2014, 36: 698–702 MEDICAL TEACHER

Experiences with EPAs, potential benefits and pitfalls

KARSTEN A. VAN LOON[1], ERIK W. DRIESSEN[2], PIM W. TEUNISSEN[1,2] & FEDDE SCHEELE[1,3]

[1]VU University Medical Centre, The Netherlands, [2]Maastricht University, The Netherlands, [3]St Lucas Andreas Hospital, The Netherlands

Abstract

Reforms in postgraduate medical education (PGME) exposed a gap between educational theory and clinical practice. Entrustable Professional Activities (EPAs) were introduced to assist clinicians in bridging this gap and to create better consonance between the intended and the enacted curriculum. In this viewpoint paper, we discuss the potential and the pitfalls of using EPAs in PGME. EPAs promise an effective way of teaching abstract competencies in a curriculum based on real-life professional activities that are suitable for clinical assessment. Summative judgement is used to entrust a resident step by step in a certain EPA, resulting in an increase of independent practice. However, we argue that the success of EPAs depends on (1) a balance: brief focussed descriptions against the requirements for detail and (2) a precondition: a mature and flexible workplace for learning.

Med Teach Downloaded from informahealthcare.com by 84.30.64.109 on 08/25/14
For personal use only.

Introduction

World-wide, postgraduate medical education (PGME) is in a process of reform. This reform is complex, and many clinical teachers are struggling with the implementation of new competency-based curricula. The difficulties experienced by clinical teachers can possibly be explained in part by inconsistencies between the concepts espoused in the reforms and in part by the struggles with the implementation of the concepts in clinical practice. To bridge the gap between competency-driven education and clinical practice, the concept of entrustable professional activities (EPAs) was introduced (ten Cate & Scheele 2007). Briefly, EPAs are collections of tasks a trainee needs to be able to deal with in order to perform well in an essential part of his or her professional work domain (see Box 1). An EPA typically requires the integration of several competencies. A trainee's level of responsibility and independence within an EPA can be prospectively agreed upon in a more or less formal qualification, based on the supervisors' confirmation that a resident is ready to assume such responsibilities. This paper gives an overview of experiences working with EPAs.

The creation of EPAs was a reaction to major changes in PGME. The process of reform in PGME was triggered by societal demands as well as increased educational knowledge about workplace-based learning. Society now requires doctors with more than just medical expertise and scientific knowledge (Neufeld et al. 1998; Tallis 2006). For patient organizations and governmental bodies, it has become increasingly important that doctors are able to practise with professionalism and societal responsiveness, based on shared decision-making and in optimal collaboration within teams and the health care system at large. Competency-based training has been applied as a new didactic principle in high schools, vocational training, and higher education for many years (Clanchy & Ballard 1995). In medical education, these capabilities were translated into competency frameworks like CanMEDS in Canada, the General Competencies framework by the outcome project from the ACGME in the US, Tomorrows Doctors in the UK and the Scottish Doctor from Scotland. All these frameworks have their own signature but also share a similar core of important competencies (ACGME 2007; Ellaway et al. 2007; Frank & Danoff 2007; GMC 2009). Besides these competency frameworks, other relatively new educational concepts for workplace-based learning have been introduced in the clinical environment. Examples are milestones, comprehensive assessment programmes, portfolios, better quality of feedback, and faculty development (Carraccio et al. 2002).

These educational reforms need to be integrated into a clinical environment that is characterized by a tradition of master-apprentice learning and high expectations concerning

Practice points

- Entrustable Professional Activities (EPAs) can contribute to the integration of abstract competencies into the clinical workplace.
- Using EPAs could create a better alignment between the intended and enacted curriculum.
- The pitfall of too much detail and "granularity" threaten the usefulness of EPAs.
- EPAs can only be successful in a mature and flexible workplace with committed, experienced and highly trained faculty.

Correspondence: Karsten A. van Loon, VU University Medical Centre, Jan Tooropstraat 164, 1061 AE Amsterdam, the Netherlands. Tel: +31 6 13 15 98 65; Fax: +31 30 289 85 72; E-mail: k.vanloon@slaz.nl

ISSN 0142-159X print/ISSN 1466-187X online/14/80698–5 © 2014 Informa UK Ltd.
DOI: 10.3109/0142159X.2014.909588

Box 1. A Dutch example.

Obstetric examples of EPAs from the Dutch Obstetrics and Gynaecology curriculum are:

- Uncomplicated antenatal care
- Complicated antenatal care
- Intrapartum care
- Complicated childbirth
- Basic high-risk childbirth
- Uncomplicated postpartum and new-born care
- Complicated postpartum and new-born care

Chris, a resident in his second year of the Obstetrics and Gynaecology training programme, has already been entrusted by his programme director in the EPAs ''Uncomplicated Antenatal Care'', ''Intrapartum Care'' and ''Uncomplicated Postpartum and New-born Care''. From now on, Chris is entrusted to perform the care around uncomplicated childbirth independently. During his upcoming rotation, he will try to get entrustment for the EPAs ''Complicated Antenatal Care'' and ''Complicated Childbirth'' as well. Most of his colleagues did not reach full entrustment in their second year for these EPAs, but Chris already proved himself capable in nested EPAs (for instance, the counselling and multidisciplinary management of hypertensive disorders of pregnancy, diabetes in pregnancy, pre-existing disease complicating pregnancy, and multiple gestation) that are needed for the EPA Complicated Antenatal Care, therefore he hopes that he can get his entrustment for this EPA more quickly than average. This way he will be able to spend some extra time on the EPA ''Complicated Childbirth'', which has been a particular challenge for Chris.

Med Teach Downloaded from informahealthcare.com by 84.30.64.109 on 08/25/14
For personal use only.

patient service (van der Zwet et al. 2010). In such an environment, clinical educators intending to introduce PGME reform are likely to encounter various challenges. According to Billett (2006), introducing a curriculum focused on training in a clinical environment with other priorities is likely to result in an enacted curriculum (in the clinical workplace) that differs from the intended curriculum as created by professional bodies, educationalists and governments. Billett makes a plea for a curriculum that considers the needs of clinicians, educationalists and residents as well as the requirements of the systems they serve. Only then alignment can be reached between the intended and the enacted curriculum. However, the medical education literature in PGME focuses on the refinement of educational tools, e.g. feedback, assessment and faculty development, and seems to underestimate the issue of alignment (Bok & Teunissen 2013). The literature on bridging the gap between intended and enacted curricula is relatively scarce, and the discourse seems to focus on a solution based on EPAs (Carraccio & Burke 2010; Jones et al. 2011).

Here, we will discuss EPAs in light of the PGME reform and we build on current conceptualizations of effective workplace-based learning, as exemplified by the work of Billet, using relevant articles about EPAs and drawing on our interactions with clinicians and educationalists with experience in using EPAs. We summarize the potential of the EPA and discuss what pitfalls we need to look out for while trying to close the gap between the intended curriculum and the enacted curriculum.

Why EPAs are necessary

Competencies are a necessary blueprint for curricula, but too abstract to translate into a concrete training program. EPAs can be used to make competencies meaningful, trainable and assessable for clinical teachers (Carraccio & Burke 2010). Competencies alone are relatively abstract and need to be embedded in a relevant clinical context for educators to be able to train and assess them repetitious (Dath & Iobst 2010). For example, the competency ''communicating with the patient'' is a relevant role for every resident, and every resident should be trained and assessed in this competency. However, the difficulty is that doctor–patient communication differs depending on the context (Veldhuijzen et al. 2012). It matters whether the communication is, for instance, about a broken bone, a mental health problem or an end-of-life issue. It is conceivable that a resident is perfectly capable of talking with patients about their broken bone, while the same resident may not be ready to deal with more complex topics, such as end-of-life issues. This example shows that the content and degree of complexity of a competency differs depending on the context in which it is practised (Essers et al. 2011). Also, it demonstrates that a competency cannot be trained separately from other competencies. For communicating about end-of-life decisions, a resident has to be competent in the competency of communication, but equally in competencies dealing with medical expertise and professionalism. Competencies are constantly intertwined in the context of the day-to-day workplace. The EPA concept intends to integrate different competencies within relevant and recognizable contexts and in this way to link the educational and medical worlds (Mulder et al. 2010).

Building a curriculum based on real-life tasks

EPAs were created to assist programme directors and faculty in their efforts to introduce competency-based education in practice. EPAs are real-world professional activities and were developed to help adapt the intended curriculum to the way clinicians work and to the way they train and assess their residents. ten Cate has studied the EPA concept in more detail and for a more comprehensive description we refer to his work (ten Cate 2005; ten Cate et al. 2010; ten Cate & Young 2012). To create EPAs, professional activities are deliberately chosen in such a way that each of them is supported by its own (mini) curriculum for training and assessment. Moreover, these entrustable activities for training and assessment allow for a stepwise increase in the level of entrustment as well as in the number of professional activities entrusted throughout the course of the curriculum. According to ten Cate et al. (2010), ideally a medical specialty can be represented by the sum of all defined EPAs. EPAs allow for individual learning curves based on longitudinal assessment of individual progress.

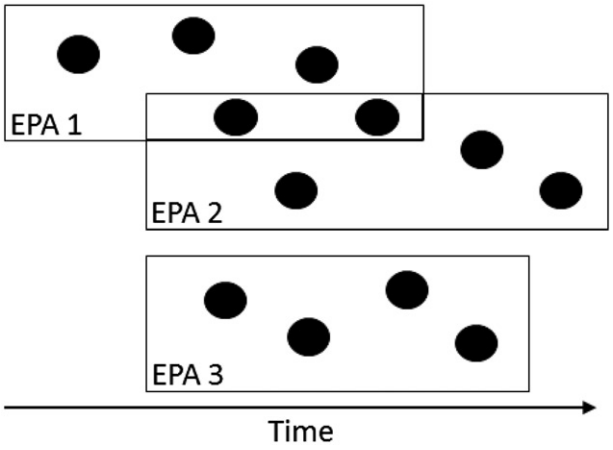

Figure 1. The three rectangles represent three overarching EPAs, with the right boundary being the entrustment. The dots are the nested EPAs within an overarching EPA.

Med Teach Downloaded from informahealthcare.com by 84.30.64.109 on 08/25/14
For personal use only.

The example in Box 1 shows that the time required for getting entrusted in an EPA can differ per resident. Less-complex EPAs (e.g. obstetricians, the normal delivery) are usually trained in the earlier years, whereas more complicated ones (e.g. complex gynaecologic surgery) are acquired in the later years of training. In practice, training and assessment for different EPAs is done simultaneously as well as consecutively (Figure 1). Certain tasks and competencies can be counted for several EPAs at once, provided that the context is similar for all these EPAs.

The EPA could be seen as a way of unifying the professional body of educationalists and the clinicians, which would stimulate the discourse between clinicians and educationalists. Ideally, an EPA briefly and meaningfully describes the main professional activities and is sufficiently general to be applicable in different professional contexts.

A delicate balance

A challenge of curriculum building by means of EPAs and using them in daily practice is finding a balance between holistic activities and the granularity of the training program. The EPA-concept helps to narrow a specialism down to independent professional activities without losing the holistic view of the profession. This is a delicate balance and subject of discussion amongst curriculum designers, although consensus seems to exist that a holistic EPA is too broad to assess in once, while the smaller competencies and milestones are too abstract and do not bear a relevant context. An EPA like "Complicated childbirth" cannot be trained or assessed in one encounter because of its wide variety, while a key competency alone like "Participate effectively and appropriately in an interprofessional healthcare team" (The Royal College of Physicians and Surgeons of Canada 2005) needs a description of a situation or task in which it can be trained. For example, a whole curriculum could consist of twenty EPAs, while the total number of relevant specific activities is much greater (ten Cate et al. 2010). To tackle the problem of training and assessing an EPA that contains several relevant activities, the concept of "nested EPAs" was suggested (ten Cate & Scheele 2007). These are several small sub-EPAs within a bigger overarching EPA. Where competencies are abstract concepts without a relevant context and therefore difficult to train and assess, the nested EPAs are chosen for being a task of high importance for daily practice (core business), a high-risk or error-prone task (e.g. surgical procedure) or a task that is exemplary for specific competencies (Scheele et al. 2008). For example, in the Dutch curriculum for obstetricians, "complicated childbirth" is identified as an overarching EPA. A nested EPA in this case is "being able to indicate and provide the care around the caesarean section, including the procedure itself". A resident cannot be entrusted with the EPA "complicated childbirth" without being competent in performing the nested EPA "caesarean section". For entrustment in the overarching EPA, the resident has to show he is competent in other nested EPAs as well, for instance in the vacuum extraction or in more general activities like managing several delivery rooms at once. The overarching EPA defines the total number of assessable activities and cherishes the holistic view. The strength of a (nested) EPA is that it is linked to a relevant daily activity, whereas a milestone is a behavioural description that still needs to be linked to a context before it can be trained and assessed in daily practice.

For a programme director, it is easier to give feedback on a relatively small activity than to judge a resident's capability in the overarching EPA. The assessments of all nested EPAs help to grant entrustment for the overarching EPA. The benefit of working with an overarching EPA is that it prevents a reductionist approach and preserves a more holistic view on the wider domains of practice. We observed that a number of programme directors value the holistic approach of the EPA concept, using their professional expertise to choose from a variety of educational tools out of the toolbox. Others prefer more granular EPAs and favour to be handed specific educational prescriptions for each learning activity they encounter. Finding a balance in the level of detail of the EPA is vital, too much of it can lead to the same pitfalls of granularity encountered in education based on the behaviourist approach (Kuchinke & Han 2005). Programme directors and faculty need to understand how to work with the holistic approach, in order to keep the level of detail workable.

Transparent entrustment decisions

A potential benefit of the use of EPAs in PGME is that it can facilitate entrustments in a for clinicians and residents comprehensible way. Granting entrustment is a clinically recognizable step that resonates with the former master-apprenticeship model, in which a form of (informal) entrustment also helped to prepare trainees for independent practice (Saxon & Juneja 2013). Entrustment is the clinically meaningful summative judgment based on a rich source of information about the quantity and quality of a resident's professional performance. For example, when a resident is entrusted with the EPA "complicated childbirth", this is registered and integrated in a portfolio (Driessen & Scheele 2013). This portfolio contains evidence of the volume of practice

(patient care concerning operative deliveries and handling the complex hospital organization), the results of various assessments (knowledge tests, simulations and direct observations in practice), and reflections on the resident's performance. A way of organizing a system of entrustability is to have residents formally ask for entrustment for a specific EPA or nested EPA based on the information in their portfolio. The programme director and the faculty together decide on a resident's request and discuss the level of competence of the resident in a certain task (ten Cate & Scheele 2007; Mehta et al. 2013). This straightforward, transparent and formal way of arriving at an entrustment decision depends on the shared goals and visions of the faculty (Jones et al. 2011) and can help to gradually increase the independence of the resident without being dependent of a subjective judgement of one programme director.

In the previous paragraphs, we outlined ways in which the EPA concept might help to reform PGME towards competency-based education. It is important to stress that this tool, however, needs to handled with caution. If the workplace is not yet ready to deal with the required flexibility and faculty does not have the didactic qualities necessary, EPAs will not work. EPAs demand an educational environment that is flexible and, at least partly, learner driven, since the concept works best in an environment that allows for individualized learning trajectories. An educational organization based on fixed rotations can be frustrating for learners, because steep learning curves are not rewarded by new learning experiences. In case of fixed rotations, generating transparency about progress with the help of EPAs has limited value for the learner and could easily be perceived as mere bureaucracy. EPAs have much more success in implementing competency-based education if certain conditions are met, such as the following:

- Both the resident and the programme director have a clear overview of the resident's progress in training
- They creatively use the workplace to fulfil the remaining needs for training
- The training programme is flexible

In an educational context suitable for the use of EPAs, i.e. a context with a highly motivated and highly advanced faculty, the alignment between the intended and the enacted curriculum might be improved by the use of the EPAs. However, most clinical workplaces probably struggle to measure up to the description of an educationally well-prepared context.

Discussion

In our view, EPAs can provide a step in the direction of improved alignment between the intended and the enacted curriculum. The concept seems to be sound and fit for the clinical learning context as long as certain conditions are met such as the ones mentioned above. And, this is exactly today's main problem. We know of workplaces with good conditions, but they are still rare. By using EPAs, curriculum designers try to lean towards the clinicians, but if the clinical world does not lean towards the intended curriculum, there is still an important gap. However, it can also be that the EPA is not the best solution for closing the gap. Achieving transparency in postgraduate medical education is a culture change. The change management scientist Rogers (1995) showed that a theoretically well-designed innovation does not necessarily constitute a successful concept in practice. It can be that EPAs are only a solution for some workplaces and not suitable for all the training programmes in PGME.

We argued that there are two main obstacles that may preclude a successful implementation of EPAs namely the pitfall of too much detail and the need for a flexible workplace. Both obstacles are related to the level of faculty development and to the level of organisation of education or to the degree the clinical world is willing and ready to adjust to the intended curriculum. At this moment, the flexibility of most workplaces is insufficient for a successful use of the EPA. Many programme directors cannot cope with the disruptions of service caused by more flexible rotations. Moreover, values and culture conveyed by the hidden curriculum are often not aligned with the intended curriculum. Faculty and residents are struggling with the assessment tools, and in case of high risk EPAs, faculty members are often unsure about the criteria for entrustment decisions (Dijksterhuis et al. 2009). Our goals in PGME may be set too high, and our discussion is influenced by the fact that we see the EPA as a potential pivot in the educational reorganization in PGME. However, in the light of our ambitions, until now the EPA has not been able to change PGME at a larger scale. The issues we described above could be perceived as complex implementation problems and probably we simply have to try to overcome them eventually.

Future research should address several areas: it could elucidate how to avoid two things: the dangers of granularity described above and the return to end objectives like entities. We need more insight into the conditions for using EPAs. What are the essential requirements for the workplace infrastructure, and what are the main topics for faculty development? We need to know how proper entrustment works. Subsequently, we have to find out whether EPAs encourage workplace-based learning and adult learner behaviour. As training with the use of EPAs is such an immense project, the cost-benefit ratio of optimal resident training may become an issue.

Good medical education requires continual investments. In the case of optimal PGME with the use of EPAs, it requires a major change in the workplace organization and an intensive faculty development programme based on EPAs. EPAs might be judged as vulnerable concepts since they depend on two essential foundations: an adaptive workplace and highly trained faculty. On the other hand, perhaps this vulnerability is inevitable in good workplace-based learning.

Glossary

Entrustable professional activity (EPA): A collection of tasks a trainee needs to be able to deal with in order to perform well in an essential part of his or her professional work domain.

Med Teach Downloaded from informahealthcare.com by 84.30.64.109 on 08/25/14
For personal use only.

Notes on contributors

KARSTEN VAN LOON, MSc, is a PhD student at the School of medical sciences of the VU University Medical Centre, Amsterdam, The Netherlands.

ERIK DRIESSEN, PhD, is an Associate Professor at the Department of Educational Development and Research, Faculty of Health, Medicine and Life Sciences, Maastricht University, The Netherlands.

PIM TEUNISSEN, MD, PhD, is an Associate Professor at the Department of Educational Development and Research, School of Health Professions Education (SHE), Maastricht University and Specialist Registrar in Gynaecology, VU University Medical Centre, Amsterdam, The Netherlands.

FEDDE SCHEELE, MD, PhD, is a Professor of Health Systems Innovation and Education at the VU university in Amsterdam, and gynaecologist in the St Lucas Andreas Hospital, Amsterdam, The Netherlands.

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

Med Teach Downloaded from informahealthcare.com by 84.30.64.109 on 08/25/14
For personal use only.

References

Accreditation Council for Graduate Medical Education (ACGME). 2007. Outcome project. [Accessed 12 December 2013] Available from http://www.acgme.org/outcome/comp/GeneralCompetencies Standards21307.pdf.

Billett S. 2006. Constituting the workplace curriculum. J Curriculum Stud 38: 31–48.

Bok HG, Teunissen PW. 2013. Patients and learners: Time for a re-evaluation of our goals in bringing them together. Med Educ 47: 1157–1159.

Carraccio C, Burke AE. 2010. Beyond competencies and milestones: Adding meaning through context. J Grad Med Educ 2:419–422.

Carraccio C, Wolfsthal SD, Englander R, Ferentz K, Martin C. 2002. Shifting paradigms: From Flexner to competencies. Acad Med 77:361–367.

Clanchy J, Ballard B. 1995. Generic skills in the context of higher education. High Educ Res Dev 14:155–166.

Dath D, Iobst W. 2010. The importance of faculty development in the transition to competency-based medical education. Med Teach 32: 683–686.

Dijksterhuis MGK, Voorhuis M, Teunissen PW, Schuwirth LWT, ten Cate OTJ, Braat DDM, Scheele F. 2009. Assessment of competence and progressive independence in postgraduate clinical training. Med Educ 43:1156–1165.

Driessen EW, Scheele F. 2013. What is wrong with assessment in postgraduate training? Lessons from clinical practice and educational research. Med Teach 35:569–574.

Ellaway R, Evans P, McKillop J, Cameron H, Morrison J, McKenzie H, Mires G, Pippard M, Simpson J, Cumming A, et al. 2007. Cross-referencing the Scottish Doctor and Tomorrow's Doctors learning outcome frameworks. Med Teach 29:630–635.

Essers G, van Dulmen S, van Weel C, van der Vleuten C, Kramer A. 2011. Identifying context factors explaining physician's low performance in communication assessment: An explorative study in general practice. BMC Fam Pract, 12:138.

Frank JR, Danoff D. 2007. The CanMEDS initiative: Implementing an outcomes-based framework of physician competencies. Med Teach 29: 642–647.

General Medical Council (GMC). 2009. Tomorrow's doctors. [Accessed 12 December 2013] Available from http://www.gmc-uk.org/static/documents/content/TomorrowsDoctors_2009.pdf.

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. Acad Med 86:161–165.

Kuchinke KP, Han H. (2005). Should caring be viewed as competence? (Re) Opening the dialogue over the limitations of competency frameworks in HRD. Hum Resour Dev Int 8:385–389.

Mehta NB, Hull AL, Young JB, Stoller JK. 2013. Just imagine: New paradigms for medical education. Acad Med 88:1418–1423.

Mulder H, ten Cate O, Daalder R, Berkvens J. 2010. Building a competency-based workplace curriculum around entrustable professional activities: The case of physician assistant training. Med Teach 32:453–459.

Neufeld VR, Maudsley RF, Pickering RJ, Turnbull JM, Weston WW, Brown MG, Simpson JC. 1998. Educating future physicians for Ontario. Acad Med 73:1133–1148.

Rogers EM. 1995. Diffusion of innovations. New York: Free Press.

Saxon K, Juneja N. 2013. Establishing entrustment of residents and autonomy. Acad Emerg Med 20:947–949.

Scheele F, Teunissen P, Van Luijk S, Heineman E, Fluit L, Mulder H, Meininger A, Wijnen-Meijer M, Glas G, Sluiter H, et al. 2008. Introducing competency-based postgraduate medical education in the Netherlands. Med Teach 30:248–253.

Tallis RC. 2006. Doctors in society: Medical professionalism in a changing world. Clin Med 6:7–12.

The Royal College of Physicians and Surgeons of Canada 2005. The CanMEDS 2005 Physician Competency Framework. Available from: http://www.royalcollege.ca/portal/page/portal/rc/common/documents/canmeds/resources/publications/framework_full_e.pdf [Last accessed 15 January 2014].

ten Cate O. 2005. Entrustability of professional activities and competency-based training. Med Educ 39:1176–1177.

ten Cate O, Scheele F. 2007. Competency-based postgraduate training: Can we bridge the gap between theory and clinical practice? Acad Med 82:542–547.

ten Cate O, Snell L, Carraccio C. 2010. Medical competence: The interplay between individual ability and the health care environment. Med Teach 32:669–675.

ten Cate O, Young JQ. 2012. The patient handover as an entrustable professional activity: Adding meaning in teaching and practice. BMJ Qual Saf 21:i9–i12.

van der Zwet J, Hanssen VG, Zwietering PJ, Muijtjens AM, Van der Vleuten CP, Metsemakers JF, Scherpbier AJ. 2010. Workplace learning in general practice: Supervision, patient mix and independence emerge from the black box once again. Med Teach 32:294–299.

Veldhuijzen W, Mogendorff K, Ram P, van der Weijden T, Elwyn G, van der Vleuten C. 2012. How doctors move from generic goals to specific communicative behavior in real practice consultations. Patient education and counseling. Thesis.