



# Preface to the Proceedings of the ACAPS Winter Retreat

Jeffrey E. Janis, MD, FACS

In 2013, the American Council of Academic Plastic Surgeons (ACAPS) increased its educational offerings to its membership by starting a Winter Retreat under the direction of now immediate-Past President Dr. Joe Losee. The purpose of the Winter Retreat was to do a “deep dive” into the Next Accreditation System (NAS) and Milestones project. It was a 1-day fly-in to Chicago where a large proportion of our active and associate membership came to listen to multiple perspectives and experiences of those who had gone in Phase I of NAS, specifically Neurosurgery, Orthopedics, and Urology. It also provided an excellent venue for increasing familiarity to the Milestones, which is common to all programs.

Now, in 2014, we continue the tradition of having a Winter Retreat, except that we have expanded it to 1½ days to address multiple topics that are on everyone’s mind. Under the direction of Vice President of Education Scott Hultman, Education Committee Chair Bob Weber, and with input from Mentoring Committee Chair and Co-Chair Arun Gosain and Linda Phillips, this year we continued to revisit the Milestones and the Annual Program Evaluation and also included topics on mentoring, professionalism, ethics, and educating the educator. Scientific presentations, discussions, and topics were discussed not only by members of our own society but also by recognized experts in the field outside of plastic surgery. It was a phenomenal success by all standpoints,

and it is with great pleasure that we bring you the Proceedings from the Winter Retreat. Although a comprehensive list of all topics are not reflected in these proceedings, they do give you a good flavor of what was presented, in abstract form, so that those of you who were there can be reminded of the robust information that was presented and for those who were not can see a glimpse as well.

Going into the future for 2015 and beyond, ACAPS has developed a partnership with *PRS Global Open* and *Plastic and Reconstructive Surgery* that includes multiple touchpoints of collaboration. One of these touchpoints is the development of this ACAPS Supplement on the Proceedings of the Winter Retreat. The plan will be to continue these collaborative efforts into the future so that all members may benefit from the topics and discussions that are occurring within the house of plastic surgery. We sincerely appreciate the efforts of not only our own members who are actively involved in the education of plastic surgery residents but also to *PRS Global Open* for their support of initiatives like this.

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**ACAPS:** American Council of Academic Plastic Surgeons (ACAPS) Winter Retreat, in Chicago, Illinois on December 6-7, 2014

# CCC/PEC/APE: Three for the Price of One? An Example from the University of North Carolina

Michelle C. Roughton, MD

## INTRODUCTION

The Clinical Competency Committee (CCC) comprises a minimum of 3 faculty members who meet semiannually and compile milestone-based evaluations of each resident. They make recommendations to the program director regarding resident promotion, remediation, and dismissal. The Program Evaluation Committee (PEC) requires a minimum of 2 faculty members and 1 resident who oversee the educational side of the program and review it annually in the form of the Annual Program Evaluation (APE).<sup>1</sup>

## METHODS

We reviewed these new committees and their recent work at the University of North Carolina's Plastic and Reconstructive Surgery's residency program, which became integrated in July 2014. CCC and PEC committees were developed in January 2014 and met officially in the summer and fall to complete the APE and milestone-based evaluations. The residents also completed 2 self-assessments. These were compared, and discrepancies were reviewed with the residents at the time of their performance evaluation.

## RESULTS

The PEC identified several action plans for the program in the APE regarding improvements in clinical rotations, hand-off policies, and resident evaluation forms. The CCC provided new milestone-based evaluations and found they highlighted the ongoing change and growth in our section. The CCC received a single inconsistent resident evaluation 6 weeks after the CCC meeting. This did not change the CCC's evaluation, and we hypothesize it may be due to faculty who are unused to our newly integrated program and the resident's level of training prior to their plastic surgery experience.

## CONCLUSIONS

We identified ongoing development of actions plans and their fulfillment as a strength of the new system. Furthermore, we suspect that timely evaluation of resident performance and increased percentage of faculty participation at CCC meetings will help to avoid discrepancies in resident evaluations in the future.

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# Starting a New Plastic Surgery Residency Program Again?

Joyce Aycock, MD

**A**cademic plastic surgery programs have high turnover rates in both chief and faculty positions, leading to the frequent need to either restart or rebuild residency programs. The reasons for this are unclear; however, plastic surgeons in general report a high degree of career dissatisfaction. On a recent survey of practitioners in 25 medical specialties,<sup>1</sup> plastic surgeons are least likely to feel fairly compensated, despite reporting one of the highest average salaries. They also ranked last in overall career satisfaction and last in choosing medicine as a career if starting over. Plastic surgery organizations such as American Council of Academic Plastic Surgeons (ACAPS) should investigate ways to improve career satisfaction in academic plastic surgery, such as improved practice models, organized mentorship programs, and alternative benefits to the private practice track to reduce turnover and the need to restructure training programs. ACAPS can also streamline

the process of rebuilding plastic surgery training programs by providing standardized resources, such as curriculum, policy manuals, and teaching materials. Other challenges to beginning a new residency program include financing resident positions. ACAPS should support collecting data on the financial benefits to the hospital system of a plastic surgery residency training program. The benefits to teaching residents are numerous, with increased academic productivity, lifelong learning, and most importantly the contribution to maintaining our specialty, and organizations such as ACAPS and The American Society of Plastic Surgeons must support the development of new programs and maintenance of existing programs to the greatest extent possible.

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# Integrated Programs: Teach across the Chasm

Julie E. Park, MD

**W**ith the current trend of independent fellowships converting to integrated residency programs, many faculty are faced with the new challenge of teaching a junior resident rather than a fellow who has already been fully trained as a general surgeon. The lack of mastery of basic skills can lead to exasperation when the resident assistant does not have the expertise to which the attending is accustomed. This “chasm” exists due to the imbalance of faculty expectation and resident experience.

The most important factor to successfully “teach across the chasm” is simply awareness. Rather than assuming resident proficiency, faculty must recognize the PGY year of a resident assistant and scale expectations to the competencies concordant with that level. Take, for example, a simple reduction mammoplasty. A PGY 1 may retract and “hold hook” while teaching is focused on properly positioning and prepping the patient in the OR and perfecting suturing technique. The attending performs the majority of the surgery while teaching didactically on criteria for appropriate patient evaluation and selection and the differences between various pedicles and techniques. A midlevel PGY 4 may be shepherded through the procedure with close monitoring and be questioned in a Socratic method to probe and enhance understanding of the procedure. A PGY 6 would be expected to help with marking the patient and performing the reduction on 1 of the breasts. Programs are required by ACGME to outline competency-based goals and objectives and to delineate a progression in responsibility for patient care that is specific to each PGY year. Faculty should anticipate how to apply these guidelines to the particular procedures in which they specialize when working with individual residents.

With the implementation of integrated programs, faculty and senior residents also must assume the responsibilities of teaching basic surgical skills that were previously in the purview of general surgery. This includes fundamentals such as management of a service, with expectations to round on patients in both morning and evening, following up on laboratories and studies that were ordered, and properly writing H&Ps and consults. During the early years of a program’s transition from an independent to integrated pathway, the senior residents and the teaching faculty must be made aware of the necessity to teach these skills.

As more fellowships become integrated residency programs, we have assumed the responsibility to teach not only the plastic surgery but also the commitment to develop the residents’ maturity and professionalism. Criticism or harsh feedback can be especially devastating to junior residents who are still developing confidence and resilience as surgeons. While junior residents enter residency with fewer skills compared with a first-year fellow, there is the benefit of not needing to restrain overconfident fellows who, while fully trained general surgeons, are just beginning their plastic surgery experience. An integrated resident presents more as a blank slate with fewer “bad habits” to unlearn. It is important to note that studies have not demonstrated a difference in overall final competency and abilities of graduating chief residents from either track.<sup>1,2</sup>

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# The Core Surgery Content Outline

Robert A. Weber, MD

**B**oth the American Board of Plastic Surgery (ABPS) and the plastic surgery Residency Review Committee (RRC) require training in core surgical disciplines as part of an integrated plastic surgery residency, yet there is no description of the expected knowledge or skills that should be learned. The ABPS does publish a Content Outline that describes the plastic surgery subject matter that is expected to be mastered by a practicing plastic surgeon. The Content Outline serves as the source for written and oral examination question topics and can provide subjects for the goals and objectives of plastic surgery training activities. There is no similar content outline for the core surgical subjects beyond a requirement for experience in specified subject areas.

According to the ABPS, “Clinical experiences ... should be provided in alimentary tract surgery, abdominal surgery, breast surgery, emergency medicine, pediatric surgery, surgical critical care, surgical oncology, transplant, trauma management, and vascular surgery,” as well as “acute burn management, anesthesia, dermatology, oculoplastic surgery, oral and maxillofacial surgery, and orthopedic surgery.” In order to fill the gap and assist program directors as they develop the core surgical experiences, the American College of Academic Plastic Surgeons (ACAPS) has developed an outline describing the subjects that a plastic surgery resident should master as part of their integrated training. A committee of senior plastic surgeons with both plastic surgery and general surgery training developed a suggested outline; the outline was vetted internally and then distributed to the RRC and ABPS for comment. At the same time, the proposed Core Surgery Content Outline was presented to the ACAPS membership for input.

The proposed content outline covers the competencies of Medical Knowledge and Patient Care. The topics covered under Medical Knowledge are Anesthesia; Biostatistics and Evaluation of Evidence; Fluids, Electrolytes, and Acid-Base Balance; Geriatric Surgery and End-of-Life Care; Infection and Antimicrobial Therapy; Minimally Invasive Surgery; Nutrition and Metabolism; Oncology and Tumor Biology; Patient Safety; Pharmacology; Preoperative Evaluation and Perioperative Care; and Transfusion Medicine and Disorders of Coagulation. Patient Care subjects include the fundamentals and plastic surgery–related aspects of Abdominal Surgery; Breast Surgery; Burn Surgery; Dermatology; Head and Neck Surgery; Neurosurgery; Oculoplastic Surgery; Oral and Maxillofacial Surgery; Orthopedic Surgery; Pediatric Surgery; Surgical Critical Care; Thoracic Surgery; Transplantation; Trauma; and Vascular Surgery. The other 4 competencies such as Systems-Based Practice are addressed in the section on The Practice of Surgery.

The headings described above are further broken down to a level detailed enough to provide specific topics for learning. For example, the Breast Surgery section is divided into Management of Breast Masses, Management of Breast Cancer, Management of High-Risk Breast Patients, Management of Anaplastic Large Cell Lymphoma (ALCL), and Management of Benign Breast Disease; each of these with further subsections. ACAPS is also in the process of developing a fifth module on the Plastic Surgery In-Training Exam that will assess a resident’s competence in these areas. The Core Surgery Content Outline thus provides guidance for program directors to develop rotation goals and objectives that specifically cover the material that integrated plastic surgery residents need to learn to prepare them for the practice of plastic surgery.

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# Transition from the Independent to Integrated Program: Changing All Those Changes

C. Scott Hultman, MD, MBA, FACS

**A**s a mid-career academic plastic surgeon who survived a 20th century categorical general surgery residency, 3 years of a basic science fellowship, every other night in-house call, and work weeks never less than 100 hours in length, my formal education culminated in 2 glorious years of training with some of the legends (and 1 rising star) in our field: Jurkiewicz, Bostwick, Nahai, and a very young Bert Losken. Thankfully, paradigms change.

Although I defended the independent training model publicly,<sup>1,2</sup> I privately questioned: what is the best way to train our residents to become not only competent surgeons but also leaders and innovators? Certainly, if neurosurgery, orthopedics, and otolaryngology could train outstanding physicians in 5–6 years, why would plastic surgery be so self-righteous to think that our residents had to be fully-trained surgeons before we would let them hold a scalpel? Were we afraid of failure?

Incrementally, over many years, I concluded that the value created by integrated programs was too large to ignore. Evidence from other programs appeared in the form of increased resident research productivity, more fulfilled faculty members, and conversion of many divisions into departments. The tipping point, for me, was crystal clear: one of our star residents, having also completed 10 years of training, just ran out of energy. He was done, burned out. No fellowship, no academic career. Time to cash in.

Once our division made the decision to convert from an independent to an integrated program, we have never looked back. In fact, the transition has been less traumatic and far more exciting than when we expanded from a 2-year to a 3-year program. Although our conversion is not yet complete (that occurs in the symbolic year of 2020), it already feels like a different program. We must confront many known knowns

(milestones) and known unknowns (graduate medical education funding), plus the unknown unknowns that lurk over the horizon. However, the collective collegiality, academic enrichment, and re-innervation of our program are palpable. Coming to work every day is exciting (disclaimer: almost every day).

What I have learned is this:

- Explore, develop, and articulate your vision.
- Select a great Associate Program Director.
- Delegate well.
- The residents can and should manage a large bulk of their program.
- Figure out early on what details you need to pay attention to and which ones you can ignore.
- Develop your faculty as educators.
- Nurture your important relationships, with the Designated Institutional Official, Chief Financial Officer, General Surgery Program Director, Chair of Surgery, and Vice President of Surgical Services.
- Network with your colleagues in American Council of Academic Plastic Surgeons and national leaders in the Residency Review Council, American Society of Plastic Surgeons, and American Board of Plastic Surgery. chances are highly likely that your problem has been solved before.
- Fake it until you make it.
- Protect your integrity, which in the end is your most valuable asset.

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# Accredited Fellowships: Playing by the Rules

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## BACKGROUND

The American Council of Graduate Medical Education (ACGME) Milestones for accredited Hand Surgery Fellowships were developed and approved by a joint effort of the American Board of Orthopedic Surgery, the American Board of Plastic Surgery, and the Residency Review Committees for Orthopedic and Plastic Surgery. Implementation of the Milestones was begun in August 2014. January 9, 2015, is the deadline for reporting the first set of Milestone data for accredited Hand Fellowships. The Mary S. Stern Hand Fellowship is a 1-year-accredited Hand Surgery Fellowship that currently enrolls 3 fellows per year. The fellowship is affiliated with the University of Cincinnati Medical Center and TriHealth—a community hospital system in Cincinnati. Concerns about the practicality and utility of the Milestone framework for 1-year fellowships have been expressed by some stakeholders involved in fellowship training. We reviewed our experience with Milestone implementation in Cincinnati and will report a summary of the discussion at the 2nd Annual American Council of Academic Plastic Surgeons—American Association of Plastic Surgeons Winter Retreat with special considerations for Milestone implementation for accredited Hand Surgery Fellowships.

## METHODS

The program director, selected faculty, and the hand fellows were interviewed regarding their experience

and plan for implementation of the ACGME Milestones for accredited Hand Surgery Fellowships. Faculty of accredited Hand Surgery Fellowships present at the open forum at the Retreat were also invited to share their experiences.

## RESULTS

The current Hand Fellows at the University of Cincinnati are graduates of Orthopedic Residency and are generally well acquainted with the Milestones concepts. A Clinical Competency Committee (CCC) was formed and consisted of 4 faculty surgeons including the Program Director and an Operating Room nurse. At the meeting of the CCC, fellow self-ratings were reviewed along with the ratings of all members of the CCC. The fellow self-ratings and all faculty surgeon ratings were remarkably similar. The outlier rater was the operating room nurse who was relatively unfamiliar with the Milestones. As a result of the review, Congenital/Pediatric Hand Surgery was identified as an area for focus during the second half of the year. Faculty and the fellows agree that further education about the Milestones and plans for implantation and assessment is needed. Improvement in assessment tools and infrastructure will be crucial to assist the CCC with efficient, meaningful Milestone competency level assignment for the fellows.

## CONCLUSIONS

The Milestones will be challenging to implement in a 1-year fellowship format; however, the process is important to ensure that all competencies required by ACGME accreditation are addressed.<sup>1</sup> Successful implementation will depend on education of faculty and the fellows about the Milestones and the program plan for the organization of educational experiences and assessments to train competent fellows. Milestone assignment does not replace the crucial need for faculty to

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provide timely, regular, and specific performance feedback to the fellows.

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# Simplifying the Milestones

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## BACKGROUND

The Accreditation Council for Graduate Medical Education (ACGME) Next Accreditation System (NAS) milestones were implemented for plastic surgery programs in July 2014. The new system, however, poses a new challenge to staff due to the vast amount of data that need to be collected for each trainee. For example, for every plastic surgery resident, there are 36 milestones comprising 432 checkpoints. Per the ACGME, milestones are to be collated biannually. Collecting these many data points on multiple residents poses a dilemma of being a significant logistical data collection challenge from faculty. Our goal was to develop an efficient computer software platform to both increase data collection/response rate from faculty and collate results for ACGME reporting in an efficient manner.

## METHODS

A computer software platform was developed as a resource to assist 4 main groups: faculty, clinical competency committee (CCC), residency program administrators, and residents to expeditiously evaluate and to collect milestone data points. The partici-

pant is able to choose an interface: a text message, a smartphone browser, or a web browser. The software prompts a response about a specific resident on a milestone checkpoint by sending an e-mail or text message notification when a response is due. Questions are presented in a 1-click yes or no format, and each question correlates to a specific milestone. The software then automates data collection and generates reports on each resident. The goal of the software is to simplify data collection and generate meaningful evidence-based reports about resident performance. The software utilizes Secure Sockets Layer encryption, utilizes industry-standard data separation, and is backed up daily to a cloud service. Regular software upgrades are performed in response to changes in the ACGME requirements and participate feedback.

## RESULTS

The software platform was launched in July 2014 and was introduced more broadly at the American Council of Academic Plastic Surgeons (ACAPS) Coordinator Meeting at the American Society of Plastic Surgeons in October 2014 and at the ACAPS Winter Retreat in December 2014. The software is currently being used at pilot ACGME-accredited Plastic Surgery residency programs across the country with other ACGME fields in the process. Preliminary data demonstrate that the average faculty completion time for a checkpoint is 40 seconds. Early experience reported by residency programs at ACGME workshops indicated that CCC meetings could take 2–3 days. The software platform has been used at our

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institution since its launch. In the Harvard residency program, our first CCC meeting to discuss 27 residents' milestones took 2.5 hours to complete, and we anticipate future CCC meetings to be potentially more efficient.

### CONCLUSIONS

The NAS has been implemented nationwide for all plastic surgery training programs. Milestone-based resident training is a new paradigm for residency training evaluation; training programs are in the process of making this transition to find ways to make milestone data meaningful for faculty and resi-

dents; however, the vast amount of data points that need to be collected per residents can seem overwhelming. We have developed a user-friendly computer software platform that allows easy and efficient collection of data points. The software currently is being used at pilot residency programs, and development with other surgical specialty fields is underway.

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## The Operative Entrustability Assessment: Going Beyond the NAS Milestones

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### PURPOSE

Documentation of resident operative performance remains challenging. Although numerous assessment tools exist, they tend to be lengthy and ill-suited for use after every case, leading to inconsistent or insufficient data informing mandatory semiannual resident reviews. For these reasons, we created a simple, online assessment of resident operative skill to facilitate documentation of training activities in compliance with the American Council of Graduate Medical Education's (ACGME) Next Accreditation System (NAS).

### METHODS

Working with the Johns Hopkins Technology Innovation Center, we developed an online assessment tool: the Operative Entrustability Assessment (OEA). The tool includes a 5-point scale with descriptive anchors, can be applied to any current procedural terminology code, can be mapped to the NAS Milestones, and mirrors the ACGME case log structure. Department-wide use of the OEA started in January 2014, and residents and faculty were instructed to complete OEAs for all plastic surgery residents performing operative procedures with Department of Plastic Surgery attending physicians. Residents initiate assessments, complete a self-assessment, and hand (or e-mail) the OEA to the attending for completion. Attendings assign cases to the most relevant NAS Milestone and grade the resident on his/her ability to perform the case autonomously. In-person evaluations provide opportunities for immediate feedback; scores are available for viewing in real time via the Data Dashboard. Data can

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be viewed by Milestone category, CPT code, or case. Data can be further sorted by postgraduate year level, specific dates, Milestone, and CPT code.

## RESULTS

From January 21, 2014, to October 31, 2014, 1298 OEAs were completed by 21 residents and available for use by the Clinical Competency Committee. Six residents did not complete any OEAs due to being on off-service or elective rotations ( $n = 1$ ); on required, nonclinical (eg, research) rotations ( $n = 3$ ); or PGY-1 residents assigned to general surgery rotations ( $n = 2$ ) during the time assessed. Clinical Competency Committee resident assessment and documentation took 275 minutes (4.58 hours), averaging 11.5 minutes (range, 2–28 minutes) per resident across all 36 Milestones, including discussion and recording of action items/assignment of learning activities. OEA data were most often used to inform Patient Care Milestones. Comparisons with the operating room case counts per attending physician estimate the OEA completion rate at approximately 60% of all resident-assisted cases; 38% of residents reported increased immediate feedback on operative performance.

## CONCLUSIONS

Implementation of the OEA has greatly benefited our semiannual and ongoing assessment of >20 residents, reducing evaluation time >5 times from pilot program evaluation times (1 hour per resident). The OEA also informs program mentor and director the meetings and assignment of training activities. Data transparency provides residents with their own progress compared to the pooled mean of their peers, empowering residents to proactively address areas for potential improvement. Completing OEAs immediately following cases provides valuable opportunities for immediate feedback on operative performance. We continue using the OEA and Data Dashboard for resident assessment and plan to make this tool, which has changed the ACGME case log from a passive to an active measure of operative skill, available to other Plastic Surgery Programs in the near future to validate these findings.

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# GME Finally Catches Up: Backward Design of Educational Curriculum

Clark Denniston, MD

The advent of the Milestones Project within the Accreditation Council for Graduate Medical Education Next Accreditation System provides residency and fellowship educators with a real opportunity to reframe the way we think about curriculum design. The Next Accreditation Sys-

tem moves our entire graduate medical education culture further toward outcomes-based education, and the Milestones, as developmentally appropriate waypoints along the professional trajectory toward unsupervised practice, serve as predefined outcomes within each medical specialty. A theoretical framework in 4 parts is provided for relating competency-based and outcomes-based education to the Milestones. The first part is a deeper look into the major components of outcomes-based education and how this new active learning model, in which our trainees must demonstrate competence, differs from the older models of passive learning, in which

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trainees received instruction. The second part introduces an educational research-based model for curriculum design that is novel to medical education. This model, called Backwards Design, is presented as it was first described in 1998 by Wiggins and McTighe in their publication, *Understanding by Design*, and then framed further to illustrate how Backwards Design applies to the Milestones and to outcomes-based medical education. The third part explores the Accreditation Council for Graduate Medical Education imperative to “move from

numbers to narratives” and how the Milestones narratives apply to the Backwards Design model. The fourth and final part offers a roadmap for the use of the Backwards Design paradigm in curriculum planning to allow residency and fellowship programs to better educate toward, and reliably assess, their trainee’s achievement of the Milestones.

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## Why Professionalism Matters: The Cognitive, Ethical, and Functional Components of Our Most Important Competency

C. Scott Hultman, MD, MBA, FACS

Even though professionalism is recognized as 1 of the 6 core competencies that residents must achieve during graduate medical education, many questions regarding the definition, assessment, and demonstration of professionalism remain unanswered.<sup>1-3</sup> In addition to becoming experts in patient care and medical knowledge, students and residents must evolve into professionals. Furthermore, professionalism is rapidly becoming a key component of state licensure, hospital credentialing, board certification, and maintenance of certification.

Why does professionalism matter? First and foremost, professionalism defines the essence of who we are as healers and separates us from those technicians who may master a trade but never engage in a true relationship with those who are helped. In fact, professionalism involves a 3-way contract between the provider, the patient, and society. Sheldon,<sup>4</sup> in his 1998 Presidential Address to the American College

of Surgeons, used a sociological model to identify 5 principles that define the professional: (1) engagement in social service—that is, altruism; (2) the requirement for special education, training, and a high degree of knowledge; (3) an ability and willingness to apply knowledge and skill to a greater societal good; (4) autonomy: the right to regulate; and (5) the development of and conformance to a body of ethics.

Rather than being an intrinsic character trait, professionalism is actually a sophisticated, learned competency that can be taught and, fortunately, modeled.<sup>5</sup> Understanding the cognitive, ethical, behavioral, and social components of professionalism will allow and inspire students to function like professionals on their journey to becoming physicians.<sup>6</sup> From a utilitarian perspective, professionalism is good for business, helping us to improve patient satisfaction and reduce malpractice risk.<sup>7</sup> However, from a deeper and more fulfilling vantage, professionalism defines who we are as healers and preserves the sacred covenant that we have established with those who we serve.<sup>8</sup>

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## He/She Is a Great Surgeon, But...: Addressing Behaviors That Undermine a Culture of Safety

William O. Cooper, MD, MPH

**F**our concerns were reported over 16 months about Dr. Y, a busy, highly accomplished plastic surgeon: one patient asserted, “I had to wait 2 hours after my appointment time....”; another said Dr. Y responded to her question with, “ask the nurse,” then left; another patient who waited a long time reported Dr. Y arrived saying, “I forgot you were here”; and a senior resident reported, “the case was about to start ... Dr. Y appeared uncertain about his approach ...”

Using anonymous polling technology, 68% of American Council of Academic Plastic Surgeons 2014 Winter Retreat participants agreed that these behaviors represented a threat to safety. Despite this, 60% of respondents believed such events would be reported in their organization infrequently (ie, <20% of the time). And, even if reported, 36% indi-

cated that a medical leader would be just as unlikely to have a conversation with Dr. Y.

One distinguishing feature of a profession is responsibility for its members' conduct. Unfortunately, healthcare leaders often do not have training in or strategies for addressing behaviors that undermine a culture of safety, threaten quality of care and patient safety, and can undermine staff morale and organizations' bottom lines. Reliable operations are a function of organizational goals, values, modeled leadership, and safety culture (including team members' willingness to report and address concerns). This presentation introduced critical domains of a comprehensive plan and essential tools for addressing “unreasonable variation” in behavior and performance: people, policies and procedures, and performance data. The people domain includes 3 key factors: committed leadership, dedicated project champions, and engaged implementation team(s). Policies and procedures must be aligned with and tied to specific organizational goals and enforced with reliably applied tiered interventions. Finally, key factors related to performance data are robust measurements, surveillance data that identify unnecessary variation, thoughtful data reviews, and

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multilevel training on philosophy and skills for promoting accountability.

Participants were polled about the robustness of selected elements at their organization. For example, only 61% reported that their organization had “leadership commitment to address ...,” but 94% described themselves as personally committed. A complete analysis of the degree to which an organization has the critical elements in place to address behaviors that undermine a culture of safety can identify keys to increasing the likelihood that a safety/quality initiative will achieve its goals. Barriers to taking action (eg, competing priorities and fear of antagonizing influential individuals) and reasons to act (eg, patient safety, community reputation, and staff retention) were identified and discussed. Benefits of applying this approach at Vanderbilt and elsewhere included reductions in patient and coworker complaints about physicians, reductions in

physicians’ malpractice claims and suits, substantially increased organization-wide hand hygiene and fewer hospital-acquired infections, and positive returns on investment in various safety/quality initiatives.

*Postscript:* Dr. Y continued to accumulate patient and coworker concerns, received tiered interventions, and ultimately underwent screening by a qualified physician assessment program, which revealed early stages of cognitive impairment. This case and the presentation highlight the importance of identifying and addressing behaviors that undermine a culture of safety.

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## Behavioral Approach to Improving Communication

Pamela A. Rowland, PhD

**T**oo often surgeons proceed under the fallacy that patient satisfaction is determined at the end of the encounter, not at the beginning. They may believe, incorrectly, that if they “reimplant” the severed finger, anything else that occurs may be forgiven. However, initial impressions are quick to form and difficult to change, whether we are speaking with patients or their family members, speaking with new members of our team, interviewing, or meeting surgeons at a national meeting for the first time.

Research has indicated that within the first few minutes of the initial interaction, people decide the competency of a person and whether to continue the new relationship. Specific variables during the initial interaction can have significant influence on outcomes, especially during certifying examinations<sup>1</sup>

when the examiners should be able to recognize an acceptable answer.

These variables<sup>2</sup> that can be observed and measured include, but are not limited to, reciprocity of language (correct level of vocabulary), direct eye contact with the listener, professional image of the surgeon, etiquette or cultural literacy, silence (reaction-time latency), posture, rate of speech, use of vocal segregates (“ah,” “you know,” “okay”), grammar, volume, and use of proxemics (space).

Dedicated feedback and deliberate practice of these variables during residency training and beyond will affect positive change. The key is to identify strengths and weaknesses and then to focus on 1 behavior through the adult skill development steps (unconsciously incompetent, consciously incompetent, consciously competent, and unconsciously competent) until the behavior becomes a habit. Surgeons, unlike other physicians, must change their clothes and behavior in a variety of settings (outpatient, operating rooms, national conferences, legal proceeding, scientific presentations, and community). Ignorance of the power of

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these variables in different settings will likely result in physician failure.

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# Mentoring and Modeling Professionalism: Leadership

Dale Collins Vidal, MD, MS

## MENTORSHIP

It may be time to rethink the traditional roles of mentors and mentees. A mentor is traditionally thought of as someone who is wise, experienced, and senior and who provides advice and support to a junior colleague. The role of mentor is often self-assigned, and the mentees may be a fairly passive recipient of the advice and influence of their mentor. However, this traditional view of mentorship is far too limiting. Effective mentors may take many shapes. They may be peers who are willing to provide meaningful feedback to a colleague or a professional coach who has made a career out of helping others reach their potential.

The Oxford Dictionary defines mentee as “a person who is advised, trained, or counseled by a mentor.”<sup>1</sup> This definition is also too restrictive and far too passive. Mentorship is more effective when the mentee takes active role as the mentor in the relationship. Mentees should actively identify and invite people to act as mentors. Mentees need to be clear about what they need from their mentors and have a

discussion about how to make best use on the mentor’s time and influence.<sup>2</sup>

Developing and maintaining strong mentoring relationships can make a significant difference in enabling professionals to reach their goals. Both mentors and mentees should actively work to improve their skills in making that relationship meaningful. In addition, professionals today may want to explore other models of social learning, such as peer coaching and learning collaboratives.

## PEER COACHING AND LEARNING COLLABORATIVES

Coaching differs from mentoring in that it focuses on specific competencies rather than overall development.<sup>3</sup> Much of the leadership coaching you may be familiar with is provided by professional coaches, and the focus is on skill building, encouraging specific behaviors, and self-reflection. However, peer coaching is much less costly and can be very effective.

Peer coaching is a process through which colleagues within an organization work together to test ideas, give and receive feedback, and teach one another or solve problems in the workplace. While the word “coach” implies that there is an asymmetric relationship, peer coaching is meant to be non-hierarchical in nature and participants work together in a supportive fashion and everyone is both coach and learner.

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In contrast, learning collaboratives are groups of 2 or more peers, colleagues, or mentors, often from different organizations, who are attempting to learn together. Both approaches capitalize on the resources and skills of everyone involved.

### CONCLUSIONS

Vygotsky's theory of proximal development suggests that learning is inherently social and individuals learn more together than they could alone. Mentors, coaches, and peers provide important support for learning and skill development. Our educational programs should have strategies in place to support these learning relationships and networks.<sup>4</sup>

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## Mentoring and Modeling Professionalism: Clinical Care

Richard Korentager, MD, FACS

The concept of mentoring has been present for millennia. The original “mentor” was named Mentor in Homer’s *Odyssey*. He helped Odysseus’ son mature during the 20 years Odysseus was away on his quest. Mentoring and modeling professionalism in clinical care follows that same principal. The mentor serves as a role model, critic, and evaluator for the mentees to help the mentees develop the skills they need to be successful in their professional life and by extension in their personal life.

Mentoring is a 2-way street. It is a relationship between the mentor and the mentee in which both must be engaged in the process. When asking fac-

ulty to serve as mentors to other faculty, residents, or medical students, it is essential to match the experience, style, and personality of the faculty to those they are to mentor. Mentors and mentees need to define their expectations of the relationship and periodically evaluate the success of the relationship. A mentor who models professionalism in their professional and personal life can have a profound effect on the mentee. They can provide a template for the development of future clinical care leaders. The mentor, being in a leadership position relative to the mentee, is best served following the principles of the Servant Leader, which include the ability to listen, be introspective, empathetic, and be committed to the growth of the mentee.

Mentoring and modeling cannot be separated especially when it comes to professionalism. Mentorship will naturally occur in both structured and unstructured forms—formal meetings between the mentor and mentee and in the form of observation in the clinic and OR setting by both parties. Just as is the case when working with young children, demon-

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strating and consistently applying professionalism to all aspects of clinical care—whether it be relationships with patients, nursing/paramedical staff, medical students, residents, and other faculty—is of the utmost importance. Do as I say and not as I do is a recipe for disaster.

Ideally, the relationship that is established should continue for an extended period of time to allow the mentor/mentee relationship to mature. The mentees must feel safe to express what they feel and see relative to professionalism. It is important to evaluate the success of the relationship from both the mentor and mentee perspective. That may require the input of a senior leader if either or both parties feel that the relationship is not progressing in a positive direction.

The mentor must always be willing to discuss and honestly evaluate all interactions where professionalism may have been compromised whether it is the mentor, mentee, or any member of the clinical care team. The best predictor of future behavior is past behavior, so it is essential for the mentor to address instances of breaks of professionalism in clinical care as quickly as possible. One must also use all of the resources at one's disposal to correct lapses in professionalism. These may include not only the department/division resources but also others within the hospital or medical school.

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# Mentoring and Modeling Professionalism for Educators

W. Thomas Lawrence, MPH, MD

**M**ost Plastic Surgery educators lack formal training in educational methods and techniques. We have learned to teach by modeling ourselves after those who have taught us and those whom we have observed teaching others. Strong mentorship is, therefore, particularly critical to the development of the surgical educators of the future.

Mentorship in education is not radically different from mentorship in research, the development of clinical skills, or other facets of an academician's professional career. To be an effective mentor, one has to have certain attributes. A mentor needs to be competent in the area in which mentorship is being provided and have time available to devote to the mentee. Mentors must also aspire to excellence in their craft and have enthusiasm for their area of expertise. Effective mentors display empathy and compassion, as well as humility. Character and integrity are also essential. It is hard for a mentee to believe in a mentor who does not "walk the walk" himself or herself.

An appropriate mentor-mentee match is essential for the relationship to be mutually beneficial. One mentor cannot have an excessive number of mentees due to the amount of time required for each. Ideally, a mentor is a half-generation older than the mentee and should not be a direct manager or assessor of the mentee. It is difficult to combine authoritative and evaluative roles with the counseling role a mentor serves. It is helpful for a mentor to have a

mentee who reminds them of themselves and who has similar goals, objectives, values, and a similar work ethic. Sometimes, an informal trial period can be an effective way of assessing mentor-mentee fit.

In acting as a mentor, it is critical that individuals not only identify and label talents and strengths but also define relationship boundaries, particularly if the relationship has other components. Clear expectations for the relationship need to be defined, and measurable, but aspirational goals need to be established. It is also important that the path to goal achievement is broken down into steps that can be measured. Creative approaches to reaching these goals need to be encouraged.

A good mentor uses his or her status and influence to provide opportunities within institutions and organizations for advancement and recognition. Mentors need to trumpet the success of their mentee to senior leaders. An effective mentor teaches the mentee regarding institutional and organizational norms, traditions, and beliefs and gives insight into identifying who the key individuals are. An excellent mentor functions as a teacher, a coach, and a cheerleader and may often use storytelling and their own personal experiences to help the mentee understand how to deal with issues as they arise.

It is hoped that with appropriate mentorship, the next generation of Plastic Surgery educators will be even more effective than the current one and help drive the specialty to loftier heights.

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# Mentorship in Research

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## INTRODUCTION

Mentorship for plastic surgery residents who designate a fixed block dedicated to research is critical to making this block a constructive experience.

## METHODS

Two residents who are presently engaged in a 1-year research block were asked to discuss questions related to the following:

1. Time length of the designated research block
2. Establishing research and balancing these between goals directed to benefit the mentor and those to benefit the resident
3. How can the mentor best facilitate goals established by the mentee?
4. Funding—is the resident best served by working with funds specific to an ongoing grant versus general funds allowing greater flexibility?
5. Are residents better facilitated by engaging in predetermined protocols versus mentee-initiated protocols?
6. How can investigations be extended beyond the immediate laboratory to incorporate the community and/or other institutions?
7. Does the mentor play a role beyond the designated research block?

## RESULTS

The residents felt that a desirable research mentor should incorporate the following: (1) Listen to residents and individualize the structure of their respective research blocks. The mentor should incorporate

the resident's goals to optimize their experience during the research block and to facilitate subsequent career goals. (2) Take research out of the "ivory tower" confined to the university research laboratory and facilitate investigation of *all* relevant questions. The mentor should encourage mentee-initiated investigations and collaborative investigations, and in so doing, they should cultivate community resources as "clinical capital" for ongoing research; clinical research should not serve as a "step child" behind bench research. (3) Make research part of the fabric of plastic surgery. Mentors should make an effort to instill an appreciation of the investigative process for problems in surgery and to provide a mechanism for critical analysis of the literature to precede critical reporting of their own results. (4) Utilize the mentor's "research capital" to help residents to realize their goals, to include expertise in specific areas of research, experience with similar goals and projects, and providing network connections in the specific areas of research and in building subsequent career networks.

## CONCLUSIONS

Based on known practice patterns in plastic surgery following residency, only a minority of graduates will continue as primary researchers, particularly in basic research. However, a well-structured research experience can instill an appreciation for the research process in all graduating residents. This would serve plastic surgery to encourage all graduating residents to continue their support of research either through financial contribution to our national organizations or as community surgeons participating in clinical research. In order to do so, the mentor must serve as a role model and exemplify the importance of research as an integral component in the activities of the clinician-scientist.

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# Mentoring and Modeling Professionalism: Service and Global Health

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**W**ith recent Residency Review Committee approval of Plastic Surgery resident participation in international surgical trips, our specialty will be required to develop professionalism milestones to define this international work, protecting both residents and patients. What does it mean to mentor and model professionalism in international work? The answer must include the intentionality that defines our professionalism mandate at home. However, modeling professionalism is more nuanced in international work, with pitfalls that are sometimes unpredictable.

To exhibit professionalism, we need clear delineation of our *scope of practice*. Should we be doing procedures internationally that we do not do at home? We often claim that we provide better care than these patients usually get. However, this cannot be an excuse to provide inexperienced, deficient care outside our scope of practice. If adequately trained personnel and resources are not present to operate and properly care peri- and postoperatively for patients, we must call this exactly what it is: “patient abandonment.” Most of us teach students and residents at academic institutions or nurses and technicians in community settings. How can we travel internationally and not share our craft with local medical students, residents, and hospital surgeons with the same intentionality? The counter that no one in country wants to do cleft work is easily a mask for our unwillingness to find local surgeons with an interest in clefts. When participating in international research, we are aware of the need to obtain home institution review board approval. Why not develop relationships

to obtain permission for research from host academic institutions? This “approval” may not have the same rigor of our home institutions; however, the simple act of disclosure is a starting point for local empowerment. We are acutely aware of practice guidelines for advertising from our national specialty organizations. However, there are no metrics to limit *self-promotion* with our international work. The danger is that we overstate our roles and sense of importance with “advertising” that would not be acceptable at our home institutions. International surgical work is attractive to colleagues, patients, families, and industry partners and must be guided by *financial professionalism*. Many partners are willing to provide resources to the “great surgeon” they know rather than an impersonal organization. Are we using the money exactly as designated by our donors? In overseas work, we are increasingly aware of the centrality of *cultural awareness*: what we do and say at home has different meanings away from home. The simplest, yet most difficult, act of cultural awareness is learning the local language. Speaking our hosts’ language opens doors of partnership that otherwise remain closed.

Professionalism at home is guided by scope of practice agreements, commitment to patients’ welfare, obligations to teach, strict adherence to institution review board guidelines, careful advertisements of surgical practices, financial integrity, and cultural sensitivity. We should hold similar standards in our international work and model this for residents who will increasingly be our partners. It may be time to develop measurable professionalism milestones for international work and establish Plastic Surgery as a leader in this field.

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# Curriculum Development for the Resident Aesthetic Clinic

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One key feature of Plastic Surgery is that it encompasses aesthetic concerns as a major component of the specialty. Over the course of their training, residents are expected to learn how to examine, diagnose, and treat a wide variety of solely aesthetic patient concerns. Unfortunately, there has been no comprehensive resource to which trainees can turn for accurate information. As part of a project undertaken by the American Council of Academic Plastic Surgeons (ACAPS), a comprehensive resource for plastic surgery residents covering topics in aesthetic medicine and surgery was developed.

A small committee was chosen to develop topics relevant to aesthetic surgery and resources resident would find particularly valuable as they rotate through their training program's aesthetic surgery clinic.

The initial task was to identify topics that fell within the definition of aesthetic surgery. This would include physical findings and treatment options involving the head and neck and the breast, trunk, and extremities. Then, within each section and for each topic, relevant abstracts, textbook chapters, and videos were included. More recent references with updated information were chosen in lieu of older ones. A wide sample of authors was included, and each author chosen was deemed to be well-versed in the subject. Videos were more difficult to identify; YouTube videos were not included in the first

iteration but are a possibility for future updates should they be deemed unbiased, free of commercial interests, and well-crafted. Next, general and specific resources related to each of the identified subjects were chosen. These were deemed important to senior and chief residents to direct a successful resident aesthetic clinic. They included consultations, photographic standards for various anatomic areas, specific consents (surgical and photographic), key review articles, seminal textbooks, selected videos, and miscellaneous items. For example, the blepharoplasty consultation sheet incorporated a directed ophthalmologic history and physical examination that should be performed by the plastic surgeon before referral to an ophthalmologist for clearance. Each consultation was designed to recall specific features of each diagnosis that would be necessary for safe and effective treatment. Each was also designed to be 1 page in length and contain relevant diagrams as necessary. The resident would be able to log in the ACAPS Web site and download the specific resource desired.

Future iterations will hopefully include continual updates to the site, as new, important data are acquired. In addition, investigative surveys can be developed to better the residents' experience with their aesthetic clinic. These might include questions of value to program directors, such as the cost structure of the clinic, what resident year levels participate in cosmetic clinic, and what other specialties participate in resident clinic. The ultimate goal of the described project is not only to better the experience of the aesthetic clinic for the resident and faculty but also to maximize patient safety and satisfaction.

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# Lessons Learned from Remediation of Plastic Surgery Residents

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Kari A. Keys, MD

## BACKGROUND

Surgical training requires the acquisition of a complex array of knowledge and skills traversing the technical and personal, quantified by the 6 core competencies. Individual residents may struggle to achieve standards necessary for graduation and, in these cases, require some form of remediation. The purpose of this study is to analyze common factors in the cases of remediation in one plastic surgery residency program. Identification of common elements may provide early warning signs for residents where intervention may prevent the need for formal remediation.

## METHODS

The cases of all residents who required some form of remediation or dismissal from 2005 to 2014 were examined. Isolated, nonrepetitive resident concerns were excluded. Common themes and factors were analyzed.

## RESULTS

There were 5 individual residents who required some form of remediation. Three were classified

as major remediations and 2 as minor remediations (Table 1). In all major remediations, there was a critical deficit in medical knowledge and patient care (specifically surgical technical skills). Notably, all 3 residents had at least moderate deficiencies in professionalism (either with patients or other care team members). All 3 residents with major remediation ultimately successfully completed remediation. Of the 2 residents who required minor remediation, the core competency not met for both residents was medical knowledge. Both of these residents successfully remediated their performance. Common across 4 of 5 remediation cases was an underlying personal stressor that appeared to be associated with performance decline.

## CONCLUSIONS

The core competency most commonly not met in all cases of remediation was medical knowledge, followed by patient care (technical skills). Decline in residency performance appeared to be related, or at least coincident, to stressors unrelated to clinical work. Based on these findings, our program actively engages residents found to have outside life stressors in an attempt to mitigate problems with residency performance.

**Table 1. Classification of Major and Minor Remediations**

PGY	Competency Deficiencies	Stressor	Remediation Elements	Outcome
Major remediations				
PGY 5	MK, PC, P	Personal relationship decline	Mentoring, personal counseling, time off	Repeat PGY 5 yr, successful
PGY 5	MK, PC, P	Death of family member	Mentoring, personal counseling, time off	Repeat PGY 5 yr, successful
PGY 4	MK, PC, P	Long-distance relationship with spouse	Mentoring, personal counseling	Program dismissal (successful completion of residency in another program)
Minor remediations				
PGY 1	MK	None noted	Mentoring, reading plan	Performance improved
PGY 6	MK	Depression	Mentoring, reading plan, time off, psychiatrist treatment	Performance improved

MK, medical knowledge; P, professionalism; PC, patient care; PGY, postgraduate year.

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## Development of an Operative Performance Rating System for Plastic Surgery Residents

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### PURPOSE

A standardized measure of operative performance is an essential component of the Patient Care Competency and is critical to the training of plastic surgery residents. The Operative Performance Rating System (OPRS) developed and validated by the Department of General Surgery at Southern Illinois University consists of procedure-specific evaluations for resident intraoperative performance. The OPRS provides an objective measure of procedure-specific resident performance that is not currently being assessed in plastic surgery training programs.

The purpose of this study is to describe OPRS for plastic surgery residents and propose methodology for assessing the reliability, validity, and feasibility of this instrument.

### METHODS

Ten procedure-specific rating instruments were developed for sentinel cases, each consisting of critical procedure-specific steps based on literature review and faculty focus group consensus. Sentinel cases were chosen based on review of the American

Council of Graduate Medical Education Milestones and resident logs of the most commonly performed plastic surgery procedures, both at our institution and nationally. The degree of guidance required from the attending surgeon is recorded for each step. General operative performance competency is evaluated from validated items developed by the University of Toronto.<sup>1</sup> All items use a 5-point Likert scale with behavioral anchors.

The OPRS assessments will be incorporated into the internet-based resident management platform New Innovations. Sentinel procedures for evaluation will be identified on a weekly basis by the residency coordinator, based on resident operative assignments (postgraduate year 2–6) organized by the chief resident. OPRS assessment forms will be available electronically immediately following the procedures, with an e-mail reminder notification 24 hours later to help encourage compliance.

In addition, resident self-assessment using the same OPRS will be conducted and correlated with faculty OPRS evaluations.

Each OPRS assessment will be evaluated for internal consistency reliability and inter-item correlation. Inter-rater reliability will be measured by faculty assessment of videotaped sentinel procedures using the appropriate OPRS instrument. Performance variation based on resident PGY level will be analyzed using 1-way analysis of variance. Feasibility will also be determined based on attending and resident

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response rates and time to completion for the OPRS evaluations, as well as a short written survey to assess resident and attending satisfaction and obtain feedback following OPRS implementation.

### CONCLUSIONS

A web-based OPRS provides timely and objective feedback to improve residents' technical and decision-making skills, as demonstrated by the experiences of other surgical specialties.<sup>2</sup> This instrument will provide both formative and summative resident feedback, encouraging faculty and residents to focus on demonstrated competencies and areas for improvement.<sup>3</sup> Furthermore, resident operative performance can be monitored across time and residents, allowing program directors to have a long-term objective method of evaluating resident technical performance.<sup>3</sup> A reliable and valid OPRS

may provide a feasible method of intraoperative assessment that could be implemented across all plastic surgery training programs.

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## Improving Education and Standards for Cleft Care in the Developing World: The Partner Hospital Model

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Arun K. Gosain, MD

### INTRODUCTION

The partner hospital model identifies hospitals in the developing world to educate and enable local surgeons to deliver effective cleft care. This study aimed to determine the outcomes of this model on safety, education, and quality of surgical care.

### MATERIALS AND METHODS

Twelve partner hospitals, sponsored by Smile Train for 5 or more years and distributed over 4 continents, were selected. Activities at each institution were evaluated using cleft surgical data, and electronic surveys were completed by hospital leadership.

### RESULTS

A mean of 82% of patients with cleft at partner hospitals underwent sponsored surgeries. After partnership, all 12 hospitals implemented preoperative checklists for cleft surgery, and 5 hospitals implemented checklists for other sur-

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geries. All hospitals had personnel who received safety training as a result of partnership. There was no change in 30-day reoperations or readmissions. Follow-up rate increased by 18% ( $P = 0.03$ ). Facilities recruited 1.8 additional cleft surgeons ( $P < 0.01$ ) and increased the number of cleft surgical trainees by a mean of 13.3 annually ( $P = 0.012$ );  $2.5 \pm 1.7$  additional ancillary services were added, resulting in 75% of partner hospitals having a basic multidisciplinary cleft team (Surgery, Speech, and Dental), compared with 25% prior to partnership ( $P < 0.01$ ). Total cleft surgeries, alveolar bone grafts, and percentage of secondary surgeries increased significantly as the length of partnership progressed ( $P < 0.01$ ).

## CONCLUSIONS

A model to enhance global education and delivery of cleft care through development and support of local hospitals increases both the volume and the quality of cleft care delivered at these institutions. Safety initiatives for cleft care demonstrate effects extending to global surgical care delivered at partner hospitals.

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# Plastic Surgery Representation on Medical School Faculty Development Committees

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## BACKGROUND

Medical schools are devoting increased resources to supporting their faculty and assisting with promotion. Several schools have created specialized "faculty development committees" (FDCs) to foster this goal. The FDC's charge is to develop a support system for faculty by providing advice to standing faculty members, coordinating seminars to assist in career development, and reporting to the deans any faculty issues. As medical school faculties comprise medical, surgical, and lay members, it is important to have diverse representation on such a committee. The aim of the present study is to determine the level of Plastic Surgery involvement on FDCs in American medical schools.

## METHODS

A list of MD granting institutions in the United States was obtained from the US News and World Report yearly Education Rankings. For each of the 141 accredited MD programs on the list, a Google search was performed using the name of the medical school combined with the following search terms: "faculty development," "faculty development committee," and "development committee." After lists of the committees were found, each member's specialty was determined from the school-specific websites.

## RESULTS

Standing FDCs were noted in 19 medical schools in the United States. The committees have between 7 and 31 active members, with an average of 19.3 members. Surgeons in general have minimal input to FDCs, representing only 5.6% of FDC members on average. The Association of American Medical Colleges reported last year that surgeons made up 12.1% of US medical school faculty, significantly more than their level of representation on FDCs. Seven out of the 19 committees have no surgical

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faculty representatives sitting on the committee. Of the ones that do have surgical faculty, they represent 8.3% of the committee on average. Although all 19 schools have plastic surgeons on their faculty, only one school has any plastic surgery representation on its FDC and that school has 1 plastic surgeon on a committee of 30 people.

### CONCLUSIONS

Having an FDC is important for the maintenance of a successful, productive, and content faculty. It is crucial for such committees to have representation from a diverse portion of the medical community so as to address everyone's needs. The present study identified the near lack of input from plastic surgeons

on FDCs. In general, there is a similar lack of surgical representation. Through their operations and patient care every day, plastic surgeons regularly interact with a wide variety of related surgical and medical specialists and nonmedical personnel. This gives them the unique ability to speak toward the needs of many of their peers. Increasing the number of plastic surgeons on FDCs would improve the strength and efficacy of such committees, allowing for holistic development of a cohesive medical school faculty.

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# Identification of Best Practices for Resident Aesthetic Clinics in Plastic Surgery Training: The ACAPS National Survey

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**Introduction:** Resident aesthetic clinics (RACs) have demonstrated good outcomes and acceptable patient satisfaction, but few studies have evaluated their educational, financial, or medicolegal components. We sought to determine RAC best practices.

**Methods:** We surveyed American Council of Academic Plastic Surgeon members ( $n = 399$ ), focusing on operational details, resident supervision, patient safety, medicolegal history, financial viability, and research opportunities. Of the 96 respondents, 63 reported having a RAC, and 56% of plastic surgery residency program directors responded.

**Results:** RACs averaged 243 patient encounters and 53.9 procedures annually, having been in existence for 19.6 years (mean). Full-time faculty (73%) supervised chief residents (84%) in all aspects of care (65%). Of the 63 RACs, 45 were accredited, 40 had licensed procedural suites, 28 had inclusion/exclusion criteria, and 31 used anesthesiologists. Seventeen had overnight capability, and 17 had a Life Safety Plan. No cases of malignant hyperthermia occurred, but 1 facility death was reported. Sixteen RACs had been involved in a lawsuit, and 33 respondents reported financial viability of the RACs. Net revenue was transferred to both the residents' educational fund (41%) and divisional/departmental overhead (37%). Quality measures included case logs (78%), morbidity/mortality conference (62%), resident surveys (52%), and patient satisfaction scores (46%). Of 63 respondents, 14 have presented or published RAC-specific research; 80 of 96 of those who were surveyed believed RACs enhanced education.

**Conclusions:** RACs are an important component of plastic surgery education. Most clinics are financially viable but carry high malpractice risk and consume significant resources. Best practices, to maximize patient safety and optimize resident education, include use of accredited procedural rooms and direct faculty supervision of all components of care. (*Plast Reconstr Surg Glob Open* 2015;3:e370; doi:10.1097/GOX.0000000000000334; Published online 30 March 2015.)

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**M**any plastic surgery training programs include a resident aesthetic clinic (RAC), in which trainees have increased autonomy in decision making and patients have improved access to aesthetic surgery, usually through reduced charges. Although many studies have demonstrated good outcomes,<sup>1-6</sup> reasonable patient satisfaction,<sup>7,8</sup> and an acceptable safety profile,<sup>9,10</sup> few reports have rigorously evaluated the operational, financial, and medicolegal components of these programs.<sup>11-13</sup>

Even though most plastic surgery educators recognize the value of having a RAC, many different models for such a learning environment exist,<sup>14-18</sup> and best practices for this teaching paradigm have not yet been defined. As the surgical trainee gains experience in aesthetic surgery, this learner must also become an autonomous practitioner, mastering key competencies of not only patient care and medical knowledge but also systems-based practice, communications, practice-based learning, and professionalism. The RAC, in which trainees evaluate patients, form an operative plan, execute the procedure, and provide follow-up care, represents an ideal setting for gaining increased independence, under the close observation of supervising faculty members.

This article attempts to move our educational framework “1-step closer” to knowing the optimal learning experience in aesthetic surgery. We hypothesize that RACs represent a valuable, unique paradigm for surgical education, provided that clinical results are acceptable, patient and provider satisfaction remains high, and patient safety is given highest priority. The authors will describe the current status of RACs in plastic surgery training and will provide best-practice guidelines to achieve superior outcomes.

## MATERIALS AND METHODS

We conducted an anonymous, 41-question, internet-based survey of all members of the American

**Disclosure:** Drs. Hultman, Bentz, David, Taub, and Janis currently hold officer or chair positions on the American Council of Academic Plastic Surgeons. Neither of the other authors has any financial disclosures. This study was supported, in part, by the UNC Ethel and James Valone Plastic Surgery Research Endowment. The Article Processing Charge was paid for by the authors.

Supplemental digital content is available for this article. Clickable URL citations appear in the text.

Council of Academic Plastic Surgeons (ACAPS) ( $n = 399$ ). Our questionnaire (designed by the first author and constructed by PRRI, Beverly, Mass.) focused on the following components: demographic information about the respondents, operational details of the clinic, resident training and supervision, patient safety, medicolegal history, financial considerations, and research opportunities.

The questionnaire was sent to ACAPS members 3 times, from October to December 2012 (See **Appendix, Supplemental Digital Content 1**, which displays the Resident Aesthetic Clinic: Best Practices Project, ACAPS National Survey, <http://links.lww.com/PRSGO/A94>) Overall response rate for ACAPS members was 24% ( $n = 96$ ). Response rate for program directors was 56% (49 program directors from 87 institutions), representing over half of all training programs. Of the 96 respondents, 63 reported that their institution included a RAC (66%). It should be noted that some institutions had more than 1 respondent. Thus, this survey reflects the opinions of ACAPS members who are involved with resident education, not specific programs.

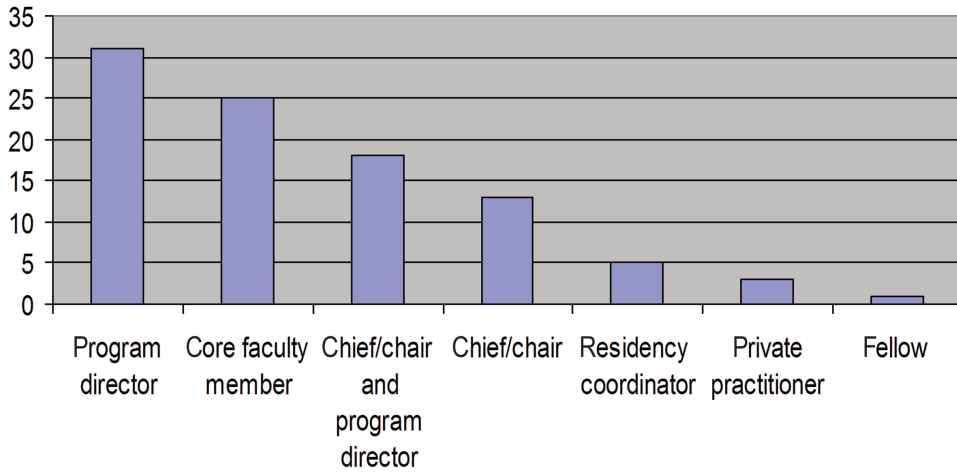
Using information obtained by this survey and combining these data with their own experience, the authors developed a list of best practices for RACs. These best practices were further refined, as a result of the discussion between panelists and attendees, at the 2013 ACAPS Annual Spring Retreat and further refined by the ACAPS Aesthetic Surgery Task Force at the 2014 Annual Winter retreat of ACAPS.

## RESULTS

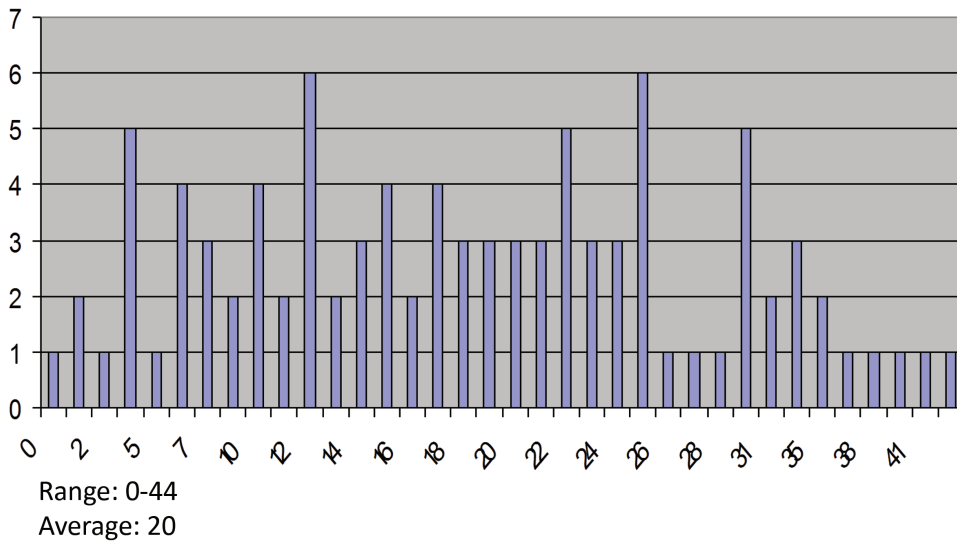
### Demographics of Respondents

Overall response rate was 96 of 399 ACAPS members (24%). Of the 96 respondents, 49 were program directors and 31 were chiefs or chairs of plastic surgery (Fig. 1). Only 5 residency coordinators participated in the survey. Mean length of time in practice was 20 years, with a range of 0–40 years (Fig. 2). Regarding type of practice, the vast majority of respondents had mostly reconstructive practices ( $n = 76$ ), compared with a minority of respondents who had mostly aesthetic practices ( $n = 9$ ) (Fig. 3).

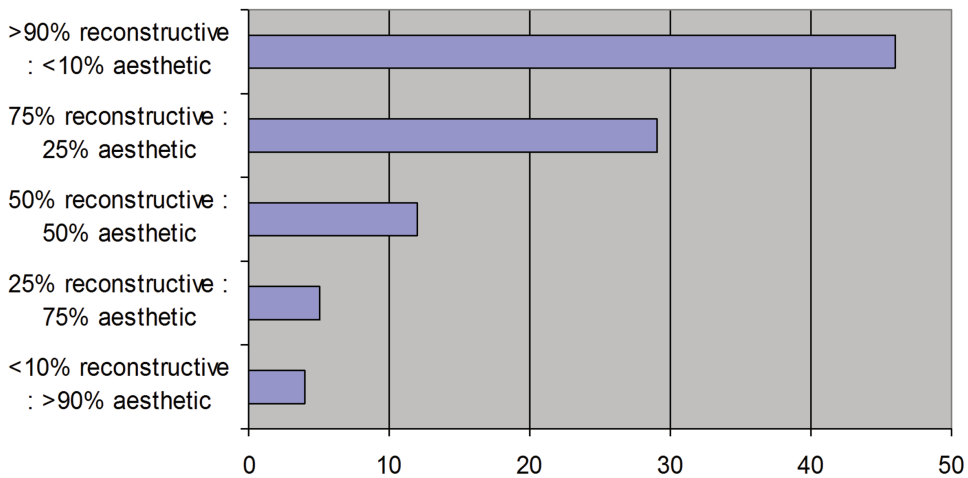
In terms of the training programs, respondents reported the following mix of residency programs: integrated,  $n = 35$ ; independent,  $n = 34$ ; integrated and independent,  $n = 27$ . The following organizational structure was reported for the plastic surgery practices: Division of Surgery at a Medical School ( $n = 72$ ), Department of a Medical School ( $n = 19$ ), and Private Practice ( $n = 5$ ). Sixty-three of 96 respondents (66%)



**Fig. 1.** Role of ACAPS member at parent institution.



**Fig. 2.** Distribution of years in practice for respondents: x axis represents length of practice in years, and y axis represents number of respondents for that time point.



**Fig. 3.** Ratio of clinical practice, in terms of reconstructive vs aesthetic.

reported the presence of a RAC, in which “plastic surgery residents had a focused cosmetic experience with some degree of autonomy.”

**Operational Details**

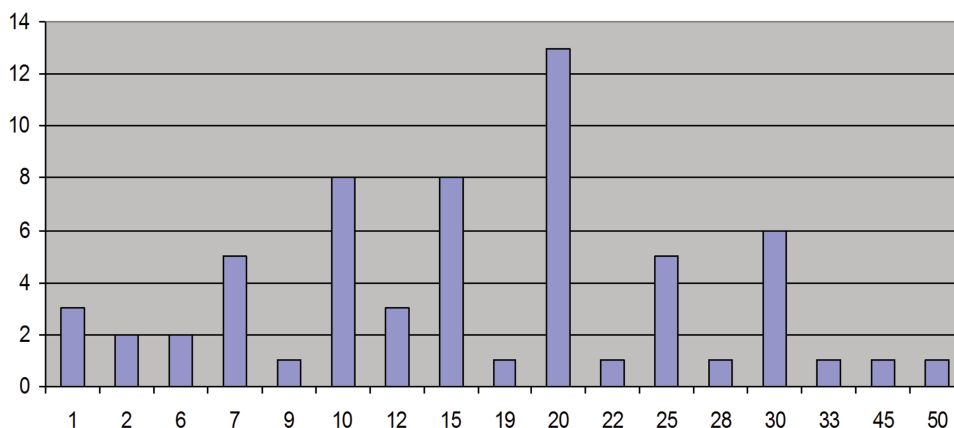
RACs have been in practice for a mean of 19.6 years, with a range of 1–50 years (Fig. 4). In terms of clinical volume, respondents reported a median of 88 patients and an average of 243 patients treated each year, with a range of 2–2000 encounters per year (Fig. 5). When asked about procedures done at the RAC, respondents noted a median of 25 and an average of 53.9 procedures done each year, with a range of 0–300 cases per year (Fig. 6). Components of the RACs, specific to location of patient encounters, include a combination of examination rooms and surgical suites (Fig. 7), with 40 of the 63 clinics including access to a licensed operating room.

**Resident Supervision**

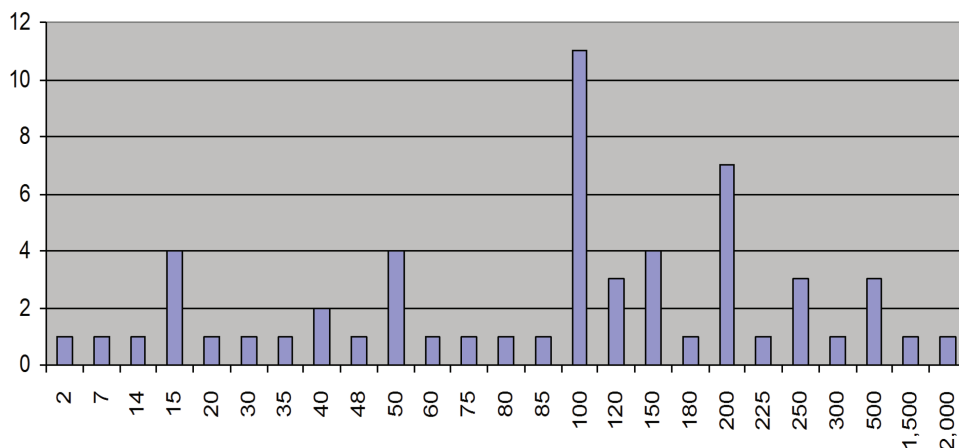
Thirty-five of 64 respondents (54%) who reported having a RAC indicated that RAC was a formal rotation in their residency program. Although respondents noted that chief residents represented the largest group of participants ( $n = 53$ ), lower level residents also have some degree of participation in the RAC (Fig. 8). Nearly all residents (60 of 64) provide continuity of care for their patients. According to the respondents, residents receive supervision mostly by full-time core faculty (Fig. 9), who usually oversee all components of perioperative and intra-operative care (Fig. 10).

**Patient Safety**

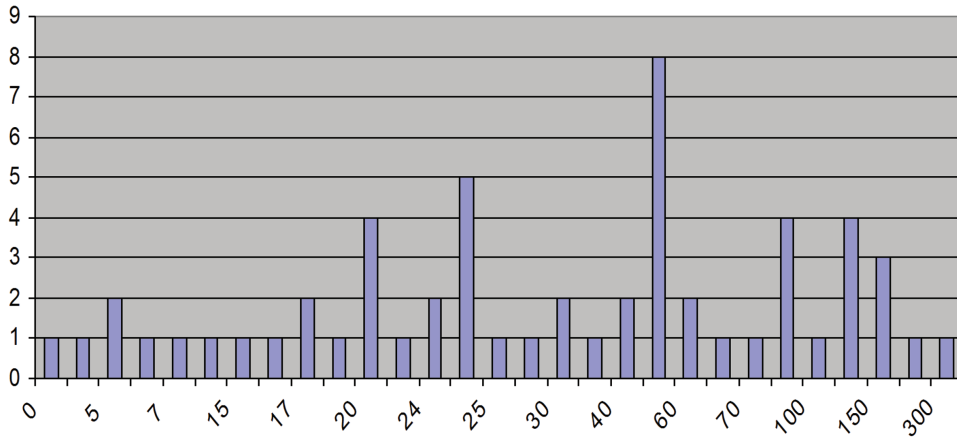
Although the majority of RACs have some type of accreditation, 18 of 63 respondents with RACs reported no accreditation (Fig. 11). Furthermore, 28 of 63 respondents with RACs



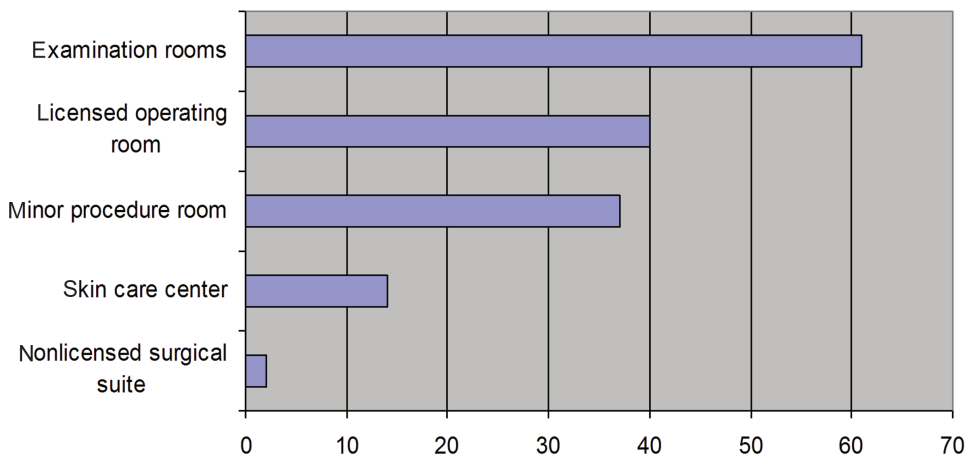
**Fig. 4.** Length of time that RACs have been in practice at institution: x axis represents length of practice in years, and y axis represents number of respondents for that time point.



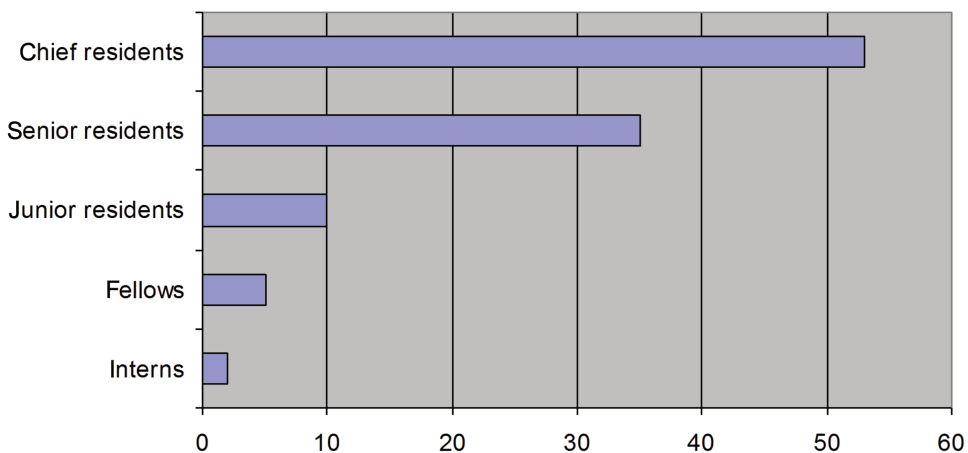
**Fig. 5.** Distribution of number of patients seen in the RAC each year: x axis represents number of patients seen per year, and y axis represents number of respondents for that number of patients.



**Fig. 6.** Distribution of number of procedures done in RAC each year: x axis represents number of procedures, and y axis represents number of respondents for each procedure number.



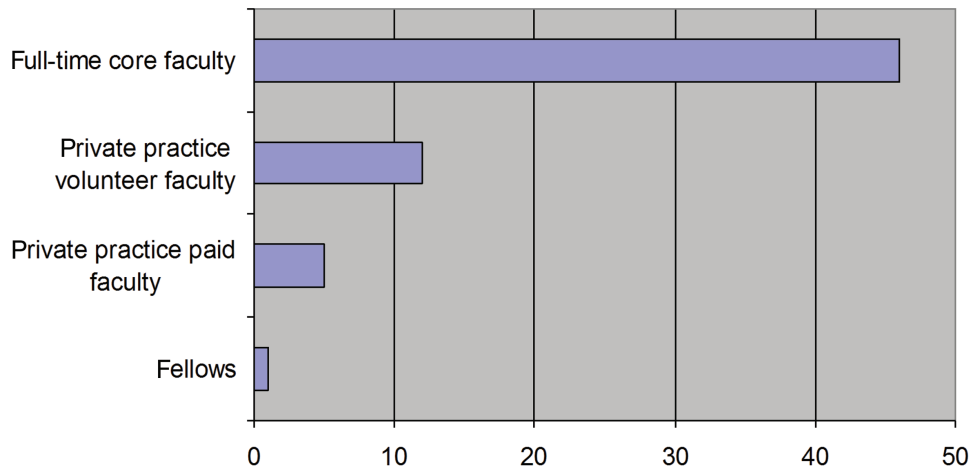
**Fig. 7.** Components of RAC, in terms of locations for patient encounters.



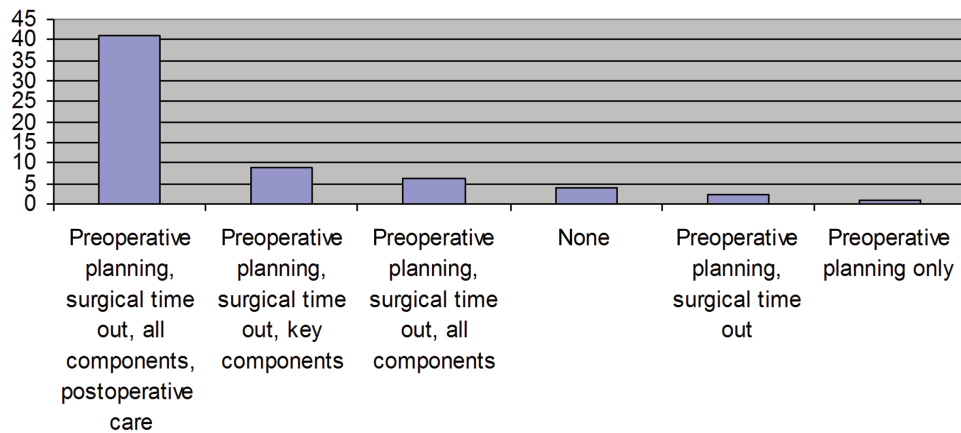
**Fig. 8.** Participation of plastic surgery residents in the RAC.

reported a list of inclusion/exclusion criteria for cases, and only 17 respondents reported having a Life Safety Plan for the RAC. An an-

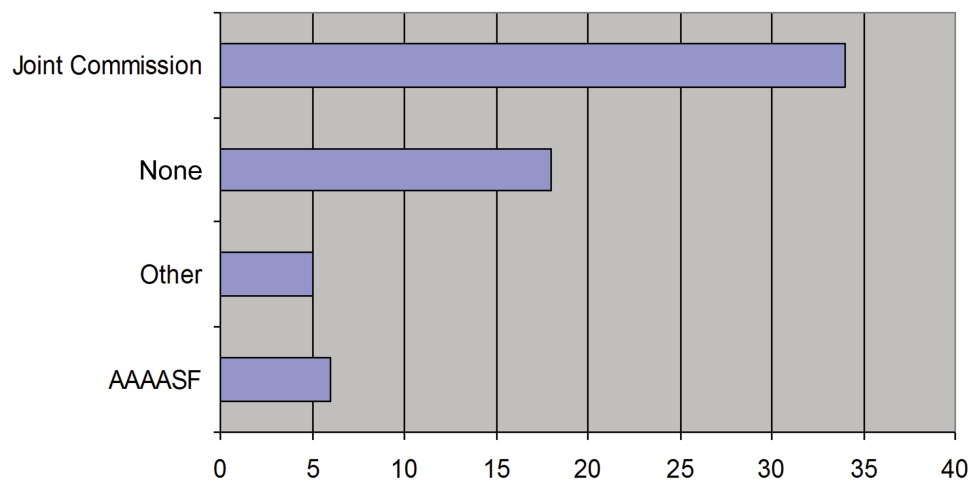
esthesiologist administers anesthesia in 31 of 38 RACs with operative capability, whereas other personnel are used for this function in the



**Fig. 9.** Responsible supervisor for trainees in RAC.



**Fig. 10.** Type of resident supervision provided in RAC.



**Fig. 11.** Type of accreditation for RAC. AAAASF indicates American Association for Accreditation of Ambulatory Surgical Facilities.

remaining RACs (certified registered nurse anesthetist, 3; nursing staff, 2; and surgeon, 2). Seventeen of the 35 clinics with operative capability reported the ability to recover patients overnight.

**Medicolegal History**

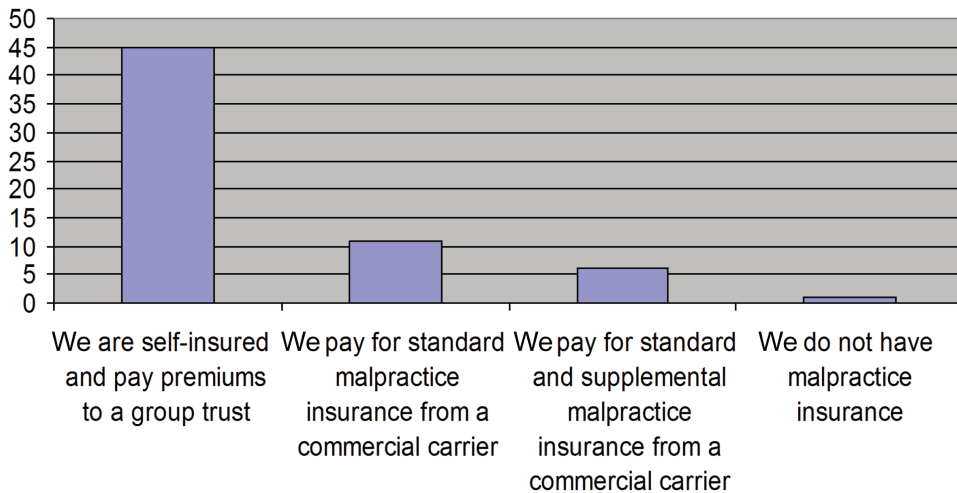
Of the 64 respondents who indicated that their institution had a RAC, 1 ACAPS member reported a patient death in the facility and 2 ACAPS members

reported patient deaths within 30 days of the procedure. Our cohort of ACAPS members observed no cases of malignant hyperthermia. Sixteen of the 62 ACAPS members (26%) indicated that their RAC has been involved in a lawsuit. Regarding malpractice insurance models, most groups are self-insured and pay premiums to a group trust (Fig. 12). Three of the 63 respondents with RACs noted that patients must sign a waiver, releasing residents from malpractice liability or to limit award for damages.

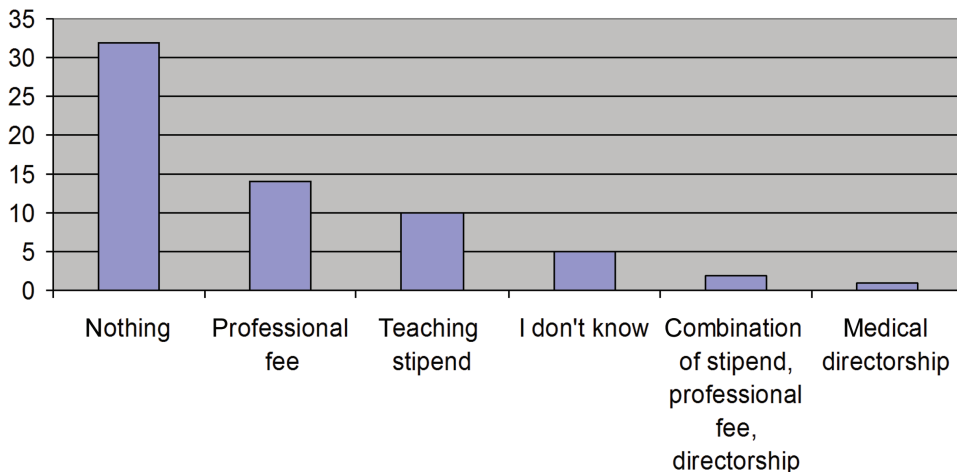
**Financial Viability**

Although 18 respondents did not know if their RACs were financially viable, 33 respondents indicated that their RACs were financially viable, compared with 13 respondents who reported that the RACs were not financially viable. The large majority of attending surgeons do not receive any financial

remuneration, but some of the respondents do receive compensation from professional fees, teaching stipend, or a medial directorship (Fig. 13). Almost all RACs offer discounted fees (59 of 63, 94%), and most RACs charge for the initial consultation (39 of 63, 62%). The most effective method for patient recruitment was listed as “word of mouth” (61 of 63, 97%). Faculty practices contribute various types of resources to the RACs, in addition to resident supervision (Fig. 14), such as clinic space, scheduling, nursing support, and disposable supplies. If profitable, net income is primarily transferred to a residents’ education fund, but some of the gains are transferred back to the division or department, presumably to cover overhead costs (Fig. 15). Only a small fraction of the positive net income is directed toward incentive plans for the faculty, to the dean or the hospital, or toward an operating reserve.



**Fig. 12.** Malpractice insurance model for RACs.



**Fig. 13.** Type of remuneration for attending surgeons who provide supervision of RACs.



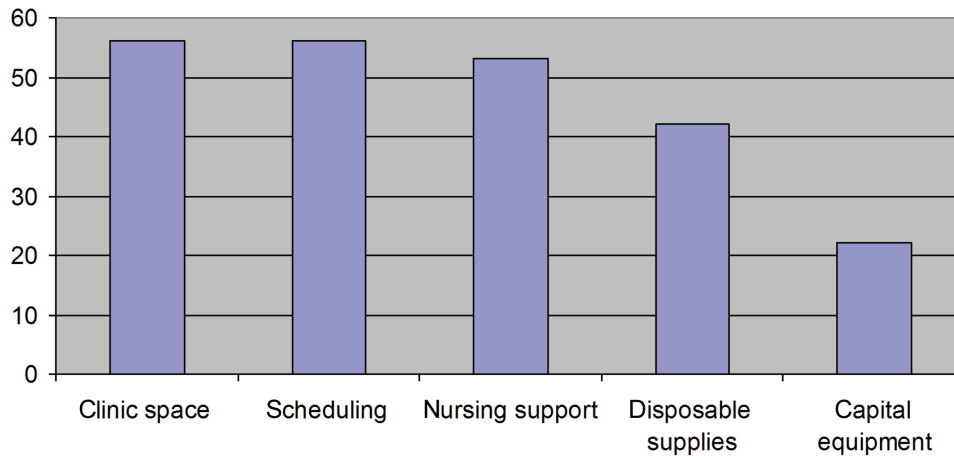


Fig. 14. Resources provided by practice to RAC.

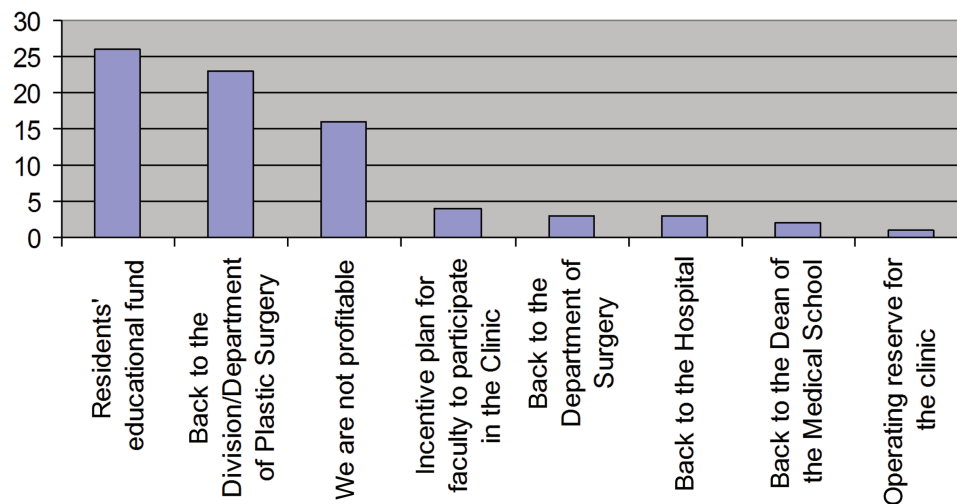


Fig. 15. Transfer location of net income, if profit/loss statement positive.

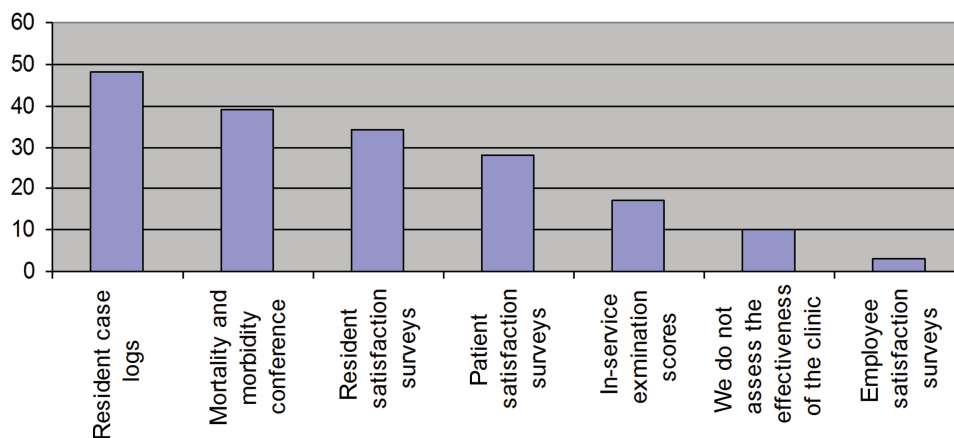
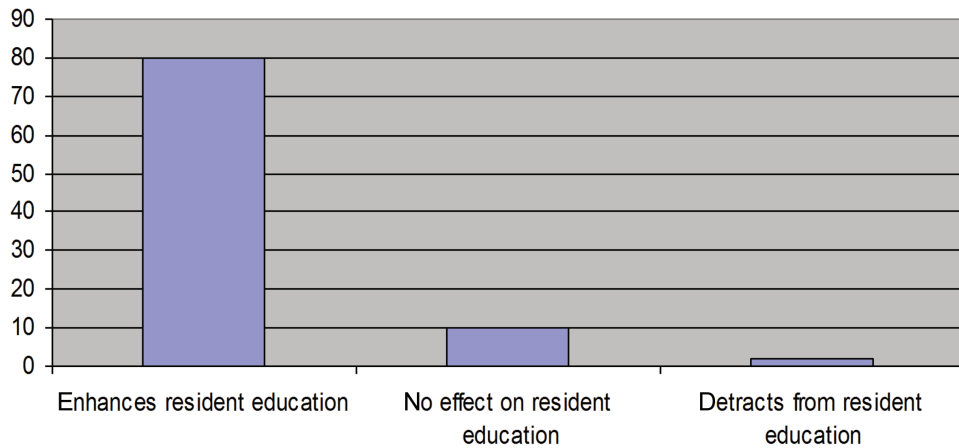


Fig. 16. Mechanisms to assess effectiveness of RAC.

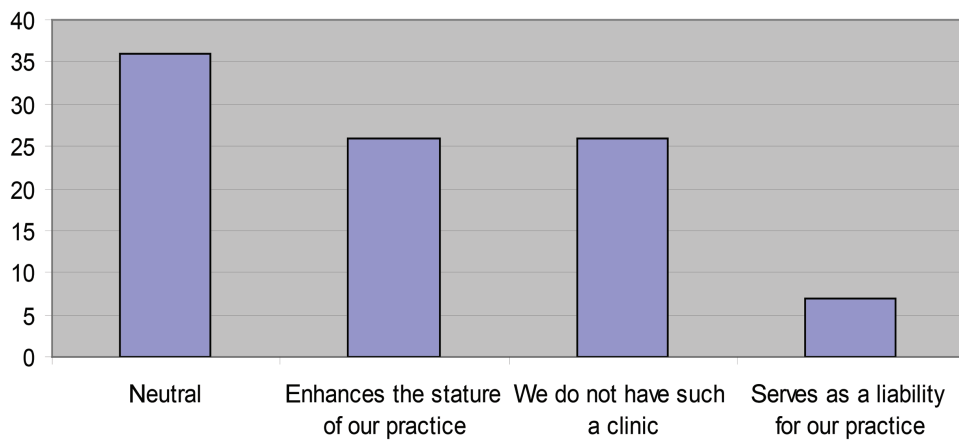
**Research and Outcomes Effectiveness**

Respondents indicated that RACs use a number of different methodologies to measure the effectiveness of the educational experience, with review of

resident case logs and morbidity and mortality conferences as the most popular techniques (Fig. 16). Fourteen of the 64 respondents with RACs have presented related data at national scientific meetings,



**Fig. 17.** Effect of the RAC on plastic surgery training.



**Fig. 18.** Impact of the RAC on the faculty practice.

and 12 respondents have published their research in peer-reviewed, scientific journals. The overwhelming perception is that RACs have a positive effect on plastic surgery training (Fig. 17). The majority of respondents were neutral when asked about the impact of the RAC on their practice ( $n = 36$ ), but only a minority of respondents reported that the RAC was a liability for the practice ( $n = 7$ ) (Fig. 18).

### DISCUSSION

RACs serve as an important component of graduate medical education in plastic surgery. Most clinics are financially viable but carry a high malpractice risk and consume considerable resources. Best practices, to maximize patient safety and optimize resident education, include use of accredited procedural rooms, having anesthesiologists provide anesthesia, and providing appropriate faculty supervision at all stages of patient care.

Despite their tremendous potential educational importance, medicolegal issues limit the value of RACs,

through increased exposure and liability of both the resident and attending physicians. Given the perioperative deaths reported in this survey, combined with a litigation rate of 25%, significant measures must be pursued to create a culture that stresses patient safety, in such a setting where graduate medical education occurs. Quality metrics, such as reporting of adverse events, use of standardized safety protocols and check lists, supervision that exceeds requirements of the Accreditation Council for Graduate Medical Education (ACGME), and longitudinal follow-up of patients, must be incorporated into the mission and operational structure of the RAC. We strongly recommend establishing a formal relationship with risk management, just as divisions and departments currently do, through the following modalities: morbidity and mortality conferences, peer review of cases, and preemptive reporting of complications and patient complaints.

The educational concept of a RACs is not new and has been implemented in various specialties, including plastic surgery, otolaryngology,<sup>19</sup> and dermatology.<sup>20</sup> In fact, the literature is replete with articles addressing

the mechanics of administering Plastic Surgery RACs, their educational benefit, and analyses of outcome data. According to Neaman et al<sup>3</sup> in 2010, 71% of plastic surgery residencies had a cosmetic surgery clinic, with 44% of the respondents noted that 100% of the cases performed there were cosmetic in nature.

In 2006, the University of Kentucky group noted that the resident cosmetic surgery clinic contributed 82% of the resident's total aesthetic procedures. This was completed with a 3.1% reoperative complication rate and no medicolegal litigation.<sup>4</sup> Pyle et al<sup>10</sup> at Wake Forest reported that not only do residents gain added experience as surgeon in a resident-driven clinic but also patients are able to receive cosmetic surgery that they might not otherwise be able to access. They had no major complications but did report a minor complication rate of 8% and a revision rate of 14.4%.<sup>10</sup>

Freiberg et al<sup>8</sup> at the University of Toronto examined a retrospective survey of 265 patients with a 49% response rate, where 93% of patients said they would recommend the clinic (after a slightly lower rate the first year), and 93% would undergo the same procedure again if required. The highest patient satisfaction was seen in augmentation mammoplasty (9.1/10.0) and blepharoplasty (9.0/10.0), whereas rhytidectomy and rhinoplasty were lower at 7.8/10.00 and 6.9/10.0, respectively.<sup>8</sup> At Georgetown University, Iorio et al<sup>7</sup> evaluated satisfaction with resident injected fillers using a FACE-Q survey. They demonstrated a 91% rate of being satisfied or very satisfied with this evolving less invasive and highly popular injection in 10 patients.<sup>7</sup>

At the American Association of Plastic Surgeons meeting in 2012, a 2-year retrospective review of patient care from 2009 to 2011 at the Johns Hopkins Resident Cosmetic Surgery Clinic was presented. Rad et al<sup>9</sup> noted complications rates consistent with the mainstream cosmetic surgery literature, breaking down the procedures by type and body location. Their study sample included 115 patients who underwent 132 primary body-contouring procedures and 53 patients who underwent 84 facial aesthetic procedures.<sup>9</sup>

Based on the published literature and the ACAPS national survey, it is clear that resident education in aesthetic surgery must be grounded in principles of informed consent, appropriate patient selection, patient safety, teamwork, and critical assessment of outcomes. Fortunately, qualitative and quantitative instruments have been recently developed to assess outcomes, in terms of patient satisfaction and objective measures.<sup>21–23</sup> Furthermore, surgical educators are focusing on how to teach trainees aesthetic surgery—and reporting these results—within the framework of competency- and milestone-based graduate medical education.<sup>24–26</sup> Additional efforts have been

pursued to educate residents about the importance of strategic marketing, accounting and finance, economic forces of competition, the supply chain, and regulatory/legal considerations, in the context of office-based surgery and aesthetic services.<sup>27–32</sup>

The Aesthetic Surgery Task Force of the ACAPS endorses the concept a properly supervised RAC, provided that the following guidelines are considered and followed, to the greatest extent possible, within training programs accredited by the ACGME:

1. The educational experience should maximize resident autonomy, appropriate to level of training, as permitted by ACGME guidelines.
  - a. Residents must obtain a complete history and physical examination, with preoperative evaluation to include patient photographs.
  - b. Residents must discuss case with attending regarding operative plan.
  - c. Attendings must be present for planning and execution of procedure.
  - d. Residents must be involved with postoperative management, including complications.
  - e. Residents must be available for 24–7 coverage, with adequate faculty backup.
2. Longitudinal, complete continuity of care is critical; no postrotation handoffs should occur.
3. The RAC must have a medical director who oversees the educational components of the program, to ensure that quality measures are met, that patient safety is optimized, and that operational logistics are well managed.
4. The RAC must establish screening processes to eliminate inappropriate patients, using such predefined parameters, such as body mass index, smoking status, uncontrolled diabetes, or hypertension.
5. The RAC must establish operative criteria, such as inclusion/exclusion lists and maximum length of case.
6. Surgery must be performed in accredited facilities only.
7. The RAC must have close faculty supervision in both the clinic and operating room, including presence at the key components of procedure.
8. The faculty must establish goals, objectives, and targets for residents; track outcomes; provide regular review; and offer timely feedback.
9. Real-time evaluation of competencies and milestones must be performed.
10. The program director should review operative logs to ensure diversity of cases, surgeons, and locations.
11. The RAC must combine a robust clinic and operative experience with strong educational

modules focused on aesthetic surgery, including lectures, indications and outcomes conferences, and a journal club.

12. The medical director should moderate a formal Resident Clinic Outcomes Conference for the entire division/department, in association with risk management.
13. The division/department should reinvest net income back into the aesthetic curriculum/program.
14. The RAC can consider reduced fees to stimulate demand, by decreasing professional fees and charging facility fees high enough to cover overhead.
15. The RAC should involve residents with strategic marketing of the practice.
16. The RAC should have a dedicated administrative assistant to help run the program.
17. Although aesthetic education should begin early in the training program, the RAC should be limited to chief or senior residents in Plastic Surgery.
18. The educational curriculum should phase in the complexity of the cases as the resident skill set grows (eg, the trainee could start with breast and body procedures and then move to facial procedures).
19. Trainee experience at the RAC should occur after more traditional aesthetic surgery rotations have been completed and should be considered separate and distinct from faculty practices.
20. Residents should not be allowed to perform injection of neuromodulators, soft-tissue fillers, or chemical peels in the RAC, which instead should be used as an operative experience, for surgical procedures.

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