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Preparing students to be doctors: introduction of a sub-internship program.

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Citation

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Preparing Students to be Doctors: Introduction of a Sub-Internship Program

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Abstract

Preparing graduates for the transformation from medical student to doctor provides medical schools with a real challenge. Medical educators advocate a process of graduated delegation of responsibility in the clinical years of medical school. This is best exemplified in the North American system of sub-internship programmes; an educational approach which European medical schools have been slow to adopt. This study reports on the introduction of an intensive two-week surgical sub-internship for final year medical students. "Sub-interns" were asked to complete pre and post sub-internship online questionnaires assessing their readiness to perform clinical and practical skills, attitudes towards the program, and how well it prepared students for internships. Forty-nine students completed a questionnaire pre-sub-internship and 47 completed the post-questionnaire. Student confidence towards practical and clinical skills and their first day at work increased over the two weeks. Mean likert scores for all 6 practical and clinical skills improved post sub-internship. The introduction of a surgical sub-internship is timely and welcomed by medical students. Its development helps bridge the gap in responsibilities between medical student and doctor.

Introduction

The transformation from medical student to doctor can be demanding and stressful. Numerous studies confirm that many doctors in their first year of work lack necessary competencies. During medical school, students not only learn the science of medicine but must also assimilate a core set of skills which will ease the sudden change from student to doctor. One key element adopted in many countries to ease this transition is a sub-internship program. The sub-internship appears to have been born in America during World War II out of necessity and as a response to the shortage of interns. Utilisation of senior medical students to serve as interns was simply a logical response to manpower shortages and extended the "progressive graded responsibility" concept already common to residency training programs. The delegation of clinical responsibility to students became institutionalised and has facilitated the transition from student to doctor. Whilst sub-internships have been common practice in North American medical schools they have failed to become an integral part of the student experience in the United Kingdom and Ireland. In the absence of such programs, it is no surprise that undergraduate curricula have been found to poorly prepare medical students for the intensity of their first year of hospital life.

The Department of Surgery in the medical school of the Royal College of Surgeons in Ireland has introduced a surgical sub-internship program. This program provides an opportunity for final year medical students to acquire the skills which will ease the adaptation in the first days as a surgical intern. Trainee perception of their degree of preparation to perform defined skills can be a useful measurement of an educational program which teaches these skills.

Therefore, we surveyed final year medical students, before and after undertaking an intensive 2-week surgical sub-internship. Students were questioned in regard to their readiness to perform key clinical and practical skills, their attitudes towards the sub-intern program and the extent to which it prepared them for their first post-graduate year.

Methods

Subinternship Design

Final year medical students assumed the role of highly supervised "acting interns". They participated fully in morning rounds, organised patient care, responded to nursing staff queries, attended educational and multi-disciplinary conferences and performed daily practical ward tasks. This role differs from a normal student attachment where students traditionally shadow team members with limited clinical responsibility and participation. In addition to their enhanced role within the team structure, sub-interns were also integrated into the on-call schedule, partnered with the rostered intern.

<table>
<thead>
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<th>Table 1: Goals for Sub-Internship</th>
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<tr>
<td><strong>1 Knowledge</strong></td>
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<tr>
<td>1. Emphasis on clinical scenarios which may present clinical tasks during the exam.</td>
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<td>2. Emphasis on diagnosis and management of common surgical conditions.</td>
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<td>3. Clerking ability to clinical patients.</td>
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<td>5. Participation in the management of acute and emergency surgical conditions.</td>
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<td><strong>2 Practical and Clinical Skills</strong></td>
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<td>1. Assessing patient with disease.</td>
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<td>2. Assessment of patient with systemic disease.</td>
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<td>3. Assessment of patient with post-operative pain.</td>
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<td>6. Performing endoscopic procedures with patients.</td>
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<td>7. Communication with team, district key points in organizing practical skills.</td>
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<td>8. Listening to fellow healthcare practitioners.</td>
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<td><strong>3 Professional Development</strong></td>
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<td>1. Increased responsibility for patient care.</td>
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<td>2. Increased autonomy to develop decision-making and organizing patient care.</td>
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<td>3. Enabling awareness of confidence in decision making.</td>
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<td>5. Participation in clinical case.</td>
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<tr>
<td>6. Preparing for internship.</td>
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</table>

**Subinternship Goals – Table 1**

The surgical sub-internship was designed to achieve educational goals categorized into knowledge, skills and professional development. Goals related to knowledge emphasized clinical scenarios which may prove problematic during the intern year. Development of practical, physical diagnosis and communication skills required by all interns comprised the skills goals of the program. Lastly, sub-internship provided a period where students gained opportunity for professional development through increased autonomy for decision making.

Figure 1
Questionnaire Content and Design

During the academic years from 2007-2008 49 students participated in the surgical sub-internship program. Ethical approval was not deemed necessary as this study was limited to the secondary analysis of anonymized data. A preliminary questionnaire was piloted to assess its ease of use, redundancy and validity. The final questionnaire was revised accordingly and students completed it anonymously online. Responses to questions were based on a Likert scale. The questionnaire primarily assessed sub-interns' confidence in performing a series of 6 ward-based clinical skills and 6 practical procedures. Students were surveyed before and after completion of the program. A 9-point ordinal scale was utilized to assess confidence in performing these skills and procedures.

Results

Overall, 49 students completed the pre and 47 students completed the post sub-internship questionnaire. All respondents participated in a surgically based sub-internship program in a range of specialties. Twenty-six students were males and 23 were females. The majority of sub-interns (63.3%) planned to work in Ireland during their first post-graduate year. Twenty-one students stated that their projected career choice was surgery. On completion of the sub-internship 19 students were more likely to consider a surgical career whilst 28 students said their career choice had not been
influenced.

Forty-five students had been on overseas electives, with 32 of these being undertaken in either North America or Africa. Students who had participated in electives in either North America or Africa stated that these experiences had afforded opportunity for developing their ward based practical skills. Prior to commencing this program, only 6 students stated that they had learnt to perform practical skills during surgical attachments in medical school. Only 5 (10.2%) students ‘strongly agreed’ that there was ample opportunity during their medical school attachments to gain practical and clinical skills. Student confidence in performing all six ward-based practical skills was increased during the sub-internship. This is reflected by the mean likert scale scores depicted in Figure 1. Likewise, student confidence in 6 core clinical skill areas was also dramatically improved by the period of guided supervision provided by this program (Figure 2). Mean likert scores for all 6 practical and clinical skills improved post sub-internship.

Figure 3 shows student perception of integration into clinical teams during medical school rotations and during sub-internship. It reflects a much higher degree of student satisfaction with integration during time spent in sub-internship. Thirty-five students (74.5%) either ‘agreed’ or ‘strongly agreed’ that their sub-internship had made them more confident about their first day as a surgical intern, whilst 26 students (55.3%) ‘agreed’ or ‘strongly agreed’ that sub-internship had been the most beneficial clinical attachment of medical school. Twenty-nine participants (61.7%) felt that integration into the on call rota had been a beneficial element of sub-internship.

Discussion

This questionnaire describes final year medical students’ attitudes towards their preparation for internship by a surgical sub-internship. The recognition that medical undergraduate education is a continuum has created the scope for developing sub-internships to bridge the gap between life as a student and that as a doctor. The gradual acquisition of the attributes required for a successful transition to internship commences early in medical school with students’ first patient encounters and continues throughout their clinical attachments. This process has, until recent years, largely been student driven and relied on their own clinical encounters rather than a specified program of skills development. It is unsurprising, therefore, that several studies have revealed that many undergraduate curricula leave medical students inadequately prepared for internship.1,4,8-11

With these concerns in mind, the outcomes of this study are both relevant and timely.

The aim of this surgical sub-internship was to provide senior medical students with closely supervised autonomy in the execution of basic clinical skills and greater devolvement of responsibility for patient care. Traditional clinical attachments have been shown to provide inadequate training in such basic skills.12 Our survey results confirmed that students, on completion of this intensive 2 week sub-internship, felt more confident in performing all ward based practical and clinical skills which were assessed (Figures 1 and 2). Medical educators have traditionally focused more attention on clinical attachments or clerkships,13 than the sub-internship.14-16 The findings from this survey suggest that this balance should be redressed in medical schools curricula. A majority of surveyed students (74.5%) in the post sub-internship questionnaire ‘agreed’ or ‘strongly agreed’ that they had an enhanced sense of confidence about starting their internship. A recent survey of graduates in the United Kingdom has revealed that over 40% of medical graduates did not feel appropriately prepared for their first job.17 A sub-internship is uniquely placed to assign students responsibilities they will face as newly franchised doctors. It clearly serves a role in transferring clinical responsibility in a graduated rather than sudden manner. The fact that 26 students (55.3%) reported this as being the most beneficial attachment in medical school demonstrates that the introduction of this element of teaching has real benefit in preparation for life as a hospital doctor.

This study has several limitations. Potentially, important skills or procedures which interns perform may have been omitted. The curriculum for this sub-internship will undoubtedly evolve in the years ahead. This questionnaire was also confined to a single graduating class from a single medical school and hence results may not be generalised. Finally, whilst all clinical teams were briefed on the expectations of the sub-internship, student integration and experience not only depended on a receptive and pro-active teaching team environment but also was reliant upon the prevalent in-patients during their two week exposure. It is likely that the transition from student to doctor will continue to be both difficult and stressful for medical graduates. Medical educators must continue to innovate to ensure confidence and competence in young doctors setting out on demanding careers. This study illustrates that students respond well to the challenges and intensive nature of a sub-internship. The desire, by this cohort of students, to have this program extended beyond its initial scope demonstrates their recognition that it provides the necessary springboard to clinical practice.

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References