



Get started with Post Graduate Medical Research

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There are important decisions to consider before embarking on postgraduate research. Guidance for the trainee has conventionally been through advice sought from supervisors and seniors. This article attempts to formalise these ideas and opinions to allow informed choices to be made.

When is the right time to do research?

This can be extremely variable. Research can be undertaken as a stepping-stone to gain entry to formal surgical or medical training. A period of formal research can allow augmentation of research skills and make a candidate more competitive candidate for National Training Number (NTN) recruitment. For trainees who have secured a NTN without a preceding period of research, there is the option to apply for Out of Programme for Research (OOPR)⁽²⁾. This is subject to agreement from the applicants' Post Graduate Deanery. There is the option of including time spent in the research post towards your Certificate of Completion of Training (CCT) but this must be approved by the General Medical Council (GMC)⁽²⁾.

Recently, Integrated Combined Academic Clinical Programmes have been created. These allow entry into speciality training and provide a run through scheme which incorporates a balance between assigned clinical and academic training. The exact details of these schemes are variable between the four devolved home countries but in general, entry level is typically from CT1-ST4⁽³⁾. Academic Clinical Programmes incorporate a higher degree (3 year PhD) into the clinical curriculum with dedicated academic time in the latter years⁽³⁾. NTN already obtained can be transferred over to this scheme following successful, competitive application.

What type of degree to choose?

Often the type of degree pursued by the trainee is dependant on the individuals' career preferences and past research experience. These can be full time or part time, laboratory based, clinical or educational and with or without service commitments. Appropriate consideration should be given to the volume of work that is needed to successfully

complete and "write up" a higher degree against the time given to clinical obligation. What is often a concern to the trainee in craft specialities is that, a period of time away from clinical practice may lead to a loss of practical skills. This may, in fact, be counterproductive and an appropriate balance needs to be struck. Most Universities will have strict criteria as to who they will allow to undertake higher degree research. This usually means having a good first degree and/ or a master's qualification. Some require you to have studied as an undergraduate with them before being eligible.

What should I consider before applying for a higher degree?

There are several aspects which make a research project appealing and more likely to succeed. A well thought out, planned application process can reduce delays and often simplify the difficult transition of moving from clinician to researcher.

1. Supervision

Choosing an enthusiastic and appropriately skilled supervisor who you are able to work well with is imperative. It may be useful to work with a supervisor with a proven track record of supervising higher degrees and a good publication rate. It may also be useful to speak with their current research fellows who will have good insight of the research project. It is vital that you meet with your potential supervisor before starting the project to discuss your aims and expectations.

2. Consider the content of research

One of the most important aspects of undertaking a higher degree is that you are interested in the topic. Research can at times be challenging and often relies on the enthusiasm of the researcher to drive progression during times of difficulty. In addition, the individual should decide whether to pursue a clinical, educational or laboratory based project according to personal preference. What ever the decision the over all question should be, "Is the research question being asked of significant scientific depth to accommodate the submission criteria for a higher degree?" A well performed literature review and discussions with respected University authorities will allow you to make an informed decision. If a thesis is planned, it is also important that you review the University Guidelines of the institution that you plan to submit your work to. Most graduate schools have their own guide to writing a thesis, and it is important that this is obtained prior to commencing the project⁽⁴⁾. These can vary considerably between organisations.

3. Funding

Research fellowships for higher degrees may require funding in order to cover salaries, laboratory costs and administrative fees. It is imperative that this is clarified before starting a post. The project supervisor may have useful knowledge in obtaining funding for their particular type of research. It can take in excess of two years in some cases for grant application to be written, processed and approved. In some cases clinical work can supplement salaries whilst conducting research but this may distract focus from the project and boundaries needs to be established with your supervisor. Prestigious grants are awarded from a variety of sources including The Wellcome Trust (www.wellcome.ac.uk), and the Medical Research Council (www.mrc.ac.uk). Speciality specific grants also exist. In surgery for example, the Royal College of Surgeons of England offer several annual Research Fellowships (www.rcseng.ac.uk). These are extremely competitive but can add great stature to a project as well as helping to publicise and support the research.

4. Ethical approval

It is very important to consider the ethical issues of the proposed research. This is particularly true of clinically based projects which involve recruitment of patients. If this is uncertain, a useful resource when starting out considering a submission for ethical approval is the National

Research Ethics Service (NRES) which is part of the NHS' National Patient Safety Agency (NPSA) (<http://www.nres.npsa.nhs.uk/home>). Except where research involves adults unable to consent for themselves in both England / Wales and Scotland, only one ethical review is required for any research study in the UK⁽⁵⁾. This is the Integrated Research Application System (IRAS) which has helped to streamline the process (<https://www.myresearchproject.org.uk>).

How do I get started with research?

Once you have started your higher degree you should expect the first six months to be demanding. You may be learning new skills and adapting to different work patterns which can take time. For higher degrees (in particular PhD and MD), a review of literature should be the first thing you do and as comprehensively as possible. It is the back drop on which you present your work⁽⁶⁾. This must be constantly updated and a final search performed before submission and before the viva to ensure that important work is not overlooked⁽⁴⁾. This will usually form the opening chapter of your thesis. The literature review is usually followed by hypothesis and statement of the research problem to be answered by conducting the project. It is advisable to write your thesis as you go along; this is particularly true of the methods which need to be in sufficient detail that the reader may conduct the experiment themselves. Early statistical planning and involvement of statisticians is vital. The discussion part of any thesis reveals the fate of your hypothesis, reveals new knowledge gained from your work, compares your work with others' and suggests what may be done to further your new knowledge⁽⁶⁾. Conclusions should summarise the salient points of the project, often in bullet format and publications can be included in the appendices and can add strength to your work⁽⁴⁾.

Conclusion

It is vital that trainee's are encouraged to actively pursue high quality research in order to further the speciality. Well planned, focussed research is the key to producing successful results. Although research can be a daunting and challenging time in training, the informed trainee is empowered to make this both worthwhile and rewarding.

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