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The surgical clerkship: a contemporary paradigm

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ABSTRACT

Background: Traditional surgical clerkships have been composed of hospitalized patients, usually in academic centers, daily resident interaction, periodic attending rounds, assigned texts, and a lecture format. However, traditional clerkships do not reflect the current changes in learning theory nor the economic realities of today's surgical practice. Initiated in 2001, the allopathic Florida State University College of Medicine provided an opportunity to create a contemporary surgical clerkship.

Methods: At each of 6 regional campuses, clerkship students served as apprentices to a board-certified community surgeon. In addition, during weekly meetings with the student, a campus-specific Clerkship Director administered a centralized curriculum with defined objectives and competencies. Contact with residents was minimal, and lectures were not used. Students were free to choose from suggested texts or to use alternative learning sources. An electronic data system monitored patient contacts. Evaluations of the students' clinical performance are 360 degrees.

Results: To date, 450 students have graduated. No significant differences were found between campuses for the following: types of patients encountered, U.S. Medical Liscensure Examination Step 2 Clinical Knowledge and Clinical Skills scores, internal Objective Structured Clinical Examination results, or National Board of Medical Examiners scores ($P > 0.05$). The national examination metrics have been met or exceeded. On the recent anonymous Association of American Medical Colleges Graduation Questionnaire survey, the students rated the surgery clerkship as the best course in the school. Overall, 23.3% of graduates have chosen some aspect of surgery as a career.

Conclusions: A quality clerkship in surgery can be provided using a nontraditional community-based system, with as many as 6 distributed campuses. Also, the distributed campus model does not lead to inequality in learning opportunities, surgical experiences, or basic surgical knowledge. Third, documentation of campus comparability is markedly assisted by electronic monitoring. Fourth, the tutorial model offers, at the very least, a comparable learning experience and is strongly supported by both students and the community surgical faculty. Finally, student learning and acquisition of a fund of surgical knowledge in this system has been confirmed by national metrics.

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1. Introduction

Traditional surgical clerkships have been composed of a variable mixture of hospitalized patients, usually in academic centers, daily resident interaction, periodic attending surgeon rounds, and assigned texts, augmented by lectures. Most of the surgeons currently in practice in America, and virtually all those surgical academicians responsible for surgical education, have been trained within this system. It could be said that this system of surgical education for students has served us well since its introduction in the early 1900s.

Nevertheless, this traditional system of clerkship teaching has certain limitations that are becoming more widely appreciated. In the 1990s, significant changes in the practice of medicine arose and have intensified with time [1]. Increasing emphasis on outpatient medicine and short-stay care has wrought corresponding changes in medical education and a decrease in the numbers of patients available for teaching in academic institutions [2]. Moreover, full-time academic faculty interaction with students in the traditional clerkship system has become increasingly limited by the shifting exigencies of academic faculty responsibilities. Decreasing external financial support has resulted in an increasing need for academic departments to become self-supporting. In turn, this has led to mandates for full-time surgical faculty to fund research and to increase practice income, while continuing to maintain a high research profile. This has placed great pressure on teaching, the third leg of the academic "stool." All too often, this shift in priorities for the academic faculty has resulted in delegation of the responsibility for student teaching to junior members of the surgical house staff. Currently, it is estimated that more than 50% of surgical clerks are taught by residents [3,4]. Thus, it is likely that the scope of the educational experience in surgery has been adversely affected by the relative inexperience of the available teachers [5]. Compounding the change in faculty priorities are the ever burgeoning numbers of students entering into medical school and the earlier introduction of clinical experiences in years 1 and 2. As more students have entered the system, the already thin teaching faculty has been stretched even further [6].

Concerns regarding the relevancy of clerkship education by the traditional system have also been raised regarding the patient mix in academic institutions, in that patients in these institutions represent referral of less common surgical conditions [5,6]. Because academic surgical practice does not mirror those common surgical conditions encountered in everyday community practice, most clerks, who will be entering fields other than surgery, will have a disadvantage because of their lack of experience with the more common surgical problems they are most likely to encounter in their future practice.

When Florida State University College of Medicine (FSUCOM) accepted its first students, clinical curricula did not exist and an opportunity arose to restructure the traditional surgical clerkship by improving conditions for student learning and by designing a curriculum more relevant to contemporary community practice.

2. Institutional Model

The FSUCOM, the first new allopathic medical school in 25 years, and the first of the 21st century, was established in June 2000 by the Florida Legislature, with the mission of serving elderly, disadvantaged, and underserved Floridians. The FSUCOM welcomed its first 30 students, the class of 2005, in 2001. Provisional Liaison Committee on Medical Education accreditation was given in 2002, its first full accreditation in 2005, and reaccreditation in 2011 for an 8-y term.

The college was designed as a community-based medical school, in which the students spend their first 2 years taking basic science courses on the main campus in Tallahassee and are then assigned to 1 of 6 regional medical school campuses for their third and fourth year of clinical training. The original regional campuses opened in Orlando, Pensacola, and Tallahassee in 2003, followed by Sarasota in 2005. Additional campuses in Daytona Beach and Fort Pierce were activated in 2007. A clinical faculty of more than 1,700 community physicians throughout the state has been recruited to assist in the clinical training of our third- and fourth-year students.

The FSUCOM does not own or operate a health sciences center, because the clinical training for its students is provided at healthcare facilities and doctors' offices in the 6 designated communities. The college has affiliation agreements with 90 hospital systems, surgery centers, and health departments at its 6 regional campuses. It also has affiliations with residency programs at a few of the campuses. The FSUCOM Dean, the Senior Associate Dean for Medical Education and Academic Affairs, a Director of Community Clinical Relations, and the regional Campus Deans maintain ongoing relationships with our hospital partners. A key administrator from each clinical affiliate serves on the community board of the respective regional campus. Representatives from several of the hospital affiliates also serve on the central campus dean's advisory council.

An important internal evaluation of students' clinical skills uses multistation formative and summative objective structured clinical examinations. Students who do not perform at the developmentally appropriate level on these evaluations are provided individual counseling and remediation. Students' participation in small group sessions, encounters with standardized patients and simulators, and clinical performance in the preceptor program and on clerkships are all components of the overall assessment of our students.

3. Surgical Curriculum

The surgery clerkship at the FSUCOM has taken advantage of the known learning advantages offered by a tutorial system [7]. At each of our 6 campuses, clerks are assigned 1-on-1 to a board-certified community surgeon, carefully chosen for patient mix, desire to teach, and reputation within the community. Each member of the community surgical faculty must meet the requirements for faculty development before and after a student is assigned. Students serve as an