Review Article

Entrustable Professional Activities for Surgical Residents: A Competency-Based Framework for Assessment and Progression

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Abstract

Background: The goal of surgical residency training is not simply to complete a specified period of training, but to ensure that residents can acquire demonstrated competencies and provide safe and effective patient care. Competency-Based Medical Education (CBME) supports this goal by focusing on the skills and abilities demonstrated by residents rather than time spent in training. Entrustable Professional Activities (EPAs) translate these competencies into practical clinical tasks, helping supervisors to assess the readiness of trainees to take on greater responsibility and work independently in surgical practice.

Objective: To review the concept of EPAs and evaluate their relevance, implementation, and assessment in surgical residency training.

Materials and Methods: A narrative review of recent medical education literature was conducted, focusing on the use of EPAs as a part of CBME in postgraduate surgical training. The main concept, assessment methods, benefits, and implementation challenges and limitations were reviewed and summarised.

Results: EPAs provide a structured workplace-based framework for assessing trainees by combining different competencies into observable professional tasks that can be directly observed. In surgical training, EPAs reflect clinical responsibilities, including performing operations, perioperative care, and leading surgical teams. EPAs enhance expectations, support constructive feedback, and promote patient safety by ensuring that trainees receive appropriate supervision according to their level of competence.

Conclusion: EPAs provide a structured and dependable way to determine whether surgical residents are ready to practise independently. Effective implementation requires careful planning, appropriate faculty development, and alignment with the existing curriculum and assessment system.

Keywords: Entrustable Professional Activities, Clinical Competence, Competency-Based Education, Education, Medical, Graduate, Internship and Residency.

Introduction

Traditionally, surgical residency programs have been structured around fixed training durations and the number of cases observed or performed to assess trainee competence. However, over time, increasing expectations for patient safety, the expansion of surgical subspecialties, and variations in individual learning dynamics have highlighted the limitations of traditional time-based training models.[1] To address these challenges, Competency-Based Medical Education (CBME) has emerged as an educational approach that

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emphasises predefined competencies and measurable learning outcomes rather than the duration of training.[2]

Concept of Entrustable Professional Activities (EPAs)

Ten Cate introduced the concept of Entrustable Professional Activities (EPAs), which provide a practical approach to integrating CBME into clinical training. EPAs represent discrete clinical activities that trainees can be entrusted to perform with increasing independence once they have demonstrated the required level of competence. Surgical practice is task-oriented and requires appropriate levels of supervision. In this context, EPAs offer a particularly appropriate framework.[3,4]

EPAs are essential professional tasks performed in daily clinical practice. Trainees can carry out these activities independently once they have developed the required competencies and demonstrated sufficient reliability. Each EPA combines different areas of competence, including medical knowledge, practical skills, professionalism, teamwork, communication skills, and patient safety.[5] Key features of EPAs include activities that can be directly observed and assessed in the clinical setting. They also include predefined responsibilities and limits, integrating multiple competencies. EPAs have measurable outcomes, clearly defined levels of supervision, and a direct connection to patient care. They focus on the ability of surgical trainees to integrate their knowledge, skills, and professional attitudes to perform real clinical tasks.[6]

Importance of EPAs in Surgical Residency Training

Surgical residency training is particularly well suited to EPA-based assessment because it involves practical procedures with gradually increasing responsibilities. Common EPAs in surgical training include assessing patients before surgery and obtaining informed consent; performing basic surgical procedures under appropriate supervision; managing the operating room and coordinating with the surgical team; identifying and managing common postoperative complications; providing initial care for surgical emergencies and trauma; and conducting effective patient handovers and communicating with other healthcare professionals.

These activities provide meaningful indicators of trainee progress and offer insight into their readiness for independent practice.[7]

Levels of Supervision and Entrustment

Entrustment decisions are based on the level of supervision a trainee requires rather than simply passing or failing an assessment. The commonly used levels of supervision are:

Observation Only: The trainee observes the procedure performed by the expert surgeon but does not perform it.

Direct Supervision: The trainee performs the task in the presence of the supervisor, who actively guides and assists them.

Indirect Supervision: The trainee performs the task with increasing independence while the supervisor remains available for assistance when required.

Distant Supervision: The trainee performs the task independently, with the supervisor available for consultation and evaluating the work subsequently.

Supervision of Junior Trainees: The trainee has the skills and experience to guide and supervise junior trainees.

Progression through these levels indicates the development of the knowledge, skills, and professional reliability required to assume greater clinical responsibility and work with increasing independence.[8]

Assessment of EPAs in Surgical Training

Various workplace-based assessment (WBA) methods can be used to evaluate EPAs in different clinical situations. Common methods include:

Direct Observation of Procedural Skills (DOPS): Assessing a trainee while they perform a procedure.

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Mini-Clinical Evaluation Exercise (mini-CEX): Evaluating the trainee during a clinical encounter with a patient.

Case-Based Discussion (CBD): Discussing a clinical case with the trainee to assess their knowledge, clinical reasoning, and decision-making.

Operative Performance Rating Scales: Evaluating the technical skills and overall performance of the trainee during surgery.

Multisource (360-degree) Feedback: Assessing trainees through feedback collected from supervisors, colleagues, other healthcare professionals, and team members.

Using different assessment methods over time provides a more comprehensive picture of the trainee's competence and readiness for independent practice. Entrustment decisions should be based on multiple assessments conducted over time and input from several evaluators to ensure that decisions are consistent and reliable.[9]

Educational Benefits of EPAs

Using EPAs in surgical residency training offers several benefits, which may include:

Real-World Assessment: Evaluates trainees on tasks they perform in actual clinical practice.

Clear Expectations: Helps trainees and supervisors understand the required competencies, skills, and responsibilities.

Improved Feedback: Provides constructive feedback to trainees to support improvement in their performance.

Individualised Learning: Allows training to be adapted to individual trainees' needs and progress.

Improved Patient Safety: Ensures that trainees receive appropriate supervision according to their level of competence, helping to reduce the risk of errors, identify gaps in knowledge and skills, and promote safe and effective patient care.

For surgical training programmes, EPAs provide a structured framework for assessing trainee progress and making decisions about certification and promotion.[10]

Challenges and Limitations

Despite their advantages, implementing EPAs in surgical training presents several challenges and limitations:

Faculty Training: Supervisors require appropriate training to assess trainees and make consistent and informed decisions about their competence.

Increased Workload: EPA assessments require additional time for documentation, feedback, and record-keeping.

Resistance to Change: Some senior faculty members may prefer traditional training models based on time spent in a programme rather than demonstrated competence.

Variations in Clinical Exposure: Trainees in different hospital settings may have unequal opportunities to perform surgical procedures and interact with patients, making consistent assessment across training sites challenging.

These challenges can be addressed through institutional support, gradual implementation of EPAs, faculty development, and integration with existing assessment methods.[7]

Implementation Strategies

The following steps can be adopted for the successful implementation of EPAs in surgical residency training:

Defining Core EPAs: Predefining essential surgical tasks relevant to the training programme.

Aligning EPAs with the Curriculum: Aligning EPAs with existing competencies and learning objectives in the curriculum.

Training Faculty and Residents: Guiding supervisors and trainees to understand the principles and application of EPAs and assessment models.

Integrating Assessment into Daily Practice: Assessing trainees during routine

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clinical activities without creating an unnecessary additional workload.

Using Assessment Results Effectively: Providing feedback to trainees to improve their learning and decision-making and prepare them for independent practice.

It is advisable to begin with a small number of EPAs, evaluate their effectiveness, and gradually expand the approach across the training programme.[11]

Conclusion

Entrustable Professional Activities (EPAs) offer a structured, practical, and systematic approach to assessing the competence of surgical residents. EPAs focus on the trainee's ability to perform real clinical tasks, the level of supervision required, professional reliability, and the assumption of clinical responsibilities. With adequate institutional support and appropriate faculty development, EPAs can improve the quality of surgical training and ensure that assessment is closely linked to safe and effective patient care.

Recommendations and Future Research

In the future, surgical EPAs could be standardised across postgraduate training programmes at the national level. Selected EPAs could also be incorporated into undergraduate medical education to facilitate a smoother transition to postgraduate training. Digital portfolios and simulation-based learning could be used to track trainee progress and assess competence.

Further research is needed to determine whether EPA-based assessment translates into improved patient outcomes. EPAs may become an important component of surgical certification as medical education continues to shift towards competency-based medical education (CBME).

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