The ABCs of EPAs – an overview of ‘Entrustable Professional Activities’ in medical education

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**Abstract**

Consultants regularly need to decide whether a trainee can be *entrusted* to perform a clinical activity independently. ‘Entrustable Professional Activities’ (EPAs) provide a framework for justifying and better utilising supervisor entrustment decisions for trainee feedback and assessment in the workplace. Since being proposed by Olle ten Cate in 2005, EPAs are emerging as an integral part of many international medical curricula, and are being considered by the Royal Australasian College of Physicians in the current review of physician training. EPAs are defined as tasks or responsibilities that can be entrusted to a trainee once sufficient competence is reached to allow for unsupervised practice. An example might be to entrust a trainee to ‘Initiate and co-ordinate care of the palliative patient’ with only off-site or indirect supervision. Rather than attempting to directly measure each of the many separate competencies required to undertake such a complex task, EPAs direct the trainee and supervisor’s attention to the trainee’s performance in a limited number of selected, representative, important day-to-day activities. EPA based assessment is gaining momentum, amongst significant concerns regarding feasibility of implementation. While the optimal process for designing and implementing EPAs remains to be determined, it is an assessment strategy where the over-arching goal of optimal patient care remains in clear sight. This review explores the central role of trust in medical training, the case for EPAs, and potential barriers to implementing EPAs based assessment.

**Key words**

Entrustable professional activities, trust, workplace based assessment
During a busy clinic, Simon, your new basic physician trainee calls you. He is concerned about a deteriorating patient with advanced pulmonary fibrosis. Unfamiliar with his level of experience, you reluctantly advise him to discuss end-of-life care plans with the patient’s family. “After all,” you reason—“...Simon has passed his exams, so he must be competent enough to complete this task...”

Introduction

Current approaches to assessment suggest that a coordinated program of multiple types of complementary assessments may produce a more meaningful result than simply the sum of its parts. This acknowledges that no one method of assessment can cover all the required knowledge, skills and attitudes required of medical experts.¹ The Royal Australasian College of Physicians (RACP) training program includes written and clinical examinations with a workplace based assessment component known as PREP (Physician Readiness for Expert Practice). ‘Entrustable professional activities’ (EPAs) have emerged internationally as tools for assessing on-the-job performance, and may play an important role in revising the workplace component of RACP curricula. However given their recent development, many clinicians and educators are unfamiliar with this educational tool.

The concept of EPAs was introduced by ten Cate in 2005 as a novel method of assessment in medical education. The aim was to ‘help supervisors in their determination of competence of trainees’.² EPAs are essentially units of significant clinical work. They are defined as tasks or responsibilities to be entrusted to a trainee once sufficient competence is reached to allow for unsupervised practice.³

What does ‘entrustable’ mean?

Trust plays a central role in the daily interactions of supervisors and trainees. Supervisors regularly need to decide what level of trainee supervision is needed for safe patient care. Assessment using EPAs formalises these daily clinical entrustment decisions, by providing a framework to collect
evidence and document what clinical supervisors are already doing – using their expert judgement based on their observations of the trainee’s proficiency.

When dealing with EPAs it is important to highlight the relationship between ‘activities’ and ‘competencies’. Competencies are general attributes of a doctor – for example, ‘The ability to apply interpersonal and communication skills’. In contrast, activities are elements of professional work – for example, ‘Discuss end of life care with a patient and family’.

Tasks appropriate for an EPA must be: observable, measurable, executable within a given timeframe, and suitable for entrustment decisions. An EPA grading system has been developed based on the amount of trust a supervisor has in a trainee. There are five levels of trainee proficiency;

1. has knowledge
2. may act under full supervision
3. may act under moderate supervision
4. may act independently (with ‘supervision at a distance’)
5. may act as a supervisor and instructor

So how do supervisors make ‘entrustment decisions’? Unsurprisingly, the literature suggests that this is a complex multifactorial process. In a survey-based study of supervisors and trainees, four main domains of ‘entrusting factors’ were identified: trainee factors (e.g. confidence), supervisor factors, task factors, and systems factors. Furthermore in a qualitative study, Dijksterhuis et al found significant variability in how obstetrics and gynaecology supervisors make entrustment decisions. Reported methods included direct observation, discussions with colleagues, and even ‘blind faith’.
Given the complexity of an entrustment decision, it has been argued that sustained observation of the trainee performing clinical work over time allows supervisors to make better decisions. The success of using trust as the basis for assessment therefore hinges on effective implementation in the real world context of clinical training.

The case for EPAs

With the advent of competency-based education (CBE), traditional assessment techniques attempted to directly measure a trainee’s ‘competence’. However the literature suggests this is neither a practical nor useful exercise, highlighting the need for a new approach to assessment.

The first problem with measuring competencies, rather than focusing on activities, is that competence does not necessarily predict performance. A trainee may appear to be ‘competent’ in an examination setting, but exhibit poor performance in daily clinical work. Most clinical supervisors can give examples of trainees who perform exceptionally in written examinations and simulated tests of clinical skills, but poorly in daily clinical work, and vice versa. Consider the introductory scenario - if Simon was deemed able to apply interpersonal and communication skills, it does not necessarily mean that he can be trusted to discuss end of life care with a patient.

Furthermore, it may not even be possible to actually measure competencies in the workplace environment. In 2009 Lurie, Mooney and Lyness systematically reviewed published evidence that the Accreditation Council for Graduate Medical Education’s (ACGME) six general competencies can be measured in a reliable way. They found that current measurement tools were not able to measure competencies independently of one another. For example items on global rating forms tended to cluster into one or perhaps two domains, rather than the six ACGME competencies on which they were based. The authors resolved these competencies may ‘exist in a realm outside of measurement’. These problems paved the way for a novel approach to assessment in CBE.
According to Miller’s well known framework for clinical assessment (“Miller’s pyramid”), trainees typically progress through four stages of development;\(^1\)

1. Knows (knowledge)
2. Knows how (competence)
3. Shows how (performance)
4. Does (action)

Instead of attempting to directly measure ‘competence’, EPAs assess trainees at the ‘Does’ level in the context of daily clinical practice. Descriptors of a typical EPA are shown in Table 1. For a more detailed sample EPA, refer to the worked example published by ten Cate using the task of completing a patient handover.\(^3\)

**Developing EPAs for post-graduate training**

The rapid international uptake of EPAs into education and training programs has been remarkable and perhaps reflects an underlying need for better assessment methods in CBE.

EPAs are being incorporated into numerous post-graduate training curricula including paediatrics, internal medicine, family medicine, psychiatry, obstetrics and gynaecology, and nursing.\(^11\)-\(^13\) Full-scale implementation has been undertaken in Australia and New Zealand (psychiatry training) and the Netherlands (obstetrics and gynaecology training).\(^11\) Another notable example is the Association of American Medical Colleges’ list of EPAs describing a core set of behaviours to be expected from all medical graduates entering residency.\(^14\)

The suggested number of EPAs for a full postgraduate program is 20-30.\(^13\) The selected EPAs should be ‘critical activities that constitute a specialty’, which can be unique to the practice setting or
context where the assessment occurs. \textsuperscript{4} By definition, each EPA will require multiple competencies which can be mapped in a two dimensional grid. EPAs can also specify the stage of training, so as a trainee progresses through terms, a portfolio of completed EPAs can develop. Indeed, the concept of using a digital portfolio to track EPAs through a learner’s lifetime was recently proposed.\textsuperscript{15}

There remain, however, important questions on EPA development and implementation. How should EPAs be selected? How should educators decide on the content, or the ‘Required knowledge and skills’ of EPAs? What are appropriate ‘Assessment methods’?

ten Cate has suggested “…there is no single correct mode of description and application of EPAs…”\textsuperscript{16} Accordingly, multiple approaches to EPA design have emerged recently highlighting both potential benefits and pitfalls of this educational tool.

The Royal Australian and New Zealand College of Psychiatrists (RANZCP) provide a model example of how to select EPAs and schedule them over the course of training.\textsuperscript{17} EPAs were chosen through a college-wide consultative process using surveys and expert panels. Respondents provided feedback on whether trainees should be entrusted with a specific list of EPAs by the first stage of training. The result was the selection of 4 EPAs from a list of 30.

Building on such work, Aylward, Nixon and Gladding proposed a model for EPA assessment development using ‘resident handoff’ as an example.\textsuperscript{18} A nine-step process was used to create the EPA which can be adopted by other institutions. Their rigorous methodology seems appropriate given that only a limited number of EPAs form the defining activities for a particular specialty. Key aspects of their approach were wide consultation and an iterative process allowing for multiple revisions. Sources used for EPA development included literature reviews, curriculum material from
medical boards, and expert opinion. Behavioural descriptors for each level of entrustment were written.

Other approaches have included using a modified Delphi technique and more recently a sequential qualitative and quantitative mixed methods approach. However such heterogeneity in the design process has led to significant variation in developed EPAs. One potentially significant pitfall is producing an exhaustive list of detailed tasks resembling a checklist, losing the holistic value of EPA based assessment. For example, a published list of 76 EPAs for ambulatory practice in family medicine carries this risk. Further research in the area of EPA design is needed to inform this process.

Finally, the potential role of EPAs in undergraduate medical education and internship has recently emerged. This could perhaps improve continuity between undergraduate and post-graduate medical training, as EPAs are benchmarked against different levels of clinician supervision, which can be applied across clinical settings.

Is the workplace ready for EPAs?

Significant concerns have been raised regarding the application of EPAs into constrained hospital based training programs. In a feasibility study evaluating implementation of internal medicine EPAs, Hauer et al identified multiple barriers including limited trainee-supervisor contact and interns prioritising immediate work duties over learning activities.

EPA based assessment hinges on trust, and trust takes time - a precious resource for both supervisors and trainees. Furthermore, trainee rotations may need to be adjusted to accommodate EPA based training programs. Factors such as this have led some authors to conclude that the “...flexibility of current workplaces is insufficient for EPAs”. Given that evaluation studies of EPA based curricula are still pending, one would be forgiven for maintaining status quo for the time being.
Conclusion

Let us return to the opening scenario. Can EPAs help this supervisor? Perhaps the more important question is whether EPAs can improve the quality and safety of care this patient receives. To quote Buhyan et al, “Ultimately, the EPAs should be a list of what the public can expect from their family physicians”. In theory, an EPA based training program can equip Simon’s supervisor to make an informed, safe entrustment decision. However, this assumes rigorous design and application of this educational tool in a supportive learning environment. We keenly await the progress and evaluation of EPA implementation to shed light on this question.
References

22. Chen HC, van den Broek WE, Cate OT. The Case for Use of Entrustable Professional Activities in Undergraduate Medical Education. Acad Med. 2014.

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**Table 1: Descriptors of an EPA**

<table>
<thead>
<tr>
<th>Title</th>
<th>A succinct title clearly describing the activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
<td>The EPA includes (a) recognition of the dying patient, (b) participation in end-of-life discussions with the patient and family, (c) communicating with interdisciplinary health professionals, (d) written documentation and (e) prescribing appropriate pharmacotherapy</td>
</tr>
<tr>
<td>Required competencies</td>
<td>Relevant domains of competence include: Communication Skills, Professionalism, and Scholarship/Medical knowledge</td>
</tr>
<tr>
<td>Required knowledge, skills, and attitudes (KSAs)</td>
<td>The trainee must have satisfactory knowledge to understand the overall medical condition of the patient, including: active medical problems, co-morbidities, required investigations, treatment options, and prognosis. The Australian Palliative Care Therapeutic Guidelines provide a framework for the standards expected of trainees. A high level of communication skills is required to sensitively and professionally discuss end-of-life issues with the patient, family members, and interdisciplinary health care professionals</td>
</tr>
<tr>
<td>Information sources to assess</td>
<td>Direct observation of trainee interactions with the patient, family members, and health care</td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th>Estimated stage of training when unsupervised practice may be reached (or supervision at a distance)</th>
<th>This will vary depending on the nature of the EPA and the training program</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basis for formal entrustment decisions</td>
<td>Define who will assess the trainee, criteria for formal entrustment decisions</td>
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<td></td>
<td>The trainee must be directly observed in caring for palliative patients, including reviewing documentation and prescribed medications. Feedback must be received from nursing staff and other relevant health professionals caring for the patient. The supervisor must be satisfied the trainee has provided safe, compassionate care and communicated effectively as a member of the treating team.</td>
</tr>
</tbody>
</table>

† More recent EPA examples have included behavioural descriptors at each level of entrustment to guide the observer and learner. ¹⁸