The Role of Resident-Run Clinics for Aesthetic Surgery Training in the Context of Competency-based Plastic Surgery Education

Becher Al-halabi, MD, MHPE*
Jessica Hazan, MD*
Tyler Safran, MD*
Mirko S. Gilardino, MD, MSC, FRCSC, FACS*

Abstract: Resident-run clinics (RRCs) have been suggested as a clinical teaching tool to improve resident exposure in aesthetic plastic surgery education. In exchange for reduced cost aesthetic services, RRCs offer trainees the opportunity to assess, plan, execute, and follow surgical procedures in an independent yet supervised manner. With the transition into a competency-based medical education model involving a switch away from a time-based into a milestones-based model, the role of RRCs, within the context of the evolving plastic surgery curriculum has yet to be determined. To that end, the present study summarizes current models of aesthetic surgery training and assesses RRCs as an adjunct to aesthetics education within the framework of competency-based medical education. Explored themes include advantages and issues of RRCs including surgical autonomy, feasibility, exposure, learners’ perception, ethics, and quality improvement. In addition, attention is focused on their role in cognitive competency acquisition and exposure to non-surgical techniques. RRCs are considered an effective educational model that provides an autonomous learning platform with reasonable patient satisfaction and safety profiles. (Plast Reconstr Surg Glob Open 2020;8:e2766; doi: 10.1097/GOX.0000000000002766; Published online 27 April 2020.)

INTRODUCTION
Surgical education in North America is shifting towards competency-based medical education (CBME), whereby trainee performance is measured and demonstrated through objective milestones.1 In response to this curriculum reform, the Accreditation Council for Graduate Medical Education (ACGME) has defined core competencies that all plastic surgery residents are expected to attain upon program completion, with aesthetic surgical education being among these competencies.2,3 As highlighted by Murray and Baker, aesthetic surgery education distinguishes plastic surgery from other competing specialties, yet hands-on training in aesthetic plastic surgery is challenging mainly due to patient reluctance to have trainees participate in their procedures.2,4 Suggestions for improvement by experts include standardizing curricula across programs, shortening general surgery training, and increasing hands-on training and faculty involvement, community rotations, fellowships in aesthetic surgery, and implementing resident-run clinics (RRCs).2,5–9 With an increase in RRCs and continuous transition in plastic surgery education into a milestones-based model, this study explores RRCs as a model for competency-based aesthetic surgery training in terms of best practices and outcomes.10,11

CURRENT METHODS OF AESTHETIC SURGERY TRAINING
Current methods of aesthetic surgery training differ across residency programs. Most programs employ designated cosmetic surgery rotations and integrate didactic teaching, while few have an RRC dedicated to aesthetic surgery training.1,2,12,13 Designated rotations are usually single or multiple 1–6-month periods whereby residents assist in surgery with variable exposure to the consultation and follow-up process.2,14 At some academic centers, the variability and extent of cosmetic procedures performed are minimal.15 Notably, private practice patients frequently undergo wide-awake procedures under local anesthesia, which may further limit the degree of intraoperative teaching.3

A TYPICAL RESIDENT-RUN CLINIC IN AESTHETIC PLASTIC SURGERY
During the first clinical visit, the senior resident performs a complete evaluation of the patient, with or without...
an attending present, and formulates a preliminary care plan. During this time, the resident is able to counsel the patient on a given aesthetic surgery procedure and discuss the risks and benefits of surgery or other interventions. Initial consultations usually cost a ranging nonrefundable fee of $25–150 that can later be applied toward surgical expenses. Certain clinics do not charge consultation fees if the attending is not present during the clinical encounter. RRCs may choose to perform pre-consultation screening to identify eligible patients in advance. Free screening visits at the beginning of each rotation can promote the practice, with cost deficits offset by future revenue.

The most common reasons for not accepting consultations are unavailable services, issues with insurance, patient’s body mass index, or comorbidity. The majority of consultations involve aging face and eyelids in older patients, as well as nasal, breast and body contouring in younger patients. A second reevaluation visit entails a review of the plan with the attending, surgical booking, and routine pre-operative photography. Clear disclosure on all costs associated with consultations, follow-ups, surgeries, and management of complications is given. To improve compliance to treatment and follow-up all payments are submitted in advance.

Operative time can be provided or donated by the attending, and the residents should be responsible for booking their own surgeries. Most cases are done under general anesthesia. Patients are charged, in part or full, for anesthetic, hospital, surgical and overnight admission fees. Despite the expected increase in total-surgical-time given resident involvement, an autonomously working resident can be safe when adequately supervised. Adequate supervision entails that an attending is present or easily available, particularly for more complex or involved procedures. Intraoperatively, the attending’s presence follows a progressive autonomy model. That is, the degree of attending involvement depends on the comfort and experience of the resident.

The resident is held accountable as the primary surgeon on all documentation and patient information material. A preformulated postoperative plan is followed and patients are encouraged to adhere to a follow-up timeline, consisting of 3–4 visits on average. The follow-up includes postoperative photographs and satisfaction surveys. Residents remain on call for their cases, and in charge of follow-up and the management of any complications. A policy for fees associated with revisional surgery should be discussed and agreed upon before the first intervention. When complications arise, an open disclosure session can be held with the involved resident and attending to address dissatisfaction and provide feedback.

MANAGING-complications

As with any clinic, RRCs are at risk for complications. Ethical issues arise following unfavorable results, especially in the absence of direct supervision.

This mandates designation of responsibility, proper ethical education and medical liability insurance to help navigate conflicts between educational goals and patients’ safety and expectations. Residents require liability insurance and sometimes patients require cosmetic medical insurance. Clear patient understanding of residents as surgeons-in-training under supervision is essential. Only 35% of patients clearly understand residents’ designated role, and most expect to be asked for permission before the resident assuming responsibility. Patient education tools improve informed consent and understanding of residents’ roles and thus shared decision-making and satisfaction by approximating expectation. Nevertheless, evidence suggests that satisfaction rates in RRCs are comparable to that of private centers. Low satisfaction is likely related to the technical learning curve, unrealistic patient expectations, resident demeanor, communication and time spent in an interview. Other common reasons for dissatisfaction following surgery included scarring, asymmetry, complications, and unmatched expectations.

Finally, cosmetic patients require personalized service and privacy, which is contrary to academic practices whereby multiple trainees partake in patient care. This patient population demands care by selected experts, restricting residents’ exposure to private-clinic-based rotations. Reluctance stems from the perceived negative effects on their aesthetic outcomes, which patients pay for out-of-pocket. As such, most of the learning is obtained by observing or assisting surgical attendings perform aesthetic surgery. In addition, with many procedures performed in an awake patient under local anesthesia or light sedation, teaching may be further limited during these types of interventions. Financial incentives are thought to be a crucial factor in recruiting patients for surgery carried out by trainees. RRCs cater to a niche of patients that are attracted to lowered prices in exchange for resident involvement.

DEGREE OF EXPOSURE AND NON-SURGICAL TECHNIQUES

The most commonly performed procedures are body contouring and breast surgeries, and across all programs, residents report the highest confidence in performing these surgeries. The exceptions are mastopexy, advanced and lower body contouring, and endoscopic breast augmentation. Most graduates lack comfort in facial surgical procedures, such as facelifts and rhytidoplasties. In contrast, graduates feel comfortable performing platysma and brow lifts, yet their program directors feel they lacked comfort in open or endoscopic brow lift, and chin or face implants. Finally, residents lack exposure in noninvasive procedures including endoscopic techniques, peels, skin care, injectables, laser resurfacing, and hair transplantation.

OVERCOMING BARRIERS

RRCs are difficult to initiate due to lack of public knowledge and may not generate enough revenue to survive. Media advertisement can be used to promote...
free screening visits or the launch of new clinics or rotations.16–18,22,50 Alternatively, patient satisfaction driving “word of mouth” can also increase referrals.21,25,27,28,31 Most RRCs operate on a not-for-profit basis. Revenue from the clinic is usually returned to the program or used for compensation of clinic staff.19,26–28 For example, some clinics hire administrative assistants, freeing residents from these time-consuming tasks.18,26,27 Revenue can also be used to provide residents with housing, travel, books, and stipends.14,21,28 Some programs provide attending staff with educational reimbursements, such as a percentage of insurance claims.16,57

Despite having garnered support by plastic surgery educators,13,22 the lack of RRC standardization is multifactorial. Most of the available research shows financial viability despite high risk for litigation and extensive resources and personnel.12,20 In terms of location, an off-site set-up requires fixed costs, expensive equipment (lasers, endoscopes, etc.) and can be logistically difficult for residents to reach. Although offsite clinics avoid the need for sharing resources and space, they must be fully accredited.22,50 For revenue optimization, an understanding of economic elasticity is essential to appropriately price services and optimize deficiency coverage while maintaining viability.19 The American Council of Academic Plastic Surgeons also recognizes costs, staff oversight, malpractice concerns, and administrative issues as barriers to setting up RRCs.29,57 Administration, logistics, and billing are essential for a practice’s success and evidence shows that residents lack knowledge on appropriate documentation and coding.16,48 This requires education on strategic marketing, accounting and finance, economic forces of competition, supply chain, and regulations, in the context of office-based surgery and aesthetic services, which is lacking.12,49,50 In addition, due to the rotating nature of residents’ involvement, residents lack exposure to all aspects of running a practice and may not complete their patients’ follow-up as they graduate or move onto other rotations.31 Other administrative issues lie in legal accountability of complications or unfavorable results.16,51

Establishing RRCs can be challenging due to a lack of faculty or program director/residency program committee approval, or alternatively a public perception of residents being inexperienced or unqualified for their aesthetic surgery needs.16,25 Operating room availability and adequate clinic time may also be roadblocks.16,28,37 Moreover, inadequate funding and negative attitudes from residents towards RRCs are also reported.25,45 Infrequently, local private aesthetic clinics can perceive the introduction of an RRC as competition.17,25,27 To avoid damaging relationships with local private cosmetic surgeons, RRCs should be advertised as a learning resource targeted to patients with inadequate funding, and those with complex medical problems to allow residents to practice patient screening.31

RATIONALE FOR RESIDENT-RUN CLINICS IN CBME IN AESTHETIC SURGERY

The ACGME has introduced a CBME model in hopes of providing trainees with the tools to meet societal expectations upon transition into independent practice. RRCs are semi-independent environments that employ all aspects of this competency framework and provide a milestone-based education through progressive autonomy.12 Since the quality of care in aesthetics is centralized around patient satisfaction, continuity of care is essential for improving resident performance.51,45 As such, it provides a society-catered educational opportunity that well prepares residents for postgraduation practice, while maintaining an equivalent safety profile.

Using the competencies of the ACGME and the roles of the Royal College of Physicians and Surgeons of Canada as a framework (Fig. 1), comparing the currently employed models in aesthetics training to RRCs will highlight the importance of the latter in the transition towards CBME (Table 1).52,55 Although didactic teachings and designated rotations can provide medical knowledge and some exposure to patient care (medical expert role), RRCs employ a unique, semi-autonomous and immersive learning environment to improve knowledge and skill acquisition through applicative learning.17–19,22,24,27 Moreover, RRCs provide residents with prime opportunities to develop their professionalism and their roles as health advocates by allowing them direct patient exposure during a primary visit in a milieu that varies from that in an academic practice.16–25 This is further augmented by the accountability bestowed on the resident in terms of outcomes, which is lacking in traditional teaching models of aesthetic surgery.25,26,29,51 This learning environment is also compatible with the plastic surgery milestone project by providing measurable and attainable levels of experience and accountability and help identify learning gaps.31 As such, the role of RRCs within CBME become especially important with the implementation of the Next Accreditation System, with evidence of validity and effectiveness emerging from application on other surgical programs.54,57 With variability in response and preparedness among plastic surgery programs, the effects within the accreditation process can range from suggesting programs where residents have difficulties in attaining milestone to establish RRCs or making them essential for accreditation given the weight given to aesthetic surgery within the established Plastic Surgery Milestones.11,57

When residents are allowed to take charge in patient care, RRCs develop skills related to the non-technical aspects of care (cognitive competencies) as well, which are often deficient in other models of aesthetic training.20,21,23,28,31 These non-technical skills include communication, leadership, task management, and practice management. In addition, such learning environments involve a trial and error process that most trainees will only go on to experience in their first year of practice, as well as autonomous learning that allows residents to graduate with more confidence.16,24,47 RRCs are, therefore, unique in providing an opportunity to partake in all aspects of patient care, including preoperative planning and long-term follow-up of aesthetic surgical cases compared to other models.17 Exposure to these skills are imperative for practice and system-based learning, where residents assume the roles of collaborators with other team members, leaders of their
practice and communicators through direct patient care, patient education and plan formation.18,22,27 Lastly, several RRCs involve their residents in learning through evidence-based-medicine and studying the clinic’s outcomes, thus developing their analytical and research skills.20,26,31,43,61

In such a transition to CBME, the ability to measure the progress and competency in the aforementioned skills and roles becomes a priority; RRCs provide an optimal environment for such assessments as well. Attainment of the 6 ACGME core competencies can be measured using 360-degree evaluations.61–63 That is, feedback is obtained from all parties involved, including subjective self-evaluations. Establishing learning objectives, providing feedback in real-time, completing case logs, and attending mortality-morbidity meetings are also methods commonly employed for performance improvement.18,21,24,37,59 A recent survey of the effect of the increased ACGME case log minimum requirements demonstrated an increase in RRCs, designated rotations, and self-perceived resident preparedness; this transition was generally thought to be beneficial for training.10 An autonomy score describing the attending’s role, ranging from “available” to “scrubbed for the entire case,” has been used to track autonomy progression. This form of graded autonomy provides stable soil for competency development.5,12,14,16,20,23 Application of formal tools such as client satisfaction questionnaire-8 and FACE-Q among others can also be used to track resident performance and provide feedback for improvement.23,58,64

### SUMMARY

Current research on RRCs in aesthetic surgery mainly consists of statistical compilations from surveys targeting residents and program directors. There remains a gap between the perception of faculty and residents with regard to aesthetic training. Eighty-eight percent of program directors were “satisfied” or “very
satisfied” with cosmetic training, compared to only 32% of residents.21 Accordingly, a 2016 ASAPS survey demonstrated that both parties agreed that RRCs were the best modality for aesthetic surgery teaching.20,22,23,24 Members of the American Council of Academic Plastic Surgeons were also in support of RRCs and did not perceive them as being a liability.12 The present authors provide further support for the merit of RRCs, highlighting how the autonomous learning platform can serve as a vehicle for competency-based learning within aesthetic surgery training. As such, RRCs may provide teaching programs and faculty with a tool to facilitate the challenging shift towards CBME, which has already become the evolving standard for North American surgical education.

**Mirko S. Gildartino, MD, MSC, FRCS, FACS**
Division of Plastic and Reconstructive Surgery
McGill University Health Centre;
H.B. Williams Craniofacial and Cleft Surgery Unit
Montreal Children’s Hospital
1001 Decarie Blvd, B05.3310
Montreal, QC H4A 3J1, Canada
E-mail: mirko.gildartino@muhc.mcgill.ca

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