



# Construct Validity of the Resident Observation and Competency Assessment

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## Introduction

- Direct observation of trainees' clinical skills by faculty members is essential to ensure a satisfactory level of competence to practice independently.
- Studies have documented significant deficiencies in the basic clinical skills of physicians-in-training, highlighting the need for a valid evaluation method for clinical skills.
- Failure to identify poor performance precludes effective remediation or improvement in clinical skills.
- Although standardized patients offer another opportunity to observe clinical skills directly, the RO&CA is easier to implement and less costly.

## Objectives

- The purpose of this study was to investigate the construct validity of the RO&CA.

## Materials and Methods

- Fifty faculty members from 10 physical medicine and rehabilitation residency programs participated in the study.
- Video-based scenarios were developed to represent varying performance levels in interviewing skills, physical examinations, and procedural skills.
- Participants watched and rated the performances of standardized residents on nine scripted clinical videos depicting three levels of performance (unsatisfactory, satisfactory/very good, and excellent).
- Videos were shown in random order, and the faculty members were instructed to use the RO&CA, a paper-based instrument with a 5-point scale defining each level of performance, to rate the clinical skills.
- The depicted resident was stated to be a postgraduate year-3, and the same standardized resident portrayed each level of performance per clinical skill.

## Results

Characteristic	
Mean age	41 years
Mean years teaching experience	8 years
Academic Rank	
Professor	6 (12%)
Associate Professor	14 (28%)
Assistant Professor	30 (60%)

**Table 1 – Demographic Characteristics for 50 faculty Raters**

	Score by Standardized Resident Performance Level									p
	Unsatisfactory			Satisfactory/Very Good			Excellent			
Clinical Skill	Mean	Median	Range	Mean	Median	Range	Mean	Median	Range	
History	1.12	1	1-3	2.5	2	1-4	3.5	4	2-4	<.0001
Physical	1.1	1	1-3	2.42	2	1-4	3.16	3	2-4	<.0001
Procedure	1.08	1	1-2	2.7	3	2-4	2.6	4	2-4	<.0001

**Table 2 – Results of Three-Way ANOVA Comparing Faculty's RO&CA Ratings of Three Levels of Performance**

- The mean ratings on the RO&CA increased with each higher level of performance. The three-way ANOVA demonstrated a statistically significant change ( $p < .0001$ ) in scoring over the three levels of depicted performance.

- The range of ratings among the participants for each video was wide.
- Scores ranged from unsatisfactory to excellent on two videos scripted for satisfactory/very good performance.
- Thirteen of the 150 (8.7%) observations on the unsatisfactory videos were scored as satisfactory/very good (RO&CA rating of 2 or 3).
- Conversely, none of the participants scored an unsatisfactory performance video as excellent (RO&CA rating of 4).
- None of the participants scored an excellent performance video as unsatisfactory (RO&CA rating of 1).

**Figure 1 - RO&CA**

Resident Name: \_\_\_\_\_ Rotation: \_\_\_\_\_ Date: \_\_\_\_\_

**PM&R RESIDENT OBSERVATION & COMPETENCY ASSESSMENT (RO&CA)**

**Instructions for Evaluator**  
The RO&CA evaluation is a brief (10-20 minute) spot check of resident clinical skills followed by immediate feedback. Directly observe a focused exam, a complete exam, a procedure or other resident-patient encounter, or a formal teaching experience by the resident with students or other health care professionals. Complete the assessment and give feedback to the resident immediately after the observation. Base your evaluation on only 1 observation, not on a composite of encounters. It is not necessary to observe and rate all these competencies during the evaluation.

Patient diagnosis (for this observation): _____		N/A=not assessed 1=unsatisfactory 2=satisfactory 3=very good 4=excellent
Inpatient _____	Outpatient _____ Consult _____ EMG _____ Procedure _____	
<b>PATIENT CARE</b>		
<b>Interviewing Skills:</b> gathers essential and accurate information that identifies impairments/diagnoses and functional impact on patient; efficient		N/A 1 2 3 4
<b>Physical Exam Skills:</b> proficient, thorough, elicits subtle findings; sensitive to patient comfort and modesty		
Complete exam _____	Focused exam: check all that apply	
Neuro exam _____	MMT _____ Spine exam _____ Upper limb mus/skel _____	N/A 1 2 3 4
Mental Status exam _____	ROM _____ Neck exam _____ Lower limb mus/skel _____	
ASIA exam (SCI) _____	Mobility/gait _____ Other (specify) _____	
<b>Procedure Skills:</b> proficient; safe; uses equipment correctly; minimizes patient risk or discomfort		
Procedure observed (e.g. electrodiagnosis, injection): _____		N/A 1 2 3 4
<b>PROFESSIONALISM</b>		
<b>Informed consent:</b> obtains informed consent including explanation of risks, benefits, and alternate methods of treatment prior to procedures		N/A 1 2 3 4
<b>Sensitivity:</b> demonstrates sensitivity and responsiveness to patient's culture, age, gender, disability, and tolerance to exam/procedure		N/A 1 2 3 4
<b>INTERPERSONAL AND COMMUNICATION SKILLS</b>		
<b>Relationship Management:</b> forms positive relationships and effectively communicates with patients, families, staff; educates patients; facilitates family meetings; manages conflicts; leads complex discussions; expert in complex relationship management		N/A 1 2 3 4
<b>Information Gathering and Sharing:</b> understands benefits and pitfalls of information technology; accurate medical records; clinical reasoning demonstrated in records; effectively integrates information; medical records comply with regulatory requirements; expert in communication technology		N/A 1 2 3 4
<b>SYSTEMS-BASED PRACTICE</b>		
<b>Efficient use of resources:</b> develops cost effective diagnostic or treatment or discharge plan of care, using services in the continuum of care; does not compromise quality of care		N/A 1 2 3 4
<b>PRACTICE BASED LEARNING AND IMPROVEMENT</b>		
<b>Teaching skills:</b> facilitates the learning of students and other health care professionals		
Title of resident presentation observation: _____		N/A 1 2 3 4

**Strengths or Areas Needing Improvement:** For scores of 1, comments must include areas for remediation.

Both attending and resident should rate their satisfaction with the value and use of this observation and assessment.

Attending Signature: \_\_\_\_\_ Satisfaction Rating: (Low) 1 2 3 4 5 (High)

Resident Signature: \_\_\_\_\_ Satisfaction Rating: (Low) 1 2 3 4 5 (High)

## Conclusion

- This is the first study to document the construct validity of the RO&CA.
- Our results reinforce the need for multiple observations of the same trainee to ensure sufficient reliability, as witnessed by the wide range of ratings given for each level of clinical skill.
- Although the RO&CA appears to have construct validity, further studies are needed to improve individual faculty observation skills and reduce inter-rater variability.