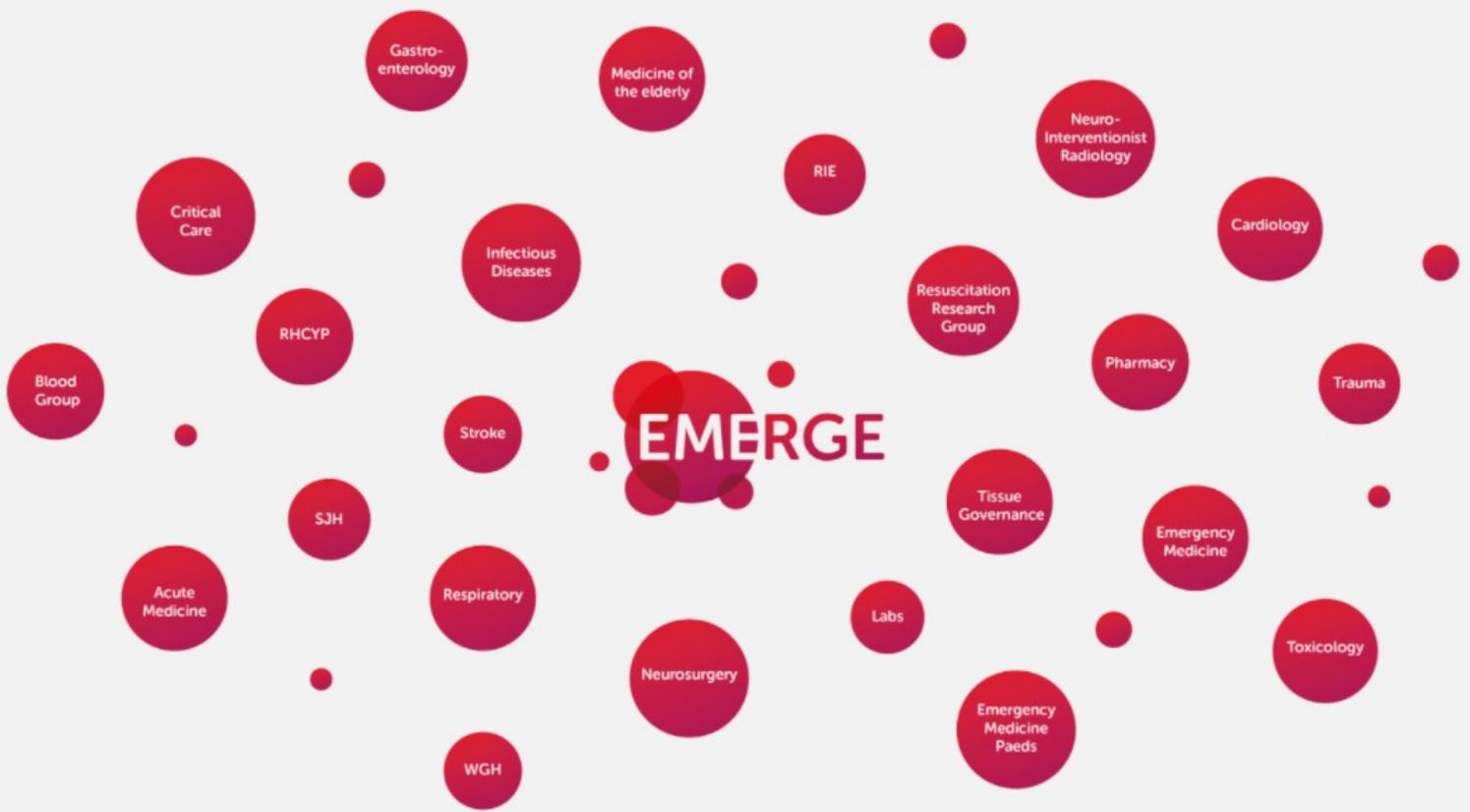
Above all, I would like to acknowledge the excellent work that all of the EMERGE team do, day in, day out to deliver research, year on year increasing the number of patients who are given the opportunity to participate in research.

As always, we would like to thank all the participants in our research, most of who have arrived unexpectedly in hospital in what is undoubtedly a nerve wracking time for them where they can be at their most vulnerable. Despite this, it is remarkable how many people are so eager to be altruistic, all resulting in answering research questions with the aim to improve patient care.



**Rachel O'Brien**  
**Research Nurse Manager**





## JOIN THE RESEARCH CONVERSATION



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