

APPENDIX A: SURVEYS

CBME RESIDENT SURVEY

INTRODUCTION

Urology postgraduate medical education (PGME) programs have transitioned from the traditional time-based training model to competency-based medical education (CBME), a new outcomes-based approach focused on acquiring skills and core competencies. The following survey aims to assess urology residents' opinions of CBME after 5 years since its implementation. It will cover different topics such as activities, outcomes, and overall satisfaction associated with CBME in Canadian urology.

Section #1: DEMOGRAPHICS

Q1. What is your training level?

- a. PGY-4
- b. PGY-5

Q2. CBME implementation has led to increased use of digital platforms. Which among the following options, do you use more often?

- a. Elentra
- b. One45
- c. New Innovations
- d. Ventis
- e. Other. Specify: _____
- f. I don't know

Section #2: ACTIVITIES

→ What activities are critical for CBME?

Q1. Opportunities for observation, assessment, and provision of feedback differ depending on the training environment (e.g., operating room vs. outpatient clinic).

- a. I strongly agree
- b. I somewhat agree
- c. I neither agree nor disagree
- d. I somewhat disagree
- e. I strongly disagree

Q2. For every training environment listed below, please specify how conducive they are to opportunities for observation, assessment, and feedback to residents.

1. Operating room

- a) Very good opportunities
- b) Good opportunities
- c) Variable opportunities (sometimes good and sometimes limited)
- d) Limited opportunities
- e) Very limited opportunities

2. Outpatient clinic

- a) Very good opportunities
- b) Good opportunities
- c) Variable opportunities (sometimes good and sometimes limited)
- d) Limited opportunities
- e) Very limited opportunities

3. Ward

- a) Very good opportunities
- b) Good opportunities
- c) Variable opportunities (sometimes good and sometimes limited)
- d) Limited opportunities
- e) Very limited opportunities

4. Cystoscopy

- a) Very good opportunities
- b) Good opportunities
- c) Variable opportunities (sometimes good and sometimes limited)
- d) Limited opportunities
- e) Very limited opportunities

Q3. Complete the following statement: “Most of the time, I receive feedback _____.”

- a. Immediately at point-of-care
- b. Later that same day
- c. The same day by e-mail
- d. A few days later by e-mail
- e. Highly variable (varies among teachers, varies depending on how busy the day was, etc)

Q4. How are entrustable professional activity (EPA) evaluations triggered for you?

- a. I always trigger every EPAs.
- b. I trigger the majority of EPAs.
- c. Staff members and I trigger EPAs equally.
- d. Staff members trigger the majority of EPAs.
- e. Staff members always trigger every EPAs.

Q5. How do you tend to trigger EPAs? (Select all that apply)

- a. Early and often

- b. When I remember to do them
- c. Once I feel that I will receive competency rating
- d. If I believe I will receive a “good” evaluation.
If the supervisor is known for giving positive ratings to residents.

Section #3: OUTCOMES

Q1. To what extent do you agree that the introduction of CBME has enhanced the following elements of post-graduate urology education?

1.1 Explicit description of competency-based outcomes

- a. I strongly agree
- b. I somewhat agree
- c. I neither agree or disagree
- d. I somewhat disagree
- e. I strongly disagree

1.2 A curriculum design/map that aligns competency-based outcomes with learning experiences, teaching, and assessment practices.

- a. I strongly agree
- b. I somewhat agree
- c. I neither agree or disagree
- d. I somewhat disagree
- e. I strongly disagree

1.3 Individualized pathways of progression.

- a. I strongly agree
- b. I somewhat agree
- c. I neither agree or disagree
- d. I somewhat disagree
- e. I strongly disagree

Q2. The CBME initiative to break down specialist education and resident training into a series of integrated stages (transition to discipline, foundations of discipline, core of discipline, transition to practice) is relevant and appropriate.

- a. I strongly agree
- b. I somewhat agree
- c. I neither agree nor disagree
- d. I somewhat disagree
- e. I strongly disagree

Q3. Overall, what is your degree of satisfaction regarding the digital platforms (Elentra, One45, New Innovations, Ventis) used since CBME implementation?

- a. **Satisfied**

- b. Somewhat **satisfied**
- c. Neither satisfied nor dissatisfied
- d. Somewhat **dissatisfied**
- e. **Dissatisfied**

Section #4: EARLY OUTCOMES*

***Early outcomes:** outcomes most likely associated with the program's outcomes and tend to occur within a shorter time frame.

Reflecting on your experiences in residency thus far, to what extent do you agree with the following statements:

Q1. Under CBME, the quality of feedback has been enhanced.

- a. I strongly **agree**
- b. I somewhat **agree**
- c. I neither agree nor disagree
- d. I somewhat **disagree**
- e. I strongly **disagree**

Q2. Under CBME, the quantity of feedback has been enhanced.

- f. I strongly **agree**
- g. I somewhat **agree**
- h. I neither agree nor disagree
- i. I somewhat **disagree**
- j. I strongly **disagree**

Q3. Under CBME, I have developed self-regulated learning skills.

- a. I strongly **agree**
- b. I somewhat **agree**
- c. I neither agree nor disagree
- d. I somewhat **disagree**
- e. I strongly **disagree**

Q4. Under CBME, teachers have demonstrated the ability to teach/coach according to my individual needs as a resident.

- a. I strongly **agree**
- b. I somewhat **agree**
- c. I neither agree nor disagree
- d. I somewhat **disagree**
- e. I strongly **disagree**

Q5. CBME allows earlier identification of residents who can participate in advanced training and/or graduate early.

- a. I strongly **agree**
- b. I somewhat **agree**
- c. I neither agree nor disagree

- d. I somewhat **disagree**
- e. I strongly **disagree**

Q6. CBME allows earlier identification of residents who are struggling.

- a. I strongly **agree**
- b. I somewhat **agree**
- c. I neither agree nor disagree
- d. I somewhat **disagree**
- e. I strongly **disagree**

Q7. CBME supports an individualized approach to post-graduate urology education.

- a. I strongly **agree**
- b. I somewhat **agree**
- c. I neither agree nor disagree
- d. I somewhat **disagree**
- e. I strongly **disagree**

Q8. CBME improves resident's perception of their level of preparedness for practice.

- a. I strongly **agree**
- b. I somewhat **agree**
- c. I neither agree nor disagree
- d. I somewhat **disagree**
- e. I strongly **disagree**

Section #5: UNINTENDED OUTCOMES

→ What positive or negative unanticipated outcomes arise from CBME implementation?

To what extent do you agree with the following statements:

Q1. The focus under CBME is to attain competence rather than excellence.

- a. I strongly **agree**
- b. I somewhat **agree**
- c. I neither agree nor disagree
- d. I somewhat **disagree**
- e. I strongly **disagree**

Q2. It is hard to keep track of all the EPAs.

- a. I strongly **agree**
- b. I somewhat **agree**
- c. I neither agree nor disagree
- d. I somewhat **disagree**
- e. I strongly **disagree**

Q3. EPAs are challenging to complete in the clinical environment.

- a. I strongly **agree**

- b. I somewhat **agree**
- c. I neither agree nor disagree
- d. I somewhat **disagree**
- e. I strongly **disagree**

Q4. EPAs are time-consuming.

- a. I strongly **agree**
- b. I somewhat **agree**
- c. I neither agree nor disagree
- d. I somewhat **disagree**
- e. I strongly **disagree**

Q5. I have experienced periods of anxiety and fatigue due to the intense evaluation process and increased frequency of feedback.

- a. I strongly **agree**
- b. I somewhat **agree**
- c. I neither agree nor disagree
- d. I somewhat **disagree**
- e. I strongly **disagree**

Q6. I have had to provide multiple reminders to supervisors to fill in EPA evaluations before they expired.

- a. I strongly **agree**
- b. I somewhat **agree**
- c. I neither agree nor disagree
- d. I somewhat **disagree**
- e. I strongly **disagree**

Q7. The feedback given by attending physicians on my EPAs is often not helpful or directive enough for me to improve my clinical performance.

- a. I strongly **agree**
- b. I somewhat **agree**
- c. I neither agree nor disagree
- d. I somewhat **disagree**
- e. I strongly **disagree**

Q8. Supervisors often fill EPAs in a delayed fashion which affects the quality of feedback given as opposed to evaluations filled immediately after the activity.

- a. I strongly **agree**
- b. I somewhat **agree**
- c. I neither agree nor disagree
- d. I somewhat **disagree**
- e. I strongly **disagree**

Q9. Written feedback on EPA evaluations often does not measure up to verbal feedback given by supervisors.

- a. I strongly agree
- b. I somewhat agree
- c. I neither agree nor disagree
- d. I somewhat disagree
- e. I strongly disagree

Q10. There is a lack of clear direction to what being competent exactly entails.

- a. I strongly agree
- b. I somewhat agree
- c. I neither agree nor disagree
- d. I somewhat disagree
- e. I strongly disagree

Q11. Programs are not responsive to feedback from residents on how to improve CBME from the resident perspective.

- a. I strongly agree
- b. I somewhat agree
- c. I neither agree nor disagree
- d. I somewhat disagree
- e. I strongly disagree

Q12. There are significant inconsistencies in the assessment of EPAs by different faculty members.

- a. I strongly agree
- b. I somewhat agree
- c. I neither agree nor disagree
- d. I somewhat disagree
- e. I strongly disagree

Q13. I only request EPAs to be filled out by supervisors if I believe I achieved the “pass mark” in the activity and will receive positive feedback.

- a. I strongly agree
- b. I somewhat agree
- c. I neither agree nor disagree
- d. I somewhat disagree
- e. I strongly disagree

Q14. CBME formalizes and standardizes learning objectives.

- a. I strongly agree
- b. I somewhat agree
- c. I neither agree nor disagree
- d. I somewhat disagree
- e. I strongly disagree

Q15. CMBE improves the frequency of feedback from multiple sources.

- a. I strongly agree

- b. I somewhat **agree**
- c. I neither agree nor disagree
- d. I somewhat **disagree**
- e. I strongly **disagree**

Q16. CBME provides flexibility during training by de-emphasizing time-based training.

- a. I strongly **agree**
- b. I somewhat **agree**
- c. I neither agree nor disagree
- d. I somewhat **disagree**
- e. I strongly **disagree**

Q17. My curriculum map is a helpful tool to ensure I achieve my EPAs.

- a. I strongly **agree**
- b. I somewhat **agree**
- c. I somewhat **disagree**
- d. I strongly **disagree**
- e. I did not receive a curricular map.

Q18. CBME ensures that less time is spent on other assessment practices such as In-Training Evaluation Reports.

- a. I strongly **agree**
- b. I somewhat **agree**
- c. I neither agree nor disagree
- d. I somewhat **disagree**
- e. I strongly **disagree**

Q19. CBME fosters more bedside teaching through the direct observation of clinical competencies.

- a. I strongly **agree**
- b. I somewhat **agree**
- c. I neither agree nor disagree
- d. I somewhat **disagree**
- e. I strongly **disagree**

Q20. CBME improves patient care and patient safety.

- a. I strongly **agree**
- b. I somewhat **agree**
- c. I neither agree nor disagree
- d. I somewhat **disagree**
- e. I strongly **disagree**

Q21. CBME has increased senior residents' involvement in teaching junior residents due to senior residents being asked to evaluate their juniors.

- a. I strongly **agree**
- b. I somewhat **agree**

- c. I neither agree nor disagree
- d. I somewhat disagree
- e. I strongly disagree

Section #6: OVERALL OPINION

Q1. What are your overall thoughts on CBME implementation in your program?

- a. I am **satisfied** with the outcomes of CBME since its implementation in my program.
- b. I am not entirely **satisfied nor dissatisfied** of the outcomes of CBME since its implementation in my program.
- c. I am **NOT satisfied** with the outcomes of CBME since its implementation in my program.

Q2. Please specify what is the best solution moving forward for CBME in your opinion.

- a. I would rather go back to the traditional curriculum.
- b. I am in favor of implementing 2 different assessment systems in parallel (traditional model and assessment according to CBME).
- c. I am in favor of maintaining CBME in my program, but I strongly believe it needs significant improvement.
- d. I am in favor of maintaining CBME in m program as it is with minimal-to-no improvement.
- e. Other. Please specify _____

Section #7: REMAINING CHALLENGES

Q1. In your opinion, what is/are the main challenge(s) faced during CBME implementation?
(select all that apply)

- a. Faculty buy-in/participation
- b. Required changes to rotations/learning experiences
- c. Inconvenient and complex digital platforms
- d. Lack of trained staff in executing CBME
- e. Lack of resources
- f. Low acceptance and reluctance to transition from traditional teaching methods among faculty members
- g. Low acceptance and reluctance to transition from traditional teaching methods among residents
- h. Inconsistencies in conception of competencies
- i. Other. Please specify: _____

CBD DIRECTOR/FACULTY SURVEY

INTRODUCTION

Urology postgraduate medical education (PGME) programs have transitioned from the traditional time-based training model to competency-based medical education (CBME), a new outcomes-based approach focused on acquiring skills and core competencies. The following survey aims to assess urology program directors' and faculty members' opinions of competency-based medical education (CBME) after 5 years since its implementation. It will cover different topics such as activities, outcomes, and overall satisfaction associated with CBME in Canadian urology.

Section #1: DEMOGRAPHICS

Q1. Which position do you hold in your urology program? Multiple answers can be selected if you have multiple roles.

- c. Program Director
- d. CBME Program Lead (if same person as program director, choose both)
- e. Academic Advisor
- f. Staff member/faculty
- g. Other (please specify) : _____

Q2. CBME implementation has led to increased use of digital platforms. Which among the following options, do you use more often?

- g. Elentra
- h. One45
- i. New Innovations
- j. Ventis
- k. Other. Specify: _____
- l. I don't know

Section #2: ACTIVITIES

→ What activities are critical for CBME?

Q1. Opportunities for observation, assessment, and provision of feedback differ depending on the training environment (e.g., operating room vs. outpatient clinic).

- f. I strongly agree
- g. I somewhat agree
- h. I neither agree nor disagree
- i. I somewhat disagree
- j. I strongly disagree

Q2. For every training environment listed below, please specify how conducive they are to opportunities for observation, assessment and feedback to residents.

5. Operating room

- f) Very good opportunities
- g) Good opportunities
- h) Variable opportunities (sometimes good and sometimes limited)
- i) Limited opportunities
- j) Very limited opportunities

6. Outpatient clinic

- f) Very good opportunities
- g) Good opportunities
- h) Variable opportunities (sometimes good and sometimes limited)
- i) Limited opportunities
- j) Very limited opportunities

7. Urology wards

- f) Very good opportunities
- g) Good opportunities
- h) Variable opportunities (sometimes good and sometimes limited)
- i) Limited opportunities
- j) Very limited opportunities

8. Cystoscopy

- f) Very good opportunities
- g) Good opportunities
- h) Variable opportunities (sometimes good and sometimes limited)
- i) Limited opportunities
- j) Very limited opportunities

Q3. Complete the following statement: “Most of the time, supervisors provide feedback ____.”

- f. Immediately at point-of-care
- g. Later that same day
- h. The same day by e-mail
- i. A few days later by e-mail
- j. Highly variable (depends on how busy the day was, etc)

Q4. How are entrustable professional activity (EPA) evaluations triggered for residents?

- f. Residents always trigger every EPAs.
- g. Residents trigger the majority of EPAs.
- h. Staff members and residents trigger EPAs equally.
- i. Staff members trigger the majority of EPAs.
- j. Staff members always trigger every EPAs.

Section #3: OUTCOMES

Q1. To what extent do you agree that the introduction of CBME has enhanced the following elements of post-graduate urology education?

1.4 Explicit description of competency-based outcomes

- f. I strongly **agree**
- g. I somewhat **agree**
- h. I neither agree or disagree
- i. I somewhat **disagree**
- j. I strongly **disagree**

1.5 A curriculum design/map that aligns competency-based outcomes with learning experiences, teaching, and assessment practices.

- f. I strongly **agree**
- g. I somewhat **agree**
- h. I neither agree or disagree
- i. I somewhat **disagree**
- j. I strongly **disagree**

1.6 Individualized pathways of progression.

- f. I strongly **agree**
- g. I somewhat **agree**
- h. I neither agree or disagree
- i. I somewhat **disagree**
- j. I strongly **disagree**

Q2. The CBME initiative to break down resident training into a series of integrated stages (transition to discipline, foundations of discipline, core of discipline, transition to practice) is relevant and appropriate.

- f. I strongly agree**
- g. I somewhat agree**
- h. I neither agree nor disagree**
- i. I somewhat disagree**
- j. I strongly disagree**

Q3. Overall, what is your degree of satisfaction regarding the digital platforms (Elentra, One45, New Innovations, Ventis) used since CBME implementation?

- f. Satisfied**
- g. Somewhat satisfied**
- h. Neither satisfied nor dissatisfied**
- i. Somewhat dissatisfied**
- j. Dissatisfied**

Section #4: EARLY OUTCOMES*

***Early outcomes:** outcomes most likely associated with the program's outcomes and tend to occur within a shorter time frame.

Please indicate your level of agreement with the following statements about early outcomes under CBME.

Q1. Under CBME, the **quality** of feedback provided by staff members has been enhanced.

- k.** I strongly agree
- l.** I somewhat agree
- m.** I neither agree nor disagree
- n.** I somewhat disagree
- o.** I strongly disagree

Q2. Under CBME, the **quantity** of feedback provided by staff members has been enhanced.

- p.** I strongly agree
- q.** I somewhat agree
- r.** I neither agree nor disagree
- s.** I somewhat disagree
- t.** I strongly disagree

Q3. Under CBME, residents have developed self-regulated learning skills.

- f.** I strongly agree
- g.** I somewhat agree
- h.** I neither agree nor disagree
- i.** I somewhat disagree
- j.** I strongly disagree

Q4. Under CBME, teachers have demonstrated the ability to teach according to the individual needs of residents.

- f.** I strongly agree
- g.** I somewhat agree
- h.** I neither agree nor disagree
- i.** I somewhat disagree
- j.** I strongly disagree

Q5. CBME allows earlier identification of residents who can participate in advanced training and/or graduate early.

- f.** I strongly agree
- g.** I somewhat agree
- h.** I neither agree nor disagree
- i.** I somewhat disagree
- j.** I strongly disagree

Q6. CBME allows earlier identification of residents who are struggling.

- f. I strongly agree
- g. I somewhat agree
- h. I neither agree nor disagree
- i. I somewhat disagree
- j. I strongly disagree

Q7. CBME supports an individualized approach to post-graduate urology education.

- f. I strongly agree
- g. I somewhat agree
- h. I neither agree nor disagree
- i. I somewhat disagree
- j. I strongly disagree

Q8. CBME improves resident's perception of their level of preparedness for practice.

- f. I strongly agree
- g. I somewhat agree
- h. I neither agree nor disagree
- i. I somewhat disagree
- j. I strongly disagree

Section #5: UNINTENDED OUTCOMES

→ What unanticipated outcomes arise from CBME implementation?

To what extent do you agree with the following statements:

Q1. The focus under CBME is to attain competence rather than excellence.

- f. I strongly agree
- g. I somewhat agree
- h. I neither agree nor disagree
- i. I somewhat disagree
- j. I strongly disagree

Q2. Residents have a hard time keeping track of all the EPAs.

- f. I strongly agree
- g. I somewhat agree
- h. I neither agree nor disagree
- i. I somewhat disagree
- j. I strongly disagree

Q3. EPAs are challenging to complete in the clinical environment.

- f. I strongly agree
- g. I somewhat agree
- h. I neither agree nor disagree

- i. I somewhat **disagree**
- j. I strongly **disagree**

Q4. EPAs are time-consuming.

- f. I strongly **agree**
- g. I somewhat **agree**
- h. I neither agree nor disagree
- i. I somewhat **disagree**
- j. I strongly **disagree**

Q5. EPAs do not reflect actual practice.

- a. I strongly **agree**
- b. I somewhat **agree**
- c. I neither agree nor disagree
- d. I somewhat **disagree**
- e. I strongly **disagree**

Q6. Residents have experienced periods of anxiety and fatigue due to the intense evaluation process and increased frequency of feedback.

- f. I strongly **agree**
- g. I somewhat **agree**
- h. I neither agree nor disagree
- i. I somewhat **disagree**
- j. I strongly **disagree**

Q7. Academic supervisors experienced anxiety and fatigue due to the increased number of direct observations and feedback they have to offer residents.

- a. I strongly **agree**
- b. I somewhat **agree**
- c. I neither agree nor disagree
- d. I somewhat **disagree**
- e. I strongly **disagree**

Q8. Residents have had to provide multiple reminders to supervisors to fill in EPA evaluations before they expired which has led to increased fatigue and anxiety.

- f. I strongly **agree**
- g. I somewhat **agree**
- h. I neither agree nor disagree
- i. I somewhat **disagree**
- j. I strongly **disagree**

Q9. CBME has consequences on patient flow and efficiency.

- a. I strongly **agree**
- b. I somewhat **agree**
- c. I neither agree nor disagree
- d. I somewhat **disagree**

- e. I strongly disagree

Q10. The feedback given by attending physicians on EPAs is not helpful or directive enough for residents to improve their clinical performance.

- f. I strongly agree
- g. I somewhat agree
- h. I neither agree nor disagree
- i. I somewhat disagree
- j. I strongly disagree

Q11. Supervisors often fill EPAs in a delayed fashion which affects the quality of feedback given, as opposed to evaluations completed immediately after the activity.

- f. I strongly agree
- g. I somewhat agree
- h. I neither agree nor disagree
- i. I somewhat disagree
- j. I strongly disagree

Q12. Written feedback on EPA evaluations often does not measure up to verbal feedback given by supervisors.

- f. I strongly agree
- g. I somewhat agree
- h. I neither agree nor disagree
- i. I somewhat disagree
- j. I strongly disagree

Q13. Many supervisors are uncomfortable assessing residents' global competence and fear the repercussions that might follow negative feedback.

- a. I strongly agree
- b. I somewhat agree
- c. I neither agree nor disagree
- d. I somewhat disagree
- e. I strongly disagree

Q14. There is a lack of clear direction to what being “competent” exactly entails.

- f. I strongly agree
- g. I somewhat agree
- h. I neither agree nor disagree
- i. I somewhat disagree
- j. I strongly disagree

Q15. Implementing a CBME curriculum is associated with logistical issues and requires significant investment in resources (e.g., the need for new teaching techniques, assessment strategies and educational technologies).

- a. I strongly agree
- b. I somewhat agree

- c. I neither agree nor disagree
- d. I somewhat **disagree**
- e. I strongly **disagree**

Q16. Programs are responsive to feedback from residents and staff members and offer sufficient support through the potential challenges encountered during the transition to CBME.

- a. I strongly **agree**
- f. I somewhat **agree**
- g. I neither agree nor disagree
- h. I somewhat **disagree**
- i. I strongly **disagree**

Q17. There are significant inconsistencies in the assessment of EPAs by different faculty members.

- a. I strongly **agree**
- b. I somewhat **agree**
- c. I neither agree nor disagree
- d. I somewhat **disagree**
- e. I strongly **disagree**

Q18. CBME improves the frequency of feedback from multiple sources.

- f. I strongly **agree**
- g. I somewhat **agree**
- h. I neither agree nor disagree
- i. I somewhat **disagree**
- j. I strongly **disagree**

Q19. CBME provides flexibility during training by de-emphasizing time-based training.

- f. I strongly **agree**
- g. I somewhat **agree**
- h. I neither agree nor disagree
- i. I somewhat **disagree**
- j. I strongly **disagree**

Q20. CBME ensures that less time is spent on other assessment practices such as In-Training Evaluation Reports.

- f. I strongly **agree**
- g. I somewhat **agree**
- h. I neither agree nor disagree
- i. I somewhat **disagree**
- j. I strongly **disagree**

Q21. CBME fosters more bedside teaching through the direct observation of clinical competencies.

- f. I strongly **agree**
- g. I somewhat **agree**

- h. I neither agree nor disagree
- i. I somewhat **disagree**
- j. I strongly **disagree**

Q22. CBME improves patient care and patient safety.

- f. I strongly **agree**
- g. I somewhat **agree**
- h. I neither agree nor disagree
- i. I somewhat **disagree**
- j. I strongly **disagree**

Q23. CBME has increased senior residents' involvement in teaching junior residents due to senior residents being asked to evaluate their juniors.

- f. I strongly **agree**
- g. I somewhat **agree**
- h. I neither agree nor disagree
- i. I somewhat **disagree**
- j. I strongly **disagree**

Section #6: OVERALL OPINION

Q1. What are your overall thoughts on CBME implementation in your program?

- d. I am **satisfied** with the outcomes of CBME since its implementation in my program.
- e. I am not entirely **satisfied nor dissatisfied** of the outcomes of CBME since its implementation in my program.
- f. I am not **satisfied** with the outcomes of CBME since its implementation in my program.

Q2. Please specify what is the best solution moving forward for CBME in your opinion.

- f. I would rather go back to the traditional curriculum.
- g. I am in favor of implementing 2 different assessment systems in parallel (traditional model and assessment according to CBME).
- h. I am in favor of maintaining CBME in my program, but I strongly believe it needs significant improvement.
- i. I am in favor of maintaining CBME in my program as is with minimal-to-no improvement.
- j. Other. Please specify: _____

Section #7: REMAINING CHALLENGES

Q1. In your opinion, what is/are the main challenge(s) faced during CBME implementation?
(select all that apply)

- j. Faculty buy-in/participation
- k. Required changes to rotations/learning experiences

Nguyen et al. Five years of competency-based medical education in Canadian urology

- l. Inconvenient and complex digital platforms
- m. Lack of trained staff in executing CBME
- n. Lack of resources
- o. Low acceptance and reluctance to transition from traditional teaching methods among faculty members
- p. Low acceptance and reluctance to transition from traditional teaching methods among residents
- q. Inconsistencies in conception of competencies
- r. Other. Please specify: _____

APPENDIX B: SUPPLEMENTARY TABLES

Supplementary Table 1. Urology residency faculty members and senior residents Likert-Scale results																				
	PD (n=10)					FACULTY MEMBERS (n = 19)					RESIDENTS (n = 33)					TOTAL (n = 63)				
	SA	A	N	D	SD	SA	A	N	D	SD	SA	A	N	D	SD	SA	A	N	D	SD
	(%)					(%)					(%)					(%)				
ACTIVITIES																				
Q1. Opportunities for observation, assessment, and provision of feedback differ depending on the training environment (e.g., operating room vs. outpatient clinic).	4 (40)	4 (40)	0	2 (20)	0	11 (58)	3 (16)	2 (11)	2 (11)	1 (5)	15 (45)	12 (36)	2 (6)	2 (6)	2 (6)	30 (48)	19 (31)	4 (6)	6 (10)	3 (5)
OUTCOMES																				
Q1. To what extent do you agree that the introduction of CBME has enhanced the following elements of post-graduate urology education? Explicit description of competency-based outcomes.	0	4 (40)	3 (30)	2 (20)	1 (10)	2 (11)	9 (47)	4 (21)	1 (5)	3 (16)	0	11 (33)	8 (24)	7 (21)	7 (21)	2 (3)	24 (39)	15 (24)	10 (16)	11 (18)
A curriculum design/map that aligns competency-based outcomes with learning experiences, teaching and assessment practices.	0	3 (30)	5 (50)	1 (10)	1 (10)	0	8 (42)	3 (16)	5 (26)	3 (16)	0	7 (21)	5 (15)	7 (21)	14 (42)	0	18 (29)	13 (21)	13 (21)	18 (29)
Individualized pathways of progression.	0	0	4 (40)	5 (50)	1 (10)	1 (5)	4 (21)	4 (21)	6 (32)	4 (21)	0	2 (6)	8 (24)	7 (21)	16 (48)	1 (2)	6 (10)	16 (26)	18 (29)	21 (34)
Q2. The CBME initiative to break down specialist education and resident training into a series of integrated stages (transition to discipline, foundations of discipline, core of discipline, transition to practice) is relevant and appropriate.	0	4 (40)	3 (30)	2 (20)	1 (10)	1 (5)	6 (32)	7 (37)	4 (21)	1 (5)	1 (3)	13 (39)	6 (18)	5 (15)	8 (24)	2 (3)	23 (37)	16 (26)	11 (18)	10 (16)
Q3. Overall, what is your degree of satisfaction regarding the digital platforms (Iletra, One45, New Innovations, Ventis) used since CBME implementation?	0	3 (30)	4 (40)	3 (30)	0	1 (5)	6 (32)	5 (26)	3 (16)	4 (21)	1 (3)	7 (21)	9 (27)	8 (24)	8 (24)	2 (2)	16 (26)	18 (29)	14 (23)	12 (19)
EARLY OUTCOMES																				
Q1. Under CBME, the quality of feedback provided by staff members has been enhanced.	0	5 (50)	2 (20)	3 (30)	0	0	4 (21)	4 (21)	7 (37)	4 (21)	2 (6)	6 (18)	6 (18)	8 (24)	11 (33)	2 (3)	15 (24)	12 (19)	18 (29)	15 (24)
Q2. Under CBME, the quantity of feedback provided by staff members has been enhanced.	2 (20)	6 (60)	2 (20)	0	0	6 (32)	8 (42)	4 (21)	0	1 (5)	4 (12)	15 (45)	3 (8)	6 (18)	5 (15)	12 (19)	29 (47)	9 (15)	6 (10)	6 (10)
Q3. Under CBME, residents have developed self-regulated learning skills.	0	0	3 (30)	6 (60)	1 (10)	0	2 (11)	9 (47)	4 (21)	4 (21)	1 (3)	5 (15)	11 (33)	7 (21)	9 (27)	1 (2)	7 (11)	23 (37)	17 (27)	14 (23)
Q4. Under CBME, staff members have demonstrated the ability to teach/coach according to the individual needs of residents.	0	0	5 (50)	5 (50)	0	0	4 (21)	7 (37)	3 (16)	5 (26)	0	5 (15)	7 (21)	8 (24)	13 (39)	0	9 (15)	19 (31)	16 (26)	18 (29)
Q5. CBME allows earlier identification of residents who can participate in advanced training and/or graduate early.	0	1 (10)	2 (20)	4 (40)	3 (30)	0	0	1 (5)	14 (74)	4 (21)	0	1 (3)	4 (12)	6 (18)	22 (67)	0	2 (3)	7 (11)	24 (39)	29 (47)
Q6. CBME allows earlier identification of residents who are struggling.	1 (10)	2 (20)	2 (20)	3 (30)	2 (20)	1 (5)	2 (11)	7 (37)	6 (32)	3 (16)	0	8 (24)	4 (12)	9 (27)	12 (36)	2 (3)	12 (19)	13 (21)	18 (29)	17 (27)
Q7. CBME supports an individualized approach to post-graduate urology education.	1 (10)	0	3 (30)	4 (40)	2 (20)	0	1 (5)	11 (58)	4 (21)	3 (16)	0	3 (9)	8 (24)	6 (18)	16 (48)	1 (2)	4 (6)	22 (35)	14 (23)	21 (34)
Q8. CBME improves resident's perception of their level of preparedness for practice.	0	2 (20)	2 (20)	4 (40)	2 (20)	0	3 (16)	8 (42)	6 (32)	2 (11)	1 (3)	3 (9)	5 (15)	10 (30)	14 (42)	1 (2)	8 (13)	15 (24)	10 (32)	18 (29)
UNINTENDED OUTCOMES																				
Q1. The focus under CBME is to attain competence rather than excellence.	1 (10)	5 (50)	1 (10)	3 (30)	0	5 (26)	9 (47)	3 (16)	2 (11)	0	4 (12)	14 (42)	10 (30)	3 (9)	2 (6)	19 (16)	28 (45)	14 (23)	8 (13)	2 (3)
Q2. Residents have a hard time keeping track of all the EPAs.	3 (30)	5 (50)	2 (20)	0	0	7 (37)	9 (47)	3 (16)	0	0	19 (58)	8 (24)	5 (15)	1 (3)	0	29 (47)	22 (35)	10 (16)	1 (2)	0
Q3. EPAs are challenging to complete in the clinical environment.	3 (30)	3 (30)	2 (20)	2 (20)	0	6 (32)	7 (37)	3 (16)	3 (16)	0	20 (61)	9 (27)	2 (6)	2 (6)	0	29 (47)	19 (31)	7 (11)	7 (11)	0
Q4. EPAs are time-consuming.	4 (40)	2 (20)	1 (10)	3 (30)	0	8 (42)	3 (16)	4 (21)	4 (21)	0	24 (73)	4 (12)	2 (6)	2 (6)	1 (3)	36 (58)	9 (15)	7 (11)	9 (15)	1 (2)
Q5. EPAs do not reflect actual practice.	4 (40)	1 (10)	3 (30)	2 (20)	0	3 (16)	8 (42)	5 (26)	3 (16)	0										
Q6. Residents have experienced periods of anxiety and fatigue due to the intense evaluation process and increased frequency of feedback.	5 (50)	3 (30)	2 (20)	0	0	3 (16)	10 (53)	5 (26)	1 (5)	0	16 (48)	6 (18)	2 (6)	3 (9)	6 (18)	24 (39)	19 (31)	9 (15)	4 (6)	6 (10)
Q7. Academic supervisors experienced anxiety and fatigue due to the increased number of direct observations and feedback they have to offer residents.	4 (40)	5 (50)	0	1 (10)	0	3 (16)	10 (53)	3 (16)	3 (16)	0										
Q8. Residents have had to provide multiple reminders to supervisors to fill in EPA evaluations before they expired.	3 (30)	4 (40)	1 (10)	1 (10)	0	4 (21)	6 (32)	6 (32)	2 (11)	1 (5)	20 (61)	8 (24)	0	4 (12)	1 (3)	27 (44)	18 (29)	8 (13)	7 (11)	2 (3)
Q9. CBME has consequences on patient flow and efficiency.	0	1 (10)	1 (10)	7 (70)	1 (10)	0	5 (26)	7 (37)	7 (37)	0										
Q10. The feedback given by attending physicians on EPAs is not helpful or directive enough for residents to improve their clinical performance.	0	5 (50)	3 (30)	2 (20)	0	1 (5)	12 (63)	4 (21)	2 (11)	0	17 (52)	11 (33)	3 (9)	1 (3)	1 (3)	18 (29)	28 (45)	10 (16)	5 (8)	1 (2)
Q11. Supervisors often fill EPAs in a delayed fashion which affects the quality of feedback given, as opposed to evaluations completed immediately after the activity.	1 (10)	8 (80)	1 (10)	0	0	2 (11)	11 (58)	3 (16)	1 (5)	1 (5)	16 (48)	10 (30)	6 (18)	1 (3)	0	19 (31)	29 (47)	11 (18)	2 (3)	1 (2)
Q12. Written feedback on EPA evaluations often does not measure up to verbal feedback given by supervisors.	2 (20)	3 (30)	4 (40)	1 (10)	0	6 (32)	2 (11)	7 (37)	4 (21)	0	16 (48)	8 (24)	5 (15)	3 (9)	1 (3)	24 (39)	13 (21)	16 (26)	8 (13)	1 (2)
Q13. Many supervisors are uncomfortable assessing residents' global competence and fear the repercussions that might follow negative feedback.	1 (10)	4 (40)	3 (30)	2 (20)	0	1 (5)	8 (42)	6 (32)	3 (16)	1 (5)										
Q14. There is a lack of clear direction to what being "competent" exactly entails.	3 (30)	3 (30)	3 (30)	0	0	4 (21)	8 (42)	4 (21)	3 (16)	0	18 (55)	10 (30)	3 (9)	2 (6)	0	25 (40)	21 (34)	11 (18)	5 (8)	0
Q15. Implementing a CBME curriculum is associated with logistical issues and requires significant investment in resources (e.g., the need for new teaching techniques, assessment strategies and educational technologies).	3 (30)	5 (50)	2 (20)	0	0	7 (37)	6 (32)	5 (26)	1 (5)	0										
Q16. Programs are responsive to feedback from residents and staff members and offer sufficient support through the potential challenges encountered during the transition to CBME.	1 (10)	7 (70)	1 (10)	1 (10)	0	2 (11)	8 (42)	6 (32)	2 (11)	1 (5)	1 (3)	7 (21)	6 (18)	9 (27)	4 (6)	4 (6)	22 (35)	12 (21)	12 (19)	11 (18)
Q17. There are significant inconsistencies in the assessment of EPAs by different faculty members.	2 (20)	7 (70)	1 (10)	0	0	4 (21)	9 (47)	5 (26)	1 (5)	0	23 (70)	4 (12)	5 (15)	1 (3)	0	29 (47)	20 (32)	11 (18)	2 (3)	0
Q18. Residents only request EPAs to be filled out by supervisors if they believe they achieved the "pass mark" in the activity and will receive positive feedback.	1 (10)	5 (50)	3 (30)	1 (10)	0	2 (11)	8 (42)	3 (16)	3 (16)	3 (16)	9 (27)	11 (33)	4 (12)	6 (18)	3 (9)		5 (8)	24 (39)	13 (21)	10 (16)
Q19. CBME improves the frequency of feedback from multiple sources.	1 (10)	5 (50)	3 (30)	1 (10)	0	2 (11)	8 (42)	3 (16)	3 (16)	3 (16)	2 (6)	11 (33)	7 (21)	6 (18)	7 (21)	5 (8)	24 (39)	13 (21)	10 (16)	10 (16)
Q20. CBME formalizes and standardizes learning objectives.											1 (3)	15 (45)	5 (15)	4 (12)	8 (24)					
Q21. CBME provides flexibility during training by de-emphasizing time-based training.	0	2 (20)	2 (20)	5 (50)	1 (10)	0	3 (16)	4 (21)	9 (47)	3 (16)	0	3 (9)	3 (9)	10 (30)	17 (52)	0	8 (13)	9 (15)	24 (39)	21 (34)
Q22. CBME ensures that less time is spent on other assessment practices such as In-Training Evaluation Reports.	0	0	1 (10)	6 (60)	3 (30)	0	1 (5)	5 (26)	7 (37)	6 (32)	1 (3)	6 (18)	4 (12)	10 (30)	12 (36)	1 (2)	7 (11)	10 (16)	23 (37)	21 (34)
Q23. The curriculum map is a helpful tool to ensure residents achieve all the required EPAs.											0	5 (15)	14 (24)	4 (12)	10 (30)					
Q24. CBME fosters more bedside teaching through the direct observation of clinical competencies.	0	1 (10)	2 (20)	6 (60)	1 (10)	0	2 (11)	6 (32)	7 (37)	4 (21)	0	6 (18)	3 (9)	7 (21)	17 (52)	0	9 (15)	11 (18)	20 (32)	22 (35)
Q25. CBME improves patient care and patient safety.	0	0	3 (30)	2 (20)	5 (50)	0	0	5 (26)	7 (37)	7 (37)	0	1 (3)	5 (15)	12 (36)	15 (45)	0	1 (2)	13 (21)	21 (34)	27 (44)
Q26. CBME has increased senior residents' involvement in teaching junior residents due to senior residents being asked to evaluate their juniors.	0	3 (30)	5 (50)	1 (10)	1 (10)	1 (5)	5 (26)	5 (26)	5 (26)	3 (16)	1 (3)	7 (21)	4 (12)	7 (21)	14 (42)	2 (3)	15 (24)	14 (23)	13 (21)	18 (29)

Bold denotes 50% or greater agreement within the cohort. A: agree; CBME: competency-based medical education; D: disagree; EPA: entrustable professional activity; N: neutral; SA: strongly agree; SD: Strongly disagree.

Supplementary Table 2. Urology residency faculty members and senior residents multiple choice results

	PD (n = 10) (%)				FACULTY MEMBERS (n =19) (%)				RESIDENTS (n =33) (%)				TOTAL (n = 63) (%)			
CBME implementation has led to increased use of digital platforms. Which among the following options do you use more often? (Select all that apply)																
Elenra	5				4				5				14			
One45	3				4				12				19			
Entrada	0				1				2				3			
Mainport	1				1				0				2			
Dbrief	1				0				0				1			
MedSis	0				0				2				2			
I don't know	0				12				5				17			
For every training environment listed below, please specify how conducive they are to opportunities for observation, assessment, and feedback to residents.																
	OR	Outpatient clinic	Ward	Cystoscopy	OR	Outpatient clinic	Ward	Cystoscopy	OR	Outpatient clinic	Ward	Cystoscopy	OR	Outpatient clinic	Ward	Cystoscopy
Very Good opportunities	8 (80)	3 (30)	0	4 (40)	11 (58)	8 (42)	1 (5)	8 (42)	9 (27)	6 (18)	0	6 (18)	28 (45)	17 (27)	1 (2)	18 (29)
Good opportunities	2 (20)	2 (20)	2 (20)	6 (60)	6 (32)	4 (21)	3 (16)	8 (42)	9 (27)	14 (42)	2 (6)	12 (36)	17 (27)	20 (32)	7 (11)	26 (42)
Variable opportunities	0	4 (40)	4 (40)	0	2 (11)	7 (37)	7 (37)	3 (16)	8 (24)	7 (21)	8 (24)	8 (24)	10 (16)	18 (29)	19 (31)	11 (18)
Limited opportunities	0	1 (10)	3 (30)	0	0	0	5 (26)	0	5 (15)	3 (9)	10 (30)	5 (15)	5 (8)	4 (6)	18 (29)	5 (8)
Very limited opportunities	0	0	1 (10)	0	0	0	3 (16)	0	2 (6)	3 (9)	13 (39)	2 (6)	2 (3)	3 (5)	17 (27)	2 (3)
Complete the following statement: "Most of the time, supervisors provide feedback"																
Immediately at point-of-care	0				0				2 (6)				2 (3)			
In person, later that same day	1 (10)				4 (21)				3 (9)				8 (13)			
By e-mail, later that same day	0				1 (5)				0				1 (2)			
By e-mail, a few days later	3 (30)				2 (11)				6 (18)				11 (18)			
Highly variable	6 (60)				12 (63)				22 (67)				40 (65)			
How are entrustable professional activity (EPA) evaluations triggered for residents?																
Residents always trigger EPAs	1 (10)				6 (32)				24 (73)				31 (50)			
Residents trigger the majority of EPAs.	7 (70)				8 (42)				8 (24)				23 (37)			
Staff members and residents trigger EPAs equally.	2 (20)				5 (26)				1 (3)				8 (13)			
Staff members trigger the majority of EPAs.	0				0				0				0			
Staff members always trigger EPAs.	0				0				0				0			
What are your overall thoughts on CBME implementation in your program?																
I am very satisfied with CBME.	0				0				0				0			
I am satisfied with CBME.	1 (10)				2 (11)				4 (12)				7 (11)			
I am not entirely satisfied nor dissatisfied with CBME.	1 (10)				5 (26)				6 (18)				12 (19)			
I am unsatisfied with CBME.	7 (70)				8 (42)				5 (15)				20 (32)			
I am very unsatisfied with CBME.	1 (10)				4 (21)				18 (55)				23 (37)			
Please specify what is the best solution moving forward for CBME in your opinion.																
I would rather go back to the traditional curriculum.	2 (20)				9 (47)				16 (48)				27 (44)			
I am in favor of implementing two different assessment system in parallel.	1 (10)				6 (32)				2 (6)				8 (13)			
I am in favor of maintaining CBME if it undergoes significant improvements.	7 (70)				4 (21)				15 (45)				26 (42)			
I am in favor of maintaining CBME as it is.	0				0				0				1 (2)			
In your opinion, what is/are the main challenge(s) faced during CBME implementation? (Select all that apply)																
Faculty buy-in/participation	4 (40)				16 (84)				26 (79)				46 (74)			
Required changes to rotations/learning experiences.	3 (30)				7 (37)				9 (27)				19 (31)			
Inconvenient and complex digital platforms	4 (40)				8 (42)				21 (64)				33 (53)			
Lack of trained staff in executing CBME.	3 (30)				8 (42)				19 (58)				30 (48)			
Lack of resources	5 (50)				11 (58)				10 (30)				26 (42)			
Low acceptance and reluctance to transition from traditional training methods among faculty members	2 (20)				6 (32)				15 (45)				23 (37)			
Low acceptance and reluctance to transition from traditional training methods among residents	2 (20)				2 (11)				10 (30)				14 (23)			
Inconsistencies in conception of competencies	7 (70)				8 (42)				28 (85)				33 (53)			

CBME: competency-based medical education, EPA: entrustable professional activity.