

Demonstrating Excellence in Plastic Surgery Residency

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Background: Residents can achieve distinction by discerning which areas of achievement are worth additional focus at each stage in training. Our survey examines the perspectives of faculty members affiliated with Accreditation Council for Graduation Medical Education–accredited plastic surgery residency programs regarding qualities indicative of resident excellence.

Methods: A survey including Likert scales and rank-ordering was distributed to plastic surgery program directors and faculty with the intent to assess perspectives regarding resident excellence at each stage of training. Responses were analyzed using marginal homogeneity tests and summary tables.

Results: In total, 90 respondents completed the survey. An estimated 94.5% believe it is possible for residents to achieve excellence at any stage of clinical training, and 87.7% report their definition of excellence differs by training level. Top three metrics indicative of resident excellence for interns and junior residents were preparation for operative cases, bedside manner, and personality. For seniors: preparation for operative cases, leadership capability, and bedside manner. For chief residents: preparation for operative cases, leadership capability, and technical operative expertise.

Conclusions: A resident who displays excellence inspires mentorship, which can propel future career success. Faculty agree excellence can be achieved by residents of any stage, although the qualities that define this evolve by training year. Preparation for operative cases is considered a critical component of resident performance at all levels. Bedside manner and personality are ways intern and junior level residents excel, whereas leadership ability and technical expertise in the operating room become significant in senior and chief trainees. (*Plast Reconstr Surg Glob Open* 2022;10:e4061; doi: 10.1097/GOX.0000000000004061; Published online 21 January 2022.)

INTRODUCTION

Integrated plastic surgery residency is a six-year clinical training period during which residents' responsibilities, performance expectations, and mentorship evolve. At all stages of training, residents seek to demonstrate proficiency and distinction both internally within their own program and externally within the field. Excellence—a state of outstanding knowledge, skills, and performance—helps residents establish goodwill among faculty members and peers.

Resident training milestones are rooted in Accreditation Council for Graduation Medical Education (ACGME) requirements and emphasize achieving proficiency and focus heavily on honing operative technique.¹ However, these academic milestones fail to capture faculty values as they pertain to residents' performance at each stage of training. As residents progress through 6 years of clinical training, the importance of certain characteristics inherently evolves.

Plastic surgery residents seeking to establish a reputable name for themselves within their program are challenged by limited time and resources beyond their clinical service obligations.² As such, it can be difficult to discern which areas of achievement are worth additional devotion at each stage in residency.³ With clear goals and alignment of values, surgical residents can work with program faculty to achieve and exceed expectations more often and with greater satisfaction. This project intends to survey the perspectives and sentiments of current faculty members affiliated with United States integrated plastic surgery training programs to illuminate and

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better understand which metrics are perceived to garner the greatest sense of resident excellence.

METHODS

A nationwide survey was designed to assess faculty perspectives regarding integrated plastic surgery resident excellence at each stage of training. The survey was pilot tested and internal validity was assessed. The final survey instrument utilized a combination of Likert scales, rank orders, and multiple-choice questions. The survey was hosted on the SurveyMonkey (San Mateo, Calif.) platform. This study received institutional review board exemption from the Ohio State University Office of Responsible Research Practices (IRB #2020E0909).

Surveys were distributed through both the American Council of Academic Plastic Surgeons and through personal email to a mailing list of currently employed faculty members affiliated with ACGME-accredited integrated plastic surgery residency programs. Three survey rounds were issued via email from January to August 2021. Review of the electronic consent form and successful completion of the survey was considered consent for participation.

Categorical variables were summarized in tables. Marginal homogeneity tests were utilized to detect changes in metrics for assessing resident excellence. Statistical analysis was performed using Microsoft Excel (Redmond, Wash.).

RESULTS

We received 90 responses from plastic surgery faculty affiliated with ACGME integrated residency programs. Respondents were predominantly men (75%) and identified as White (85%). Most (91%) respondents reported more than 5 years' experience as a faculty member. A majority (77%) were identified as a current, former, or associate residency program director. Current or former plastic surgery department chairpersons or division chiefs represented 35% of respondents.

Takeaways

Question: What specific qualities make plastic surgery residents excellent?

Findings: Surveyed ACGME-affiliated faculty reported that characteristics demonstrative of resident excellence naturally vary by training year. Respondents indicated that excellence among junior residents was displayed by bedside manner and personality, whereas leadership and technical skills were emphasized in senior residents. Preparation for operative cases was important at all stages of residency.

Meaning: Plastic surgery residents value clarity on what characteristics warrant development at each stage of their training. This summary of faculty opinions can help direct trainees who seek to refine their professionalism and inspire goodwill among supervising surgeons.

Most (66%) were affiliated with an integrated-only residency program; no respondents were affiliated with an independent-only track residency program. Respondent demographics are summarized in [Table 1](#). A response rate was unable to be calculated given the manner of survey distribution.

General sentiments about resident excellence are summarized in [Table 2](#). Most faculty members responded that they clearly communicate operative (93.3%), clinical (90.0%), and professional development (84.5%) expectations to residents. In total, 94.5% of faculty believe it is possible for residents to achieve excellence at any stage of their clinical training, and 87.7% of faculty reported their definition of excellence differs by residency training level. Respondents did not consider resident excellence to be a requirement for faculty mentorship or advocacy. A minority replied that they exclusively mentor (11.1%) or advocate for (22.2%) residents who they perceive to strive for excellence.

Table 1. Respondent Demographics

Category		n	%
Gender identity	Women	10	20.8
	Men	36	75.0
	Not listed	1	2.1
	Prefer not to answer	1	2.1
Race	Asian	5	10.7
	Black or African American	1	2.1
	White	40	85.1
	Other	1	2.1
Ethnicity	Hispanic and/or Latino	1	2.4
Cumulative years as plastic surgery faculty member	<5 y	4	8.3
	5–9 y	12	25.0
	10–14 y	7	14.6
	15–19 y	7	14.6
	20+ y	18	37.5
Program director (PD)?	Yes	25	52.1
	Associate Program Director (APD)	3	6.3
	Former PD or APD	9	18.8
Department chairperson or division chief?	Yes	14	29.2
	Former Chairperson or Division Chief	3	6.3
Affiliated residency program type	Integrated	32	0.7
	Independent	0	0.0
	Both	16	33.3

Table 2. Respondent Sentiments Regarding Resident Performance

Statement	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
My operative expectations for residents are clearly communicated	50.0%	43.3%	4.5%	2.2%	0.0%
My nonoperative, clinical expectations for residents are clearly communicated	51.1%	38.9%	6.7%	3.3%	0.0%
My nonclinical, professional development expectations for residents are clearly communicated	36.7%	47.8%	14.4%	1.1%	0.0%
It is possible for residents to achieve excellence at each stage of their plastic surgery training	74.5%	20.0%	4.4%	1.1%	0.0%
My definition of excellence for residents changes depending on their training year	53.3%	34.4%	5.6%	2.2%	4.5%
I exclusively mentor residents who I believe strive for excellence	3.3%	7.8%	21.1%	43.3%	24.5%
I exclusively advocate on behalf of residents who I believe strive for excellence	8.9%	13.3%	15.6%	41.1%	21.1%

The three most highly ranked metrics for first-year plastic surgery residents were bedside manner, preparation for operative cases, and personality. Bedside manner was ranked within the top three metrics in 70% of responses, out of 13 total rank order positions. Preparation for operative cases was ranked in the top three in 47.1% of responses, and personality in 20.4%. The two lowest ranked metrics for a post-graduate-year one (PGY-1) resident were research productivity and case log status.

Excellence in junior residents (PGY-2 or PGY-3) was defined by faculty selections of the following three metrics: preparation for operative cases (54.6%), bedside manner (46.6%), and personality (23.3%). These were ranked most highly out of a total of 13 selections. The two lowest ranked metrics for a junior resident were research productivity and case log status.

Senior residents (PGY-4 or PGY-5) were assessed most frequently for excellence on the following metrics: preparation for operative cases, leadership capability, and bedside manner. Preparation for operative cases was ranked in the top three positions 63.7% of the time. Leadership capability occupied a top three rank in 51.1% of responses, and bedside manner in 39.6%. These were ranked most highly out of a total of fourteen selections. The two lowest ranked metrics for senior residents were post-residency career interests and case log.

The three most highly ranked metrics for chief (PGY-6) residents were leadership capability, operative

technical expertise, and preparation for operative cases. Leadership capability was ranked within the top three metrics for excellence in 68.3% of responses, out of a fourteen total rank order positions possible. Operative technical expertise was ranked within the top three positions in 63.6% of responses, followed by preparation for operative cases (58.5%). Research productivity and post-residency plans were the two lowest ranked metrics when assessing PGY-6 excellence. Top three metrics for interns, juniors, seniors, and chiefs are summarized in [Table 3](#).

DISCUSSION

Plastic surgery residents have limited time and resources to devote throughout training due to a rigorous schedule and demands of patient care. Despite this, trainees are incentivized to pursue endeavors that will demonstrate their abilities to supervising faculty and mentors. Residents naturally progress through training to acquire new competencies as they develop into a future independent surgeon. Career success at all levels depends on both intrinsic and extrinsic factors. Intrinsic qualities include characteristics and traits such as reliability, trustworthiness, and grit.⁴ Extrinsic factors involve mentorship, networking, and advocacy from existing leaders.⁵ For trainees motivated to perform at the top of their abilities throughout residency, knowledge of specific qualities they must develop and demonstrate at each stage can propel them towards future achievement.

Table 3. Perceived Top Three Metrics for a Resident Achieving Training Excellence

Metric	Total (n)	Ranked First (%)	Ranked Second (%)	Ranked Third (%)
Intern (PGY-1)				
Bedside manner	35	44.0%	12.0%	14.0%
Preparation for operative cases	24	15.7%	21.6%	9.8%
Personality	10	10.2%	4.1%	6.1%
Junior (PGY-2 or PGY-3)				
Preparation for operative cases	24	25.0%	18.2%	11.4%
Bedside manner	20	23.3%	16.3%	7.0%
Personality	10	14.0%	2.3%	7.0%
Senior (PGY-4 or PGY-5)				
Preparation for operative cases	28	29.6%	27.3%	6.8%
Leadership capability	23	20.0%	4.4%	26.7%
Bedside manner	17	18.6%	4.7%	16.3%
Chief (PGY-6)				
Leadership capability	30	29.6%	18.2%	20.5%
Operative technical expertise	28	22.7%	18.2%	22.7%
Preparation for operative cases	24	14.6%	26.8%	17.1%

Preparation for operative cases was indicative of resident excellence across all training years. Additionally, for residents in their first three clinical years of training, interpersonal characteristics such as bedside manner and personality were prioritized. For senior and chief residents, leadership capability gained significance. Operative technical expertise became a top three metric only for chief residents. Case logs were considered unimportant across all training years. Although these findings may be intuitive, the data affirm and outline key factors to achieve excellence to trainees who may not know where to start or refine their professional development. Additionally, each of these metrics was ranked in the context of other worthy pursuits such as research productivity, preparation for formal curricular activities, rapport with others, and performance on the in-service exam, etc. Showing that certain characteristics take precedence, according to the majority of our survey respondents, may encourage residents to devote time to certain qualities they may have neglected.

Despite some similarities, our findings mostly diverge from the emphasis of ACGME Milestone assessments, which highlight knowledge of categories predominantly focused on regions of the body requiring reconstruction.¹ Although a breadth and depth of knowledge that encompasses the full spectrum of core plastic surgery is key before resident graduation, these Milestone categories serve mostly as a reiteration of existing case log requirements. This raises the question of whether ACGME Milestones should be changed to more accurately reflect qualities prioritized by plastic surgery faculty and leaders. This would provide a means of regular assessment of characteristics, which, in combination with other progress-tracking tools such as case logs, can holistically develop residents into well-rounded surgeons.

Other metrics to track resident performance include in-service examination scores. This has historically predicted American Board of Physician Specialties examination pass rate, which is necessary for future career realization.⁶ Despite this, in-service examination scores in our survey were ranked in the bottom half of responses for intern, junior, and chief levels residents. Although annual examination scores may carry importance for success in specialties like general surgery, this is not reflected in the current beliefs of plastic surgery faculty members nationally.⁷

Strong recommendations by established faculty from all plastic surgery subspecialties is one of the most critical factors in fellowship match.^{8–11} Demonstrating talent and excellence throughout training is essential to developing relationships with mentors who may serve as a steward for residents as they graduate.^{12–16} Trainees who shine predictably inspire program faculty to provide mentorship and advocate on the resident's behalf. These high-quality, longitudinal relationships with faculty translate to future resident career prospects in prominent roles such as a surgeon-researcher or thought leader.^{17,18}

Limitations to our study include both sample size and survey design. We received a total of 90 responses

after distributing to 82 emails. This equates to approximately 1.1 responses per original email sent. Although we cannot calculate a specific response rate given that the exact denominator is unknown, our survey captured a minority of its intended audience, limiting the weight and diversity of our conclusions. In addition, our survey design included many similar, but inconsistent metrics throughout the PGY years. This led to ranking differences in total number and certain options to select.

CONCLUSIONS

A resident who displays excellence is often easy to identify; however, the specific qualities that contribute to such excellence can be difficult to isolate. Our survey demonstrates certain metrics that plastic surgeons find to be indicative of resident distinction at all stages of training. Preparation for operative cases is a critical component of resident performance at all levels. Bedside manner and personality are ways junior-level residents excel, whereas leadership ability and technical expertise in the operating room become significant in senior level trainees.

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