ORIGINAL ARTICLES

Formal education programmes for senior house officers: comparison of experience in three hospital specialties

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Abstract

This study was designed to compare the attendance rate of senior house officers (SHOs) in three specialties at formal educational events, examine experiences of protected time, use of educational objectives, and perceived barriers to attendance and evaluate differences found in the context of variations in training practice within each specialty. A quantitative questionnaire survey was completed by Trent region SHOs in obstetrics and gynaecology, general medicine, and accident and emergency posts. An independent researcher visited a selection of educational programme events over a two month span, recorded attendances, and administered the questionnaire. Attendance rates ranged from 40.8% of those in obstetrics and gynaecology jobs to 55.4% of those in accident and emergency jobs. The questionnaire findings found that service commitments were a major obstacle to attendance for the majority of those in obstetrics and gynaecology and general medicine jobs, while relatively few of the accident and emergency SHOs specified any barriers. SHOs in accident and emergency jobs had significantly more protected time for education and found educational objectives to be more widely used by senior staff. The findings suggest that the planned integration of formal education programmes with appropriate working pattern systems—in this case full shifts within accident and emergency departments—will result in SHOs receiving a better deal in terms of provision and structure of education.

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The General Medical Council document *The Early Years* identifies and defines the generic educational needs of senior house officers (SHOs) and maintains that “innovative approaches to educational and service issues” can serve to improve SHO training.¹ It stresses that senior house officers are “doctors in training whose educational needs must be met”. Much of this training is assumed to occur experientially via service commitment, however, the document also emphasises the importance of

formal educational programmes constituting seminars, tutorials, and group discussions that take place in protected time.

Concerns have been expressed about the ability of SHOs to attend and benefit from educational events,^{2–4} and it is well known that the demands of service often eclipse the perceived importance of such events, resulting in limited attendance and impaired quality of learning.^{5–6}

New working pattern systems such as full and partial shifts have been introduced by hospital departments with the aim of reducing the number of hours junior doctors work—as specified by *The New Deal*⁷—while maintaining appropriate service provision and training for practice.^{8–9} Studies have reviewed the effects of shift working patterns on junior doctors’ experience and have reported stress,¹⁰ diminished job satisfaction,^{11–12} disruption of continuity of care,^{4–13} and even physical ill health,¹¹ and it is suggested that quality of training may be compromised.^{12–13}

Little, however, is known about the junior doctors’ experiences of formal educational events in the “new deal” era. This study sought to compare attendance rates at scheduled educational events in three specialties, survey attending SHOs on their experiences and perceived barriers to attendance, and discuss potential implications for planners of SHO educational programmes.

Method

A quantitative questionnaire was designed to be completed by SHOs in the Trent region who held posts in obstetrics and gynaecology, accident and emergency, and general medicine. The three specialties were chosen on the basis of locality and information available regarding the prevalence of differing working patterns within each specialty.

The questionnaire asked the SHOs about the existence and perceived relevance of educational objectives in their post, barriers to the attendance at educational events, and experiences of provision of protected time for education. The items chosen for inclusion in the questionnaire were selected from a pool of issues highlighted by previous research.¹⁴

The questionnaire also asked for information about the respondent’s specialty and the work patterns of his or her current post.

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Table 1 Factors preventing attendance at educational events; results are number (%)

	General medicine (n=126)	Accident and emergency (n=77)	Obstetrics and gynaecology (n=69)	Total (n=272)
Service commitments, for example ward work	99 (78.6)	8 (10.4)	49 (71.0)	156 (57.4)
Fatigue	22 (17.5)	19 (24.7)	15 (21.7)	56 (20.6)
Educational events taking place outside working hours	7 (5.6)	11 (14.3)	7 (10.1)	25 (9.2)
Those available not relevant to needs	13 (10.3)	4 (5.2)	8 (11.6)	25 (9.2)
Inconvenient location	7 (5.6)	4 (5.2)	11 (15.9)	22 (8.1)
Not valuable use of time	7 (5.6)	1 (1.3)	6 (8.7)	14 (5.1)
Irregularly timed educational meetings	4 (3.2)	2 (2.6)	7 (10.1)	13 (4.8)
None of these	8 (6.3)	26 (33.8)	4 (5.8)	38 (14.0)

The following definitions of work patterns—derived from the *Junior Doctors—The New Deal* document⁸—were provided:

On-call rotas—Doctors work a normal working day and are “on-call” for emergencies overnight and at weekends, after which they all work normally the next day.

Full shift—Normally three people working eight to 14 hour shifts are used to cover 24 hours, but if the work is intensive it can be shortened to, say, six hours, requiring four people to cover the 24 hours.

Partial shift—Doctors working partial shifts normally work weekdays, but at intervals work a different duty, for instance a week on nights every fourth week.

Hybrid—Combination of systems outlined above.

The formal educational events targeted were the weekly lunchtime and afternoon SHO tutorials and seminars organised on a sub-regional basis to meet college curricula. These programmed events were held in each of the three specialties across the regional trusts. The meetings all followed a similar presentation and general discussion format. A researcher visited two such meetings from each specialty's formal education programme in each of the three subregions (North, South and Mid-Trent). These meetings were selected in order to sample typical examples of educational practice and to represent comparable proportions of each specialty's educational programme. With the prior consent of the seminar leader or organiser the researcher requested that all SHOs present complete the questionnaire. These were collected at the end of the session. This data gathering process spanned an eight week period starting in April (so that the SHOs would have experienced at least two months of their rotation).

The data were collated and differences between the responses of the groups were

statistically analysed using Pearson's χ^2 technique. Where continuous data were collected—time allocated and time taken for educational activities—differences between the groups were analysed using analysis of variance.

Results

ATTENDANCE

All 285 SHOs in attendance at the selected sample of educational seminars and meetings visited over the two month period returned the questionnaire. This comprised 48.5% of all SHOs in the three specialties in the Trent region: 55.4% of the accident and emergency SHOs, 45.0% of the general medicine SHOs, and 40.8% of the obstetrics and gynaecology SHOs. Thirteen of the questionnaires returned were blank, incomplete, or otherwise rendered invalid.

FACTORS PREVENTING ATTENDANCE AT EDUCATIONAL EVENTS

The respondents were given a list of potential barriers to attending organised educational events and asked to indicate which they had experienced (see table 1). Space was provided for the respondent to suggest any other barrier.

“Service commitments” were, overall, the most commonly cited barrier, identified by 156 of the 272 SHOs (57.4%). However, only 10.4% of the accident and emergency SHOs found these commitments problematic, compared with 71% of those in obstetrics and gynaecology and 78.6% of those in general medicine ($\chi^2=97.9$, $df=2$, $p<0.0001$). “Fatigue” was the second most frequently cited reason for non-attendance overall (56/272; 20.6%), with no significant difference between specialties.

Fourteen per cent of the overall sample (38/272) felt that *none* of the factors listed had prevented their attendance at educational events. A significantly greater proportion (33.8%) of those in accident and emergency jobs indicated this, compared with 6.3% of the general medicine sample and 5.8% of the obstetrics and gynaecology sample ($\chi^2=35.0$, $df=2$, $p<0.0001$).

There were no significant differences between the groups' responses to the rest of the factors; “educational events taking place outside working hours”, “those available not relevant to needs”, “inconvenient location”, “not valuable use of my time”, or “irregular timing of educational meetings”. None of the respondents reported any barrier to attendance not included in the list.

Table 2 Use of educational objectives in post; results are number (%)

	General medicine (n=126)	Accident and emergency (n=77)	Obstetrics and gynaecology (n=69)	Total (n=272)
Do educational objectives exist for this current post?				
Yes	78 (61.9)	33 (42.9)	50 (72.5)	161 (59.2)
No	15 (11.9)	14 (18.2)	9 (13.0)	38 (14.0)
Don't know	33 (26.2)	30 (39.0)	10 (14.5)	73 (26.8)
(If above “yes”) Are educational objectives put into practice by senior staff?				
Yes, by all	22 (27.2)	21 (63.6)	11 (22.0)	54 (33.5)
By some, but not others	46 (56.8)	11 (33.3)	34 (68.0)	91 (55.5)
No, by none at all	2 (2.5)	—	1 (2.0)	3 (1.8)
Don't know	11 (13.6)	1 (3.0)	4 (8.0)	16 (9.8)
Have you found these educational objectives useful?				
Yes	43 (53.1)	28 (84.8)	32 (64.0)	103 (62.8)
Some but not others	9 (11.1)	1 (3.0)	5 (10.0)	46 (28.0)
No	29 (35.8)	4 (12.1)	13 (26.0)	15 (9.1)

Table 3 Protected time for education

	General medicine (n=126)	Accident and emergency (n=77)	Obstetrics and gynaecology (n=69)	Total (n=272)
Do you have protected time to undertake educational activities (No (%))?				
Yes	48 (38.1)	65 (84.4)	37 (53.6)	150 (55.1)
Sometimes	37 (29.4)	8 (10.4)	12 (17.4)	57 (21.0)
Yes in theory, no in practice	35 (27.8)	12 (1.3)	13 (18.8)	49 (18.0)
No	6 (4.8)	3 (3.9)	7 (10.1)	16 (5.9)
How many hours per week are you allocated for educational activities?				
Mean (SD) No of hours	3.16 (1.1)	3.56 (1.3)	3.08 (0.8)	3.26 (1.1)
(Time to nearest minute)	3 hours 10 min	3 hours 34 min	3 hours 5 min	3 hours 16 min
How many hours per week do you take on average for educational activities?				
Mean (SD) No of hours	2.39 (1.1)	3.43 (1.3)	2.78 (0.9)	2.79 (1.2)
(Time to nearest minute)	2 hours 23 min	3 hours 26 min	2 hours 47 min	2 hours 47 min

EDUCATIONAL OBJECTIVES

The SHOs were asked if they were aware of educational objectives for their post. (It was left open as to whether they interpreted this as set objectives attached to the post or as personal educational objectives.) Just under 60% of the total sample knew of educational objectives (see table 2). A significantly lower proportion (42.9%) of the accident and emergency SHOs claimed to know of these, compared with 72.5% of those in obstetrics and gynaecology and 61.9% of those in general medicine ($\chi^2=15.2$, $df=4$, $p=0.004$).

Of those who *did* know of educational objectives for their post, just over half (91 out of 161) felt that the objectives were put into practice by some senior staff but not others, although the use of educational objectives by all senior staff was reported by the majority (63.6%) of accident and emergency respondents.

Overall, most found their educational objectives useful (103 out of 161), though a significantly greater proportion of those in accident and emergency posts (84.8%), compared with 64% of those in obstetrics and gynaecology and 53.1% of those in general medicine claimed that *all* of their educational objectives had been useful ($\chi^2=10.3$, $df=4$, $p=0.036$).

PROTECTED TIME FOR EDUCATION

The questionnaire asked each respondent if their post had protected time for educational activity. The vast majority (84.4%) of the accident and emergency SHOs indicated that they did. In comparison, only 53.6% of the obstetrics and gynaecology SHOs and 38.1% of the general medicine SHOs answered likewise (see table 3).

The average time allocated for educational activities per week over the full sample was approximately three and a quarter hours. There were no significant differences between the groups in the reports of this.

Time *actually taken* for educational activities did vary significantly ($F=17.8$, $df=2$, $p<0.0001$). The accident and emergency

SHOs claimed on average to take more than those in other groups: 3 hours 26 minutes, compared with 2 hours 47 minutes in obstetrics and gynaecology and 2 hours and 23 minutes in general medicine.

WORKING PATTERNS

The respondents were asked to indicate the working pattern of their current job (see table 4). All of the accident and emergency SHOs were working full shifts, while over half of both the obstetrics and gynaecology and general medicine SHOs reported on-call rotas. Over a third in general medicine were working partial shifts. A relatively small number reported hybrid systems in operation in their post.

Discussion

The study sought firstly to assess levels of attendance at educational seminars or meetings across three specialties. It is striking that overall, over half of the total number of SHOs in the Trent area across the three specialties were not in attendance at the educational seminars or meetings visited by the researcher. Attendance rates were highest in accident and emergency meetings (55.4%) and lowest in obstetrics and gynaecology meetings (40.1%).

The study also aimed to assess and compare the experiences and views of the doctors in attendance at the meetings. While the methodology used sampled the views of attendees only, the study does provide evidence of disruptions to educational programmes that potentially explain the absence of their colleagues. Future research might usefully focus on non-attenders. The results were borne of a relatively simple parallel descriptive study, and differences in the nature of the medical work and curricula in the three disciplines will, undoubtedly, have contributed to the views expressed.

Nevertheless, the findings of this study suggest that the training offered in the accident and emergency departments gives the SHOs surveyed a better deal in terms of provision and structure of formal education. Although fewer respondents in accident and emergency were explicitly aware of the existence of written educational objectives, those who were aware found them to be more widely observed and useful. These SHOs were more likely to have protected time for education and actually took more protected time on average than the other groups. In addition, they were much less likely to find service commitments a barrier to

Table 4 Numbers of SHOs in each working pattern system in current post; results are number (%)

	General medicine (n=126)	Accident and emergency (n=77)	Obstetrics and gynaecology (n=69)	Total (n=272)	Past experience of shift pattern
On-call	68 (54.0)	—	46 (66.7)	114 (41.9)	212 (77.9)
Partial shift	42 (33.3)	—	11 (15.9)	53 (19.5)	100 (36.8)
Full shift	2 (1.6)	77 (100.0)	9 (13.0)	88 (32.4)	83 (30.5)
Other*	14 (11.1)	—	3 (4.3)	17 (6.3)	13 (4.8)

*Mainly "hybrid" systems.

attending educational activities. Indeed they were less likely to specify *any* barriers to attendance at such events.

The operation of the full shift system reported by all of the accident and emergency respondents may be a critical factor in determining their satisfaction levels. The Junior Doctors' Committee specifies that these systems are specifically tailored for the "intensive and potentially continuous"⁸ medical cover provided in accident and emergency, intensive care, and neonatal units. It is likely that careful planning before the implementation of the full shift system has paid dividends in terms of maximising formal education within the context of the prevailing medical environment. Clearly the system benefits the education of the doctors in our survey.

Those from general medicine and obstetrics and gynaecology departments more often reported an existence of explicit educational objectives, but these seem to be less widely acknowledged by senior staff. General medicine offered the least protected time for educational activity—with over a quarter of SHOs claiming to have *no* protected time at all—and the majority of respondents in both general medicine and obstetrics and gynaecology jobs found their service commitments obstructive to attending educational events. These experiences do not reflect the standards of high quality formal education specified in *The Early Years*. Notably none of the specialty averages for protected time meet the four hours agreed minimum for SHO educational activities suggested by postgraduate deans.¹⁵

Further work is necessary in order to disaggregate the factors critical to successful integration of service needs and education. It is likely that time is a major factor. A recent British Medical Association report indicated that nationally, only 5.7% of accident and emergency junior doctors were working more hours (or with less rest) than the agreed "new deal" limits.¹⁶ This compares with 37.9% of those in general medicine and 38.1% of those in obstetrics and gynaecology.

One potential reason for shortfalls in experience of education programmes may be that hospital departments with more varied working patterns in place may still be struggling to find the "optimal system". New working pattern systems implemented as a mean of meeting the terms of *The New Deal* may have been designed with reduction of hours as the primary goal, without due consideration for the effects on provision of education. These systems will require thorough appraisal. Some departments may find that fine tuning helps optimise the integration of formal education with service. Others may require radical restructure if education is found to be severely compromised.

Whatever other factors determine the working patterns set out for doctors training in any specialty, education must be a core priority. Commitment to more meaningful use of educational objectives and protected time are

Key points

- A selected sample of formal education programme meetings attracted fewer than half of the SHOs they were provided for. Overall attendance rates varied between 55.4% and 40.1% across the three specialties targeted.
- SHOs training in accident and emergency departments reported better experiences in their educational programmes than those in general medicine and obstetrics and gynaecology departments. More use was made of educational objectives and protected time, and service commitments were less likely to impede attendance at educational events.
- Use of carefully integrated full shift working patterns would appear to benefit the formal education of the SHO within the prevailing medical environment of accident and emergency medicine.
- Working pattern systems in operation within hospital departments must be appraised in order to establish their effect on the provision of education for SHOs and the standards defined in *The Early Years*.

likely to be critical in the development of effective formal education programmes. In addition, planners should recognise the deleterious impact of badly designed working patterns on the educational development of doctors and work towards creating systems that integrate education and service commitment much more effectively than those in operation at present.

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