Competency-Based Medical Education and Assessment of Training: Review of Selected National Obstetrics and Gynaecology Curricula

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Abstract

There are global variations in obstetrics and gynaecology (OBGYN) training curricula, both in length and in their structure and content. The ultimate goal for all residency programs is to ensure a skilled, competent physician, capable of independent practice by the end of his or her training. An online search was used for nationally recognized OBGYN training curricula. The curricula of Australia, Canada, the Netherlands, the United Kingdom, and the United States were individually reviewed and evaluated for their use of competency-based medical education and methods of assessment, including simulation. These were also compared to the World Federation for Medical Education's Global Standards for post-graduate medical education. Comparing the OBGYN curricula of these five countries led to quite similar results. Even though curricula reviewed have or will be integrating competency-based medical education into their residency program, there is a need to develop adequate assessment tools, including simulation, to train competent physicians capable of independent practice. Standardization of curricula leads to a decrease in the variability and an increase in the quality of training and allows for measurements and comparisons across centres. Ultimately, modifications to the curricula or even consensus for an international standard, including a standardized national simulation curriculum, may potentially increase the quality and efficiency of training, which could have a direct impact on patient safety and quality of care.

Résumé

La formation en obstétrique-gynécologie varie dans le monde, autant dans sa durée que dans sa structure et son contenu. Tous les programmes de résidence ont le même objectif ultime : former des médecins compétents et qualifiés, capables de pratiquer seuls à la fin de leur formation. Nous avons effectué une recherche en ligne pour repérer les programmes nationaux reconnus de formation en obstétrique-gynécologie. Nous avons ensuite examiné et évalué ceux de l'Australie, du Canada, des Pays-Bas, du Royaume-Uni et des États-Unis en ce qui a trait à l'utilisation de l'apprentissage par compétences et aux méthodes d'évaluation, notamment la simulation. Les programmes ont aussi été comparés aux normes internationales relatives aux études postdoctorales en médecine de la Fédération mondiale pour l'éducation médicale. L'évaluation a montré que la formation dans les cinq pays était similaire. Bien que les programmes de résidence utilisent ou utiliseront l'apprentissage par compétences, il faudra élaborer des outils d'évaluation adéquats, y compris des exercices de simulation, pour former des médecins compétents pouvant travailler de façon autonome. L'uniformisation des programmes limite la variabilité et fait augmenter la qualité de la formation, en plus de permettre la collecte de données et d'assurer la comparabilité d'un centre à l'autre. Au final, modifier les programmes, voire arriver à un consensus sur une norme internationale de formation – prévoyant un programme de simulation national –, pourrait rehausser la qualité et l'efficacité de la formation, et ainsi avoir une incidence directe sur la sécurité des patients et la qualité des soins.

Key Words: Curriculum, obstetrics, gynecology, simulation, medical education, competency-based education

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INTRODUCTION

There are variations in the training of obstetricians and gynaecologists worldwide. One of those differences is in the length of training, from 4 to 7 years depending on the country reviewed. Despite these variations, the end goal of residency training remains the same: a physician capable of safe, independent practice in his or her area of specialization. A study comparing competence of surgeons trained in North America and Europe, where working hours and length of training

differ, failed to show a difference in technical skill and cognitive knowledge at the beginning of practice.[1] Thus, despite shorter training in some countries, the end product seems to be equivalent. There is also evidence that patient outcomes, notably major complications, may be associated with the quality of training received.[2] Accordingly, providing high-quality health care by providing high-quality residency training will lead to improvement of patient safety and quality of care. The medical education system has remained relatively unchanged over the past 100 years, despite important changes in health care.[3] This is why in recent years, we have seen a shift from the more traditional Halstedian apprenticeship model of residency training ("see one, do one, teach one") to the more contemporary model that is competency-based medical education.

CBME is gaining popularity worldwide as a novel approach to educate and assess junior physicians.[4–6] It is "an outcomes-based approach to the design, implementation, assessment, and evaluation of a medical education program using an organizing framework of competencies."[7] The aim of CBME is to regularly assess performance outcomes as opposed to the traditional "time-based" model. It is a way of ensuring that physicians possess the knowledge, skills, and attitudes required for every stage in their career. The goal of a CBME program is to determine which competencies and assessment tools residents need at different stages of their residency to ultimately meet patient needs for that specific area of medicine. The idea is that there will be stages of training, and at each stage and for each rotation, there will be a focus on specific acquisition of identified competencies, which will be measured by entrustable professional activities[8] and milestones. For each domain of competence, there is a corresponding spectrum of ability from novice to master, as described by Dreyfus and Dreyfus.[9]

Competencies are defined as "sets of general qualities that every medical specialist should acquire" or more generally "the ability to do something successfully."[8,10] The Dutch further define competencies as "the synthesis of knowledge, skills and attitudes that are reflected in professional activities."[11] As an example, the CanMEDS Medical Expert Role is a competency that involves "the ability to apply medical knowledge, clinical skills, and professional attitudes in the provision of patient-centred care."[12] In 2009, the international CBME collaborators defined a "competent" physician as one who possesses the required abilities in all domains in a certain context at a defined stage of medical education or practice.[13] Thus, competence is a dynamic construct that develops or recedes over time depending on the environment. The concept of EPA was introduced by Ten Cate and Scheele in 2007 to "bridge the gap between competency-driven education and clinical practice" because in clinical practice, "competencies are intertwined in complex ways that make them less explicit and measurable."[8,14] An EPA is a specific task or activity that can be "entrusted" to a person once sufficient competence has been achieved. EPAs represent the day-to-day work of the professional, being executable, observable, and measurable entities and can be the focus of assessment.[10] A milestone is defined as "an observable marker of an individual's ability."[7] Milestones are usually specialty-specific and characterize expectations for residents at various stages of their training for a particular competency.[15]

For example, "performance of assisted-delivery including caesarean section" would be one of many milestones in a larger EPA, "Complicated Childbirth." (See Table 1 for a detailed example of an EPA, for which its competencies and milestones are outlined.) In summary, competencies have been defined as descriptors of physicians, whereas EPAs are descriptors of work.[10] Typically, each EPA integrates multiple competencies and milestones.[7,8,10] For residents, this means a more personalized and targeted medical experience, focused on particular learning abilities and personal development, allowing for individual learning curves. As such, some residents will be able to advance more quickly than others compared with the current traditional model.

Medical and surgical simulation is also gaining popularity in the medical field as a means of complementing the more traditional patient experiences. It allows for the opportunity to improve skills and do "the real thing" in a safe learning environment.[16,17] However, its integration into the medical

ABBREVIATIONS

ACGME	Accreditation Council for Graduate Medical Education
BOEG	Better Education for Obstetrics and Gynecology
CBD	Competence by Design
CBME	competency-based medical education
EPA	entrustable professional activity
GMC	General Medical Council
GMP	Good Medical Practice
OBGYN	obstetrics and gynaecology
PME	postgraduate medical education
RANZCOG	Royal Australian and New Zealand College of Obstetricians and Gynaecologists
STAR	statement of awarded responsibility
WFME	World Federation for Medical Education