

An evaluation of foundation doctor training: a mixed-methods study of the impact on workforce well-being and patient care [the Evaluating the Impact of Doctors in Training (EDiT) study]

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Scientific summary

The Evaluating the Impact of Doctors in Training (EDiT) study

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Scientific summary

Background

There is a growing recognition amongst policy-makers that the health and well-being of NHS staff is a vital component of the continuing commitment to provide high-quality care for patients. NHS trusts with better records in improving the well-being of staff, evidenced by reduced sickness days and turnover, have demonstrated higher rates of patient satisfaction and better performance.

Postgraduate medical training has undergone major restructuring in recent years with the introduction of foundation training (FT), in part to improve the working conditions of postgraduate doctors. The new FT model introduced a 2-year fixed programme of training for doctors, replacing the previous house officer structure. In the second year of FT (foundation year 2 or F2), doctors are expected to become increasingly independent members of health-care teams. This is particularly true in busy, shift-driven specialties such as emergency medicine (EM) where delivering patient care is challenging in a fast-paced, performance-driven service.

Little is known about the impact of FT on the well-being of foundation doctors, particularly evaluating change over the period of training and the impact of working in specialties such as EM. The link between doctor well-being and quality of patient care is also under-researched.

Theoretical concepts of motivation suggest that there is an energy pool from which amounts of energy are drawn according to demand allocation. It is likely that extra resources of energy will be required in the emergency work environment and we would anticipate variations in motivation and well-being of F2 doctors to be associated with emergency department (ED) placements.

Objectives

This study aimed to evaluate the well-being of F2 doctors in training and to examine associations with quality of care provided to patients attending the ED. It was carried out in two phases.

Phase 1 objectives

- To describe the national strategic view of the aims of delivering FT with a particular focus on the role of training in supporting the well-being of doctors.
- To assess how FT is implemented on a regional basis and in particular its impact on the specialty of EM.

Phase 2 objectives

- To undertake a longitudinal study using a structured survey to assess F2 doctors in terms of their well-being, motivation, confidence and competence at four time points over a 12-month period.
- To conduct a survey at four time points [at the end of foundation year 1 (F1) and then after each F2 placement] to assess the level of and change in F2 doctor well-being, motivation, confidence and competence. One of these placements will be in EM and the impact of this placement can be assessed in relation to the study outcomes.
- Assess patient safety and quality of care by F2 doctors by reviewing the clinical records of patients receiving emergency care from F2 doctors and evaluating routine ED data to link workload and mean time with the patient for each of the participating F2 doctors.

Methods

Phase 1

Consultation exercise and scoping study

A consultation exercise and scoping study was undertaken to describe the strategic aims and implementation of FT in England, with a particular focus on the specialty of EM. The following qualitative methods were used.

Eighteen semistructured interviews with key stakeholders [national stakeholders, postgraduate deans, foundation school directors, training leads (TLs) in EDs] and four focus groups with F2 doctors in EM were undertaken to identify national structures, potential variation in the implementation of FT locally, the role of doctors in training, the provision of training by other staff within the specialty, the well-being of doctors in training and the quality of patient care being provided by foundation doctors.

Postgraduate education stakeholders (PESs), including postgraduate deans and foundation school directors, were recruited from four deaneries, and TLs and F2 doctors were recruited from four EDs in England between December 2008 and March 2010.

Three researchers were involved in conducting and analysing the interviews and focus groups to gain multiple perspectives and insights into the data collected. Overall themes validated by participants were derived for each stakeholder group. A summary template was then produced to bring together the similarities and differences across the groups.

Phase 2

Longitudinal study

A 12-month longitudinal study was undertaken with a sample of F2 doctors in England between August 2010 and August 2011 to measure levels of and changes in well-being and motivation at four time points.

Measures of work-related outcomes (well-being, motivation, intention to quit, confidence in managing acute conditions and experience in performing practical procedures) and job-related characteristics (e.g. work demands, task feedback, role clarity) were collected using an online survey at four time points, one before and three during the 12 months of the study, covering a range of specialties, one of which was a placement in EM.

A total of 30 EDs in nine postgraduate medical deaneries participated in the longitudinal study. In total, 654 F2 doctors had a placement in the participating EDs in the study period and were eligible to be included, with 217 doctors completing the study (33.2%). We analysed the pattern of change in sample mean scores over the four survey time points for each of the work-related outcomes and job-related characteristics. Variation in mean scores by time of placement in the ED was also compared with normative data.

A clinical case notes review of foundation year 2 doctors' quality of care

Quality of care, as documented in the clinical records of F2 doctors during their placement in the ED, was assessed using two well-established methods (criterion based and holistic review). The F2 doctors were all participants in the longitudinal study and were working in 10 of the 30 participating EDs. In total, 74 doctors were included in this part of the study and an average of 10 case notes per doctor were reviewed.

The study assessed quality of care delivered in relation to two clinical conditions, head injury and chronic obstructive pulmonary disease (COPD). Higher specialist trainees in EM were recruited from each of the

participating EDs and trained to review the clinical records relating to their own hospital using a standardised assessment process.

For the criterion-based review, criteria were developed for the two clinical conditions using relevant national and local clinical guidelines and validated by two ED consultants. Scoring of criterion-based data involved calculating a total score for each head injury and COPD patient record. To compare mean criterion scores for the two conditions, a score for the proportion of the criteria met was also calculated by dividing the total score by the maximum potential score.

The holistic review allowed reviewers to assess different levels of health-care quality in the notes and rate the quality of care provided on a numerical scale (1 = unsatisfactory, 6 = very best care). Statistical analysis examined inter-rater reliability and the quality of care delivered by F2 doctors during ED placements.

Mean scores were calculated for criterion-based and holistic ratings across three levels of case complexity (low, average and high).

Analysing the association between work-related well-being and motivation, quality of care and performance in the emergency department

Associations between F2 doctor work-related well-being and F2 doctor quality of care were analysed at one point in time, during their placement in the ED.

Doctors with both ED quality-of-care data collected from the clinical case notes review and ED well-being data collected from the longitudinal study were included in the analysis to measure the pattern and strength of associations. Additional data on F2 doctor ED performance were also obtained, measuring performance against the 4-hour ED target and compared with the ED well-being outcomes.

Results

Phase 1

- National and regional PESs agreed that there was a clear national framework in place for FT but that variation existed at the regional level in how FT was implemented. To an extent the variation reflected local NHS service needs; however, differences in the quality and amount of supervision and feedback that trainees received was concerning.
- There was a lack of a clearly defined end point for the second year of FT, which meant inconsistency in the end points used (e.g. completion of FT assessments, demonstrating competence, successfully moving into specialty training).
- Three stakeholder groups [national and regional stakeholders and emergency department training leads (EDTLs)] agreed that F2 doctor well-being was a focus only for those F2 doctors already shown to be 'in difficulty'; there were no systems in place to identify periods of overwork or strain for the 'average trainee' that could cause detriment to their performance.
- All stakeholders agreed that the ED presented a challenging but worthwhile learning environment requiring a significant amount of support from senior staff. In some cases this placed significant strain on already stretched ED senior staff.
- There was disagreement about the performance and confidence levels of F2 doctors, with EDTLs seeing F2 doctors as underprepared for the demands of a performance-driven service. PESs and national and regional stakeholders suggested that F2 doctors were fit for purpose, although they acknowledged that there were often difficulties at the beginning of placements. Trainees admitted to having anxieties over elements of patient care in the time-pressured ED environment.

Phase 2

Longitudinal study

- F2 doctors reported a significant increase in confidence managing common acute conditions over the second foundation year.
- The biggest increase in confidence was associated with undertaking the ED placement.
- Competence managing five common practical procedures improved significantly over the second foundation year.
- The biggest increase in competence in all five practical procedures was associated with undertaking the ED placement.
- F2 doctors have comparable or better levels of job satisfaction and anxiety/depression than other NHS workers and on average expend a lower level of effort than those in managerial roles.
- However, the ED placement was associated with a slight increase in anxiety and effort (not significantly different from levels in the comparison groups) and, for some groups, a decrease in extrinsic job satisfaction (e.g. issues of pay and working conditions).

Summary of clinical case notes review of foundation year 2 doctors' quality of care

- Mean scores for the proportion of head injury and COPD criteria met were 50.8% and 54.9% respectively. A detailed breakdown of these results identified weaknesses in relation to the extent of clinical information recorded in case notes.
- Findings from an analysis of case mix for head injury and COPD cases revealed no significant differences in relation to quality and complexity of clinical presentation, indicating that any observed differences in quality of care are not attributable to case mix variation.
- A high level of agreement was found among reviewers across the sites for the criterion-based review [intraclass correlations (ICCs) of 0.65–0.94], but agreement for the holistic review was lower (ICCs of 0.08–0.65).

Relationship between foundation year 2 doctors' work-related well-being and job-related characteristics and quality of care during emergency department placements

- No statistically significant associations were found between work-related well-being and quality of care or performance outcomes.
- There was evidence of small- to medium-sized associations between anxiety and depression and two performance outcomes (with higher levels of anxiety or depression likely to be associated with poorer performance outcomes). A similar pattern of association was seen for motivation and two quality-of-care outcomes (with higher levels of effort likely to be associated with better quality-of-care scores).

Conclusions

Our study was the first to systematically examine a sample of trainees at the end of their first year (F1) and throughout the second year (F2). We used a multiple-perspective mixed-methods study to examine the current arrangements for the delivery of FT in England and to examine a group of 217 foundation doctors in 28 NHS trusts as they proceeded through their second year of training (from August 2010 to August 2011).

We found a clear framework for FT with some variation in educational philosophy, implementation and views on assessment. There were disagreements over the outcomes of training and the lack of a clear end to F2 training. The longitudinal study showed an increase in confidence and competence of trainees

across F2, with the steepest rise occurring after the ED placement. Trainees had similar or better levels of well-being than other doctors and health-care workers but reported a slight rise in anxiety and effort (not significantly different from levels in the comparison groups) and, for some, a decrease in extrinsic job satisfaction associated with the ED placement. We have demonstrated that it is possible to systematically record levels of well-being of trainee doctors and compare these over time and with other normative studies, enabling appropriate interpretation. These measures could be incorporated within trainees' electronic portfolios (e-Portfolios) to facilitate monitoring of trainee well-being and to enable any changes to be acted on.

Limitations

- The study has limitations in the sample providing stakeholder input, and focus group participants may have more experience in teaching hospitals than smaller NHS trusts. Further studies may benefit from including greater numbers of other staff who have more informal roles in supervising and supporting F2 doctors, such as senior nursing staff and nurse practitioners.
- Although 217 F2 doctors from 28 acute trusts participated in the longitudinal study, this is a small proportion of all F2 doctors training throughout the UK. This sample made up approximately one-third of the eligible population undertaking ED placements in the 28 trusts (654 doctors). It is possible that the F2 doctors participating in the study had greater levels of well-being than those who chose not to participate. However, we achieved the target of 210 F2 doctors calculated to be sufficient to show an effect on the measurement of well-being and motivation.
- Assessing quality of care through case-note review is reliant on information being recorded in the notes, which may not reflect every detail of the care provided.

Future study

- Further studies examining quality-of-care outcomes and junior doctors' well-being and motivation. These would need to be large-scale, multicentre studies to provide sufficient power to examine possible relationships.
- More large-scale studies looking at assessment of competence, feedback and case discussion conducted by a range of health-care staff may yield further good practice that can be incorporated into the FT assessment programme.

Implications for practice

- Disseminate the findings of this study to encourage more general support for work-based learning and assessment as part of postgraduate medical education, especially to organisations such as the UK Foundation Programme Board. We would seek national communication of the findings so that participating trusts can learn of the findings through conferences such as the Health Services Research Network annual symposium and the NHS Confederation conferences.
- Trainees' levels of well-being and motivation can be measured accurately over time and would form an appropriate part of the e-Portfolio, but this would require timely feedback to supervisors to enable appropriate work demands and role clarity to be determined within the placement period. If this service cannot be provided within a useful time frame a trainee report measure regarding their well-being, work demands and role clarity and use of their abilities should be communicated to the trainees and their supervisors, enabling local changes in placements to be made. There is a well-validated system for the recording of well-being amongst NHS staff [the National NHS Staff Survey, URL: www.nhsstaffsurveys.com/Page/1010/Home/Staff-Survey-2013 (accessed 22 November 2013)] and this would be utilised to specifically identify and benchmark the well-being of

foundation doctors. However, it would need to be acknowledged that this is an annual review and is not as accurate as placement measures.

- This study offers clear evidence that all F2 doctors would gain in confidence and competence from undertaking an ED placement; however, this should be accompanied by additional support for senior staff to enable them to provide the level of support that trainees need during this intense learning period. In addition, more consideration needs to be given to work–life balance issues during this placement period.
- The success of workplace learning depends on the provision of adequate levels of supervision and support for trainees. The exact level of support needs to be determined by working closely with senior trust staff who support trainees in the workplace and their educational supervisors. This by necessity will not be ‘one size fits all’ as it will depend on a number of factors associated with service delivery and requires consultation with both the Foundation Programme and the trusts involved.
- The espoused educational philosophy of medical training (as problem-based education supported by workplace experiential learning) should be debated to articulate a clear and understood purpose of FT, enabling the implementation of agreed learning outcomes with supervisors and trainees.
- Further work should be carried out on work-based assessments, with close examination and development of specific criteria that contribute to a clearly defined and measurable endpoint for F2.
- Careful consideration should be given to incorporating formal processes for careers advice at both the F1 and the F2 points in training to ensure that foundation doctors acquire the most appropriate training for their intended career track. Although the benefits of ED placements are acknowledged, this may not always be the case when intended career tracks involve service specialties such as laboratory medicine and radiology.

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