



The Knowledge And Skills Of Surgical Foundation Year One Doctors In A Teaching Hospital In The UK: A Review And Results Of A Survey

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Abstract

Introduction: Junior doctors had acquired knowledge and skills in the past using weekly specialty based teaching sessions and on the job learning. They currently learn on the job as before (with the restraints of less working hours). However, generic hospital wide teaching programmes have replaced the specialty teaching programmes. We aim to assess the effects of these changes on the surgical foundation year one doctors' knowledge of common surgical conditions and on their basic surgical skills.

Methods:

We carried out a survey of foundation year one doctors towards the end of their first surgical placements in the largest teaching trust in Manchester. We surveyed the foundation year one doctors' perception of their abilities to manage common surgical conditions and to carry out basic surgical procedures.

Results:

Response rate was 100% with 24 doctors participating in the survey (n=24). Only 9 out of 24 FY1s (38%) agreed that the generic teaching programme provided teaching which is relevant to their surgical placement. The FY1s' perceived knowledge and ability to deal with common surgical conditions was 3/5. Doctors in GI surgery placements fared better on average (mean 3.20 vs. 2.78, p

Conclusions:

Foundation year one doctors needs specialty teaching as they rotate through their rotations apart from the generic teaching programme. It could be useful if all those who cover surgical on call shift to go through a GI placement to improve their skills and knowledge in common surgical conditions.

Introduction

Whilst undergraduate education has been under the control of university medical schools, postgraduate education has been under the domain of the specialist

Royal Colleges, which regulate specialist training programmes and examinations. The education of foundation year (FY) doctors is provided by individual hospital under supervision from the Foundation Schools. Each hospital has an independent, empirical education programme, based on perceived need, popular demand or potential supply.

With the introduction of the Foundation Programme, generic teaching programmes were introduced across all deaneries with the main aim of bridging the divide between undergraduate and postgraduate education. FY doctors are expected to complete a series of assessments which range from patient interaction to disease management and procedural skills in addition to their usual ward cover. They are also expected to attend 3 hours of dedicated teaching each week, which is organised by the Trust they work in [2].

Every doctor needs a core of basic surgical knowledge and skills. A minimal of one surgical placement of 4 months is compulsory for every FY doctor and is a prerequisite for advancement into the second year of the programme. It is hoped that these skills and knowledge are learned through a combination of teaching programmes, ward rounds, theatre exposure and 'on the job' learning that will be acquired during these 4 months.

This aim of this study was to look at the effectiveness of teaching FY1 doctors receive on their surgical knowledge and skills by asking Foundation Doctors directly involved on what their perception was on the teaching that they receive and also on their knowledge of key surgical topics.

Methods

A survey of FY1 doctors prior to the end of their first surgical placements in the largest teaching trust in Manchester was conducted. These doctors were at the end of their surgical placements and would have on average done 14 night shifts, 14 long days including weekends on top of 14 weeks worth of day duty. All trainees have 4 hours of formal teaching session arranged by the Trust every week, on topics ranging from prescription skills to pain management, and cover a wide range of subjects thought pertinent

to FY1 doctors. A detailed structured questionnaire was prepared to assess the current situation (quantity and quality of teaching episodes), identify the FY1's perception of their surgical knowledge and skills and to invite suggestions to improve learning.

The quality of teaching currently received and the perception of knowledge were assessed using specifically constructed 5 point global Lickert rating scale. The questionnaire took approximately 15 minutes to complete. The questionnaire was wholly anonymous apart from a section where junior doctors were asked to identify the speciality they were attached to.

Results were then analysed using median, SD, Mann-Whitney U test, one way and two way analyses of variance between these groups.

Results

A response rate of 100% was achieved with a total of 24 foundation year 1 (FY1) doctors participating in the study (n=24).

Each trainee had on average 5 consultant or specialist registrar (SpR) led ward rounds (median 5) and a single session of informal teaching (median 1) per week. Informal teaching included teaching received during ward rounds, clinics, theatre sessions, MDT meetings, case discussions or self initiated questions. However, there was very minimal dedicated or structured surgical teaching during that period. Out of these, 47% managed to attend MDT meetings and 50% attended theatre sessions during their placement and only 17% of the trainees managed to attend clinics during their placement. A high proportion of trainees (96%) ranked ward rounds, self initiated questions and case based discussions in varying order as their top three in terms of where most learning took place. Most of the teaching was done by SpRs (40%) followed by senior house officers (SHO) and consultants (27% each). Median rating for quality of teaching received was ranked two out five. On whether doctors found their core surgical knowledge improving after their placement, a median score of 3 out of 5 on a Lickert scale was given with doctors in the renal transplant firm gaining the most.

Sixteen key topics ranging from management of upper GI bleeding to acute limb ischaemia were identified based on their frequency of occurrence, relevance and importance to junior doctors as the first port of call in hospital medicine. On the whole, median rating was 3 out of 5 (mean 3.08, SD 0.82). Amongst the 16 topics, trainees were most confident in dealing with sepsis (median 4, mean 4, SD 0.54) and least confident when

dealing patients with intestinal ischaemia (median 2, mean 2.4, SD 0.88) and acute limb ischaemia (median 3, mean 2.4, SD 0.85). Doctors in GI surgery placements (colorectal, upper GI and HPB) felt on the whole more confident in dealing with those conditions than doctors in non GI placements (mean 3.20 vs. 2.78, p

When asked to rate their knowledge on suturing materials, techniques and surgical instruments, 13 (54%) respondents ranked their knowledge as poor (score of two or less out of 5). Average score was 2.66 with median 2 and SD 0.88. There was no significant difference between doctors in different placements. On procedural skills, 23 out of 24 trainees had never performed procedures akin to excision of skin lesions or appendectomy with supervision. Ten (41.7%) trainees had done an incision and drainage (I&D) and/or skin closure throughout their placement.

Junior doctors preferred SpRs (57%) to be lead teachers and ranked small group teaching (40%) with case study and discussion (33%) as their preferred method of learning. All respondents felt that a more structured and cohesive surgical teaching programme is essential in developing competent and confident junior doctors particularly when it comes to dealing with surgical emergencies.

Discussion

Since the inception of the Foundation Programme in line with the MMC, every trainee in the country should receive up to 3 hours of formal teaching a week [2]. However, three hours constitute less than 10% of the total time junior doctors spend in the hospital. In the Foundation Training Curriculum 2007 (FTC 2007), it is stated, "new doctors must be encouraged to learn in, and from practice in the clinical environment where this service is delivered [1]. Taking this into account, a significant amount of learning should take place outside the lecture room, in the wards, in clinics, on nights etc. That is not the case in our survey in which FY1s reported to have only one informal learning/teaching session on average per week. In a study undertaken in Oxford, only a third of FY1s agreed that their learning throughout the year had been of high standard with posts in medicine rating consistently higher than surgery for quality of training [2]. An Australian study showed that the first postgraduate year was particularly significant for the development of clinical skills in all trainees. It also highlighted a positive correlation between experience and confidence in performing these skills. It is worth analysing the results above with a view to explore

whether there is real weakness of training in the surgical disciplines, what the reason might be, and how foundation training could be supplemented to enhance competence in managing surgical emergencies and bridging this potentially concerning deficit [3].

When the GMC published *The New Doctor* in 1997 [4], it recommended that proper use was made of the then Pre-Registration House Officer's time and that he/she should not be expected to routinely undertake tasks of no educational value or to work in excess of the limits set by the New Deal [5]. A decade on, studies have shown that FY1's spend a large proportion of their time in doing task of minimal educational value despite the employment of nurse practitioners or specialist nurses [6,7,8]. This may well explain the poor attendance of FY1's in our survey in clinics and theatre where substantial amount of learning could have taken place. There is evidence to suggest that OPD clinics can be used as a major learning environment for junior doctors if there is an adequate direct supervision and interaction with senior doctors and consultants [9, 10]. However, only 7% of learning episodes observed in a survey of OPD clinics in Manchester saw doctors providing clinical care under direct supervision [9]. Unfortunately, these trends may worsen as FY1's are likely to gain less and less experience in future on the wards – a phenomenon recognised in the United States years ago [11]. The emphasis of patient care is already shifting from the wards to the outpatients departments, and unless house officers spend more time in clinics, the opportunity for them to learn on the job will decline.

The current batch of trainees lack many of the procedural skills once considered 'a must have' for junior doctors [12, 13]. Many procedural skills in surgery are taught on the basis of 'see one, do one, then teach one' in what was known as the apprenticeship style of training [14]. This style of learning is under strain since the introduction of the EWTD, which has reduced the amount of clinical exposure in terms of both skills and patient management [15, 16]. From our survey, 73% of trainees rated their knowledge of practical skills as poor and only a third of trainees had the chance of doing an incision and drainage (I&D) and/or skin closure throughout their placement. Evidence shows much of the training of junior doctors in practical procedures is still received on an informal basis [17, 18]. In the formal teaching sessions, it is of paramount importance to include practical sessions for such skills to ensure that patient safety is guaranteed [14].

Ward round teaching remains a powerful teaching context in medicine as it provides an authentic

experience of the complexity of patient care and professional practice. The enduring value of the ward round lies in its potential to model professionalism, enhance clinical reasoning, and demonstrate the cultural norms of medical practice. All our trainees had an average of five ward rounds per week, but rated their learning as less than average. Studies have shown that ward rounds are no longer viewed as a learning exercise by a large proportion of medical students and house officers [19, 20, 21, and 22].

Taking the cohort used in this study, high satisfaction scores were achieved in doctors working in the renal transplant wards as their ward rounds are known to be learner focused and detailed while successfully combining the intricacies of renal medicine with transplant surgery.

The majority of junior doctors in the study rated case based discussions and self initiated questions alongside ward rounds as their prime ways of learning. The requirement of having at least six case based discussions throughout the first year of Foundation Training has had a positive impact on fellow doctors. In addition, junior doctors have shown to benefit from regular feedback and discussion sessions between colleagues and seniors.

In the FPC 2007, it is stated "they (junior doctors) must also become familiar with the need to repeat clinical experience to ensure their progression from competence, through proficiency to expertise" [1]. From the 16 key topics that we identified, FY1's were most confident, almost unanimously when it came to dealing with sepsis. The reason is the common occurrence of this pathology in the wards, on nights and even in the lecture room as a topic of discussion. This is also consistent with a study done on the knowledge of sepsis among training-grade doctors, which found that there was a significant improvement in doctors' understanding of sepsis, its recognition and treatment following the introduction of antibiotics guidelines and several other initiatives to improve the knowledge base of junior doctors [23]. The majority of the topics covered in the study had a bias towards GI surgery. Obviously most common topics to be faced on the emergency surgical shifts are essentially related to GI surgery. This might explain the reason for GI firm trainees scoring on the average higher than their counterparts in non-GI firms in regards to their knowledge of core surgical topics.

According to the GMC's Good Medical Practice, all doctors have a professional obligation to contribute to the education and training of other doctors, medical students, and non-medical healthcare professionals on the team [24]. The GMC proclaims that experience in the pre registration year should be acquired under the

supervision of consultants and other senior medical staff. But a survey in Liverpool showed that 85% of the 115 FY1's questioned received most of their teaching from other junior doctors and 62% had learnt 'a lot' from the nursing staff[11]. Despite evidence showing that specialist and senior nurses can in fact be excellent teaching interfaces, involvement of Registrars (SpRs and StRs) and Consultants cannot be overstated [25]. From our study, a high number of trainees preferred the registrars to teach them as they were more accessible and trainees were more likely to ask questions and do a procedure with them. Pressure on consultants to work faster, participate in audit and management, and accept financial responsibility for their clinical work, coupled with the reduction in junior doctors' hours, could be the reason behind the consultants' reduced involvement in educating FY1's [26].

Recommendations:

To deal with the problems, which we identified, in this paper, we expect the situation to improve significantly by undertaking three key steps.

The first step is to get surgeons (of all grades) involved again in teaching.

During the last several years, surgeons have become extremely busy with meeting targets, carrying out waiting lists initiatives and filling in the gaps created by EWTD. We recommend building teaching and training into the job description of surgeons (consultants and trainees).

We also propose that every teaching committee has at least one surgeon among its members. The involvement of surgeons should be a condition for approval of foundation educational programmes. To ensure appropriate coverage of surgical topics in the educational programmes of FY1s, we recommend that surgery is given 25% of the teaching slots of FY1s.

Surgeons might be encouraged to be engaged by making involvement in formal teaching sessions a compulsory part of the appraisal and revalidation process. The feedback given by FY1s in regards to the quality of teaching they receive in the unit should be part of the training approval of surgical FY1 slots.

The second step is to utilise existing and new teaching fellows/demonstrators involved formally in the surgical teaching and training of FY1s.

We surveyed BMJ careers for teaching related jobs using the terms teaching and fellow. We found 20 posts with closing dates between 1st Sep 08 and 1st Sep 09). The teachers are expected to be involved in instructing qualified doctors only in three out of 20 posts. The rest of the posts are essentially related to instructing medical students. Surgical teaching fellows can be utilised in teaching FY1s while also helping in

EWTD compliance.

The third step involves scheduling ambulatory surgery and educational shadowing in the FY1's timetable.

Most common surgical cases are currently seen in outpatient or A&E, treated in ambulatory care setting (A&E, day case, surgical assessment units) and discharged from there. Delegating FY1 to such settings (in a training capacity) can improve their knowledge significantly. Educational shadowing of trainees as they see patients in A&E, outpatient clinic, day case unit and as they deal with critically ill patients would sharpen the FY1's skills and abilities. That would also encourage trainees to become more involved in teaching.

Conclusions:

The key question is whether we are equipping our juniors with the right amount of information and knowledge to be better clinicians and possibly surgeons of tomorrow. From our results, it does not seem so. Despite self initiated learning being the core of postgraduate education, it is essential to deliver core knowledge and skills via structured and cohesive teaching sessions as ultimately the main beneficiary of competent and confident junior doctors would be the patients of today and tomorrow.

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