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Core Program Education: Tracking the Progression Toward Excellence in an Anesthesiology Residency Program Over 60 Years

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ABSTRACT

The Ochsner Clinic Foundation Anesthesiology Residency Program is the oldest continuously accredited anesthesiology residency program in the state of Louisiana. As the American College of Graduate Medical Education has developed residency training requirements, so has the Ochsner training program evolved from a structure- and process-based program to an outcomes-based program. The author, associated with the program since 1983, reviewed Program Information Forms from 1971 to the present to track the evolution of the anesthesiology residency training program. The Accreditation Council of Graduate Medical Education demanded allocation of resources to residency training and mandated the demonstration of outcomes of training. The Ochsner Clinic Foundation Anesthesiology Residency Program has kept pace with these demands. The trend for graduate performance on written examinations has been upward. Fifty years ago, graduates practiced locally, but graduates now practice throughout the United States. Many completed fellowship training at increasingly higher profile institutions.

The Ochsner Anesthesiology Residency Training Program, one of the oldest in the Gulf South, has been in continuous existence since 1947. Since the inception of the program, more than 180 anesthesiologists have completed training at Ochsner (Ochsner Graduate Medical Education and Knowledge Management, written communication, July 2010). As graduate medical education evolved during this time, so did anesthesiology training at Ochsner. The program kept pace with externally imposed requirements for training during a period when some anesthesiology training programs closed. Information recorded in Program Information Forms (PIFs) and correspondence with the Residency Review Committee for Anesthesiology (RRC for Anesthesiology) dating to 1971 provide insight into how the program adapted and evolved during the years.

Ten chairmen have overseen training at Ochsner (Table 1). Early chairmen held their posts for as long as 17 years. More recently, the tenure of chairmen has been shorter, around 4 years in length, possibly reflecting the degree of challenge encountered by recent chairmen.

In 2003, the RRC for Anesthesiology modified its standing on directorship of anesthesiology training programs. Until that time, the department chairman, by definition, also served as the residency program director (PD). In 2003, the RRC for Anesthesiology gave the chairman the option to delegate the role of PD. That provision made it possible for PDs to assume the oversight of increasingly complex anesthesiology residency training programs under the auspices of chairmen who were charged with running increasingly complex departments of anesthesiology. At Ochsner, Dr Orin F. Guidry appointed the first anesthesiology PD in 2003. PDs who were not department chairmen were able to receive direct communications from the Accreditation Council for Graduate Medical Education (ACGME), RRC for Anesthesiology, and the American Board of Anesthesiology. These direct communications assured that PDs received timely information, enabling their effectiveness.

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ANESTHESIOLOGY TRAINING AT THE BEGINNING

During the earliest years of the Ochsner anesthesiology residency program (1947-1953), 3 anesthesiologists were on staff. Anesthesiology training was described as an apprenticeship[1] that typically consisted of some initial training in surgery followed by 1 year of anesthesiology training. In 1953, the RRC for Anesthesiology accredited the Ochsner anesthesiology training program under the direction of Dr George Grant. Thirty anesthesiologists, including 2 women,

Table 1. Anesthesiology Department Chairmen and Program Directors From 1947-Present

Physicians	Titles Held	Years Served
George Grant, MD	ADC/PD	1947-1960
Francis LeTard, MD	ADC/PD	1960-1968
James Arens, MD	ADC/PD	July 1968-1972
Tom Martin, MD	ADC/PD	July 1972-1974
Samuel Welborn, MD	ADC/PD	1975-1982
James R. Douglas, MD, PhD	ADC/PD	1982-1999
Orin F. Guidry, MD	ADC/PD[a]	1999-2004
Alan Santos, MD, MPH	ADC	2004-2008
W. David Sumrall, MD	Interim ADC	2008-2009
Armin Schubert, MD, MBA	ADC	2009-present
Robin B. Stedman, MD, MPH	PD[a]	2003-present
David Broussard, MD	Deputy PD	2005-present

Abbreviations: ADC, anesthesiology department chairman; PD, program director.

[a] In 2003, the PD function was split off from the ADC role into its own position. From that time, Dr Guidry served only as ADC and Dr Stedman assumed the PD position.

trained during Dr Grant's tenure as chairman (1947-1960).[2] By the time of his retirement in 1968, however, the program had apparently languished, and the number of trainees had declined.

Dr James Arens reinvigorated the training program after he became chairman in 1968. During Dr Arens' tenure at Ochsner, the RRC for Anesthesiology decreed that programs would not be approved unless they had the educational resources to provide 3 years of training beyond a preliminary year, although programs could offer a 2-year option (Program Information Form, Site Visit, October 14, 1971). Dr Arens labored to organize a specialized year of training for residents. He also arranged a didactic affiliation with Charity Hospital that allowed trainees to attend 10 hours of weekly instruction provided by Dr John Adriani. When reviewed in 1971, the program had 7 staff and 3 residents in training and was granted a 2-year accreditation. Dr Arens remained at Ochsner for 6 years; his vision and energy followed him to his eventual leadership of the RRC for Anesthesiology.

STRUCTURE-BASED TRAINING

In the 1970s and through the mid-1980s, graduate medical education focused on structure and process as determined by the Liaison Committee on Graduate Medical Education, later the ACGME. Anesthesiology training typically comprised a preliminary year and 2 clinical anesthesiology years with an optional fourth year. The Ochsner anesthesiology training program assumed this structure. Trainees had to document completion of a variety of case types, including cases involving cardiopulmonary bypass. Two months were spent in the intensive care unit. There were no formal subspecialty rotations. There was no formal requirement for research although opportunities had to exist. During this period, Drs Welborn, Martin, and Douglas served as chairmen and PDs. Approximately 60 more anesthesiologists trained at Ochsner, including 11 women.

The RRC for Anesthesiology reviewed the program in 1973 when Dr Martin became chairman. The program, with 7 staff and 4 residents, offered self-contained didactics, established after determining that the Charity didactic affiliation was impractical and disruptive to the daily work schedule (Program Information Form, Site Visit, August 21, 1973).

Under Dr Welborn, the RRC for Anesthesiology reviewed the program in 1975, 1978, and 1982, and it received 3-year accreditation cycles each time (Program Information Form, Site Visit, December 1, 1975; Program Information Form, Site Visit, September 18-19, 1978; Program Information Form, Site Visit, April 20, 1982). Chief issues in these reviews were lack of space, lack of a research program, and lack of cohesiveness of the specialized year. Also of concern in 1982 was insufficient resident exposure to regional anesthesia. By 1985, however, resident opportunities to perform neuraxial anesthesia were in abundance. Epidural anesthesia and analgesia were commonly performed in labor and delivery, caudal analgesia was used in adult rectal and pediatric urologic surgery, and the postoperative pain management service boasted a daily census of as many as 20 in-house patients receiving epidural preservative-free morphine. Axillary blocks were offered for hand surgery.

The RRC for Anesthesiology site visit in 1985 resulted in the finding that the departmental structure to support the residency program was insufficient. The program received 7 citations, including inadequate opportunity for preoperative evaluation and consultation (residents did not know their case assignments until the morning of surgery), unacceptable

didactics, and an ineffective clinical competence committee (ACGME written correspondence, May 8, 1986). The residency program, with 10 trainees and 13 staff anesthesiologists, was put on probation. In response, several committees were formalized: the Clinical Competence Committee, the Resident Education Committee (that created a new core curriculum), the Resident Selection Committee, and the Quality Assurance Committee.

The third year of clinical training for anesthesia residents became mandatory in 1987. This additional year necessitated further development of the curriculum to make senior-level training distinctly different from junior-level training. At Ochsner, the role of Staff Residency Program Coordinator was created, and much of the coordinator's attention focused on developing the didactic curriculum. The RRC for Anesthesiology reviewed the program again in 1987. The site visit resulted in a 3-year accreditation, at which time the RRC for Anesthesiology suggested introducing subspecialty block rotations and developing staff subspecialty interests and research (ACGME correspondence, November 19, 1987).

The requirement for demonstrable subspecialty rotations posed a challenge for the Ochsner program that resided in a small department whose anesthesiologists all performed anesthesia as needed for all types of cases (pediatric, cardiac, regional, obstetric, neurologic, etc). In July 1989, the department met the requirement by assigning a resident for 1 month at a time to subspecialty cases of 1 type. With this huge change in training, the clinical directors (anesthesiologists charged with distributing the anesthesia workforce as needed each day) followed a master rotation schedule when making daily assignments. They assigned each resident to a room where cases of his or her subspecialty block were to be performed. Any 1 of 12 staff could supervise the resident during the month, so the resident could learn from a large number of staff but concentrate on a particular type of anesthesia. Previously, residents were assigned cases at the discretion of a clinical director who was often different each day and who required no formal accounting for the curriculum.

To develop faculty subspecialty expertise, the department pursued the hiring of anesthesiologists with some formal training in chronic pain, pediatric, and obstetrical anesthesiology. Several of the existing faculty members pursued board certification in critical care.

The RRC for Anesthesiology visited the anesthesiology residency program again in November 1990 (Program Information Form, Site Visit, November 6, 1990). The 18 residents in clinical anesthesia training were taught by 16 anesthesiology staff. Once again, the review focused on the structure of the program. Reviewed anesthesiology programs had to enumerate available anesthesia machines, monitors, books, and journals. At the time of review, the department was handling almost 14,000 anesthesia cases per year, with the residents caring for 40% of the cases. Upon completion of the clinical anesthesia (CA) 1 and CA 2 years, residents had performed on average 450 general anesthetics, 350 epidurals, 25 spinals, 40 nerve blocks, and 25 intracranial cases and had spent 2 months in the critical care unit. Ochsner had an active acute pain service, and a resident rounded twice daily to manage all hospital patients who were using patient-controlled analgesia or who were on epidural preservative-free morphine. The chronic pain service managed about 900 cases per year; 50% received epidural steroid injections, 10% underwent intercostal nerve blocks, 5% stellate ganglion blocks, 7% epidural sympathetic blocks, and 1% celiac plexus blocks. Most of these procedures were performed in an anesthesia cubicle (a physical location in proximity to the operating room [OR] readied with anesthesia equipment) and were worked in around the OR schedule. Access to and use of fluoroscopy were limited.

In 1990, staff were not required to stay in house on call but had a 20-minute response time. The first duty of the day for the staff on call was to present a resident didactic lecture. Two residents were on call: A junior resident stayed in house, and a senior resident took call from home. Junior residents were introduced to call in the fourth month of clinical training. The senior resident was called in for placement of a labor epidural, a procedure that staff rarely directly supervised.

Development of research had been a concern at the time of the 1987 RRC site visit. Subsequently, the department recruited and hired a research staff member whose duties were 50% clinical and 50% research. A Research Advisory Committee was formed and charged with approving resident research. By completion of training, residents were instructed to submit for publication a case report, review of literature, or report of a clinical investigation. The bibliography of scholarly activity in the 5 years leading up to the 1990 RRC site visit contained 41 publications by 7 faculty. However, no residents were listed as authors. Residents did participate in a journal club that was held quarterly, usually in a staff home.

The residency was granted a 5-year accreditation; it was cited for lacking a formalized clinical scientist track, which would be mandatory by January 1992. The site visit report also noted that the OR scheduling process did not allow for resident consultation with staff supervisors for advance planning because the

staff supervisors were not identified until the morning of surgery.

DIRECTION OF CRITICAL CARE SHIFTS TO PULMONOLOGISTS

During the 1980s, the critical care unit, which Dr Arens had started,[1] remained under the directorship of the Department of Anesthesiology. Surgical and medical staff members were primary caregivers for their patients, but anesthesiologists supervised the respiratory therapists managing the mechanical ventilators. All arterial blood gas measurements were reported to an anesthesiology resident or staff. Anesthesiologists saw all patients twice daily. By the mid-1990s, the number of critical care patients outstripped the number of beds in the critical care unit adjacent to the OR, and a second unit was built 6 floors up from the OR suite. Staffing the remote location, along with an increasingly busy operatory, surpassed department resources and resulted in a simultaneous effort on the part of surgeons and internists to manage their own patients' ventilators. An institutional decision shifted oversight of the critical care unit from the Department of Anesthesiology to Pulmonary Medicine. The didactic program for critical care also shifted from the Department of Anesthesiology to Pulmonary Critical Care. As time went on, anesthesiologists were increasingly dissociated from patient care in the critical care unit.

Notification of the next RRC for Anesthesiology site visit came in April 1995. By then, the department consisted of 14 staff who worked in 20 ORs to train 21 residents. In an effort to improve efficiency, the didactic program had been confined to 1 day a week. The day began with a morbidity and mortality conference, followed by 2 hours of tutorials, and finally a chief resident conference. In the intensive care unit, bedside grand rounds were held weekly. An annual research conference was introduced as a vehicle for residents and staff to report their research. Four resident projects were accepted for presentation at national meetings. Staff produced 42 publications, but only 1 resident participated in a publication. Emphasis on the evaluative process in training programs was gaining importance. Evaluations of the program by residents, the residents by staff, and the staff by residents were required. At Ochsner, all supervising staff were required to evaluate all residents twice a year with respect to their character attributes and clinical performance as defined by the American Board of Anesthesiology. This semiannual evaluation was unpopular with staff who felt hard-pressed to recall the specifics of resident interactions during the preceding 6 months. The concepts of summative and formative evaluations were beginning to appear, but the department had not devised a formal approach to these.

The promised RRC site visit occurred in August 1995 (Program Information Form, Site Visit, August 28, 1995). Again, the program received a 5-year accreditation, but it was accompanied by 2 citations. The first citation noted that a number of faculty were trained in critical care but seemed to lack a role in resident critical care training, while the nonanesthesiologist's role was not described. The second citation involved the small number of publications indicating a minimal involvement in research. The RRC for Anesthesiology required a progress report in 4 months.

The progress report of June 1996 described a role for anesthesiology staff in a weekly critical care lecture series provided to anesthesiology residents. Two of the critical care anesthesiology staff were assigned periodic rounds with the nonanesthesiology critical care staff, 4 of whom were board certified in pulmonology and 1 board certified in infectious diseases. In response to the citation regarding research, the department allocated resources for a staff member to spend one-third of his or her time devoted to coordinating resident research, journal clubs, and staff development in research. The next RRC site visit was planned for May 2001.

OUTCOMES-BASED TRAINING

The next few years at Ochsner were tumultuous as leadership and direction of the multispecialty partnership were changing. A new chairman of Anesthesiology, Dr Orin F. Guidry, was appointed in August 1999. The operatory underwent a major expansion, which included the addition of an ambulatory surgery center. The anesthesiology department offices changed physical location twice. In July 2001, the physician-owned Ochsner Clinic and nonprofit Alton Ochsner Foundation and Hospital merged into 1 entity, Ochsner Clinic Foundation. Dr William Pinsky became Executive Vice-President for Academic Affairs and Designated Institutional Official for residency education. During these same years, another vitally important change was occurring in graduate medical education external to Ochsner: the inception of what was later to be known as the ACGME Outcome Project.[3] Graduate medical education now emphasized training in 6 general competencies and was making the transition from being structure and process based to outcomes based. The time course of the change was to occur during 11 years.

Under Dr Guidry's direction, numerous changes made to the residency program aimed to improve medical knowledge and professionalism. Dr Guidry, who had served as an oral board examiner, instituted

weekly mock oral examination sessions for the residents. He introduced a weekly key word conference that focused on a discussion of key words that Ochsner residents most commonly missed on the in-training examination. Journal club became a monthly event. An affiliated trauma rotation was arranged at the Louisiana State University Health Sciences Center. A rotation in transplant anesthesia was added. The institution adopted an electronic evaluation program that facilitated daily resident assessments and formative feedback based on the competencies. A program for academic remediation was set in place. Residents evaluated staff after didactic sessions. The academic project became better defined with options available for clinical or bench research. The Director of Molecular Therapeutics was given a joint appointment in the Department of Anesthesiology. In spite of efforts to increase scholarly activity, the department bibliography contained only 7 citations; however, 5 residents participated in these publications.

An RRC site visit projected for May 2001 actually took place in February 2003 (Program Information Form, Site Visit, February 3, 2003) and was conducted by a field representative rather than a specialist in anesthesiology. There were 15 residents in clinical anesthesiology training under 19 staff anesthesiologists. Dr Guidry, who realized that the program had never been formally assigned a resident complement, requested 6 positions per level. The program was granted 6 training positions per year, increasing the number of residents in clinical anesthesia training to 18. The training program received a 2-year accreditation cycle accompanied by 7 citations. Chief among these citations were the lack of investigative activity and publication among faculty, limited involvement of the department in critical care (in particular surgical critical care), superficial goals and objectives for rotations, lack of education of faculty and residents about the general competencies, and lack of organization of the teaching program.

In August 2003, Dr Guidry appointed Robin Stedman, MD, MPH, as PD. Faculty engagement in the ACGME Outcome Project became a major focus of the program. Goals and objectives were rewritten for the 6 competencies: medical knowledge, patient care, practice-based learning and improvement, communication and interpersonal skills, professionalism, and systems-based practice. Evaluations were similarly designed to assess performance with respect to the competencies. In 2004, Dr Guidry, who was about to assume the role of president of the American Society of Anesthesiologists, announced his intention to step down as chairman of the Department of Anesthesiology. The short accreditation cycle became one of the issues central to the nationwide search for the next chairman. In October 2004, Alan Santos, MD, MPH. succeeded Dr Guidry. An enormous expansion of the anesthesiology staff ensued to allow for the development of subspecialty sections in cardiovascular, pediatric, transplant, and regional anesthesia. The group grew to include 30 staff involved in residency training.

An RRC for Anesthesiology site visit was projected for September 2005. The PIF was sent to the site visitor, and the stage was set for a visit. However, plans changed after Hurricane Katrina hit New Orleans on August 29, 2005. Graduate medical education in the city of New Orleans was obviously impacted by the disaster. By grace and luck, the Ochsner campus remained intact, and the training programs at Ochsner were largely spared. In fact, Ochsner programs worked rapidly to absorb residents who were displaced from the other local programs at Tulane University School of Medicine and Louisiana State University Health Sciences Center. Ochsner Graduate Medical Education worked closely with the ACGME during this time to secure the transfer of residents for continued training in New Orleans. As part of the process, an emergency institutional site visit of Ochsner Graduate Medical Education occurred in January 2006. The RRC for Anesthesiology site visit was rescheduled to occur November 29, 2006 (Program Information Form, Site Visit, November 29, 2006). One requirement for the latter visit was an entirely new PIF, so this administrative project was begun anew.

When the 2006 RRC site visit was conducted, there were 20 residents enrolled in the program, a temporary increase in resident allocations in the aftermath of Katrina. Although the program had suffered some temporary setbacks with respect to surgical case volumes and the ability to offer a trauma rotation at the Louisiana State University Health Sciences Center in New Orleans, anesthesiology residents were able to catch up with all training requirements as needed. While 2 residents left the program, several more transferred into the program. Although 3 staff left in the aftermath of Hurricane Katrina, a number of anesthesiologists who had worked at local anesthesiology training programs joined the Ochsner group. The end result was enrichment of the program. Most significantly, an anesthesiology intensivist with strong research experience joined the program.

Dr Santos addressed the citations from the 2003 RRC for Anesthesiology site visit. To address lack of scholarly activity, Dr Santos developed a compensation incentive for scholarly activity. The department held regular research conferences and sponsored the

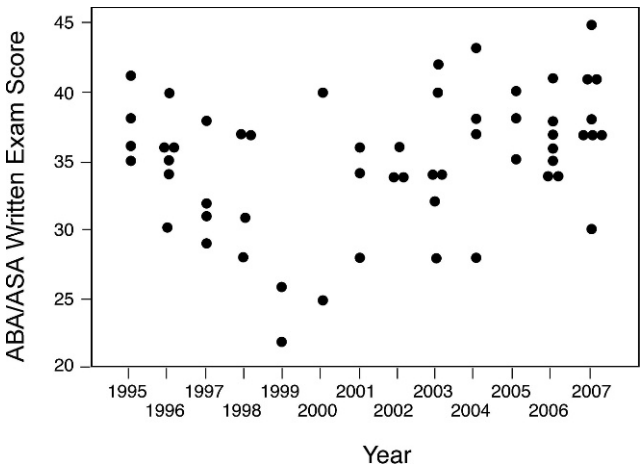

Figure 1. Graduate written examination scores (Part 1 Exam) by year.

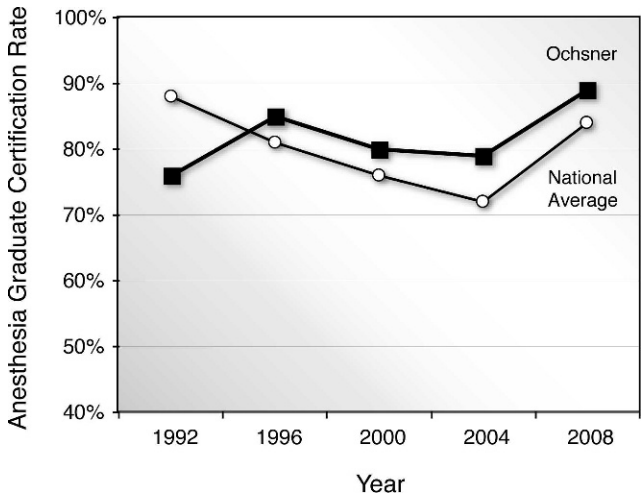

Figure 2. Ochsner graduate board certification rate versus the national average.

Gulf Atlantic Anesthesiology Resident Research Conference (GAARRC). The curriculum for scholarly activity was forged under the direction of Bobby Nossaman, MD, who came to Ochsner from the faculty of Tulane University School of Medicine.

Another citation, the lack of exposure of anesthesiology residents to critically ill surgical patients, was addressed by the formation of a Surgical Critical Care Consult Service. The service, which had been in the planning phase in 2005, was rapidly ushered in following Hurricane Katrina. An anesthesiologist intensivist became the director of the surgical intensive care unit, and anesthesiology residents became partners with surgery residents in a 3-resident team. By the next year, the team expanded to 4 members and became an admitting service with 24-hour coverage of patient care.

To improve organization of the training program, a deputy PD was appointed, and a skilled program manager was hired. The Resident Education and Clinical Competence committees were expanded to include more staff. A Curriculum Committee revised the didactic sessions. Tutorials were structured to be interactive, and separate sessions were introduced for junior-level and senior-level residents. An affiliation agreement with a local program provided simulation training for the residents. The department hosted numerous guests who lectured about teaching and developing competencies, and a visiting professor lecture series was implemented. A portfolio was prepared for each resident to track development of competencies. A department of chronic pain medicine was formed.

The department sought to validate the outcome of training by several means. Performance on the final written examinations was tracked (Figure 1). The board certification rate exceeded the national average

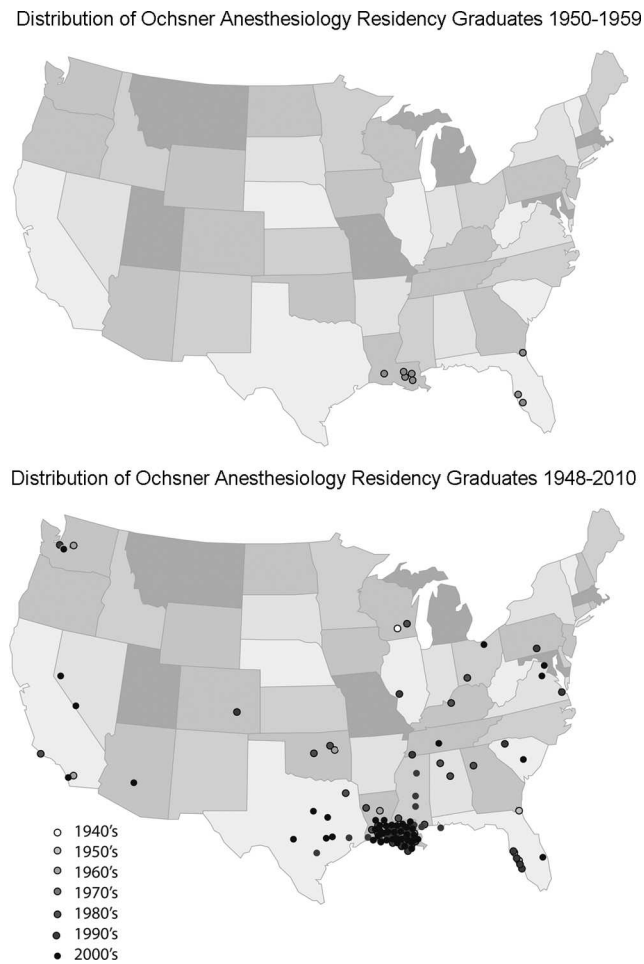

Figure 3. Distribution of graduates before 1960 versus distribution of graduates as of 2010.

Table 2. Fellowship Training Pursued by Anesthesiology Residency Graduates by Graduation Year

Graduation Year	Fellowship
2010	Cardiothoracic Anesthesia, Cleveland Clinic
	Pediatric Anesthesia, George Washington University
	Regional Anesthesia, Vanderbilt University
2009	Pain Medicine, Cleveland Clinic
2008	Pain Medicine, University of New Mexico
2007	Regional Anesthesia, Duke University
	Pain Medicine, University of New Mexico
	Cardiothoracic Anesthesia, Texas Heart Institute
	Obstetrical Anesthesia, Ochsner Clinic Foundation
2006	Regional Anesthesia, University of Iowa
	Cardiothoracic Anesthesia, Duke University
	Cardiovascular Anesthesia, Emory University (2)
2004	Pediatric Anesthesia, Boston Children's Hospital
	Regional Anesthesia, Virginia Mason
1999	Pain Medicine, Northwestern University
1998	Pain Medicine, Wake Forest University
1997	Cardiothoracic Anesthesia, University of Maryland
1990	Obstetrical Anesthesia, Brigham and Women's

(Figure 2). Employers and fellowship training programs were surveyed annually regarding the performance of Ochsner anesthesiology graduates with respect to competence. The distribution of graduating residents was plotted and had widened significantly since the program's inception (Figure 3). Graduates seeking subspecialty fellowship training were accepted at highly respected fellowship training programs (Table 2). Anesthesiology residents were attaining leadership positions such as Louisiana Resident Delegate to the American Society of Anesthesiologists (ASA), Secretary of the Resident Component of the ASA, and President of the Ochsner Fellows Association (the hospital's housestaff association). The new PIF indicated that 7 residents authored publications, and all residents were presenters at GAARRC by completion of training.

The efforts of the department were rewarded by a very favorable RRC assessment and a 4-year accreditation cycle. The efforts to enhance scholarly activity were recognized, although continued monitoring was suggested. The department requested an increase in resident complement at the time of the review, and the program expanded to 7 residents per year.

The Ochsner Anesthesiology Residency Program continues to strive for excellence. A new cardiothoracic fellowship has been awarded a 4-year accreditation cycle. The Department of Anesthesiology has adopted the use of an automated electronic medical record; the growing sophistication of information management offers increased opportunities for meaningful research. Dr Armin Schubert, a past president

Table 3. Major Changes and Program Improvements

RRC Site Visit Years	Major Changes and Program Improvements
1971	Expanded educational scope to include more thorough preparation in basic sciences and general medicine; affiliation with Charity Hospital for didactics; 2-year accreditation
1973	Didactics self-contained on campus; 2-year accreditation
1975	Allocation of office and conference room space; daily didactic 1-hour session; research program; 3-year accreditation
1978	3-year accreditation
1982	Option of 4 years of training reasserted; 3-year accreditation
1985	Widespread adoption of epidural analgesia for labor; acute postoperative pain service offering neuraxial opioids and PCA; program probation
1987	Resident Education Committee, Resident Selection Committee, Quality Assurance Committee, Resident Education Coordinator; 3-year accreditation
1990	Introduction of subspecialty rotations; hiring of subspecialty trained anesthesiologists and half-time research staff member; chronic pain service in operatory; 5-year accreditation
1995	Annual research conference; evaluations of program by residents, staff by residents, residents by staff—all mandatory; 5-year accreditation
2000	ACGME Outcome Project launched
2001	Merger of Ochsner Clinic and Ochsner Foundation Hospital
2003	Affiliated trauma rotation; daily formative online evaluations; written goals and objectives for all rotations; resident evaluation of didactics; weekly key word conference; established resident complement; program director appointed; 2-year accreditation
2006	Visiting professor program; surgical intensive care unit; continuum of scholarly activity; GAARRC at Ochsner; program manager and deputy program director; chronic pain medicine department; increased resident complement; cardiothoracic anesthesiology fellowship; 4-year accreditation

Abbreviations: ACGME, Accreditation Council for Graduate Medical Education; GAARRC, Gulf Atlantic Anesthesiology Resident Research Conference; PCA, patient-controlled analgesia; RRC, Residency Review Committee.

Table 4. Program Statistics Provided in the Program Information Form by Year of Site Visit

	Year			
Program Stats	**1990**	**1995**	**2003**	**2006**
Number of CA 1-3 residents	18	21	14	20
Number of full time staff	16	14	18	30
Resident:staff ratio	9:8	3:2	7:9	2:3
Number of fellowship-trained staff	2	2	2	6
Number of subspecialty rotations	7	8	8	10
Number of anesthetics administered per resident per year	304	305	341	411
Number of anesthetics administered per resident upon completion of the CA2 year by case type:				
Intrathoracic	65	34	32	39
Intracranial	25	14	11	23
C-sections	79	40	41	51
Spinals	21	60	84	93
Epidurals	351	140	18	75
Nerve blocks	42	24	37	42
Peds < 2 years	44	33	N/A	N/A
Peds < 1 year	N/A	N/A	31	42

Abbreviations: CA, clinical anesthesia; N/A, not available; Peds, pediatrics.

of the Society for Education in Anesthesia, became department chairman in 2009. He has expanded the department's offerings by recruiting an anesthesiology neurointensivist who is now the first director of the Ochsner Neurointensive Care Unit. Dr Schubert will steer the department through a new phase of expansion as the Ochsner Health System grows to include more hospitals, clinics, physicians, patients, and programs. With careful stewardship, opportunities abound in the Ochsner Health System for the development of specialized training in anesthesiology.

WHAT HAVE WE LEARNED?

In 2011, the ACGME Outcome Project will come to fruition. As that target approaches, programs will examine how outcomes-based training has impacted their products of training. External regulations define residency training. The Ochsner program was shaped by adopting these regulations within the context of its institutional resources. The size of a residency program is determined by the RRC for Anesthesiology (Table 3), and the number of staff is influenced by educational program demands. At Ochsner, the ratio of staff to residents has increased significantly over time (Table 4). And although duty hour regulations have limited the hours that residents work, the number of cases performed per Ochsner resident has appeared to increase. One factor might be the formation of a regional anesthesia rotation that provides for residents to place nerve blocks in patients subsequently monitored by another member of the anesthesia team. It is probable that OR efficiency has improved so that more cases are completed in the average work day. The nature of cases performed has changed over time, as has surgical and anesthetic practice. For instance, spinal anesthesia is far more common than epidural anesthesia owing to improvements in spinal needles. Performance on the in-training examinations has improved during the years, as has the board certification rate that has been consistently above the national average for 10 years. This may be a function of reduced duty hours, improved teaching, and changes in program culture. Increased resident participation in scholarly activity is evident and undoubtedly arises from concerted program support of the curriculum for scholarly activity. Although competency-based training seems intuitively beneficial, the real effects of this project remain to be seen. At least in the short term, the competencies provide a ready framework for teaching and evaluation of the complete physician.

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This article meets the Accreditation Council for Graduate Medical Education competencies for Patient Care, Medical Knowledge, and Professionalism.