State of the Art in Entrustable Professional Activities
The Evolution of a Concept

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Overview

• How it started and what happened since
• Core principles
• New developments
• Hesitations in the literature
• Wrapping up the essence of EPAs

What triggered EPA thinking in 2005?

• My role in introducing CanMEDS competency roles framework in PGME in the Netherlands
• Uproar in Dutch politics about “disasters” of “new learning” and “competency-based” education leading to a parliamentary investigation
• A chat with UMCU’s CEO: “Nurses are now being educated competency-based but cannot calculate the drips of an IV anymore”
• A chat with one of the clinicians: “I find most important whether I can trust the trainee”
• Invitation to give a EU PhD course on CBE (May 2005)
Competency-based Residency Training: The Next Advance in Graduate Medical Education proposes the replacement of the current approach to residents’ education, which specifies a fixed number of years in training, with competency-based training, in which each resident remains in training until he or she has been shown to have the required knowledge and skills and can apply them independently. Such programs, in addition to tailoring the training time to each individual, would make it possible to devise and test schemes to evaluate competency more surely than is now possible.

In which this was the case, and explains the implications. He describes the encouraging experience of his neurosurgery department, which has used competency-based training for its residents since 1994. He then discusses issues of demonstrating competency in procedural and nonprocedural fields, as well as the evaluation of competency in traditional and competency-based training, emphasizing that the latter approach offers hope for better ways of assessing competency.


Ole Isac Gair

commentaries

Entrustability of professional activities and competency-based training

2005, Medical Education
Increase of publications about EPAs

Articles/yr referring to EPAs according to Google Scholar

Examples of programs and countries seriously considering to apply EPAs

<table>
<thead>
<tr>
<th>Known countries</th>
<th>Known disciplines</th>
</tr>
</thead>
<tbody>
<tr>
<td>Netherlands</td>
<td>Obstetrics &amp; Gynaecology</td>
</tr>
<tr>
<td>United States</td>
<td>Psychiatry</td>
</tr>
<tr>
<td>Canada</td>
<td>Pediatrics</td>
</tr>
<tr>
<td>Singapore</td>
<td>Internal Medicine</td>
</tr>
<tr>
<td>Ireland</td>
<td>Radiology</td>
</tr>
<tr>
<td>Scotland / UK</td>
<td>Family medicine</td>
</tr>
<tr>
<td>Switzerland</td>
<td>Emergency Medicine</td>
</tr>
<tr>
<td>Germany</td>
<td>Surgery</td>
</tr>
<tr>
<td>Denmark</td>
<td>Gastro-enterology</td>
</tr>
<tr>
<td>Australia / NZ</td>
<td>Pulmonary &amp; crit.care</td>
</tr>
</tbody>
</table>

- Anesthesiology
- Haematology
- ENT-surgery
- Physician Assistant ed.
- Nursing
- Veterinary medicine
- Midwifery
Has its definition changed?
2005 circumscription and 2016 definition

Criteria for entrustable professional activities
- Part of essential professional work
- Require specific knowledge, skill, and attitude
- Generally be acquired through training
- Lead to recognised output of professional labour
- Usually be confined to qualified staff
- Be independently executable within a time frame
- Be observable and measurable in their process and their outcome
- Lead to a conclusion (done well or not well)
- Reflect the competencies to be acquired

EPA:
A unit of professional practice that can be fully entrusted to a trainee, as soon as he or she has demonstrated the necessary competence to execute this activity unsupervised

Not essentially changed

Core principles
Competencies versus EPAs

<table>
<thead>
<tr>
<th>Competencies</th>
<th>EPAs</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>person-descriptors</strong></td>
<td><strong>work-descriptors</strong></td>
</tr>
<tr>
<td>knowledge, skills, attitudes, values</td>
<td>Essential units of professional practice</td>
</tr>
<tr>
<td>• content expertise</td>
<td>• discharge patient</td>
</tr>
<tr>
<td>• health system knowledge</td>
<td>• counsel patient</td>
</tr>
<tr>
<td>• communication ability</td>
<td>• lead family meeting</td>
</tr>
<tr>
<td>• management ability</td>
<td>• design treatment plan</td>
</tr>
<tr>
<td>• professional attitude</td>
<td>• Insert central line</td>
</tr>
<tr>
<td>• scholarly skills</td>
<td>• Resuscitate patient</td>
</tr>
</tbody>
</table>
Core principles

Competencies versus EPAs

One can possess competencies;
one cannot possess EPAs

Analytic competencies framework

Consultation
Breaking bad news
Explain medication
With children
With elderly
...
Core principles
Synthetic EPA framework approach

- Medical expert
- Collaborator
- Communicator
- Manager
- Health advocate
- Scholar
- Professional

EPA1 EPA2 EPA3 EPA4 EPA5

The matrix: EPAs require multiple competencies

<table>
<thead>
<tr>
<th></th>
<th>EPA1</th>
<th>EPA2</th>
<th>EPA3</th>
<th>EPA4</th>
<th>EPA5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medical expert</td>
<td>++</td>
<td>++</td>
<td>+</td>
<td>-</td>
<td>++</td>
</tr>
<tr>
<td>Collaborator</td>
<td>+</td>
<td></td>
<td>++</td>
<td>+</td>
<td></td>
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<tr>
<td>Communicator</td>
<td>+</td>
<td>++</td>
<td></td>
<td>+</td>
<td></td>
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<tr>
<td>Leader</td>
<td></td>
<td>+</td>
<td>++</td>
<td>+</td>
<td></td>
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<tr>
<td>Health advocate</td>
<td>+</td>
<td>++</td>
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<tr>
<td>Scholar</td>
<td>+</td>
<td></td>
<td></td>
<td></td>
<td>++</td>
</tr>
<tr>
<td>Professional</td>
<td>+</td>
<td>+</td>
<td>+</td>
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</tbody>
</table>

Assessment focused on EPAs
Core principles

Growth of competence over time

5 expert
4 proficient
3 competent
2 advanced
1 novice

Shades of decreasing supervision

Ready for unsupervised practice

Core principles

Growth of competence over time
Individualized 5-EPA workplace curriculum for a physician assistant (level 4= full entrustment)

<table>
<thead>
<tr>
<th>EPA 1: Carry out initial history and physical examination with ambulatory neurology patients</th>
<th>Block 1</th>
<th>Block 2</th>
<th>Block 3</th>
<th>Block 4</th>
<th>Block 5</th>
<th>Block 6</th>
<th>Block 7</th>
<th>Block 8</th>
<th>Block 9</th>
<th>Block 10</th>
</tr>
</thead>
<tbody>
<tr>
<td>EPA 2: Execute lumbar punctures with adult neurology patients</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
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<td></td>
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</tr>
<tr>
<td>EPA 3: Basic care of stroke patients</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>4</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>EPA 4: Basic care of patients with lumbo-sacral radicular complaints</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>4</td>
<td></td>
<td></td>
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<tr>
<td>EPA 5: Basic care of patients with carpal tunnel syndrome</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

Core principles
Accomodating flexibility

X EPAs
X + Y EPAs
Some new developments

• From EPAs for completion of residency to include EPAs ("unsupervised") for entering residency ("indirect supervision")
• From just EPAs to Core EPAs (for all trainees) and Elective EPAs (not for all)
• From "Entrustable" as adjective for activities, to one for learner behavior too (+ pre-entrustable)
• From EPAs as all independent, to small EPAs nested within broad EPAs later.
• Linking supervision levels with milestones and Dreyfus
The nesting principle: example - UME small EPAs nested within broad EPAs for entering residency

Dreyfus stages of development (1986):
1 = novice
2 = advanced beginner
3 = competent
4 = proficient
5 = expert

Connecting Dreyfus stages, EPAs, competencies, milestones, supervision
Some new developments

- From 5-step supervision scale (from “observe only” to “supervise others”) to more details for medical school
- *Trust may expire* after non-practice or transition to other context → from “unsupervised” to “requires indirect supervision” → implications for MOC?
- New concepts: Entrustment decision-making, ad-hoc versus summative entrustment (STAR), entrustability scales, presumptive, initial and grounded trust, factors and features enabling trust (*ability, integrity, reliability, humility*)
- Technology to support entrustment decisions

Expiration after inactive period

[Diagram showing the relationship between competence, threshold, training, practice, entrustment decisions, EPA, and loss of trust]
Based on my observation(s), I suggest for this EPA the trainee may be ready after the next review to:
2. Act under direct supervision
3. Act under indirect supervision
4. Act with only post-hoc report
5. Supervise juniors

Provide feedback on each of the following domains of competence, relevant to this EPA
* Medical Expert
* Communicator
* Collaborator
* Scholar
* Leader
* Health advocate
* Professional

Or record a feedback message.

Hesitations in the literature
**Bottom line:**

- Mastery-learning in K-12 and Army does not work; outcome-based education has a “history of failure”.
- Too much effort in individual assessments is needed to be practical. +1000 pages military doctrine tasks turned out unmanageable.
- Required observations for CBME and EPAs by clinicians will not happen; unreliable and useless delayed ratings will result.

**Bottom line:**

- Competencies and milestones [and EPAs?] suffer from conceptual, psychometric and logistical problems
- Learning curves are more complex than suggested.
- Potential for curriculum, assessment, licensure and certification but no “wonder drug”
- Focus toward achievement of competency, rather than in time, is likely to have demonstrable benefits.
- The challenge is to reallocate resources.
Bottom line:
• Why did your trust? 5139 justifications of entrustment decisions for EPAs in ObGyn analyzed.
• Most important reasons: Experience with the task (59%), Technical performance (20%), Skills training done (9%), Generic competencies (0.5%)
• Clinicians don’t consider generic competencies when entrusting residents with EPAs.

Wrapping up the essence
• Physicians must be trained to do physician work
• Competencies: indirect features of learners enabling performance. Effective completion of activities (EPAs) is key.
• “Activities”: from infinitely small (handing over a tool to a nurse) to huge (running a hospital). Search the middle ground.
• EPAs can be applied from UMC through PGME and fellowship
• EPAs reflect expectations at the end of training, i.e. breadth of responsibility at start of subsequent training or career.
• Small EPAs become nested within larger EPAs in further training, hence are holistic; not a checklist of small activities.
Wrapping up the essence

• Measurement using standards of competence is limited
• Ways activities can be successfully executed legitimately vary
• Entrustment decisions include, next to assessing ability, permission and duty to act at a specified level of supervision
• Two individuals may both be excellent but work differently; both may be trusted, but for different reasons
• Trust in effective performance is a gestalt, incompletely informed by observation - it includes taking an acceptable risk

Wrapping up the essence

• Learners in health professions must be trusted with responsibilities as soon they are competent to do so; gradual increase in responsibility stimulates motivation
• Full responsibility while still in training is better for patient safety than working suddenly unsupervised after licensing
• A portfolio of certified EPAs reflects current competence and should be accessible by third parties
• Inactivity after certification for an EPA should lead to loss of trust and increase of required supervision
• Ultimately: all is about bringing back trust in the equation of learners, health care staff, patients and society
Selected references