Informing Promotion Decisions: Designing Structured Assessment Reports for Competence Committees Using Messick’s Validity Framework

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Supervisors: Dr. Sylvia Heeneman & Dr. Rodrigo Cavalcanti
Conflicts of Interest

• No conflicts of interest to disclose.

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

Understand how validity can be incorporated into the design of assessment data reports for competence committees
Background

Process & Time Based Training

Competency & Time Based Training

(Carraccio et al. 2016)
Background
Background

(Lockyer et al. 2017)
Background

(Hauer et al. 2015)
Background

Messick’s Validity Framework

- Test content
- Response process
- Internal structure
- Relations to other variables
- Consequences of testing

(Cook, Brydges, Ginsburg, Hatala. 2015)
Research Question

Using Messick’s validity framework, how can structured assessment reports be designed to support Clinical Competence Committees (CCCs) in making promotion decisions?
Methodology: Design Based Research

(Dolmans & Tigelaar, 2012)
Methods

Template Reports

Stage of Training

“Strong” Resident

“Borderline” Resident

“Weak” Resident

Single EPA

Messick’s Validity Framework

Populated with Simulated Assessment Data
Methods

“Strong” Resident  “Borderline” Resident  “Weak” Resident

Individual Interview with IM/GIM Competence Committee Member
Data Analysis

Framework analysis using Messick’s validity framework

(Pope, Ziebland & Mays. 2000)
Report Elements: Single EPA Contextual Data & Heat Map

EPA: TTD History, Physical & Documentation
- Total Completed: 9
- Completed Entrustable: 7
- Required Entrustable: 5

Heat Map: Overall Entrustment Scale

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Number and Type of Assessors
- Number of Unique Assessors: 6
  - Resident: 3 (33%)
  - Fellow: 1 (11%)
  - Faculty: 5 (56%)

Setting of Assessment
- Ward: 6 (67%)
- Clinic: 1 (11%)
- ED: 2 (22%)

Number of Clinical Sites: 3

Entrustment Scale:
1: Intervention
2: Direction
3: Support
4: Autonomy
5: Excellence
Report Elements: Single EPA Growth Curve

Growth Curve: Overall Entrustment Scale

Growth Curve of History, Physical & Documentation

Entrustment Scale:
1: Intervention
2: Direction
3: Support
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## Report Elements: Single EPA Narrative Comments

### Assessments Where Trainee Deemed Entrustable

**2-3 Strengths:**
- Clear presentation, speaking style
- Nice patient centered approach
- Written communication very clear
- Very patient centered
- Organized presentation

**2-3 Actions or area for improvement:**
- Remember to obtain doses for all medications where possible
- Remember to ask the patient to confirm medications rather than assuming they are taking them from their ODB list
- It’s important to ask about both pertinent positive and negative aspects of the case

### Assessments Where Trainee Deemed Not Entrustable

**2-3 Strengths:**
- Clear speaker, don’t use medical jargon
- Invited patient to ask questions
- Did not cut off the patient
- Documentation is very clear

**2-3 Actions or area for improvement:**
- Work on generating a problem list at the end of your case
- Generate a differential diagnosis while you are taking the history
- Work on performing a focused physical examination based on your history

### Other comments:
- Keep practicing history taking skills whenever you can
- Try typing your consultation note
- Continue to read about management of community acquired pneumonia
# Report Elements: Stage of Training

## Heat Map

### Heat Map: All EPAs: Overall Entrustment Scale

<table>
<thead>
<tr>
<th>EPA</th>
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**Entrustment Scale:**
1: Intervention
2: Direction
3: Support
4: Autonomy
5: Excellence
Interview Data

• 10 interviews with CCC members
Results: Content Evidence

- Reports should contain descriptive titles of each EPA

“the documentation... I'm surprised it was all put into that, right? Because I actually consider it a separate sort of EPA so I'm not sure... I would say yes to this history and physical that they would be likely be entrustable. The documentation I feel... I'm not sure that that one belongs there”
Results: Response Process

• CCC members start with reviewing quantitative data, then review qualitative data if required

• Reports should display both quantitative and qualitative data

“I think we also have to think about how these competence committees function, I don't think it would be feasible to have to go through all of that complex data for every single resident when a majority of their assessment are on entrustable end of the scale.”

Participant 5
Results: Response Process

• Type of assessor is important in their decision making
  • Concern about using data from peer and untrained faculty assessors

“if you have someone who doesn't really understand and appreciate all the complexities of making a decision, how then, can we trust that person to then make an entrustment decision of a junior trainee? So, if this is not just faculty information but this is also resident information, then I think that would make a huge difference.”

Participant 5
Results: Internal Structure

• Growth curves show change in overall entrustment score over time

“if they started low and went high then I'm confident that this is showing a natural progression towards entrustment but it's not showing that, it's a bit flat, if anything, may have been a little bit high and went, dropped. And then back up, so I'm not confident that there's a natural growth here.”

Participant 3
Results: Relations to other Variables

- Desire to use other assessment sources (OSCE, written examination, etc)

“If the EPAs for example are saying that they've achieved competence and yet the entrance exam is not matching that, then there's a huge discrepancy. So that would actually argue that you would have to go into the EPAs and see what exactly they were assessing and how reliable the assessments were”

Participant 1
Results: Consequences Evidence

• Felt the weight of the term “entrustment”

“it's a heavier decision to say you're not entrustable, and I think you end up thinking to yourself also, if you're going to be making that decision, I need to justify why and actually see evidence in the narrative comments, in the milestone data that support that claim.”

Participant 5
Conclusions

• Assessment data reports can be designed to summarize assessment data for competence committees
• Reports should be deliberately designed with validity in mind
• Multiple sources of validity evidence are used to make decisions
Limitations

• Early in implementation of competency based assessment
• Data from two programs at a single school
Informing Promotion Decisions: Designing Structured Assessment Reports for Competence Committees Using Messick’s Validity Framework

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PGY-5 General Internal Medicine, University of Toronto

Supervisors: Dr. Rodrigo Cavalcanti (Toronto) & Dr. Sylvia Heeneman (Maastricht)

Thank You

Questions?

Acknowledgements:
Dr. Maria Myolopoulos, Ms. Sarah Meilach
References


## Report Elements: Stage of Training Heat Map

### Heat Map: All EPAs: Overall Entrustment Scale

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**Entrustment Scale:**
1: Intervention  
2: Direction  
3: Support  
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5: Excellence
Report Elements: Stage of Training
Bar Graph

Number of Entrustable Assessments: All EPAs

Number of Entrustable Assessments

- History, Physical & Documentation
- Assess Unstable Patients
- Procedural Skill

# Completed  # Entrustable  # Required Entrustable
Report Elements: Single EPA Contextual Data & Heat Map

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Number of Clinical Sites: 3
Report Elements: Single EPA Growth Curve
## Report Elements: Single EPA Milestones

### Heat Maps

**Overall Engagement Scale**

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**Milestones**

**Gathers a comprehensive but appropriate current history (pertinent positives and negatives, accurate and includes relevant comorbid issues):**

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**Gathers comprehensive but appropriate past medical history, medications, previous treatments, family history, and relevant social history:**

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**Performs and interprets appropriate physical exam:**

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**Demonstrates a person-centered approach to patient's needs, goals and issues:**

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**Gathers relevant data from all available sources (chart, family, existing lab results, etc.):**

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**Formulates a problem list and provides a prioritized differential diagnosis:**

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**Documents and verbally presents the clinical case in an organized, coherent manner:**

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Report Elements: Single EPA Comments

Assessments Where Trainee Deemed Entrustable

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- Written communication very clear
- Very patient centered
- Organized presentation

2-3 Actions or area for improvement:
- Remember to obtain doses for all medications where possible
- Remember to ask the patient to confirm medications rather than assuming they are taking them from their ODB list
- It’s important to ask about both pertinent positive and negative aspects of the case

Other comments:
- Keep practicing history taking skills whenever you can
- Try typing your consultation note

Assessments Where Trainee Deemed Not Entrustable

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- Generate a differential diagnosis while you are taking the history
- Work on performing a focused physical examination based on your history

Other comments:
- Continue to read about management of community acquired pneumonia
Report Elements: Single EPA Spider Graph

Spider Graph: Average Overall Entrustment Scale

Average Overall Entrustment Score

- Average Score For This Resident
- Average Score For All Residents

- History, Physical & Documentation
- Procedural Skill
- Assess Unstable Patients