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To cite this article: Harm Peters, Ylva Holzhausen, Christy Boscardin, Olle ten Cate & H. Carrie Chen (2017) Twelve tips for the implementation of EPAs for assessment and entrustment decisions, *Medical Teacher*, 39:8, 802-807, DOI: [10.1080/0142159X.2017.1331031](https://doi.org/10.1080/0142159X.2017.1331031)

To link to this article: <https://doi.org/10.1080/0142159X.2017.1331031>



Published online: 26 May 2017.



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Twelve tips for the implementation of EPAs for assessment and entrustment decisions

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ABSTRACT

The concept of entrustable professional activities (EPAs) reframes the approach to assessment in competency-based medical education. Key to this concept is the linking of assessment to decision making about entrusting learners with clinical responsibilities. Based on recent literature and the authors' experiences with implementing EPAs, this article provides practical recommendations for how to implement EPAs for assessment and entrustment decisions in the workplace. Tips for supervising clinicians include talking to learners about trust, using EPA descriptions to guide learning and teaching, providing learners with greater *ad hoc* responsibilities, using EPAs to identify/create opportunities for assessment and feedback, including case-based discussions and acknowledging gut feelings about learner readiness for more autonomy. Tips for curriculum leaders entail enabling the trust development, applying trust decisions at all levels of the supervision scale, employing all available information sources for entrustment, empowering learner ownership of the assessment process and using technology for learner tracking and program evaluation.

Introduction

Entrustable professional activities (EPAs) were introduced to operationalize competency-based medical education and to facilitate the guidance and evaluation of learners in clinical workplaces (ten Cate & Scheele 2007). EPAs were initially proposed for postgraduate medical education (PGME) but have lately expanded to include undergraduate medical education (UME) and to other health professions such as veterinary medicine, physician assistant training and even to teacher training (Mulder et al. 2010; Chen et al. 2015b; ten Cate et al. 2015; Leijen et al. 2017). The EPA concept was described in rudimentary form in 2005 and in more elaborate form in 2015 (ten Cate 2005; ten Cate et al. 2015). As it was proposed to serve the assessment of learners, entrustment decision-making has received much attention recently (Rekman et al. 2016; ten Cate et al. 2016; Holzhausen et al. 2017). The EPA concept aims to guide learners and clinical educators in establishing a graded increase in autonomy and responsibility toward readiness for the unsupervised practice of key tasks of the profession.

As EPAs are now being implemented in many programs – UME and PGME, implementation questions emerge about paths to entrustment decisions, assessment practices and the faculty development needed for entrustment assessments (Brown et al. 2017; Favreau et al. 2017; Lomis et al. 2017). In our work across different institutions and contexts as members of an international multidisciplinary research network, we have recently gained practical experiences with the implementation of EPAs for workplace assessment that may help address these questions. This contribution builds upon recent literature and emphasizes our lessons

learned. Our goal is to provide practical tips, consistent with sound educational principles, to both supervising clinicians and curriculum leaders to enable successful operationalization of EPAs for assessment.

For supervising clinicians (tips 1–6)

Tip 1

Talk explicitly about trust with learners

Supervising clinicians need to make clear to learners from the outset that the concept of trust (elaborated and defined in tips 3 and 7) influences both their participation in the workplace and assessments of their performance. Learners tend not to recognize the role of trust and focus only on the competencies (knowledge/skills) needed for patient care or to accomplish an EPA. Therefore, supervising clinicians should set adequate expectations and ensure that learners understand they are assessed on all the key qualities that enable trust. *Competence* (knowledge/skill to perform the EPA) needs to be complemented by *integrity* (truthfulness and benevolence), *reliability* (conscientiousness and predictable behavior) and *humility* (recognition of own limitations and willingness to ask for help if needed) (ten Cate et al. 2016). As trust is a two-way street (Sklar 2016), the learner should understand that trust in supervising clinicians is also an expectation.

Supervisors should explain that demonstration of these four qualities inform decisions about levels of supervision/entrustment and learners' professional responsibilities. This occurs on a day-to-day basis for both workplace

participation and summative assessments. The EPA framework of decreasing levels of supervision and increasing professional responsibilities is useful for specifying the expected learning trajectory in the clinical placement and setting. Supervisors should indicate to learners the typical starting point and incremental learning goals or level of entrustment usually achieved within given timeframes. They can also coach learners to attend to plateaus in their learning curves (e.g. when specific activities become routine) as potential indicators of readiness for next steps, that is, new professional activities or less supervision.

Tip 2

Use the elaborated EPA descriptions to inform learners and guide teaching

Supervisors and learners should take advantage of well-elaborated EPA descriptions (typically 1–2 pages) to shape and focus experiences and practice opportunities for the learner, with a clear goal of preparing learners for entrustment decisions (ten Cate 2013; ten Cate et al. 2015). Some people perceive and use EPA descriptions as merely definitions of the end-points for summative entrustment decisions and transfer of responsibility. This narrow view misses an important opportunity. EPA descriptions can serve as detailed road maps or mini-curricula for how to get to entrustment. The EPA description section specification and limitations can be interpreted as the learning objectives: what exactly is it that the learner must master? Details in the section on required knowledge, skills and attitude should guide supervisor selection of experiences and practice opportunities needed to prepare students for an entrustment decision. Sharing these descriptions with learners may empower them to direct their own study and seek needed experiences. The supervisor can understand how their assessments of the learner relate to other assessments/expectations and demystify the evaluation process for learners by referring to the sections on sources of information to assess progress and link with the competency framework. In many placements, when supervisors and learners are immersed in the clinical environment, expectations, opportunities and useful activities may not always be clear (Crossley 2014). The mini-curricula outlined by elaborated EPA descriptions may help supervisors focus their choice of learning activities and support their learners in taking the lead in their own education (Table 1).

Tip 3

Provide learners with opportunities to practice higher levels of responsibility ad hoc

Learners should and need to have opportunities to gain experience performing a professional activity at increasingly higher levels of responsibility before they are fully entrusted with it. It is a misunderstanding that learners cannot be allowed to practice at a given level of supervision (e.g. indirect supervision) before a summative entrustment decision has been made for that level of supervision. Learners may be asked to practice certain tasks in a controlled learning situation with a higher level of autonomy (as *ad hoc* entrustment), without the promise or certification that they may or will from then on always work at that same higher level of autonomy (as summative entrustment). This is an important distinction. Daily or *ad hoc* entrustment decisions are dependent on circumstances that might change from day to day. The supervisor must judge every situation separately for the patient risks involved and its safety for the learner to practice. These *ad hoc* decisions are based on presumptive or initial trust (Tip 7). In contrast to *ad hoc* decisions, a summative entrustment decision is based solely on grounded trust and is a generalized permission to enact an EPA at a designated level of supervision (ten Cate et al. 2016).

To illustrate, a clinical supervisor should provide a learner, who is at entrustment level of “direct supervision” for an activity, opportunities to practice being responsible to perform the activity under indirect supervision, while still having support from the training environment. It is the supervisor’s multiple experiences with *ad hoc* decisions showing that the learner can be entrusted with the professional activity under indirect supervision that will then support the eventual *summative* entrustment decision for indirect supervision. This aligns with the concept of programmatic assessment (Schuwirth & Van der Vleuten 2011).

Tip 4

Use EPAs to identify and create opportunities for assessment and focused feedback

Supervising clinicians should use the EPAs expected of learners to anchor and focus their feedback. They are

Table 1. Entrustment and supervision scales: original and expanded form.

Original entrustment and supervision scale for PGME	Expanded entrustment and supervision scale for UME and PGME
1. Not allowed to practice EPA	1. Not allowed to practice EPA a. Inadequate knowledge/skill (e.g. does not know how to preserve sterile field); not allowed to observe b. Adequate knowledge, some skill; allowed to observe
2. Allowed to practice EPA only under proactive, full supervision	2. Allowed to practice EPA only under proactive, full supervision a. As coactivity with supervisor b. With supervisor in room ready to step in as needed
3. Allowed to practice EPA only under reactive/on-demand supervision	3. Allowed to practice EPA only under reactive/on-demand supervision a. With supervisor immediately available, all findings and decisions double checked b. With supervisor immediately available, key findings and decisions double checked c. With supervisor distantly available (e.g. by phone), findings and decisions promptly reviewed
4. Allowed to practice EPA unsupervised	4. Allowed to practice EPA unsupervised a. With remote monitoring (e.g. next day check-in for learner questions) b. Without monitoring
5. Allowed to supervise others in practice of EPA	5. Allowed to supervise others in practice of EPA

PGME: postgraduate medical education; UME: undergraduate medical education.

sources for credible and effective feedback when clear about performance expectations and informed by direct observations embedded in clinical practice (Teunissen et al. 2009; Bok et al. 2013, 2016; Lefroy et al. 2015). However, in busy clinical workplaces, supervisors may limit their attention and feedback to only a few common learner behaviors or activities, for example, rapport with patients or history-taking skill. Keeping the EPAs in mind can remind them to provide performance-based feedback on a breadth of workplace activities (e.g. application of evidence, transitions of care responsibility, etc.). It also can help supervisors focus on the behaviors needed for a decrease in learner supervision, leading to specific meaningful feedback about correct and safe task performance rather than general praise or criticisms of personal characteristics.

One challenge is that the opportunities for assessment and feedback, particularly for activities that have typically received less attention, may not always be clear. Here, the EPA descriptions can help supervisors identify or create activities that can inform assessment of specific EPAs (e.g. consent for immunizations as an assessment opportunity for an EPA on informed consent). In all cases, feedback should enable supervisors and learners to engage in a dialog about learner progress toward achieving desired levels of entrustment and any adjustments needed in learning goals and practice opportunities. To encourage meaningful feedback encounters and avoid supervisors and learners becoming overwhelmed by the number of activities to observe and assess, we recommend supervisors limit the scope of each feedback interaction to only one EPA (Lefroy et al. 2015).

Tip 5

Use case-based discussions to support entrustment decisions

To support the validity of entrustment decisions, clinical supervisors should use case-based discussions (CBD) to gain additional insights into learner abilities. Unlike other frameworks for assessment that focus on past performance, EPA assessments focus on future performance – trust in a learner’s ability to handle future patients/situations that may pose new challenges. Thus, in deciding to trust a learner for health care tasks, clinical supervisors must take certain risks, ones that in their estimation are acceptable and manageable (Holzhausen et al. 2017). Because it is not possible to observe learners in every imaginable situation, they must use adjunctive methods to discern how learners will likely perform in situations not yet encountered.

A supervisor can perform CBD in four steps that are easily integrated into the daily workflow. Following a professional activity, either directly observed or not, the supervisor asks the learner to (1) explain what has been done, (2) exhibit background knowledge, (3) describe risks or complications and (4) explain how he/she would have acted if the situation or patient had been different for any reason (e.g. culture, medical history, unexpected findings, mental or physical abnormality, etc.). CBDs may include selected preformulated scenarios of rare or risky situations. Valid learner reactions may include awareness of when to ask for help (ten Cate et al. 2015).

Tip 6

Listen to and try to understand gut feelings about a learner

Supervisors may sometimes feel uneasy granting a learner more autonomy, despite available satisfactory data on the learner’s ability. We recommend that supervisors not deny their gut feelings, but rather listen to them as they may give voice to the unconscious processing of previous experiences with learners. Supervisors may see entrustment decision-making as a fully rational process best based on multiple information sources, but not everything can be easily measured or expressed in numbers. Research has shown that rules of thumb heuristics may outperform deep analysis in the quality of decision making. Even decisions that ignore some information can lead to more accurate judgments than weighting and adding all information available (Gigerenzer & Gaissmaier 2011). Thus, reflect on these feelings, when it comes to the question “Can I trust the learner to execute a critical task without direct or indirect supervision?”. If the gut feeling says “No”, then consider “Why?”. Examine the information you have about the learner, not just about their competence but also their integrity, reliability and humility. Review the specifications and limitations of the task as elaborated in the EPA description (Tip 2). Ask, “Is my information sufficient?” and “Should I observe and be available nearby?” Comparison with other learners or comparison with the learner’s prior development in similar situations is helpful but should not distract from the standard for safe and high-quality patient care. This should be the most logical standard against which to evaluate entrustment decisions. For supervisors, it is important to disentangle these three benchmarks (group comparison, individual development and safe care) before making entrustment decisions. A useful exercise for a clinical supervisor is to imagine having the learner as the health care provider for their family member.

For curriculum leaders (tips 7–12)

Tip 7

Enable and facilitate the development of trust

Curricular and workplace structures should aim for more consistent supervisor–learner pairings, longer periods of working together and/or longitudinal clinical placements. Supervisors need to have sufficient opportunities to develop trust in a learner. The longer the relationship between the supervisor and learner, the better the supervisor can estimate the learner’s capabilities and limitations and the more valid the entrustment decisions (Hirsh et al. 2014; Sheu et al. 2016, 2017). Early relationships between supervisors and learners begin with presumptive trust based on prior credentials and initial trust based on the first impressions gained in the first days of working together. The grounded trust which is a necessary foundation for summative entrustment decisions, develops through longitudinal relationships and extended experiences with learners.

In cases where longer placements are not possible, other approaches can be actively employed to facilitate building

of trust in the learner. For instance, in short clerkships, supervisors may employ learner handovers from one supervisor to the next (Chen et al. 2015a). Similarly, portfolios can document learner progress on professional activities and supervision levels, and allow forward feeding of the information to the subsequent supervisors (van der Schaaf et al. 2017).

Tip 8

Apply trust decisions to all levels of the graduated supervision scales

Trust decisions should be made at each step of the learner's developmental trajectory, and not just at the end. As EPAs are being operationalized, discussion has arisen around the "entrustable" and "pre-entrustable" learner (Englander et al. 2016). While this dichotomous approach (whether or not a learner may be entrusted to work unsupervised) can be appropriate for a final entrustment decision at the completion of training, it overlooks the application of trust to "pre-entrustable" learners during training. A learner progresses through many steps on the way to achieving full entrustment. Learners can and should be assessed and rewarded with increasing autonomy at each of these "pre-entrustable" steps, aligning with and formalizing the gradual decrease of supervision practiced by clinical supervisors. Therefore, the better question to ask is at what level of supervision a learner may be entrusted to work. This also avoids the labeling of learners as untrustworthy.

Published entrustment and supervision scales provide useful frameworks for the assessment of these interim steps in UME and PGME (Chen et al. 2016, 2015b; ten Cate et al. 2010). We have further refined the expanded scale for UME and PGME in Table 2. Additional specialty-specific entrustability scales may be created for PGME. These scales permit programs to incorporate explicitly, trust-based assessments for specific professional activities at each stage of training. This is important for clarity among all stakeholders (including learners) in determining learner progression and in facilitating competency-based advancement of learner responsibilities (George et al. 2014; Weller et al. 2017).

Tip 9

Use all available sources of information in the workplace to ground entrustment decisions

The workplace is a rich information source and all available data should be used in the assessment of learner performance. Whenever possible, assessment of a learner's mastery of an EPA should be based on his/her performance of the specified activity and trustworthiness in the workplace. However, it is a misconception to believe that grounded entrustment decisions need to rely *only* on direct observations of performance, such as short (Mini-Clinical Evaluation Exercise MiniCEX, Direct Observation of Procedural Skills – DOPS, etc.) or longitudinal (multisource feedback, etc.) practice observations. Every day work and work products can be used to supplement direct observation and provide additional insights into learner performance. These could include product evaluation (health record entries, discharge letters, postoperative report), self-report (activity logbooks, reflection reports, confidence/comfort measures, self-remediation plans), *post hoc* results check (evaluations of work quality/quantity, patient satisfaction), and knowledge and skills tests (Welink et al. 2017). The use of these sources allow competency committees to have a more complete picture of the learner. Also, because they naturally integrate into the routine workflows of the clinical workplace (versus artificial add-on exercises based on abstract evaluation scales), they can be easier to implement among clinical supervisors. Of note, however, many of these existing tools need to be adapted to gather information beyond learner competence (e.g. recognition of limitations, context and level of supervision provided).

Tip 10

Encourage learner ownership and engagement in the assessment process

Learners should be empowered to own their assessments and engage in the assessment process. Ideally, trust, assessment and feedback should involve a bidirectional, rather than unidirectional, conversation between the supervisor and learner (Lefroy et al. 2015). Yet learners typically perceive assessment as a top-down process that is thrust upon

Table 2. Description of an entrustable professional activity that can be used as mini-curriculum by trainees and supervisors.

1. Title: <i>Routine checkup of the stable adult patient</i>	
2. Specification and limitations	1. Measuring vital functions: pulse, breathing, temperature, blood pressure, saturation: by 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. Relevant competency domains	<input checked="" type="checkbox"/> Medical Expert <input type="checkbox"/> Health Advocate <input checked="" type="checkbox"/> Communicator <input type="checkbox"/> Scholar <input checked="" type="checkbox"/> Collaborator <input type="checkbox"/> Professional <input type="checkbox"/> Manager
4. Required experience, knowledge, skills, attitude, behavior before 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
5. Sources of information for assessment	Short practice observations of all acts, 3 case-based discussions
6. Level & expected moment of entrustment	Level 3a (indirect supervision, all findings checked) after 2 weeks of first clerkship
7. Expiration	One year after nonpractice

them. Use the EPA focus on increasing autonomy to motivate learners to request observation and feedback on areas in need of assessment. This can help learners direct supervisor attention to their individual growth targets and ensure that they are being assessed adequately on all EPAs. Ask learners to reflect and self-assess their levels of entrustability to provide insights into the learner's development as well as their limitations, points for the feedback conversation and information for entrustment decisions. Some learners overestimate their readiness for less supervision, while others never seem to develop sufficient confidence to take full responsibility.

In addition, learner ownership and engagement can help institutions reflect on the learning environment. Feedback loops utilizing information from learners allow evaluation of the validity and assumptions about expected competency levels for various EPAs, and whether the learning environment provides sufficient opportunities for learners to achieve their desired developmental goals and levels of supervision. This feedback and evaluation of the assessment and feedback system is crucial when implementing new assessments.

Tip 11

Use technology to facilitate documentation of progress

Institutions should employ today's information technology, for instance e-portfolios with database and learning analytics, to manage and track EPA-based workplace assessments. In order to monitor and facilitate the progress of learners over time, data must be collected, summarized and presented in a way that can be used easily by learners and supervisors. The e-portfolio can provide a current overview of which EPAs learners performed under which supervision level in their placements (van der Schaaf et al. 2017). It can also capture all results and outcomes from information sources relevant to entrustment decision-making (Tips 5 and 9). The continuous documentation of the learner's professional development and progression allows for early signals of strengths and weaknesses. Supervisors and competency committees can use this information to guide entrustment decision-making. Learners could be empowered to practice self-regulated learning and monitor their own progress in relation to their prior performance, performance of their peers and competency-based performance expectations. Summative entrustment decisions can be registered in an e-portfolio, enabling the learner to show which EPAs he/she can be entrusted to perform at what supervision level (ten Cate et al. 2015).

Tip 12

Use aggregate data as metrics for program evaluation

EPA assessment data should be aggregated and analyzed at the programmatic level for curricular evaluation and improvement. Data aggregated by EPA can provide information about differences in the frequency and acquisition of different types of EPAs and inform the sequencing of learning opportunities. It can identify gaps in the curriculum based on average entrustment levels on specific EPAs

and provide information for remediating specific deficits. These data can drive policies and recommendations around optimal levels of supervision based on evidence. Using predictive modeling techniques and learning analytics, aggregate data at the learner level can help identify early the learners who need additional support. Finally, data may be aggregated by supervisors as well. Many supervisors observe and rate a multitude of learners and may build their own educational portfolio from the same database. This allows for the benchmarking of supervisor assessment habits against those of colleagues and may serve as a form of faculty development.

Conclusions

These 12 tips build upon recent literature and emphasize the authors' practical experiences and lessons learned in a domain that is dynamic and still very much in development. While we wrote these recommendations with the specific challenges of implementing EPA-based assessments in mind, several of the underlying principles reflect best practices that may be applied to workplace-based assessments in general.

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Disclosure statement


The authors report no conflicts of interest. The authors alone are responsible for the content and writing of this article.

Funding

This publication was supported by a grant from the European Union Seventh Framework Programme for Research, Technological

Development and Demonstration with the title "Workplace-based e-assessment technology for competency-based higher multi-professional education" (WATCHME, grant agreement No. 619349).

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