

Entrustable Professional Activities for MD Biochemistry: A Primer

Sumitra Govindarajan¹, Sujatha Rajaragupathy²

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ABSTRACT

This review article delves into the significance of implementing entrustable professional activities (EPAs) within competency-based medical education (CBME) frameworks, particularly focusing on the MD Biochemistry program in India. EPAs represent units of professional practice that can be entrusted to a trainee upon demonstrating competence, bridging the gap between individual competencies and holistic professional capabilities. The MD Biochemistry program, unique to India, faces challenges in global recognition and career opportunities compared to equivalent programs worldwide. By aligning the program's curriculum with EPAs, specific professional tasks performed by MD Biochemists can be delineated, showcasing their capabilities on a global scale. This not only clarifies the program's scope but also opens avenues for MD Biochemistry graduates in diverse international roles and settings.

Keywords: Competency-based medical education, Global recognition, PG medical education.

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WHAT IS AN EPA?

An entrustable professional activity (EPA) is a unit of professional practice that can be fully entrusted to a trainee, once he or she has demonstrated the necessary competence to execute this activity unsupervised, as described by Olle ten Cate in 2005.¹

How is it Different from Competency?

Competency is a person-descriptor and refers to the ability of a learner to do something efficiently. However, EPA is a work-descriptor and refers to the professional task that is done using those abilities.²

For example, "Analyze, interpret and evaluate biochemical laboratory findings in integration with the relevant clinical data to evaluate, analyze and monitor a disease state" is a competency described by the National Medical Commission for the MD Biochemistry program.³ A professional task performed by a Biochemist using this competency will be "Reporting lab results," which may be an EPA for this program.

How is EPA Related to CBME?

Competency-based medical education (CBME) was adopted to ensure Indian Medical Graduates acquire a standardized set of essential competencies.⁴ This approach has also been integrated into post-graduate medical education to enhance training effectiveness. Competency-based medical education follows a backward design model, wherein a professional's role is examined and systematically broken down to list the abilities needed for executing that role.⁵ However, traditional assessment approaches in CBME are described as being reductionist in nature as they focus on individual competencies, overlooking the interconnectedness and holistic nature of medical practice.⁶ How do we know that the sum of the parts is equal to the whole? Do the combined competencies accurately represent the holistic professional capabilities?

The EPA approach promises to bridge this gap, focusing on identifying units of professional tasks that are performed by professionals in their workplace.⁷ Each of these tasks encompasses

^{1,2}Department of Biochemistry, PSG Institute of Medical Sciences & Research, Coimbatore, Tamil Nadu, India

Corresponding Author: Sujatha Rajaragupathy, Department of Biochemistry, PSG Institute of Medical Sciences & Research, Coimbatore, Tamil Nadu, India, Phone: +91 04222570170, e-mail: suja1357@gmail.com

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multiple competencies (Fig. 1). Learners are allowed to perform these tasks with decreasing levels of supervision. Once a learner performs these tasks with little or no supervision, they are deemed competent or certified in the associated competencies. When the learner graduates, he is expected to perform all the tasks at the pre-defined level of supervision, making him ready for independent practice. Thus, assessments are more meaningful and holistic in the EPA approach thus operationalizing CBME.⁸ Defining EPAs for a program entails listing all potential tasks that a graduate will be capable of performing, thereby clarifying the program's scope to the community.⁹

Why is EPA Required for MD Biochemistry Program?

MD Biochemistry program is exclusive to India. A few equivalent programs running across the globe are as follows.

- Postdoctoral training in Clinical Chemistry is a 2-year program available in Canada and USA.¹⁰
- Chemical Pathology is offered by Royal College (UK) as a 5-year program after a degree in Medicine followed by a foundation program.¹¹
- Masters in Laboratory Medicine is a 2-year full-time/4-year part-time program in Australia where the applicant can choose any

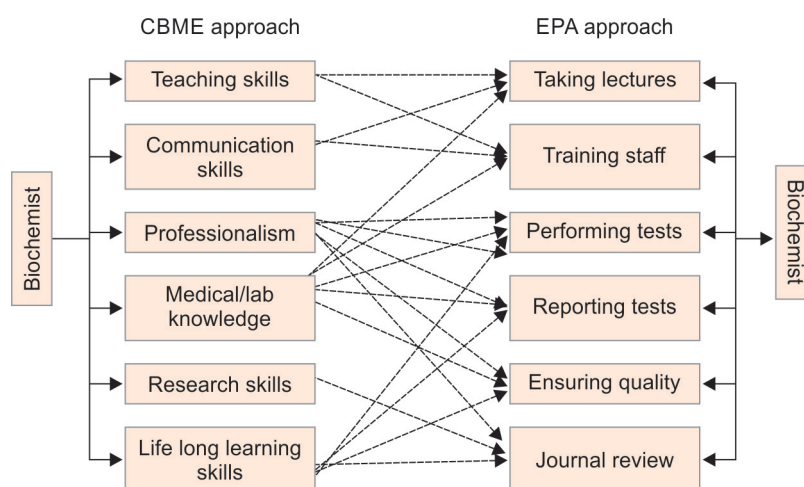


Fig. 1: Relationship between EPAs and competencies

two areas of specialization from Anatomical Pathology, Clinical Biochemistry, Hematology, Medical Microbiology, Transfusion and Transplantation Science.¹²

The eligibility criteria for these courses vary significantly. In India, individuals pursue the MD Biochemistry program after completing their MBBS degree, similar to the eligibility criteria for the Royal College Chemical Pathology program available in the UK.¹¹ In other countries, the equivalent programs are for PhDs in Biochemistry or graduates of any biomedical science.^{10,12}

Globally, there is a lack of recognition regarding the training provided in the MD Biochemistry program, and capabilities of the graduates. As a result, opportunities for MD Biochemists are limited in foreign nations. Laboratory manager roles are typically filled by Pathologists and PhDs in Biochemistry in countries outside India, leaving MD Biochemists with opportunities in smaller laboratories in the Middle East as laboratory supervisors. Teaching positions in medical colleges in other countries also predominantly prioritize the recruitment of PhDs in Biochemistry, often overlooking MD Biochemistry graduates.

We can enhance global awareness of the MD Biochemistry program and the abilities of the graduates by defining our curriculum with EPAs that detail the precise tasks MD Biochemists are trained and certified to execute. This approach would not only clarify our capabilities, but also potentially create new opportunities for MD Biochemistry graduates worldwide.

ORCID

Sumitra Govindarajan <https://orcid.org/0000-0003-3217-8324>

Sujatha Rajaragupathy <https://orcid.org/0000-0003-0776-1454>

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