

# Towards a Realistic View of Future Physicians: A Descriptive Follow-up Study on Entrustable Professional Activities

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## Introduction

The recently developed concept of 'Entrustable Professional Activities' (EPAs) is an innovative concept for work-place based learning. It allows faculties to make individual, competency-based decisions depending on the physician trainees' required level of supervision. The present study aims to assess students' clinical performance throughout their clinical rotation with the EPA concept. The entrustment decision can be *ad hoc* or *structural* and is based on four groups of variables: (1) the trainees' attributes, (2) the supervisors' attributes, (3) contextual variables, and (4) the EPAs' nature. However, the assessment method guiding the process of decision making remains critical.

## Methods

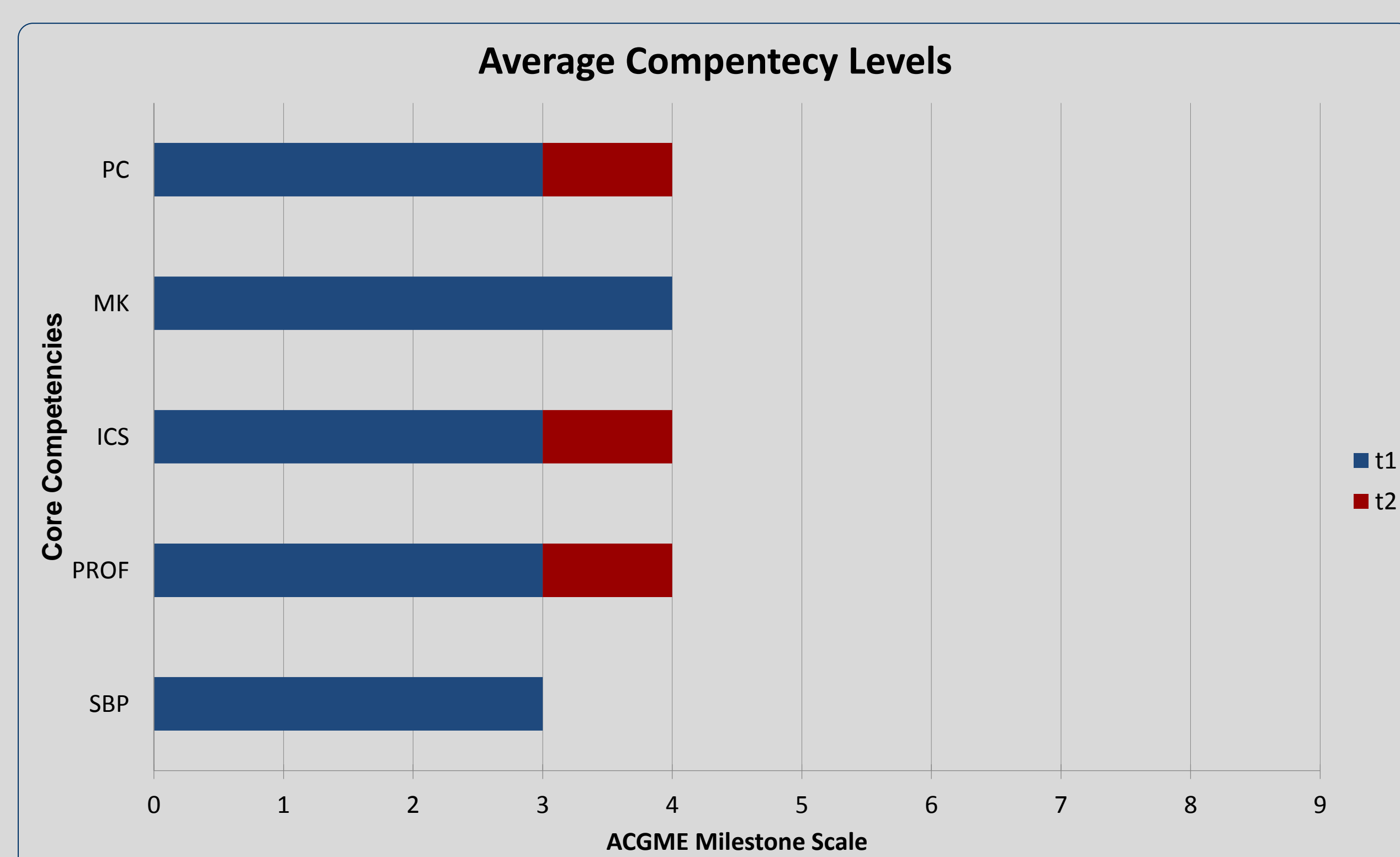
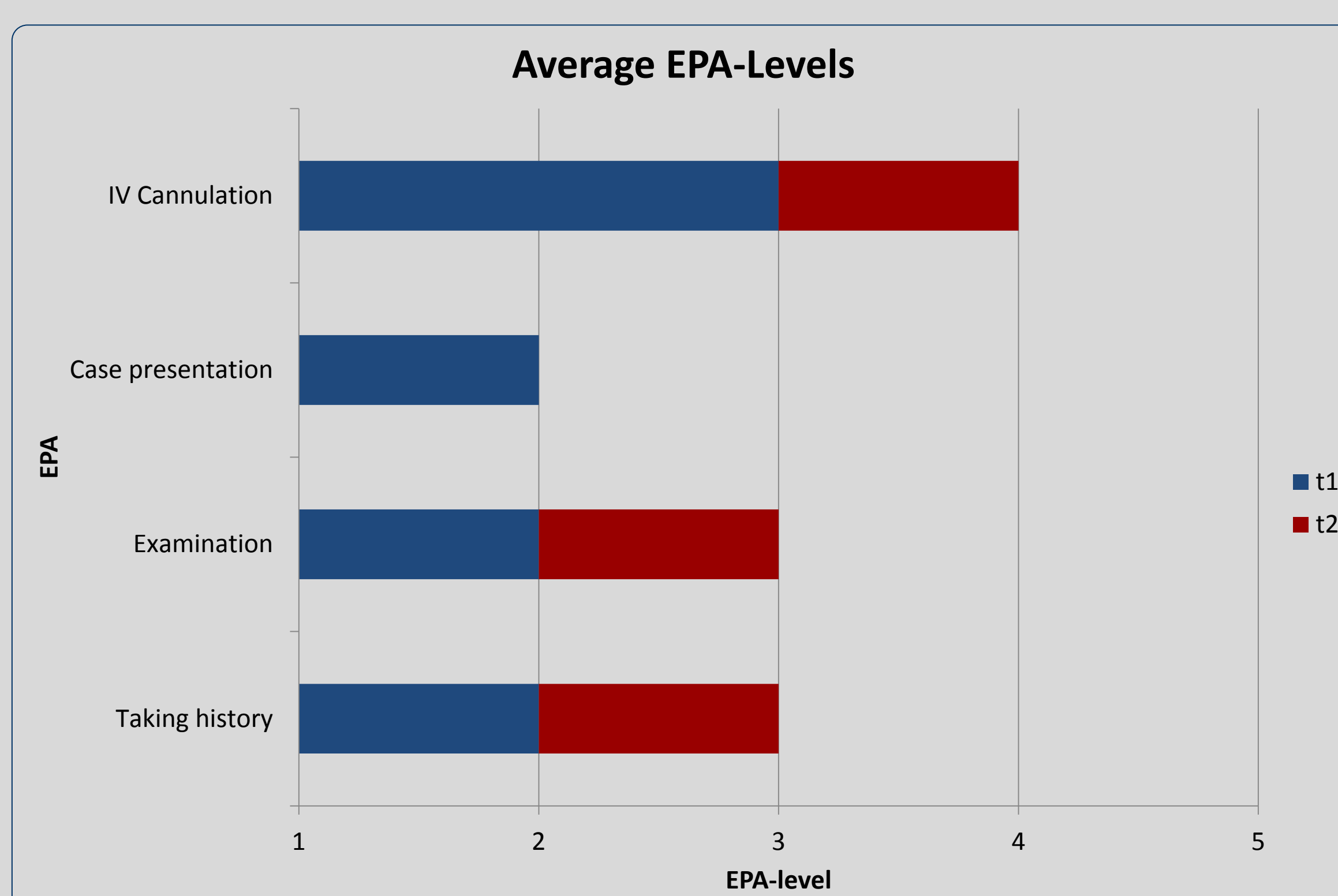
Using the EPA concept, the clinical performance of final-year medical students was assessed during their internal medicine rotation in the department of internal medicine at the University of Heidelberg Medical Hospital. Four common clinical activities (history taking, physical examination, IV cannulation, and case presentation) were selected, and corresponding EPAs were defined and implemented. Consenting students were filmed while performing the four activities under supervision at the beginning and end of rotation. Two independent, blinded video assessors rated the clinical performance using EPA-levels and corresponding Accreditation Council for Graduate Medical Education (ACGME) core competencies.

## Main Results

- **Participants:** n = 24, 62.5% female; mean age 25.5 years, all 1<sup>st</sup> clinical rotation
- **Patients:** n = 48, 32.2 % female; mean age 59 years (range 27 – 89 years), 90.3 % elective admissions and 9.6 % emergency hospitalizations
- Inter-rater reliability for EPA-Levels was good.
- Despite improving with time, final year medical students showed severe deficits when performing clinical on-ward activities. With the exception of IV cannulation, performance-levels were rated as not sufficient for independent practice as physicians post-rotation.

Clinical activity	Assessment	t1, M (SD)	t2, M (SD)	p	IRR rs	p
History taking	EPA <sup>®</sup> level [1 - 5]	2.43 (.71)	3.04 (.53)	.002*	.43	.04*
	Milestones [%]	.38 (.10)	.47 (.07)	---	---	---
Physical examination	EPA <sup>®</sup> level [1 - 5]	2.40 (.49)	2.96 (.51)	<.001*	.49	.02*
	Milestones [%]	.39 (.09)	.46 (.08)	---	---	---
Case presentation	EPA <sup>®</sup> level [1-5]	1.65 (.63)	2.19 (.66)	.001*	.54	.006*
	Milestones [%]	.31 (.10)	.34 (.07)	---	---	---
IV cannulation	EPA <sup>®</sup> level [1-5]	3.19 (.69)	3.60 (.85)	.03*	.78	<.001*
	Milestones [%]	.50 (.14)	.52 (.13)	---	---	---

EPA	Participants baseline data (Self-assessment)		Career preparedness (M, SD)
	Number of estimated performances (M, SD) supervised	unsupervised	
History taking [n]	13.50 (6.65)	64.83 (54.80)	4.46 (.51)
Physical examination [n]	12.58 (6.80)	68.79 (52.75)	4.25(.61)
Case presentation [n]	3.67 (3.09)	24.96 (41.19)	3.46 (.59)
IV cannulation [n]	5.50 (4.34)	82.92 (67.85)	4.21 (.93)



## Conclusion

We were able to implement the concept of EPAs for on-ward supervision and needs of assessment. As expected difficulties in performing and assessing rise with the complexity of the EPA. Despite the limitations of our pilot-study, we were able to highlight a major gap in final year medical education. Although these

activities and responsibilities are entrusted to physician trainees, the final year students in our study failed to meet the requirements for independent practice. Further research should investigate the implementation and quality management of EPAs.

## Literature

Ten Cate O (2013) Nuts and bolts of entrustable professional activities. J Grad Med Educ 5: 157-158  
Jones Jr MD, Rosenberg AA, Gilhooly JT, Carraccio CL (2011) Perspective: competencies, outcomes, and controversy—linking professional activities to competencies to improve resident education and practice. Academic Medicine 86: 161-165.

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