



A Model of Basic Surgical Skills Course to Supplement the Training of Foundation-Year Doctors by Efficient Use of Local Resources

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INTRODUCTION: This study investigates the efficiency of teaching basic surgical skills to foundation-year doctors and medical students by using local resources.

METHODS: A course comprising 4 workshops, once a week, of 3 hours duration per session was delivered using local education center facilities and using the local faculty of consultants and surgical trainees. Teaching methods include practical skill stations supplemented with short didactic lectures and group discussion. Precourse and postcourse assessments were completed by candidates and analyzed to measure outcomes of the course both subjectively and objectively.

RESULTS: A total number of 20 participants completed the course. On completion of the course, (1) participants' theoretical knowledge improved significantly ($p < 0.0001$), as measured by multiple-choice questions, and scores improved by 35% (mean 44%, standard deviation = 16%) before the course compared to (mean = 79%, standard deviation = 13) after the course; (2) the level of confidence in knowledge and skills was measured by a questionnaire on a scale of 1 to 5, and there was a significant ($p < 0.0001$) improvement on postcourse assessment (mean difference = 1.5, 95% CI: 0.7-2.4); and (3) practical skills such as suture position, knot tying, and wound apposition significantly improved after the course, χ^2 (2) = 16, $p < 0.001$; χ^2 (2) = 18, $p < 0.001$; and χ^2 (2) = 22, $p < 0.0001$, respectively.

CONCLUSION: Effective delivery of basic surgical skills to foundation-year doctors by using local resources can be achieved at low cost. (J Surg Ed 73:567-574. © 2016

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COMPETENCIES: Patient Care, Systems-Based Practice, Practice-Based Learning and Improvement

INTRODUCTION

In the United Kingdom, foundation-year (FY) training is the first generic postgraduate medical education that junior doctors must complete before applying to specialty core training. Although a minimum of 4 months rotation in surgery is a mandatory requirement for completion of FY training, there is a lack of emphasis on basic surgical skills (BSS).¹ General consensus among 51 FY doctors, supported by a questionnaire conducted at the University College London Hospital (UCLH), highlighted the lack of confidence in BSS knowledge and practice. As a result, there may be a concern that seniors perceive this as a lack of enthusiasm on the trainees' part to get involved in theater. Hence, motivation to provide surgical training to FY doctors may diminish. Furthermore, FY doctors may feel discouraged to attend theater sessions and be fully involved in surgical patients' care.

A well-established model of teaching BSS is through the Royal College of Surgeons' (RCS) course, which can be considered as gold standard. Basic techniques such as handling surgical instruments and tissues and surgical knot tying, for example, are ideally taught within controlled workshop environments before doctors can perform procedures on patients. The RCS' BSS course teaches, assesses, and certifies the ability

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of trainees to safely perform basic surgical procedures. Currently, attending the BSS course is a mandatory requirement for core surgical training in the United Kingdom.² Although FY doctors are eligible to attend the BSS course, there are various limitations including limited number of spaces, high cost, usually held over 2 to 3 days at certain centers, and attendance may require study leave and travel.³

The authors believe that BSS, such as wound suturing, knot tying, excision of skin lesions, abscess incision and drainage, and basic understanding of laparoscopic surgery are essential for doctors rotating in surgery. Additionally, achieving competencies in these basic techniques may be necessary in most specialties and may represent an important component of patient safety. For example, a doctor would be expected to suture a cut wound or perform basic invasive procedures in most medical specialties. The provision of these skills should be encouraged and made available for free or at a low cost. In this article, we present a model that effectively uses local resources to deliver in-house teaching of BSS to junior doctors and medical students. This study evaluates the effectiveness of this teaching model. This model may not only motivate those who were seeking a career in surgery, but also create an engaging environment for FY doctors and improve their confidence level in performing basic procedures.

METHODS

Participants and Logistics

Approval of the course was obtained from the UCLH Education Centre and held at the Simulation and Clinical Skills Laboratory. The course targeted junior doctors at the level of FY as well as elective and final year medical students. Collaboration was made with the FY program tutor, North Central Thames Foundation School. This has allowed the course to be incorporated within the FY1 weekly mandatory teaching. The existing weekly teaching sessions were generic surgical topic distributed over a period of 16 weeks and include management of clinical scenarios such as perioperative care of surgical patients, per-rectal bleeding, and pancreatitis. Weekly teaching sessions were rearranged to accommodate for the BSS course. After a careful opportunity cost considerations, consensus was reached among the trainers to incorporate the course into the FY-dedicated educational program.

Medical students, particularly those in their final years attending their elective in the surgical department, were also encouraged to complete the course. Advertisement was achieved through the medical staffing e-mailing list (UCLH).

Faculty Members

Senior surgical trainees at the level of specialty training year 3 and above were invited to contribute to the teaching program as faculty members. A pool of faculty members was developed, and all members attended an introduction

session to inform them about the aims and objectives of the course as well as their role. All faculty members were senior surgical trainees who completed their Membership of the RCS examination. We excluded the faculty applicants who had not completed the MRCS examination or not attended the BSS college course.

Course Design and Teaching Methods

The course comprised four, 3-hour-long training modules once a week, in which students acquired surgical skills using pads and animal models, as well as laparoscopic stack system in an appropriate educational room. To achieve motivation and optimal theoretical knowledge and practical skills, a mixture of teacher-centered and student-centered approaches was used (Fig. 1). For the theory domain, didactic short lectures as well as group discussion methods were adopted. Group discussion was deemed appropriate for the theory aspect of this course because the participants were fully trained doctors with existing background knowledge. The aim of this section was to emphasis on effective learning rather than exclusive teaching, sharing knowledge and ideas, promoting participation, and reflective thinking to help foster interest in surgery. Clinical scenarios were used in the group discussion and the surgical management was discussed among the group who had to answer targeted questions about the clinical scenario. This established knowledge in areas such as suturing material, instruments use, as well as clinical assessment. Furthermore, from the feedback it was mentioned that group discussion helped participant in understanding the application of knowledge and practical skills to clinical scenarios. The limitations of group discussion, such as 1 participant dominating the discussion and others not contributing to the discussion, were avoided by careful guidance by the faculty member facilitating the session.⁴ For example, unintimidating question directed at participants who were not contributing to

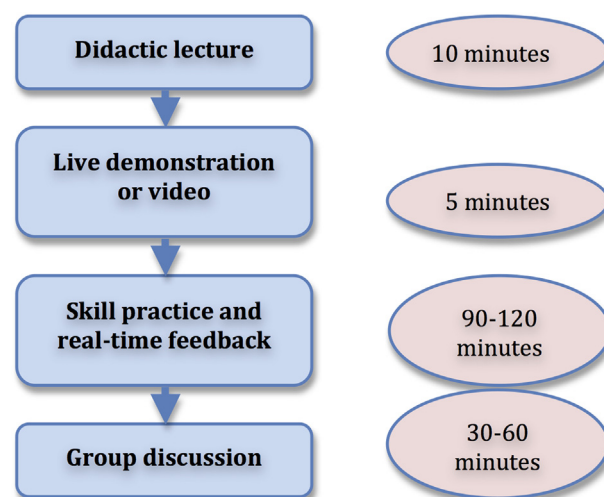


FIGURE 1. An example of a 3-hour session, note that most of the time is spent on skill practice, real-time feedback, and group discussion.

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