Investigating Faculty Development for Competence by Design

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for the betterment of the future

Abstract

The launch of Competence by Design (CBD) in 2017 by the Royal College of Physicians and Surgeons of Canada (RCPSC) ushered in a new era of residency education in Canada. For CBD to succeed, faculty responsible for training residents must undergo faculty development to attain the relevant knowledge and skills required to fulfil their new duties. This thesis examines the faculty development resources available to faculty, and the approaches taken by program directors to facilitate faculty development. This research was guided by two research questions: (1) What faculty development resources (e.g., online modules, websites, slide decks) are currently available for faculty members in CBD programs across Canada? (2) How do program directors facilitate faculty development within their specific program? Phase 1 of this study involved a document review of all English-speaking medical schools in Canada with a post graduate CBD program. In phase 2, semi-structured interviews were conducted with program directors from the emergency medicine and psychiatry specialties. The document review found that Canadian universities hosted a range of informative websites, documents, newsletters, live sessions, and online modules to support faculty development efforts on a range of topics. During the interview phase, program directors identified live faculty development sessions, both in-person and online, were the most effective. They also expanded on their experience in the transition to CBD, some noting that their previous assessment models shared similarities with CBD, lessening the burden on faculty to change their teaching practice. Many expressed concerns over resource and time constraints on faculty development and the implementation of CBD as a whole.

Keywords: Competence by Design, residency training, competency-based medical education, faculty development, qualitative

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Section I: Introduction to MA Thesis by Article

Structure of Thesis

I completed this MA thesis, *Investigating Faculty Development for Competence by Design*, in article format with three sections. The first section introduces my thesis study and provides the context under which the study was performed. I outline the research questions and purpose, justification for the use of mixed methods, my personal positionality, the epistemology behind the work, and finally, the theorized contributions to research of the following study.

Section two contains my thesis study in article format. My thesis study examines the current landscape of faculty development for the purpose of implementing and delivering the Competence by Design (CBD) framework for post-graduate medical education in Canada.

The final section concludes the MA thesis by article by reflecting on my experience in conducting this study. I outline lessons learned from the process with regards to my identity as both a program evaluator, and as a researcher in the field of education. These lessons are followed by a discussion of the implications of this thesis on both the theoretical and practical knowledge surrounding faculty development for CBD, and other competency-based medical education programs (CBME).

Research Objectives and Questions

Since the official launch of CBD in 2017, universities and post-graduate medical programs across Canada have participated in efforts to train faculty to deliver the framework effectively. When compared to the previous time-based frameworks, CBD presents a long list of new demands and challenges for faculty. Faculty must develop the knowledge and skills to coach and assess residents using new models and systems. However, programs across and within universities aren't bound by a universal faculty development guideline. Additionally, there are few academic works distinctly outlining best practice for faculty development in CBD or CBME. For these reasons, individual programs or universities are left to develop their own faculty development plans and resources which accommodate their own local context and barriers. Evidence also suggests that there are still gaps in faculty knowledge surrounding CBD and CBME practice. The objective of this study is to investigate the current landscape of faculty

development for CBD in terms of availability, methods, and effectiveness through the use of a mixed methods study design.

The research questions that I used to guide this study include the following: (1) What faculty development resources (e.g., online modules, websites, slide decks) are currently available for faculty members in CBD programs across Canada? (2) How do program directors facilitate faculty development within their specific program? To answer these questions, I used a two-phase sequential design, including a document review, and interviews with program directors.

Methodological Rationale

In the following study, I used a two-phase sequential, qualitative mixed methods design. In phase 1, I conducted a document review to gather and analyze relevant faculty development resources from English-speaking medical universities in Canada. The results of this phase were analyzed using content analysis and inductive coding to identify themes among the resources according to methodologies outlined by Bowen (2009). I identified themes within and between institutions and aimed to describe faculty development for CBD programs. Phase 2 involved conducting interviews with a number of program directors of CBD residency training programs across Canada in the emergency medicine and psychiatry specialties. The results of this phase were also conducted qualitatively, drawing from Miles, Huberman, and Saldana's (2014) iterative approach to generating meaning from data. While typically a mixed methods approach involves the integration of a quantitative method and a qualitative method in one study, this methodology combines two qualitative methods. This could also be classified as a multimethod qualitative methodology (Mik-Meyer, 2020).

I chose to employ this methodology for a number of reasons. Firstly, given the limited available literature on the topic of faculty development practices for CBD and CBME programs, not much was known about what was available for faculty under CBD programs. The document review acted as an exploratory assessment of the resources available to faculty. This also informed my approach to the subsequent interview phase, which went into more depth as to what specific actions are taken at the local level in terms of faculty development.

Secondly, the use of multiple qualitative methods supported triangulation throughout the study (Mik-Meyer, 2020). By reviewing literature, relevant documents, and stakeholder interviews, I was able to generate richer and more holistic findings and results. The use of triangulation also adds to the trustworthiness of the findings and helps mitigate the risk of biases present in single method studies (Mik-Meyer, 2020).

Thirdly, the breadth of information present in the document review made it difficult to analyze the results quantitatively, as the variance in content between institutions was generally large. By utilizing content analysis and inductive coding (Bowen, 2009), I was able to organize the collected data, and draw reasonable conclusions from said documents. This approach excels in exploratory analysis and is a good fit for educational research objectives (Adning, 2021).

Positionality

I chose to pursue this research topic due to my academic and personal experiences in the fields of health sciences, medicine, and education. Prior to starting this master's program, I completed a bachelor's degree in health sciences at McMaster University. McMaster's undergraduate health sciences program follows an inquiry-based learning philosophy, which supports student-driven learning and investigation. This approach to education resonated with me, and I chose to be an inquiry peer-tutor (teaching assistant) in my final year to help facilitate the process with younger students. Inquiry was not something I had experienced outside of my bachelor's, and it opened my eyes to what I perceived as educational innovation, and the profound impact it can have on learners. I believe that inquiry-based learning and competency-based education have many similarities. Both involve coaching and one-on-one or small group learning, development through a progression of a learner's responsibilities, and the gathering and analysis of evidence for learning. I sought to explore Competence by Design as a way of furthering my understanding of education innovation and methodology, while still making use of my background in the health sciences.

While I do not have a formal medical education, I understood the process and structure broadly through a combination of my own research and interest, and through the experience of close family and friends who occupy a wide range of levels of medical training and practice. These connections have been most beneficial in supporting my understanding of the culture of medical education, and how to navigate and communicate with members of this function.

Conversely, while this understanding is not quantified in the analysis of the results of this study, there may be biases present due to my knowledge of the field as a whole. I do not have any outside connection with learners or faculty directly involved in the launch or delivery of Competence by Design; however, my close ties to medical practice in Canada may somewhat skew my research towards groups such as medical learners and faculty, rather than other potential stakeholders such as patient groups, the general public, or international medical education groups.

During the study period, I took up a position with the Government of Canada in the Office of Audit and Evaluation as a junior program evaluator. This experience refined my knowledge of the program evaluation function, and the methods and practice involved. While this position did not conflict with any of the stakeholders addressed in the study, it supported my ability to objectively analyze literature, program documents, and interview transcripts for the purpose of program evaluation.

Epistemology

My epistemology for this thesis follows the pragmatist paradigm of inquiry. In broad terms, pragmatism involves understanding the world as being inseparable from the agency within it (Legg & Hookway, 2021). Truth in this context is knowledge that proves itself as good and useful over time (Kaushik & Christine, 2019). John Dewey, one of the founding fathers of classic pragmatist philosophy, framed experience in two questions: What are the sources of our beliefs? And, what are the meanings of our actions (Dewey, 2008)? He believed that beliefs and actions are cyclically linked, the first informing the next, and vice versa. The joining of these two concepts leads to experience, which is interpreted within the cycle.

In the context of research, experience is driven by the process of inquiry, a self-conscious form of decision-making (Dewey, 2008; Morgan, 2014). By identifying beliefs that have become problematic, relevant questions can be asked and answered to generate future action. Dewey's approach to inquiry involves five steps:

1. Recognizing a situation as problematic;
2. Considering the difference it makes to define the problem one way rather than another;

3. Developing a possible line of action as a response to the problem;
4. Evaluating potential actions in terms of their likely consequences;
5. Taking actions that are felt to be likely to address the problematic situation.

My research incorporates steps 1 through 4, as my recommendations simply evaluate future courses of action, but do not act on them. Firstly, through my personal experiences and review of previous literature, I was able to identify a problematic situation, which will be explored in more detail in the second section of this thesis. Secondly, research objectives and questions were drafted to capture the problem and its potential solutions. Research questions were drafted in a way which would maximize the resulting utility to key stakeholders, as the outcomes supported tangible goals in faculty development for CBD. Thirdly, through the conducting and analysis of the document review and interviews, possible lines of action were developed. Finally, potential actions and recommendations were evaluated and triangulated across multiple lines of evidence, including current literature. While my thesis does not complete Dewey's process of inquiry, it supports the future development and implementation of action within faculty development for CBD.

Study Contributions

The following thesis study directly contributes to the ongoing implementation of CBD across Canada. The RCPSC has made it clear that faculty development is a priority for investigation, and that the quality implementation of CBD depends on it (RCPSC, 2019, 2020). By evaluating current faculty development practice for CBD programs, this study aims to help RCPSC administrators, as well as program directors across the country, make informed decisions regarding faculty development in the future. Currently, little is known about specific program initiatives in faculty development for CBD as this information is not typically published. Given that only 60% of faculty in 2019 and 2020 were trained in CBD related skills (RCPSC, 2019, 2020), there may be a fundamental gap between the training expectations of the RCPSC, and what is being implemented in practice. Understanding how program directors view and utilize faculty development is an important first step to improving the system as a whole. Although each program has their own approach to faculty development that fits their needs, I hope this study will be able to connect the larger community of medical educators. I expect this study to assist

researchers and program directors in developing universal best practices for faculty development in CBD training and support the maintenance of CBD in the future.

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Section II: Investigating Faculty Development for Competence by Design

Description of the Problem

In 2017, the Royal College of Physicians and Surgeons of Canada (RCPSC) began implementing the Competence by Design (CBD) framework for post-graduate medical residency programs across Canada. This change shifts residency training towards a competency-based approach and away from a traditional, time-based approach. The goal of this change is to ensure that residents develop and display the specific competencies and skills necessary to become an effective and independent practitioner (RCPSC, 2022e). The seven core competencies (professional, communicator, collaborator, leader, health advocate, scholar, and medical expert) targeted by CBD are outlined by the CanMEDS framework. Residents practice these competencies by completing Entrustable Professional Activities (EPAs), which are specialty specific actions that can entail one or more of the CanMEDS competencies. EPAs are assessed by faculty, and feedback is provided through a coaching conversation. These changes to the fundamentals of residency training makes for a more engaging and intentional learning experience for students; however, while the resident remains at the center of learning, the ability of faculty and staff to accommodate these changes also plays a significant role in the program's implementation. Faculty members must employ educative skills such as coaching, direct observation, and formative assessment in order to facilitate the learning environment envisioned with CBD (RCPSC, 2022d). Some faculty may have limited experience with these skills prior to CBD, so without proper faculty development regimens and guidance, the ability for different programs to offer consistent and effective teaching comes into question. There are also additional technical and administrative components of CBD, such as filling out EPAs or using electronic systems, which can also hinder faculty performance.

Between 2019 and 2020, the RCPSC released several reports evaluating CBD's implementation. The 2020 CBD Readiness to Implement report from the RCPSC listed evaluating existing faculty development resources as a recommendation. This came as a result of surveys in both 2019 and 2020 showing around 60% of faculty had been trained in specific CBD related skills such as acting as coaches for performance improvement and incorporating direct observation and teaching into workflow (RCPSC, 2019, 2020). While the RCPSC has released a

number of general resources for faculty development on their website (slide decks, modules, videos, etc.) (RCPSC, 2022c), there is no mandated distribution or usage of these resources for programs. Because of this, there is potential for the faculty development process to differ drastically between institutions and specialties. I believe that understanding how different post-graduate medical residency programs across Canada are supporting faculty members through faculty development is important to the ongoing transition to, and future effectiveness of CBD, as well as the implementation of faculty development in the future.

Literature Review

This literature review will cover the structure and theory of competency-based medical education (CBME), competence by design, and the role and need for faculty development in the implementation of CBME programs.

Competency-Based Medical Education

Traditional medical training often falls into the category of a time-based, with periodic exams and defined time spent in a program being measures of student learning and performance (Leung & Diwakar, 2002; Park et al., 2016). This strategy is also present in nearly every level of education, including primary and secondary schooling. As long as a learner completes a time-based program, they are considered to be competent in that field. CBME alters this way of thinking. Learners must demonstrate specific competencies and behaviors to complete the program and be judged as competent. Learners demonstrate these skills throughout the program by completing pre-defined activities; their skills observed by educators and faculty. These activities, along with the associated competencies, are defined by the body or institution delivering the curriculum, the RCPSC and individual programs in this case, and typically differ between medical specialties. By completing a collection of activities, residents demonstrate their competence as they move through milestones set by the program. Only once they have completed these milestones are they considered competent by a competence committee, and ready to practice independently.

Frank et al. (2010) proposes four advantages to adopting CBME: a focus on outcomes, an emphasis on abilities, a de-emphasis of time-based training, and the promotion of learner-centeredness. Outcome focused learning aims to filter out unnecessary elements of a program and ensure that each learning experience has a clear purpose and outcome. For physicians in-

training, the ideal outcome of effective learning is improved patient care. By keeping that in mind, program designers may integrate more relevant skills into complex activities. An emphasis on ability is considered by some as an upgrade to an emphasis on knowledge, which is a common ideology in traditional medical education. While theoretical knowledge is a core foundation in developing competencies, an over-emphasis on the theory can lead to the sacrifice of practical application. CBME puts practical application first, as learners demonstrate and integrate their knowledge through the aforementioned activities. One criticism of time-based training is that different learners progress at different rates, and therefore a set program may result in a range of graduate competence. In theory, CBME is more flexible at the individual level. While some may progress faster than others through a program, by the end of their education, they should all have reached a satisfactory level of competence. Because of this flexibility, more responsibility is given to the learner for their development. Learner-centered approaches engage a student's prior knowledge, skills, and attitudes, helping them better integrate knowledge, especially for adult learners. Discovery and active participation in the learning process can also enhance competency development (Thompson et al., 2003).

Competence by Design

Competence by Design is a competency-based framework for postgraduate medical education in Canada. This training model was developed in part due to recommendations from the Future of Medical Education in Canada Postgraduate (FMEC PG) Project in 2010 (Busing et al., 2015). This project was launched as a joint effort between the Association of Faculties of Medicine of Canada, the Collège des Médecins du Québec, the College of Family Physicians of Canada, and the RCPSC. Prior to CBD, the Triple C program had already been implemented for postgraduate family medicine education. Triple C helped demonstrate the benefits of CBME for residency training, and educators wanted to expand on its success into other specialties.

The goal of CBD is to develop the competencies related to the seven CanMEDS roles (RCPSC, 2022e). These roles outline the skills and behaviors that physicians must practice in order to provide effective patient care. CBD divides residency training into four stages. Each stage includes a list of Entrustable Professional Activities (EPAs) and milestones. Throughout training, residents are observed completing these EPAs by faculty, and are given formative feedback and coaching to improve their skills. There is a notable difference between traditional

summative assessments, such as formal exams, and the new formative assessment strategy promoted by CBD. Summative assessments are often called “assessments OF learning”, whereas formative assessments are referred to as “assessments FOR learning”. While both evaluate the ability of the resident to perform their duties, formative assessments also play an educative role in resident development. Coaching is a big part of this paradigm shift, and the CBD Coaching Model provides a framework for how clinician educators should approach resident training.

Coaching in CBD is divided into two categories: Coaching in the Moment, and Coaching over Time (RCPSC, 2022). Coaching in the Moment refers to the day-to-day interactions with residents, in which faculty members observe EPAs and general work, and provide formative feedback. Educators are encouraged to follow the RX-OCR process. This five-step process includes the following steps:

1. Establish educational **R**apport between the resident and the clinician (an educational alliance or partnership)
1. Set e**X**pectations for an encounter (discuss learning goals).
2. **O**bserve the resident (directly or indirectly).
3. Engage in a **C**oaching conversation for the purpose of improvement of that work (“coaching”).
4. **R**ecord a summary of the encounter.

Coaching over Time refers to the long-term educational relationship between a resident and their clinician educator. This involves regular meetings and discussions regarding the resident’s development and progress, identifying performance patterns, and fostering independence and professional identity. Evidently, both Coaching in the Moment and Coaching over Time require significantly more clinician engagement than traditional residency training. More time must be taken to carry out elements such as EPA observation, coaching conversations, documentation, and additional meeting times. In addition to the added time burden of teaching, clinician educators must also develop new skills related to delivering formative feedback and coaching residents in competency development. Because of this, it is important to effectively train faculty members to fulfil these roles, as it has a direct impact on the learning done by residents, and the flow of work of regular practice.

Faculty Development

Faculty development can be defined as a, "support framework provided to faculty members to assist them in responding to the challenges of their multiple roles and evolving responsibilities" (Leslie et al., 2013). While this can involve formal programs offered by the hosting medical school or institution, faculty development can also take place informally through experience, observation, and reflection (Steinert, 2010). As such, there is a wide range in types of activities that can be considered as faculty development, with a varied assortment of topics and learning objectives (Steinert et al., 2016). In Steinert et al.'s 2016 systematic review, faculty development opportunities were divided into five categories: workshops, short courses, seminars, longitudinal programs, and other activities. Across the 111 analyzed interventions, eight key features were identified to positively contribute to program effectiveness: evidence-informed educational design; relevant content; experiential learning and opportunities for practice and application; opportunities for feedback and reflection; educational projects; international community building; longitudinal program design; and institutional support. In comparison with Steinert et al.'s 2006 review of faculty development initiatives, the authors found that the field of faculty development had grown, and more institutions were implementing programs to enhance teaching effectiveness. However, it is not uncommon for current clinical educators and physicians in teaching positions to have little to no formal training as educators (Behar-Horenstein et al., 2014; Dath & Iobst, 2010). In a traditional resident training environment, this may not present a major issue, but in the new age of CBME, faculty must be better prepared to meet curricular requirements and perform new tasks.

The RCPSC recognizes the need for faculty development in the implementation of CBD, as the faculty must first understand and engage in the change in order to model and teach it (RCPSC, 2022c). The 2019 and 2020 RCPSC CBD Readiness to Implement reports showed that only around 60% of faculty members were trained to act as coaches for performance improvement, and even fewer indicated that they were able to incorporate direct observation into their normal workflow. In 2019, a survey of Canadian obstetrics and gynaecology faculty transitioning to CBD showed that only 44% of faculty members were familiar with the concept of CBME (Tannenbaum et al., 2020). There were several concerns regarding the additional observation and assessment time, knowing what and how to teach, and the evaluation process. Faculty were quoted saying, "When I signed on as a teacher, I got very little info on what to

teach, how to teach, how to get the students to retain their knowledge, or how to evaluate them.", and "[There is a] lack of faculty training regarding giving feedback." (Tannenbaum et al., 2020). These are core pieces of the CBD philosophy, and this study illustrates a potential knowledge gap between what the RCPSC expects out of a program, and what is being implemented at the practice level. In a 2021 survey of psychiatry faculty attending an annual "Education Day" at McMaster University, faculty reported a moderate knowledge of CBME and CBD concepts before attending an hour-long grand rounds session on the topic (Bogie et al., 2021). Of the faculty surveyed, less than 40% reported they had accessed at least one CBD related resource provided by the RCPSC, and the faculty who had noted that they were only somewhat helpful. While the one-hour session did significantly improve the knowledge of faculty in a pre-test post-test measure, most faculty expressed the need for at least a moderate amount of training to help develop CBD related skills (Bogie et al., 2021).

In a review from Sirianni et al. (Sirianni et al., 2020), the authors noted that there were very limited articles on the topic of faculty development in CBME relative to the growth of the movement worldwide. Additionally, more often than not, articles consisted of position statements and expert opinion papers. Few studies employed experimental design, intervention, or program evaluation approaches. While this is a worrying trend for the ongoing and future implementation of CBME programs, the authors gathered a number of recommendations with regards to developing faculty development for CBME and future research. Among the many skills related to CBME, the importance of the coaching role was highlighted by many experts as a key target for future faculty development. There was discussion surrounding novel faculty development strategies to cater to the new types of knowledge involved with teaching CBME. Novel faculty development ideas included commitment to change activities (Kogan et al., 2017), and an EPA system for faculty skills with observation and feedback (Dewey et al., 2017). The authors recommended more studies with experimental designs in order to better define faculty development best practices.

In conclusion, while there is a broad definition of faculty development in both structure and purpose, its value to medical education cannot be understated. However, it is not uncommon for faculty to have little to no formal training as educators. For faculty to develop the numerous teaching and coaching skills required by CBME programs, such as CBD, faculty development

must take a higher priority than it has in the past. It has been demonstrated across several faculty surveys that there are still gaps in faculty's understanding of CBME concepts and their ability to convert the theory of CBME to practice. Recommendations to continue research into faculty development strategies are also prevalent, most notably research involving experimental designs to determine best practice.

Conceptual Framework

Derived from the literature reviewed above, the conceptual framework consists of the following three primary components under the overarching theme of medical education: (1) Competency-Based Medical Education, (2) Competence by Design, and (3) Faculty Development. Faculty development is an important component of CBME, as faculty need new teaching skills that are not present in traditional medical education. This training is critical to the effective implementation of the curriculum. As a CBME program, CBD must integrate faculty development into its core structure as it moves through the implementation phase and into a maintenance phase. This framework aims to organize the relationships between interacting components, and support research that is relevant to the current situation in Canadian medical education. Ultimately, this work is expected to contribute to the broader faculty development community in Canadian residency programs, with the goal of elevating the standard of teaching across country. Given the scarce literature on faculty development practices for CBME programs including CBD, this work aims to inform future decisions made by program directors and RCPSC administrators. A visual of this framework is provide below (see Figure 1). Serving as the preliminary guide for this study, this conceptual framework will evolve as the study progresses and new ideas, concepts, and relationships emerge.

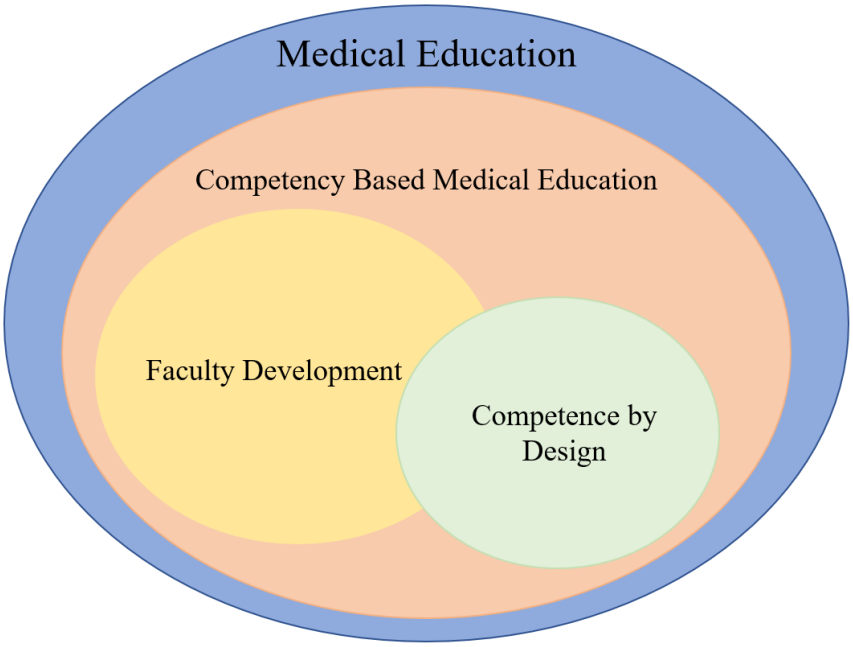

Figure 1. Conceptual framework for faculty development in Competence by Design

Research Questions

The research questions that were used to guide this study include the following: (1) What faculty development resources (e.g., online modules, websites, slide decks) are currently available for faculty members in CBD programs across Canada? (2) How do program directors facilitate faculty development within their specific program? These questions were answered using a two-phase sequential design, including a document review, and interviews with program directors.

Methodology

Research Design

In this study I used a two-phase sequential, mixed methods design. In Phase 1, I completed a document analysis. In Phase 2, I conducted interviews with program directors from the three target disciplines. I chose this research design to best explore current practice in faculty development. By performing a document review in the first phase, I was able to get a general sense of what faculty development resources different programs have available. This was be followed up with in-depth interviews, where I was able to dive deeper into the actions of specific

programs. Since this topic has not been investigated extensively, the flexibility of an iterative process allowed me to adapt to new information as it arises.

Phase 1: Document Review

Document Collection. The first stage of this study involved collecting and reviewing resources (e.g., webpages, slide decks, online modules, videos) relevant to CBD and faculty development. I collected resources from the main websites of the 14 English speaking Canadian universities, which host RCPSC accredited residency programs, as well as the RCPSC's CBD Resource Directory (RCPSC, 2022c). These websites host all of the relevant institutional resources publicly shared by the faculty responsible for residency education. By using the main search function on these websites, I was able to use these webpages to narrow down the searches to those relevant to the proposed study. Additionally, I investigated relevant references found in these resources as an extension of the content. The Boolean search terms and phrases I used were taken from the literature review I conducted in faculty development for CBD and CBME programs. See Appendix A for the list of university websites and search terms used.

Document analysis. Once documents were collected from the target university websites, I used content analysis and inductive coding to identify themes among the resources (Bowen, 2009). I identified themes within and between institutions and aimed to describe faculty development for CBD programs. I completed the individual document analyses in three steps:

1. I read the resource (following a transcription in the case of a video) in its entirety several times in order to gain a general sense of the content.
2. I iteratively coded the resource based on keywords typically used to describe faculty development.
3. I grouped and linked the codes to develop broad categories and themes that address the first research question.

Trustworthiness. I used analytic memo writing to address trustworthiness during document review. These notes document my decision-making process when assigning codes and creating themes. The goal of analytic memo writing was to improve credibility, dependability, confirmability, and transferability.

Phase 2: Interviews

Interview sampling. The second stage of this study involved interviewing program directors in order to understand how they facilitate faculty development for CBD in their respective programs. Given the resources and time available for study, I chose to focus on 3 disciplines: emergency medicine (EM), internal medicine (IM), and psychiatry. These 3 were selected for two main reasons. First, each discipline was launched in a different year (EM in 2018, IM in 2019, and psychiatry in 2020). This will allow me to understand how faculty development may have progressed over a number of years following implementation. Second, all three disciplines are non-surgical, meaning faculty will have somewhat comparable responsibilities, in contrast with what might be expected of faculty in surgical disciplines. This is not to say that these disciplines are similar in any way, but there exists a level of commonality that may reduce the complexity of themes between disciplines during analyses. On the RCPSC directory of accredited residency programs, there are 22 EM program directors, 26 IM program directors, and 23 psychiatry program directors from English speaking universities (RCPSC, 2021b). Although there are only 14 English medical schools in Canada, some universities have more than one program director per program. Emails were sent to all 71 program directors within the three target disciplines with invitations to participate in the study (See Appendix B for *Participant Invitation Email*). The email contained an introduction to the study, an attached information sheet including the purpose, process, risks, benefits, and other ethical considerations surrounding the study, and instructions if they wished to participate. I aimed to conduct interviews with 10-15 program directors total, or 3-5 for each discipline. This sample size was chosen to produce enough data to offer a breadth of knowledge on faculty development within a given discipline, while staying within the bounds of the available resources for this study.

Interview process. If program directors opted into participating in the study, they were able to schedule a date and time over Calendly to conduct a distance interview (e.g. via Zoom or Microsoft Teams). Participants were asked to provide informed consent prior to the beginning of the interview (See Appendix C for *Participant Consent Form*). Interviews followed a semi-structured interview guide. This guide contained three main components: an introduction to the study and informed consent, semi-structured questions with follow up prompts, and a conclusion with time for additional comments. Questions were be aimed at answering the second research question and understanding how program directors conduct faculty development for CBD. This

interview process was iterative, and questions were further influenced by document analysis (phase 1), as well as the analysis of prior interviews. With the participant's permission, interviews were recorded, and subsequently transcribed. Each interview lasted approximately 30-40 minutes.

Interview analysis. For the analysis of transcripts, I referred to Miles, Huberman, and Saldana's (2014) iterative approach to generating meaning from data. I performed a six-step process:

1. Listen to and transcribe each recorded interview to gain a sense of broad themes.
2. Read each transcript multiple times and assign initial codes.
3. Record analytic memos regarding initial codes and trends.
4. Generate a list of categories and themes aimed at answering the second research question.
5. Transfer the relevant analytic memos, codes, themes, and exemplar quotations into a data analysis matrix for comparison between participants and institutions
6. Member check data by inviting participants to review and provide feedback on initial findings

As I performed my initial analysis, I evaluated and modified the interview guide accordingly for subsequent interviews.

Trustworthiness. Participants had the opportunity to verify the transcript from their interview to ensure transcription accuracy, as well as member check my interpretations of the data, further building on the credibility of the results. Analytic memos were also included throughout the analysis to document the decision-making process in the construction of codes and themes, as well the iterative process of modifying the interview guide.

Results

Phase 1 Results

When applicable, the Boolean search terms in Appendix A were used on the 14 English-speaking university websites. On multiple occasions, searches returned over 100 results; however, in all cases, the search engine used by the university limited the number of viewable links to a maximum of 100, sorted by relevance as defined by the search engine. In these cases,

only the first 100 links were included. Multiple universities also had additional restrictions on search functionality. McGill University did not allow for any Boolean operators, so the search terms were inputted as plain text. The University of Manitoba redirected the majority of results to an inaccessible server. The University of Saskatchewan did not allow for the use of more than one phase search operation. Only the first phrase search in each term was employed, with the remainder of the term being inputted as plain text.

In the case of the RCPSC CBD resource directory, there is no free search tool, rather, the directory is organized by two dropdown menu filters: “topic area”, and “who are you?”. The former of these categories, “topic area”, has several overlapping topics (for example CBD online modules and CBE Online Modules are listed as different topics). For this reason, I chose to conduct the search using the “who are you filter”. There are 8 options for this filter: CBME leads, competence committee chairs, faculty, medical students, postgrad deans, program directors, program managers/administrators, and residents. I screened all documents and links under the “faculty” and “program directors” options, which returned 27 and 55 results respectively, with a total of 72 unique, relevant results between the two filters out of a 98 total resources in the overall directory.

The RCPSC CBD Resource Directory is the primary location for CBD related content. These resources are developed by the RCPSC and offer the most in-depth and technical information regarding the core elements of CBD. This is to be expected, as this directory serves to inform and update CBD programs across the country. The RCPSC CBD Resource Directory hosts many types of resources. This includes interactive online modules, documents, webpages, videos, and slide decks. These resources also cover a wide range of topics, including implementation guides, coaching models, assessment tools, competence committees, and many more.

Relevant university resources were identified through their inclusion of CBD or CBME content. While many resources are directed towards faculty (ie. Grand Rounds, faculty development modules, coaching guides, etc.), there are also non-targeted resources which may benefit prospective students, residents, non-teaching members of the faculty, or members of the general public. Due to the wide range of audiences for these types of resources, the depth of content and subsequent application to a practical teaching environment varies. Additionally,

some resources only briefly mentioned CBD (i.e. departmental annual reports), and others were indirectly related to CBD teaching (i.e. mentorship tips). These documents were included as relevant resources since they had the potential to contribute to a faculty member's knowledge and implementation of their CBD curriculum, even if not providing direct faculty development training.

Universities host a variety of faculty development resources including webpages, documents, slide decks, and newsletters related to CBD. **Webpages** on the university's website that are easily accessible to both faculty members and the general public. These were found to cover a wide range of topics including CBD overviews and introductions, CBD in different departments, EPA's and assessment, competence committees, coaching and mentorship tips, etc. These webpages also contained relevant links and resources such as videos or other webpages on the website. Given the general accessibility of these webpages, the content contained therein was typically broad and provided only an overview of the topic. If the reader wanted more information, there may also be a contact suggestion. For example, "contact your CBME lead for more information." **Documents** often provided a more technical look into certain topics. These were typically pdfs stored on the university website that appeared in the aforementioned searches. These were different from webpages as they were often standalone pieces of information with a more targeted audience. Additionally, unlike webpages, which were constructed by the university, some documents were provided by external institutions, most commonly by the RCPSC resource directory. Topics covered by documents included CBD implementation, departmental updates and reports, policies and procedures, committee guidelines, and EPA's and assessment. These documents appeared to target faculty, and while some were explicit faculty development pieces, many simply outlined the function or procedure of various CBD elements. **Newsletters** and other forms of correspondence were other common forms of faculty development. Newsletters were either directed to specific departments or were general CBME newsletters circulated to faculty. Some included tips and tricks for CBD faculty, definitions, terms of reference, and notifications of upcoming CBD related events. **Slide decks, rounds, retreats, and workshops** were also somewhat documented on university websites and provided evidence of live training sessions both in-person and online. While some sessions appeared to cover similar content to what was offered in webpages and documents (introduction to CBD, CBD implementation, coaching and assessment), some covered more detailed topics

including evaluating CBME programs, lessons learned from CBD, how to conduct direct observation, and entrustability scales. Recordings and slide decks were available for some sessions; however, many only had information on the session date and topic, with no detailed summary. **Online modules** were less common, with only a few universities producing their own module resources. It was more common for a program to refer their faculty to existing modules hosted by the RCPSC.

Some universities also hosted standout faculty development resources in addition the aforementioned mediums. For example, the University of Saskatchewan hosts a medical education wiki which contains a large number of resources for teaching faculty. Some are directly related to CBME and CBD teaching, although most support the general medical educator with skills such as assessing your own effectiveness as a teacher, classroom techniques, educational principles, and a breadth of online teaching tools. Another notable resource was the CBD Handbook from the Department of Psychiatry at the University of Toronto. This 82-page document addressed many of the what's, how's, and why's of the CBD program for CBD coaches and faculty. No other handbook or document of this depth was found on UofT's public servers, so it is unclear whether other departments have generated similar resources. Regardless, a document with this level of depth and breadth would undoubtably be an informative resource for faculty in CBD programs.

Phase 2 Results

Interview invitations were sent to 71 program directors in emergency, internal medicine, and psychiatry. Of these 71 invitations, 8 program directors responded with interest in the study, and 7 interviews were ultimately conducted. The majority of interviewees were program directors in emergency medicine (5), 2 interviewees were program directors in psychiatry, and 0 interviews were conducted with members of internal medicine. Interviews were conducted online via Zoom and Microsoft Teams and lasted between 25 and 35 minutes.

Transition to CBD

The experience of a program in the transition to CBD was somewhat dependent on their previous assessment paradigm, and how similar elements lessened the burden of change for faculty. 5 of the 7 respondents identified their previous assessment models as positive factors in

their transition to CBD. Completing end-of-shift cards or In-Training Evaluation Reports (ITERs) was common practice for interviewed programs prior to CBD. These forms provided practice for faculty to provide day-to-day assessment including narrative comments for competency-based learning. One program went as far as to implement a competency-based assessment system similar to CBD years prior to their launch for the purpose of, "getting our faculty used to the idea of this type of assessment, with more direct observation and targeted assessments." [2] Additionally, both emergency and psychiatry program directors noted that their service prior to CBD typically involved one-on-one time with residents or direct observation, so the process of teaching was also relatively unchanged with one program director stating, "For us, CBD was mostly around the new evaluation structure, it actually didn't change much from our perspective in the way that we taught our trainees." [3] By having established elements of CBD present prior to launch, programs don't need to start from scratch when formulating their faculty development approach. Rather, they can build on their faculty's experience, and offer a more focused development strategy. The respondents who did not have a comparable system prior to launch noted that there was an initial barrier in transition to CBD, as faculty acclimatized to a more frequent and in-depth assessment strategy. "There's a bigger learning curve to become a supervisor now than there used to be in terms of 'how do I evaluate?' or 'what's the process I'm supposed to undertake to give feedback?'" [7].

Faculty Development Topics

In the early stages of CBD, faculty development was focused on previewing CBD concepts and processes to faculty and giving them an idea of what to expect. As mentioned previously, many faculty in emergency and psychiatry programs are familiar with general concepts regarding WBA and direct observation; however, EPAs, the assessment forms unique to CBD, present a new challenge for all supervisors. Getting faculty familiar with filling out EPAs and using the university's designated digital platform are integral parts of the CBD assessment process and were critical pieces of early faculty development. One program director summarized their focus by saying, "We tried really hard to limit the amount of change that the individual faculty saw and focused a lot more on how you complete an EPA. How is an EPA different than what you have done historically in terms of your evaluations?" [3].

While familiarizing faculty with a program's EPAs and how to fill them out appropriately is an ongoing effort, as programs began to move away from their launch and implementation phase, more emphasis was placed on the ability of faculty to provide effective, constructive, and timely feedback and narrative comments. "Initially it was about learning about the EPAs, learning about what we were doing, learning how to use the app to track everything. Now it's more about providing effective feedback and giving an effective evaluation," [5]. Residents rely on these coaching moments to refine their skills, identify areas for improvement, and develop plans for future learning. Generic feedback such as "great job", or "do more reading" [7] doesn't add value to the resident's experience, so program directors are addressing these shortcomings with faculty development. A number of program directors also mentioned scholarly projects to better evaluate comment quality in the future. Another component of effective feedback is understanding what stage the resident is at in their training, and the expectations that go along with it. One program director addressed this issue saying, "There are certainly still faculty who struggle with the concept that entrustment is meant to be level appropriate, and we're still having to do coaching work on that front." [1] Another program took steps to create a graded responsibility document. This document outlines the program's expectations for residents in each level of their training, and the responsibilities they should be taking on clinically at that level. It was noted that use of this document will also be supported by faculty development in the future.

Beyond faculty development for the typical faculty member, there was also additional learning for those in more elevated positions, such as academic advisors, members of competence committees, and program directors themselves. This additional training came from conferences, RCPSC resources, and internally developed processes.

Looking into the future of faculty development, many programs noted potential changes to their specialty's EPAs, and other changes happening within their individual programs such as onboarding new faculty and working on their online platforms. Recognizing that CBD is an evolving process, program directors remain keen on adapting their faculty development offerings to meet the needs of their faculty.

Faculty Development Delivery

When asked about what form faculty development took in their program, all program directors mentioned live sessions with faculty, either online or in-person, as a prominent strategy

for delivering CBD content. These sessions often took place as a part of other, general departmental or university wide gatherings such as grand or city-wide rounds, departmental meetings, and faculty retreats. There were also stand alone, CBD dedicated sessions for faculty to attend. Sessions ranged from quick, informative updates, to in-depth learning opportunities with time for practice and questions. There were also mentions of various conferences and symposiums which featured CBD related panels and opportunities for faculty development.

Asynchronous, online faculty development was less common, and was typically a supporting feature in faculty development. Many programs referred their faculty to RCPSC resources, webinars, and modules, and some produced their own videos or online resources. However, these resources were found to have generally low uptake among faculty, “I think the uptake on those [videos] is low, and I honestly think even the EPA guides I imagine the uptake is low, which is why we didn’t prioritize getting them built” [1].

One unexpected avenue of faculty development that was identified by respondents was the residents themselves. In the initial launch of CBD, it appeared that both residents and faculty alike were working together to figure out the process, and in some cases, residents would support faculty in their understanding of EPAs or the online platform. “Particularly at the beginning of CBD, [residents] were the ones that were coaching the faculty on how to use an EPA, or what the entrustment scale meant.” [1]. While helpful to the process, this presents an additional burden on residents, “It’s added a burden onto the residents. It’s an extra step that they didn’t have to do before.” [2] Program directors are taking steps towards ensuring faculty are taking on the necessary responsibilities within CBD.

Faculty evaluation was another interesting form of faculty development. A number of program directors described processes to evaluate their faculty based on EPA data and comment quality. Data was gathered through their online platform, and faculty who appeared to be struggling with EPA requirements were offered additional support. One-on-one or small group sessions were specifically tailored towards these faculty, in order to clear up any misunderstandings, or knowledge gaps. Some program directors also specifically mentioned an open-door policy, and made it known that they were more than willing to help any faculty who requested it.

Program directors were typically responsible for developing or delivering these faculty development sessions, while some had additional support from other roles, including CBD leads, the university's PGME office, program administrators, or external institutions. Collaboration amongst program directors across the country was another recurring theme. Many program directors mentioned speaking with others regularly about their experiences with CBD, and how to manage common issues or get feedback on their ideas. One program went as far as to invite experienced faculty from another university to run onboarding workshops in preparation for their own launch date.

Faculty Buy-In, Motivation, and Participation

Faculty buy-in, motivation, and participation are important elements of the faculty development process. It was made clear by all respondents that CBD specific training was not mandated by their program or any governing body, and as such, faculty participation was based primarily on their own motivations to attend. While some wished that CBD specific faculty development would become mandatory, others didn't feel the same way, "I don't know if I would want to mandate these sessions. You want people to want to be there. It makes for a much more interactive session." [1]

With regards to encouraging faculty attendance, there were some programs with proactive systems. One program, parallel to their faculty evaluation system, asked their competence committee members to identify faculty who were doing a great job filling out their EPAs with effective comments and accurate scores. "We give them an email saying thanks for doing such a great job and tell them why they're doing a good job." [2] This level of faculty appreciation, however, was not common among respondents.

Typically, most interviewees noted that faculty are motivated to attend CBD development sessions because they want to continue to work with residents. Both of the responding specialties are not dependent on resident coverage to function, and as a result, if faculty wish to be scheduled with residents, there is an expectation that they must effectively fulfil their CBD responsibilities. This is supported from both the administrative perspective, "We were very clear that if you don't do faculty development to learn how to complete EPAs, you would not be scheduled with a learner, and generally faculty are very happy to work with our learners." [6], and the residents' experience, "[Residents] get to schedule themselves when they're senior

learners. They'll schedule themselves with people that will complete their EPAs" [6]. However, this motivation is only the reality for a portion of the program faculty, those who are specifically interested in education. While this core teaching faculty shows higher engagement in CBD, those who are less interested have no reason to participate in the program. "The people who come to these talks are the people who need it the least. They tend to be good educators that are trying to refine their technique. As opposed to the people who know nothing about CBD. Those are the individuals who are not coming." [1] That being said, it was acknowledged that faculty are exposed to many competing demands within their practice, and the reality is that CBD is only one part of their broader clinical experience.

The sentiment surrounding faculty buy-in was mixed overall. Some reflected on their progress on this front, "I think as people see it working and hear about the effectiveness and how it's working for other rotations and other people, they have let their walls down a little bit." [5], while others were more skeptical surrounding the change, "I think [the RCPSC] put a huge burden on learners and faculty, and I'm not sure they're really set up to demonstrate the outcomes are actually meaningful." [6]

The Royal College's Approach

Interviewees acknowledged that the RCPSC's strategy to pass down the responsibility of faculty development to programs at the local level was understandable given the natural differences between programs. However, one common concern was the already limited resources available to programs to support the launch, maintenance, and development of CBD. "Just the sort of day-to-day operations of the program, I'm just resourced enough to make that happen. CBD really is meant to be like a continuous improvement model where you take all of the data that you're getting, you refine the program based on that data, and then you move things forward. I don't have anyone to take that role on." [1]. A number of program directors mentioned CBD resources that were limited by funding, including online platform functionality, CBD subcommittees, and CBD leads, the latter two directly affecting faculty development efforts. One program director even mentioned that they were not currently engaging in CBD related faculty development due to financial reasons. Another program director alluded to tradeoffs being made by different programs, "As far as I understand, not every institution had a CBD lead, and so because we went with ePortfolio (free), we had more funding." [6]. While local delivery of CBD

allowed for the consideration of the unique context of individual programs, the limitations imposed by a lack of funding for a project of this size appear to hinder faculty development efforts and may also have implications for the functionality of the framework as a whole.

Discussion

Universities hosted a wide range of resources online including webpages, documents, newsletters, online modules, and evidence of live sessions. While these covered a number of topics, many resources only provided broad strokes of information, lacking the depth that a teaching faculty member might benefit from. The RCPSC resource directory provided a more detailed offering of faculty development resources and was often referred to by university programs.

Interviews supported the findings in phase 1, as program directors identified live sessions as their primary method of faculty development, with asynchronous resources having limited uptake among faculty. These sessions also focused more deeply into specific topics, namely the use of EPAs and providing quality feedback and coaching to residents. It was also confirmed that there were no faculty development mandates for CBD. Faculty were only motivated to attend sessions through encouragement from leadership, and an intrinsic desire to teach. Programs were also found to be significantly limited in their efforts to implement CBD, including faculty development, by their available resources. Faculty evaluation was an unexpected avenue for faculty development, as some programs outlined processes to monitor, and address faculty performance within CBD. Key findings were also supported by existing literature in faculty development for CBD and other CBME programs.

In a needs assessment survey by Sirianni et al (2021) at the University of Toronto, similar trends in faculty development were identified. Respondents identified small group, interactive sessions as the most effective format, while online modalities were the least. The priority topics respondents identified were also similar between studies, with EPAs and feedback and coaching being the most planned for upcoming years, with feedback and coaching being found to be the most valuable topic for frontline teachers.

Many concerns identified in the early adoption of CBME were found to be valid critiques of the format today. The standard of “minimal competence”, the baseline competency for

completion of training (Fraser et al., 2016), was also found to be a challenge for interviewees. Some had difficulty supporting and advancing residents who had already displayed competency. “We’re struggling with what we do when [residents] are doing really well, which is not a bad thing, but how do we help that resident continue to progress?”. Another early concern was the balance between flexibility and responsibility at the program level (Fraser et al., 2016). While the omission of faculty development best practice guidelines allows for local flexibility, the burden of developing these resources proved to be a significant challenge.

With regards to faculty evaluation, there are a number of tools which can evaluate the quality of faculty comments on EPAs. The CCERR instrument (Rougas, 2014) and the QuAL score (Chan et al., 2020) are both reliable measures of comment quality with some level of validity. While neither were mentioned by interviewees, as faculty evaluation was done using best judgement, the implementation of a more rigorous processes might better support faculty development for feedback quality in the future.

Limitations

The present study’s generalizability was limited by the small sample of interviewees selected. While the initial target number of interviews was fulfilled for emergency medicine, there was lacking representation from both psychiatry and internal medicine. Additionally, as these three specialties do not represent postgraduate medical education as a whole, responses cannot be generalized to other specialties, whose structures may differ drastically from the included programs. All respondents noted factors specific to their discipline which impacted their faculty development and CBD implementation efforts. It is unknown how the results would have been affected if a broader set of specialties was included in phase 2.

The study was also limited by the nature of study recruitment, as there was a self-selection bias present. Those who participated were likely more interested in the topic of CBD, which may have influenced their attitudes towards faculty development and their experience within the program. A methodology with a lower barrier to participate may have been more successful in attracting responses (ex. A survey), although the depth of response may have suffered as a result.

Future Research

Future research would include a more detailed study into a wider range of disciplines in order to obtain a more representative perspective on faculty development nationwide. Additionally, as follow-up to gaps identified in the present study, supporting programs in the form of best practice guidelines would aim to reduce program burden in CBD implementation and maintenance. Faculty evaluation and personalized development was another interesting narrative within the study. Further exploration into rigorous and efficient methods of evaluating teaching quality may lead to alternative avenues of faculty development.

Conclusion

Faculty development in CBD is made available through a number of synchronous, and asynchronous mediums. Asynchronously, there are webpages, handouts, and online webinars, among other things, available for faculty to learn broadly about CBD. However, more in-depth learning is addressed during live sessions identified by program directors. Program directors in emergency medicine and psychiatry found EPAs, quality feedback, and coaching to be the most important areas for ongoing development. Time and resource limitations are significant barriers to faculty development in CBD, as program directors struggle to manage and produce these offerings, while faculty are left to their own motivations to attend among a number of competing clinical demands. Faculty evaluation paired with tailored faculty development arose as an alternative to the more common traditional catch-all sessions. Constructing a strategy to harness the data collected from EPAs to evaluate teaching quality may prove to be an effective means to providing meaningful and pointed faculty development in the future.

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Appendices

Appendix A

University websites and search terms to be used for document collection

University Websites		Search Terms and Keywords
University of British Columbia	https://www.ubc.ca/	"competence by design" "faculty development" AND "competence by design" "faculty development" AND "CBD" "faculty development" AND "competency based medical education"
University of Calgary	https://www.ucalgary.ca/	
University of Alberta	https://www.ualberta.ca/	
University of Saskatchewan	https://www.usask.ca/	
University of Manitoba	https://umanitoba.ca/	
Northern Ontario School of Medicine	https://www.nosm.ca/	
Western University	https://www.uwo.ca/	
McMaster University	https://www.mcmaster.ca/	
University of Toronto	https://www.utoronto.ca/	
Queen's University	https://www.queensu.ca/	
University of Ottawa	https://www2.uottawa.ca/en	
McGill University	https://www.mcgill.ca/	
Dalhousie University	https://www.dal.ca/	
Memorial University of Newfoundland	https://www.mun.ca/	
RCPSC CBD Resource Directory	https://www.royalcollege.ca/rcsite/cbd/cbd-tools-resources-e	

Appendix B

Participation Invitation Email

uOttawa

Université d'Ottawa

Faculté d'éducation

University of Ottawa

Faculty of Education

Information Letter

Title of the study: Investigating Faculty Development for Competence by Design

Principal Investigator: Mr. Thomas Chin
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Supervisor: Dr. Katherine A. Moreau
Associate Professor
Faculty of Education
University of Ottawa
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Invitation to Participate: You are invited to participate in the abovementioned research study conducted by Mr. Thomas Chin under the supervision of Dr. Katherine A. Moreau.

Participation: If you wish to participate in this study, please reply to the invitation email with your availability to participate in a one-on-one interview. The interview will be conducted in English by videoconference (e.g., Zoom, FaceTime), and will last approximately 60 minutes. The interview will be audio-recorded and transcribed verbatim. You do not have to answer any questions that you do not want to answer. You will be asked to review and sign an informed consent form prior to participating in the interview.

Purpose of the Study: The purpose of this study is to describe: (a) the faculty development opportunities that are available to faculty in Competence by Design (CBD)

programs, (b) how program directors (or other relevant individuals) facilitate faculty development within the context of CBD, and (c) the perception of CBD related faculty development among program members.

Risks: There are no known risks to participating in this study.

Benefits: You will not immediately benefit from this study. However, the findings from it will provide the post graduate medical education community with more insight into faculty development practices for competency-based medical education programs such as CBD. Increased knowledge of these practices can support the ongoing transition to CBD, its maintenance as a framework in the future, and the advancing quality of post graduate medical education in Canada.

Confidentiality and Anonymity: The information that you will share will remain strictly confidential and will be used solely for the purposes of this research. The only people who will have access to the research data are Mr. Thomas Chin and Dr. Katherine A. Moreau.

The interview will be audio-recorded, but you will not be asked to share identifying information such as your name or the program you are a part of during the interview. If, however, any potentially identifying information is shared during the interview, it will not be included in the transcript. The digital audio-recording of the interview will be downloaded and erased from the audio-recorder immediately after the interview. Results will be published in pooled (aggregate) format.

Tel/Tél : 613-562-5804

Fax/Téléc :613-562-5144

145, Jean-Jacques Lussier

Ottawa ON K1N 6N5
Canada

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Conservation of Data: The research data will be stored in a password protected file, on a password protected laptop of Mr. Thomas Chin at the University of Ottawa for a period of 5 years at which time the data will be securely deleted.

Voluntary Participation: You are under no obligation to participate and if you choose to participate, you may withdraw from the study at any time and/or refuse to answer questions that you do not want to answer.

Information about the Study Results: If you are interested in receiving a summary of the study results, you will be given the option to indicate this interest on the consent form.

If you have any questions or require more information about the study itself, you may contact the Principal Investigator at the number mentioned herein.

If you have any questions with regards to the ethical conduct of this study, you may contact the Protocol Officer for Ethics in Research, University of Ottawa, Tabaret Hall, 550 Cumberland Street, Room 154, Ottawa, ON K1N 6N5, tel.: (613) 562-5387 or ethics@uottawa.ca.

Please keep this form for your records.

Thank you for your time and consideration.

Mr. Thomas Chin: November 28, 2022

Date

Dr. Katherine A. Moreau: November 28, 2022

Date

Appendix C

Participant Consent Form

uOttawa

Consent Form

Title of the study: Investigating Faculty Development for Competence by Design

Principal Investigator: Mr. Thomas Chin
Masters Candidate
Faculty of Education
University of Ottawa
Ottawa, ON

Université d'Ottawa
Faculté d'éducation

Supervisor: Dr. Katherine A. Moreau
Associate Professor
Faculty of Education
University of Ottawa
Ottawa, ON

University of Ottawa
Faculty of Education

Invitation to Participate: You are invited to participate in the abovementioned research study conducted by Mr. Thomas Chin as a part of his Master's Thesis, under the supervision of Dr. Katherine A. Moreau.

Purpose of the Study: The purpose of this study is to describe: (a) the faculty development opportunities that are available to faculty in Competence by Design (CBD) programs, (b) how program directors (or other relevant individuals) facilitate faculty development within the context of CBD, and (c) the perception of CBD related faculty development among program members.

Participation: Your participation will consist of participating in a one-on-one, 60-minute interview by videoconference (e.g., Zoom, FaceTime). The interview will be audio-recorded and transcribed verbatim. You will have the opportunity to review your

interview transcript. You do not have to answer any questions that you do not want to answer.

Risks: There are no known risks to participating in this study.

Benefits: You will not immediately benefit from this study. However, the findings from it will provide the post graduate medical education community with more insight into faculty development practices for competency-based medical education programs such as CBD. Increased knowledge of these practices can support the ongoing transition to CBD, its maintenance as a framework in the future, and the advancing quality of post graduate medical education in Canada.

Confidentiality and Anonymity: The information that you will share will remain strictly confidential and will be used solely for the purposes of this research. The only people who will have access to the research data are Dr. Katherine A. Moreau, and Mr. Thomas Chin.

The interview will be audio-recorded, but you will not be asked to share identifying information such as your name or the program you are a part of during the interview. If, however, any potentially identifying information is shared during the interview, it will not be included in the transcript. The digital audio-recording of the interview will be downloaded and erased from the audio-recorder immediately after the interview. Any digital video-recordings automatically produced by any video conferencing platforms will not be stored, and will be deleted immediately after the interview. Results will be published in pooled (aggregate) format.

Tel/Tél : 613-562-5804

Fax/Téléc :613-562-5144

145, Jean-Jacques Lussier

Ottawa ON K1N 6N5
Canada

www.education.uOttawa.ca

Conservation of Data: The research data will be stored in a password protected file, on a password protected laptop of Mr. Thomas Chin at the University of Ottawa for a period of 5 years at which time the data will be securely deleted. If you choose to withdraw, all research data gathered until the time of withdrawal will be immediately securely deleted.

Compensation: None.

Voluntary Participation: You are under no obligation to participate and if you choose to participate, you may withdraw from the study at any time and/or refuse to answer questions that you do not want to answer.

Acceptance: I, _____, agree to participate in the above research study conducted by Dr. Katherine A. Moreau and Mr. Thomas Chin of the Faculty of Education, University of Ottawa.

I would like to receive a summary of the study findings:

Yes □

No □

If you have any questions or require more information about the study itself, you may contact the Principal Investigator or Supervisor at the numbers mentioned herein.

If you have any questions with regards to the ethical conduct of this study, you may contact the Protocol Officer for Ethics in Research, University of Ottawa, Tabaret Hall, 550 Cumberland Street, Room 154, Ottawa, ON K1N 6N5, tel.: (613) 562-5387 or ethics@uottawa.ca.

There are two copies of the consent form, one of which is yours to keep.

Participant`s signature: Date:

Researcher`s signature: Date:

Section III: Conclusion to MA Thesis by Article

Lessons Learned

Throughout my time conducting this study, I learned a great deal about qualitative research methods, program evaluation, and post-graduate medical education. While I have prior experience doing small literature and document reviews, as well as conducting a few stakeholder interviews, I have not done either on the scale, or with the rigor, that was completed for this study. The document review for this study was particularly challenging due to the quantity of resources that were examined, and the breadth of content that was found. A number of iterations of the search and coding strategy were done before finding a suitable methodology; however, there were still shortcomings in the data collection process. If I were to conduct this phase again, I would utilize additional measures to count and track different resource characteristics. This way I could better analyze trends over the hundreds of resources that were ultimately collected. In the end, the analysis was done manually, and deciphering trends such as prevalence of different teaching topics was made difficult.

With regards to the interviewing process, I felt very good about how phase 2 was conducted overall. The semi-structured nature of the guides allowed me to identify new and interesting threads that would come up during an interview, and greatly expand my view of the topic. One thing I would have done differently during this phase would have been to conduct a more thorough analysis of the results directly following an interview. I conducted the majority of the analysis after all of the interviews had been conducted. While that provided a better holistic view of the outcome, I found that some trends became more or less prominent than what I had suspected at the beginning of the study. I feel that if I had a stronger understanding of the results and trends throughout the interview period, I could have adjusted my approach in the latter interviews to better represent emerging themes.

From a program evaluation standpoint, I would have liked to have a robust and structured evaluation matrix to frame my research. During my analysis of the results, I realized that my research questions were overly broad, making it difficult to code my findings and condense them into relevant themes. In my outside work with federal program evaluation, we develop clear evaluation questions and indicators to focus and organize our evaluation. If I had more practice

in program evaluation prior to beginning this study, I would have taken similar steps to better help align my results with the goals of the study.

Overall, this was a great exercise in program evaluation and qualitative research, especially considering this was a program that I was deeply interested in. I know I will be able to take these lessons learned into my future research as a program evaluator, and I hope to continue to contribute to the broader academic education community.

Implications for Theory

The results of this study have several implications on the theory of faculty development strategy for CBME programs such as CBD. By evaluating and comparing strategies from a variety of institutions, this study demonstrates that there are many different active approaches to faculty development for CBD. Research in this field typically focuses on single institutions or programs, and therefore may not capture the breadth of available options with regards to faculty development delivery methodology. As a needs assessment, this has implications for future research in this field, and the further exploration of these methods. One innovative approach that was discussed in this study is the usage of faculty assessment tools for the purpose of faculty development. Not commonly discussed in the literature, this approach utilizes various modes of data collection to monitor faculty, and design tailored training sessions for them, or facilitate conversations regarding faculty development. CBD already allows for the collection of EPA performance metrics, so I believe this may be a reasonable next step in the usage of this data.

I also believe the qualitative nature of this study will help advance the understanding of the implementation of CBME type programs, as well as innovations in medical educations as a whole. While the development of best practices and ideal approaches in medical education are important, the human element of institutional change should have weight as well. Throughout my study, particularly during the interview phase, I was able to come to understand many of the challenges that program directors and faculty faced during the launch and implementation of CBD. From the lack of resources and time, to identifying key CBME concepts, to even overcoming traditional medical education culture, faculty felt as though they were unprepared to carry out such large institutional change. There were many considerations that were not addressed in full, and their hinderance of the program's perceived effectiveness was commonly expressed among respondents. Continuing the dialogue with key stakeholders throughout the

implementation process is key to identifying and tackling challenges as they arise. Moving forward, I hope this study contributes to the understanding of the process of implementing educative change in similar settings, and also the importance of qualitative methods in the evaluation of innovations in medical education.

Implications for Practice

This study discusses various approaches to CBD related faculty development. This has implications on individual programs, and how they choose to implement their own faculty development. For example, one interviewee captured how important it was to their program that they incorporate positive reinforcement into their faculty communications. Another program might see this and consider doing something similar with their own faculty. Additionally, while collaboration between programs and institutions already takes place in some capacity, this study may encourage programs to work more closely to come towards a common goal. Opening the dialogue for program directors and faculty to connect with others across the country would help support the medical education community, and perhaps lessen the burden on individual programs to carry out large scale changes in the program.

I believe that faculty development is both the responsibility of the program and the faculty themselves, and I hope that by reading this study, members of the medical education community will take on bigger roles in pursuing teaching excellence. While time and resource constraints are valid, simply being aware of faculty development opportunities, learning with intention, and reflecting on what has been done and what could be done are important steps in providing effective instruction. The RCPSC also has a role in this matter, and I hope that this study is able to demonstrate the reality of faculty development for CBD, so that it can be judged according to their expectations to identify areas for further improvement.