Review Doi: 10.25282/ted.1362961

Entrustable Professional Activites for Clinical Competence
Klinik Yeterlilikte Devredilebilir Mesleksel Etkinlikler

Duygu Demirbaş Keskin[1] (ORCID: 0000-0002-4162-2442)

Demet Koc[1,2] (ORCID: 0000-0003-4109-6793)

Levent Altintas[3] (ORCID: 0000-0002-4950-6956)

[1]Acibadem Mehmet Ali Aydinlar University Graduate School of Health Sciences, Istanbul, TÜRKİYE

[2]Bahcesehir University Faculty of Medicine, Istanbul, TÜRKİYE

[3]Acibadem Mehmet Ali Aydinlar University Faculty of Medicine, Istanbul, TÜRKİYE

Corresponding Author: Duygu DEMIRBAS KESKIN, E-Mail: duydemir@yahoo.com

Abstract

Aim: In recent years Entrustable Professional Activities (EPAs) have developed as an essential framework for competency-based medical education (CBME) implementation, which has become an important component of contemporary medical education. The need to close the gap between healthcare professional education, healthcare delivery, and societal demands motivates the transition to CBME. While the competencies describe the attributes that medical professionals should possess, the EPAs describe the practical activities that learners are expected to perform in their medical education and future careers. The difficulty of translating abstract abilities into clinical practice in the real world encouraged the development of EPAs, which are specific activities or responsibilities that may be delegated to learners upon demonstrating competency. With the introduction of EPAs, medical education programs have discovered a more effective means of assessing competencies that aligns them with the professional tasks that students are expected to perform. This alignment promotes a meaningful connection between intended competencies and real-world practice, which ultimately improves the readiness of future medical professionals.

Methods: The article was prepared by the traditional review method.

Results: This article highlights the particular features of EPAs and the significance of competency-based assessments being grounded in actual clinical situations. EPAs enable learners to advance progressively, fostering preparedness as well as responsibility over time. It is discussed how the incorporation of technology into EPAs has the potential to improve both teaching and learning. The use of technological support and mobile applications can make EPAs more applicable and comprehensible to both faculty and students.

Conclusions: The integration of CBME and EPAs is a promising strategy for addressing concerns about medical education's effectiveness. By actively engaging in real-world tasks, EPAs facilitate the internalization of competencies by learners. By providing a structured, adaptable, and context-specific approach to competency assessment, EPAs enable learners to assume responsibilities progressively, thereby facilitating their path to becoming competent and confident healthcare professionals. By recognizing the complementary nature of EPAs and competences, medical education programs can

Keywords:
EPAs, Competency, Undergraduate Medical Education, Postgraduate Medical Education

Anahtar Sözcükler:
DME, Yeterlilik, Mezuniyet Öncesi Tıp Eğitimi, Mezuniyet Sonrası Tıp Eğitimi

Gönderilme Tarihi
Submitted: 20.09.2023
Kabul Tarihi
Accepted: 29.01.2024

To cite this article: Keskin D, Koc D, Altintas L. Entrustable Professional Activites for Clinical Competence. World of Medical Education. 2024;23(69):5-14

develop thorough and efficient training techniques that bridge the gaps between theoretical knowledge and practical clinical abilities.

Özet

Amaç: Son yıllarda Devredilebilir Mesleksel Etkinlikler (DME), çağdaş tıp eğitiminin önemli bir bileşeni haline gelen Yetkinliğe Dayalı Tıp Eğitimi (YDTE) uygulaması için temel bir çerçeve olarak gelişmiştir. Sağlık mesleği eğitimi, sağlık hizmeti sunumu ve toplumsal talepler arasındaki açığı kapatma ihtiyacı, YDTE'e geçişi motive etmektedir. Yetkinlikler tıp profesyonellerinin sahip olması gereken özellikleri tanımlarken, DME'ler öğrencilerin tıp eğitimlerinde ve gelecekteki kariyerlerinde gerçekleştirmeleri beklenen pratik faaliyetleri tanımlamaktadır. Soyut becerileri gerçek dünyada klinik uygulamaya dönüştürmenin zorluğu, yetkinlik gösterdikten sonra öğrencilere devredilebilecek belirli faaliyetler veya sorumluluklar olan DME'lerin geliştirilmesini teşvik etmiştir. Devredilebilir Mesleksel Etkinliklerin kullanılmaya başlanmasıyla tıp eğitimi programları, yetkinlikleri değerlendirmenin daha etkili bir yolunu keşfetmiş ve bunları öğrencilerin gerçekleştirmesi beklenen mesleki görevlerle uyumlu hale getirmiştir. Bu uyum, amaçlanan yetkinlikler ile gerçek dünyadaki uygulamalar arasında anlamlı bir bağlantı kurulmasını sağlayarak geleceğin tıp uzmanlarının hazır olma durumunu iyileştirmektedir.

Yöntem: Makale geleneksel derleme yöntemiyle hazırlanmıştır.

Bulgular: Bu makale, Devredilebilir Mesleksel Etkinliklerin belirli özelliklerini ve yetkinlik temelli değerlendirmelerin gerçek klinik durumlara dayandırılmasının önemini vurgulamaktadır. DME'ler, öğrencilerin aşamalı olarak ilerlemesini sağlayarak zaman içinde hazırlıklı olmanın yanı sıra sorumluluğu da teşvik eder. Teknolojinin DME'lere dahil edilmesinin hem öğretimi hem de öğrenimi nasıl geliştirme potansiyeline sahip olduğu tartışılmaktadır. Teknolojik destek ve mobil uygulamaların kullanımı DME'leri hem öğretim üyeleri hem de öğrenciler için daha uygulanabilir ve anlaşılır hale getirebilir.

Sonuç: Yetkinliğe Dayalı Tıp Eğitimi ve Devredilebilir Mesleksel Etkinlikler'in entegrasyonu, tıp eğitiminin etkinliği konusundaki endişeleri gidermek için umut verici bir stratejidir. DME'ler, gerçek dünyadaki görevlerle aktif olarak ilgilenerek, yetkinliklerin öğrenciler tarafından içselleştirilmesini kolaylaştırır geleneksel yetkinlik çerçevelerinden farklı olarak, nitelikler yerine eylemleri vurgulayarak değerlendirme ve ölçmeyi daha somut ve yerinde hale getirir. DME'ler, yetkinlik değerlendirmesine yapılandırılmış, uyarlanabilir ve bağlama özgü bir yaklaşım sunarak, öğrencilerin aşamalı olarak sorumluluk üstlenmelerini sağlar ve böylece yetkin ve kendine güvenen sağlık uzmanları olma yollarını kolaylaştırır. Tıp eğitimi programları, DME'lerin ve yetkinliklerin tamamlayıcı doğasını kabul ederek, teorik bilgi ve pratik klinik beceriler arasındaki boşlukları dolduran kapsamlı ve etkili eğitim teknikleri geliştirebilir.

INTRODUCTION

The concept of competency based medical education (CBME) has become the predominant method for designing undergraduate and graduate medical education in contemporary medical practice (1). Several countries adopted CBME in the 1990s and early 2000s, providing an organizational framework to define the full range of medical competencies required for practice (2,3). Frameworks such as Good Medical Practice in the United Kingdom, the Accreditation Council for Graduate Medical Education (ACGME) competencies in the United States, the Canadian Medical Educational Directives for Specialists (CanMEDS), and the Australian Curriculum Framework for Junior Doctors in Australia (ACFJD) are examples of the adoption of CBME in various health systems (4,5). This transition to CBME marks a move away from time-based models with flexible standards to standardized competencies with adaptable time frames (2,6). The shift was motivated by concerns about societal health needs, dissatisfaction with training methods, and the quality and safety of patient care (7,8). Especially after the Flexner report in the 21st

century, there has been a paradigm shift in medical education from the current structure and process-based curriculum to competency-based curriculum and outcomes assessment (9). Coraccio et al. describe three steps to achieve this paradigm shift. First, the characteristics that the public expects from a physician in the new century should be identified. Second, the paradigm shift necessitates a definition of competency performance levels and the third step of the paradigm shift is the development of an assessment and curriculum framework (9).

As the gap between health professional education, health care delivery, and the changing needs of society widened, there was a worldwide call to place 'competencies' at the center of medical education and curriculum planning (7).

Entrustable Professional Activities and Competency-Based Medical Education

To achieve the high efficiency expected from CBME, clear learning outcomes must be defined to ensure that students achieve these goals while being appropriately assessed (1,10). CBME emphasizes the development of knowledge, skills, and attitudes through practice-based methods to effectively perform defined tasks. While this approach has gained increasing prominence in studies of curriculum development, its application to workplace learning presents challenges, particularly for scholars involved in designing assessment and evaluation (6,10,11).

Initial concerns that competency-based educational frameworks (e.g., ACGME or CanMEDS) were too abstract and theoretical for practical application in the day-to-day education and assessment of medical students led to the conceptualization of Entrustable Professional Activities (EPAs) (10). EPAs are specific tasks or responsibilities that are essential to the practice of medicine and can be entrusted to a learner once he or she has demonstrated the required competency (10–12). Unlike traditional competency-based frameworks that focus on abstract competencies, EPAs are more practical in design and directly applicable to real-world clinical practice (12,13). They specify specific activities that physicians must be able to perform independently throughout their training and careers. These activities are context-specific and make the assessment and measurement of competencies more tangible and meaningful.

With the introduction of EPAs, medical education programs have discovered a more effective means of assessing competencies that aligns them with the professional tasks that students are expected to perform (12,13). This alignment promotes a meaningful connection between intended competencies and real-world practice, which ultimately improves the readiness of future medical professionals (12–14).

Entrustable Professional Activities

The concept of EPAs was developed by Olle ten Cate in 2005 and described as "An entrustable professional activity is a unit of professional practice that can be fully entrusted to a trainee once he or she has demonstrated the necessary competence to perform that activity independently" (12,13). The term "unit" refers to a specific task or a group of interdependent tasks (12,15). The goal of EPAs is to integrate competencies with the professional activities to which they are assigned (13).

Unlike traditional medical licenses or specialty registrations, which can be too extensive for a single educator, EPAs divide professional practice into manageable units that are subject to oversight, assessment, monitoring, documentation, and certification (12,13). One of the advantages of EPAs is that learners can receive certification for individual EPAs as they demonstrate readiness, allowing them to progress incrementally throughout their training. EPAs are expected to include increasing responsibilities and contributions to professional practice over time (12). EPAs are characterized by a clearly defined beginning

and end and focus solely on the task to be accomplished rather than describing the learner's qualities or competencies. They are precise and clearly defined and allow for observation during the process and measurement after completion. The EPAs can be easily distinguished from one another within the framework and are essential and significant to the profession as a whole. In addition, they are accessible only to appropriately trained individuals and require the practical application and integration of multiple skill areas (12,13).

The full descriptions of EPA are a valuable guide for learners, educators, employers, and colleagues, enabling them to understand exactly what a health care professional is capable of. This clarity enables learners to set goals and effectively manage their own development (11–13).

Entrustable Professional Activities Versus Competencies

EPAs are not intended to replace competencies, but rather serve as a complementary means of translating abstract concepts of competency into daily medical practice (13,14). While EPAs represent the units of physician work, competencies refer to the skills individuals need to perform that work (12).

To become a competent health care professional, one must acquire a set of competencies that encompass the knowledge, skills, and attitudes necessary for patient care and professional practice. Competencies define the qualities a physician should possess and highlight the necessary attributes for successful medical practice.

On the other hand, EPAs specify the essential tasks and responsibilities that must be performed in the clinical workplace. These tasks require the use of a number of complementary skills to complete successfully. For example, EPAs include communicating with patients and their families, making decisions, implementing treatment plans, performing physical examinations, applying splints, discharging patients, and performing surgical procedures (12,13).

While the competencies describe the attributes that medical professionals should possess, the EPAs describe the practical activities that learners are expected to perform in their medical education and future careers. The EPAs provide a tangible link between the abstract concept of competencies and actual work in medical practice (12,13,15).

By recognizing the complementary nature of EPAs and competencies, medical education programs can effectively integrate both aspects to create a comprehensive and well-rounded educational approach for future healthcare professionals (3,7,10,13).

Designing Entrustable Professional Activities

The seven-point EPA description guidelines framework was published in 2013 and 2015. A novel item has been added to the current recommendation, updating the previous ones (Table1) (3).

Recommended sections in a full EPA description (12).

1. EPA Title
2. Specification and limitations
3. Potential risks in case of failure
4. Most relevant competency domains
5. Required knowledge, skills, attitudes, and experiences to allow for summative entrustment
6. Information sources to assess progress and support summative entrustment
7. Entrustment / supervision level expected at which stage of training
8. Time period to expiration if not practiced

All stakeholders (students, supervisors, physicians, nursing staff, etc.) must be able to understand the title of EPA. The title should not refer to a specific person or situation, but should be written as a general task. The title should be concise; the verbs should refer to the action that will be performed in the implementation of the EPA; the title must be clear and should not offer other options; It is best to keep the title succinct and focused on a single activity, as opposed to

including a series of related components (12).

Table1. An Example of an EPA (The table adapted from Twelve tips for the implementation of EPAs for assessment and entrustment decisions) (16).

1. Title	Routine checkup of the stable adult patient
2.Specification and limitation	1. Measuring vital functions: pulse, breathing, temperature, blood pressure, saturation: bay hand and with devices 2. Explaining all actions to the patient 3. Reporting results to care givers (orally and/or written) Limitations: only with circulatory stable patients > 18-year old
3.Potential risks in case of failure	Missing an important disease or a problem
4.Most relevant competency domains	✓ Medical Expert ✓ Communicator ✓ Collaborator Manager Health Advocate Scholar Professional
5.Required knowledge, skills, attitudes, and experiences to allow for summative entrustment	Knowledge: Basic anatomy; normal and abnormal values, interpretation; estimation of consequences Skill: 2nd year medical school skill test-based Attitude: Aware of critical nature of adequate report
6.Sources for information of assessment	Short practice observations of all acts, 3 case-based discussions
7.Level and expected moment of entrustment	Level 3a (indirect supervision, all findings checked) after 2 weeks of first clerkship
8.Expiration	One year after nonpractice

The activity must be described in detail and contain no more or no less than what is on EPA. The title alone is not sufficient; a detailed explanation is required. EPAs may be individual tasks which may consist of components arranged in a chronological or bulleted list. "Observable Practice Activities" refers to a collection of individual tasks or specialized duties that together form an EPA (12). Limitations are activities or situations for which an EPA-certified individual is not always qualified (12). Failure to perform the task properly has risky consequences not only for the learner but also for future patients. The term "Entrustment-based Discussions" refers to a structured conversation with a learner that is intended to support an entrustment decision for an EPA. It is structured by the four queries listed below. Does the student comprehend the required actions? Does the learner possess adequate background knowledge? Is the learner aware of the activity's potential risks and complications? In addition, what actions would the learner take if he or she encountered patients, uncommon results, or emergent risks or complications (8,17).

Numerous health professions educational institutions utilize local or national competency frameworks. These frameworks clearly outline the knowledge, skills, and abilities that health professionals need, but they struggle to provide the level of quality control that competency-based assessments are intended to do. EPAs are intended to document how trainees integrate pertinent competencies into particular healthcare tasks, rather than to substitute competencies (13). Although a range of competencies is often used in EPAs, not all are equally critical (12). The mapping of EPAs to competencies is in essence, an answer to the question what competencies a person must possess before he or she can be entrusted to perform a critical activity unsupervised (15).

The level of knowledge required can be very high for certain EPAs. A general reference book or a specific knowledge test that satisfies the knowledge requirements for an EPA may be utilized to condense information for students. If necessary, a narrower set of skills is usually used. These might be mentioned in the description of EPA, refer to a relevant resource, or mention a specific skill test that has been passed (10,12). “What qualities must learners possess before deciding to minimize supervision?” is the critical question for all knowledge, skills, and attitudes. Knowledge and skills can be assessed at specific intervals, but attitudes are more difficult to measure. Many authors have investigated what attitudes and actions ought to be taken into account when making entrustment judgments. The acronym, A RICH (Agency, Reliability, Integrity, Capability, Humility), represents five general characteristics essential to building trust in clinical learners (8,12,18). Experiences may include things such as clinical rotations, number of procedures performed under supervision, and other things (12).

Making entrustment decisions, especially for summative ones, should consider a variety of sources of data rather than simply a single observation or test. Innovative workplace-based assessment (WBA) tools and techniques have multiplied over the past two decades. Written or online knowledge tests, skills assessments, and simulation tests are lower-level information sources that can be helpful but are less widespread in the workplace and are unable to replace the WBA (12,17). When EPAs and entrustment are the focus of assessment, a small number of assessment methods have been identified as being particularly appropriate: short practice observation (Mini Clinical Examination, Direct observations of procedural skills); case-based discussion; longitudinal practice observations (360 degree evaluation, multi-source feedback); and products (including discharge letters, electronic health record entries, written reports, and presentations) (12,17). After an EPA, the case-based discussion should assess the student's understanding of what has been achieved and include "what-if" questions to determine whether the student would be able to respond appropriately in unexpected or unfamiliar situations (3). Entrustment decisions can also be classified as ad hoc (happen every day) or structural (formal occasions to recognize competencies) (19). "Ad hoc entrustment decisions" describe situations in which the supervising physician determines that the risks are acceptable, and the trainee's existing skills are appropriate to the complexity of the patient. At the end of the formative assessment, the instructor can determine which EPAs can be entrusted to the trainee and which ones he or she is not yet prepared to handle. As competency increases, the trainee should be able to perform EPAs of increasing difficulty, risk, or complexity. A trainee who is entrusted with important EPAs is considered well trained. A trainee who has not achieved Level four or five in one or more critical competencies may be required to remain in the program longer than anticipated. When an EPA is awarded, the learner receives a STAR (Statement of Awarded Responsibility) which is the certification alternative and must be based on a sufficiently

established level of trust. This trust should include agreement among numerous observers and various observations to reduce the risk of subjectivity so that entrustment can be justified (12,14,17,19,20). In contrast, "summative entrustment decisions" have a certification component. These decisions have already been made and are based on the obligations that students will face in the future (3,17). Four groups of factors influence the decision to assign someone to a task: trainee characteristics (e.g., tired, self-conscious, level of training); supervisor characteristics (e.g., lenient, or strict); situation (e.g., time of day, available facilities); and characteristics of EPA (e.g., common, easy, or rare, complex) (19). “Based on my observations, I suggest that this trainee is ready for supervision at level x” This is an appropriate phrase for evaluation forms (12,15). The primary objective of evaluating a student is to determine how much supervision he or she requires for a specific EPA. Developing competencies is often not a short-term endeavor. In order to reach the desired level, students must go through a series of stages. The assessment system must be properly constructed in the first place for this process to be managed effectively. A successful outcome for the student is when he/she reaches the point of competence where he/she can carry out a certain task independently and without supervision (2).

There are five levels of monitoring. For most EPAs in undergraduate medical education, this may be Level Three, and for post¬graduate programs, Level Four (3,15,20,21).

Each student's position on the scale (entrustment is inversely proportional to the level of supervision) is determined by his or her performance on the EPA.

Level 1. Not ready to be entrusted with the task (be present and observe)

Level 2. Ready to perform EPA under direct, pro-active supervision (supervisor present in the room).

Level 3. Ready to perform EPA under indirect, reactive supervision (supervisor available on request).

Level 4. Ready for unsupervised practice (distant oversight).

Level 5. Ready to supervise junior learners in the performance of the EPA.

If the learner has repeatedly demonstrated over time that he or she is able to perform the task competently, the supervisor knows that the learner is ready to perform the task without supervision and may award the learner the EPA. The apprentice may then perform the task independently. The trainee's eligibility to receive the EPA may be determined by the trainee's area of expertise. For some activities, it may be awarded when the trainee has reached competency level four, for others, particularly simple, common, or essential activities, level five may be preferred (19,21).

A student's developmental processes for multiple competencies will not be the same, just as a student’s developmental processes for each competency would be different. While some students progress more quickly than others in communication, others may take longer to master surgical procedures. For another student, the opposite is true (10,11).

It will be beneficial to implement a portfolio of EPAs because it motivates learners to take ownership of their training. Learners are more likely to internalize the lessons of the training if their portfolio reflects them (15,22).

Some EPAs require consistent practice every week or month to maintain proficiency, while for others it may be less important if they neglect a few years of practice. Because of the differences among EPAs, it may be necessary to establish separate expiration dates for each EPA (12). If a student does not practice EPA after a summative entrustment decision, the decision may expire, and the individual (undergraduate or postgraduate student) must be re-supervised. The purpose of a summative entrustment decision is to substantiate the right to practice

independently in the future, similar to a medical license or specialized board certification (12).

Use of Technology in EPA

As in any other discipline, the use of EPAs has been influenced by the development and widespread use of technology in medicine. The use of technological support and mobile applications can make EPAs more applicable and comprehensible to both faculty and students. With the increased use and integration of smartphones, assessment data can be collected in a truly seamless manner, reducing administrative challenges and increasing the authenticity of assessments. In recent years, articles have envisioned a future where mobile technology and workplace assessment are seamlessly combined, which could result in a dynamic educational environment that improves assessment procedures and ultimately elevates patient care in medical school (15,23).

Implementation of EPAs into Curriculum

If we want to incorporate EPAs into our curriculum and translate professional work into EPAs, curriculum development with EPAs must begin with a thorough description of clinical practice, focusing on the desired learning outcomes, and the identification and selection of relevant, representative, or critical tasks (15,22). When tasks are analyzed, a summary is created, sometimes with categories for frequency, importance, and difficulty. The "importance" of healthcare EPAs would include how crucial it is that the activity be carried out securely (15). Because each task must be explicitly linked to the domains of competence that are most relevant to that work, this provides a basis for the observing and assessing skills as they emerge in clinical practice (22). The phases: identification, development, and validation of EPAs are essential (15). EPAs should reflect professional practice units large enough to make entrusting trainees with unsupervised practice a significant step. In general, it is suggested that trainees receive no more than 10 summative entrustment decisions for EPAs per year (15).

Validation of EPAs should lead to informed recognition of entrusted EPAs by linking them as closely as possible to standard requirements for program graduates (15). In order to do this, EPAs can be compared to existing materials such as curriculum design and publications, expert opinion, or both. Obtaining expert opinion can not only ensure the quality of the EPAs but also engage and inform the academics who will later work with them. The content validity of EPAs can be demonstrated using a variety of methods including expert meetings, interviews, and the Delphi method, which uses a consensus of individual experts, and the nominal group technique (9,15,22).

CONCLUSIONS

The integration of CBME and EPAs has resulted in a significant transformation in modern medical education. Concerns regarding the quality of patient care, societal demands, and the efficacy of training motivate the shift from traditional time-based models to competency-driven ones. The introduction of EPAs by Olle ten Cate is fundamental to this transformation. EPAs offer a pragmatic solution to the challenge of translating abstract competencies into concrete clinical responsibilities. EPAs, unlike traditional competency frameworks, emphasize actions over qualities, making assessment and measurement more concrete and pertinent. The modular nature of EPAs, which are subdivided into manageable units of practice, allows for progressive advancement and incremental accomplishment throughout training. The article highlights the compatibility of EPAs and competencies. Competencies describe the qualities a physician should possess, whereas EPAs describe the tasks and responsibilities they must perform. This partnership, which is mutually advantageous, bridges the gap between theoretical knowledge and practical application. By actively engaging in real-world

tasks, EPAs facilitate the internalization of competencies by learners. By providing a structured, adaptable, and context-specific approach to competency assessment, EPAs enable learners to assume responsibilities progressively, thereby facilitating their path to becoming competent and confident healthcare professionals.

REFERENCES

1. Association of American Medical Colleges (AAMC) [Internet]. 2023 [cited 2023 Aug 1]. Competency-Based Medical Education (CBME). Available from: https://www.aamc.org/about-us/mission-areas/medical-education/cbme

2. Ten Cate O. Entrustable Professional Activities as a Framework for the Assessment of Residents, ACGME Annual Educational Conference. In: Cate Ten olle, editor. Entrustable Professional Activities as a Framework for the Assessment of Residents. 2015.

3. Cate O ten. An Updated Primer on Entrustable Professional Activities (EPAs). Rev Bras Educ Med. 2019;43(1 suppl 1):712–20.

4. Kwan J, Crampton R, Mogensen LL, Weaver R, Van Der Vleuten CPM, Hu WCY. Bridging the gap: A five stage approach for developing specialty-specific entrustable professional activities. BMC Med Educ. 2016 Apr 20;16(1).

5. ten Cate O. Competency-Based Education, Entrustable Professional Activities, and the Power of Language. J Grad Med Educ. 2013 Mar 1;5(1):6–7.

6. Frank JR, Mungroo R, Ahmad Y, Wang M, De Rossi S, Horsley T. Toward a definition of competency-based education in medicine: A systematic review of published definitions. Med Teach. 2010 Aug;32(8):631–7.

7. Frenk J, Chen L, Bhutta ZA, Cohen J, Crisp N, Evans T, et al. Health professionals for a new century: Ttransforming education to strengthen health systems in an interdependent world. Vol. 376, The Lancet. Elsevier B.V.; 2010. p. 1923–58.

8. Modi J GPST. Competency-based Medical Education, Entrustment and Assessment. Indian Pediatr. 2015 May 15;52:413–20.

9. Carraccio C, Wolfsthal SD, Englander R, Ferentz K, Martin C. Shifting Paradigms: From Flexner to Competencies. Acad Med. 2002 May;77(5):361–7.

10. Altıntaş Levent. Mezuniyet Sonrası Dönemde Ölçme ve Değerlendirmenin Tasarımında Devredilebilir Mesleksel Etkinliklerin Önemi. Turkiye Klinikleri J Med Educ-Special Topics. 2016;1(2):31–7.

11. Hauer Karen E, Chen H, Young J, O'Sullivan P. Defining and assesing Entrustable Professional Activities [Internet]. 2013 [cited 2023 Aug 1]. Available from: https://slidetodoc.com/defining-and-assessing-entrustable-professional-activities-karen-e/

12. Ten Cate O, Taylor DR. The recommended description of an entrustable professional activity: AMEE Guide No. 140. Med Teach. 2021;43(10):1106–14.

13. Ten Cate O. Entrustability of professional activities and competency-based training. Vol. 39, Medical Education. 2005. p. 1176–7.

14. Ten Cate O, Scheele F. Viewpoint: Competency-Based Postgraduate Training: Can We Bridge the Gap between Theory and Clinical Practice? Academic Medicine. 2007;82(6):542–7.

15. Ten Cate O, Chen HC, Hoff RG, Peters H,

Bok H, Van Der Schaaf M. Curriculum development for the workplace using Entrustable Professional Activities (EPAs): AMEE Guide No. 99. Med Teach. 2015 Nov 2;37(11):983–1002.

16. Peters H, Holzhausen Y, Boscardin C, ten Cate O, Chen HC. Twelve tips for the implementation of EPAs for assessment and entrustment decisions. Med Teach. 2017 Aug 3;39(8):802–7.

17. ten Cate O, Hoff RG. From case-based to entrustment-based discussions. Clinical Teacher. 2017 Dec 1;14(6):385–9.

18. Kennedy TJT, Regehr G, Baker GR, Lingard L. Point-of-Care Assessment of Medical Trainee Competence for Independent Clinical Work.

19.ten Cate O. Nuts and Bolts of Entrustable Professional Activities. J Grad Med Educ. 2013 Mar 1;5(1):157–8.

20. Cate O Ten, Hart D, Ankel F, Busari J, Englander R, Glasgow N, et al. Entrustment Decision Making in Clinical Training. Academic Medicine. 2016 Feb 1;91(2):191–8.

21. Upreet Dhaliwal, Pıyush Gupta, Tejinder Sing. Entrustable Professional Activities: Teaching and Assessing Clinical Competence. Indian Journals. 2015 Jul 15;52:591–7.

22. Mulder H, Cate O Ten, Daalder R, Berkvens J. Building a competency-based workplace curriculum around entrustable professional activities: The case of physician assistant training. Med Teach. 2010 Oct;32(10).

23. Marty AP, Linsenmeyer M, George B, Young JQ, Breckwoldt J, ten Cate O. Mobile technologies to support workplace-based assessment for entrustment decisions: guidelines for programs and educators: AMEE Guide No. 154. Med Teach. 2023; 45(11):1203-1213.