Competence by Design (CBD): Cost Analysis

Executive Report

Resource Framework Working Group

March 2019

CBD Costing Analysis

Introduction

Key takeaways

- As CBD implementation began, stakeholders requested more information on costs associated with the change.
- A Costing Model discussion paper was written in late 2017, and the Resource Framework Working Group was formed to provide feedback and produce a more detailed version.
- This report is the result of the working group's study on the costs of CBD, focusing on variability, direct and additional costs, anticipated impacts, and the costs of running parallel systems.

Competence by Design (CBD) is the Royal College of Physicians and Surgeons of Canada's major change initiative intended to reform the training of medical specialists in Canada. It is based on a global movement known as competency-based medical education (CBME). CBD intends to shift the current model and educational design of specialty residency training such that training is explicitly focused on the trainee's demonstrated achievement of key competencies. CBD is being implemented in 'cohorts' of disciplines. Eight disciplines have officially launched the new training model in Canada, although a variety of investments have been made to prepare for the change for many others.

After the first disciplines launched CBD in July, 2017, the Royal College received requests from programs, institutions, and Ministries for more information on the costs of CBD. In response, a "Costing Model" discussion report that provides an indication of the anticipated costs and overall resource requirements of CBD was drafted. This draft was disseminated for feedback, and the Resource Framework Working Group (RFWG), a taskforce comprised of various stakeholders in the medical education community, was formed to provide input and create a revised version of the Costing Model. A full list of Resource Framework Working Group members can be found in Appendix A.

In response to a request from the Committee on Health Workforce (CHW) about the costs of CBD implementation, the RFWG expedited the timelines of a planned study on the resource/cost implications of CBD. This expedited study was conducted with the understanding that the timing would make it challenging to receive a full data set, which was one of the limitations of this study. The RFWG collected data through interviews with all Faculties of Medicine across Canada and surveys of program directors in 2017, 2018, and 2019 launch disciplines. More details on the methodology can be found in the full report. This report is an abridged version of the full report. For the full RFWG report, please contact educationstrategy@royalcollege.ca.

CBD implementation is still in a relatively early stage and this is a first attempt to determine the actual costs of implementing CBD. Therefore, the data is incomplete and the costs are likely to change as more programs implement CBD, and as programs adapt to implementation.

This study was guided by four key questions:

1. What is the variability in investments associated with CBD implementation?
    a. How much variability is there, and why?
2. What are the direct costs of CBD associated with CBD expectations? Were there any additional investments that institutions and programs made when implementing CBD beyond the expected changes?
3. Are there opportunity costs or anticipated impacts of CBD (i.e. are there activities that are not happening because of CBD)?
4. Are there identifiable costs of running two parallel educational systems during the transition to CBD?

Key Findings

Key takeaways

- The costs and resources of CBD implementation were highly variable.
    - CBD allows flexibility; local institutions and programs invested differently.
    - Local institutions and programs had different baselines when starting CBD, leading to the need to invest in different areas.
- The largest areas of cost were electronic portfolio, administrative requirements, and faculty development. Other areas had a smaller monetary cost, but often had additional work time associated with them.
- The impacts of CBD on faculty productivity, time in training, and patient care are inconclusive.
- There are some costs of running parallel systems, but the costs are unclear and are likely to decrease overtime.

Costs of CBD implementation were sorted into categories of potential changes that institutions and programs may have had to undertake when implementing CBD. (For more detail on potential changes, please contact educationstrategy@royalcollege.ca for the full report). The costs in these categories were then characterized as either a specific CBD cost (directly attributable to CBD) or an additional investment in the academic mission.

The most common finding throughout this study was variability. Across all categories of spending, expenses were highly variable, and there were limited patterns in these expenditures, at either an institution or program level.

We believe such variability results from two particular factors:

- Although there are some required elements of CBD implementation, there is also a significant amount of choice possible at a local level. Institutions and programs approached CBD implementation differently, and therefore, had different investments in CBD to complement their own environment and its needs.
- Local institutions and programs varied in terms of their "starting position." Each institution has a unique context and history with respect to its educational mission for PGME. Some programs required additional investments to accommodate the change associated with CBD.

Costs of CBD implementation

It is challenging to provide an overall cost of CBD, as each institution and program approached CBD differently, creating a large amount of variability in expenditures. However, there were three areas that often had the largest monetary cost: electronic portfolio, administrative requirements, and faculty development. These areas also had the most variability in costs, with the investments differing between both institutions and programs.

Category of Cost	CBD Specific Cost		Additional investments in the academic mission	
	Expenditure	Cost variability	Expenditure	Cost variability
Electronic portfolio	Royal College ePortfolio	No cost to 1 FTE	Alternative platform	$23,000 to >$1,000,000
Faculty Development	Amount spent on each activity is unclear Total institution budget ranges from $3000 to $295,000			
Administration of CBD	Institution CBD lead	$11,000-$80,000	Various (coordinator, administrative, evaluation, education)	0 FTE to 7.6 FTE
	Program CBD lead	$5000-$30,000		
	Both	0.1 – 0.4 FTE		

Other changes (i.e. competency focused instruction, tailored learning experiences, competence committees) were reported to have lower associated monetary cost, but did often have a cost of work time associated with them, especially for program directors and faculty.

Category of Cost	CBD Specific Cost		Additional investments in the academic mission	
	Expenditure	Cost variability	Expenditure	Cost variability
Tailored learning experiences	Modifying rotations	Faculty time	Simulation	$5000-$30,000
			Boot Camps	$5000-$25,000
			Clinics	Faculty time, patient flow
			OSCE	Faculty time, patient flow
Competency Focused Instruction	Direct cost is unclear Some programs indicate it is taking more time and impacting patient care Some programs indicate there is no impact or it is taking less time			
Competence Committees	Forming a Competence Committee	$2000-$20,000 6 – 72 hours/yr	Academic advisors	Highly variable
Resident Orientation	Workshops Learning materials Reallocation of other sessions	Minimal dollar amount Faculty and resident time	One on one meetings Preparation time	Time of faculty, academic advisors

Anticipated Impacts

There was concern that CBD would impact faculty productivity and patient care, and that because CBD offers a more flexible, tailored curriculum, it would lead to a lengthening of training time. Responses to these anticipated impacts were mixed.

Anticipated Impact	Finding
Faculty Productivity	• Impact to productivity focused on research • Some saw an increase in productivity, others saw no change, and other still saw a decrease • Many programs did indicate an increased workload for faculty, which may negatively impact productivity
Time in Training	• Most anticipate catching, or are already catching, residents who are struggling earlier • No evidence of increased training time
Patient Care	• In some programs direct observation seems to be impacting patient care, but not all • One time activities, such as faculty development, may impact patient care

Costs of running two parallel systems

CBD is being implemented in cohorts of disciplines beginning in 2017; as such, institutions and programs may need to maintain some aspects of the current system to accommodate cohorts and programs not in CBD. There were some costs of running two parallel systems, particularly in the areas of electronic portfolios and competency focused instruction, although the exact costs are unknown.

Some institutions and programs also chose to layer aspects of CBD onto the traditional system; for example some are maintaining In-training Evaluation Reports (ITERs). This is not required for CBD, but some programs and institutions may feel it adds value to their system. Over time, more attention may be needed to understand these decisions, to tease out what decisions may be duplicative and what may truly be complementary in order to refine CBD implementation.

Looking forward and recommendations

CBD is still in its infancy, and the projected costs of CBD implementation are still unknown. There are potential areas of increased costs and resources as CBD continues (i.e. more time for Competence Committee members, additional administrative support), and potential areas of decreased cost (i.e., transition to maintenance of electronic portfolios, streamlining of time on direct observation, a reduced need for parallel systems). Additional study and monitoring of costs will be needed to determine the actual cost of CBD, as well as the potential impacts of CBD.

The RFWG made three recommendations at the conclusion of this study:

- **Continue to study the costs of CBD implementation**: at this point in implementation, it is too early to gain a clear picture of the costs. Continuing to study this will allow a clearer picture of the costs, and an examination of ongoing and one-time costs. This can help inform disciplines launching in the future, and quell anxieties over which costs will be repeated.
- **In the medium and longer-tem, monitor impacts on patient care**: at this point in implementation, it is unclear what the impact of CBD is on patient care, and whether there are positive or negative impacts. As part of the Royal College's CBD Program Evaluation, it is recommended that these potential impacts be monitored.
- **Monitor impacts of additional time spent on CBD:** many faculty indicated implementing CBD was taking additional time on top of their normal workload. Aside from the potential impact on patient care, this can also have an impact on stress and wellness. Similar to above, it is also recommended as part of the Royal College's CBD Program Evaluation, that the impacts of additional time spent on CBD should be monitored.

Appendix A

Resource Framework Working Group Membership

Co-Chairs

Dwayne Martins, COO, Western University Faculty of Medicine and Chair, Senior Administrators Network, Co-Chair RFWG
Jason R Frank, Co-Lead, CBD, Director, Specialty Education, Royal College, Co-Chair RFWG

Members[1]

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[1] Membership list is reflective of the Resource Framework Working Group membership at the time of report completion.