# THAMES VALLEY EMERGENCY MEDICINE RESEARCH NETWORK

Summary and proposals

August 2018

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# Thames Valley Emergency Medicine Research Network

## Introduction

The Problem:

Emergency Medicine (EM) is a developing academic field in the UK, and has historically suffered from underinvestment in this regard, both in terms of overall financial input and in the proportion of time and attention devoted towards research pursuits by already overburdened Emergency Department (ED) staff. Whilst recruitment for research studies takes place in EDs across the UK, the well-documented day-to-day pressures facing departments often demand a highly focussed and pro-active approach to engagement with potential study participants, which in turn requires significant resources and organisation to achieve.

Furthermore, the studies are often not led by Emergency Physicians themselves. This has two significant effects on EM research as a whole, in terms of content and capacity:

1) Overall this acts to slow the growth of EM as an academic specialty, as resources and expertise are developed outside of the EDs, along with track records for successful grant application and funding. It also fails to encourage and harness the engagement of junior doctors and other health professionals working in Emergency Medicine, further exacerbating the problem.

2) The lack of ED-centric research means that key research questions may be overlooked, for example certain topics/aspects of disease presentation which do not occur outside of the ED, for example in minor injuries. Equally, significant but less common presentations may be ignored which present a challenge in terms of adequately powering a study e.g. the diagnosis and immediate management of vascular emergencies such as aortic dissection/rupture.

3) Developments in medical knowledge and technology tend to be aligned with Specialties' outlook on disease (pathology-based) rather than orientated towards the work of Emergency and Acute physicians (presentation-based)

Whilst there have been some significant research successes locally in the field of Emergency Medicine, both in terms of increasing recruitment to NIHR portfolio studies and in developing *de novo* research projects, the potential for Emergency Medicine-led research in the Thames Valley region is still markedly under-realised. In the Thames Valley region, research resources are unevenly distributed across the EDs, which fails to maximise on the capacity of the departments to engage in research activity. EM trainees rotate between departments on a yearly basis, making it difficult to complete research projects in a single placement. There are also a relatively small number of clinicians in each ED actively involved in research, all separately facing similar challenges within their own department.

Whilst a number of research organisations are active locally, including the NIHR Injuries and Emergencies Study Group and the Oxford Academic Health Science Network, none of them

are directly concerned with developing the infrastructure of the Emergency Departments to deliver EM-orientated research.

## The Proposal:

We aim to develop the Thames Valley Emergency Medicine Research Network, a locally-orientated research organisation which aims to link all five regional Emergency Departments, and allow them to coordinate their activity with the aim of expanding the regional research infrastructure, and increasing the efficiency and scope of recruitment to NIHR portfolio studies, plus developing original local research projects, (which may in turn be included on the NIHR portfolio).

This should have the following benefits:

- Improved efficiency in developing research capacity and infrastructure – e.g. coordinating GCP training across the Deanery to maximise the number of shop-floor clinicians who are able to actively recruit into studies, including existing NIHR portfolio studies
- Organised and structured approach to development of new regional collaborative studies
- Encourage and facilitate the development of locally-initiated research projects which may then be included in the NIHR portfolio
- Coordinate and share research resources at ground-level across region
- Trainee development – increase the engagement of junior clinicians, enable trainees to follow studies and projects across the region and facilitate their continued involvement as they rotate around different hospitals in the Deanery
- Regional overview and coordination of research capability – pooling resources for teaching sessions, GCP training, research skills, study design
- Nurturing local research from idea to implementation
- Peer review and support - allowing departments to share strategies/solutions to problems/impedances to research activity
- Expand portfolio recruitment to studies by encouraging and supporting the uptake of studies across the region as a whole
- Power studies sufficiently to allow investigation into areas which have previously been difficult to research, for example the ED presentations of significant but less common conditions and presentations such as Aortic Dissection/Rupture, Boerhaave's Syndrome, epiglottitis, compartment syndrome

## Structure and Organisation:

- It is proposed that each regional ED nominates three representatives – one research-active senior doctor (Consultant or Staff Grade), one from the wider research team e.g. a Research nurse, and one junior doctor, for example an ED Registrar or Middle Grade. Any other interested individuals from each ED would be welcome and encouraged to participate, as the emphasis remains on inclusion and expansion of the research workforce.

- Involvement would initially have to be accounted for within existing SPA/protected research time, though once a track record is established for the network, there may be the potential to support applications for separate funding on an individual or group basis.

- We have already identified, approached and obtained the interest and support in principle of a research-active Consultant/Senior Doctor in each of the main hospitals in the Deanery (Oxford University Hospitals, Royal Berkshire Hospital, Wrexham Park Hospital, Stoke Mandeville Hospital and Milton Keynes Hospital).

- To maintain a consistently devolved, regional outlook it is proposed that the leadership of the network should rotate around the region, with each centre's team taking a turn at the helm. The length of time for this rotation should be determined at the initial meeting, but it is envisaged that it should be in the range of 1-3 years.

- The responsibilities for the network development lead would include:

    - Setting out strategy and key targets for the network
    - Encouraging collaborative development of local ED-focussed research studies and initiatives
    - Liason with the various stakeholders, both in terms of participating EDs and external agencies such as NIHR CRN, OAHSN, TERN
    - External and internal communication of matters pertaining to the network and reporting of progress back to steering committee
    - Chairing and coordination of meetings

- For continuity purposes, it is also suggested that there should be a permanent committee position to oversee and advise the team currently leading the network – this should be independent of the current locus of the network leadership. This should be an item for discussion in the inaugural meeting

## Measures of success:

Success or failure of the TVEMRN should be measured in the following ways:

**Short Term:**

- Initiation and maintenance of network meetings
- Increased GCP coverage and engagement of training and non-training doctors in region
- Engagement with external research agencies – OAHSN, TERN, NIHR CRN

**Long Term:**

- Improved recruitment to NIHR portfolio studies
- Increase in number of locally-initiated EM-orientated research projects

- Increase in scope of research projects to include previously minimally or unresearched topics
- Increased regional output of research publication
- Increased senior research posts in region
- Increase in number of individuals in region with funded research time
- Increase in number of individuals in region involved in sustained research

## Potential starter projects

### Project 1: Infrastructure – Good Clinical Practice Training

**Context:**

Good Clinical Practice (GCP) Training is a basic requirement for anyone wishing to engage in the recruitment of patients into clinical studies, yet the percentage of ED doctors with up-to-date certification is generally low. This immediately places a barrier into their engagement with wider ED research, and potentially limits the recruitment of patients into studies on the ED shop-floor.

**Proposal:**

- Each ED to create a register of current GCP-trained clinicians in their department (and those currently without a valid GCP certificate) – this can be combined to form a regional register.
- Strategies to increase this population within the ED workforce to be discussed and compared within TVEMRN – potential approaches include incorporating GCP into induction or departmental teaching, incentivising with SPA/shop-floor time, using online/self-certification versus offering dedicated face-to-face teaching.
- These strategies to be implemented and maintained over six month period, then GCP registers re-assessed to measure effect.

### Project 2: Research Output – CT Chest in Elderly Trauma

**Context:**

Elderly falls from standing have overtaken other mechanisms to be the leading cause of major injury in the region. The trigger thresholds and risks/benefits of cross-sectional imaging in this age group are as yet unclear, though there is evidently a significant prevalence of injury in this population which will not be identified by plain X-Ray. Current trauma guidelines do not include adequate thresholds to routinely trigger CT in these circumstances, and there is concern regarding the potentially routine use of contrast-enhanced CT in a population vulnerable to acute kidney injury.

**Proposal:**

- Regional study into the utility of plain CT chest criteria in elderly patients who have sustained chest injury from a low-force fall (e.g. from standing)
- Use set of threshold criteria for initiating CT developed by Lois Brand *et al* in OUH derived from local audit data
- Compare groups using threshold/plain CT versus standard care over three months
- Compare variables such as mortality, Length of Stay, injuries identified and prevalence, cost of admission, re-attendance/readmission rates

## Next steps:

- Email to each ED to confirm interest/agreement to participate and select representatives
- Arrange first meeting to establish group/structure and initiate projects