

An Advanced Specialty Training Program in Anesthesiology: A Special Educational Fellowship Designed to Return Community Anesthesiologists to Clinical Practice

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We describe a program for community anesthesiologists designed to evaluate clinical skills and provide additional training in the latest technologies in anesthesiology. This educational program was established for previously trained anesthesiologists who require additional training for either remedial purposes or because of a prolonged absence from practice. All enrollees had an active, unrestricted California medical license and malpractice insurance. Approximately half of the participants had been in active practice at the time of enrollment; the remainder had been away from practice from 1 to 9 yr. The first 24 graduates of the fellowship spent an average of 9 wk (range, 3–24 wk) in the program to meet their individualized goals. Graduates were surveyed an average of 15 mo after completion of the fellowship. All respondents indicated that they would enroll in the program again; 80% indicated they learned new technical skills, 73% stated that the fellowship introduced them to a greater variety of drugs, and 50% indicated that the fellowship changed their approach to patient care. This program may serve as a model for any discipline of medicine and is particularly relevant for those with a substantial component of technical skills expected of its practitioners.

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Anesthesiology, with its focus on technology, undergoes continual changes in practice patterns as new drugs are developed and new technical advances are made. What is being taught anesthesia residents today is not the same as what was taught in the 1970s and 1980s. We addressed the issue of upgrading previously trained physicians' knowledge and technical skills to those of current graduates by developing the program described below.

ADVANCED SPECIALTY TRAINING PROGRAM (ASTP)

The ASTP was created within the Department of Anesthesiology at the University of California, Los Angeles (UCLA) Medical Center in 1994 ([http://](http://www.anes.ucla.edu/dept/fellowship.html)

www.anes.ucla.edu/dept/fellowship.html). The objective was to address the perceived need for a program that could provide a detailed evaluation of a community anesthesiologist's academic and clinical skills and augment those skills where appropriate through didactic and clinical teaching. The program is geared toward retraining anesthesiologists who have been out of practice or whose skills are in question. The UCLA Human Subjects Protection Committee has approved the disclosure of the data included in this report.

APPLICATION PROCESS

To be eligible for the program, an applicant must document graduation from an allopathic or osteopathic medical school, have completed training in anesthesiology from an Accreditation Council for Graduate Medical Education-accredited institution, have a valid California medical license, and current medical liability insurance. If the candidate has a history of substance abuse, enrollment in or completion of a state-approved diversion program is required. The application process requires completion of an application form, submission of a curriculum vitae, and payment of an application fee of \$525. This fee is

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Table 1. Evaluation Document for ASTP Fellows

Date:
 To: Specific Faculty
 From: C. Philip Larson Jr., MD
 Re: Performance Evaluation of Dr. X

This memo is to request that you provide me with an evaluation of the performance of Dr. X. This information will be used to prepare a letter that documents his performance while in the ASTP. You may have only supervised a few of Dr. X's cases, but each interaction needs to be evaluated. I have prepared an outline form that you are welcome to use, marking the specific category of evaluation either satisfactory (S) or unsatisfactory (U). If you cannot make an evaluation, please leave it blank. Also, I have left space for comments if you wish to make them. Please send your response ASAP.
 Thank you for your help and cooperation.

PREOPERATIVE PREPARATION AND PATIENT EVALUATION	S	U
INTRAOPERATIVE ANESTHETIC MANAGEMENT	S	U
RECOVERY ROOM CARE AND POSTOPERATIVE FOLLOWUP	S	U
TECHNICAL SKILLS (please indicate any special procedures performed)	S	U
RECORD KEEPING ABILITY	S	U
PERFORMANCE IN EMERGENCY SITUATIONS	S	U
JUDGMENT	S	U
RAPPORT WITH PATIENTS, SURGEONS, ANESTHESIA COLLEAGUES	S	U
OVERALL CLINICAL COMPETENCE	S	U
SIGNATURE _____		
DATE _____		

ASTP = Advanced Specialty Training Program

not refundable but is applied to the program tuition, which is \$1000 per month of training. These funds are used to cover the administrative costs of the program. Fellows are responsible for arranging local housing.

Once the ASTP Fellow begins the program, individualized goals are established to meet identified needs. The program length varies for each Fellow based on the time required to satisfactorily meet their specific objectives. At enrollment the Fellow is given a blank copy of the evaluation form used by the faculty (Table 1).

Enrollees are encouraged to bring a portable computer or personal digital assistant with them for recording data daily regarding their clinical activities. The Fellows are expected to keep case logs of each anesthetic that they provide and submit the data to the Director at the conclusion of the fellowship. These data are used to prepare letters of reference on conclusion of the program.

EDUCATIONAL PROGRAM

Initially, the Fellow is assigned primarily to work with the ASTP Director, usually on a 1:1 basis. Once the Fellow is oriented to the environment and the ASTP Director is confident that the Fellow can train effectively with other faculty, educational experiences are broadened. During this time, the faculty-to-Fellow teaching ratio is never more than 1:2. The assignments begin with anesthetics for orthopedics, urology, general surgery, head and neck surgery, and gynecology. With increased experience, participants may be assigned to provide more complex anesthetics for neurosurgery, thoracic, pediatric and/or transplantation surgery, and/or be assigned to ambulatory surgery. Most Fellows also spend one or more weeks providing

obstetrical anesthesia. They are given opportunities to demonstrate proficiency in managing difficult airways including use of laryngeal mask airways, intubating catheters, and fiberoptic intubation. They are expected to demonstrate proficiency in all aspects of invasive monitoring, including pulmonary artery catheterization. Emphasis is placed on use of syringe pumps, use of newer drugs, and prevention and management of hemodynamic disturbances. Fellows are also given 2.5 h/wk of didactic education and one half-day of crisis management using a full-scale, high-fidelity simulator, all of which are part of the continuing educational programs for anesthesia residents. The multiple demands on a Fellow's time do not allow us to provide more than one or two simulation sessions while in the program.

FELLOW EVALUATION

The criteria used to evaluate the Fellow are identical to those used to evaluate residents for graduation. The evaluation begins with an assessment by the ASTP Director, who works with the Fellow on a one-to-one basis until he deems the Fellow's performance satisfactory. At this point the Fellow is assigned to other services to broaden the Fellow's clinical experiences. These experiences are selected based on the Fellow's expectations of their work assignments when they resume independent practice. Rotations on other services increase the number of faculty providing independent evaluations. At the conclusion of the fellowship, the participating faculty members complete a summary evaluation of the Fellow's performance (Table 1) by assigning assessments of satisfactory or unsatisfactory in the areas noted in addition to comments. A Fellow is expected to remain in the

Table 2. Demographics of ASTP Graduates

American Board of Anesthesiology Certification	Yes	18 (72%)
	No	7 (28%)
Age (yr)	31–40	3 (12%)
Mean: 49	41–50	14 (56%)
Median: 48	51–60	5 (20%)
Range: 34–68	61–70	3 (12%)
Duration of anesthesia practice (yr)	0–5	4 (16%)
Mean: 14	6–10	5 (20%)
Median: 12	11–15	6 (24%)
Range: 0–30	16–20	4 (16%)
	21–25	3 (12%)
	26–30	3 (12%)
Duration away from anesthesia (yr)	None	11 (44%)
Mean, Median: 2	1–5	11 (44%)
Range: 0–10	6–9	3 (12%)
Time in ASTP (wk)	<4	1 (4%)
Mean: 9	4–8	10 (40%)
Median: 10	9–12	6 (24%)
Range: 3–24	13–16	7 (28%)
	17–20	0 (0%)
	21–24	1 (4%)
Number of cases supervised	<50	8 (32%)
Mean: 88	51–100	5 (20%)
Median: 95	101–150	10 (40%)
Range: 15–174	>150	2 (8%)

Values are n (%).

ASTP = Advanced Specialty Training Program.

program until he/she meets the same level of clinical competence as a graduating resident in the clinical services for which training has been received. The ultimate goal for all Fellows is to be able to provide safe, competent, effective anesthesia services within the scope of their practice.

At the conclusion of the fellowship, a letter is prepared detailing the duration of the fellowship, types of procedures for which anesthetic care was provided, number of patients anesthetized, patient's ages and ASA physical status, anesthetic drugs and techniques used, and any complications that occurred. This letter is given to the Fellow and any designate of his/her choice. No diploma or other type of certificate is provided.

RESULTS

Twenty-five Fellows have participated in the program as of 2005 (Table 2). Eleven others completed the application process but did not enroll. One Fellow completed the program twice because of a 4-yr hiatus from anesthesia practice. Eighteen of the 25 Fellows were diplomates of the American Board of Anesthesiology before program entry while one passed the oral examination during the program. The majority of Fellows were from California, although Fellows from Arizona, Nevada, New Jersey, Texas, Utah, and Washington have enrolled.

Eleven of the Fellows were actively practicing anesthesia at the time of enrollment. For 7 of the 11, the reason for enrollment was concern by a practice

group, hospital or both regarding their clinical competency. For all 7 Fellows, the mandating body identified the area(s) of concern, but did not define the curriculum to be provided. Issues generally centered on adequacy of technical skills, ability to exercise sound judgment in a stressful environment, or ability to deal with complex anesthetic issues. The remaining 4 Fellows in active practice enrolled because they felt a need to upgrade their clinical skills. Fourteen Fellows had been away from active clinical anesthesia practice for 1.5 to 9 yr. Fellows had terminated anesthesia practice for a variety of reasons including serious illness and time spent in non-medical fields or working in other medical disciplines.

The time spent in the ASTP averaged 9 wk (range, 3 to 24 wk). Time in the program depended primarily on performance and the number of clinical experiences (i.e., obstetric, thoracic, etc.) they desired. Given the small number of participants, we were not able to distinguish any differences in program duration based upon the Fellow's age, time away from practice, or history of substance abuse.

The number of cases in which the Fellows participated ranged from 15 for a Fellow enrolled for 3 wk to 174 cases for a Fellow enrolled for 24 weeks. Fellows averaged 7 to 8 cases per week. All of the Fellows administered anesthesia to patients whose ASA physical status was III, IV, or V, and all anesthetized one or more patients designated as an emergency. The minimum number of faculty supervisors per Fellow was 5 and the maximum was 23. The simulator became operational 1 yr after the ASTP was started; 21 of 25 Fellows received that experience.

Twenty-four Fellows achieved satisfactory clinical competence evaluations by the faculty and successfully completed the program. One Fellow was terminated after 4 wk in the program because of continuing unsatisfactory performance with minimal likelihood of improvement.

To evaluate the impact of the ASTP on their subsequent clinical practice, each Fellow completed a one-page survey (Table 3). Responses were received from 22 of the 25 Fellows. Most of the Fellows had no suggestions for improvement of the program. A few suggested that an orientation manual would be helpful, and this has been implemented. Another recent addition to the educational program is the requirement that Fellows view the videotaped orientation lectures prepared for the incoming resident staff.

DISCUSSION

Continuing medical education throughout a lifetime of medical practice is essential for maintaining clinical competency. Updating the skills of anesthesiologists takes less time than training medical school graduates new to the field. However, there are few programs for this purpose (1). There is an abundance of programs for meeting state continuing medical education requirements (2). Most are in the form of

Table 3. UCLA Advanced Specialty Training Program Survey

Question	Results
1. How long has it been since you completed your Fellowship?	Mean, 15 Range, 1–39 mo
2. Type of practice.	Hospital, 14; ambulatory facility, 0; both, 7
3. Are you doing anesthesia full time or part time?	Full, 14; part, 5
4. Were the preoperative telephone calls with the faculty educational?	Yes, 21; no, 1
5. Did the Fellowship enhance your academic knowledge of anesthesia?	Yes, 21; no, 1
6. If yes, has that knowledge been useful in your practice?	Yes, 21; no, 0
7. If no, why not?	
8. Did the Fellowship improve existing technical skills?	Yes, 21; no, 0
9. Did you learn any new technical skills during the Fellowship?	Yes, 16; no, 4
10. Did the Fellowship introduce you to the use of a greater variety of drugs?	Yes, 16; no, 6
11. Did the Fellowship change the way you use standard anesthetic drugs?	Yes, 15; no, 6
12. Did the Fellowship change your approach to patient care?*	Yes, 11; no, 11
13. Did the Fellowship experience validate the quality of the practice patterns that you had before entering the Fellowship?	Yes, 16; no, 5
14. Was the time in the Fellowship too short, too long, or just right?	Short, 1; long, 0; just right, 20
15. Is your practice different now than before taking the Fellowship?	Yes, 16; no, 5
16. If you had it to do over again, would you have enrolled in the Fellowship?	Yes, 21; no, 0
17. Is there anything that I should do to make the initial orientation/adaptation to the Fellowship easier?	Orientation manual

UCLA = University of California, Los Angeles.

* Yes responders cited improved documentation, improved assessment of neuromuscular blockade, better understanding of the anesthesia machine, and avoidance of operative hypothermia.

weekend meetings, or weeklong “updates,” typically held in hotels or resorts. Courses are also available that focus specifically on teaching a new technology such as transesophageal echocardiography. Our program differs from those described in the literature in several ways. First, it features a flexible curriculum that focuses on individual needs rather than a fixed curriculum. Second, the program features direct contact using patients rather than computers, animals, or models. Existing skills are observed and, where deficient, corrections are made. In addition, important new skills are developed. The most common new skill is fiberoptic intubation for the management of the difficult airway. Fiberoptic intubation was not part of the anesthetic curriculum for most enrollees when they were in residency training. Developing this skill has been one of the most popular and rewarding features of the program. Another has been the use and interpretation of transesophageal echocardiography as a tool for caring for patients with cardiovascular disease undergoing noncardiac surgery. Third, as a result of intense and continuous supervision, areas needing improvement are quickly identified and corrected. Fourth, the location of the program in a tertiary care hospital results in many complex cases; many patients have a difficult medical or surgical history (i.e., prior organ transplant), or the proposed surgical procedure is new or complicated. By the completion of the program it is doubtful that a Fellow would encounter anesthetic problems that he/she had not faced

or discussed while in training. Fifth, the Fellows undergo daily practical oral examinations while providing patient care and attend weekly didactic instruction. In many cases these interactions rekindle an interest in knowledge acquisition. Sixth, the use of the simulator exposed the Fellows to crisis management and allowed them to reflect on and discuss their leadership and critical thinking skills. These sessions lacked a formal assessment, as the number of scenarios encountered was not sufficient to permit a global evaluation. Finally, the training emphasizes aspects of anesthesia practice that enrich both the specialist and the specialty. Many of the Fellows wrote in their evaluation of the ASTP that they had never experienced the appreciation of patients for the preoperative telephone call and had forgotten the joys of making postoperative rounds beyond the recovery room.

Review of the literature did not identify any comparable program in anesthesia elsewhere in the United States. There is a program at the University of California, San Diego called the Physician Assessment and Clinical Education program (www.paceprogram.ucsd.edu), which is designed primarily for physicians in any discipline who are perceived to be having problem(s) with clinical care or who are referred to the program by the Medical Board of California. The Physician Assessment and Clinical Education program involves a 2-day assessment of the individual, followed by the development of a didactic education program and a week spent

observing clinical practice. There is no direct contact with patients while in the program.

Methods for assessing the clinical performance of physicians once they have completed their training and have successfully completed one of the 24 specialty examinations offered by the American Board of Medical Specialties are very limited. Standards of performance are illusive, and outcome-based or process-based measures of performance are fraught with problems (3). Direct observation is "the most important method of evaluating trainees' clinical skills" (4). Others have suggested "...we can move assessment back to the real world of the workplace as a result of the development of less standardized, but nevertheless reliable, methods of practice-based assessment" (5).

Although the ASTP is an effective method for assessing clinical performance, it may not be applicable to large numbers of physicians for reasons of cost and lack of facilities and personnel to implement the program (1). Furthermore, it is reasonable to question whether completion of the ASTP results in a sustained improvement in clinical competence. As with any educational program, it is difficult to document that the experience enhanced clinical skills or produced a sustained improvement in clinical care. An indirect measure of the value of the program is the fact that no hospital or medical group has expressed continued reservations or concerns about a Fellow's clinical competence after he/she has completed the program.

The public health aspect of ASTP is threefold. First, it allows the clinician whose knowledge or clinical skills are in question to have them evaluated and, where deficient, upgraded to the current standards established by experienced educators. Evidence indicates that the public wants the medical profession to do more to assess the clinical competence of practicing physicians than is currently the case (6). Second, it

allows physicians who have left medicine for whatever reason to re-enter clinical practice safely. This is particularly important in anesthesiology, a specialty that lacks sufficient numbers of trained physicians to meet the current or projected clinical needs. Third, it provides a mechanism for health care facilities to credential applicants for medical staff privileges in critically needed specialties using an independent evaluation of their competency.

In summary, we believe that the ASTP at UCLA provides a valuable service to individual anesthesiologists, to the specialty, and to patients by providing previously trained anesthesiologists access to updated training and education that allow them to return to the mainstream of clinical practice. This program may also serve as a model for much needed, similar programs in other disciplines and in other parts of the United States.

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