Starting a research post: some considerations for ward-based doctors

Martin R Turner

Starting a research post after ward-based work can be a leap of faith and, as rewarding as it ultimately is, the initial transition can be a difficult one. This article addresses some of the questions which someone considering research should ask.

For those considering research, hearsay can be the sole source of information. There remains a resource gap when it comes to the practicalities of moving from a ward-based to a research post. With an increasing number of people entering research from senior house officer (SHO) level, this article offers suggestions on what to look for in a post and states questions that you should ask before applying.

WHEN TO DO RESEARCH

Traditionally, a period of research was carried out in the middle to late stages of registrar training. This would seem to be the optimal time in that an individual would often have developed a particular interest within their chosen specialty and perhaps even have a specific hypothesis in mind. The Calman reforms and the creation of the specialist registrar (SpR) structured training programme in theory permit flexibility to allow a break for research, and this is increasingly encouraged. However, these reforms have also resulted in a bottleneck at the SHO level. As a consequence of this, the acquisition of some sort of research degree has become a minimum standard, albeit often unstated, for SpR grade entry in some specialties.

The post-membership SHO who has completed general professional training, and perhaps one or more specialty posts in addition, can seem to be caught in what has been termed the research trap — obtain a research post/degree and hope for an SpR post afterwards or choose another career.

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Although there is no reason why an SHO cannot conduct a research project to the highest standard, an obvious concern has been that the motivation to undertake research may be misplaced in the current climate. On the positive side, however, conducting research may expose more doctors to academic medicine who might not otherwise have considered this career pathway.

IS IT RIGHT FOR ME?

The best motivation to enter research is the desire to study in depth an aspect of a specialty in which you have a particular interest. This is irrespective of your grade, as long as it is remembered that successful research will require far more self-motivation and commitment than is needed to simply turn up to lectures/ward rounds and that the rewards will not be short-term. Furthermore, it is virtually impossible to do research towards a higher degree while undertaking full-time ward work. Although as a doctor you can usually expect to have your previous NHS basic salary matched, the lack of on-call payments means research often represents an overall pay cut.

If the thought of reading scientific papers or writing for publication could never appeal, or if the reduction in clinical contact that might occur coupled with the loss of an immediate ward team around you is of great concern, then it may be wise to accept that research is not for you. Talk to as many people as you can find who have started in research posts from your stage.

Do not be put off, however, by the feeling that you have no ideas for projects. The belief that all juniors should be able to come up with a research idea that is novel, achievable and suitable for a higher degree is unrealistic. Most academic supervisors will already have ideas about areas that need further work, and importantly the feasibility of a particular study, based on a greater understanding of their specialty and knowledge of similar projects being undertaken worldwide.

WHERE TO START: YOUR SUPERVISOR

A supervisor will oversee your progress from the start of the project to its end. This is a major commitment and the process has been reviewed from the potential supervisor's standpoint with advice on what they should look for in a student (Isenberg and Salmon, 2000). Your choice of supervisor is one of, if not the most important factor in choosing a post, regardless of how attractive the project. Remember you will be working closely with this person for the next 2 or more years.

An idea of the subspecialty area that interests you may be an obvious initial guide as to whom to speak with, but talk to other consultants who have done research as well, possibly in unrelated areas, to get their advice. This might also involve discussion about the relative merits of a PhD *vs* an MD within your specialty (Gordon and Salmon, 1999).

Remember that departments need new researchers to continue and are dependent on your skills, so do not feel that the supervisor is doing you a favour by agreeing to take you on. Ask yourself: are they approachable, do they make you feel at ease and do they take a genuine interest? Are they likely to provide sufficient support while still allowing you to develop your own

ideas? Look at the achievements of past students, talk to current researchers — how much supervision do they get?

Not everyone has access to someone who has already had several students, but some experience is important, not least in increasing your chances of a successful grant application — grant-awarding bodies will consider a supervisor's track record to a certain extent. Finding out what sort of grants are in place, and who is funding them, will give you some indication of this experience. The research assessment exercise rating given to larger, usually teaching hospital departments by the Higher Education Funding Council is also a guide (the 2001 report is due to be published in December, see www.hefce.ac.uk).

Much of the UK's medical research is based within teaching hospitals, so you should be prepared to look further afield than the current hospital in which you are working. Also, consider choosing a region of the country in which you would be happy to remain afterwards if necessary, as this may be the logical place to apply for a subsequent SpR position if not already held. It will obviously be easier if you know people already before approaching them and although this is not an absolute requirement, you should at least make an effort to read about a potential supervisor's previous published work before any meeting.

LABORATORY OR CLINICAL?

An early decision is whether to do a laboratory-based project, e.g. genetics or cell culture, or a clinically-based project, e.g. epidemiology, imaging or a drug trial, although it is possible to take a combined approach. In both cases, the research will almost certainly involve less patient contact than ward work, but if you have major reservations about this then pure laboratory work may be less suitable.

Unless previously experienced, e.g. as part of an intercalated degree, the laboratory may be an intimidating environment initially. It may also become hard to see the clinical relevance of your research when you are not seeing patients. You will need to be taught techniques that are completely new to you. To achieve this, you may be working alongside scientists from non-medical backgrounds, and they will know far more than you about the technical aspects. For some clinical projects, the same applies. All research has its more mundane repetitive tasks, and it is worth bearing this in mind before you make your decision.

PROJECT DETAILS

Look critically at what will you be doing. Who will teach you initially and what is their background? Do their aims conflict with yours, and can you foresee potential difficulties over publications? If your project is clinical, where are the patients or patient records to be recruited or found? To how many are you likely to have access? Are there other projects competing for the same patients? If so, is there a system in place to ensure fair distribution? You will need to obtain ethical committee approval for a project involving humans, human tissue (including DNA) or animal work. This will require local, or even multicentre, research ethics committee applications. Either way, it often involves a significant amount of paperwork and can take several weeks or even months to receive approval, therefore inquire if it will be in place before you start. If not, then how long it is likely to take to obtain?

What is in the project for you? Are you the principal worker, and so first author, and will it yield publication even if the results do not exactly match the original hypothesis? Find out if there are other side projects that might lead to collaborative publications, or if your supervisor encourages researchers to write invited reviews for journals — such opportunities can boost your curriculum vitae.

Maintaining your clinical skills is important if you are planning to return to ward work. It can also be a refreshing contact with 'reality', provided it does not become burdensome in terms of time. There may be a specialist clinic from where you will recruit your patients or samples, and it would be logical to take part in this. However, you may want to get some more general clinic experience, so ask about opportunities locally and the possibility of taking part in the SpR on-call rota. Remember you will need a local honorary clinical contract to see patients.

Finally, look at the overall proposed setting for your work. Is the infrastructure sound, e.g. are the laboratory facilities adequate? Do you have a desk to work at and good library services for journal searches? Computer access and e-mail facilities are essential. Find out what statistical advice is available to researchers — you will certainly need some basic knowledge to analyse your own data eventually as well as to interpret published results. There may be statistics courses that you can attend. What other educational opportunities are there, e.g. journal clubs or access to SpR training sessions?

Table 1 contains a project checklist.

TABLE 1.
Project checklist

Is it an area you are really interested in understanding in depth?
Is the timeframe feasible for what needs to be done?
Is there someone to teach you what to do at first?
Is there a good chance of achieving publications?
Do you have access to all the materials or patients needed?
Is the department generally suitably equipped ?
Do you need ethical approval for the study?
Are there opportunities to maintain your clinical skills?

FUNDING

You must ask detailed questions about this. You might need 3 years' funding or more for a PhD, less for an MD. Some projects will be offered with complete funding for 3 years where a supervisor has obtained a grant that includes a research fellow salary. Alternatively, funding may only be for 1 or 2 years, after which you would be expected to have sought further funds. The time period for which funds are available must therefore be clearly established at the outset, with a discussion about the likely source of further funding and what 'safety nets' are in place for your salary should the grant proposal fail. If there are none, then ask yourself what you can realistically achieve and have to show for your work during the funded period.

A research training fellowship award, such as those offered by the Medical Research Council and Wellcome Trust, will provide you (and your department to a more limited extent), with secured funding as a named individual. They are highly competitive 3-year awards given on the basis of an interview where you are expected to have in-depth knowledge of the rationale and practicalities of the project. This usually means that unless you had a hand in writing the proposal, it will be hard to succeed. Practically, this can mean submitting after you start, which requires establishing what funds are available to tide you over this initial period. This time can be very beneficial if it allows you to perform some pilot work towards the project, the results of which can boost your chances of success at interview. If such funds are not available, then you will need to support yourself while making the initial application with full-time or locum work.

Personal fellowships are important if you suspect you wish to pursue an academic career, as they make obtaining postdoctoral funding more likely. Desirable as these are, there are many other charitable sources of money and a good supervisor should have a broad knowledge of those most likely to be receptive to your particular work (*Table 2*). The Wellcome Trust also offers a 1-year award (entry-level training fellowship) designed to enable medical graduates with no research experience to develop research proposals and test their suitability for a career in research.

Some projects are more costly than others (e.g. those requiring technical equipment and the staff to run them, such as scanners) and can be prohibitively high for single charities to stretch to. If a project requires more than one grant, this can obviously create added pressure in finding the funding.

The term 'soft money' refers to departmental money from pharmaceutical companies, donations or other funds not obtained through individual grant proposals. Although there are less potential conflicts of interest from work sponsored by medical charities and greater personal satisfaction in obtaining funds through a peer-review grant application process, such alternative sources are an accepted necessity in most research departments.

There may be such funds available to you through a pharmaceutical industry-funded drug trial within the department in return for you acting as a co-investigator (generally involving a GP-style role in the follow-up of patients). Clinical trials are an important aspect of research, and this may be an excellent way to fund your period of grant writing. However, you should be aware that in this setting there is usually little or no return for you in terms of publications for such work, and it is unlikely to count towards a higher degree. It is important to establish that you will not be so tied up with this work that you do not have time to set up your own project.

STARTING THE RESEARCH

This is a major culture shock from the structured routine of ward work, and although this can be liberating eventually, it may initially be an immense struggle to find points of reference and establish direction.

Timescales are often very different — 'urgent' can mean the following week, so do not expect to complete the project in the first month. Do expect your mood to oscillate — this is greatly eased if there are others around who have been in the same position. A big factor with which you need to come to terms is the reduction in personal feedback. No supervisor can match the constant feedback that is taken for granted in ward work. The ward offers a constant reminder of a doctor's role, and one weekly clinic cannot compete with this. Another factor is that your research can initially seem rather nebulous and insignificant against the background of the often greater worldwide effort. Do not expect to have a completely original idea or 'find the cure' overnight.

Expect and seek help with writing grant proposals from as many colleagues as possible — there is no sub-

TABLE 2.
Internet sites for research funding

Association	Web address	Comments
Medical Research Council	www.mrc.ac.uk	Useful links section to sites within and outside the UK
Wellcome Trust	www.wellcome.ac.uk	Includes the excellent WISDOM link where you can search for funding by area of interest
Action Research	www.actionresearch.co.uk	Large charitable body, but does not fund cancer, cardiovascular or human immunodeficiency virus/acquired immunodeficiency syndrome research
RDInfo	www.rdinfo.org.uk	Run by the Department of Health, provides up-to-the-minute information on health-related funding and training opportunities
REFUND	www.refund.ncl.ac.uk	Another searchable database
The Association of Medical Research Charities	www.amrc.org.uk	Also provides useful links to its member organizations

stitute for experience. Do not feel guilty for not knowing what you should be doing initially. For the first few weeks or months, it is usual just to read the core papers covering your topic of interest as well as to meet the people who will teach you any new techniques. Begin reading basic review articles before addressing the minutiae, and do not expect to understand all the methodological details or statistics immediately. Obtaining access to referencing software, e.g. EndNote™ (www.endnote.com) or Reference Manager™ (www.refman.com), is invaluable as you will quickly start to amass a large body of literature that needs to be catalogued easily. It will avoid a lot of extra work when you come to write for publication.

Working out a loose timetable for what you will achieve each week will help reduce the feeling of drifting that is commonly felt initially. Finally, beware of taking on too much in the seemingly slack early stages — you will regret it once your project takes off.

OTHER SOURCES OF ADVICE

As stated, it is helpful to discuss things with a consultant unconnected with potential projects. You should also speak to the regional specialty advisor about the prospects for returning to NHS work after your research and, if applicable, obtaining prospective approval for it to count towards your SpR training. Remember that general practice also offers an academic career pathway (Hilton and Carter, 2000). There are several books available on the ultimate process of writing up your work as well as more general information about higher degrees (Phillips and Pugh, 2000). Finally, the Royal College of Physicians has published some guidelines for clinicians entering research and runs courses on research skills for trainees (www.rcplondon.ac.uk).

CONCLUSION

It can take time for the many positive aspects of a research post to be revealed, but patience has its rewards, e.g. the successful grant application, your first results, presenting data and seeing your name in print. The downsides are the inevitable grant rejections, failed experiments and returned submissions. You hope for a balance tipped towards the former, and asking the right questions before you start will help you achieve this. **HM**

The author is grateful to Drs Matthew Parton and Vicki Williams for their advice on the content of this article.
Conflict of interest: Dr Turner has recently been awarded a Wellcome Trust clinical research training fellowship.

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KEY POINTS

- Do analyse your motivation for doing research.
- Do place importance on your choice of supervisor.
- Do ask detailed questions about how your salary will be funded and for how long.
- Do check that the more mundane aspects of the project will hold your interest.
- Do expect a 'culture shock' when starting research.
- Don't accept the first project you are offered.
- Don't expect to have all the original ideas at the outset.
- Don't put all your eggs in one basket — some projects rely on achieving further funding, so check how likely this is to happen.
- Don't expect to get results immediately.
- Don't forget to keep up your clinical skills if you plan to return to ward work.