Workplace-based Assessment: Informing Important Decisions about Clinician Competence

ABMS Conference
September 24, 2018
Learning Objectives

• Describe the important steps for developing the content of a workplace-based assessment system

• Identify challenges in identifying and refining content for assessment items

• Evaluate the utility of assessment outcome reports for reinforcing and correcting performance in the workplace
Outline

• Introduction
• System Development
• Demo of PMAC System
• Reporting/Analytics
• Future Applications
• Discussion
What Gaps/Needs Prompted Development of the Assessment System?

• Need for data to inform external reports
  – Accreditation
  – Verification of training
  – Evidence or reassurance for the public

• Need for data to inform advancement decisions
  – Assignment of level of supervision
  – Assignment of level of responsibility/privileges
  – Planning for developmental activities
Limitations of Available Solutions

• Administrative aspects are burdensome
• Lack of specific behavioral feedback about performance
• No systematic way to provide actionable recommendations for maintenance and improvement of relevant behaviors
Limitations of Available Solutions

• Available assessments did not include input and expertise from the broader community

• Lack of evidence for the validity and reliability of assessment outcomes/inferences
Impact

• Due to the reality of reporting and educational obligations, assessment outcomes are being used in ways that are not defensible.

• The PMAC assessment system was designed to address the gaps and limitations of current solutions in order to effectively meet critical assessment needs.
Assessment Context

PMAC Assessment System

Competency-based

Medical students, Post-graduate trainees

Feedback to learners

Informed decisions

Feedback to schools/training programs

Authentic clinical environment

Observational

Assessment Context

Medical students, Post-graduate trainees

Feedback to learners

Informed decisions

Feedback to schools/training programs

Authentic clinical environment

Observational
## Advancement Decisions

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<tr>
<th>Decision</th>
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Time range anticipated for achievement
# PMAC Content Areas by Module(ish)

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<thead>
<tr>
<th>Decision 1</th>
<th>Decision 2</th>
<th>Decision 3</th>
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<td>P1 (professionalization)</td>
<td>P2 (professional conduct)</td>
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<td>PPD-8</td>
<td>SBP-1</td>
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<td>PPD-8</td>
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<td>SBP-5</td>
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**Fill Color**
- Patient Care
- Practice-based learning & improvement
- Communication/teamwork
- Professionalism
- Systems-based practice

**ACGME Competence Domains**
- 10 competencies
- 12 competencies
- 12 competencies
Content Development

• Three notable features of the content development approach:

  1) Inclusion of content expert input throughout the process to ensure that included content is relevant, observable, and important

  2) A focus on developing reports that provide learners and mentors/decision makers with specific and useful feedback

  3) An implementation schedule that includes time for review of item-level statistics and subsequent item and/or instrument revision
Content Development

Recruit SMEs

Competencies
  Communication

Competency elements
  Communication with patients?
  With the team?

Observable behaviors
  Asks patient for questions
  Updates team about patient status

Roles that can observe each behavior
  Do Faculty observe patient interactions?
Identifying Relevant Competencies

Scenario Designed to Focus Competency Review on a Specific Clinical Situation

It is a busy call night for you as the senior resident; you are covering two floors of patients on Floor A and Floor B.

- Floor A has many complex patients, many of whom require close follow-up, one whose family is particularly challenging to communicate with, a 3 yo patient new admission with respiratory distress, and a 2 mo who needs an LP.

- You are notified that a child who is in the ED is about to be admitted to Floor B. The charge nurse from Floor B states that the patient does not sound stable to her and the intern on Floor B, who is an extremely good intern, is busy admitting two other patients. You need to go to the ED to see this new admission for Floor B to determine if it is acceptable for Floor B or if it should go to the intensive care unit.

How do you feel about going off of Floor A and leaving the intern on Floor A alone, knowing all that is going on within that unit?

As you think about going to the ED to see the potential admission:
1. List the competencies that are pertinent to characterizing whether you feel comfortable or not with leaving Intern A alone;
2. List the competencies that are pertinent to why you feel comfortable leaving Intern B alone.
Content Development Outcomes

- Observable behaviors
- Competency elements
- Settings
- Observer roles

Content Development Process
Content Development

Recruit SMEs

- Competencies
  - Communication

- Competency elements
  - Communication with patients? With the team?

- Observable behaviors
  - Asks patient for questions
  - Updates team about patient status

- Roles that can observe each behavior
  - Do Faculty observe patient interactions?

Develop Items
Item Writing

• Iterative item writing process
  – Write, review, revise

• Focus is on observable behaviors

• Item formats are selected to reduce participant burden
  – Clear questions (stems)
  – Clear answer choices
MSF and SCO Items

- Competency-specific observable behaviors
- Global judgment
- Numerous item types

• Provide information about the context of observation

Scored items

Feedback items

Demographic items

• Selection of detailed recommendations for improvement
• Free-text comments
Behaviors such as making eye contact, listening without interrupting, and deferring discussion of sensitive content on rounds may be indicative of support and/or compassion for patients/families. Thinking of the interaction between the learner and patient/family during rounds, indicate the extent to which you agree with the following statement:

The learner interacted with the patient/family in a supportive and compassionate manner

Strongly Disagree          Strongly Agree
Recommendation Item

Which of the following recommendations would help the learner improve his/her ability to communicate in a supportive and compassionate manner?

- Face patient/family and make eye contact
- Listen without interrupting
- Express support and validate patient/parent concerns
- Solicit questions (especially at the end)
- Provide information to address concerns or questions
- Explicitly encourage child/adolescent questions/input as appropriate
- Pause if patient/family appears confused and/or explore understanding
- Pause if family is emotionally distressed (anger, tears) and offer to communicate in a more private setting or at a later time
- Relocate team to discuss additional sensitive content that may or may not be relevant to the patient
- Other (Please specify) ____________________
Item Review and Instrument Creation

**Item completion**
- Each participant sees items that will be on the instrument specific to her/his role

**Individual interviews**
- What is the item asking?
- Is the described behavior observable?
- Is the range of responses appropriate?
- What roles should complete the item?

**Final content review and instrument creation**
- Interview and focus group results
- Final review and approval by content expert group
Content Development

Recruit SMEs

Competencies
- Communication

Competency elements
- Communication with patients?
- With the team?

Observable behaviors
- Asks patient for questions
- Updates team about patient status

Roles that can observe each behavior
- Do Faculty observe patient interactions?

Develop Items

SCO

MSF
Structured Clinical Observation

- Single encounter
- Observers
  - Faculty and Senior Residents
- Two inpatient contexts
  - Rounds and H&P

Multisource Feedback

- Multiple encounters
- Observers
  - Faculty, Resident, Nurse, Other
- Numerous contexts
Assessment Instruments

Structured Clinical Observation

- Inpatient: Wards, NICU, PICU, Normal Nursery
- Acute Care: Ambulatory (ED)
- Non-acute Care: Ambulatory (Continuity Clinic)
- Two inpatient contexts
  - Rounds

Multisource Feedback

- Multiple encounters
- Observers
  - Faculty, Resident, Nurse, Other
- Numerous contexts
Design – Access and Content

Respondent
Observer (& attributes)

Target
Learner (& attributes)

Curriculum
Activity (& attributes)

Instrument & Item Selection (Content specified by blueprint)

Note: If respondent is a learner and not an observer, the first two boxes are collapsed
Demo of PMAC System
Implementation and Analysis

• Two Phases
  – Phase 1: Data collection and evaluation of item performance
  – Phase 2: Data collection and evaluation of instrument performance
Implementation and Analysis

Phase 1

Data Collection

Data Analysis

• Descriptive data
• Correlations between items within a competency
• Correlations between competency-level and global items
## Implementation and Analysis

<table>
<thead>
<tr>
<th>Item</th>
<th>Score Scale</th>
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<tbody>
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<td></td>
<td>1</td>
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<tr>
<td>MSF_PC1_1a</td>
<td>73</td>
</tr>
<tr>
<td>MSF_PC1_1b</td>
<td>49</td>
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<tr>
<td>MSF_PC2_2a</td>
<td>78</td>
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<td>MSF_PC2_2b</td>
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<tr>
<td>MSF_PC2_1a</td>
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<td>MSF_PC2_1b</td>
<td>15</td>
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<td>MSF_PC2_1c</td>
<td>37</td>
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<td>MSF_PROF2_1a</td>
<td>64</td>
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<tr>
<td>MSF_PROF2_1b</td>
<td>48</td>
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<tr>
<td>MSF_PPD1_1a</td>
<td>24</td>
</tr>
<tr>
<td>MSF_PPD1_1b</td>
<td>9</td>
</tr>
<tr>
<td>MSF_PBLI5_1a</td>
<td>28</td>
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<tr>
<td>MSF_PBLI5_1b</td>
<td>20</td>
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</table>
Implementation and Analysis

Phase 1

Data Collection
Data Analysis
Review of Results
Item Revision
Phase 1 Results – Decision 2

• Eight of 40 items flagged for specific review

• After review, several categories of issues were identified
  – Clarity of item wording
  – Ambiguity of competency area
  – Generalizability of content across settings
  – Response format
Implementation and Analysis

Phase 1

- Data Collection
- Data Analysis
- Review of Results
- Item Revision

Phase 2

- Data Collection
- Data Analysis
- Review of Results
- Evaluation of Impact of Item/Instrument Changes

Generalizability Analysis
Phase 2 Results

• All statistical metrics improved
• Improved generalizability for the composite score: .77 to .83
Reports
Reports

Feedback Report
• Full picture of competency-level performance within a learning activity

Clinical Competency Committee Report
• All scores received over a six-month period
• Comparative graphical data
• Trends over time

Quarterly Feedback Report
• Establishes learning plans and goals
• Includes response to feedback (by learner and mentor)
• Documents progress on previously stated plans and goals
Feedback Reports

• Full picture of competency-level performance within a learning activity

• Reports include
  – Competency scores
  – Item-specific feedback, where relevant
  – Feedback in overall content areas
  – General narrative feedback
### Competency-Level Feedback*

*This section of the report includes: 1. Scores and relevant feedback by competency within Content Area; and 2. Overall comments by Content Area. Any numbers appearing in the feedback item grids represent the number of times an option was selected across all completed instruments.

#### Content Area

**Clinical Care: Cognitive, Diagnostic, and Management Aspects**

<table>
<thead>
<tr>
<th>Competency</th>
<th>Instruments Contributing to Score</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>PC-1</td>
<td>3 MSF (2 F, 1 O)</td>
<td>3.16</td>
</tr>
<tr>
<td></td>
<td>4 SCO (3 SCO-R, 1 HP)</td>
<td></td>
</tr>
</tbody>
</table>

**NOTE:** All MSF instruments contribute items to this competency score. The SCO-R, SCO-HX, and SCO-HP instruments contribute SCO items.

#### Feedback

**MSF**

**Recommendations for improving completeness and/or accuracy of patient information communicated to others:**

<table>
<thead>
<tr>
<th>Recommendation</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ask specific questions of others (e.g., senior, consultants, respondents during escalation of care) to clarify the story</td>
<td>1</td>
</tr>
<tr>
<td>Assemble information to form a chronologic story</td>
<td>0</td>
</tr>
<tr>
<td>Confirm information gathered by rechecking original source or seeking another source (e.g., senior resident)</td>
<td>0</td>
</tr>
<tr>
<td>Explicitly state pertinent positives and negatives</td>
<td>0</td>
</tr>
<tr>
<td>Gather missing information prior to discussion</td>
<td>0</td>
</tr>
</tbody>
</table>

**Other (Please specify)**

To improve communication, ensure you have the information you need. Also, it is okay to say "I don't know" then return w/ the answer. Start to incorporate anticipatory guidance.

#### Feedback

**SCO Rounds**

**Recommendations for improving presentation of patient information on rounds:**

Can incorporate subtle changes in overnight events or labs incorporate into differential - either the changes overnight support or do not support what we have been thinking. At times she gives a general presentation of entire hospital stay when the point of daily rounds is to look at overnight events and see if these change management strategy or thinking about diagnoses.

Today was a bit different as rounds started later and our upper level was missing. Would benefit from consistent organization of patient material, with focus on assessment, ensuring etiologies for the symptoms and reasons for hospitalization are included. Work to incorporate families and patients, translate "medical speak" as you present.

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The Pediatrics Milestones Assessment Collaborative (PMAC) is a joint project of the NBME, ABPF and the Association of Pediatric Program Directors.
Clinical Competency Committee Reports

• Twice a year, programs receive summary reports
  – Include all data from the feedback reports for the preceding six-month period

• Additional included data
  – Standardized competency scores
    • Graphical representation of a learner’s performance relative to peers on the same rotations during the same time periods
  – Estimated reporting milestone levels
    • PMAC competency scores are transformed onto the Milestone scale
Summary Report: Learner Performance Relative to Peers
Summary Report: Learner Performance on Competencies and Content Areas
### Summary Report: Learner Performance on Competencies and Content Areas

<table>
<thead>
<tr>
<th>Content Area</th>
<th>Competency Name</th>
<th>Competency Label</th>
<th>PMAC Score*</th>
<th>Milestone Translated Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clinical Expertise</td>
<td>PC-2</td>
<td>Organize and prioritize responsibilities to provide patient care that is safe, effective, and efficient</td>
<td>5.0</td>
<td>4.0</td>
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<tr>
<td></td>
<td>PPD-5</td>
<td>Demonstrate trustworthiness that makes colleagues feel secure when one is responsible for the care of patients</td>
<td>4.7</td>
<td>4.0 – 4.5</td>
</tr>
<tr>
<td></td>
<td>PC-6</td>
<td>Make informed diagnostic and therapeutic decisions that result in optimal clinical judgment</td>
<td>4.7</td>
<td>3.0 – 4.0</td>
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<tr>
<td></td>
<td>PPD-1</td>
<td>Develop the ability to use self-awareness of one’s own knowledge, skills, and emotional limitations that leads to appropriate help-seeking behaviors</td>
<td>4.2</td>
<td>3.0 – 4.5</td>
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<tr>
<td></td>
<td>PC-13</td>
<td>Provide appropriate supervision</td>
<td>3.9</td>
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<td>Team Management</td>
<td>PPD-6</td>
<td>Provide leadership that enhances team functioning, the learning environment, and/or healthcare system/environment with the ultimate intent of improving care of patients</td>
<td>4.8</td>
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<td></td>
<td>SBP-1</td>
<td>Coordinate patient care within the health system relevant to their clinical specialty</td>
<td>4.7</td>
<td>3.0 – 4.0</td>
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<td>SBP-5</td>
<td>Work in interprofessional teams to enhance patient safety and improve patient care quality</td>
<td>4.5</td>
<td>3.0 – 4.0</td>
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<td>Communication, Interpersonal, and Professional Behaviors</td>
<td>ICS-4</td>
<td>Work effectively as a member or leader of a health care team or other professional group</td>
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<td>PROF</td>
<td>Exhibit professional conduct</td>
<td>4.9</td>
<td>3.0 – 4.0</td>
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<td>ICS-3</td>
<td>Communicate effectively with physicians, other health professionals, and health-related agencies</td>
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<td>Teaching on Rounds</td>
<td>PBLI-8</td>
<td>Develop the necessary skills to be an effective teacher</td>
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*Scores are sorted by PMAC Score and Milestone Translated Score within each Content Area*
Applications with Practicing Physicians
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*Time range anticipated for achievement*
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<th>PGY-3</th>
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<td><strong>Competent to continue in specialty practice</strong></td>
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Applications with Practicing Physicians

• In what competency domains does a physician need to demonstrate continued competence?
• What elements of the necessary competencies are important?
• In what settings should those competencies be evaluated?
• To what extent do the above differ by specialty?
• What are the best approaches for collecting the necessary data?
• What type of reports would provide the most meaningful data?
Discussion