# Abstract

Growing research in geriatric medicine is a priority area. Currently, involvement of geriatricians in research lags behind other specialties. The reasons for this are multifactorial, but a lack of training infrastructure within geriatric medicine higher specialist training is contributory. This is widespread across European countries and internationally. The Geriatric Medicine Research Collaborative (GeMRC) offers an opportunity to engage trainees in research, regardless of their previous individual research experiences. Utilising national trainee networks, GeMRC is able to conduct large scale projects within short periods of time that can have real impact upon patient care. We consider that embedding GeMRC within higher specialist training with formal college support will assist to upskill trainee geriatricians in research methodology. Collaboratives are internationally recognised across disciplines. Expansion across European and international countries offer the opportunity for international collaboration in geriatric medicine. International trainee-led networks will enable the conduct of large-scale global projects in geriatric medicine.

An ever-increasing need for geriatric medicine clinicians is recognised internationally (1, 2). Geriatric medicine is a popular sub-specialism in European countries (3-5), although less common internationally (6, 7), particularly in the private sector (8). However, there remains disparity between clinical and academic engagement (9); older adults with frailty remain under-represented in clinical research (10-12). Research methodology competency is required to complete higher specialist training in many countries, including the United Kingdom (UK) and other European countries (13-15), but there are variations in how this is achieved, even within individual nations. Research methodology was not included as a recommendation for training requirement in the consensus European postgraduate curriculum (16). In Australia and New Zealand, trainees are required to submit a research project report. However, this report may be of an audit, quality improvement project, research protocol, literature review, or case study (17). In France trainees are required to submit a thesis for oral examination. Other countries have no specific requirements for higher specialist training in research methodology (18).

Within the UK, a second meeting was held in March 2019, organised by the National Institute for Health Research (NIHR) Newcastle Biomedical Research Centre (19), with spotlight on trainee-led research. This incorporated networking between research active trainees, sharing of research ideas, and discussion of how challenges academic geriatric medicine faces can be overcome through collaborative research. Challenges were further discussed with networks internationally, utilising collaboration through the European Academy for Medicine of Ageing (EAMA) (20). This article highlights challenges and suggests potential solutions to increasing research capacity amongst geriatric medicine trainees.

# What are the challenges?

## Geriatricians’ exposure to research

Trainees within non-academic posts currently obtain minimal exposure to research throughout clinical training (9). This is partially explained by lower numbers of consultants in geriatric medicine directly involved in research compared to other specialties; in the UK, 8% of consultants are employed on academic contracts compared to 16% in other physician specialties (21). In Norway, a third less specialists in geriatric medicine undertake PhDs compared to all general (internal) medicine specialties (22). Unfortunately, this effect has tendency to cycle. Trainees do not develop sufficient expertise in research methodology from their trainers, meaning that they are unable to provide such training for future trainee generations (23). In addition, as there are fewer large multicentre studies compared to other specialties (10-12), there are limited opportunities for consultant geriatricians to engage in research by acting as Principal Investigators.

## Academic training pathways

Within England and Wales, the Integrated Academic Training (IAT) programme was launched in 2005 and has been formally supported by the NIHR following formation in 2006 (24). IAT provides trainees with protected research time and research-active supervision. Recently, numbers of academic training posts in geriatric medicine have increased, particularly as the NIHR has developed a themed call for research involving older adults with complex health and social care needs (13). However, numbers of posts relative to overall posts in geriatric medicine higher specialist training still lags behind that of other specialties; of 253 NIHR Academic Clinical Fellowship posts advertised in 2018, 15 (6%) were open to geriatric trainees, and only 3 (1%) were exclusively for geriatric trainees (25). A similar programme, Irish Clinical Academic Training, has been introduced in Ireland but none of these posts have been awarded to geriatric medicine trainees to date (26). We consider there to be urgent need for development of more academic posts. However, we also consider there should be more investment in involving trainees in traditional clinical posts in research. Few countries have dedicated IAT programmes in geriatric medicine; academic training in geriatric medicine should be accessible to everyone involved in healthcare of older people.

## Funding

Unfortunately, many important research concepts are never realised in practice due to lack of funding. Many geriatricians with important research ideas may lack experience and understanding in how to increase chances of success, or may be deterred from applying due to inexperience. Unfortunately, this also has tendency to cycle as successful applications are often dependent on demonstrating previous outputs and department success. Additionally, there are fewer available funding streams for research in geriatric medicine when compared to areas such as cardiovascular disease and cancer (27), and there are fewer geriatricians in influential positions such as research councils, boards, and panels (28-30). Increased provision of funding towards improving health and wellbeing of older adults is needed, but we also should be innovative in ensuring funds are used efficiently.

## Research “ownership”

Traditional academic models focus on individual progression and success is often defined by individual outputs. Unfortunately, this may lead to reluctance of researchers to share research ideas and design outside their institutions until completed. We consider this may be detrimental to research progress overall; projects take longer to reach completion, and completed single site projects may be less impactful (23). Even considering multi-centre studies, these are often traditionally led by defined groups of researchers, and staff involved in data collection at individual sites may receive little acknowledgement for contribution. This may reduce numbers of staff that engage with such studies, due to lack of perceived personal benefit.

# Is collaborative research the answer?

## Developing the Geriatric Medicine Research Collaborative

The Geriatric Medicine Research Collaborative (GeMRC) was formed in August 2017 as a trainee-led research collaborative (23). We followed principles of similar research collaboratives that had previously successfully formed in specialties such as general surgery, which have now developed into international collaborations and global research project conduct (31). GeMRC aims to involve trainees in research, audit, and quality improvement by conducting large-scale projects, with potential for direct impact on patient care. Within the UK, we have representatives across all training regions, including Northern Ireland, Scotland, and the Welsh Geriatric Research Network (WeGeN). This close virtual network allows rapid dissemination of projects. With ever increasing international networks, we consider that we can collaborate on projects of international significance to healthcare of older people.

## Achievements to date

Following our initial formation, we have published numerous collaborative peer-reviewed articles, conference abstracts, and articles in the British Geriatrics Society newsletter and blog, and given presentations at national and international meetings. We have now successfully conducted five multi-centre audits across the UK, with further projects planned. Importantly, our audits often have important secondary research questions, offering trainees experience in research methodology. We have now conducted three rounds of our national delirium audit, which incited trainees to engage locally in quality improvement strategies. The first round of our delirium audit including 1507 patients from 45 sites; this was the first point prevalence study of delirium that had been performed in the UK to date, and the largest internationally (32).

## Overcoming challenges

### Geriatricians’ exposure to research

The key to breaking this cycle may be to upskill current trainees in research methodology in order to develop a future cohort of geriatric medicine consultants who are actively engaged in research, and are able to provide training themselves in the future. GeMRC offers the opportunity to invigorate an exciting research culture within geriatric medicine by conducting large scale projects within short periods of time, with potential for direct impact upon patient care. We envision that future consultant geriatricians who participate in GeMRC projects as trainees will be able to signpost and encourage future trainees towards GeMRC.

### Training pathways

Importantly, GeMRC involvement at all project stages is open to all trainees regardless of research experience. This offers opportunity for trainees not employed on the IAT programme to obtain experience in research methodology. GeMRC has also helped to develop a network of trainees who are in academic posts to share knowledge and experience. This close relationship has enabled trainees on academic pathways to share research knowledge with trainees in traditional clinical posts. In addition, broad inclusivity of GeMRC has offered opportunity for medical students, foundation doctors, core trainees, nurses, and allied health professionals to develop geriatric medicine research experience.

### Funding

No specific funding has been required for individual projects conducted by GeMRC to date. Data collection was conducted by trainees employed at each trust, and therefore, no additional salary supplements or overheads were required. A similar approach can be utilised with multi-centre observational and interventional studies. Where funding is necessary (e.g. equipment purchase), the collaborative approach means only one application is needed for all centres. Close working of trainee networks can ensure further increased efficiency, for instance, sharing equipment between sites.

### Research ownership

A defining principle of GeMRC is that everyone involved in research projects is treated and acknowledged equally. We have agreed a corporate authorship policy and all collaborators agree on submitted manuscripts. We consider that all collaborators have ownership of our research projects, and there is no limit to numbers of collaborators that can be involved in any project. This approach has helped develop a culture of knowledge sharing, rapid dissemination and completion of projects, and motivation of trainees to participate in projects.

# Conclusions and recommendations

GeMRC offers an innovative approach to conducting large scale projects with real impact upon patient care. We strongly recommend that involvement within GeMRC should be embedded within higher specialist training and encouraged at college level, in order to widen access to involvement in research, and upskill future geriatricians in research methodology. We encourage the development of international research collaboratives, and welcome collaboration with international countries in future projects.

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