

Higher research degrees: making the right choice

MD, PhD, or MSc? Clinical researchers Mark Anderson and Janusz Jankowski help you decide which one is right for your choice of career

After higher professional qualifications, the next major decision a clinical trainee often faces is whether to undertake a period of research and, if so, whether this should be an MD or a PhD. In addition, an increasingly popular choice for specialist registrars is to study for an MSc. Clinical governance and increased public scrutiny of the health profession have increased pressure for the maintenance and improvement of health care, emphasising the need for clinical and basic scientific research. Furthermore, after the Calman reforms in 1997, the structure and provision of specialist medical training has radically changed, with the route to consultancy posts becoming more rationalised. Having a research degree is often a prerequisite for future progression and is viewed as a charter for success. So which form of postgraduate qualification should a clinician pursue?

In a recent survey a questionnaire was distributed to all specialist registrars with national training numbers in medical specialties.¹ Only 9% of respondents indicated they did not intend to carry out research. The mean duration of research undertaken by the remaining 91% was 2.6 years. Eighty four per cent of the respondents had either achieved or were intending to achieve a higher research degree: 51% and 24% either held or intended to obtain an MD or PhD respectively. When the Calman reforms were introduced it was anticipated that research commitments would reduce for those not undertaking a career in academic medicine, but many training clinicians, particularly those in the larger specialties, now feel obliged to pursue further academic qualifications.

The MD option

The survey upholds the view that the traditional research

What are the criteria which determine funding for MD or PhD fellowships?

Personal criteria	Project criteria	Centre criteria
Good academic track record as undergraduate	Important clinical problem and clear hypothesis	Capable of supporting the project
BSc Hons 2:1 or 1st class	Feasible methodology	Known scientists with track record in the area
Publications in peer reviewed journals	Pilot data to indicate candidate has ability and enthusiasm	Core financial support from grant funding body

degree for most clinicians has been the MD, a conclusion supported by Gordon and Salmon, who found that the MD has been a passport to specialist registrar posts in rheumatology since the 1980s.² However, what level of research training does an MD provide? The MD degree structure varies across the country but generally requires two years of research. It takes a less supervised form than a PhD, though this may be changing as it has now been recognised that little discussion with a supervisor and lack of prior agreement or defined structure to research proposals can result in unfocused research. This may lead to less productive study that can be inadequate if you want to pursue a research career. The heterogeneous nature of the MD, with its ill defined levels of supervision and lack of clear boundaries, including submission and viva dates, can affect the degree's credibility and may be inappropriate for training registrars who plan future academic careers.

Funding

Funding research may be problematic, and the task of finding resources may be as difficult as arranging your research.¹

There is strong competition for research training fellowships supported by the Medical Research Council, Wellcome Trust, and other medical charities,³ and work funded by such grants carries added credibility. However, funding is becoming easier to obtain for PhD study.² Unfortunately, many MD research projects have traditionally been funded from alternative sources, which are not subject to independent peer review, such as pharmaceutical companies. Pressure exerted by drug companies may divert valuable research time into clinical trial work, which may not provide adequate understanding of research methodology. This may hinder a clinician's ability to develop independent academic skills for the future. Gaining funding such as intermediate fellowships is determined mainly on the individual's curriculum vitae and experience rather than the host institution, compounding the need for appropriate research training early on.

The PhD option

Given the stated disadvantages of the MD, is the PhD a more suitable research degree for SpRs; and is it as valuable for those who do not intend to fol-

low a career in academia?

There are many differences between an MD and a PhD (see box). The PhD is an internationally recognised postgraduate qualification based upon clearly defined research proposals, with pre-agreed aims and subsequent close supervision. The degree requires registration and includes a compulsory viva upon completion of study. However, prospective clinical PhD students should be prepared to spend many hours in the planning and submission of grant applications, with only a 25-30% chance of success. There is a growing trend to make PhD study last for 1 year longer than previously (4 years in total) so that students can undertake more detailed training with equal time given to a focused science project. Enrolment for PhD study is usually on a full time basis owing to the intensity of the research, whereas an MD is commonly undertaken on a part-time basis. It is important to realise that fulfilment of a PhD programme also requires the clinician to completely adapt to the laboratory environment, with a maximum of only two clinical sessions. On the other hand, the MD student usually has more access to the clinical are-

Core differences between an MD and PhD

	MD	PhD	Best option
Time scale	2 years	≥3 years	Subjective
Supervision	Possible	Obligatory	PhD
Content	Broad	Focused	Subjective
Recognition	UK	Worldwide	PhD
Entry criteria	Relaxed	Strict	Subjective
Preference by funding organisations	Variable	High	PhD
Completion rate	>95%	<90%	MD
Use of final oral examination	Occasional	Obligatory	PhD
Kudos	Average	Above average	PhD
Scientific training	Variable	Consistently good	PhD
Interim progress reports	None	Often required	PhD
Examiners anonymised	Common	Never	PhD
Part time study	Common	Rare	MD
Clinical sessions per week	Usually ≥3	Usually ≤2	Subjective

na, and clinical involvement may be more freely encouraged.

MSc: the third way

Evidence from a variety of sources (thesis examiners, students, and employers) suggests that the PhD gives a better grounding in research methodology and statistics, but a minimum of three years of research within a specialised area may not be necessary or desirable to all SpRs. The rigorous nature of a PhD and the demands set to achieve it may be inappropriate for SpRs with less academic interest. The option of an MSc may be a viable alternative. The MSc is usually a degree based upon modules, which provide skills involving data interpretation, assessment, and statistics. The MSc differs from an MD or PhD in that it may contain a strong taught component but can be studied in parallel with an SpR post. Therefore there is no need to take time out of rotational posts. However, the MSc provides only preliminary research skills, and prospective clinical scientists will probably be required to hold a PhD in order to progress.

Consider career aims

In deciding between a PhD and MD, it is vital to assess what you want to gain from the time in research and to consider your long term career plans. A PhD is the safest way to proceed in charting a career in academic medicine. An MD may still have a role to play, as

a method for collating pieces of past research and publications into a single theme for submission, in the same way as the DSc degree (Diploma in Science, which has become less popular over the past 5 years but is the highest award offered by the science faculty). However, an MD may be an insufficient guarantee for the adequate training of tomorrow's consultants with the skills to supervise and lead research teams. As additional proof of this there are several examples of clinical scientists who, after achieving an MD thesis, felt it necessary to subsequently undertake a PhD to attain satisfactory research training (including one of the authors, Janusz Jankowski). The study of my MD thesis was helpful in introducing me to the general principles of research but lacked the focus and the experimental training vital to a career in academic medicine. My PhD on the other hand was more stressful but enabled me to experience in depth scientific training from scientists as opposed to clinicians with an interest in science. Without my PhD I may have been content to remain a recreational scientist rather than pursue a career in basic science. Many specialities will not select candidates for SpR posts without research experience, forcing some SHO's to undertake an MD before they have clarified their long term career aims. Those who then develop academic interests may feel the need to undertake a PhD, thus increas-

ing the competition for limited funding and increasing their time spent out of the registrar rotational posts. However, it may be that the future decision for doctors in training will not be between these two options, but will lie in considering an MSc as the third possibility.

Conclusions

Trainees with no academic aims but who want to expand both their understanding of research and their CV, would be well suited to an MSc. A trainee who wants the chance of future academic interests should choose a PhD, with the MD as an option if time out of clinical posts and funding available remain limiting factors.

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1 Mather HM. *The RCP specialist registrar survey*. London: Royal College of Physicians, 2000.
2 Gordon C, Salmon M. Postgraduate degrees for rheumatology trainees: an options appraisal of MD, PhD and MSc degrees. *Rheumatology* 1999;38:1290-3.
3 Savill J. More in expectation than in hope: a new attitude to training in clinical academic medicine. *BMJ* 2000;320:630-3.

New Year Message to junior doctors

If you are a junior hospital doctor you have a new pay system—if you hadn't noticed! I hope that, by now, your correct pay band and pay rise has found its way into your bank in time for Christmas! If you are not paid in December your pay will be backdated to 1 December.

ALL of you, under the national agreement, should have received notice from your trust about your pay band by 17 November. If you still do not know, your trust is seriously breaching the agreement. Similarly, if your trust imposes an artificial deadline (there isn't one!) on appeals—it is outwith the agreement. We can only prevent abuses if we know—any problems please inform your local BMA office or e-mail us at info.jdc@bma.org.uk.

ALL of you have a right to appeal against your trust's banding decision. You may have incorrectly filled in the banding questionnaire or, more likely, your trust is trying not to put juniors in the higher bands to which they are entitled. The (binding) appeals panels will be fair and consist of 2 juniors, 2 managers, and an independent person from the Regional Action Team. Many trusts are sticking to the agreement and acting fairly. However, we will make examples of those trusts who continue to be intransigent. No trust, small DGH to Ivory Tower, can renege on this. It is a national agreement, and we will do our utmost, with your help, to enforce it.

Dr Trevor Pickersgill,
Chairperson of Junior Doctors Committee

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