Resident Selection:
What Are You Looking For?

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Dr. X had a successful ophthalmology practice but yearned to do eye plastic surgery, so he recruited Dr. Y to handle his patients while Dr. X grew his new plastics practice.
Dr. X developed a drug addiction that led to indictment for fraudulently obtaining prescription narcotics, and resulted in probation of his medical license.

Later, Dr. Y opened his own independent practice in the same city. Dr. X believed that Dr. Y had stolen his patients, so he hired a hit man to kill Dr. Y.
Tragically, the plot resulted in the death of Dr. Y in 2004 and the incarceration of Dr. X and his hit man.

We Have All Been Selected

High School
College
Graduate School
Internship
Residency
Fellowship

Grades/GPA
Test Scores
Personal Statement
Support Letters
Extracurricula
Interview
Anatomy of a Selection Process

• Applicants
• Metrics
• Selectors

OUTCOME

But how does the process relate to the outcome?

Are the metrics useful?

Is the process fair?

Information Collected During the Residency Match Process Does Not Predict Clinical Performance

Stephen M. Brown, MD; Frank T. Sanford, MD; William G. Wilson, MD

69 pediatrics residents, retrospective, 2000

Conclusions: There is significant agreement among fac-

Editor’s Note: This is definitely a “we see that” article. So why
do we waste so much time on this process? Catherine D. DeAngelis, MD

sors of clinical performance during residency.
Anatomy of a Selection Process

- Applicants
- Metrics
- Selectors

OUTCOME

Metrics

- Grades/GPA
- Test Scores
- Personal Statement
- Support Letters
- Extracurriculars
- Interview
- AOA (junior/senior)
- Dean’s letter
- Advanced Degrees (PhD, MPH)
- Publications
- Personal Knowledge

Reliability and Validity

A reliable instrument has the ability to measure in a consistent manner.

A valid instrument genuinely measures what it intends to measure.

Reliability and Validity

Let’s consider another selection process…

Basketball
If You Were the Coach, What Would You Look For?
How Would You Choose From Among Thirty Applicants?

Reliability and Validity

**Height**
- easy to measure
- quantitative
- relevant, intuitive
- little observer bias
- reproducible
- reliable, but valid?

**Hustle**
- hard to measure
- surrogate signs
- observer bias
- poor reliability
- validity limited by reliability

2 Highly valued characteristics

**Height vs Hustle**

**“Height”**
- Grades/GPA
- Test Scores
- Class rank
- Advanced Degrees (PhD, MPH)
- Publications
- AOA (junior/senior)
- Dean’s letter
- Academic pedigree

**“Hustle”**
- Interview
- Personal Statement
- Personal Knowledge
- Support Letters
- Extracurricula
### Cognitive
- Grades/GPA
- Test Scores
- Class rank
- Advanced Degrees (PhD, MPH)
- Publications
- AOA (junior/senior)
- Dean's letter
- Academic pedigree

### Non-Cognitive
- Interview
- Personal Statement
- Personal Knowledge
- Support Letters
- Extracurricula

### Non-Cognitive Metrics
- Interview
- Personal Statement
- Personal Knowledge
- Support Letters
- Extracurricula

**Are they reliable?**

**Are they valid?**

### “He has all the virtues I dislike and none of the vices I admire.”


Reliability and Validity of Admissions Tools Used to Select Students for the Health Professions

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Associate Professor, School of Rehabilitation Science, Faculty of Health Sciences, McMaster University, Hamilton, Ontario, Canada (Email: salvatori@med.mcmaster.ca)

non-cognitive variables such as work experience, interpersonal skills, motivation, maturity, empathy and ethical integrity are contributing to both academic and clinical performance outcomes. However, the literature offers little guidance on how best to assess such characteristics. In fact, there is limited evidence that any of the non-cognitive measures currently in use are sufficiently reliable and valid to predict success as a student let alone as a future health professional. The

Current Selection Process

• Redundant Cognitive Metrics
• Unreliable Non-Cognitive Metrics
• Poor Validity in General

How Do We Get Away With This?

Anatomy of a Selection Process

• Applicants
• Metrics
• Selectors

Outcome

If we redesign the process, what is the goal? What Are You Looking For?

Question: What are the most highly valued characteristics of applicants to surgical specialties?

Neurosurgery, Obstetrics/Gynecology, Ophthalmology, Orthopedics, Otolaryngology, Surgery, Urology
Lee-may Chen MD, Ob/Gyn
Badri Konety MD, Urology
Katherine Talcott, MD
Pat O’Sullivan, School of Medicine
Study

- Step 1 – pilot to determine which attributes to use in the comparison
- Step 2 – identify stakeholders
- Step 3 – develop a paired comparison survey
- Step 4 – analyze results

Step 1, pilot results

- Integrity
- Professionalism
- Communication
- Critical Thinking
- Respect for Others
- Scholarship
- Work Ethic

Notables that did not make the list:
- Medical knowledge
- Manual Dexterity
- Humility
- Diversity
- Leadership
- Altruism

Survey of Stakeholders

- Chairs and Program Directors of UC schools (UCSF, UCLA, UC Irvine, UC Davis, UC San Diego)
- 7 attributes from Phase 1
- Paired Comparison Survey


Paired Comparison

Attribute A versus B
Attribute A versus C
Attribute A versus D
Attribute A versus E
Attribute B versus C
Attribute B versus D
Et cetera…
Possessing the virtues of hard work and diligence

**Work ethic**

Academic accomplishment from creative or investigative endeavors

**Scholarship**

Demonstrating thoughtful regard and consideration to patients and colleagues.

**Respect for others**

Accountability to patients, families, colleagues, and profession; respect for patient privacy and autonomy; sensitive to diverse patient populations and demographics.

**Professionalism**

Faithful to high ethical standards, honest, soundness of moral character

**Integrity**

Questioning in a reasoned and logical manner, able to consider multiple points of view

**Critical thinking**

Skilled and effective in the interaction and exchange of information with patients, families, and other health professionals; eloquent, strong verbal reasoning abilities, good interpersonal skills

**Communication**

Academic accomplishment from creative or investigative endeavors

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Definition</th>
</tr>
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<td>Communication</td>
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**Results**

<table>
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<th>Attribute</th>
<th>Overall Mean Z-Score</th>
</tr>
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<tr>
<td>Integrity</td>
<td>1.18</td>
</tr>
<tr>
<td>Respect for others</td>
<td>0.34</td>
</tr>
<tr>
<td>Professionalism</td>
<td>-0.02</td>
</tr>
<tr>
<td>Work ethic</td>
<td>-0.13</td>
</tr>
<tr>
<td>Critical thinking</td>
<td>-0.14</td>
</tr>
<tr>
<td>Communication</td>
<td>-0.24</td>
</tr>
<tr>
<td>Scholarship</td>
<td>-0.98</td>
</tr>
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**Which of these measures Integrity?**

- Grades/GPA
- Test Scores
- Personal Statement
- Support Letters
- Extracurricula
- Interview
- Class rank
- AOA (junior/senior)
- Dean's letter (MSPE)
- Advanced Degrees (PhD, MPH)
- Publications
- Personal Knowledge
- Academic pedigree

Integrity is More Important than Scholarship?

Duh, Ayman!!!!!!!
• Scholarship, on the other hand, can take you a long way

Study Limitations

Sample size, UC bias, Limited attributes

Stakeholders: chairs/PDs

“What Are You Looking For?”

Patients: “What Are They Looking For?”

“However beautiful the strategy, you should occasionally look at the results.”

Thank You!