Applying Selection Science to Surgical Education

Aimee K. Gardner, PhD
Assistant Dean, Associate Professor
Baylor College of Medicine
Co-Founder, SurgWise Consulting
January 26, 2019

@AimeeGthePHD
2018 Applicants who Completed our Assessments

• MIS Fellows
  • **25%** (72/284) of all 2017-2018 applicants

• General Surgery
  • 2740 General Surgery applicants
  • ~1700 unique applicants
  • ~**76%** of all applicants (2228 total apps in 2018)
What we’ve learned along the way
1. Programs dedicate substantial resources to the selection process
How Much Are We Spending on Resident Selection?

128 surgery programs completed a survey on time and costs associated with residency selection.

The average program spends...

- 1571 hours of faculty and staff time screening and interviewing applicants.
- $8,000 on interview day supplies and social events.

Take Homes

- Programs spend an average of $100,000 each year on the applicant selection process.
- Each interviewee comes with a cost of $1221.
- All programs combined, surgery resident selection costs exceed $26 million annually.


@J SurgEduc  @AimeeGthePHD
How Much Are We Spending on Resident Selection?

128 surgery programs completed a survey on time and costs associated with residency selection.

The average program spends...

- 1571 hours of faculty and staff time screening and interviewing applicants.
- $8,000 on interview day supplies and social events.

Take Homes

- Programs spend an average of $100,000 each year on the applicant selection process.
- Each interviewee comes with a cost of $1221.
- All programs combined, surgery resident selection costs exceed $26 million annually.

128 surgery programs completed a survey on time and costs associated with residency selection.

The average program spends...

- 1571 hours of faculty and staff time screening and interviewing applicants
- $8,000 on interview day supplies and social events

Take Homes

- Programs spend an average of $100,000 each year on the applicant selection process
- Each interviewee comes with a cost of $1221
- All programs combined, surgery resident selection costs exceed $26 million annually

How Much Are We Spending on Resident Selection?

128 surgery programs completed a survey on time and costs associated with residency selection.

The average program spends...

- 1571 hours of faculty and staff time screening and interviewing applicants
- $8,000 on interview day supplies and social events

Take Homes

- Programs spend an average of $100,000 each year on the applicant selection process
- Each interviewee comes with a cost of $1221
- All programs combined, surgery resident selection costs exceed $26 million annually

2. A universal selection tool may not be the optimal route
Finding your Institution in Texas for a Better Experience in Surgical Training
www.FITxBEST.com
One Size
Fits All
3. PDs are quite afraid of scaring away the “good” applicants
USMLE

97% Residency Apps
N = 2740

Local?

92% Fellow Apps
N = 178

0% Residency Apps
N = 2918

Informative
Realistic preview
Demonstrate abilities

85%
4. Current tools/processes may be at odds with efforts to increase diversity
Written exams $\rightarrow$ gender, racial bias

Letters of Rec $\rightarrow$ gender, racial, SES bias

Personal statements $\rightarrow$ gender, racial, SES bias

SES = socioeconomic status
20% URMs
5. Ultimate success = trainee performance
100% Better

Overall Fit
Technical Skills
Professionalism
Trainability

N=4, Mid-Year Fellowship Evaluations
CONCLUSIONS AND RELEVANCE  This study found little support for the use of EQ assessment and only weak support for some distinct personality factors (ie, agreeableness, extraversion, and independence) in surgery resident selection. Performance on the SJT was associated with overall resident performance more than traditional cognitive measures (ie, USMLE scores). These data support further exploration of these 2 screening assessments on a larger scale across specialties and institutions.
Conclusions

These data demonstrate that **SJT**s can be created to effectively identify surgery residents most at risk for remediation across a two-year timeframe. These data provide an additional layer of validity evidence to support the role of SJTs in surgical education and align with other studies failing to find linkages between USMLE scores and residency performance criterion.
What we’ve learned along the way
Applying Selection Science to Surgical Education

Aimee K. Gardner, PhD
Assistant Dean, Associate Professor
Baylor College of Medicine
Co-Founder, SurgWise Consulting
Aimee@SurgWise.com

@AimeeGthePHD
Bias in Traditional Screening Tools

GPA
- Terregino, McConnell, Reiter Acad Med 2015
- Roth & Bobko J Appl Psychol 2000

Exam Scores
- Dawson et al. JAMA 1994
- Edmond, Deschenes, Eckler, Wenzel, Acad Med 2001
- Outz, Human Perf 2002

Letters of Recommendation
- Trix & Psenka, Discourse & Society 2003
- Madera, Hebl, & Martin, J Appl Psychol 2009
- Schmader, Whitehead, Wysocki, Sex Roles 2007

Personal Statements
- Wright & Bradley, Med Educ 2010

Unstructured Interviews
- Gardner, D’Onofrio, Dunkin, J Surg Educ 2017