

A Clinical Procedures Course for Medical Students

R.C. Romeo, M.D. and R.M. Patel, M.D.
University of Pittsburgh School of Medicine

Introduction

A course for second year medical students entitled "Clinical Procedures" is offered as part of the introduction to patient care. The course goals are to introduce students to basic diagnostic and therapeutic invasive and noninvasive procedures that they may be asked to perform while on clinical rotations. It allows students the opportunity to practice these procedures in a controlled setting prior to attempting them on actual patients. Included in the course content are the indications, complications and interpretation of data for clinical procedures.

Methods

The course is taught by the faculty in the Departments of Anesthesiology, Critical Care Medicine, Emergency Medicine, General Internal Medicine, General and Pediatric Surgery, Orthopedic Surgery and Urology. There are seven components: (1) vascular access, (2) initial patient assessment and noninvasive monitoring, (3) diagnostic lumbar puncture, basic fracture management and foley catheter insertion, (4) respiratory assessment and therapy, airway management, and chest x-ray interpretation, (5) introduction to surgical techniques, (6) introduction to invasive hemodynamic monitoring and blood gas interpretation, and (7) basic life support (BLS). Each component is taught on three days, so that the students are divided into groups of approximately fifty. Most sessions consist of smaller groups of interactive teaching stations, workshops, discussions and simulator sessions. The students get direct hands-on experience performing procedures on other students, i.e. starting IV's and applying monitors; on static manikins, i.e. arterial and lumbar punctures; and simulation experience utilizing full-bodied computerized manikins, i.e. airway management. Faculty instructors grade students utilizing performance checklists, which must be satisfactory for the student to pass the course. The following areas are assessed by the students at the end of the course: overall quality of the course, organization, pace, integration, clinical relevance, course materials, exam relevance, lectures and small groups. An A, B, C, D, E scale is used where A = Outstanding, B = Good, C = Satisfactory, D = Fair and E = Poor. The students' evaluations of the course (proportion graded outstanding or good) for 2000, 2001 and 2002 are shown on Table 1.

Results

See Table 1

Discussion

Student satisfaction of the course was very high as evidenced by the 95-97% rating in overall quality over the three-year period. The students felt that the clinical relevance of basic concepts was well emphasized. The small groups utilizing workshops, practice sessions and learning stations seem to be ideal for teaching clinical procedures. The didactic lectures given before each of the small group sessions do not seem to be valued as much since the proportion of students who rated lectures as outstanding or good was lower than that in other categories. Course materials, described as the syllabus to the students, were also rated lower. This is consistent with the observation that students prefer practicing procedures rather than reading descriptions of them. Based on these high ratings, this course appears to be an important and effective method of teaching clinical procedures.

Table 1. Student Evaluations (proportion graded Outstanding or Good)

Categories:	2000	2001	2002
Overall quality	95	97	97
Well organized	86	99	92
Appropriately paced	88	98	100
Course well integrated	93	100	95
Emphasized clinical relevance of basic concepts	95	100	100
Course materials were helpful	70	74	73
Exam reflected important aspects of course	86	94	91

Lectures	56	53	34
Small groups: Workshops/practice sessions, stations	97	100	100