Developing a Canadian Curriculum for Simulation-Based Education in Obstetrics and Gynecology: A Delphi Study

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Abstract

Objective: As obstetrics and gynaecology (Ob/Gyn) residency training programs move towards a competence-based approach to training and assessment, the development of a national standardized simulation curriculum is essential. The primary goal of this study was to define the fundamental content for the Canadian Obstetrics and Gynecology Simulation curriculum.

Methods: A modified Delphi technique was used to achieve consensus in three rounds by surveying residency program directors or their local simulation educator delegates in 16 accredited Canadian Ob/Gyn residency programs. A consensus rate of 80% was agreed upon. Survey results were collected over 11 months in 2016.

Results: Response rates for the Delphi were 50% for the first round, 81% for the second round, and 94% for the third round. The first survey resulted in 84 suggested topics. These were organized into four categories: obstetrics high acuity low frequency events, obstetrics common events, gynaecology high acuity low frequency events, and gynaecology common events. Using the modified Delphi method, consensus was reached on 6 scenarios.

Conclusion: This study identified the content for a national simulation-based curriculum for Ob/Gyn residency training programs and is the first step in the development of this curriculum.

Résumé

Objectif : Dans un contexte où les programmes de résidence en obstétrique-gynécologie évoluent vers l'adoption d'une approche de formation et d'évaluation par compétences, la mise sur pied d'un programme de simulation national est essentielle. L'objectif principal de notre étude était de déterminer le contenu qu'il serait essentiel d'inclure dans un programme de simulation canadien en obstétrique-gynécologie.

Méthodologie : Nous avons sondé les directeurs de 16 programmes de résidence canadiens agréés en obstétrique-gynécologie ou leurs délégués locaux formateurs en simulation au moyen d'une enquête de type Delphi modifiée. Le but était d'obtenir un consensus en trois tours, et le taux d'accord jugé consensuel a été établi à 80 %. La collecte de résultats s'est étalée sur 11 mois en 2016.

Résultats : Le taux de réponse à l'enquête a été de 50 % pour le premier tour, de 81 % pour le deuxième tour et de 94 % pour le troisième tour. Au premier tour, nous avons reçu 84 propositions de sujets, réparties en quatre catégories : les problèmes obstétricaux graves, mais peu fréquents, les problèmes obstétricaux fréquents, les problèmes gynécologiques graves, mais peu fréquents et les problèmes gynécologiques fréquents. Avec la méthode Delphi modifiée, un consensus a été obtenu pour six scénarios.

Conclusion : Notre étude nous a permis de définir le contenu qui devrait être enseigné dans un programme de simulation national intégré aux programmes de résidence en obstétrique-gynécologie, et constitue la première étape de son élaboration.

Key Words: Simulation, postgraduate medical education, obstetrics, gynaecology, curriculum development

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INTRODUCTION

Competence by design is coming, and competency-based residency education will require us to adapt the way we teach and assess our trainees. Simulation-based education will play a significant role in the delivery of CBD because it allows the educator to present residents with standardized cases for both formative and summative assessment. As the Royal College of Physicians and Surgeons of Canada determines the milestones and entrustable professional activities that constitute our specialty, we have an opportunity to develop a national standardized simulation curriculum for postgraduate education in obstetrics and gynaecology in Canada that could be implemented at every university. Many medical expert and intrinsic CanMEDS roles can be taught and assessed through traditional approaches, particularly knowledge, knowledge translation, and procedural skills that are commonly encountered during clinical exposures. However, there are other high-acuity but rarer events that many

residents may never experience during their 5 years of clinical training. Contributing to this decreased exposure is a reduction in resident work hours, decreased operating time, and patient safety concerns. Although this is the case, residents are still expected to develop proficiency in these uncommon, complex clinical problems and procedures during their training. As "competence" as a construct becomes a more common topic of conversation, we must ask ourselves how a graduating obstetrician can be considered truly competent without demonstrating the management of some core activities of our specialty. These high-stakes, rare emergencies are best suited to SBE. Not only can medical knowledge be assessed, but more importantly, the application of knowledge, procedural skills, leadership, teamwork, and communication skills required to manage such events are best assessed in the simulated environment.

At this time, although SBE is being incorporated into nearly every postgraduate Ob/Gyn program in Canada, a coordinated national curriculum does not yet exist. However, two other specialties, anesthesiology and pediatric emergency medicine, are at different stages in the process of development and implementation of national simulation curricula for their respective specialties. Anesthesiology has been a pioneer and leader of this movement and has a fully developed curriculum that has been implemented into all residency training programs across the country. The Canadian National Anesthesiology Simulation Curriculum task force first conducted a needs assessment and collected data on curricula content in all the residency programs across the country in 2013. They then methodically, using a modified Delphi approach, reached consensus on seven scenarios that would be important clinically and technically feasible for each residency program to accomplish. They developed a scenario template, implementation guidelines, and assessment tools. In 2014, they rolled out a single scenario, and as of 2016, they have developed a total of five scenarios. The anesthesiologists have agreed that every trainee must demonstrate competence in these scenarios at the simulation centre before graduation.[1] Similarly, the pediatric emergency medicine specialty is in the process of developing a national simulation-based curriculum for their residency programs. Bank et al. used a three-round Delphi process to survey present and immediate past program directors, and they achieved consensus on 48 topics that will represent the content for a national simulation-based curriculum. Their next plans involve the development of scenarios, piloting them, and then implementing them in a longitudinal manner over the two-year training period of the pediatric emergency medicine fellowship.[2]

Therefore, the next step in developing a national simulation curriculum for Ob/Gyn will require consensus amongst experts regarding content. This will be followed by sharing of existing resources, faculty development with respect to simulation instruction, and collaboration with our national specialty committee for implementation. This will result in both optimization of curriculum content and standardization of resident education and assessment across the country. Like anesthesiology and pediatric emergency medicine, our goal is to find consensus among simulation experts and PDs in Ob/Gyn across the country using a modified Delphi method to identify the content for a national simulation-based curriculum as the first step in the development of a Canadian Obstetrics and Gynaecology Simulation curriculum.

METHODS

Ethical approval for this study was provided by the Ottawa Health Science Network Research Ethics Board (OHSN-REB file number 20160678-01H) and informed consent obtained from the participants during the third round of the Delphi survey once the value of sharing the process with a wider audience was recognized.

A modified Delphi method was used to reach consensus among experts in three rounds. The Delphi technique is an iterative consultation of experts without interaction giving equal weighting to all individual opinions.[3,4] The important features of this consensus technique are (1) anonymity and the use of blinded surveys to avoid dominance of one opinion; (2) iteration, allowing for several rounds over which consensus is achieved so that experts can change their minds; (3) controlled feedback, by showing the participants the results of each round; and (4) statistical group response, summarizing the opinion of the group using descriptive statistics.[5] The initial scenario determination was performed in an open-ended manner. During this Delphi, each round presented the participants with questions based on the suggestions from the previous round. At the beginning of each subsequent round, a summary of

ABBREVIATIONS

APOG	Association of Academic Professionals in Obstetrics and Gynaecology of Canada
CBD	competence by design
COGS	Canadian Obstetrics and Gynecology Simulation
Ob/Gyn	obstetrics and gynaecology
PD	program director
RCPSC	Royal College of Physicians and Surgeons of Canada
SBE	simulation-based education