

Techniques in medical education

The US residency programme – lessons for pre-registration house officer education in the UK?

Robin Salter

Summary

The 1994 NACT Wyeth-Ayerst Travelling Fellowship provided the opportunity to compare the education and welfare of pre-registration house officers in the UK with their nearest counterpart in the US residency system. Investment in all aspects of learning was impressive, as was the retention of the central role of the patient in education. Adequate clinical exposure must take into account both the changing pattern of care delivery and the need to limit junior doctors' hours of work. Service containment is difficult to achieve. The self-educating potential of junior medical staff should be maximised and a post analogous to 'Chief Resident' in the US could be considered. Explicit educational aims and objectives must be stated so that meaningful assessment can be carried out and feedback provided. Adequate support systems are essential and an earlier start to the working day is encouraged.

Keywords: pre-registration house officers, residency, education

Clinical tutors along with educational supervisors have a particular concern for the education and welfare of pre-registration house officers (PRHOs). The 1994 NACT Wyeth-Ayerst Travelling Fellowship provided the opportunity to compare the UK experience of this group with the most junior level in the US hospital medical staff hierarchy and in particular to see how the service/education conflict was managed.¹ The visit was hosted by the extended medical faculty of the University of North Carolina which provided the facility to talk and listen to a wide variety of personnel involved in graduate education - residents of different seniorities and from a wide range of specialties, residency programme directors, teaching faculty, management representatives, audiovisual staff and librarians - in different hospital settings (University, University-linked, and large and small community hospitals) and clinical care situations. A wide variety of educational events was observed including ward rounds, courses, grand rounds, conferences and critical appraisal rounds. The method of information gathering was analogous to a prolonged college visitation or postgraduate education contract monitoring visit, the objective being to study all aspects of the residency system and assess which could usefully be incorporated into the education of different grades of UK junior medical staff in general and PRHOs in particular.

Medical undergraduate education in the US

The average American student enters medical school at the age of 21 years after already having spent three years at college. The undergraduate course lasts four years - years one and two comprising basic clinical sciences, the third year consisting of clinical clerkships and the fourth year incorporating a series of electives which often include an acting internship (see figure).

There is no direct equivalent to the UK PRHO in the US, the former rotating intern year having disappeared so that graduates directly enter a specialty training programme of their choice. Accordingly, during the fourth year, the US student is required to make a career decision and apply for a residency through the national residency matching programme. This is essentially a mammoth computerised matching scheme requiring a preference rating by the student of the programmes for which he/she has applied and the residency programme directors' rating of the applicant. This is undoubtedly a stressful experience for the students. They are required to make a career choice comparatively early

UK		Age		US
Enter medical school	→	18	←	Enter college
		↓		
		21	←	Enter medical school
		↓		
Graduate and start PRHO year	→	23		
		↓		
Start post-registration training	→	24	←	Apply for residency
		↓		
		25	←	Graduate and start residency

Postgraduate Department, Carlisle Hospitals NHS Trust, Cumberland Infirmary, Carlisle, CA2 7HY, UK
R Salter

Decision factors in career choice for US students

- personal preferences and perceptions of the various career options
- counselling and career guidance given by their medical school
- the accumulated debt resulting from payment of maintenance and tuition fees during undergraduate course
- the primary care push – a deliberate policy of improving the attractiveness of the primary care option

Box 1

(although they are usually older than the average UK medical student), their decision being based on a number of factors (see box 1).

Students apply for a number of residencies bearing in mind location, hospital type, information from brochures, recommendations by colleagues and friends, etc. A considerable amount of paperwork is involved, each application requiring a completed form, recommendation from the Dean, documentation of their undergraduate achievements and also supporting references. Appearances at interview can be expensive in time and money considering the distances that may be involved and can obviously be unnerving. The computer matches the student's preference against their rating by the residency matching selection process and hopefully produces a mutually acceptable placement commencing at the beginning of July. Despite its drawbacks the system appears to work well generally and meets with widespread approval.

The residency

The residency is a carefully structured training programme which provides gradually increasing responsibility for patient care.² The programmes are of varying duration (3 to 5 years) and can be located in a variety of settings, each programme having to fulfil rigid educational requirements which are overseen by the appropriate residency review committee. Particular care is taken to ensure that programmes provide the facilities and resources required to meet the educational needs of each resident and also that the service load is contained. Failure to fulfil these explicit requirements and regulations can result in withdrawal of programme accreditation.

The residency concept is undoubtedly popular with US medical graduates, providing security of employment and the chance to learn and develop in a supportive environment. On completion of the residency programme, trainees are eligible to enter independent practice or can undertake further specialist training. When working well the residency system has considerable strengths, some of which could be usefully emulated in the UK, for PRHO education in particular.

INVESTMENT IN LEARNING

One of the most impressive features was the obvious investment in all aspects of the learning process in the US (box 2). This was very evident in even the smallest hospital setting and although understandably taken for granted by the participants, was in marked contrast to the level of provision for this function in the UK.

The realisation must eventually dawn that high quality education is not a cheap option and considerable investment is required in both manpower and educational facilities to achieve satisfactory standards. The current economic climate and increasingly market driven system of health care provision does not engender optimism that this lesson is likely to be heeded.

Investment

- High level manifest by:
- physical facilities
 - audiovisual and information technology back-up
 - manpower provision

Box 2

PATIENT-FOCUSED

Reassuringly there was unanimous agreement by all concerned with residency education (particularly amongst the residents themselves) that the **patient is the most important learning resource**. 'Books, journals, lectures and research contribute greatly to the lifelong learning of medicine, but they are not a substitute for patients'.² 'The patient is my book' and 'Patients teach' were two opinions expressed by residents summarising their corporate view and 'Education should be at the point of service' the same belief in management-speak.

Teachers and trainees repeatedly commented that 'You won't learn if you are not there to see' and adequately supervised clinical experience was the most highly valued component of a residency programme. However, difficulties are arising in ensuring sufficient clinical exposure in hospitals for two main reasons:

Changing pattern of care delivery

As in the UK, the trend is increasingly towards ambulatory care and, if hospital admission is necessary, reducing the patient's stay to the absolute minimum. In consequence the educational process must follow the patient, and residency programmes have already adapted by incorporating ambulatory care experience and extending into the community. Currently UK PRHOs are exposed to a very limited range of clinical problems and supervised experience in outpatient clinics and community settings may in future need to be utilised on a much larger scale than at present.

Reduced junior doctors hours of work

Just as in the UK, residents frequently expressed the view that their hours of work are too long and the Libby Zion case (where a father who was an attorney and a writer for the New York Times claimed that his daughter had received inadequate care in the hands of overworked and unsupervised medical house officers) proved to be pivotal in initiating change.³

There is widespread agreement that working unnecessarily long hours adversely affects residents well-being and education, and methods of ensuring at least some sleep during a busy on-call period were universally favoured. However, there was an undercurrent of concern (expressed not least by the residents themselves) that shorter hours could compromise clinical experience and fail to instil an attitude of responsibility to the patient. A correct balance is certainly difficult to achieve.

SERVICE CONTAINMENT

One of the biggest problems on both sides of the Atlantic is ensuring that excessive service demands do not detract from the educational value of a junior medical staff post. Whilst accepting that 'education should be at the point of service' there was also unanimous agreement that 'service should not interfere with the educational process'. Achieving this aim in practice is more difficult for initiatives such as reducing hours of work may compound the problem by actually increasing work intensity. However there is at least a determination to address the issue. Attempts to contain service demand by explicit requirements for residency accreditation, including limiting the number of patients with which a resident is expected to cope, have only been partially successful. It was repeatedly emphasised by the residents themselves that it is not simply a question of numbers of patients but how severely ill they are. Sufficient manpower to cope with the service demand is a *sine qua non* and by UK standards at least the USA situation seems more generous.

Relieving the juniors of 'scut' (a much more graphic term than inappropriate tasks) is well in hand although is seen as less of a priority in university than in community hospitals. The residents' perception is that the university hospital residencies are so competitive that management can be more cavalier in their implementation of scut relief. Much of the work of the UK PRHO is routinely performed by nursing staff in the USA but it was repeatedly emphasised that the use of nurse practitioners is not a cheap option – back to the problem of investment!

RESIDENTS' EDUCATIONAL ROLE

One of the most impressive features of the residency was its function as a close knit self-motivated learner-centred educational cascade – each tier having a defined and accepted responsibility for the education of its immediate junior. Of course training grade staff in the UK supervise and teach their immediate juniors but the educational potential of the junior staff is not always maximised to its fullest extent. The acceptance that induction programmes should largely be under the control of the junior staff themselves is at least a step in the right direction.⁴

The chief resident is of crucial importance in the residency educational cascade and is particularly effective when this post is occupied by a junior doctor who has completed his/her residency training and is working an additional year (box 3). With a much lightened clinical load the chief resident, while still being regarded by the residents as one of 'them' for the purposes of teaching, supervision and support, also carries enough seniority to act in a liaison capacity between the residency director and teaching faculty. The chief resident is well placed to be aware of the educational needs and concerns of his/her colleagues and is in a strong position to ensure that these are met. As so often the case the personality and enthusiasm of the postholder is critically important.

There is no direct equivalent to this post in the UK and the concept of a 'senior' junior with a lightened clinical load whose main responsibility is for the junior medical staff in a particular department or specialty is worthy of consideration.

ASSESSMENT AND FEEDBACK

The realisation that junior doctors both need and wish to know how they are progressing, where their strengths and weaknesses lie and how any deficiencies can be corrected has been slow to dawn in the UK. In contrast, the process is firmly established in the residency system with the most enthusiastic proponents being the residents themselves. In addition to completing work logs, the residents' performance is regularly assessed by the supervisor who completes a rating schedule, the resident also rating the experience he/she has undergone.

Chief resident

- additional year after completion of residency
- specific role for residents' education
- liaison between residents and programme director
- provide support for residents when needed

Box 3

Assessment and feed-back

- assisted by explicit educational aims and objectives
- continuous assessment of trainees and supervisor
- welcomed by residents

Box 4

The supervisor's assessment is available for inspection by the resident although this opportunity is often not taken up. Periodically the resident meets for an appraisal interview with the residency programme director for what is usually a morale boosting exercise but anxieties on either side can be addressed (box 4).

Although extolling the virtues of the assessment process, one programme director confessed that although appearing superficially very objective, the assessment can often be very subjective – a shortcoming of which both parties must be aware.

As in the UK, family medicine in the US has led the way in the use of video assessment with respect to consultation skills and this 'fly on the wall' technique undoubtedly deserves wider application.

EXPLICIT GOALS

Again, the need to state explicit educational aims and objectives in respect of junior medical staff posts has been a comparatively recent realisation in the UK. These are very clearly specified by each residency programme and are an obvious pre-requisite for the assessment and feedback process outlined above. The situation with respect to PRHOs has been partially corrected by the publications of the education committee of the GMC⁵ and the UK Postgraduate Deans⁶ and enhanced by the recommended implementation of an individual educational agreement for each PRHO when starting his/her post.

Educational activities

- wide variety of forms
- held at meal times
- free refreshments
- mostly didactic

Box 5

EDUCATIONAL ACTIVITIES

Formal educational activities for residents were a regular feature (box 5). They took the form of morning reports, case conferences, grand rounds, critical appraisal rounds, lectures, etc, and tended to occur around meal times. Accordingly refreshments were invariably supplied free of charge and it was a virtually unanimous viewpoint that this should be the case – an opinion shared by the author. There was as much bleep-induced traffic in and out of the events as in the UK, so clearly protected time is just as difficult to achieve.

Ward rounds were also used much more for junior medical staff education in the US. That rounds have become less used for this purpose in the UK is simply another manifestation of the currently almost unbearable service pressures requiring an ever increasing patient throughput rather than a reluctance of consultants to teach.

As already indicated the chief resident has an important role in the organisation of educational activities for his/her colleagues and the level of residents' involvement in educational events is high. They learn very early to use the information resources at their disposal in preparation for their contributions. One criticism was that the presentation or lecture appeared to be by far the most common teaching technique with little evidence of small group work. The exception was again the family medicine residency which has clearly followed the route pioneered by its equivalent (the vocational training scheme for general practitioners) in the UK.

SUPPORT SYSTEMS

Residents have their problems like any other group of junior doctors. The close knit residency system, however, lends itself to peer support and encouragement, this being the unanimous view of the residents themselves. The need to work as a team is very important, hence the significant input which the residents have in choosing their successors – applicants for residency programmes have to convince the current residents of their suitability for the programme just as much as they do the programme director. The latter also has a 'mother hen' role and is aided by the assessment/appraisal process. The chief resident, when such a post is incorporated into the system, again has a significant role in junior staff support. He/she will be close to the residents, be aware of the pressures to which they are subjected and yet be senior enough to relate to the programme director on almost equal terms.

Management attitudes to residents are also extremely important with respect to their emotional and physical well-being. This was usually taken very seriously, some hospitals having a 'residents' advocate' very high in the organisational structure to ensure that their contribution was valued and their basic needs met.

In the UK Trusts vary in their approach to the welfare of PRHOs but the situation has undoubtedly improved over the last few years as a result of a number of initiatives. Those Trusts that have been slow to realise the important contribution that PRHOs make to the running of a hospital have usually been quickly brought to heel.

TIME MANAGEMENT

Time management is an essential skill for any busy professional and is undoubtedly made easier by achieving an early start to the working day. There is no such problem in the US! The residents' day starts early as it does for all medical staff. It is not uncommon for first year surgical residents responsible for in-patient care to start at 05.30 although 07.30 is more usual for other specialties!

The early start is not resented. It allows educational events to occur with breakfast (supplied) and the juniors to review their patients before the more formal rounds later in the morning, providing another explanation as to why the educational content of the latter is increased.

An early start also aids patient throughput by the early initiation of appropriate investigations which are almost invariably carried out later the same day.

Conclusions

The junior medical staff education systems in the US and the UK both have their advantages and disadvantages. However, lessons which can usefully be learned by the latter from the former include the realisation that effective education is a costly process and patients should continue to be regarded as the most effective learning resource. Service demands should be controlled, educational aims and objectives should be explicit and the trainee both expects and values feedback. The educational potential of the trainees themselves should be maximised and educational activities should be appropriate to their needs. Effective support systems should be in place and the important contribution which junior staff make to the running of a hospital should be recognised by management by deeds as well as words. Although it would probably not be universally popular, starting the working day early confers considerable benefits!

I am indebted to Wyeth–Ayerst for sponsoring my visit to the University of North Carolina and to all the faculty health care professionals who both courteously tolerated my inquisitiveness and responded generously with their time and comments.

1 Baughan ASJ. The pre-registration year: 'service versus education'. *Postgrad Med J* 1993; **69**: 217–21.

2 Mellinkoff SM. The residency years. *N Engl J Med* 1989; **320**: 1689–90.

3 Asch DA, Parker RM. The Libby Zion case: one step forward or two steps backward? *N Engl J Med* 1988; **318**: 771–5.

4 Gale R, Jackson G, Nicholls M. How to run an induction meeting for house officers. *BMJ* 1992; **304**: 1619–20.

5 General Medical Council *Recommendations on general clinical training*. London: General Medical Council, 1992.

6 UK Postgraduate Deans Consensus Statement, 1994. *The pre-registration house officer experience: implementing change*.

Techniques in medical education

Forthcoming articles in this series

Problem-based learning in medicine: an introduction
 The changing context of undergraduate medical education
 Problem-based learning: the clinical skills unit