Exploring the relationship between quantity of workplace-based assessments and resident performance in competency-based medical education

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I do not have an affiliation (financial or otherwise) with a pharmaceutical, medical device or communications organization.

Je n’ai aucune affiliation (financière ou autre) avec une entreprise pharmaceutique, un fabricant d’appareils médicaux ou un cabinet de communication.
What is the problem?

- Significant variation in the quantity of workplace-based assessments that residents seek
- This means less documented feedback for certain residents
- Problematic because it makes reliable decisions about progression difficult
- Which residents are not seeking assessments?
What we already know

- Some of the factors limiting trainees in seeking workplace-based assessments (WBAs) include 1-4:
  - Lack of time in training
  - Lack of assessor enthusiasm
  - Lack of belief in their true educational value
  - Additional administrative burden

- It is unclear whether there is a relationship between the number of assessments obtained, and entrustment/performance 5-8
The Question

- Is there an association between the number of assessments a resident obtains and their performance?
Methodology

- Retrospective observational study
- 22 first year internal medicine residents
- 516 WBAs
- July 1, 2018 to February 20, 2019
Methodology

- Residents divided into 3 groups based on how many assessments they got:
  - Low - 8 residents
  - Medium - 6 residents
  - High - 8 residents
- Highest - 53
- Lowest - 7
Methodology

- Mean global entrustment scores (GES) of each group were compared
- Data were analyzed using ANOVA, and post-hoc analysis was done using Tukey HSD Test

Figure 1: Entrustability Scale used in our database

For this encounter, select the level of supervision required for safe patient care:

- Supervisor actively performs the EPA with resident
- Supervisor intermittently assists resident to perform the EPA
- Supervisor outside room, immediately available, double-checks findings
- Supervisor outside room, immediately available, checks only key findings
- Supervisor offsite, available by phone, checks only key findings
- Distant supervisor, post-hoc debrief available as needed
## Results

<table>
<thead>
<tr>
<th>Assessment group (number of residents)</th>
<th>Assessment #</th>
<th>Mean GES</th>
<th>95% confidence interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low (8)</td>
<td>95</td>
<td>4.03</td>
<td>3.89-4.17</td>
</tr>
<tr>
<td>Medium (6)</td>
<td>150</td>
<td>4.25</td>
<td>4.17-4.34</td>
</tr>
<tr>
<td>High (8)</td>
<td>271</td>
<td>4.27</td>
<td>4.20-4.34</td>
</tr>
</tbody>
</table>

Table 1: Assessment groups and their mean GES

![Figure 1: Relationship between assessment groups and mean GES](image)
There is an association between the number of assessments a resident obtains, and their performance. Residents who obtained a high number of assessments had higher global entrustment scores compared to those who obtained a low number of assessments.
Why does this matter?
Why does this matter?

**WHY** does this association exist? Understanding this will help to focus efforts on improving and optimizing workplace-based assessment.

Here are a few hypotheses:
Discussion

Asking for more assessments may result in better performance through more frequent feedback?  

Residents with a performance goal orientation may be more likely to trigger assessments only for activities on which they feel they have done well?  

Residents with less WBAs may be more likely to have a learning goal orientation for seeking feedback, thus triggering assessments mostly on activities they feel they could do better on, wanting constructive feedback for growth?  

Residents with fewer WBAs have less opportunity to showcase their performance growth? 

Different causes have dramatically different implications going forward
**Discussion**

Asking for more assessments may result in better performance through more frequent feedback?\(^8\)

- *Determine and fix barriers, to consequently increase WBAs → feedback → performance*

  Residents with a performance goal orientation may be more likely to trigger assessments only for activities on which they feel they have done well? \(^9\)

- *Encouragement to complete more assessments; faculty initiation of WBAs; set minimal targets over ___ weeks/months*

  Residents with less WBAs may be more likely to have a learning goal orientation for seeking feedback, thus triggering assessments mostly on activities they feel they could do better on, wanting constructive feedback for growth? \(^10\)

- *Encouragement to complete more across a spectrum of situations, more weight on generic feedback vs assessment-based feedback, set minimal targets*

  Residents with fewer WBAs have less opportunity to showcase their performance growth?

- *Determine and fix barriers to increase WBAs*
Conclusion

- An association exists between residents with more WBAs, and better performance
- Why it exists is unclear, but important to recognize to tailor CBME going forward
- In practice, the goals going forward are likely *limiting barriers, setting minimal targets, and increased faculty initiation/prompting*


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