Beyond the USMLE: A New Paradigm for Residency Applicant Selection

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ABSTRACT

Objective: Determine the impact of an algorithmic approach - with no USMLE “cutoff” score - on the quality of applicants selected for residency interviews.

Study Design: Retrospective cohort study of medical student applicants and current residents

Settings and Methods: Single institution review of otolaryngology residency program applications (n=365) from 2008 to 2015. An algorithm was introduced to the selection process in 2013 in which no USMLE cutoff score was needed to receive an interview. In addition to applicants, we analyzed characteristics of residents who successfully matched into our program. Pre-algorithm residents (n=16) and post-algorithm residents (n=12) were compared to assess the impact of this approach on characteristics of successfully matched residents at the program.

Results: Applicant pools pre- and post-algorithm displayed similar characteristics. Interestingly, while there was no USMLE “cutoff,” scores significantly increased post-algorithm. The proportion of residents with a regional connection increased significantly post-algorithm. The algorithm also aided in the overall applicant screening process, reducing the needed time without impacting the overall composition of the interviewee pool.

Conclusion: Historic means of screening residency applicants are not uniform and often employ a simple USMLE score cutoff. This is neither the purpose of the exam nor an effective means of selecting the best future otolaryngologists. Applications can be objectified using an algorithmic approach, saving time and without negatively impacting the selection pool. Furthermore, while weighting attributes such as leadership and research equally with the USMLE score, we experienced an increase in average USMLE score of interviewed applicants.

INTRODUCTION

“The Match” has been the process through which medical students attain residency training positions since 1952. This process has become increasingly competitive; in 2015 there were 41,334 applicants for 27,293 PGY1 positions. On average, approximately 500 students apply for the roughly 300 available PGY1 otolaryngology positions. This has caused students to apply to more programs. In the 2014-2015 Match, the average student applied to 62 programs which translates to an average of 227 applications per program. In response, many training programs have instituted minimum standards or “cutoffs” to help whittle down the applicant pool to select those who will receive interview invites. Many simply use the USMLE score as a cutoff with those failing to achieve a minimum score eliminated from consideration as candidates.

We believe there is a better way and present our findings on how a single institution developed an algorithmic approach to resident selection that incorporates multiple facets of applicants, beyond just the USMLE score.

Table 1. Applicant Characteristics

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Matched Residents</th>
<th>Pre-Algorithm</th>
<th>Post-Algorithm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean Step 1 (SD)</td>
<td>246.9 (11.3)</td>
<td>245.1 (11.8)</td>
<td>250.9 (10.5)</td>
</tr>
<tr>
<td>Mean Step 2 (SD)</td>
<td>254.1 (7.8)</td>
<td>252.7 (12.2)</td>
<td>258.5 (11.5)</td>
</tr>
<tr>
<td>AOA</td>
<td>50%</td>
<td>51%</td>
<td>54%</td>
</tr>
<tr>
<td>Midwest Connection</td>
<td>82%</td>
<td>59%</td>
<td>68%</td>
</tr>
</tbody>
</table>

REFERENCES

2. AAMC Electronic Residency Application Survey Data. Table C-4: Residency Applicants from U.S. M.D.-Granting Medical Schools by Specialty, 2010-2011 through 2015-2016.

DISCUSSION

Programs spend hours to days attempting to identify the best residency candidates. Furthermore, the average otolaryngology applicant spends over $1,200 just submitting applications. Clearly this process has significant costs to both applicants and programs. Equally important is the fact there is more to each candidate’s potential than a test score. Our algorithmic approach sought to better incorporate the totality of each individual’s application in the selection process. For example, we equally weight leadership experience and academic performance. We feel we have been able to objectively a significant portion of the process while removing unintentional restrictions or biases.

Our screening process is more streamlined and requires less time. Furthermore, even though we do not use a USMLE “cutoff” score, in our post-algorithm cohort, we saw a rise in the average score. We have also implemented a web-based system aiming to give equal voice to the faculty members participating in interviews and expedite the ranking process.

Table 2. Selected Screening Algorithm Components

<table>
<thead>
<tr>
<th>Leadership Positions</th>
<th>Matched Residents (n=28)</th>
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<tbody>
<tr>
<td>Low (0-3 Positions)</td>
<td>19 (67%)</td>
</tr>
<tr>
<td>High (4 or more)</td>
<td>9 (33%)</td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th>Research Activities</th>
<th>Matched Residents (n=28)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low (no publications)</td>
<td>4 (14%)</td>
</tr>
<tr>
<td>High (1 or more publications)</td>
<td>24 (88%)</td>
</tr>
</tbody>
</table>

CONCLUSION

The traditional application evaluation process is not ideal and fails to take into account the myriad of attributes each applicant brings to the table, especially when arbitrary cutoffs are used. An algorithmic approach can be used to screen applicants and add efficiency to the process without compromising applicant quality.

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