

The Science of Selection: Using Best Practices From Industry to Improve Success in Surgery Training

Aimee K. Gardner, PhD,^{*,†,1} Teodor Grantcharov, MD, PhD,[‡] and Brian J. Dunkin, MD^{†,§}

^{*}Department of Surgery, School of Allied Health Sciences, Baylor College of Medicine, Houston, Texas; [†]SurgWise Consulting, Houston, Texas; [‡]Department of Surgery, University of Toronto, Toronto, Ontario, Canada; and [§]Department of Surgery, Houston Methodist Hospital, Houston, Texas

BACKGROUND: The selection of high-quality applicants is critical to the future of surgery. However, it is unclear if current practices meet industry criteria of a successful selection system, as measured by administrative efficiency and performance and attrition of those selected.

METHODS: We performed a modified systematic review process to gain an understanding of current selection processes, remediation practices, and attrition rates in surgery residency training programs in the United States. We also conducted semistructured interviews with local residency program directors and coordinators to obtain a specific snapshot of the amount of time and resources dedicated to these activities in various sized programs. The associated financial costs of these activities are also presented.

RESULTS: The administrative costs for current residency selection processes are substantial, ranging from \$45,000 to \$148,000 for each program per year. Approximately 30% of residents require at least 1 remediation intervention, costing programs \$3400 to \$5300 per episode, and typically involve concerns around nontechnical skills. Attrition rates range from 20% to 40%.

CONCLUSIONS: This review suggests that additional methodologies may allow surgery residency programs to identify best-fit candidates more efficiently and effectively, while also decreasing remediation and attrition rates. Possible solutions include incorporation of structured interviews, personality inventories, and situational judgment tests. Resources dedicated to current interview practices, remediation efforts, and attrition management can be redirected to support these methodologies. By applying the science of selection and assessment to the

recruitment process, programs may be able to make more data-driven decisions to identify candidates who will be successful at their institution. (J Surg Ed ■■■■-■■■. © 2017 Association of Program Directors in Surgery. Published by Elsevier Inc. All rights reserved.)

KEY WORDS: selection, recruitment, cost, applicants, attrition, remediation

COMPETENCIES: Systems-Based Practice, Practice Based Learning & Improvement

INTRODUCTION

Modern surgery residency training requires efficiency. New technologies, evolving techniques, duty-hour restrictions, changes in team dynamics, and increased administrative demands for both faculty and residents have intensified burdens placed upon training programs. These factors require that residents rapidly adapt to their chosen training environment, quickly develop skills to work independently, and avoid delays in their training because of remediation or performance issues. One way to identify those most likely to succeed is to create a robust and validated selection process. In fact, the Royal Colleges of Surgeons in Canada, Australia, New Zealand, England, Ireland, and Scotland have all identified better selection of surgery trainees as a key initiative integral to improving surgical residency.¹ Unfortunately, surgery residency directors may be unaware of the science of selection commonly used in industry, instead relying on ad hoc interview and selection processes that can result in remediation and attrition rates higher than those accepted in nonmedical fields.

This report defines the current paradigm of surgery resident selection and compares it to metrics used in industry to determine the return on investment (ROI) of a selection system: administrative efficiency, performance of those selected, and attrition rates. Through data collected from empirical review and semistructured interviews, we also provide the monetary and nonmonetary costs associated with current selection processes.

Correspondence: Inquiries to Aimee K. Gardner, PhD, Department of Surgery, School of Allied Health Sciences, Baylor College of Medicine, MS: BCM115, DeBakey Building, M108K, One Baylor Plaza, Houston, TX 77030; fax: (713) 798-7694; e-mail: aimee.gardner@bcm.edu

¹Twitter ID: @AimeeGthePHD.

Finally, we propose that additional methodologies and assessment strategies may allow programs to identify best-fit candidates more efficiently and effectively, while decreasing remediation and attrition rates and improving resident satisfaction, thus increasing the ROI of our current selection system.

METHODS

We performed a modified systematic review process, the Systematic Rapid Evidence Assessment or Rapid Review, which uses a variety of methods that incorporate the principles of systematic review technology but modifies the methods used to complete work within a specified time or on a multitude of topics, to gain an understanding of the current selection, remediation, and attrition management processes in surgery residency training programs in the United States. Because of the variety of research questions being addressed in this review and the variety of research designs and methods, a synthesis approach such as a meta-analysis could not be adopted. Online databases, including the Cochrane Library, Ovid MEDLINE, and PubMed, were used to search for terms associated with residents (education, medical, graduate/or internship and residency/or education, medical) and then selection (select, selection, interview, screening, recruitment, application, onboarding, mini multiple interviews, references, personal statements, USMLE, academic records, personal statements), remediation (remediation, problem, concerns, intervention, probation, performance improvement, high-risk, deficits), and attrition (attrition, turnover, dismissal, termination, fire). Findings from each of these searches are presented under the core topic areas.

Next, we performed semistructured interviews with local residency program directors and coordinators to obtain a specific snapshot of the amount of time and resources dedicated to these activities in various sized programs. Specifically, individuals were asked to describe their current screening process beginning with

receipt of applicants through the Electronic Residency Applicant Service (ERAS) system. The interview guide included questions for each work activity including (1) purpose, (2) who (role and number of individuals) was involved, (3) amount of hours involved, (4) if any preparatory work was need for that task to occur, and (5) frequency of recurrence. Program Directors and Coordinators were also asked to think about 1 remediation intervention for professionalism, technical skills, and problem solving that had occurred in the recent past. For each scenario, individuals were asked to (1) describe the situation in a deidentified manner, (2) discuss how and when program administration got involved, (3) specific actions taken by administration, (4) what preparation or development was needed to lead up to those actions and by whom, (4) if anyone outside the department was involved, (5) recurrence of activities, (6) amount of hours involved for each task, (7) amount of resident time involved, and (8) length of intervention.

These data are presented along the ROI framework offered by aforementioned selection scientists. Specifically, we report results of these methods along the topics of (1) recruitment/selection efficiency, (2) candidate performance, and (3) candidate retention. We note the monetary and nonmonetary expenses of each of these phenomena in turn. Finally, we conclude with a summary of alternative selection methodologies that have proven successful in other industries and may have value for the screening process in surgery.

RESULTS

Costs of Current Processes

Monetary Costs of Interviews

Table 1 provides a case illustration of the typical selection methodology² and associated staff and faculty hours from both author's institutions, representing a larger ($N = 13$

TABLE 1. Cost of Interview Process for a Large and Small Residency Programs

| | Total Staff Hours | Total Faculty Hours | Total PGY Hours | Total |
|--------------------------------|-------------------|---------------------|-----------------|------------------|
| Review and invite applicants | | | | |
| Small | 71 | 30 | 0 | 263 |
| Large | 104.5 | 30 | 0 | 134.5 |
| Prepare and conduct interviews | | | | |
| Small | 80 | 200 | 100 | 380 |
| Large | 75 | 400 | 120 | 595 |
| Final ranking | | | | |
| Small | 8 | 19 | 0 | 27 |
| Large | 9 | 80 | 18 | 107 |
| Total hours | | | | |
| Small | 163 | 249 | 100 | 512 |
| Large | 188.5 | 510 | 138 | 836.5 |
| Total cost | | | | |
| Small | \$4107.60 | \$45,269.00 | \$2,850 | \$52,227 |
| Large | \$4750.20 | \$103,530.00 | \$4,140 | \$112,420 |

Note: Small program: staff cost: $\$25.20/\text{h} \times 163 \text{ h} = \4107.60 ; faculty cost: $\$203/\text{h} \times 249 \text{ h} = \$45,269.00$; PGY cost: $\$30/\text{h} \times 95 \text{ h} = \2850.00 . Large program: staff cost: $\$25.20/\text{h} \times 188.5 \text{ h} = \4750.20 ; faculty cost: $\$203/\text{h} \times 510 \text{ h} = \$103,530.00$; PGY cost: $\$30/\text{h} \times 138 \text{ h} = \4140.00 . PGY, postgraduate year; Total Costs are in Bold.

متن کامل مقاله

دریافت فوری ←

ISIArticles

مرجع مقالات تخصصی ایران

- ✓ امکان دانلود نسخه تمام متن مقالات انگلیسی
- ✓ امکان دانلود نسخه ترجمه شده مقالات
- ✓ پذیرش سفارش ترجمه تخصصی
- ✓ امکان جستجو در آرشیو جامعی از صدها موضوع و هزاران مقاله
- ✓ امکان دانلود رایگان ۲ صفحه اول هر مقاله
- ✓ امکان پرداخت اینترنتی با کلیه کارت های عضو شتاب
- ✓ دانلود فوری مقاله پس از پرداخت آنلاین
- ✓ پشتیبانی کامل خرید با بهره مندی از سیستم هوشمند رهگیری سفارشات