Resident Doctors of Canada
Médecins résidents du Canada

ROYAL COLLEGE
OF PHYSICIANS AND SURGEONS OF CANADA
COLLÈGE ROYAL
DES MÉDECINS ET CHIRURGIENS DU CANADA

Competence by Design:

Resident Physician Pulse Check

Report from the 2023 Collaborative Study

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Executive Summary

Introduction

This report outlines the findings from the second Competence by Design (CBD) Resident Physician Pulse Check survey conducted collaboratively in late 2023 by Resident Doctors of Canada (RDoC) and the Royal College of Physicians and Surgeons of Canada (Royal College).

Using a utilization-focused approach, the Resident Pulse Check surveys evaluate CBD from a developmental perspective, with the primary goal of using the insights gathered to help inform necessary adaptations and evolution. The first Resident Pulse Check study, conducted in 2021 through the same collaboration, provided invaluable insights into resident physicians' lived experiences with Competence by Design (CBD), and the data gathered from the initial survey has contributed significantly to the evidence and national discussions informing the evolution of CBD. As the present survey was the second iteration of the study, it has also provided an opportunity to start tracking trends in the data and monitor changes over time, with an aim of making ongoing improvements.

For this second survey, questions that were considered less relevant were eliminated, and new questions were incorporated to gather additional insights. The updated survey aimed to collect input from residents in the following areas: 1) Key Component Implementation, 2) Outcomes, 3) Impacts on Resident Wellness, 4) Aspects of CBD Impacting the Quality of Residency Medical Education, and 5) Adaptations to CBD.

The second iteration of the Resident Pulse Check launched in October 2023 and remained open until early January 2024. Over this 10-week period, 845 resident physicians participated in the survey (13% of the targeted population[1]). Responses included representation from 13/13 participating institutions and from 47/53 disciplines that had officially launched CBD at the time of the survey.

It is important to note that the 2023 Resident Pulse Check study took place mid-way through a series of National CBD Summits led by the Royal College between spring 2023 and spring 2024. This national collaborative process brought together the medical education community to discuss and develop proposed adaptations to CBD aimed at addressing the challenges being faced by schools, programs, faculty, and residents. The outcome of this process is the CBD Adaptations Plan, which outlines ways to improve operationalization of CBD, with a particular focus on reducing the burden of assessment and increasing coaching and feedback to residents. While the adaptations included in this plan will require time for implementation and to see any effects, the proposed adaptations under consideration at the time of the study were incorporated into the survey to evaluate their potential impact from resident physicians' perspectives.

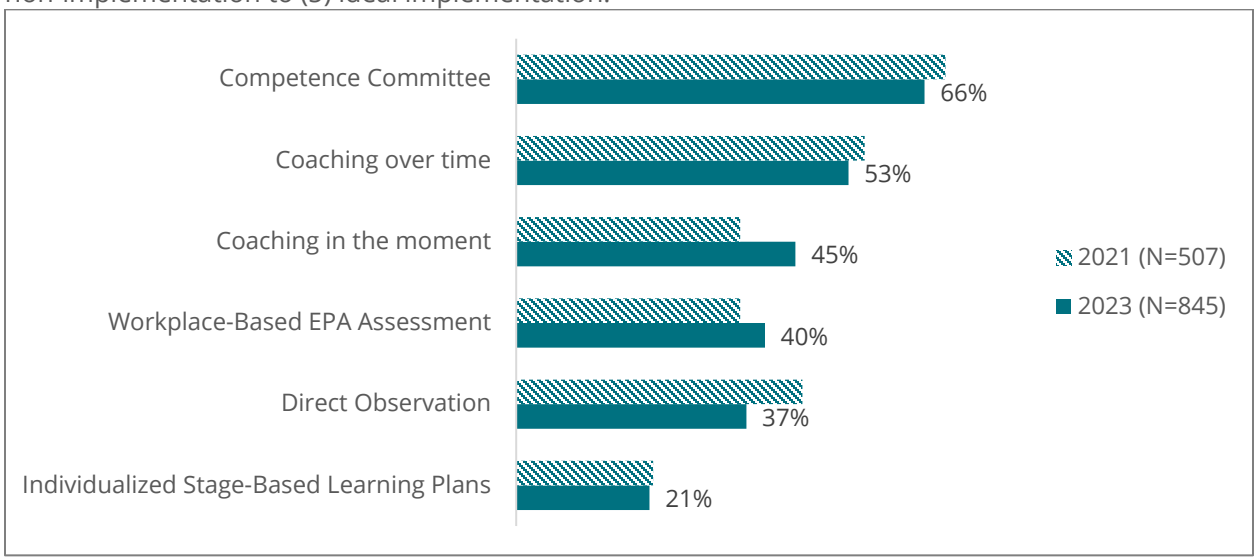
[1] Residents who were in programs that had officially launched CBD at the time of the study. Residents from Québec institutions were not surveyed as they are represented by the Fédération des Médecins Résidents du Québec (FMRQ). The FMRQ has its own survey for residents and chose not to participate in this collaboration.

Key Findings

Implementation of Key Components

With an aim to assess whether certain key components of CBD (direct observation, workplace-based assessment, coaching, competence committees, individual learning plans) are being implemented as intended, residents rated their experience of the implementation of these components on scales ranging from (1) - non implementation to (5) - ideal implementation. While each of the components were developed using distinct rating descriptions, the percentage of respondents selecting the two highest ratings (4 or 5) for each of the components is presented below.

Key Component Implementation - percentage of respondents selecting 4 or 5 on a scale from (0) non-implementation to (5) ideal implementation.



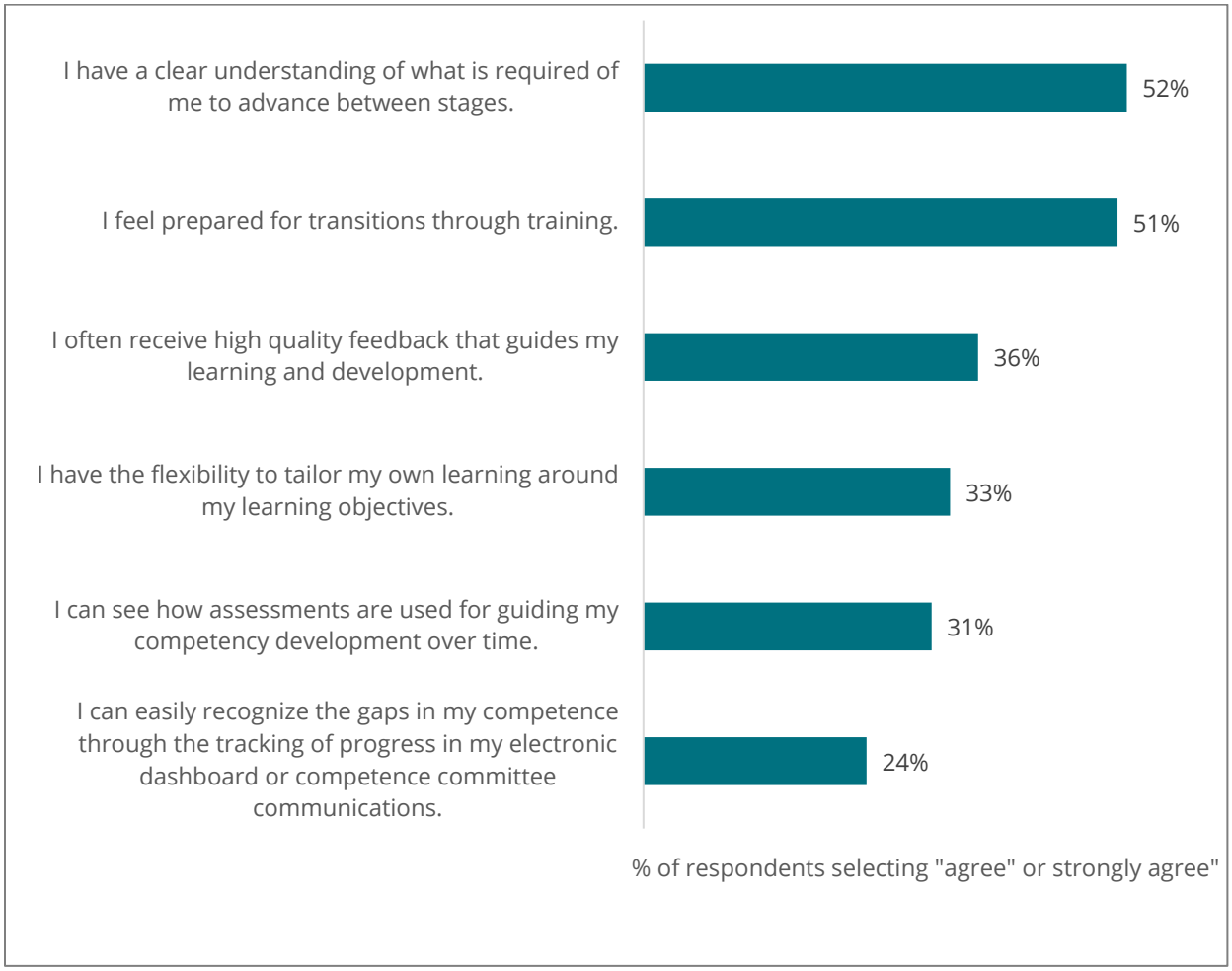
The full report provides a breakdown of each of the key components and their descriptions, along with a breakdown of the ratings by year of study, discipline, and institution. Overall, there was a strong degree of consistency in component ratings over the two years of study. However, there was significant variability among disciplines and institutions in the ratings for each component, a finding that was also observed in the initial study.

CBD Outcomes

CBD is a complex, multi-factorial intervention that involves the interplay of many variables. Consequently, there is a broad range of outcomes that can be assessed regarding the impact of CBD. These include both intended and unintended outcomes and span from early in-training effects to possible downstream impacts on the learner and patient outcomes.

As a preliminary assessment of whether some of the desired objectives of CBD are being met, a selection of anticipated "in-training" outcomes was examined as part of the study. Survey participants provided ratings on a scale from "strongly disagree" (1) to "strongly agree" (5) for six CBD outcome statements. The rate of agreement to these statements varied significantly both within and across statements as demonstrated in the figure below.

CBD Outcomes - Percentage of respondents in agreement (i.e., providing a rating of agree or strongly agree) with each outcome statement



While some are experiencing the desired outcomes there are many others who are not. There is also considerable variation in ratings across disciplines, as well as across institutions, as detailed in the full report.

Impact of CBD on Resident Wellness

The findings from the 2021 Resident Pulse Check survey provided valuable insights into how the transition to CBD has impacted resident health and wellness, with 73% of survey participants experiencing a negative impact. To continue monitoring this trend, the 2023 survey included a similar rating question (selected response) with a slight modification in wording to capture residents' current experiences with CBD. Once again, a high percentage of respondents noted negative effects, with 77% of respondents indicating that their current experience with CBD was having a (small or large) negative impact on their health and wellness.

Aspects of CBD Impacting Quality of Medical Education

Results from the 2021 Resident Pulse Check survey identified several challenges with CBD that negatively impacted resident physician wellness. In the 2023 survey, with the goal of improving understanding about the resident training experience, respondents were asked to comment about the aspects of CBD that are *currently having* the most impact (negative or positive) on the quality of their residency education.

Aspects of CBD having a negative impact:

Similar to the challenges identified in the 2021 survey, residents most frequently raised concerns regarding the perceived value of CBD, citing issues such as increased workload with minimal benefits, equating the acquisition of EPA observations to a tick-box exercise, and feeling that EPAs are neither truly reflective of their practice nor offer a comprehensive assessment of their performance. Moreover, residents identified many challenges with faculty EPA completion, including faculty neglecting to complete EPA assessments, lack of timely completion of EPA assessments by faculty, and the burden of having to constantly remind and follow up with faculty members to ensure they are completed. Other aspects of CBD that residents commonly noted as having a negative impact on their residency education included the administrative and cognitive load associated with the tracking and documentation of EPA observations, as well as the lack of opportunities for EPA completion because of the rare occurrence of opportunities for certain EPAs, or the difficulty in finding opportunities because of the volume of EPAs or the contextual criteria is too specific/strict.

Aspects of CBD having a positive impact:

When asked about the aspects of CBD that were having a positive impact on the quality of their medical education, many respondents either did not provide a response (25%) or indicated that there were no aspects of CBD that were having a positive impact (27%). Among the respondents who provided a response, the aspects most frequently noted as having a positive impact included the benefits of having a system for feedback, clear expectations and learning objectives, and the ability to monitor and reflect on one's own progress.

Adaptations to CBD

A list of proposed adaptations to CBD was included as part of the 2023 survey. The list was created with input from a diverse group of medical education partners as part of a National CBD Summit series. Within the survey, participants were asked to identify which of the adaptations would have the greatest positive impact on the quality of their residency education. Overall, the top three adaptations that respondents considered would have the most positive impact were:

1) Reduce the number of EPA assessments (67%),
2) Remove achievement thresholds (minimum EPA assessment numbers) (50%), and
3) Eliminate or reduce the number of contextual variables (47%).

Experienced Changes

The final question in the survey asked residents to identify any changes that had taken place in the past year in the way CBD had been implemented in their program. Out of 845 respondents, 117 shared positive changes that they had experienced. A common theme among residents was a reduction or modification in the number of EPA observations or EPA requirements, which they found beneficial. Additionally, many noted an increase in faculty engagement, with higher rates of EPA assessment completion, increased awareness and familiarity among faculty about CBD and EPAs, as well as a heightened sense of accountability among faculty to ensure EPA assessments are completed. Program support was another area where positive change was identified, with many residents noting that their programs have been increasingly receptive to feedback from residents and faculty and are making changes in response to that feedback.

Discussion

The following section is intended to provide insights that will help inform adaptation and revision, rather than offering justification for the findings. This information may be used for assessing CBD developmentally and identifying areas where adaptations and improvements are needed.

Consistency across years

Overall, there is a high level of consistency between the two years of study concerning the degree of implementation of key components. The implementation of competence committees, for instance, received the highest ratings for level of implementation in both years, and the implementation of individualized learning plans remains the area with the lowest level of implementation.

Nature of discipline versus institutional/systemic factors

Certain components of CBD, such as direct observation, may be particularly influenced by the nature of the discipline, such as the clinical supervisory set-up. For instance, in some disciplines, like Emergency Medicine, resident physicians typically work side by side with their supervisors, while in other disciplines, opportunities for direct observation may be limited. Moreover, certain disciplines may not have been traditionally designed to have frequent coaching in the moment and to achieve that goal, programs would need to adapt their historical structure. Other components of CBD, such as coaching over time, may be more likely influenced by institutional-driven factors, such as a PGME office requirement of having an academic advisory program, for example. By analyzing the breakdown by institution and discipline, we can start to look critically at CBD within different contexts and explore how it might be approached differently depending on the unique contexts.

Other factors influencing variations in experience

Experiences with certain key components may also vary in terms of the stage of training a resident is in or the timing of when a discipline officially launched CBD. For instance, the level of direct observation a resident receives may change as they move through various stages towards independent practice. Additionally, the frequency with which workplace-based EPA assessment is taking place, for example, may be influenced by the level of maturity of CBD within a discipline (i.e., how long it has been since the official launch in a specific discipline). Further analysis and

examination of the data will lead to a more nuanced understanding of all the variables that are contributing to the heterogeneity in experiences with CBD.

Monitoring the outcomes

As with the implementation of key components, there was a lot of variation in the degree to which the desired "in-training" outcomes are being experienced or not experienced by residents. Again, it is possible that for certain outcomes, the variation may be more heavily influenced by the nature of the discipline, whereas for others, it may be more institutionally driven. Therefore, analyzing the breakdown by discipline and institution could assist specialty committees, institutions, and programs in identifying potential barriers to achieving the desired outcomes, as well as in determining the key factors that contribute to success.

Addressing the challenges/negative impacts through adaptations

The consistency observed between the challenges identified in the 2021 study and the negative impacts reported by residents in the 2023 study reinforces the notion that these concerns are widespread and are not confined to a specific timeframe or group of respondents.

While it is concerning that the residents are facing numerous challenges related to CBD, it is notable that the CBD Adaptations Plan is intended to address many of the concerns identified in these studies. This indicates that the adaptations are well-founded and will need to be evaluated in the future to determine if they subsequently lead to improvements.

Impact on resident wellness

Resident wellness is a complex construct to measure and is influenced by numerous factors. However, it is evident that there are aspects of CBD that are negatively contributing to resident well-being, with very few positive impacts to date. It will be important to continue monitoring this impact as adaptations are adopted to ensure that the changes improve residents' experience rather than create any additional harm.

Looking ahead

The valuable information and insights derived from the Pulse Check studies, along with the findings from other program evaluation efforts, can be used by the Royal College, specialty committees, institutions, and programs to work towards the common goal of making improvements to CBD.

One of the key areas of the CBD Adaptations Plan is a renewed focus on program evaluation. The Royal College is currently implementing a new framework for CBD program evaluation, focusing on experiences, outcomes, and value. Additionally, over the next several years, targeted program evaluation information, that includes data from these Resident Pulse Check studies, will be shared with specialty committees to assist them with reviewing and revising their standards (including EPAs), with the goal of reducing the burden of assessment. This may include reducing the number of EPAs in any given stage, reducing the number of observations required per EPA, simplifying assessment tools, or reducing contextual variables for each EPA.

Further analysis of this data, in combination with other sources of evidence, will be conducted to gain a deeper understanding of the many factors contributing to the variation in experiences with CBD, which will, in turn, help identify where additional support or adjustments may be required.

Going forward, Pulse Check surveys and other mechanisms will continue to monitor the implementation and evolution of CBD so that it becomes the system it was envisioned to be, with resident well-being as one of the key indicators of its success.

Background and Rationale

In 2017, the Royal College officially launched Competence by Design (CBD), a model of competency-based medical education. This outcomes-based model of training was designed to help ensure that graduating physicians would be equipped with the necessary competencies to meet current and evolving societal health needs. The implementation of CBD has been carried out gradually, with a select number of disciplines being introduced each year. As of July 1st, 2023, 53 out of 67 Royal College disciplines had transitioned to CBD.

As CBD is being implemented throughout the specialty medicine system in Canada, ongoing program evaluation is crucial. Many postgraduate medical education (PGME) partners and researchers nationwide are actively engaged in significant evaluation efforts related to CBD.

Collaboration helps ensure that experiences and perspectives from across the diverse range of participants are captured and used to improve the system for everyone involved. With a collaborative approach in mind, Resident Doctors of Canada (RDoC) teamed up with members of the Royal College CBD Program Evaluation Operations Team (PE Ops) to gather input from resident physicians on their experiences with CBD.

The initial Resident Pulse Check was administered in 2021. The survey's design was based on the Royal College's Program Director survey but was tailored specifically to residents. The survey gathered information from resident physicians on their experiences with the implementation of CBD, the challenges and benefits experienced, as well as the impacts of CBD on resident well-being.

Valuable insights were obtained from the results of the 2021 Resident Pulse Check which have contributed important evidence that is informing the evolution of CBD.

In 2023, RDoC and Royal College collectively revised and administered a second iteration of the Resident Pulse Check survey in late 2023, with intentions to:

- further examine the fidelity of CBD implementation based on resident physicians' experiences,
- monitor the signals around health and wellness that were identified in the first iteration,
- understand the extent to which some of the intended outcomes of CBD are being achieved or not achieved,
- explore potential adaptations that would have a positive impact on the quality of residency education, and
- identify any recent changes experienced by residents in the way that CBD has been implemented in their program.

It is important to note that the 2023 Resident Pulse Check study took place mid-way through a series of National CBD Summits led by the Royal College between spring 2023 and spring 2024. This national collaborative process brought together the medical education community to discuss and develop proposed adaptations to CBD aimed at addressing the challenges being faced by schools, programs, faculty, and residents. The outcome of this process is the CBD Adaptations Plan, which

outlines ways to improve operationalization of CBD, with a particular focus on reducing the burden of assessment and increasing coaching and feedback to residents. While the adaptations included in this plan will require time for implementation and to see any effects, the proposed adaptations under consideration at the time of the study were incorporated into the survey to evaluate their potential impact from resident physicians' perspectives.

Methods

Survey

The Resident Pulse Check survey was originally developed collaboratively in 2021 by members of the Royal College and RDoC. It was based on the Royal College's Pulse Check survey for program directors but targeted to resident physicians' experience. Innovation Configuration mapping was used to define the key components of CBD and their associated scales. These "key components" represented the unique parts of the innovation that made up the whole, in this case CBD (Hall & Hord, 2015). The scales for each key component represented the range in variations from idealized implementation of that component to non-implementation (Hall & Hord, 2015). The completed innovation configuration map was incorporated into a survey with the purpose of determining the fidelity of implementation; the extent to which critical components of CBD were present in a program. Where a program best matched within the list of documented observable variations was indicative of where they fell on a scale that reflected the fidelity of the implementation (Hall & Hord, 2015).

During a collaborative and reflective process, revisions were made to the original survey prior to the launch of the 2023 Resident Pulse Check. These revisions included simplifying the structure by removing less relevant questions, enhancing consistency in terminology used across implementation scales, eliminating double-barreled questions, and adding new questions to gain further insight into residents' experiences with CBD.

The revised survey, outlined in Appendix A, consisted of the following five sections:

1) Key Component Implementation
2) Outcomes
3) Resident Wellness
4) Aspects of CBD Impacting Quality of Residency Education
5) Adaptations

Survey Tool and Distribution Strategy

The survey was hosted on Alchemer, a secure web-based survey software used by the Royal College. The distribution of the survey to the eligible resident physicians was coordinated by RDoC and

disseminated by the residency Provincial Housestaff Organizations (PHOs). The PHOs are RDoC's members and represent residents' interests provincially.

The survey was launched in October 2023, with an initial email invitation distributed through PHOs. It was promoted via the social media channels of RDoC and the Royal College. A reminder email was sent by PHOs four weeks after the initial launch to encourage participation. The survey closed in mid-January 2024, remaining open for approximately 10 weeks.

Consent and Confidentiality

The study was voluntary, and consent was assumed when a participant began the survey. The option to withdraw from the survey was always available. Participant information pertaining to the residents' discipline, program year, and institution was collected at the start of the survey, however, this information was only collected to:

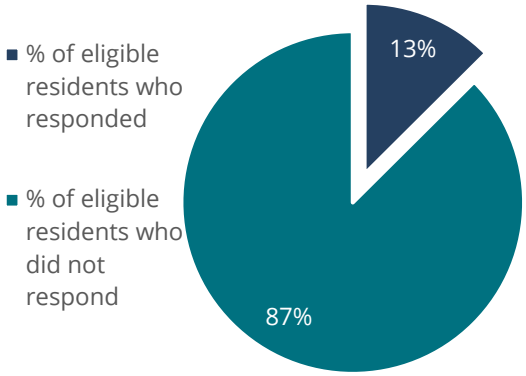
- determine sample representativeness;
- enable cross group comparisons at an aggregate level; and
- share aggregate anonymized institutional level data with institutions when there are enough responses from that institution to protect respondent anonymity (greater than 10).

Individual or program level responses will not be divulged, shared, or used in a way that would result in respondent identification. This assurance of confidentiality was explicitly stated in the email invitation, as well as at the start of the survey.

Results

Response Rates

Overall Response Rate



Overall Response Rate = 13%
(845/6737 CBD residents*)

- Responses from 47 out of the 53 disciplines that have officially launched CBD (as of July 1st, 2023)
- Responses from all 13 institutions included in the study.

*This calculated number of residents is based on the 2023/2024 CAPER census data.

Included in the resident number calculations:

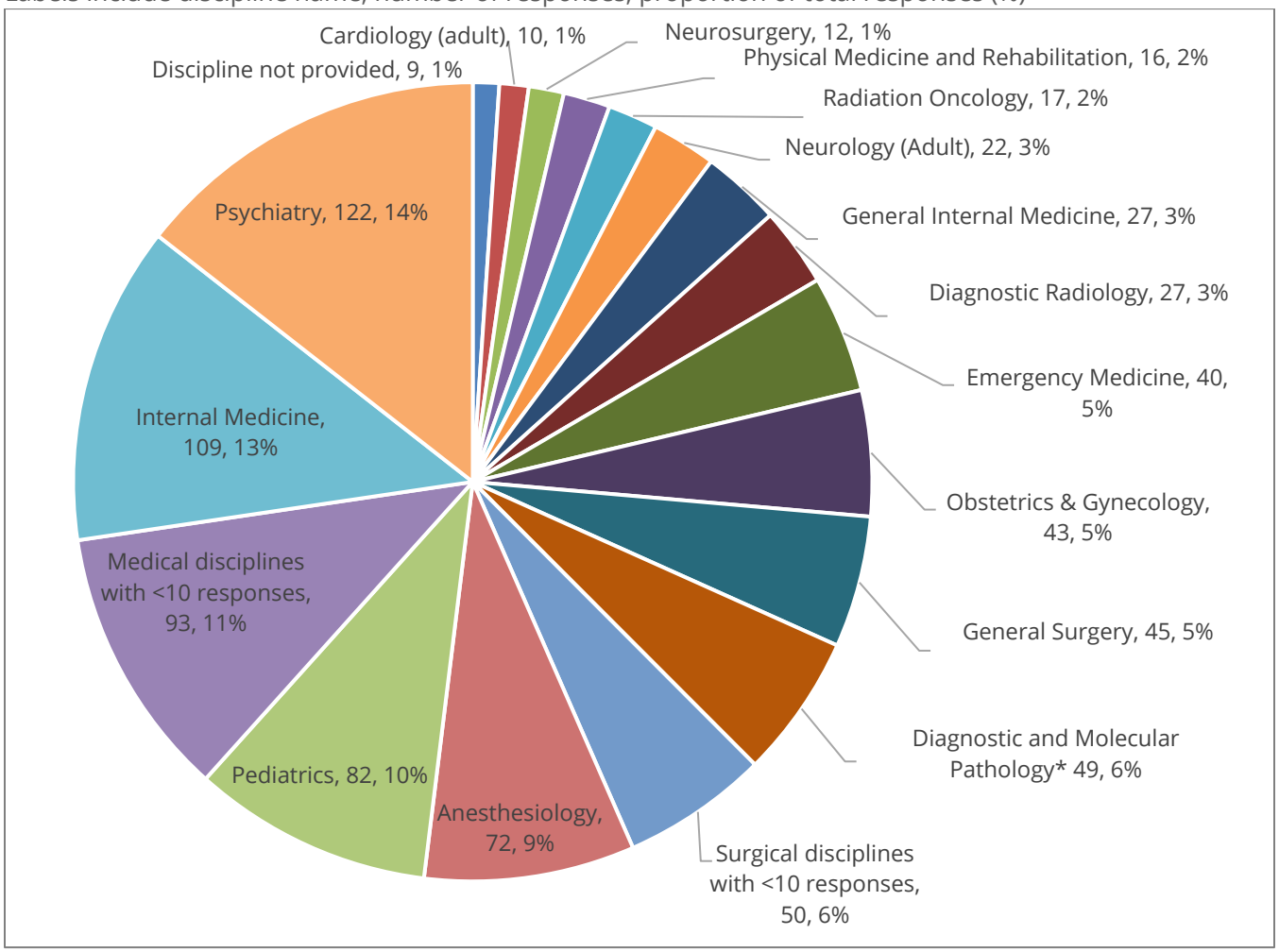
- Residents in disciplines that have officially launched CBD according to the Royal College rollout schedule.
- Residents enrolled at a Canadian postgraduate medical institution, excluding Québec institutions.
- Residents who started their current training program in the CBD stream. For example, the number of CBD residents in Anesthesiology (a discipline that launched in 2017) includes residents in PGY1, PGY2, PGY3, PGY4, PGY5, whereas the number of CBD residents in Ophthalmology (a discipline that launched in 2023) includes only residents in PGY1.

Overall, there was broad representation across disciplines and institutions, with responses from 47/53 (89%) of CBD disciplines and from 100% of the 13 institutions participating in the survey.

Responses by Discipline

Psychiatry was the discipline with the most responses to the survey, accounting for 14% of the total respondents. This was followed by Internal Medicine (13%), Pediatrics (10%), and Anesthesiology (9%). This aligns reasonably well with the relative percentage of trainees in these programs within the resident physician population. Figure 1A shows the distribution in responses across disciplines.

Figure 1A: Proportion of Total Responses by Discipline:
Labels include discipline name, number of responses, proportion of total responses (%)



*formerly known as Anatomical Pathology

Table 1: Response Rates by Discipline:

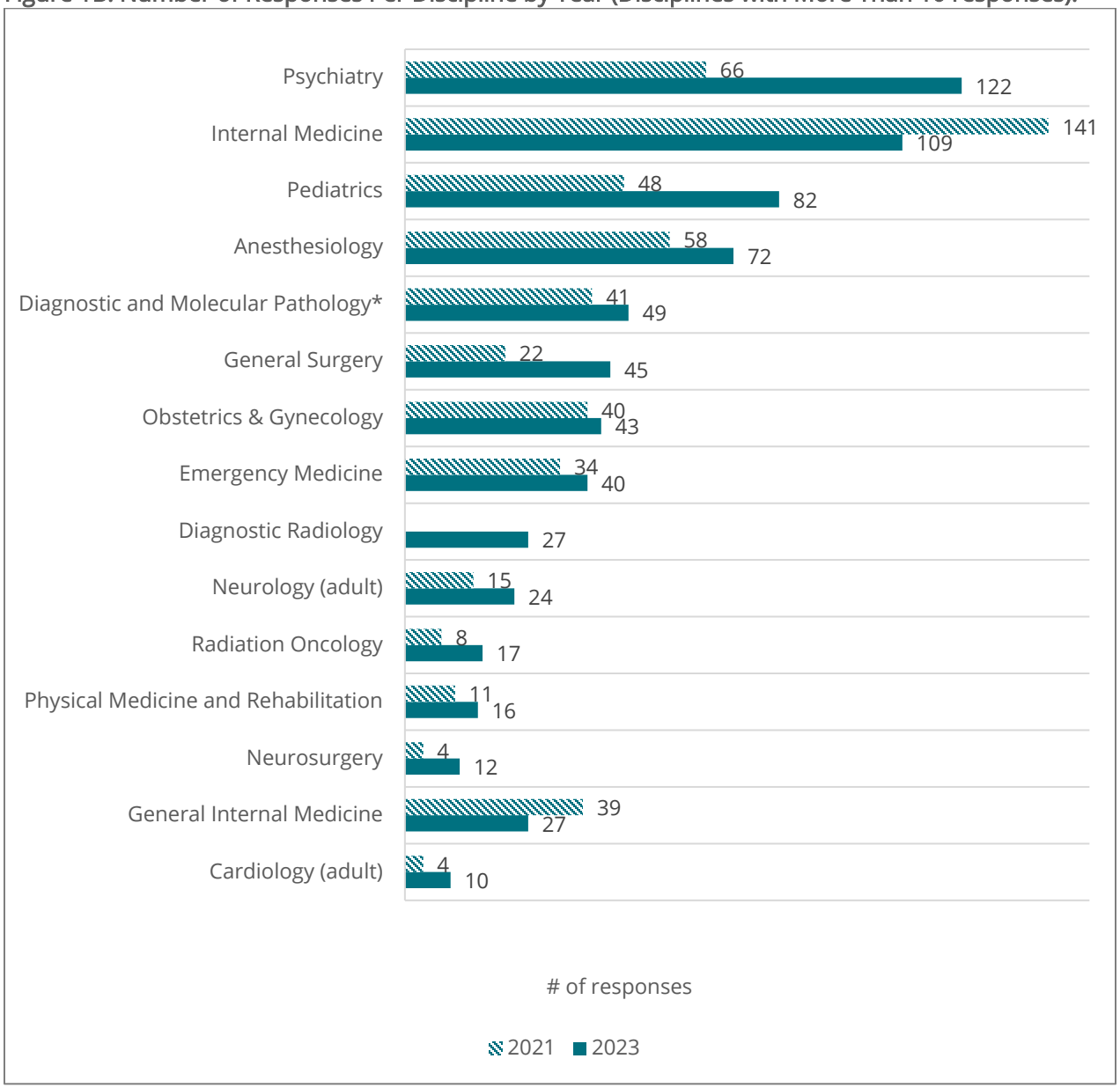
Discipline	# of responses/# of CBD residents	2023 Response Rate
Disciplines with 10 or more responses		
Anesthesiology	72/556	13%
Cardiology (adult)	10/146	7%
Diagnostic and Molecular Pathology (formerly known as Anatomical Pathology)	49/160	31%
Diagnostic Radiology	27/127	21%
Emergency Medicine	40/345	12%
General Internal Medicine	27/129	21%
General Surgery	45/340	13%
Internal Medicine	109/1326	8%
Neurology (adult)	22/198	11%
Neurosurgery	12/106	11%
Obstetrics and Gynecology	43/385	11%
Pediatrics	82/427	19%
Physical Medicine and Rehabilitation	16/102	16%
Psychiatry	122/625	20%
Radiation Oncology	17/97	18%
Disciplines with less than 10 responses		
Medical disciplines with less than 10 responses		
Adolescent Medicine	1/8	13%
Child and Adolescent Psychiatry	5/24	21%
Clinical Immunology & Allergy (adult)	2/20	10%
Clinical Immunology & Allergy (pediatric)	2/12	17%
Critical Care Medicine (adult)	4/78	5%
Critical Care Medicine (pediatric)	1/13	8%
Dermatology	8/40	20%
Developmental Pediatrics	2/4	50%
Diagnostic and Clinical Pathology (formerly known as General Pathology	8/40	20%
Forensic Pathology	1/6	17%
Gastroenterology (adult)	1/80	1%
Gastroenterology (pediatric)	1/8	13%
Geriatric Medicine	9/42	21%
Geriatric Psychiatry	6/16	38%
Hematological Pathology	3/8	38%
Hematology	6/44	14%
Maternal-Fetal Medicine	1/17	6%
Medical Genetics and Genomics	4/15	27%
Medical Oncology	3/52	6%
Neonatal-Perinatal Medicine	1/17	6%
Nephrology (adult)	3/51	6%
Nephrology (pediatric)	1/41	2%
Neurology (pediatric)	2/33	6%
Pain Medicine	2/8	25%
Pediatric Emergency Medicine	1/14	7%
Pediatric Hematology/Oncology	4/21	19%
Surgical disciplines with less than 10 responses		

Cardiac Surgery	2/53	4%
Ophthalmology	7/31	23%
Orthopedic Surgery	9/228	4%
Otolaryngology - Head and Neck Surgery	7/117	6%
Plastic Surgery	9/97	9%
Surgical Foundations	1/ -	-
Urology	9/135	7%
Vascular Surgery	6/63	10%

Disciplines with no responses:

- Cardiology (pediatric)
- Clinical Pharmacology and Toxicology
- Forensic Psychiatry
- Gynecologic Oncology
- Neuropathology
- Nuclear Medicine
- Palliative Medicine
- Pediatric Surgery
- Respirology (pediatric)
- Rheumatology (pediatric)

Figure 1B: Number of Responses Per Discipline by Year (Disciplines with More Than 10 responses):



Responses by Institution

Figure 2A: Proportion of Total Respondents by Institution:

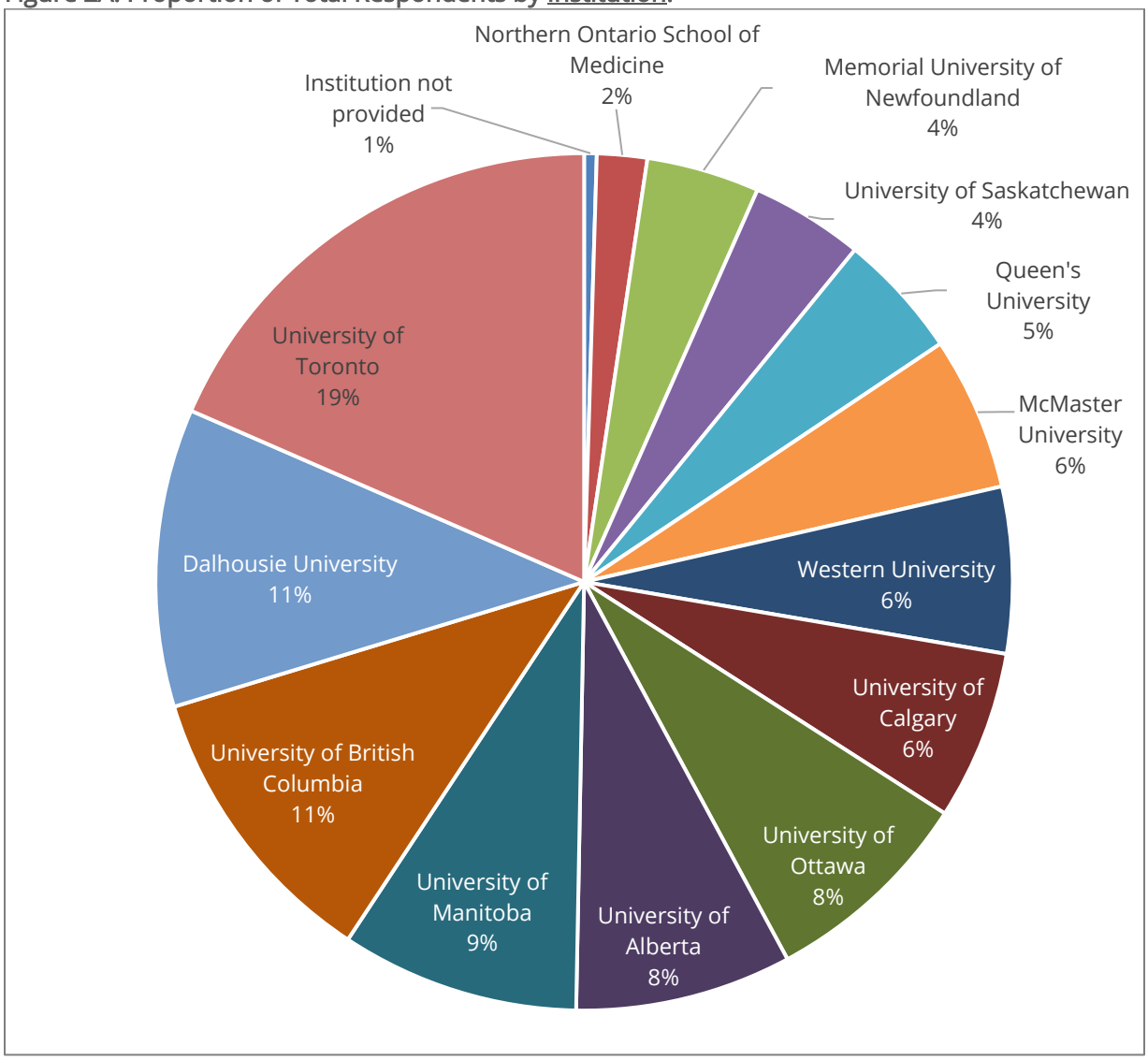
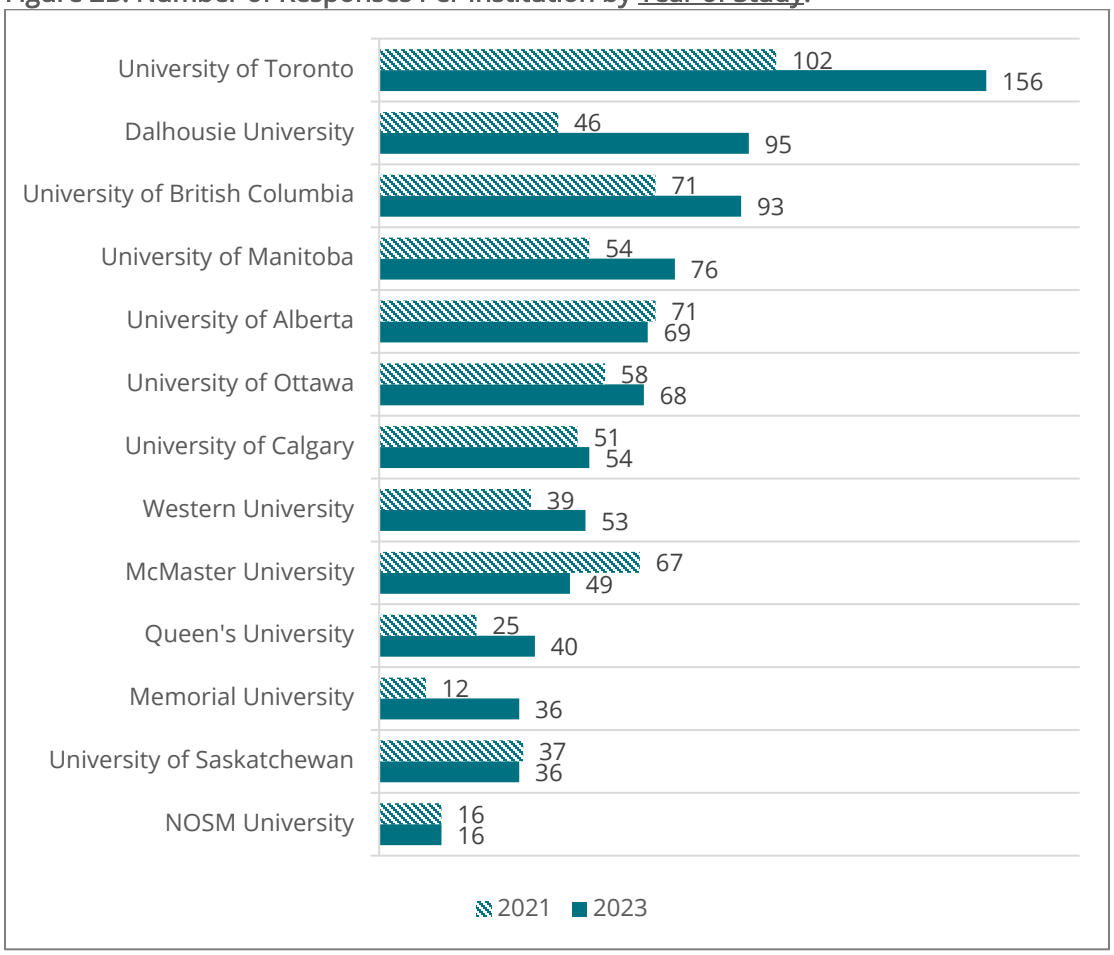


Table 2: Response Rates by Institution:

Institution	# of responses/# of CBD residents	2023 Response Rate
Dalhousie University	95/411	23%
McMaster University	49/632	8%
Memorial University of Newfoundland	36/170	21%
NOSM University	16/70	23%
Queen's University	40/302	13%
University of Alberta	69/569	12%
University of British Columbia	93/879	11%
University of Calgary	54/529	10%
University of Manitoba	76/407	19%
University of Ottawa	68/602	11%
University of Saskatchewan	36/306	12%
University of Toronto	156/1331	12%
Western University	53/529	10%

Figure 2B: Number of Responses Per Institution by Year of Study:



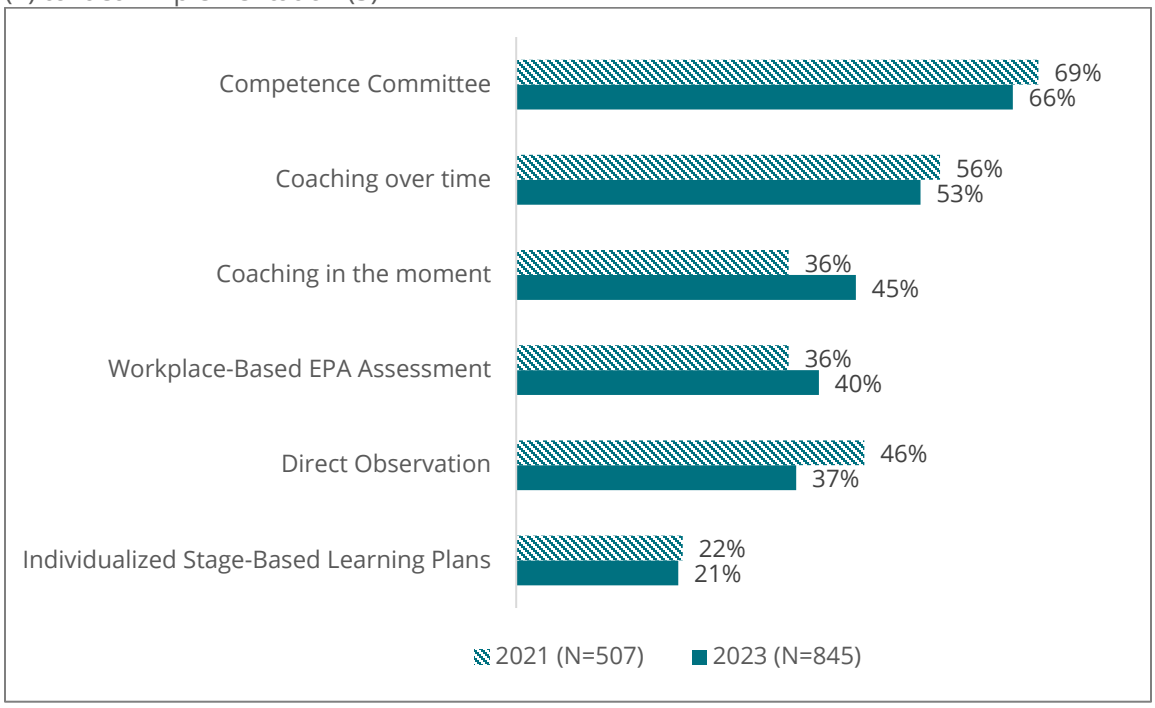
Key Component Implementation

Survey respondents were asked to indicate the degree to which each of the following key components of CBD were taking place in their program.

- Direct observation
- Workplace based EPA assessment
- Coaching in the moment
- Coaching over time
- Competence committee
- Individual resident learning plans

Each key component is rated from non-implementation to ideal implementation, using unique component specific anchors that were initially developed using the Innovation Configuration Mapping tool and described in the 2021 Resident Pulse Check. The questions underwent modifications between the 2021 and 2023 surveys to remove less relevant questions, increase consistency in the terminology across scales and to eliminate the use of double-barreled questions. Figure 3 presents a comparison between 2021 and 2023 in the degree of implementation across key features.

Figure 3: Level of Implementation of Key Components by Year of Study:
Percentage of respondents selecting the 4th or 5th option on a spectrum* from non-implementation (1) to ideal implementation (5)



* The rating descriptors for each of the key components are subsequently described.

The level of implementation across the key components shows consistency between the two surveys. The Competence Committee showed the highest level of implementation, while

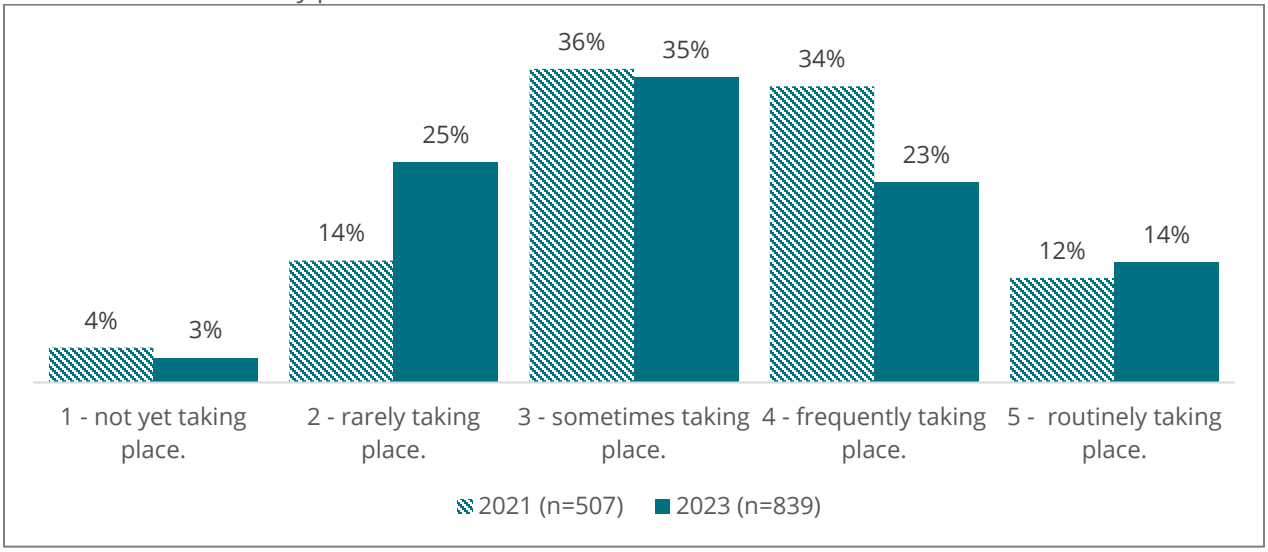
individualized learning plans had the lowest level of implementation in both years. However, it is important to consider the modifications made to the scales when interpreting this data.

The key components are individually described in figures 4-9 and are each presented by year (Figure A), discipline (Figure B), and institution (Figure C).

Direct Observation

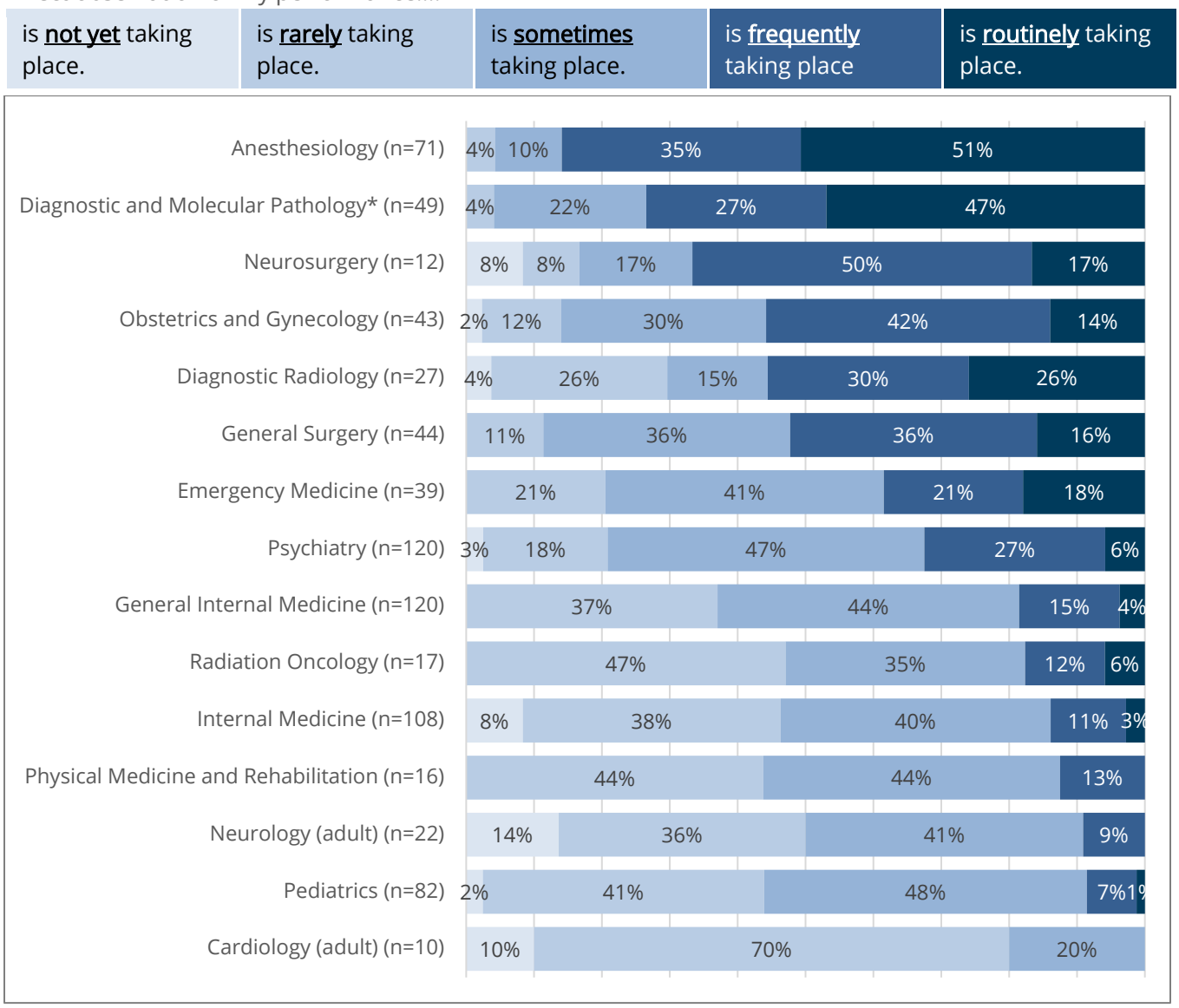
Direct observation takes place when supervisors purposefully observe residents while they perform patient care or clinical activities that are meaningful, realistic, and authentic (Kogan, Hatala, Hauer & Holmboe, 2017).

Figure 4A: Direct Observation – Level of Implementation by Year of Study:
Direct observation of my performance is....



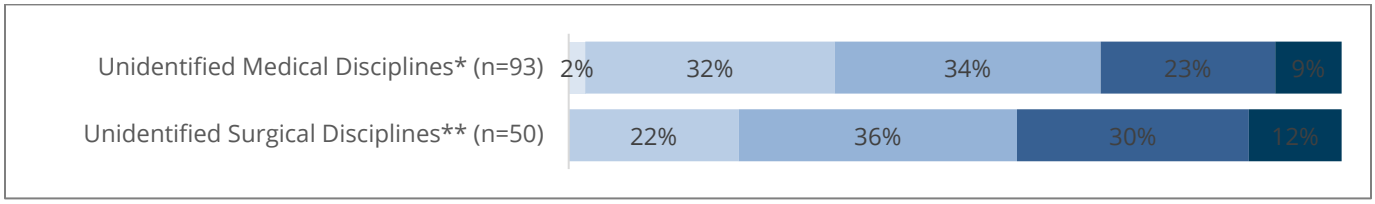
Modification: In the 2021 version, the direct observation key component scale included two activities: *direct observation* and *documentation of* direct observation. The documentation of direct observation was removed from the 2023 version as "documentation" was also being captured as part of the workplace-based EPA assessment component.

Figure 4B: Direct Observation – Level of Implementation by Discipline:
Direct observation of my performance....



*Formerly known as Anatomical Pathology

The disciplines were sorted in descending order by the % of respondents who selected the last two options on the implementation scale. The disciplines at the top of the graph had a greater percentage of respondents who experienced implementation of the key component to be further along compared to those at the bottom of the graph.

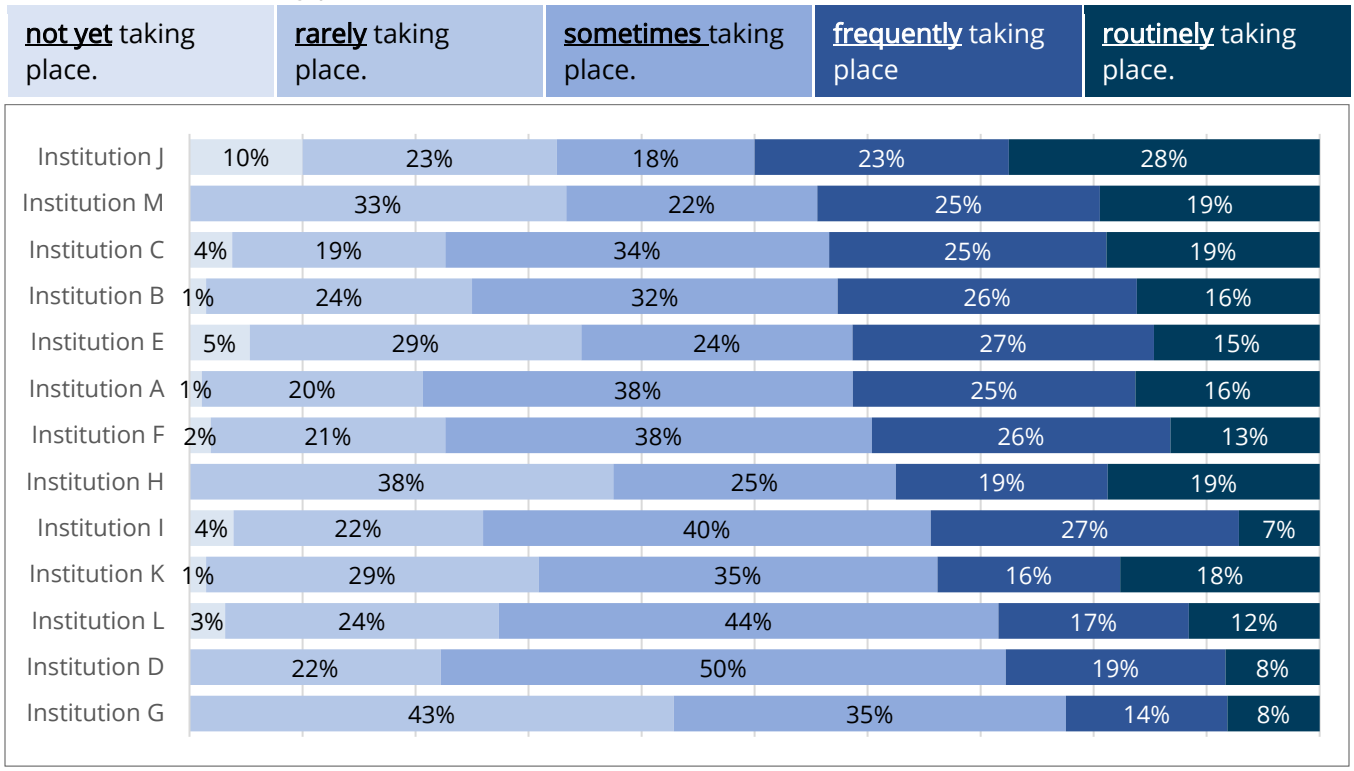


Unidentified medical disciplines*: Adolescent Medicine, Child and Adolescent Psychiatry, Clinical Immunology and Allergy (adult), Clinical Immunology and Allergy (pediatric), Critical Care Medicine (adult), Critical Care Medicine (pediatric), Dermatology, Developmental Pediatrics, Forensic Pathology, Gastroenterology (adult), Gastroenterology (pediatric), Diagnostic and Clinical Pathology (formerly known as General Pathology), Geriatric Medicine, Geriatric Psychiatry, Hematological Pathology, Hematology, Maternal-Fetal Medicine, Medical Genetics and Genomics, Medical Oncology, Neonatal Perinatal Medicine, Nephrology (adult), Nephrology (pediatric), Neurology (pediatric), Pain Medicine, Pediatric Emergency Medicine, Pediatric Hematology Oncology, Respirology (adult), Rheumatology (adult)

Unidentified surgical disciplines**: Cardiac Surgery, Ophthalmology, Orthopedic Surgery, Otolaryngology – Head and Neck Surgery, Plastic Surgery, Surgical Foundations, Urology, Vascular Surgery

Disciplines without responses: Gynecologic Oncology, Palliative Medicine, Neuropathology, Nuclear Medicine

Figure 4C: Direct Observation – Level of Implementation by Institution:
Direct observation of my performance is....

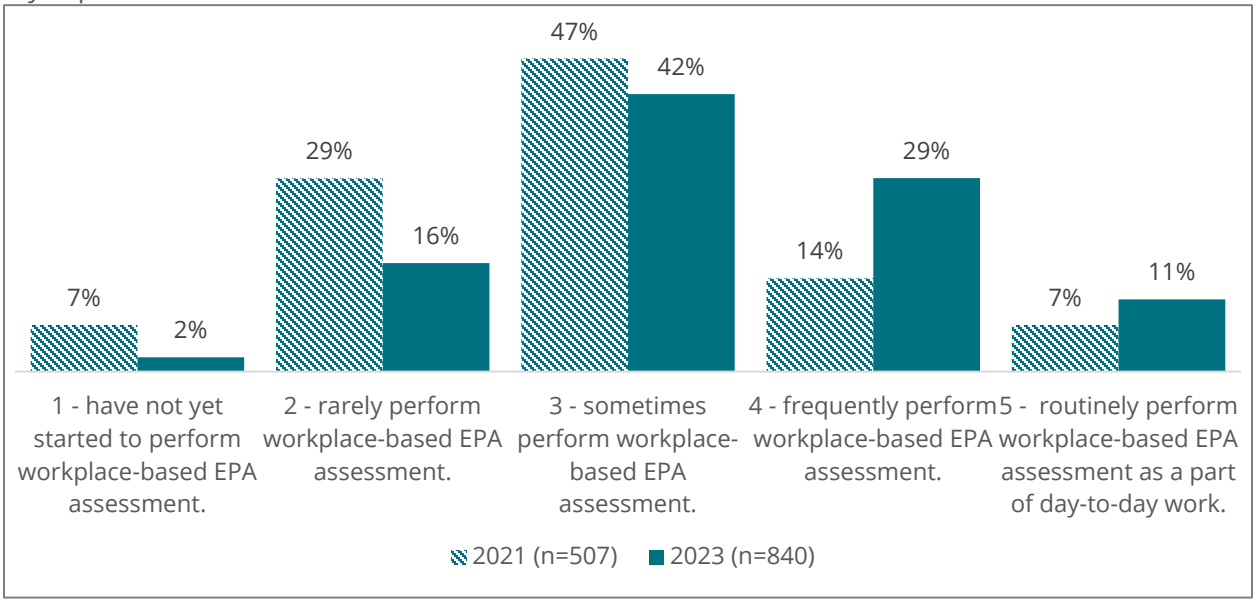


The institutions were sorted in descending order by the % of respondents who selected the last two options on the implementation scale. The institutions at the top of the graph had a greater percentage of respondents who experienced implementation of the key component being further along compared to those at the bottom of the graph.

Workplace-Based Entrustable Professional Activity (EPA) Assessment

Workplace-based assessment involves the documentation of feedback generated by supervisors from real clinical observations for the purpose of trainee development and EPA achievement decisions. EPAs reflect the authentic work of physicians and provide explicit teaching, learning and assessment goals for resident physicians (Gofton, Dudek, Barton & Bhanji, 2017).

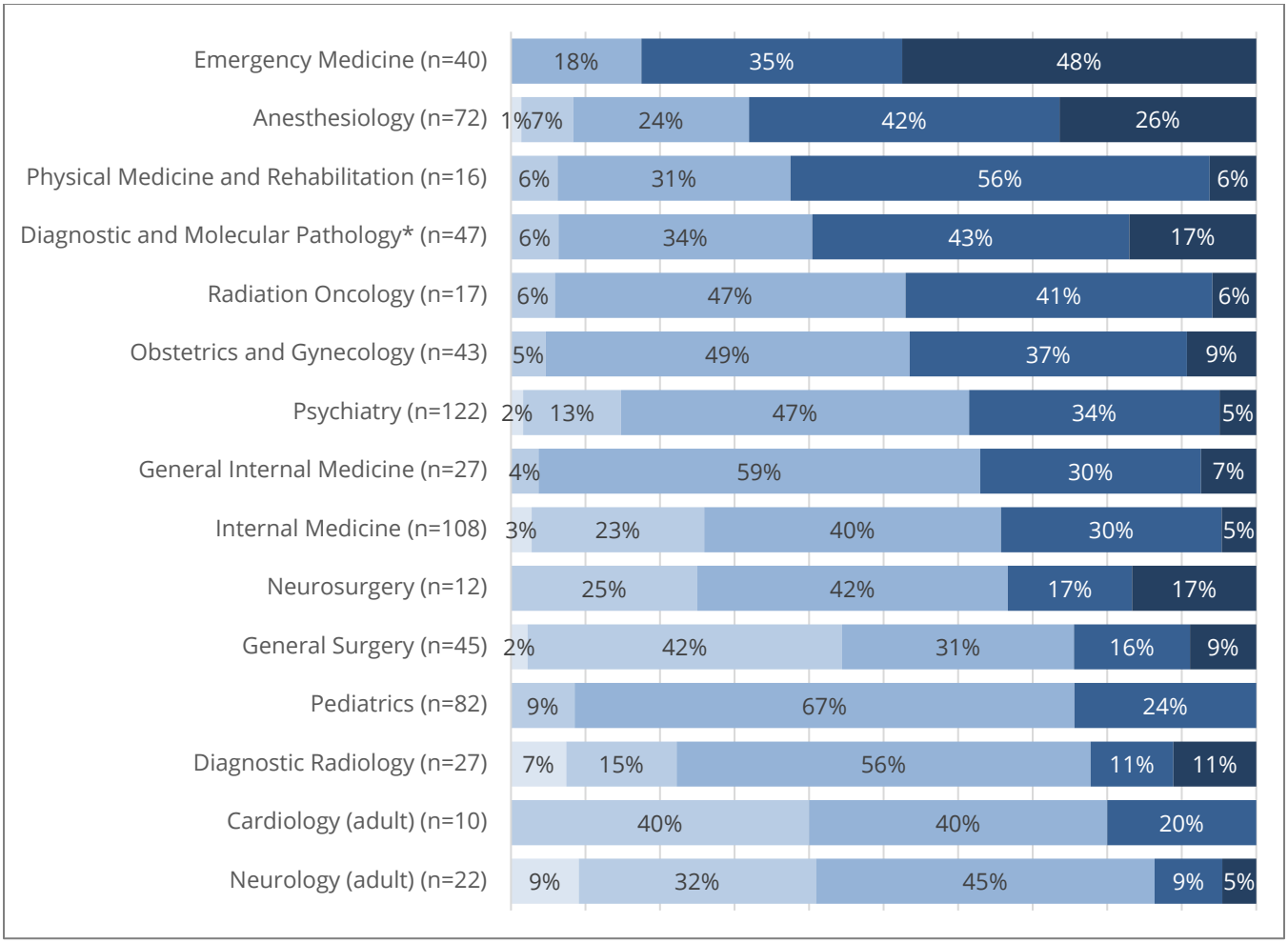
Figure 5A: Workplace-Based EPA Assessment – Level of Implementation by Year of Study:
My supervisors....



✪ There were modifications to the scale rating descriptors between the 2021 and 2023 surveys.

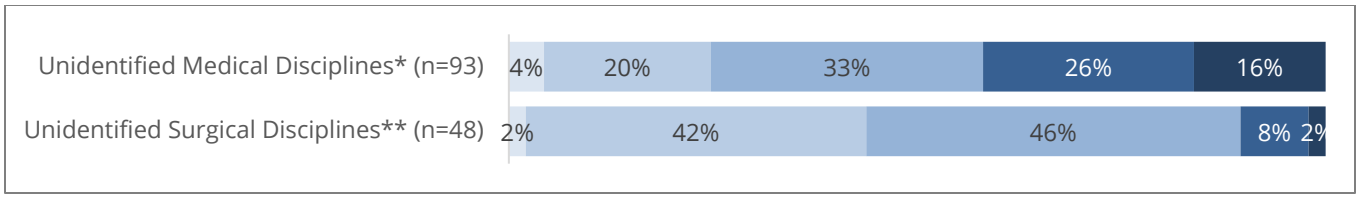
Figure 5B: Workplace-Based EPA Assessment – Level of Implementation by Discipline:
My supervisors....

have **not yet started** to perform workplace-based EPA assessment.	**rarely** perform workplace-based EPA assessment.	**sometimes** perform workplace-based EPA assessment.	**frequently** perform workplace-based EPA assessment.	Routinely perform workplace-based EPA assessment as part of day-to-day work.



*Formerly known as Anatomical Pathology

The disciplines were sorted in descending order by the % of respondents who selected the last two options on the implementation scale. The disciplines at the top of the graph had a greater percentage of respondents who experienced implementation of the key component to be further along compared to those at the bottom of the graph.



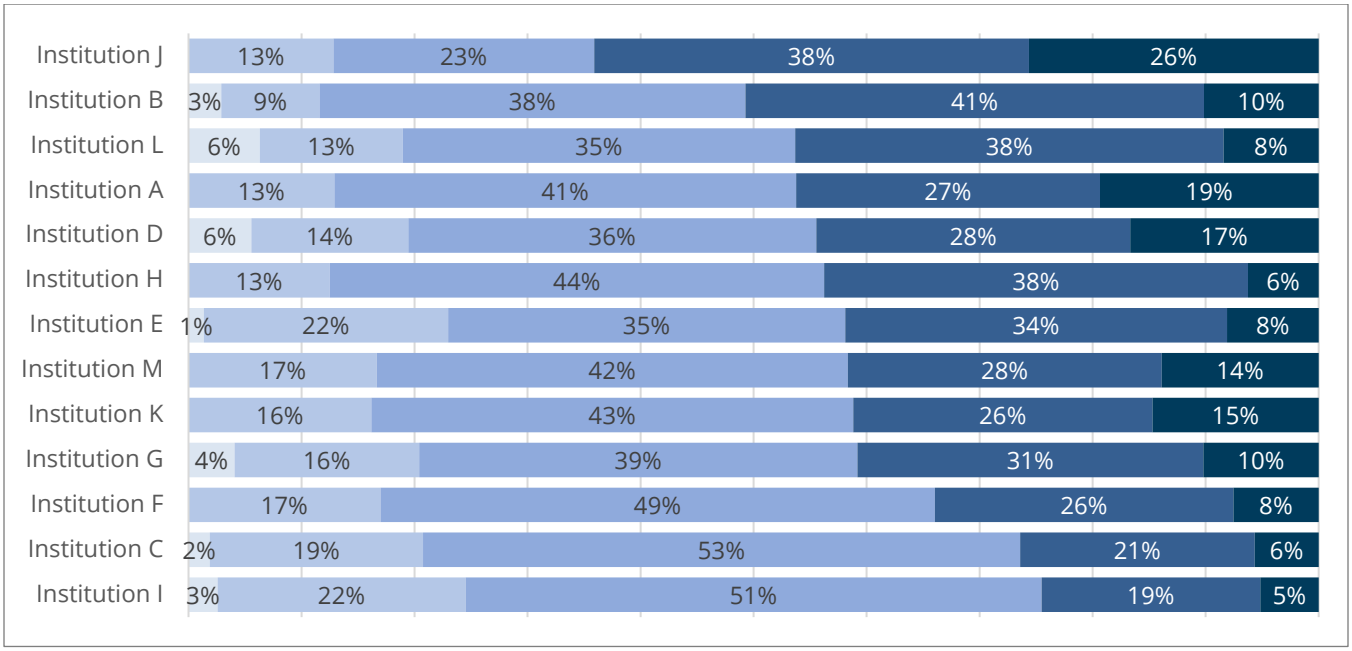
Unidentified medical disciplines*: Adolescent Medicine, Child and Adolescent Psychiatry, Clinical Immunology and Allergy (adult), Clinical Immunology and Allergy (pediatric), Critical Care Medicine (adult), Critical Care Medicine (pediatric), Dermatology, Developmental Pediatrics, Forensic Pathology, Gastroenterology (adult), Gastroenterology (pediatric), Diagnostic and Clinical Pathology (formerly known as General Pathology), Geriatric Medicine, Geriatric Psychiatry, Hematological Pathology, Hematology, Maternal-Fetal Medicine, Medical Genetics and Genomics, Medical Oncology, Neonatal Perinatal Medicine, Nephrology (adult), Nephrology (pediatric), Neurology (pediatric), Pain Medicine, Pediatric Emergency Medicine, Pediatric Hematology Oncology, Respirology (adult), Rheumatology (adult)

Unidentified surgical disciplines*: Cardiac Surgery, Ophthalmology, Orthopedic Surgery, Otolaryngology - Head and Neck Surgery, Plastic Surgery, Surgical Foundations, Urology, Vascular Surgery

Disciplines without responses: Gynecologic Oncology, Palliative Medicine, Surgical Foundations, Neuropathology, Nuclear Medicine

Figure 5C: Workplace-Based EPA Assessment – Level of Implementation by Institution:
My supervisors....

have **not yet started** to perform workplace-based EPA assessment.	**rarely** perform workplace-based EPA assessment.	**sometimes** perform workplace-based EPA assessment.	**frequently** perform workplace-based EPA assessment.	Routinely perform workplace-based EPA assessment as part of day-to-day work.



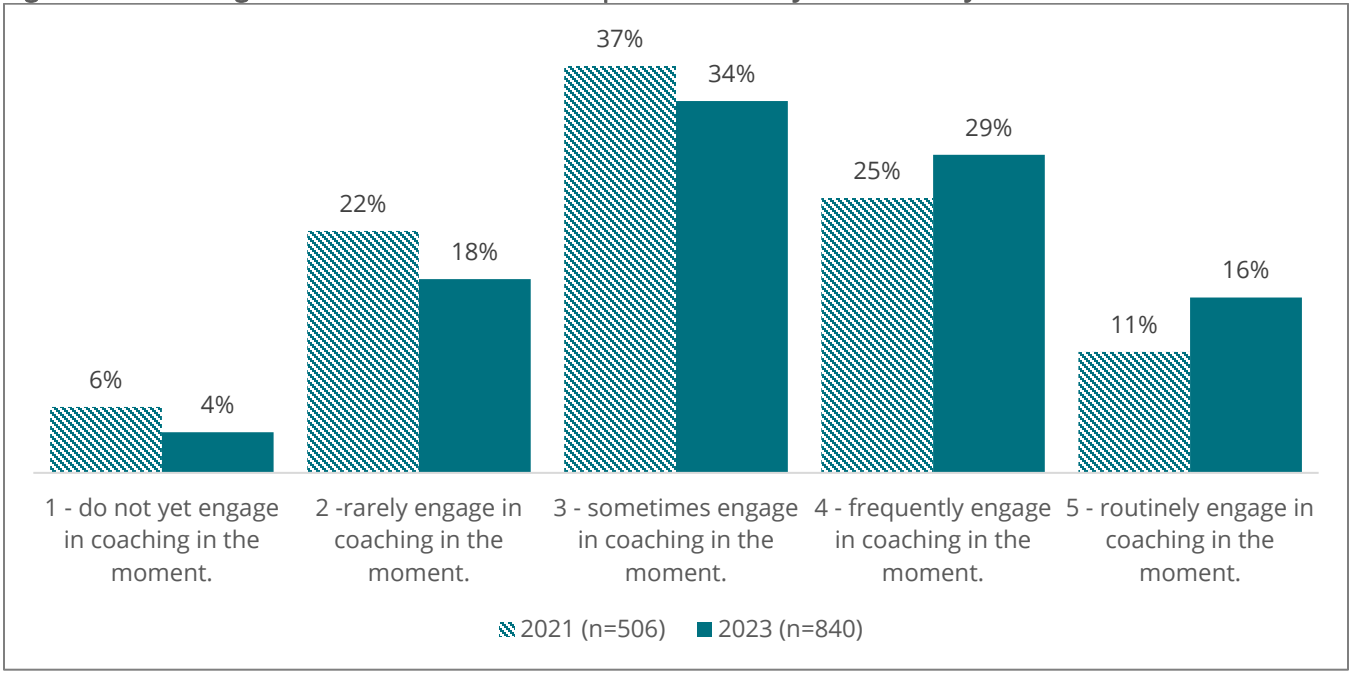
To maintain the confidentiality of the institutions, the number of respondents is not disclosed.

The institutions were sorted in descending order by the % of respondents who selected the last two options on the implementation scale. The institutions at the top of the graph had a greater percentage of respondents who experienced implementation of the key component being further along compared to those at the bottom of the graph.

Coaching in the Moment

In CBD, all supervisors are encouraged to act as coaches in the clinical environment. Supervisors should provide resident physicians with specific and actionable feedback based on observation that is meant to guide them through a growth process resulting in performance enhancement. This "coaching in the moment" should occur as part of daily work and over the course of a learning experience (Royal College of Physicians and Surgeons of Canada, 2018).

Figure 6A: Coaching in the Moment – Level of Implementation by Year of Study:

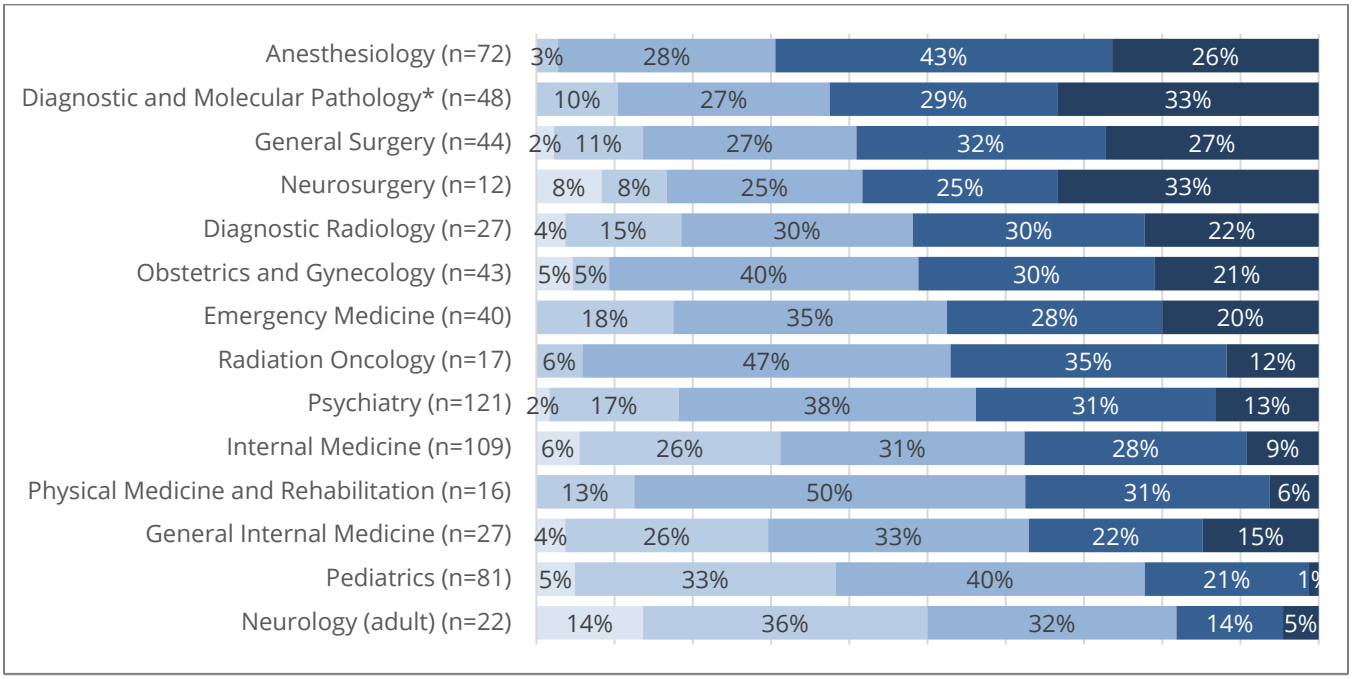


✪ There were slight modifications to the rating descriptors between the 2021 and 2023 surveys.

Figure 6B: Coaching in the Moment – Level of Implementation by Discipline:

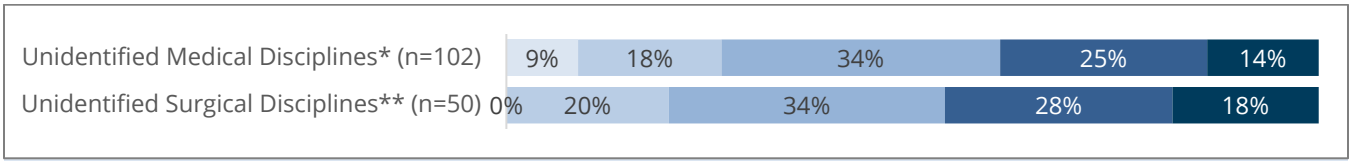
My supervisors....

do not yet engage in coaching in the moment.	rarely engage in coaching in the moment.	sometimes engage in coaching in the moment	frequently engage in coaching in the moment	routinely engage in coaching in the moment



*Formerly known as Anatomical Pathology

The disciplines were sorted in descending order by the % of respondents who selected the last two options on the implementation scale. The disciplines at the top of the graph had a greater percentage of respondents who experienced implementation of the key component to be further along compared to those at the bottom of the graph.



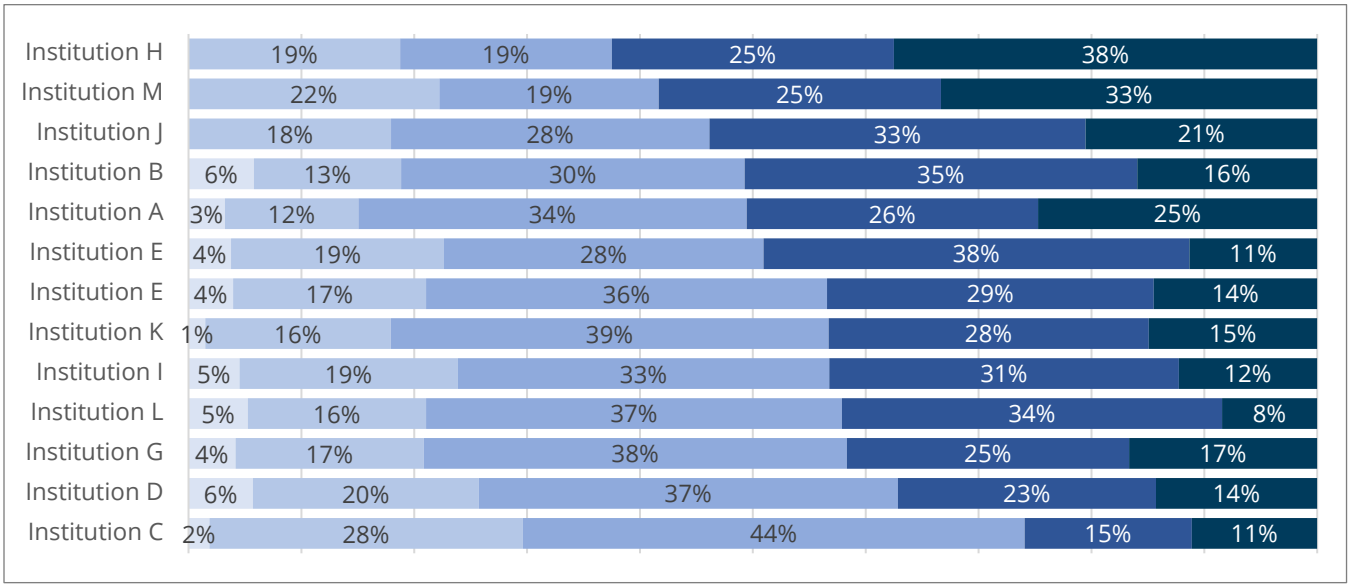
Unidentified medical disciplines**: Adolescent Medicine, Cardiology (adult), Child and Adolescent Psychiatry, Clinical Immunology and Allergy (adult), Clinical Immunology and Allergy (pediatric), Critical Care Medicine (adult), Critical Care Medicine (pediatric), Dermatology, Developmental Pediatrics, Diagnostic and Clinical Pathology (formerly known as General Pathology) Forensic Pathology, Gastroenterology (adult), Gastroenterology (pediatric), Geriatric Medicine, Geriatric Psychiatry, Hematological Pathology, Hematology, Maternal-Fetal Medicine, Medical Genetics and Genomics, Medical Oncology, Neonatal Perinatal Medicine, Nephrology (adult), Nephrology (pediatric), Neurology (pediatric), Pain Medicine, Pediatric Emergency Medicine, Pediatric Hematology Oncology, Respirology (adult), Rheumatology (adult)

Unidentified surgical disciplines*: Cardiac Surgery, Ophthalmology, Orthopedic Surgery, Otolaryngology - Head and Neck Surgery, Plastic Surgery, Surgical Foundations, Urology, Vascular Surgery

Disciplines without responses: Developmental Pediatrics, Gynecologic Oncology, Palliative Medicine, Surgical Foundations, Neuropathology, Nuclear Medicine

Figure 6C: Coaching in the Moment – Level of Implementation by Institution:
My supervisors....

do not yet engage in coaching in the moment.	rarely engage in coaching in the moment.	sometimes engage in coaching in the moment	frequently engage in coaching in the moment	routinely engage in coaching in the moment



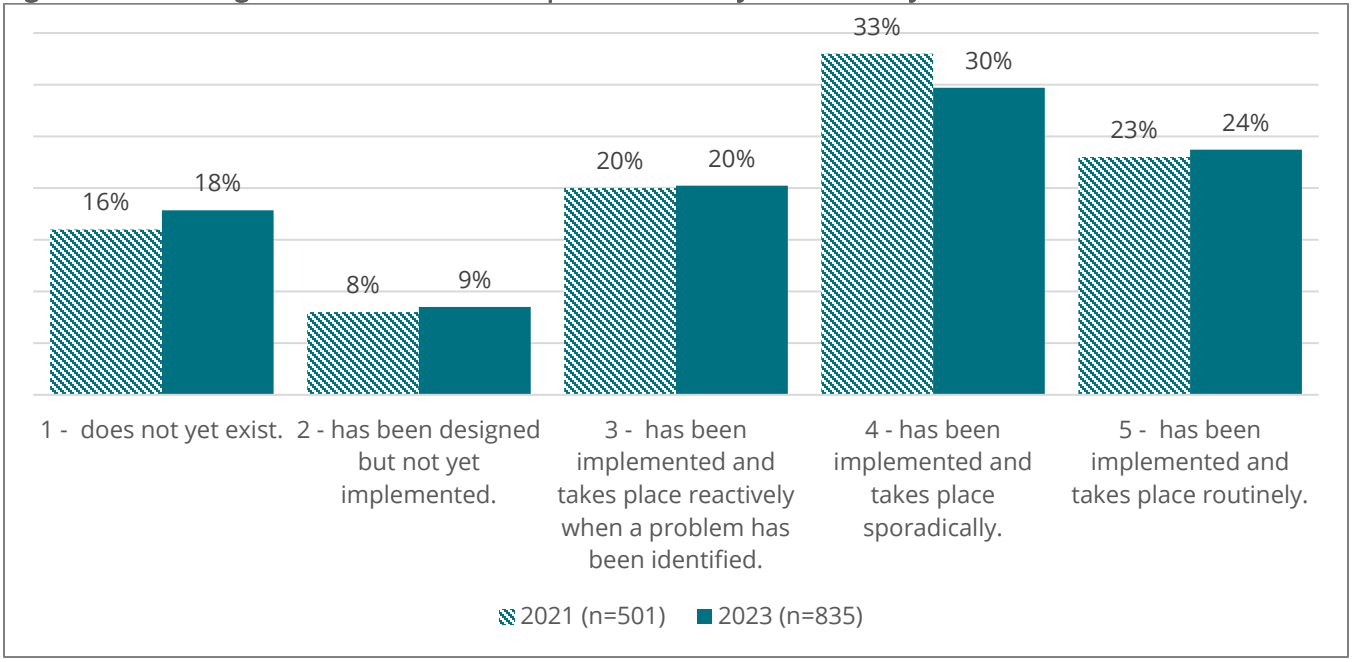
To maintain the confidentiality of the institutions, the number of respondents is not disclosed.

The institutions were sorted in descending order by the % of respondents who selected the last two options on the implementation scale. The institutions at the top of the graph had a greater percentage of respondents who experienced implementation of the key component being further along compared to those at the bottom of the graph. To maintain the confidentiality of the institutions, the number of respondents is not disclosed.

Coaching Over Time

In CBD programs some faculty are designated to act as "coaches over time". This longitudinal process involves the regular review of, and reflection on learning portfolio data between a resident and designated faculty member to guide development towards competence, individualized learning goals and self-regulated lifelong learning skills (Royal College of Physicians and Surgeons of Canada, 2018).

Figure 7A: Coaching Over Time – Level of Implementation by Year of Study:

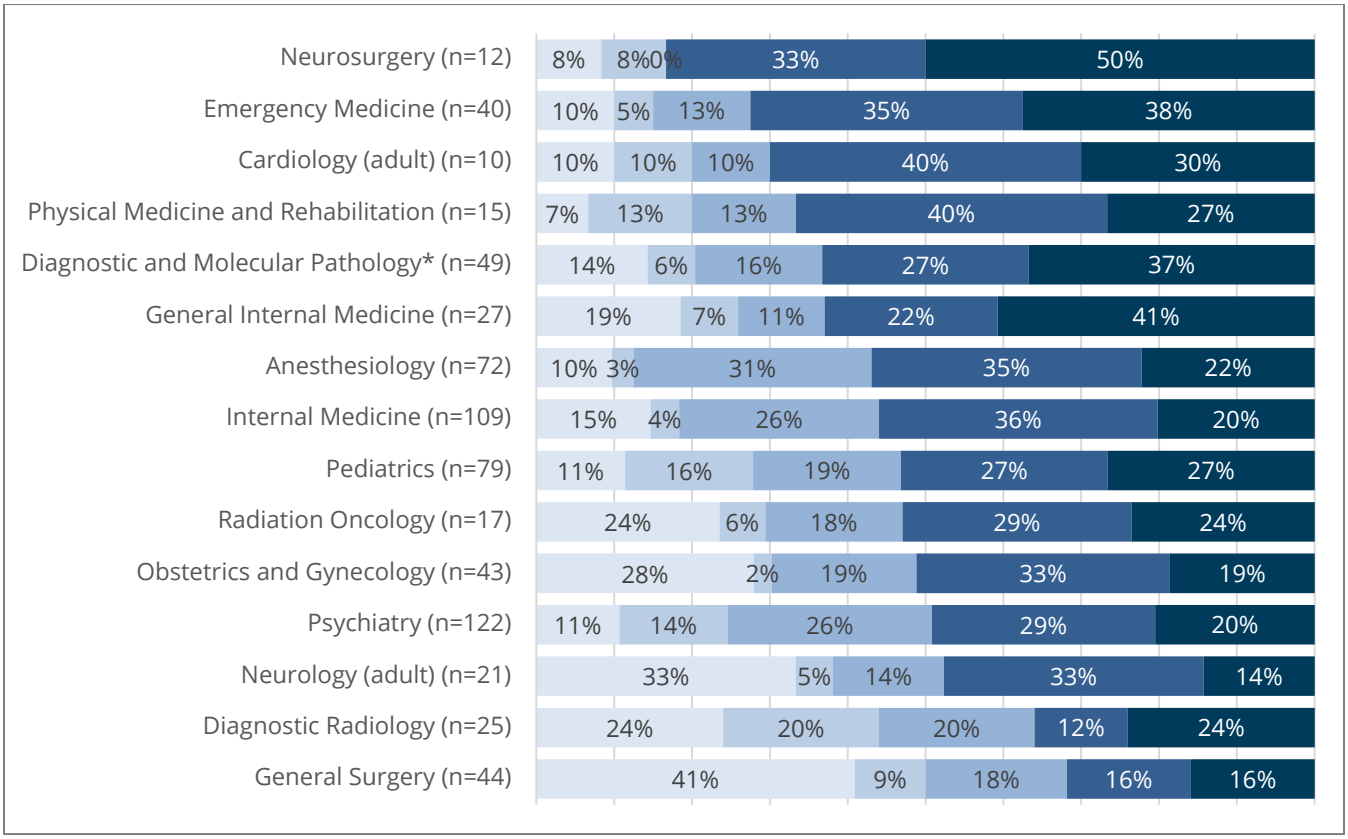


✪ There were modifications to the scale rating descriptors between the 2021 and 2023 surveys.

Figure 7B: Coaching Over Time – Level of Implementation by Discipline:

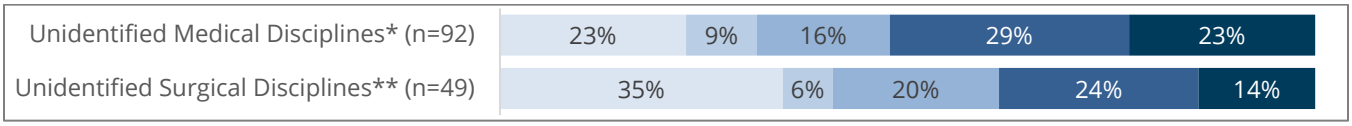
A process for coaching me over time....

does not yet exist.	has been designed but not yet implemented.	has been implemented and takes place reactively when a problem has been identified.	has been implemented and takes places sporadically.	has been implemented and takes place routinely.



*Formerly known as Anatomical Pathology

The disciplines were sorted in descending order by the % of respondents who selected the last two options on the implementation scale. The disciplines at the top of the graph had a greater percentage of respondents who experienced implementation of the key component to be further along compared to those at the bottom of the graph.



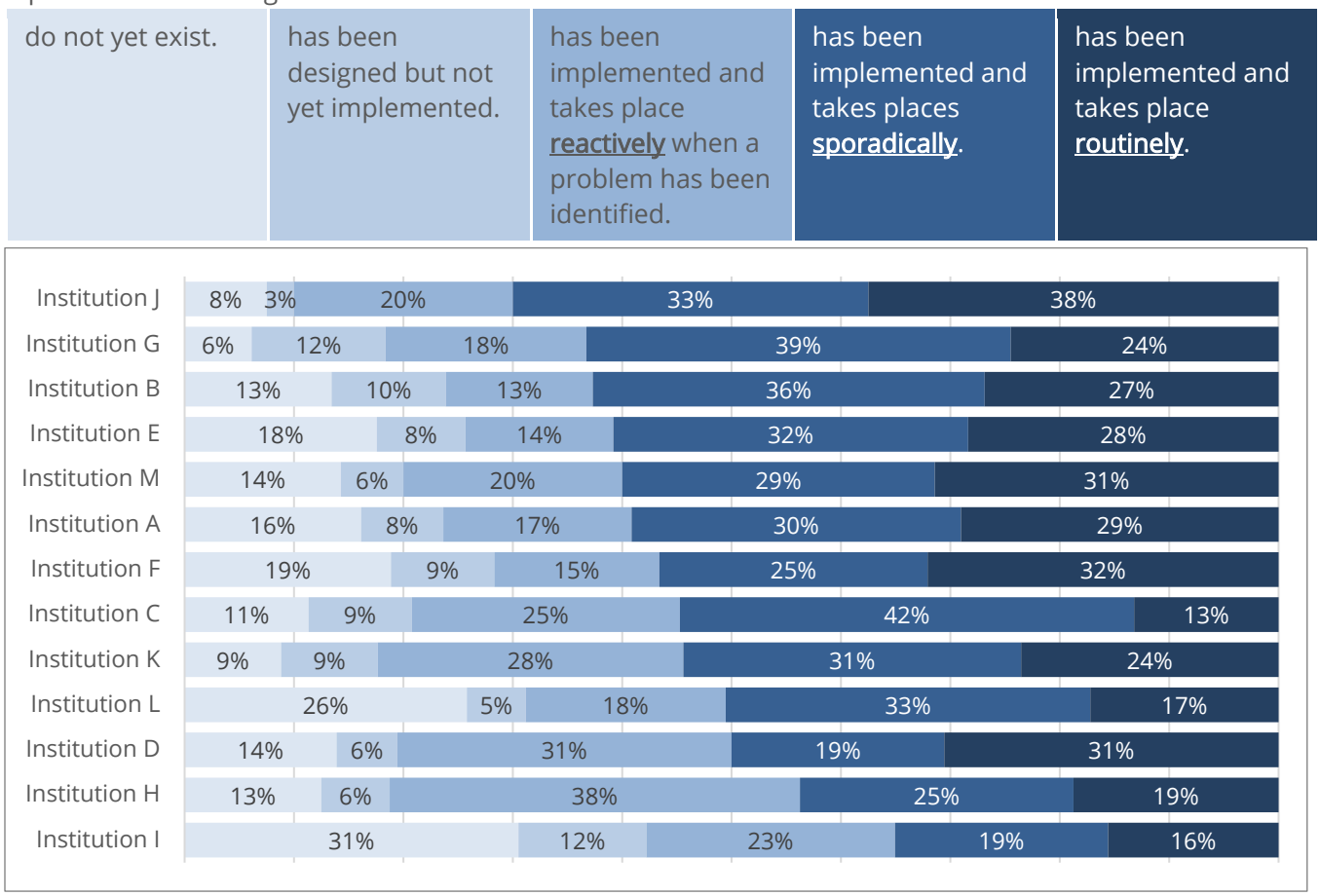
Unidentified medical disciplines**: Adolescent Medicine, Cardiology (adult), Child and Adolescent Psychiatry, Clinical Immunology and Allergy (adult), Clinical Immunology and Allergy (pediatric), Critical Care Medicine (adult), Critical Care Medicine (pediatric), Dermatology, Developmental

Pediatrics, Diagnostic and Clinical Pathology (formerly known as General Pathology) Forensic Pathology, Gastroenterology (adult), Gastroenterology (pediatric), Geriatric Medicine, Geriatric Psychiatry, Hematological Pathology, Hematology, Maternal-Fetal Medicine, Medical Genetics and Genomics, Medical Oncology, Neonatal Perinatal Medicine, Nephrology (adult), Nephrology (pediatric), Neurology (pediatric), Pain Medicine, Pediatric Emergency Medicine, Pediatric Hematology Oncology, Respirology (adult), Rheumatology (adult)

Unidentified surgical disciplines*: Ophthalmology, Orthopedic Surgery, Otolaryngology - Head and Neck Surgery, Plastic Surgery, Surgical Foundations, Urology, Vascular Surgery

Disciplines without responses: Developmental Pediatrics, Gynecologic Oncology, Palliative Medicine, Surgical Foundations, Neuropathology, Nuclear Medicine

Figure 7C: Coaching Over Time – Level of Implementation by Institution:
A process for coaching me over time....



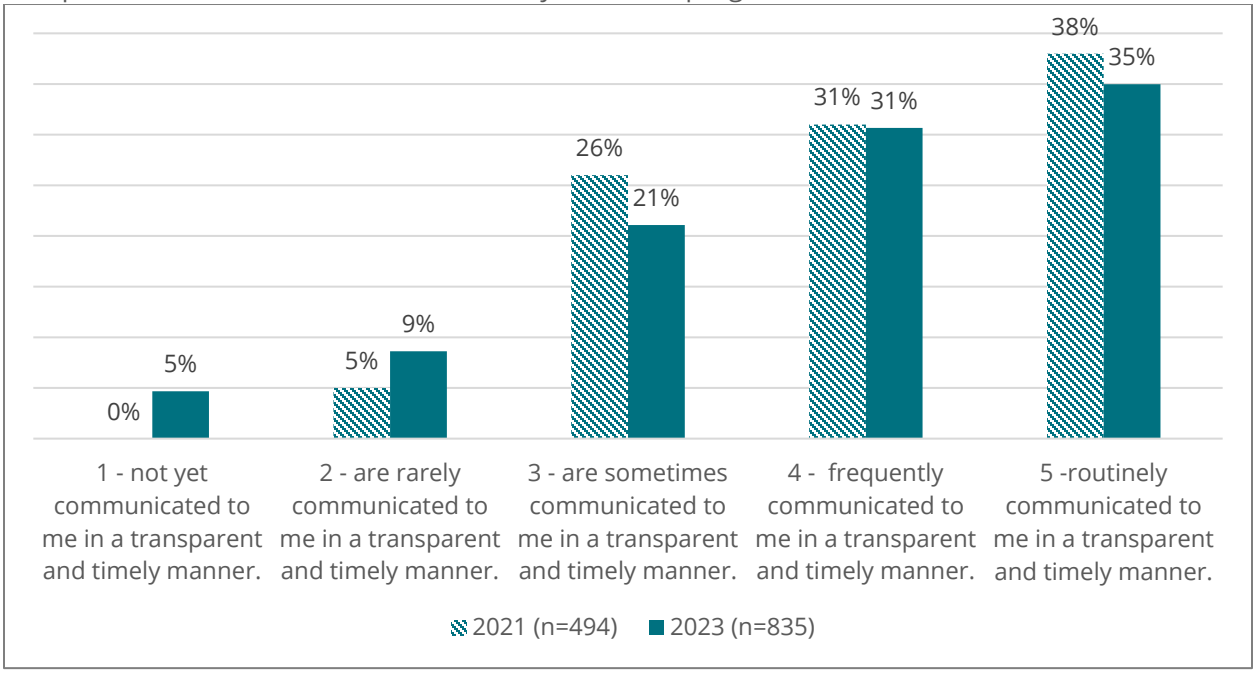
To maintain the confidentiality of the institutions, the number of respondents is not disclosed.

The institutions were sorted in descending order by the % of respondents who selected the last two options on the implementation scale. The institutions at the top of the graph had a greater percentage of respondents who experienced implementation of the key component being further along compared to those at the bottom of the graph.

Competence Committee

Competence Committee – Competence committees synthesize and appraise qualitative and quantitative data from multiple documented observations to reveal the broad picture of a resident physician's progression toward competence. The committee's processes must be transparent, and outcome decisions made by the committee must be shared with the resident undergoing review in a clear and timely manner (RCPSC, 2019a).

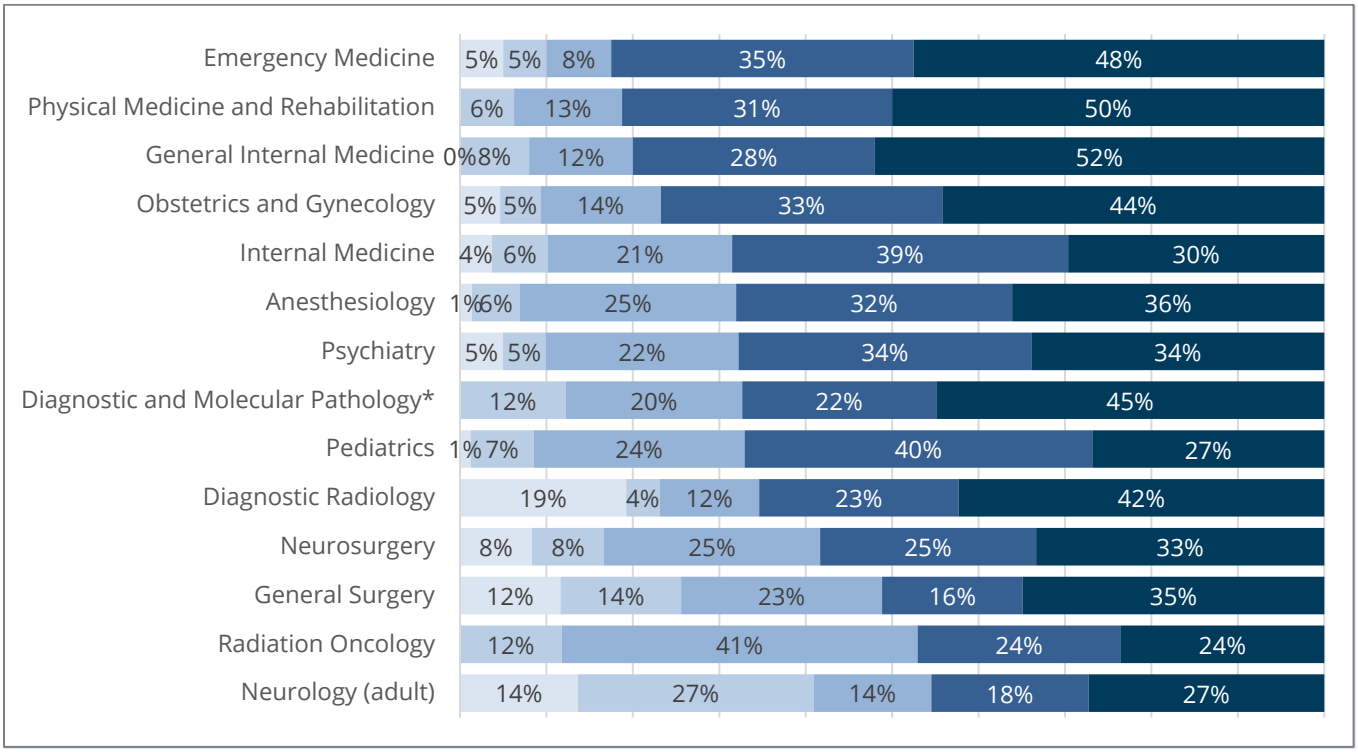
Figure 8A: Competence Committee – Level of Implementation by Year of Study:
Competence Committee decisions about my academic progression are……



The 2021 iteration of the competence committee scale included multiple elements including the frequency of reviewing resident performance by the competence committee, as well as the transparency and efficacy in communicating competence committee processes and outcomes to the residents. The 2023 version was revised to focus more specifically on the communication to the residents about the decisions around their progression made by the competence committee.

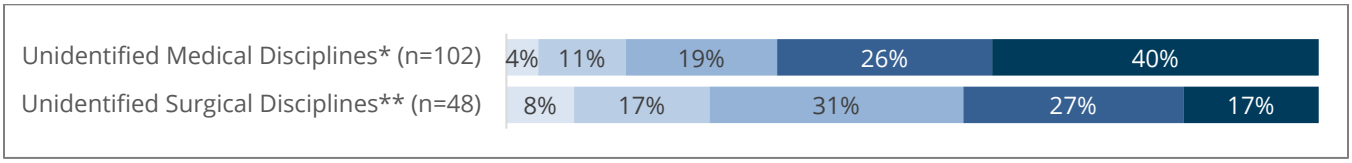
Figure 8B: Competence Committee – Level of Implementation by Discipline:
Competence Committee decisions about my academic progression are.....

not yet communicated to me in a transparent and timely manner.	rarely communicated to me in a transparent and timely manner.	sometimes communicated to me in a transparent and timely manner.	frequently communicated to me in a transparent and timely manner.	routinely communicated to me in a transparent and timely manner.



*Formerly known as Anatomical Pathology

The disciplines were sorted in descending order by the % of respondents who selected the last two options on the implementation scale. The disciplines at the top of the graph had a greater percentage of respondents who experienced implementation of the key component to be further along compared to those at the bottom of the graph.



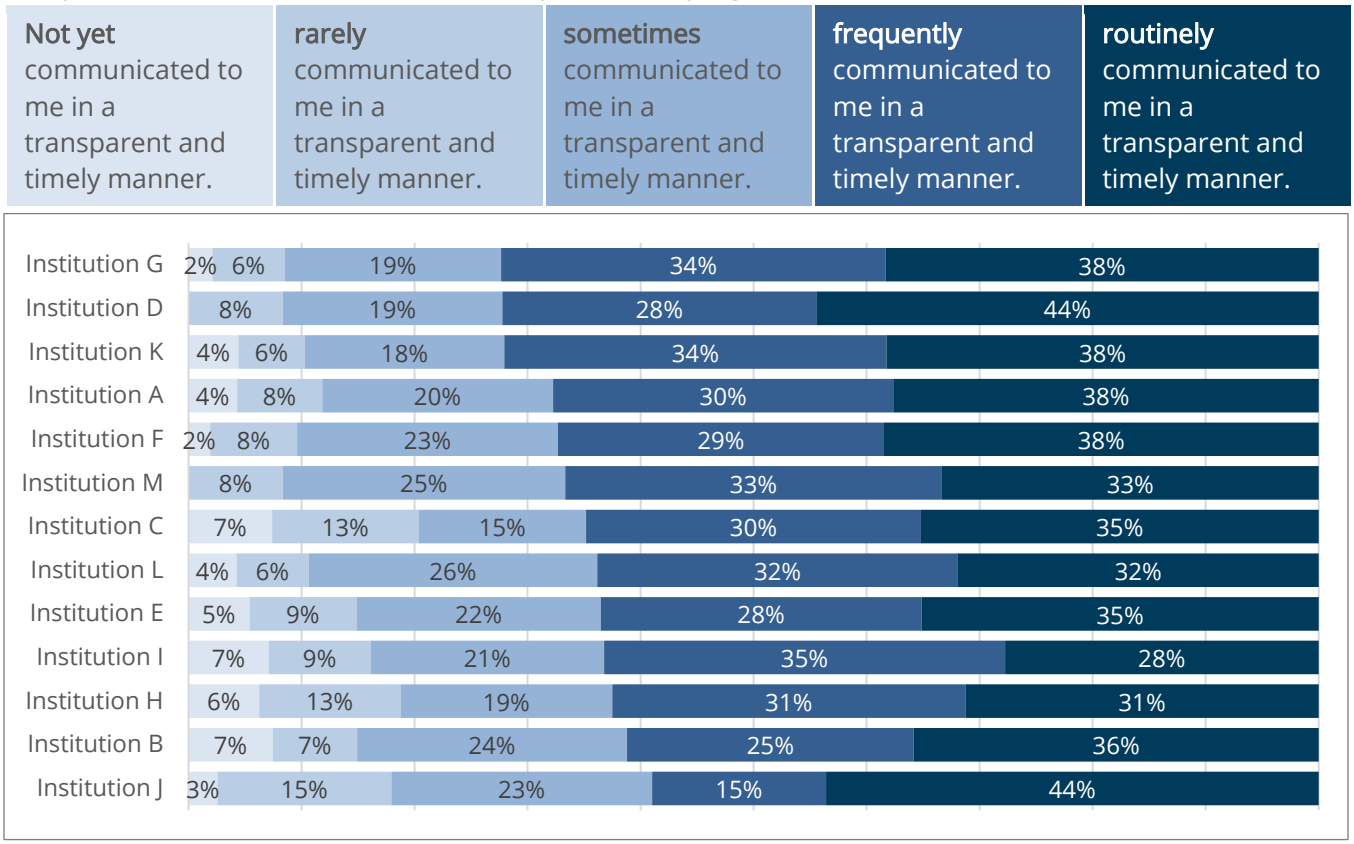
Unidentified medical disciplines**: Adolescent Medicine, Cardiology (adult), Child and Adolescent Psychiatry, Clinical Immunology and Allergy (adult), Clinical Immunology and Allergy (pediatric), Critical Care Medicine (adult), Critical Care Medicine (pediatric), Dermatology, Developmental Pediatrics, Diagnostic and Clinical Pathology (formerly known as General Pathology) Forensic Pathology, Gastroenterology (adult), Gastroenterology (pediatric), Geriatric Medicine, Geriatric Psychiatry, Hematological Pathology, Hematology, Maternal-Fetal Medicine, Medical Genetics and

Genomics, Medical Oncology, Neonatal Perinatal Medicine, Nephrology (adult), Nephrology (pediatric), Neurology (pediatric), Pain Medicine, Pediatric Emergency Medicine, Pediatric Hematology Oncology, Respirology (adult), Rheumatology (adult)

Unidentified surgical disciplines*: Cardiac Surgery, Ophthalmology, Orthopedic Surgery, Otolaryngology - Head and Neck Surgery, Plastic Surgery, Surgical Foundations, Urology, Vascular Surgery

Disciplines without responses: Gynecologic Oncology, Palliative Medicine, Surgical Foundations, Neuropathology, Nuclear Medicine

Figure 8C: Competence Committee – Level of Implementation by Institution:
Competence Committee decisions about my academic progression are.....



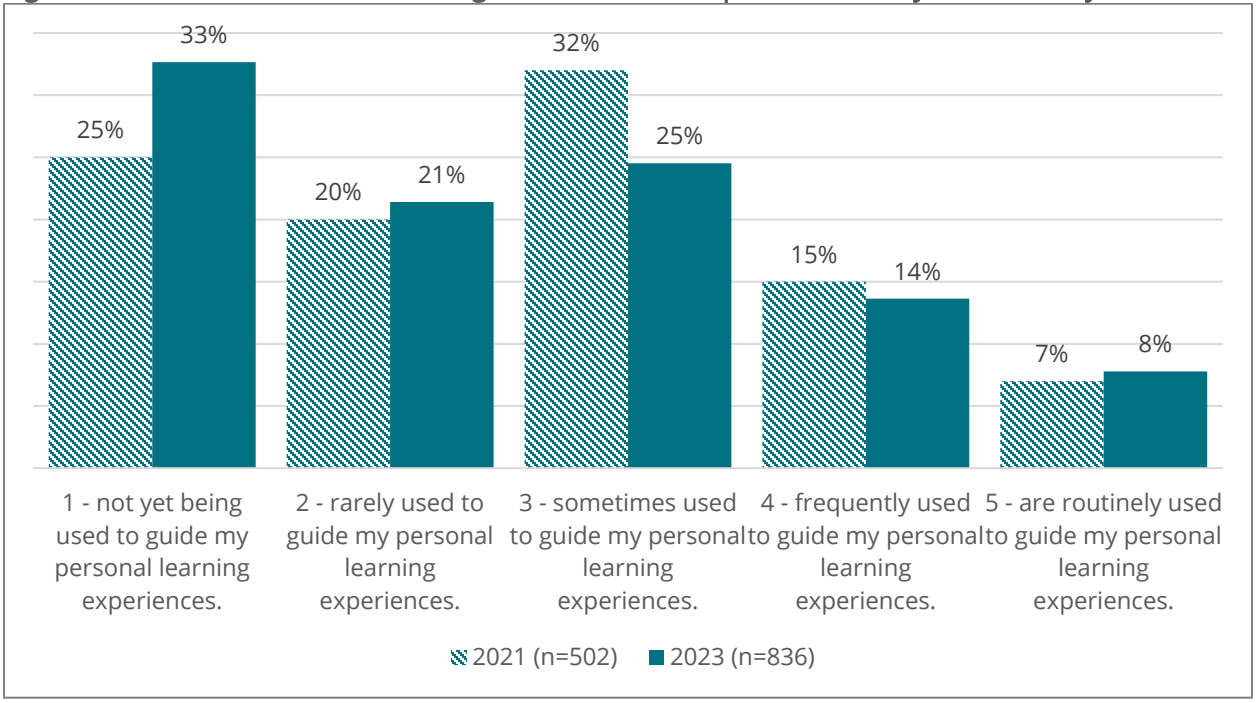
To maintain the confidentiality of the institutions, the number of respondents is not disclosed.

The institutions were sorted in descending order by the % of respondents who selected the last two options on the implementation scale. The institutions at the top of the graph had a greater percentage of respondents who experienced implementation of the key component being further along compared to those at the bottom of the graph.

Individualized Resident Physician Stage-Based Learning Plans

Individualized Resident Physician Stage-Based Learning Plans – CBME encourages a developmental approach that recognizes that all residents can benefit from documented individualized learning plans and stage-specific supports. These may include special mentors, readings, or modified rotations to maximize growth and learning (RCPSC, 2019a).

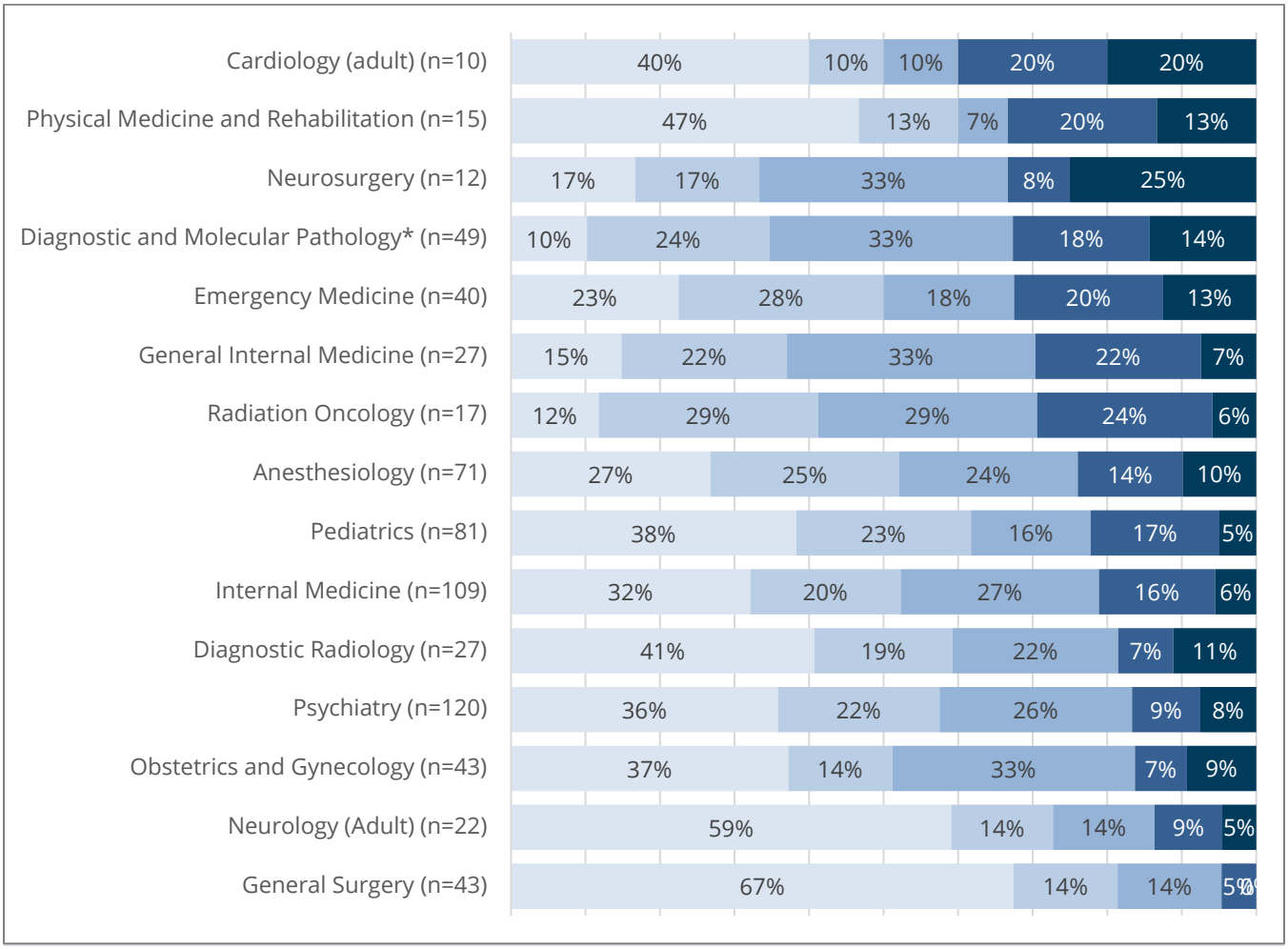
Figure 9A: Individual Resident Learning Plans – Level of Implementation by Year of Study:



✪ There were slight modifications to the rating descriptors between the 2021 and 2023.

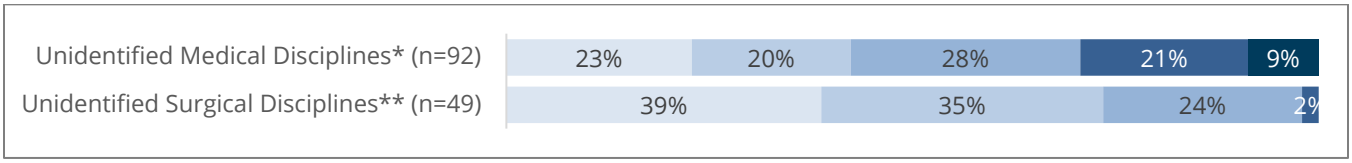
Figure 9B: Individual Resident Learning Plans – Level of Implementation by Discipline:
Individual resident learning plans are....

not yet being used to guide my personal learning experiences.	**rarely** used to guide my personal learning experiences.	**sometimes** used to guide my personal learning experiences.	**frequently** used to guide my personal learning experiences.	**routinely** used to guide my personal learning experiences.



*Formerly known as Anatomical Pathology

The disciplines were sorted in descending order by the % of respondents who selected the last two options on the implementation scale. The disciplines at the top of the graph had a greater percentage of respondents who experienced implementation of the key component to be further along compared to those at the bottom of the graph.



Unidentified medical disciplines**: Adolescent Medicine, Child and Adolescent Psychiatry, Clinical Immunology and Allergy (adult), Clinical Immunology and Allergy (pediatric), Critical Care Medicine (adult), Critical Care Medicine (pediatric), Dermatology, Developmental Pediatrics, Diagnostic and Clinical Pathology (formerly known as General Pathology) Forensic Pathology, Gastroenterology (adult), Gastroenterology (pediatric), Geriatric Medicine, Geriatric Psychiatry, Hematological Pathology, Hematology, Maternal-Fetal Medicine, Medical Genetics and Genomics, Medical Oncology, Neonatal Perinatal Medicine, Nephrology (adult), Nephrology (pediatric), Neurology (pediatric), Pain Medicine, Pediatric Emergency Medicine, Pediatric Hematology Oncology, Respirology (adult), Rheumatology (adult)

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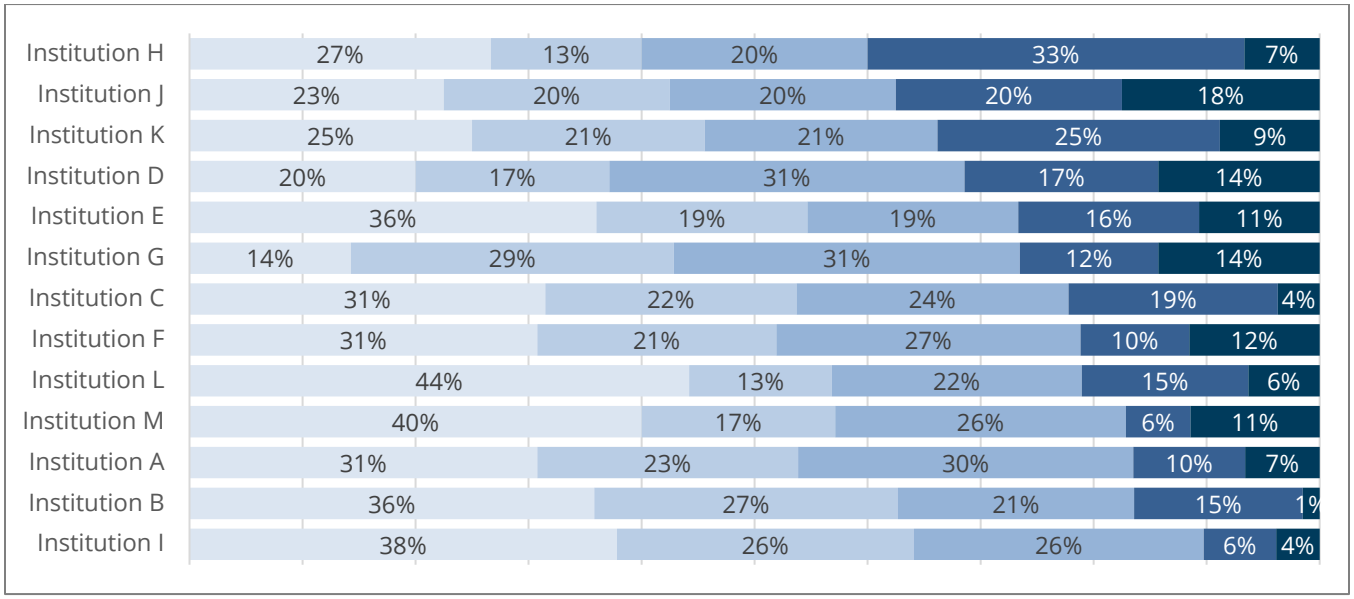
Disciplines without responses: Gynecologic Oncology, Palliative Medicine, Surgical Foundations, Neuropathology, Nuclear Medicine

Figure 9C: Individual Resident Learning Plans – Level of Implementation by Institution:
Individual resident learning plans are....

not yet communicated to me in a transparent and timely manner.	rarely communicated to me in a transparent and timely manner.	sometimes communicated to me in a transparent and timely manner.	frequently communicated to me in a transparent and timely manner.	routinely communicated to me in a transparent and timely manner.



To maintain the confidentiality of the institutions, the number of respondents is not disclosed.

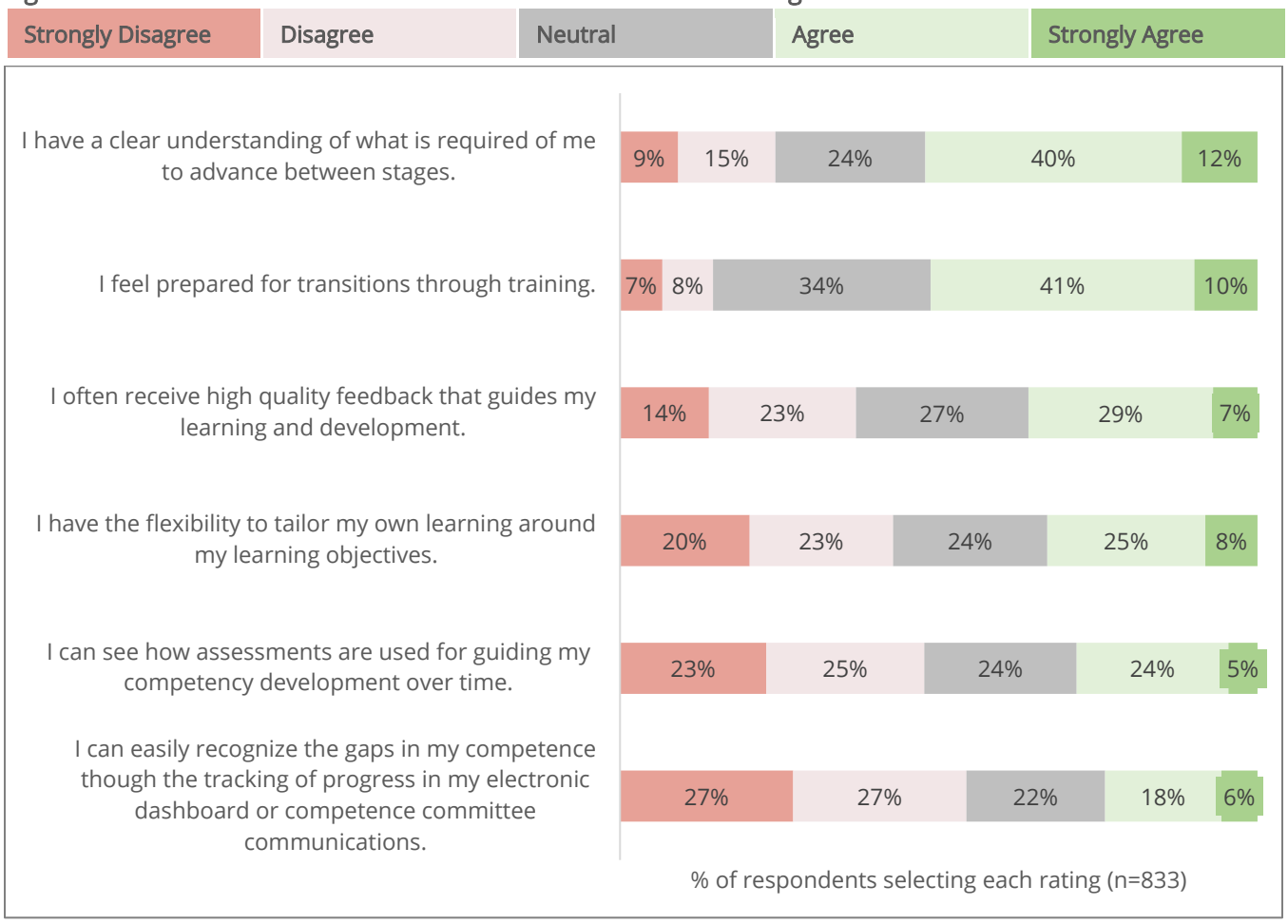
The institutions were sorted in descending order by the % of respondents who selected the last two options on the implementation scale. The institutions at the top of the graph had a greater percentage of respondents who experienced implementation of the key component being further along compared to those at the bottom of the graph.

Outcomes

CBD is a complex, multi-factorial intervention that involves the interplay of many variables. Consequently, there is a broad range of outcomes that can be assessed regarding the impact of CBD. These include both intended and unintended outcomes and span from early in-training effects to possible downstream impacts on the learner and patient outcomes. As part of the national evaluation of CBD, there has been a continuous effort to develop a strategy to effectively and tangibly measure the diverse outcomes of CBD, and this work continues to progress (Hall et al. 2024).

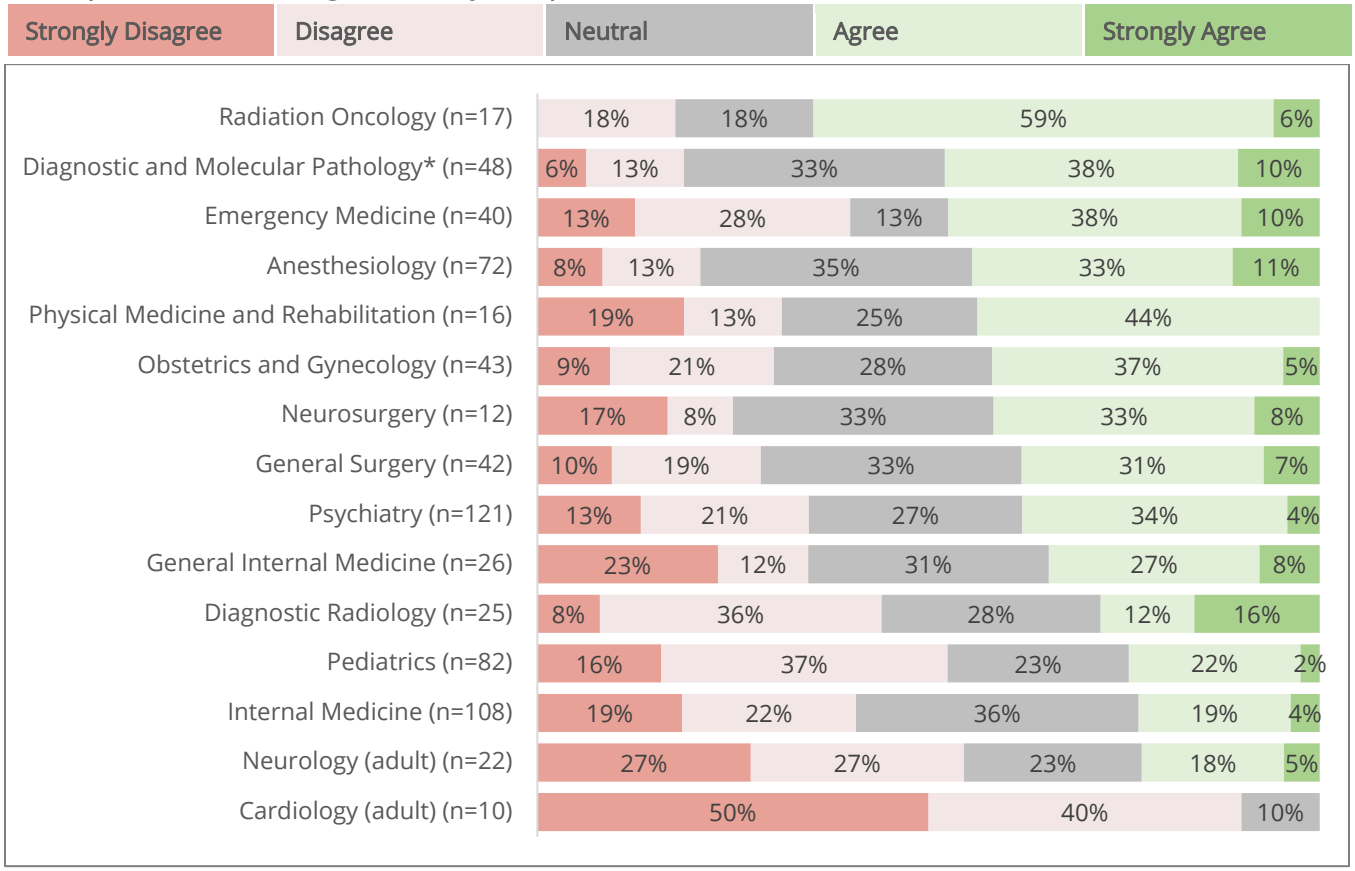
To gain a better understanding of the extent to which some of the intended outcomes of CBD are being achieved, survey respondents were asked to rate six outcome statements on a scale from "disagree" (1) to "agree" (5). The distribution in rating for these six outcomes statements is presented in Figure 10.

Figure 10: CBD Outcome Statements – Overall Distribution in Ratings



Figures 11- 16 provide a breakdown of each outcome statement by discipline (A) and by institution (B).

Figure 11A: Outcomes Statement - "I often receive high quality feedback that guides my learning and development" – Level of Agreement by Discipline:



*Formerly known as Anatomical Pathology

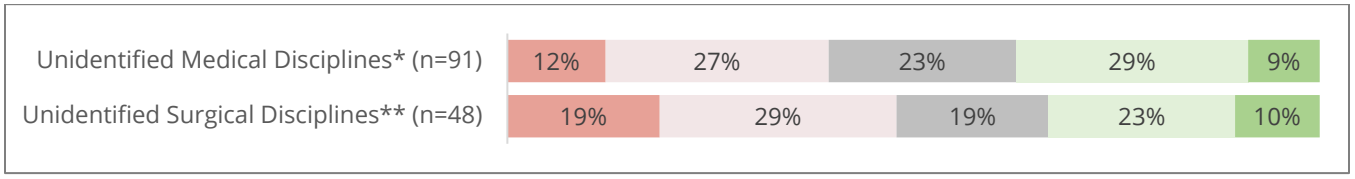
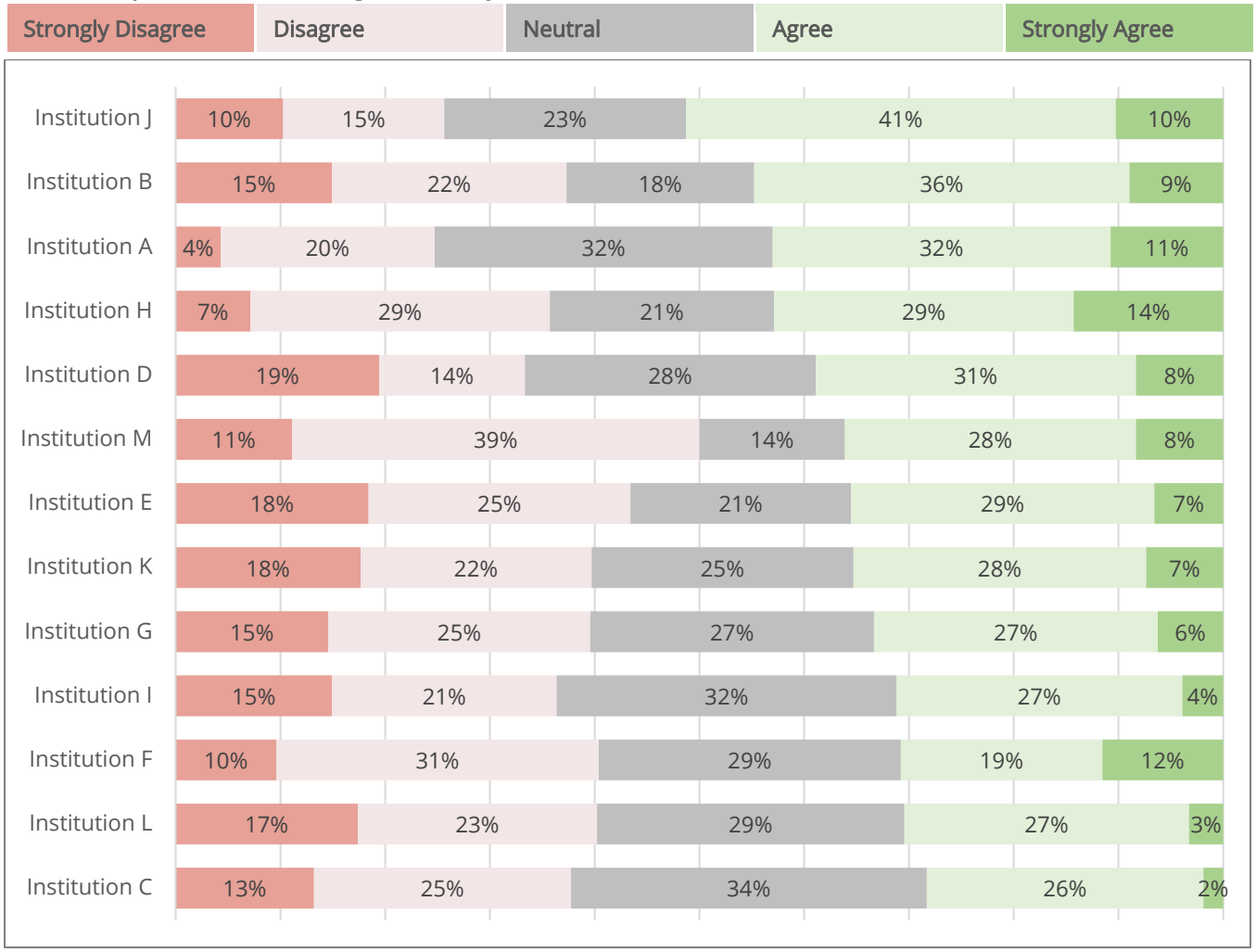
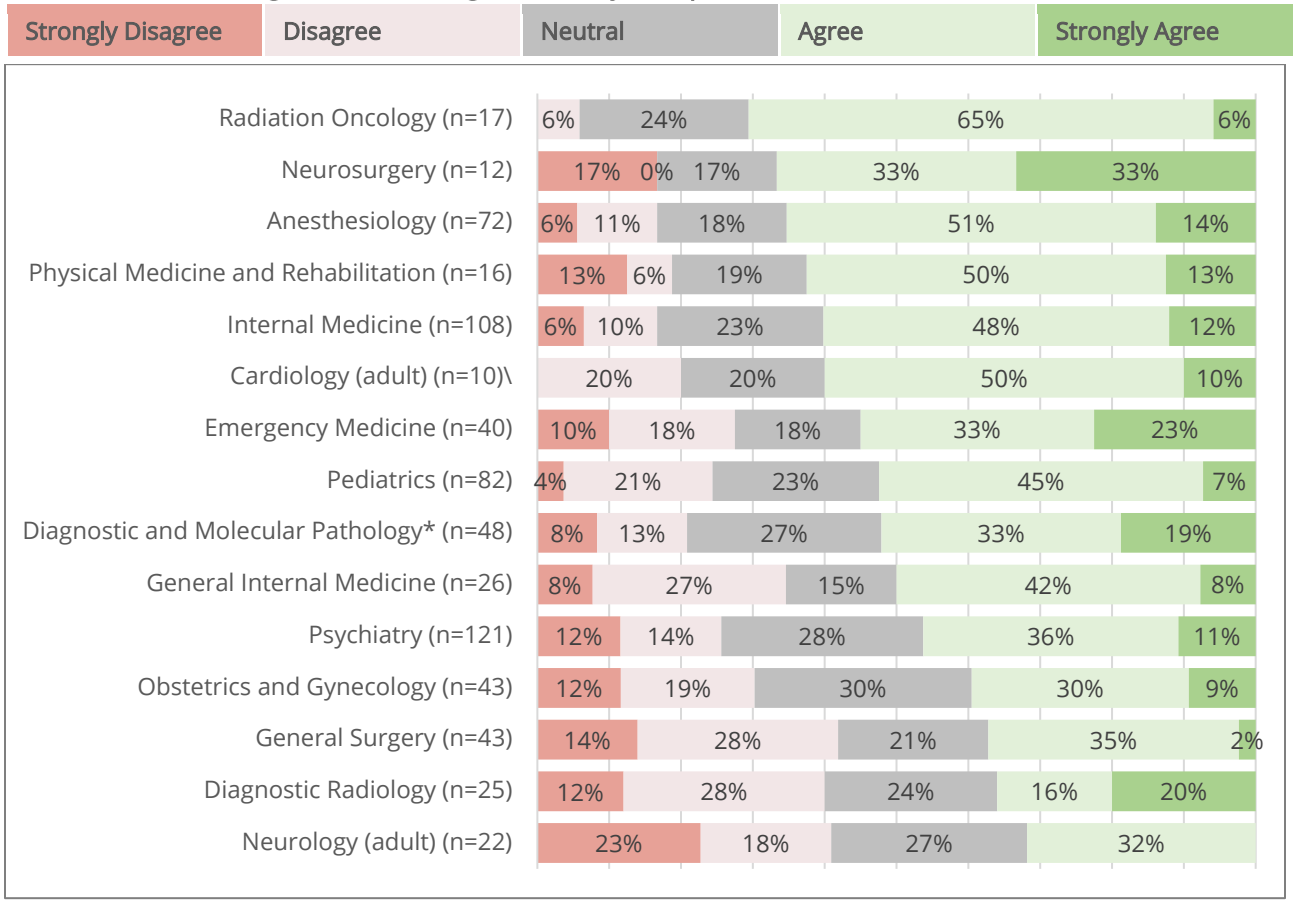


Figure 11B: Outcomes Statement – "I often receive high quality feedback that guides my learning and development" – Level of Agreement by Institution:



To maintain the confidentiality of the institutions, the number of respondents is not disclosed.

Figure 12A: Outcomes Statement – "I have a clear understanding of what is required of me to advance between stages" – Level of Agreement by Discipline



*Formerly known as Anatomical Pathology

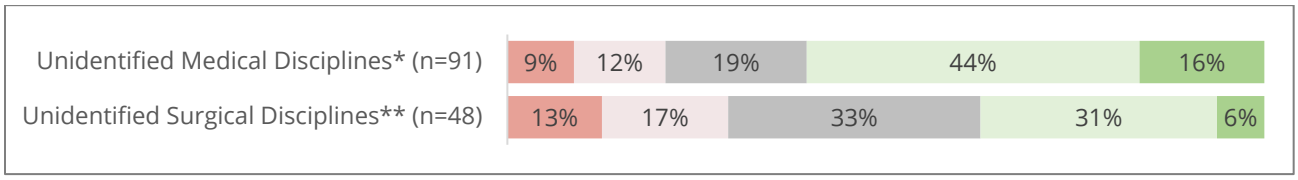
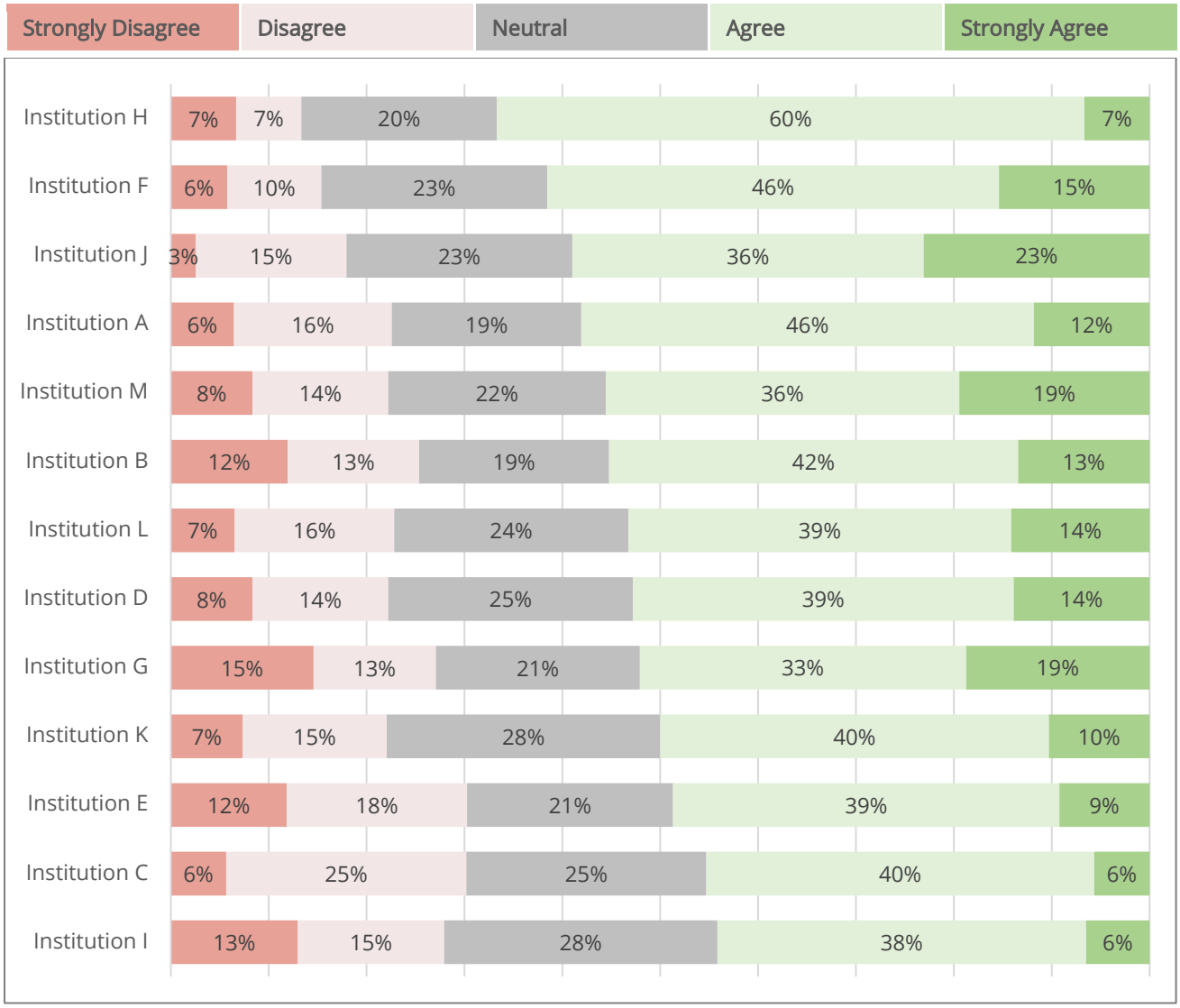
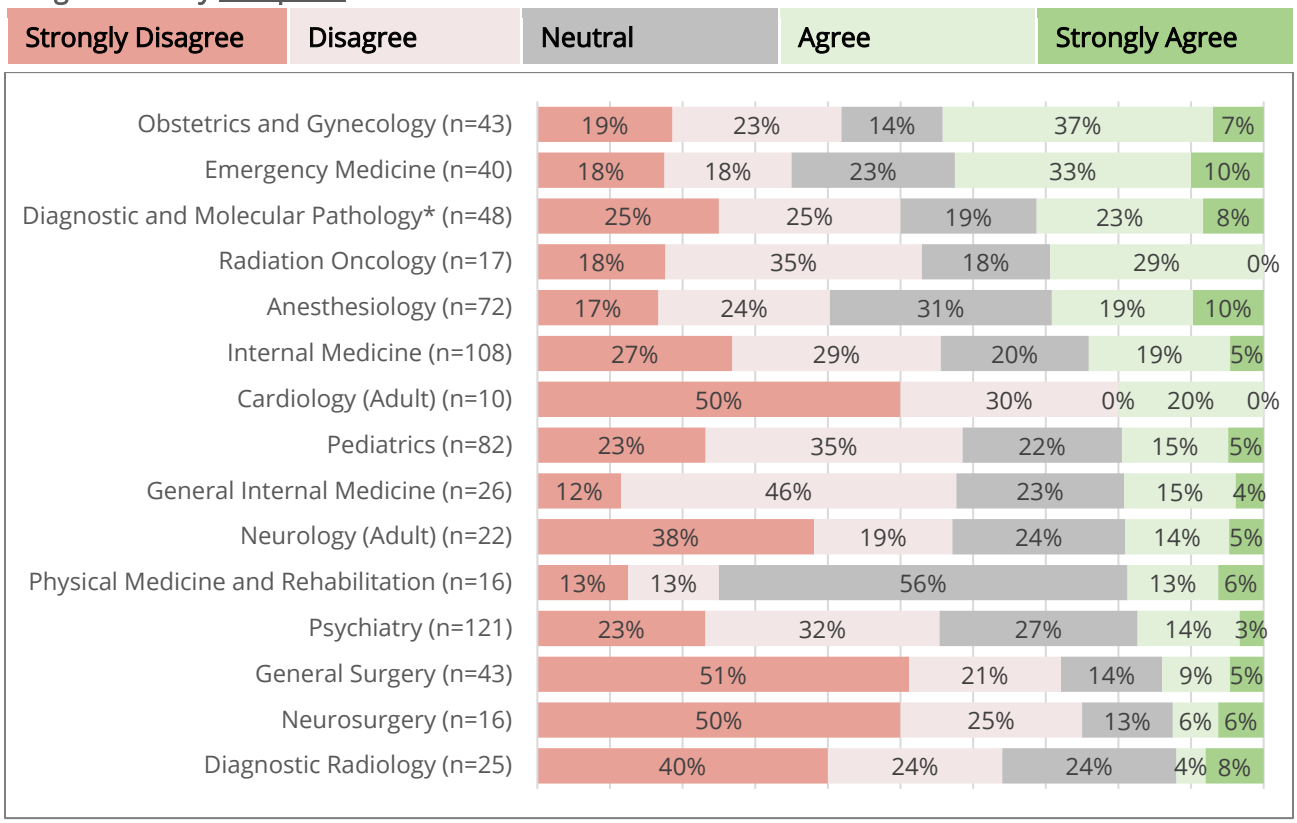


Figure 12B: Outcomes Statement – "I have a clear understanding of what is required of me to advance between stages" – Level of Agreement by Institution:



To maintain the confidentiality of the institutions, the number of respondents is not disclosed.

Figure 13A: Outcomes Statement – "I can easily recognize the gaps in my competence through the tracking of progress in my electronic dashboard or competence committee communications" – Level of Agreement by Discipline:



*Formerly known as Anatomical Pathology

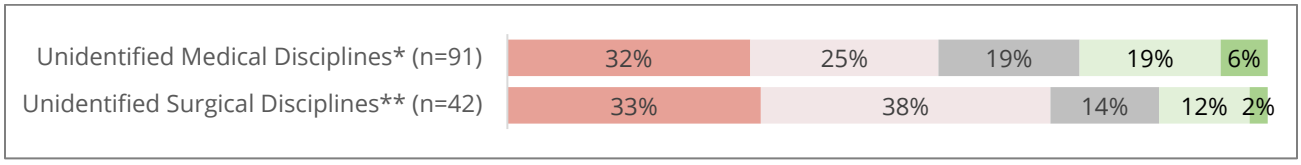
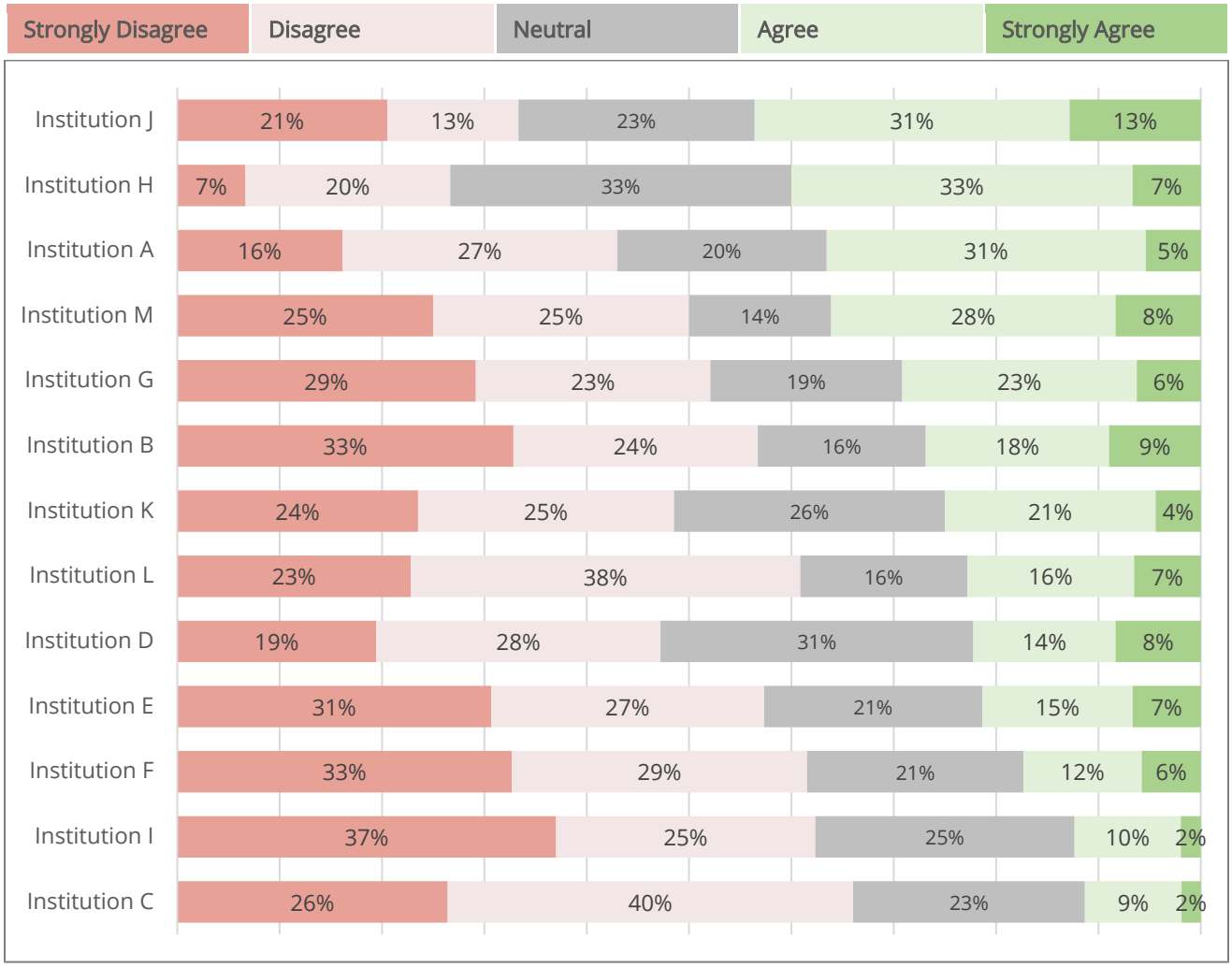
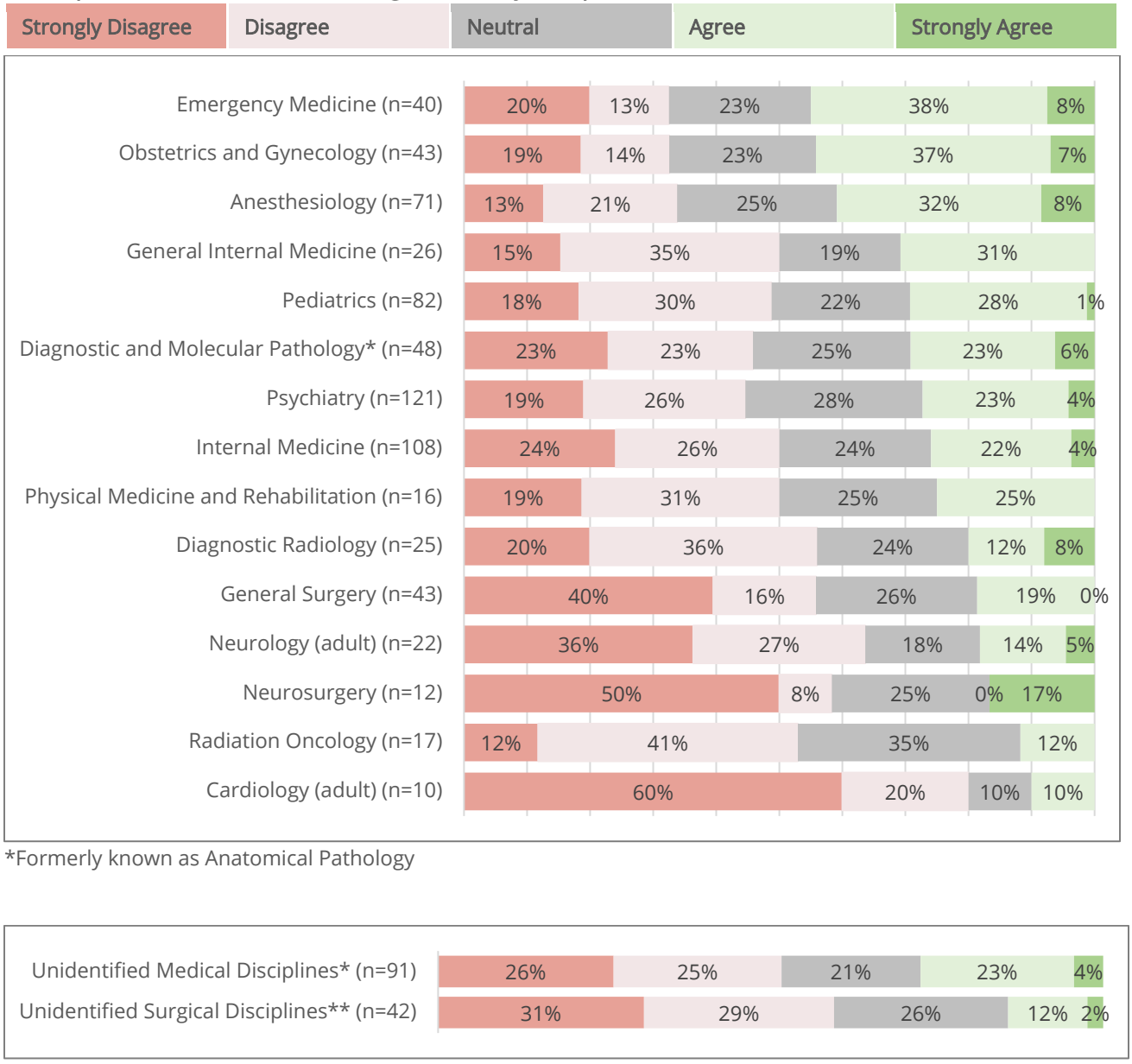


Figure 13B: I can easily recognize the gaps in my competence through the tracking of progress in my electronic dashboard or competence committee communications – Level of Agreement by Institution:



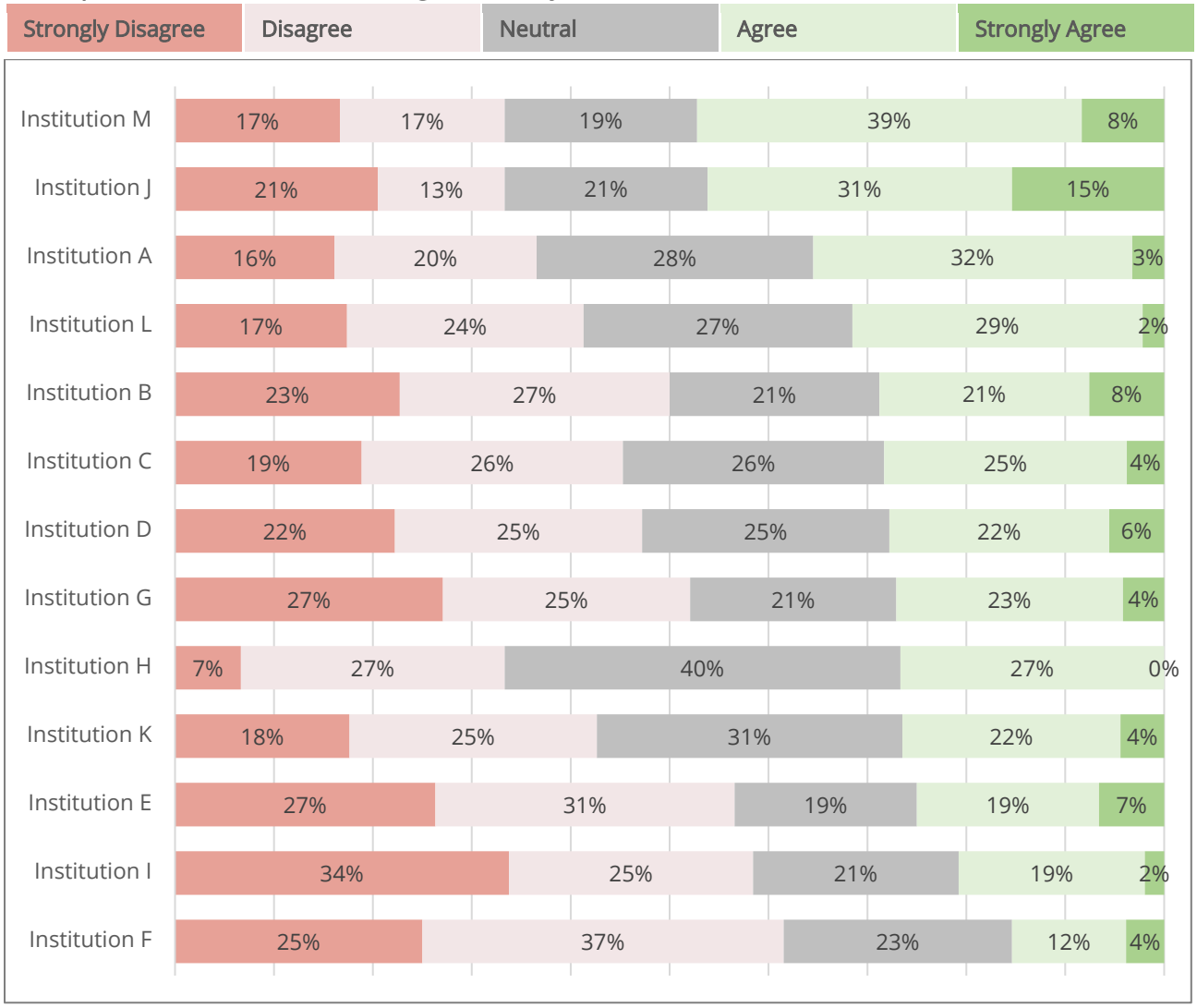
To maintain the confidentiality of the institutions, the number of respondents is not disclosed.

Figure 14A: Outcomes Statement – "I can see how assessments are used for guiding my competency development over time" – Level of Agreement by Discipline:



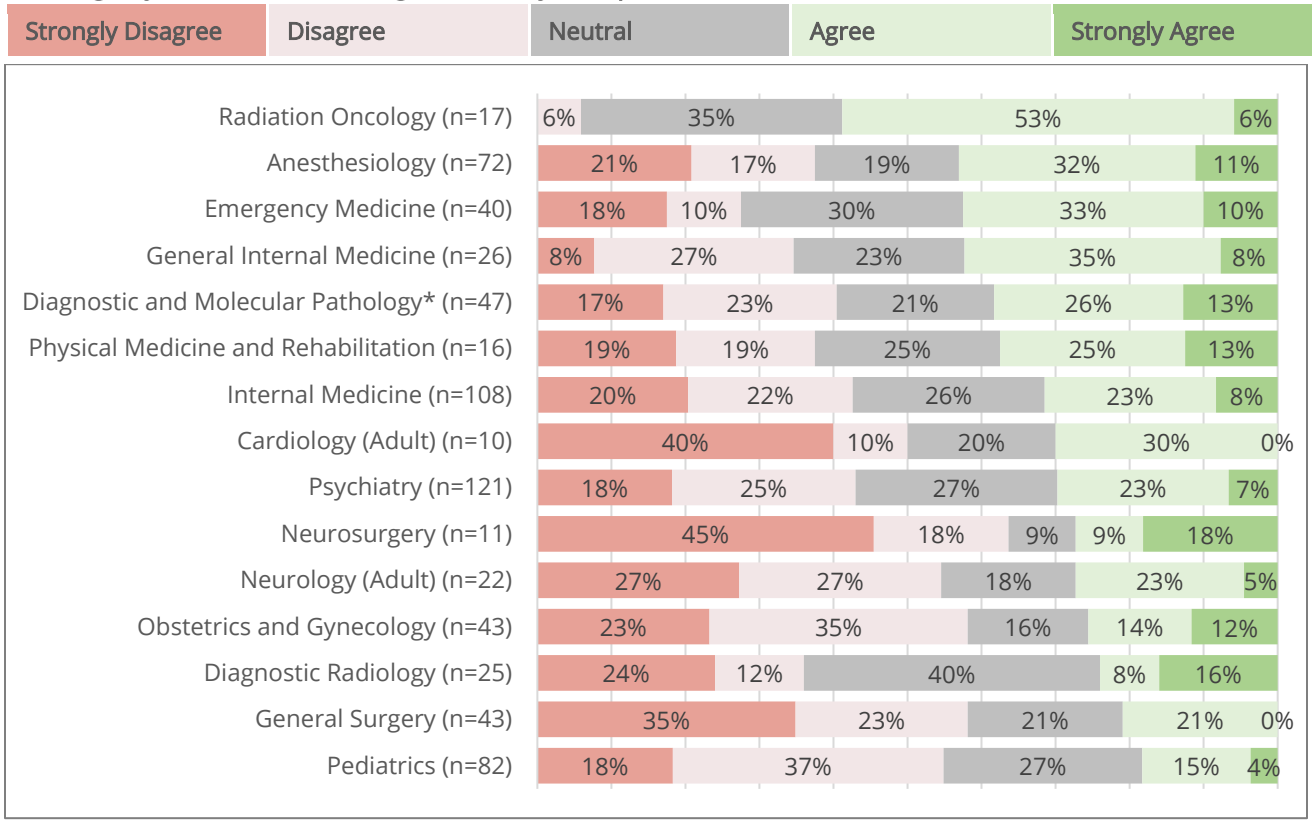
*Formerly known as Anatomical Pathology

Figure 14B: Outcomes Statement - "I can see how assessments are used for guiding my competency development over time" – Level of Agreement by Institution:



To maintain the confidentiality of the institutions, the number of respondents is not disclosed.

Figure 15A: Outcomes Statement - "I have the flexibility to tailor my own learning around my learning objectives" – Level of Agreement by Discipline:



*Formerly known as Anatomical Pathology

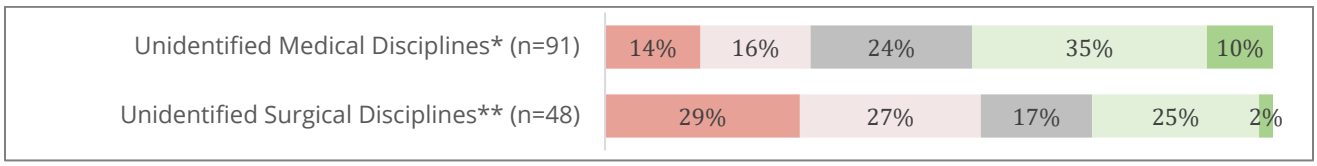
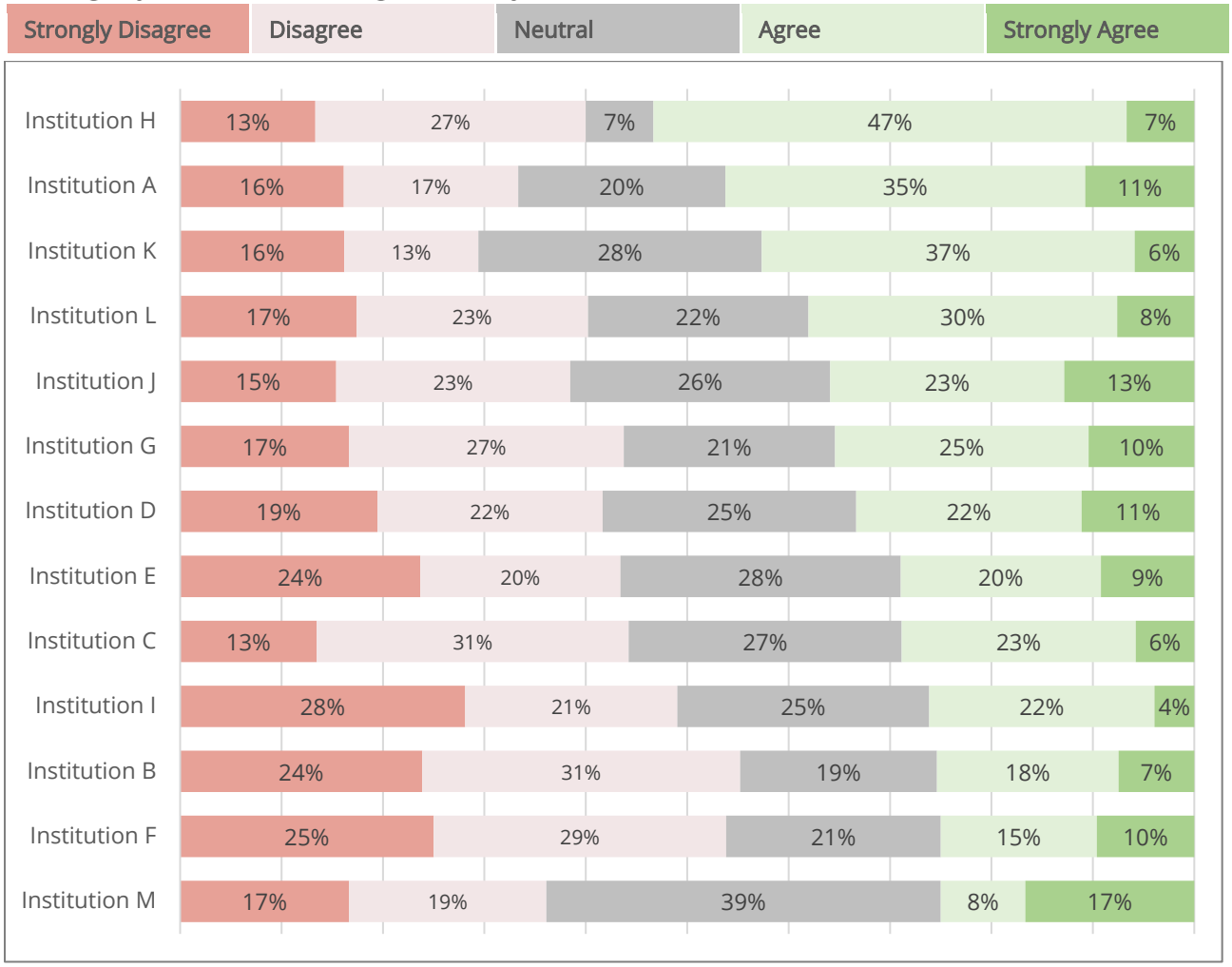
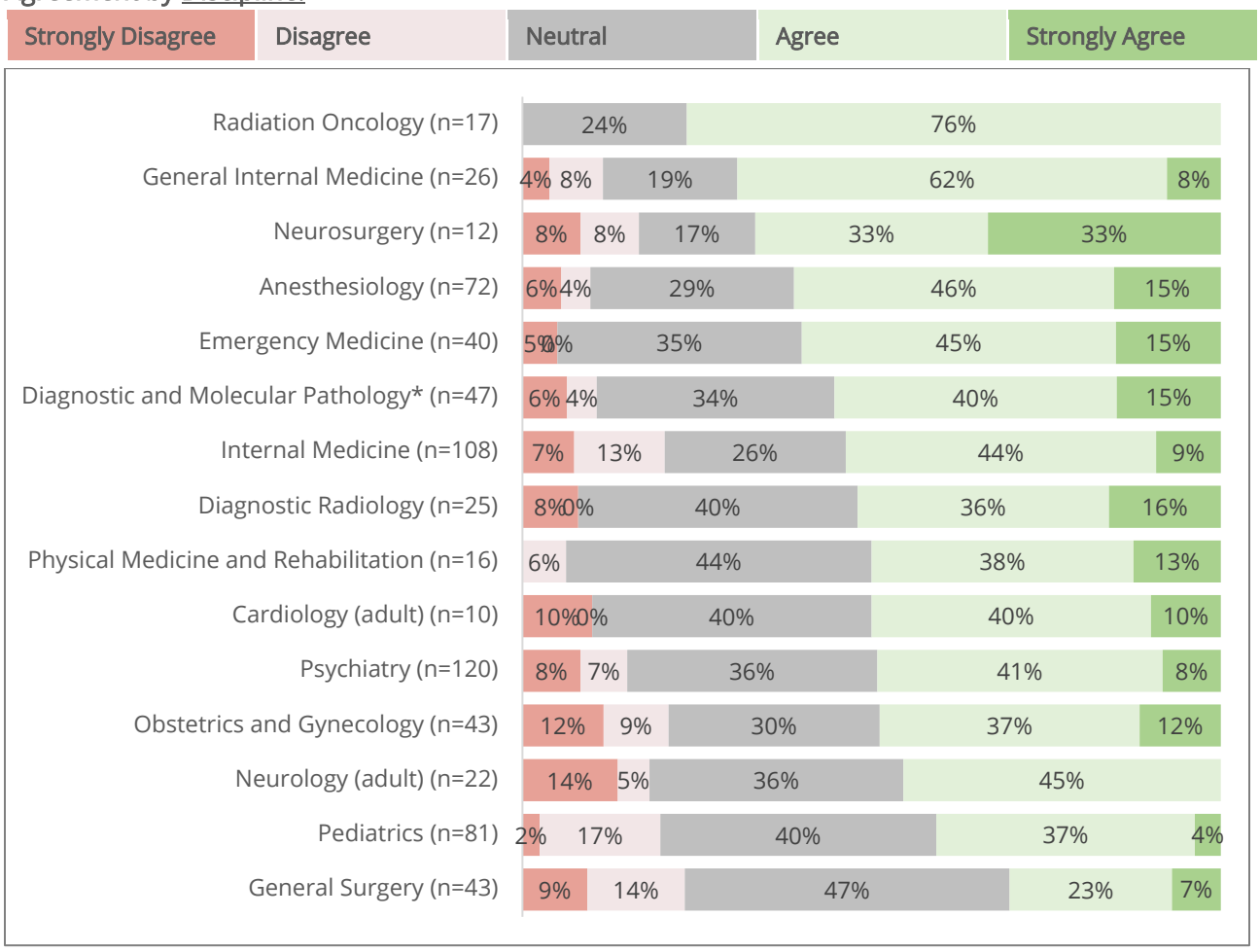


Figure 15B: Outcomes Statement – "I have the flexibility to tailor my own learning around my learning objectives" – Level of Agreement by Institution:



To maintain the confidentiality of the institutions, the number of respondents is not disclosed.

Figure 16A: Outcomes Statement – "I feel prepared for transitions through training" – Level of Agreement by Discipline:



*Formerly known as Anatomical Pathology

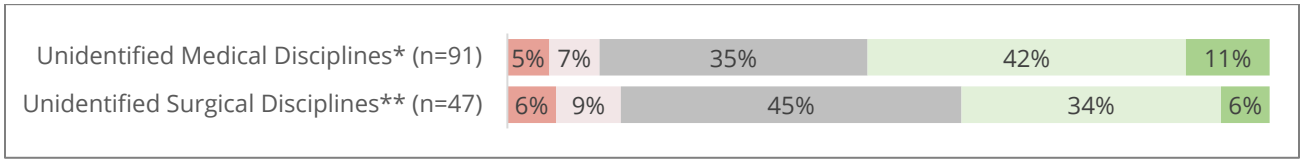
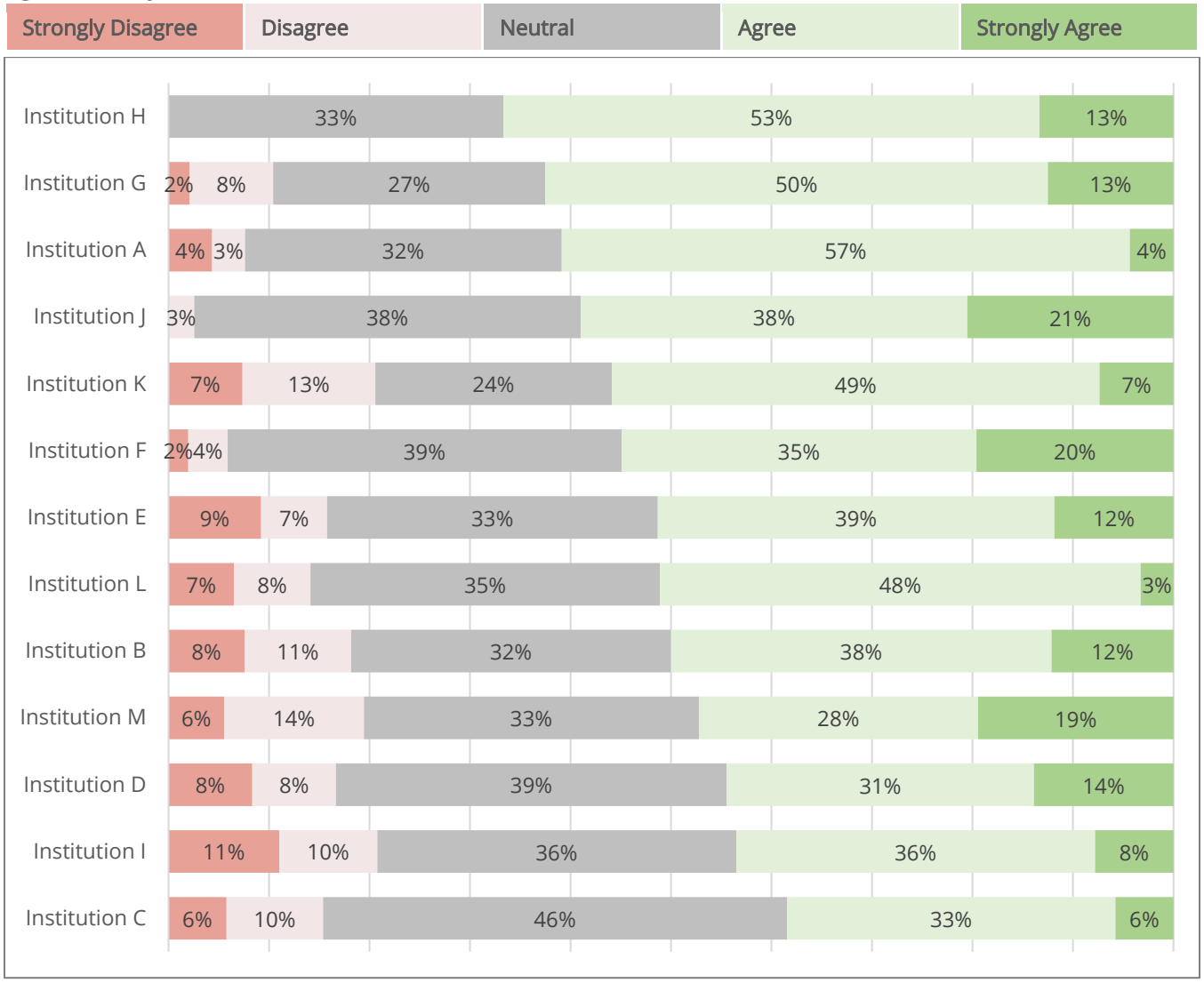


Figure 16B: Outcomes Statement – "I feel prepared for transitions through training"– Level of Agreement by Institution:



To maintain the confidentiality of the institutions, the number of respondents is not disclosed.

Resident Wellness

Resident Wellness – Residency physician training can be a particularly challenging time during a physician's career and has the potential to affect resident wellness. Recognizing that there are different ways of defining wellness, in this case we refer to wellness as the complex nature of resident physical, mental, and emotional health and well-being (Wallace, Lemaire, & Ghali, 2009).

Figure 17A: Impact of Current Experience with CBD on Health and Wellness by Year of Study:

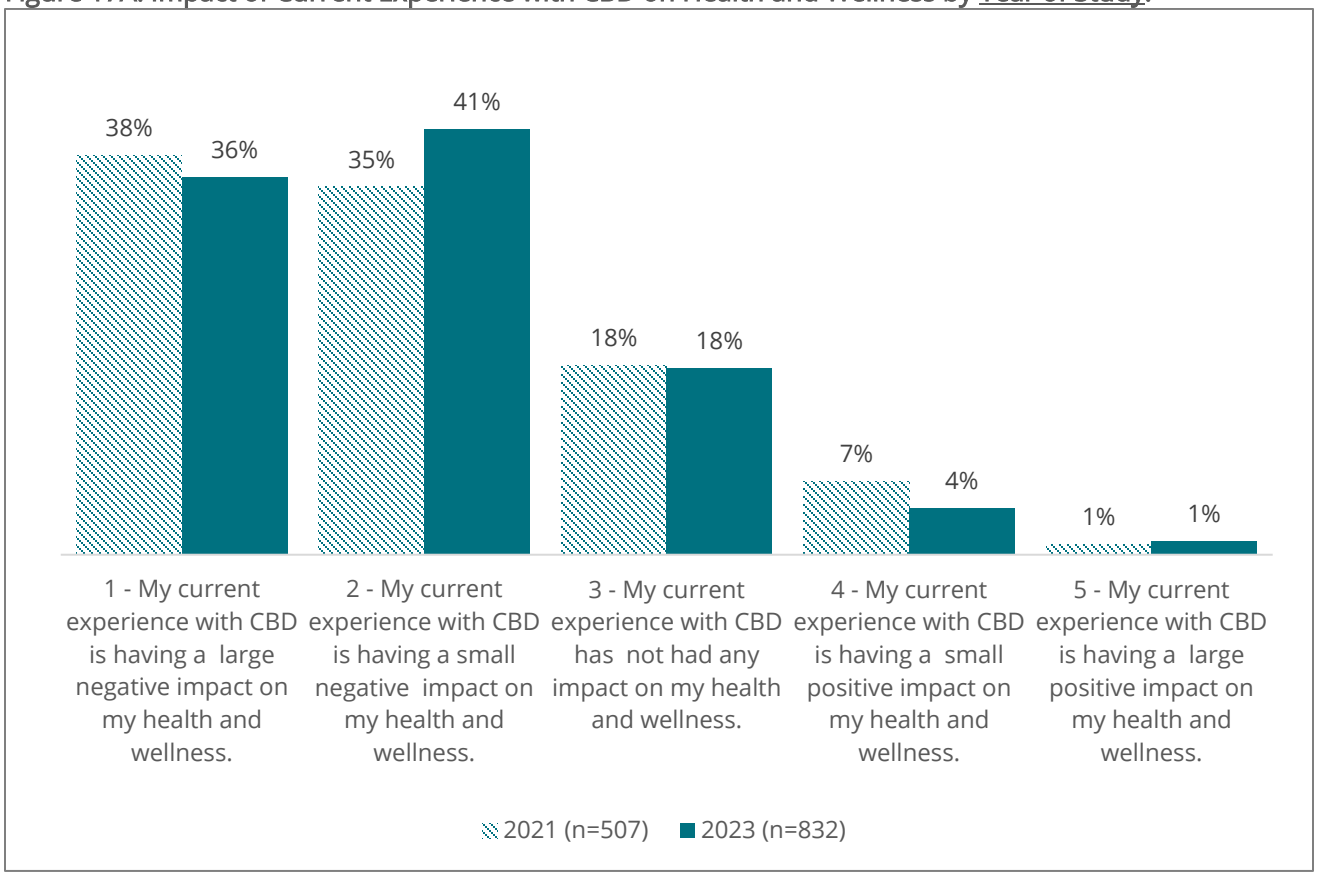
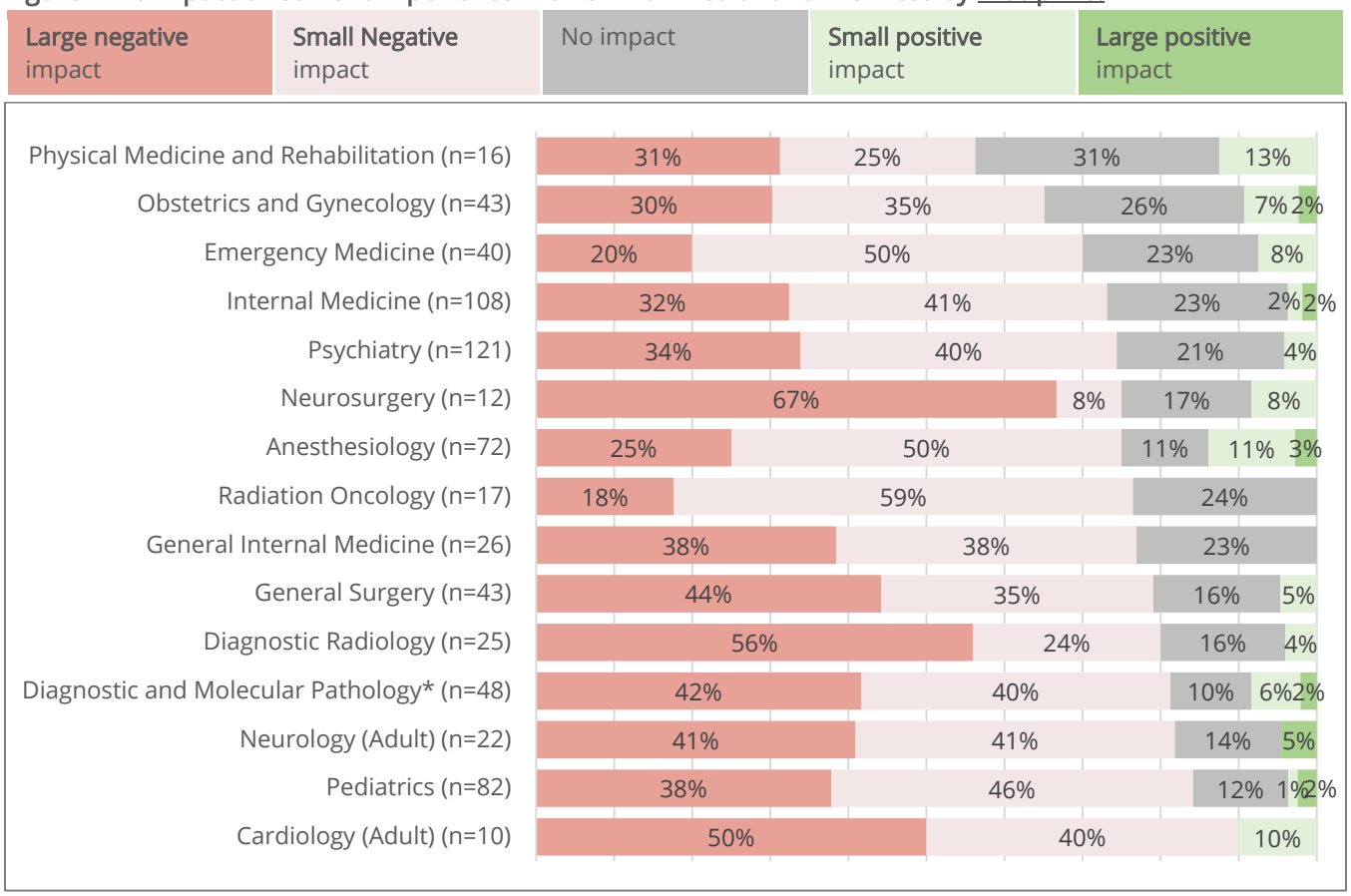
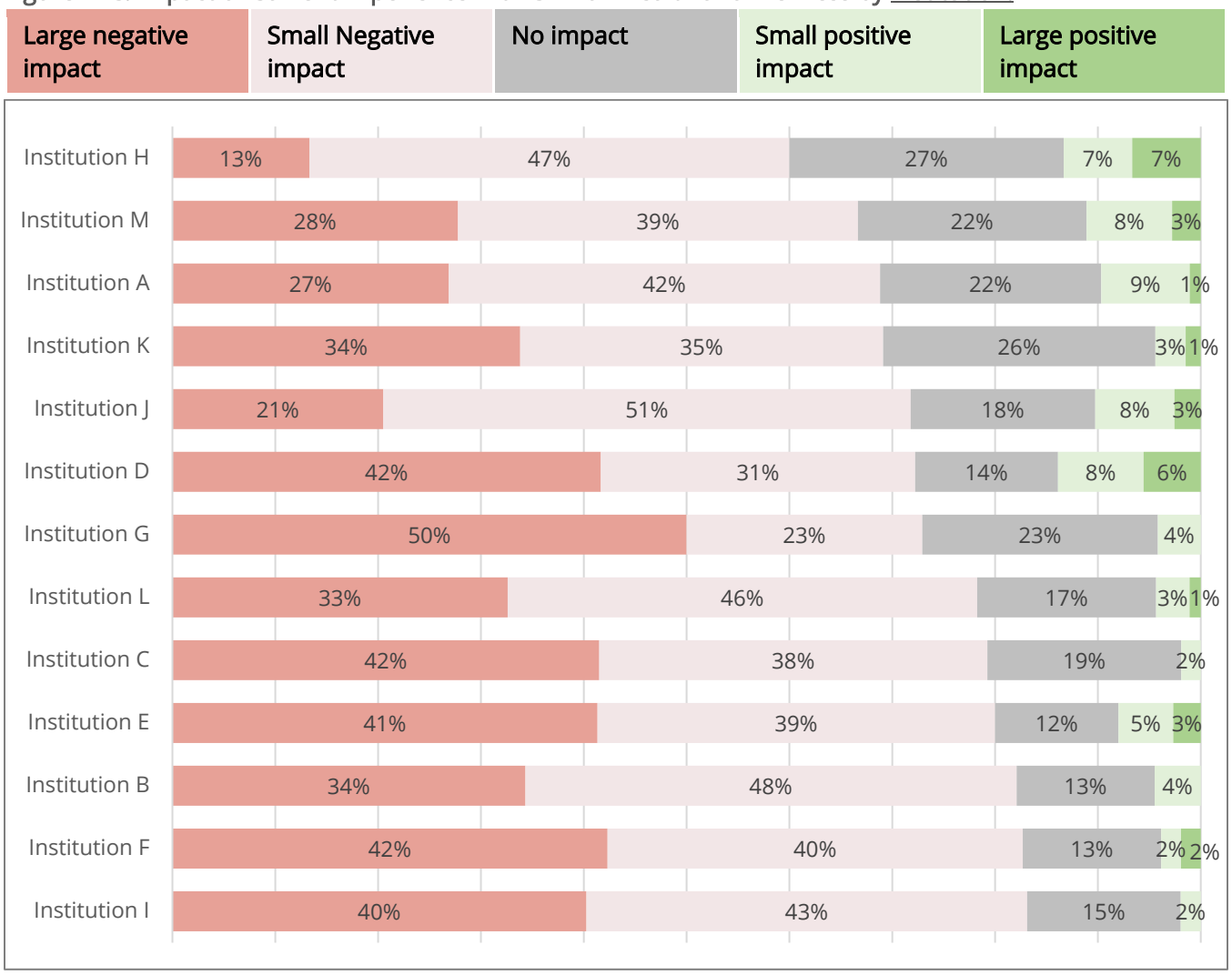


Figure 17B: Impact of Current Experience with CBD on Health and Wellness by Discipline:



*Formerly known as Anatomical Pathology

Figure 17C: Impact of Current Experience with CBD on Health and Wellness by Institution:



To maintain the confidentiality of the institutions, the number of respondents is not disclosed.

Aspects of CBD Impacting Quality of Residency Education

Results from the 2021 Resident Pulse Check survey identified several challenges with CBD that negatively impacted resident physician wellness. Some of the challenges that contributed to this negative impact include:

- Getting faculty to complete EPA assessments (lack of timely completion, unwillingness to complete)
- The administrative workload experienced by residents (documenting and tracking EPA assessments and all their sub-components)
- Finding opportunities to complete EPAs (rare occurrence of opportunities to achieve some EPAs, numbers too high, strict criteria)
- Seeing value in CBD/EPAs (a check-box exercise, extra work with little to no added benefit)
- Feedback inadequacies (lack of in-the-moment feedback, lack of meaningful feedback)

With the goal of improving the resident training experience, respondents were asked to comment about the aspects of CBD that are **currently** having the most impact (negative or positive) on the quality of their residency education.

Aspects of CBD having the greatest negative impacts on residency education quality:

The table below presents the themes and subthemes derived from the responses to the above question, along with the percentage of respondents whose comments corresponded to each theme.

Table 3A: Aspects of CBD Having the Greatest Negative Impacts on the Quality of Residency Education

Aspects of CBD having a negative impact on the quality of residency education:	% of respondents (n=845)
Concerns around value/validity	36.7% (n=310)
Extra work with little to no added benefit	15.3%
A check-box exercise/numbers game	14.7%
EPAs are not reflective of competence	4.7%
There is still a time requirement	3.9%
EPAs are not reflective of practice	3.7%
Disconnect between EPA rating and other measures of performance	1.3%
Loss of the holistic	0.8%
Challenges with EPA assessment completion by faculty	35.9% (n=303)
Not completing EPA assessments	9.2%
Having to chase/remind faculty	8.2%

Aspects of CBD having a negative impact on the quality of residency education:	% of respondents (n=845)
Lack of timely completion	8.3%
Stress/pressure of always having to chase staff to complete EPA assessments	4.7%
Letting EPAs expire	2.7%
Unwillingness/refusal to participate	2.5%
Worried about "pestering", "nagging, bothering, burdening" staff to observe, fill out, and/or sign-off on EPA completion	2.4%
Having to teach/explain to faculty how to complete EPAs	2.0%
Too busy	1.1%
Administrative workload	26.5% (n=224)
Paperwork/documentation and administrative effort	16.3%
Strain on time	5.4%
Something else to worry about in an already busy environment	4.4%
Lack of opportunities to complete EPAs	20.4% (n=172)
Rare encounters/occurrences	7.6%
Unrealistic numbers	6.3%
Strict/specific criteria	5.2%
Limited direct observation	4.3%
Feedback inadequacies	17.9% (n=151)
Lack of meaningful feedback	15.5%
Lack of in-the-moment, timely feedback	2.4%
Cognitive load	10.4% (n=88)
Trying to remember/keep track of all EPAs and their subcomponents	8.6%
Constant need to evaluate if an encounter satisfies an EPA	1.8%
Onus primarily on residents	9.7% (n=82)
To initiate EPAs, chase down busy faculty	5.3%
To keep track of EPAs and specific criteria	2.8%
Being held accountable for incomplete EPAs, despite best efforts to complete them	1.7%
Inconsistencies in EPA interpretation, scoring	7.9% (n=67)
Lack of agreement on what is required for a successful EPA	4.7%
Understanding the difference between a 4 and a 5	2.4%
Inconsistencies between verbal and written feedback	0.8%
Opportunity costs	6.4% (n=54)
Takes time/focus away from other learning experiences	5.3%
Takes time/focus away from the patient	0.7%
Technological Challenges	5.0% (n=42)
Lack of a smooth, well-functioning platform	3.1%
Difficulty navigating platform	1.4%
Challenges with access	0.4%
Worried about achieving requirements	6.9% (n=58)
Pressure of completing "enough" EPAs	3.6%

Aspects of CBD having a negative impact on the quality of residency education:	% of respondents (n=845)
Worried about not progressing to the next stage/graduating on time	1.2%
Evaluation fatigue	2.2% (n=19)
Evaluation/performance anxiety	1.7% (n=14)
Lack of transparency in competence committee decision making	1.3% (n=11)
Completing required number of EPAs each week	0.8% (n=7)
Strained relationships	0.7% (n=6)
Assessment forms	0.1% (n=1)
Redundancies	1.2% (n=10)

Resident Doctors of Canada
Médecins résidents du Canada

ROYAL COLLEGE OF PHYSICIANS AND SURGEONS OF CANADA
COLLÈGE ROYAL DES MÉDECINS ET CHIRURGIENS DU CANADA

Table 3B: Aspects of CBD Having the Greatest Negative Impacts on Residency Education Quality by Discipline:

	Anesthesiology	Cardiology (Adult)	Diagnostic and Molecular Pathology*	Diagnostic Radiology	Emergency Medicine	General Internal Medicine	General Surgery	Internal Medicine	Neurology	Neurosurgery	Obstetrics and Gynecology	Pediatrics	Physical Medicine and Rehabilitation	Psychiatry	Radiation Oncology	Unidentified Medical Disciplines	Unidentified Surgical Disciplines	Discipline not provided	**Total**
# of respondents	72	10	49	27	40	272	45	109	24	12	43	82	16	122	17	100	43	9	845
Concerns around value/validity	40%	50%	35%	52%	30%	30%	38%	39%	45%	33%	37%	44%	19%	28%	53%	33%	42%	33%	**37%**
EPA completion by faculty	28%	40%	49%	22%	25%	37%	31%	35%	41%	25%	49%	44%	44%	33%	59%	33%	35%	33%	**36%**
Administrative workload	25%	30%	27%	15%	23%	22%	38%	22%	36%	8%	26%	34%	31%	19%	35%	31%	37%	11%	**27%**
Lack of opportunities to complete EPAs	22%	0%	31%	4%	23%	15%	4%	19%	23%	33%	16%	44%	13%	17%	29%	16%	14%	22%	**20%**
Feedback inadequacies	17%	40%	2%	15%	15%	37%	11%	12%	18%	8%	33%	35%	19%	9%	18%	19%	26%	11%	**18%**
Cognitive load	13%	10%	8%	15%	8%	22%	7%	11%	9%	8%	14%	13%	19%	9%	6%	8%	7%	0%	**10%**
Onus primarily on residents	6%	10%	8%	0%	0%	15%	11%	7%	5%	8%	9%	21%	6%	11%	18%	10%	9%	11%	**10%**
Inconsistencies in EPA interpretation, scoring	14%	0%	8%	4%	5%	4%	4%	3%	5%	0%	21%	11%	31%	7%	12%	7%	5%	0%	**8%**
Worried about achieving requirements	4%	0%	27%	7%	3%	15%	9%	4%	5%	17%	7%	4%	25%	7%	6%	1%	7%	0%	**7%**
Opportunity costs	10%	10%	22%	11%	10%	0%	2%	2%	5%	0%	9%	2%	13%	7%	6%	6%	2%	0%	**6%**
Technological challenges	3%	0%	10%	11%	5%	11%	2%	6%	0%	0%	5%	10%	0%	2%	6%	5%	5%	0%	**5%**
Evaluation fatigue	1%	0%	4%	0%	5%	0%	0%	2%	0%	0%	2%	5%	0%	4%	0%	2%	0%	0%	**2%**
Evaluation/Performance Anxiety	4%	0%	2%	0%	0%	0%	2%	1%	0%	0%	2%	4%	6%	1%	0%	2%	0%	0%	**2%**
Lack of transparency	0%	0%	0%	0%	3%	11%	0%	0%	5%	0%	0%	2%	0%	2%	0%	1%	0%	0%	**1%**
Redundancies	0%	0%	2%	4%	0%	0%	2%	0%	0%	0%	0%	0%	0%	2%	0%	3%	2%	0%	**1%**
Strained relationships	1%	0%	2%	0%	3%	0%	0%	0%	0%	0%	0%	0%	0%	2%	0%	0%	0%	0%	**1%**
Assessment forms	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%	**0%**
Completing required number of EPAs/week	1%	0%	2%	0%	0%	0%	0%	0%	5%	0%	0%	0%	0%	0%	0%	4%	2%	0%	**0%**

*Formerly known as Anatomical Pathology

Table 3C: Aspects of CBD Having the Greatest Negative Impacts on Residency Education Quality by Institution:

	Institution A	Institution B	Institution C	Institution D	Institution E	Institution F	Institution G	Institution H	Institution I	Institution J	Institution K	Institution L	Institution M	No institution identified	**Total**
# of respondents	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**845**
Concerns around value/validity	28%	35%	37%	28%	41%	43%	43%	50%	44%	28%	38%	31%	31%	50%	**37%**
EPA completion by faculty	29%	28%	56%	42%	43%	28%	35%	31%	40%	20%	31%	35%	42%	75%	**36%**
Administrative workload	22%	28%	28%	31%	26%	42%	24%	31%	19%	25%	35%	29%	22%	25%	**27%**
Lack of opportunities to complete EPAs	28%	20%	19%	22%	26%	15%	14%	13%	21%	23%	24%	13%	14%	50%	**20%**
Feedback inadequacies	19%	12%	11%	14%	21%	19%	16%	25%	20%	13%	24%	17%	19%	25%	**18%**
Cognitive load	8%	17%	13%	11%	11%	13%	8%	6%	7%	5%	9%	12%	22%	0%	**10%**
Onus primarily on residents	10%	7%	17%	11%	9%	11%	8%	6%	8%	18%	9%	8%	11%	0%	**10%**
Inconsistencies in EPA interpretation, scoring	16%	17%	7%	0%	8%	2%	14%	0%	5%	3%	6%	7%	6%	0%	**8%**
Worried about achieving requirements	3%	4%	6%	6%	11%	4%	12%	0%	10%	5%	4%	8%	8%	0%	**7%**
Opportunity costs	2%	10%	11%	8%	8%	6%	10%	6%	6%	3%	3%	8%	3%	0%	**6%**
Technological challenges	2%	0%	20%	8%	8%	2%	0%	0%	4%	8%	3%	2%	17%	0%	**5%**
Evaluation fatigue	3%	0%	2%	3%	0%	0%	6%	6%	3%	0%	4%	1%	6%	0%	**2%**
Evaluation/Performance Anxiety	1%	3%	0%	0%	0%	2%	4%	0%	1%	0%	1%	6%	0%	0%	**2%**
Lack of transparency	0%	3%	2%	6%	0%	2%	4%	6%	1%	0%	0%	1%	0%	0%	**1%**
Redundancies	2%	1%	0%	3%	0%	2%	2%	0%	2%	0%	0%	0%	3%	0%	**1%**
Completing required number of EPAs/weeks	1%	4%	0%	0%	0%	2%	0%	0%	0%	3%	1%	0%	0%	0%	**1%**
Strained relationships	1%	0%	0%	0%	0%	0%	2%	0%	1%	3%	1%	0%	0%	0%	**1%**
Assessment forms	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	**0%**

To maintain the confidentiality of the institutions, the number of respondents is not disclosed.

Aspects of CBD having the greatest positive impacts on residency education quality:

Many respondents indicated that there were no aspects of CBD having a positive impact (27%) or were uncertain of any aspects having a positive impact (24%). The table below presents a breakdown of the themes and subthemes identified by those who did indicate positive aspects, along with the percentage of responses associated with each theme.

Table 4A: Aspects of CBD Having the Greatest Positive Impacts on Residency Education Quality:

Aspects of CBD having a positive impact on the quality of residency education:	% of respondents (n=845)
Feedback	**11.4% (n=96)**
• Having a mechanism/tool for seeking and receiving feedback	10.0% (n=37)
• Meaningful feedback (focused, constructive, actionable)	6.2% (n=19)
• Timely/"in-the-moment" feedback	3.5% (n=13)
• Routine/frequent feedback	3.5% (n=13)
• More feedback	3% (n=11)
Clear expectations/objectives for progression	**10.0% (n=85)**
• A map or list of objectives/required competencies to guide learning	10.0% (n=37)
• A guide of what is expected to be achieved at different stages of residency training	11.1% (n=41)
Clarity around progress	**8.5% (n=72)**
• Documentation/tracking of experiences and progress	10.6% (n=39)
• Clear sense of progression	4.9% (n=18)
• Opportunities to reflect on progress	3% (n=11)
Ensures exposure	**3.1% (n=26)**
• Ensures exposure to important aspects of training	2.4% (n=9)
• Ensures exposure to/seeking out specific experiences/cases/procedures	2.4% (n=9)
• Ensures exposure to a broad range of patients, settings	1.4% (n=5)
Flexibility in learning	**2.4% (n=20)**
• Ability to tailor learning experiences to individual needs	2.0% (n=7)
• Allows residents to progress at their own pace	1.0% (n=3)
• Fewer off-service rotations	1.6% (n=6)
• Self-directed learning	0.5% (n=2)
Theoretical benefits	**2.4% (n=20)**
• Understand the theoretical benefits, but have yet to experience them in practice	5.1% (n=19)
Coaching/mentorship	**2.1% (n=18)**
• Coaching/mentorship (general)	3.5% (n=13)
• Having an academic advisor	1.4% (n=5)
Adds structure/organization to learning	**1.4% (n=12)**
Standardized set of experience/requirements	**1.2% (n=10)**

Aspects of CBD having a positive impact on the quality of residency education:	% of respondents (n=845)
Increased direct observation/supervision	1.2% (n=10)
Increased engagement in resident learning (program, faculty, multidisciplinary interaction)	1.2% (n=8)
Competence Committee benefits	1.1% (n=9)
Competence Committee (general)	1.4% (n=5)
Objectivity - multiple sources of data used in decision making	0.8% (n=3)
Identifies gaps	0.9% (n=8)
Identifies where there may be gaps in exposure/training opportunities	1.4% (n=5)
Identifies where there may be gaps in competency/areas of weakness	0.5% (n=2)
More frequent/lower-stakes assessments	0.6% (n=5)

Table 4B: Aspects of CBD Having the Greatest Positive Impacts on Residency Education Quality by Discipline:

	Anesthesiology	Cardiology (Adult)	Diagnostic and Molecular Pathology*	Diagnostic Radiology	Emergency Medicine	General Internal Medicine	General Surgery	Internal Medicine	Neurology	Neurosurgery	Obstetrics and Gynecology	Pediatrics	Physical Medicine and Rehabilitation	Psychiatry	Radiation Oncology	Unidentified Medical Disciplines	Unidentified Surgical Disciplines	Discipline not provided	**Total**
# of respondents	72	10	49	27	40	27	45	109	24	12	43	82	16	122	17	98	43	9	**845**
Feedback	7%	0%	4%	11%	8%	19%	18%	13%	21%	17%	21%	12%	19%	10%	18%	9%	7%	0%	**11%**
Clear expectations/objective for progression	18%	0%	14%	4%	5%	4%	13%	8%	8%	0%	12%	13%	6%	9%	18%	7%	12%	11%	**10%**
Clarity around progress	14%	10%	10%	7%	18%	19%	4%	9%	4%	8%	5%	10%	0%	6%	12%	7%	7%	0%	**9%**
Ensures exposure	6%	10%	8%	0%	0%	0%	0%	5%	0%	0%	2%	1%	0%	5%	6%	4%	0%	0%	**3%**
Flexibility in learning	3%	10%	6%	7%	5%	0%	0%	0%	4%	0%	5%	1%	0%	1%	12%	2%	2%	0%	**2%**
Theoretical benefits	4%	0%	2%	0%	0%	4%	0%	2%	0%	0%	0%	5%	0%	5%	0%	2%	0%	0%	**2%**
Coaching/mentorship	3%	0%	0%	0%	5%	4%	2%	1%	0%	8%	0%	2%	0%	2%	6%	3%	2%	0%	**2%**
Adds structure/organization to learning	0%	0%	0%	0%	5%	4%	0%	1%	0%	0%	0%	1%	13%	2%	6%	2%	0%	0%	**1%**
Standardized set of experiences/requirements	4%	0%	4%	0%	0%	0%	0%	0%	0%	0%	2%	2%	0%	2%	0%	0%	0%	0%	**1%**
Increased direct observation/supervision	0%	0%	0%	0%	3%	0%	0%	1%	0%	0%	0%	0%	0%	4%	0%	2%	2%	0%	**1%**
Increased engagement in resident learning	0%	0%	0%	0%	0%	0%	2%	1%	0%	0%	0%	2%	6%	0%	12%	0%	0%	11%	**1%**
None	18%	50%	31%	48%	10%	26%	29%	29%	50%	33%	23%	26%	19%	25%	24%	39%	30%	11%	**28%**
N/A	1%	10%	6%	4%	3%	7%	0%	3%	0%	0%	5%	4%	0%	5%	0%	4%	2%	0%	**3%**
Unsure	1%	0%	0%	0%	0%	4%	2%	0%	0%	0%	2%	0%	0%	1%	0%	0%	2%	0%	**1%**
No response	22%	10%	14%	11%	43%	11%	31%	26%	13%	33%	19%	26%	38%	25%	6%	0%	0%	67%	**25%**

*Formerly known as Anatomical Pathology

Table 4C - Aspects of CBD Having the Greatest Positive Impacts on Residency Education Quality by Institution:

	Institution A	Institution B	Institution C	Institution D	Institution E	Institution F	Institution G	Institution H	Institution I	Institution J	Institution K	Institution L	Institution M	Institution not provided	Total
# of respondents	-	-	-	-	-	-	-	-	-	-	-	-	-	-	845
Feedback	16%	10%	9%	11%	17%	13%	4%	31%	8%	15%	9%	13%	6%	0%	**11%**
Clear expectations/objective for progression	13%	13%	13%	8%	9%	11%	10%	13%	5%	18%	12%	9%	6%	0%	**10%**
Clarity around progress	9%	9%	4%	8%	9%	0%	6%	19%	6%	13%	12%	11%	19%	0%	**9%**
Ensures exposure	3%	0%	2%	3%	3%	6%	0%	0%	3%	8%	4%	5%	3%	0%	**3%**
Flexibility in learning	3%	0%	0%	0%	1%	6%	0%	0%	3%	0%	3%	4%	3%	25%	**2%**
Theoretical benefits	1%	3%	6%	3%	3%	4%	0%	6%	3%	0%	1%	2%	3%	0%	**2%**
Coaching/mentorship	3%	4%	0%	0%	1%	4%	4%	0%	2%	3%	0%	1%	6%	0%	**2%**
Adds structure/organization to learning	3%	3%	2%	6%	0%	0%	2%	0%	2%	0%	0%	0%	0%	0%	**1%**
Standardized set of experiences/requirements	0%	1%	2%	0%	0%	2%	0%	6%	0%	10%	0%	2%	0%	0%	**1%**
Increased direct observation/supervision	1%	1%	2%	0%	0%	4%	2%	0%	1%	0%	1%	0%	3%	0%	**1%**
Increased engagement in resident learning	1%	0%	0%	3%	1%	0%	0%	0%	1%	3%	3%	2%	0%	0%	**1%**
None	17%	35%	31%	28%	33%	30%	39%	19%	31%	20%	26%	23%	25%	25%	**28%**
N/A	2%	3%	2%	3%	0%	0%	6%	0%	4%	0%	4%	5%	11%	0%	**3%**
Unsure	0%	1%	2%	0%	1%	2%	2%	0%	1%	0%	0%	0%	0%	0%	**1%**
No response	28%	14%	24%	25%	20%	25%	24%	13%	31%	23%	22%	27%	17%	50%	**24%**

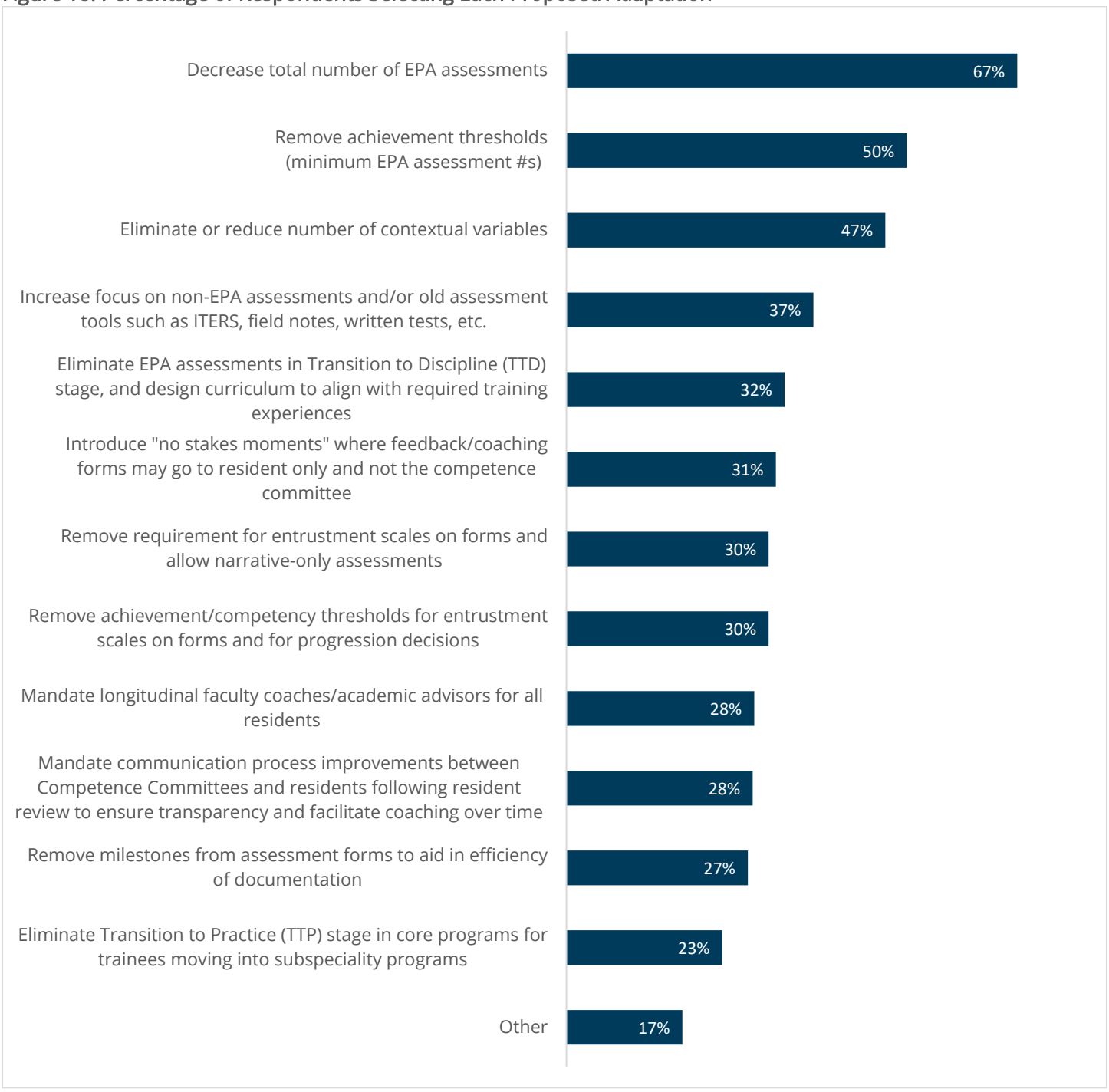
To maintain the confidentiality of the institutions, the number of respondents is not disclosed.

Adaptations

Proposed adaptations

A list of proposed adaptations to CBD was included as part of the 2023 survey, The list was created with input from a diverse group of medical education partners as part of a National CBD Summit. Within the survey, participants were asked to identify which of the adaptations would have the greatest positive impact on the quality of their residency education.

Figure 18: Percentage of Respondents Selecting Each Proposed Adaptation



Among respondents who selected **'other'** from the list of adaptations, there were many suggestions to remove or eliminate EPAs or CBD altogether. Additional adaptations proposed by residents included:

- Increase/mandate faculty responsibility for initiating/completing EPA assessments
- Simplify EPA assessment forms
- Standardize/clarify what counts as EPA achievement (i.e., 4 vs 5)
- Remove expiration times for EPA assessments
- Review/revise EPAs to ensure they are relevant and reflective of practice
- Remove/reduce time-based requirements and make it truly competency-based
- Reduce/eliminate duplicate/redundant evaluations (e. g., EPAs + traditional evaluations)
- Reconsider appropriateness of EPAs for certain disciplines
- Increase focus on feedback and reflection
- Develop an effective electronic platform

In the tables that follow, the percentage of respondents selecting each proposed adaptation is displayed by discipline and institution.

Which of the following proposed adaptations would have the greatest positive impact on the quality of your residency education? (select all that apply)

Table 5A: Percentage of Respondents Selecting Each Proposed Adaptation by Discipline

	Anesthesiology	Cardiology (Adult)	Diagnostic and Molecular Pathology*	Diagnostic Radiology	Emergency Medicine	General Internal Medicine	General Surgery	Internal Medicine	Neurology (Adult)	Neurosurgery	Obstetrics and Gynecology	Pediatrics	Physical Medicine and Rehabilitation	Psychiatry	Radiation Oncology
# of respondents	72	10	49	27	40	11	35	109	24	12	43	82	16	122	17
Decrease total number of EPA assessments.	71%	80%	78%	70%	68%	70%	94%	69%	38%	50%	37%	79%	63%	65%	76%
Remove achievement thresholds (minimum EPA assessment #s).	44%	80%	49%	52%	38%	52%	86%	52%	42%	25%	53%	62%	38%	44%	59%
Eliminate or reduce number of contextual variables.	35%	80%	53%	44%	45%	30%	49%	42%	42%	25%	33%	74%	50%	55%	41%
Increase focus on non-EPA assessments and/or old assessment tools such as ITERS, field notes, written tests, etc.	19%	50%	53%	44%	28%	33%	26%	45%	33%	17%	37%	52%	31%	32%	29%
Eliminate EPA assessments in Transition to Discipline (TTD) stage, and design curriculum to align with required training experiences.	26%	80%	45%	37%	20%	37%	34%	30%	25%	25%	30%	29%	31%	31%	29%
Introduce "no stakes moments" where feedback/coaching forms may go to resident only and not the competence committee.	47%	20%	20%	22%	35%	33%	17%	38%	17%	0%	30%	34%	50%	32%	18%
Remove achievement/competency thresholds for entrustment scales on forms and for progression decisions.	25%	30%	39%	41%	25%	30%	46%	26%	25%	8%	26%	32%	31%	29%	29%
Remove requirement for entrustment scales on forms and allow narrative-only assessments.	25%	20%	16%	30%	33%	15%	37%	26%	33%	8%	42%	39%	38%	30%	41%
Mandate longitudinal faculty coaches/academic advisors for all residents.	26%	20%	27%	33%	38%	26%	40%	23%	29%	0%	47%	23%	19%	22%	18%
Mandate communication process improvements between Competence Committees and residents following resident review to ensure transparency and facilitate coaching over time.	33%	30%	31%	19%	38%	33%	31%	22%	25%	8%	42%	34%	13%	25%	29%
Remove milestones from assessment forms to aid in efficiency of documentation	26%	40%	39%	26%	38%	7%	34%	21%	21%	0%	33%	27%	31%	25%	53%

	Anesthesiology	Cardiology (Adult)	Diagnostic and Molecular Pathology*	Diagnostic Radiology	Emergency Medicine	General Internal Medicine	General Surgery	Internal Medicine	Neurology (Adult)	Neurosurgery	Obstetrics and Gynecology	Pediatrics	Physical Medicine and Rehabilitation	Psychiatry	Radiation Oncology
# of respondents	72	10	49	27	40	11	35	109	24	12	43	82	16	122	17
Eliminate Transition to Practice (TTP) stage in core programs for trainees moving into subspeciality programs.	8%	70%	35%	26%	20%	26%	14%	19%	17%	25%	16%	26%	19%	27%	29%
Other (please specify in the text box below)	15%	10%	12%	22%	5%	19%	29%	18%	25%	17%	12%	18%	19%	19%	24%

*Formerly known as Anatomical Pathology

Which of the following proposed adaptations would have the greatest positive impact on the quality of your residency education? (select all that apply)

Table 5B: Percentage of Respondents Selecting Each Adaptation by Institution

	Institution A	Institution B	Institution C	Institution D	Institution E	Institution F	Institution G	Institution H	Institution I	Institution J	Institution K	Institution L	Institution M
# of respondents	-	-	-	-	-	-	-	-	-	-	-	-	-
Decrease total number of EPA assessments	63%	67%	67%	69%	58%	68%	69%	63%	71%	65%	66%	64%	78%
Remove achievement thresholds (minimum EPA assessment #s)	39%	49%	48%	44%	42%	62%	57%	44%	55%	48%	57%	51%	50%
Eliminate or reduce number of contextual variables	40%	45%	52%	42%	57%	45%	49%	31%	56%	43%	46%	37%	53%
Increase focus on non-EPA assessments and/or old assessment tools such as ITERS, field notes, written tests, etc.	25%	32%	37%	56%	32%	30%	33%	25%	40%	33%	43%	40%	50%
Eliminate EPA assessments in Transition to Discipline (TTD) stage, and design curriculum to align with required training experiences.	31%	25%	26%	36%	21%	42%	27%	25%	42%	38%	29%	35%	25%
Introduce "no stakes moments" where feedback/coaching forms may go to resident only and not the competence committee.	37%	23%	35%	31%	30%	23%	33%	38%	25%	55%	26%	36%	25%
Remove achievement/competency thresholds for entrustment scales on forms and for progression decisions.	27%	36%	31%	22%	25%	36%	33%	19%	35%	15%	32%	26%	25%
Remove requirement for entrustment scales on forms and allow narrative-only assessments.	37%	23%	35%	31%	30%	23%	33%	38%	25%	55%	26%	36%	25%
Mandate longitudinal faculty coaches/academic advisors for all residents.	27%	36%	31%	22%	25%	36%	33%	19%	35%	15%	32%	26%	25%
Mandate communication process improvements between Competence Committees and residents following resident review to ensure transparency and facilitate coaching over time	25%	26%	39%	14%	42%	26%	35%	13%	37%	28%	22%	25%	22%
Remove milestones from assessment forms to aid in efficiency of documentation.	34%	20%	20%	11%	22%	25%	18%	31%	27%	40%	28%	42%	33%
Eliminate Transition to Practice (TTP) stage in core programs for trainees moving into subspeciality programs	31%	29%	26%	36%	24%	15%	22%	31%	27%	43%	24%	28%	31%
Other	35%	32%	15%	25%	22%	32%	27%	25%	23%	23%	26%	25%	39%

To maintain the confidentiality of the institutions, the number of respondents is not disclosed.

Experienced adaptations/changes

Among the 845 survey participants, 117 individuals reported positive changes within their program in the previous year. The table below displays the types of improvements identified by these 117 respondents, listed in order of prevalence. Respondents were also invited to provide comments on negative changes. However, the negative changes mentioned by respondents largely reiterated the previously identified challenges or indicated a general dissatisfaction with CBD, rather than detailing specific changes that have occurred over the past year.

Table 6: Positive Program Changes Within Past Year (n=117)

Theme	Subtheme
Reduction/modifications in EPA numbers and requirements	• Reduction in overall EPA numbers (following Specialty Committee standards revisions) • Reduction in # of required observations/assessments • Removal of mandatory # of EPAs/week or month • Counting 4/5 as completed/achieved
Faculty uptake/engagement	• Improved faculty EPA assessment completion rates • Greater faculty awareness and familiarity with EPAs • More accountability is being placed on faculty
Program support	• Program is receptive to feedback from residents/faculty • Changes are being made based on resident feedback • Engaged/supportive program director
Improvements in EPA tracking/ electronic portfolio technology	• Improvements in EPA tracking • Improvements to technology
Removal/reduction of redundant evaluations and documentation	• More streamlined processes • Reduction in documentation/forms/paperwork
Competence committee improvements	• Better communication of CC meetings and results with residents • Competence committees are using more robust data
Coaching/mentorship	• Implementation/assignment of academic advisors/mentors • Meetings with coaches
Improvements to training structure	• Fewer off-service rotations/requirements; more focused time in discipline • Writing the exam earlier • Transition to practice stage
More opportunities to complete EPAs	• The use of simulation for EPAs • Program changes to facilitate EPA completion

Discussion

The following section is intended to provide insights that will help inform adaptation and revision, rather than offering justification for the findings. This information may be used for assessing CBD developmentally and identifying areas where adaptations and improvements are needed.

Consistency across years

Overall, there is a high level of consistency between the 2021 and 2023 studies concerning the degree of implementation of key components. The implementation of competence committees, for instance, received the highest ratings for level of implementation in both years, and the implementation of individualized learning plans remains the area with the lowest level of implementation. It may be that competence committees are more straightforward to implement, with clear guidelines and processes, whereas Individualized learning plans introduce more complexity in terms of the resources required and the limited flexibility that remains within the system, especially in relation to time and service requirements. Furthermore, it is possible that programs and institutions continue to view these plans as only necessary for learners facing challenges, rather than recognizing their potential benefits for all learners, as was intended by CBD. If this is the case, there may be opportunities to provide further education and raise more awareness about the intended purpose of individualized learning plans within the CBD context.

Nature of discipline versus institutional/systemic factors

Certain components of CBD, such as direct observation, may be more likely influenced by the *nature of the discipline,* such as the clinical supervisory set-up. For instance, in some disciplines, like Emergency Medicine, resident physicians typically work side by side with their supervisors, while in other disciplines, opportunities for direct observation may be limited. Moreover, some disciplines have traditionally not been designed to have frequent coaching in the moment so to achieve that goal, programs would need to adapt their structure. Other components of CBD, such as coaching over time, may be more influenced by *institutional-driven* factors, such as a PGME office requirement for all programs to have an academic advisory program. By analyzing the breakdown by institution and discipline in this report and understanding whether challenges in implementation are driven more by institutional-level factors or by discipline-related factors, we can start to look critically at CBD within different contexts and explore how it might be approached differently depending on the unique contexts.

Other factors influencing variations in experience

Experiences with certain key components may also vary in terms of the stage of training a resident is in or the timing of when a discipline officially launched CBD. For instance, the level of direct observation a resident receives may change as they move through the stages towards independent practice. Additionally, the frequency with which workplace-based EPA assessment is taking place, for example, may be influenced by the level of maturity of CBD within a discipline (i.e., how long it has been since the official launch in a specific discipline). Further analysis and examination of the data

will lead to a more nuanced understanding of all the variables that are contributing to the heterogeneity in experiences with CBD.

Monitoring the outcomes

As with the implementation of key components, there was a lot of variation in the degree to which the desired "in-training" outcomes are being experienced or not experienced by residents. Again, it is possible that for certain outcomes, the variation may be more heavily influenced by the nature of the discipline, whereas for others, it may be more institutionally driven. Therefore, analyzing the breakdown by discipline and institution could assist specialty committees, institutions, and programs in identifying potential barriers to achieving the desired outcomes, as well as determining the key factors that contribute to successful attainment of these outcomes.

It is also important to note that, in the absence of pre-CBD data for comparison, it remains unclear whether the desired outcomes observed can be attributed to CBD or if they were already occurring prior to its introduction. Therefore, monitoring these outcomes over time will be essential in determining whether any measurable progress is taking place.

Addressing the challenges/negative impacts through adaptations

The consistency observed between the challenges identified in the 2021 study and the negative impacts reported by residents in the 2023 study reinforces the notion that these concerns are widespread and are not confined to a specific timeframe or group of respondents.

There are multiple factors that could contribute to residents' experiences with CBD. Some of these factors, such as training in a learning environment where resources have been constrained by the COVID-19 pandemic, could intensify the challenges residents face with CBD. However, it is important to recognize that while these other variables may contribute to the difficulties, they do not diminish the validity of the concerns expressed by residents regarding their experiences with CBD.

While it is concerning that the residents are facing numerous challenges related to CBD, it is notable that the CBD Adaptations Plan is intended to address many of the concerns identified in these studies. This indicates that the adaptations are well-founded and will need to be evaluated in the future to determine if they subsequently lead to improvements.

Impact on resident wellness

Resident wellness is a complex construct to measure and is influenced by numerous factors. However, it is evident that there are aspects of CBD that are negatively contributing to resident well-being, with few positive impacts to date. The consistent distribution of responses to the resident wellness rating question across the two Resident Pulse Check studies suggests the tool is a reliable measure for monitoring the impact of CBD. Therefore, it will be important to continue monitoring this impact as adaptations are adopted to ensure that the changes only improve residents' experience rather than create any additional harm.

Study limitations

While RDoC and the Royal College aimed to include as many resident perspectives as possible for greater depth and nuance, the response rate was 13% and residents training in Québec were not included. Nonetheless, the valuable feedback provided from the participating resident physicians offers a reliable indication of the impact of CBD and serves as a crucial source of evidence for driving changes to CBD.

Looking ahead

The valuable information and insights derived from the Pulse Check studies, along with the findings from other CBD evaluation efforts, can be used by the Royal College, specialty committees, institutions, and programs to work towards the common goal of improving postgraduate medical education.

One of the key areas of the CBD Adaptations Plan is a renewed focus on program evaluation. The Royal College is currently implementing a new framework for CBD program evaluation, focusing on experiences, outcomes, and value. Additionally, over the next several years, targeted program evaluation information, that includes data from these Resident Pulse Check studies, will be shared with specialty committees to assist them with reviewing and revising their standards (including EPAs), with the goal of reducing the burden of assessment. This may include reducing the number of EPAs in any given stage, reducing the number of observations required per EPA, simplifying assessment tools, and/or reducing context variables for each EPA.

Further analysis of this data, in combination with other sources of evidence, will be conducted to gain a deeper understanding of the factors contributing to the variation in experiences with CBD, which will, in turn, help identify where additional support or adjustments may be required.

With an emphasis on continuous improvement, opportunities to enhance outreach strategies will be explored, aiming to maximize resident engagement in future CBD program evaluation efforts and ensure that the greatest possible number of residents are reached and provided the opportunity to share their experiences and perspectives.

Going forward, Pulse Check surveys and other mechanisms will continue to monitor the implementation and evolution of CBD so that it becomes the system it was envisioned to be, with resident wellness as one of the key indicators of its success.

Appendix A: Survey Questions

2023 Competence by Design (CBD) Pulse Check for Residents

Information collected from previous evaluation work suggests that CBD is having some unintended consequences. The data from this survey will help inform future iterations of CBD, therefore, participation is strongly encouraged.

A report of the findings from this survey will be shared with participants once the survey has closed and the data has been analyzed/summarized.

Part 1 - Demographics

Please select your current specialty/subspecialty

- Dropdown list of Royal College specialties/subspecialties

Please select your current institution: (sort alphabetically)

- University of British Columbia
- University of Alberta
- University of Calgary
- University of Manitoba
- University of Saskatchewan
- Western University
- McMaster University
- University of Toronto
- Queen's University
- University of Ottawa
- Northern Ontario School of Medicine
- Dalhousie University
- Memorial University of Newfoundland

Please indicate your current postgraduate training year.

- PGY 1
- PGY 2

- PGY 3
- PGY 4
- PGY 5
- PGY 6
- PGY 7

Other, please specify:

Part 2 – CBD Fidelity

CBD fidelity is the degree to which the key components of CBD are in place in a program. The key components of CBD are:

- Direct observation
- Workplace-based EPA assessment
- Coaching in the moment
- Coaching over time
- Competence Committee
- Individualized learning plans

Using the scales provided, please choose your response based on the degree to which each of the following key component activities is currently taking place in your program.

Direct Observation – Direct observation takes place when supervisors purposefully observe residents while they perform patient care or clinical activities that are meaningful, realistic and authentic (Kogan, Hatala, Hauer & Holmboe, 2017).

1	2	3	4	5
Direct observation of my performance is **not yet** taking place.	Direct observation of my performance is **rarely** taking place	Direct observation of my performance is **sometimes** taking place	Direct observation of my performance is **frequently** taking place	Direct observation of my performance is **routinely** taking place

Workplace-Based Entrustable Professional Activity (EPA) Assessment – Workplace-based assessment involves the documentation of feedback generated by supervisors from real clinical observations for the purpose of trainee development and EPA achievement decisions. EPAs reflect the authentic work of physicians and provide explicit teaching, learning and assessment goals for resident physicians (Gofton, Dudek, Barton & Bhanji, 2017).

Workplace-Based EPA Assessment

1	2	3	4	5
My supervisors have **not yet** started to perform workplace-based EPA assessment.	My supervisors **rarely** perform workplace-based EPA assessment.	My supervisors **sometimes** perform workplace-based EPA assessment.	My supervisors **frequently** perform workplace-based EPA assessment.	My supervisors **routinely** perform workplace-based EPA assessment as a part of day-to-day work.

Coaching in the Moment

In CBD, all supervisors are encouraged to act as coaches in the clinical environment. Supervisors should provide resident physicians with specific and actionable feedback based on observation that is meant to guide them through a growth process resulting in performance enhancement. This "coaching in the moment" should occur as part of daily work and over the course of a learning experience (Royal College of Physicians and Surgeons of Canada, 2018).

Coaching in the Moment

1	**2**	**3**	**4**	**5**
My supervisors do **not yet** engage in coaching in the moment.	My supervisors **rarely** engage in coaching in the moment.	My supervisors **sometimes** engage in coaching in the moment.	My supervisors **frequently** engage in coaching in the moment.	My supervisors **routinely** engage in coaching in the moment.

Coaching Over Time

In CBD programs some faculty are designated to act as "coaches over time", for example, academic coaches or academic advisors. This longitudinal process involves the regular review of, and reflection on learning portfolio data between a resident and designated faculty member to guide development towards competence, individualized learning goals and self-regulated lifelong learning skills (Royal College of Physicians and Surgeons of Canada, 2018).

Coaching Over Time

1	2	3	4	5
A process for coaching me over time does **not yet exist**	A process for coaching me over time has been **designed** but **not yet implemented**.	A process for coaching me over time has been implemented and takes place **reactively** when a problem has been identified.	A process for coaching me over time has been implemented and takes place **sporadically.**	A process for coaching me over time has been implemented and takes place **routinely**.

Competence Committee – Competence committees synthesize and appraise qualitative and quantitative data from multiple documented observations to reveal the broad picture of a resident physician's progression toward competence. The committee's processes must be transparent, and outcome decisions made by the committee must be shared with the resident undergoing review in a clear and timely manner (RCPSC, 2019a).

Competence Committee

1	2	3	4	5
Competence Committee decisions about my academic progression are **not yet** communicated to me in a transparent and timely manner.	Competence Committee decisions about my academic progression are **rarely** communicated to me in a transparent and timely manner.	Competence Committee decisions about my academic progression are **sometimes** communicated to me in a transparent and timely manner.	Competence Committee decisions about my academic progression are **frequently** communicated to me in a transparent and timely manner.	Competence Committee decisions about my academic progression are **routinely** communicated to me in a transparent and timely manner.

Individualized Resident Physician Stage-Based Learning Plans– Competency Based Medical Education (CBME) encourages a developmental approach that recognizes that all residents can benefit from documented individualized learning plans and stage-specific supports. These may include special mentors, readings or modified rotations to maximize growth and learning (RCPSC, 2019a).

Individualized Resident Physician Stage-Based Learning Plans

1	2	3	4	5
Individual resident learning plans are **not yet** being used to guide my personal learning experiences.	Individual resident learning plans are **rarely** used to guide my personal learning experiences.	Individual resident learning plans are **sometimes** used to guide my personal learning experiences.	Individual resident learning plans are **frequently** used to guide my personal learning experiences.	Individual resident learning plans are **routinely** used to guide my personal learning experiences.

Part 3: Outcomes

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I often receive high quality feedback that guides my learning and development					
I have a clear understanding of what is required of me to advance between stages					
I can easily recognize the gaps in my competence though the tracking of progress in my electronic dashboard or competence committee communications					
I can see how assessments are used for guiding my competency development over time					
I have the flexibility to tailor my own learning					

around my learning objectives					
I feel prepared for transitions through training					

Part 4: Resident Wellness

Resident Wellness – Residency physician training can be a particularly challenging time during a physician's career and has the potential to affect resident wellness. Recognizing that there are different ways of defining wellness, in this case we refer to wellness as the complex nature of resident physical, mental, and emotional health and well-being (Wallace, Lemaire, & Ghali, 2009).

1	2	3	4	5
My current experience with CBD is having a **large negative** impact on my health and wellness.	My current experience with CBD is having a **small negative** impact on my health and wellness.	My current experience with CBD has **not** had **any** impact on my health and wellness.	My current experience with CBD is having a **small positive** impact on my health and wellness.	My current experience with CBD is having a **large positive** impact on my health and wellness.

Part 5 – Adaptation

Results from the 2021 Resident Pulse Check survey identified several challenges with CBD that negatively impacted resident physician wellness. Some of the challenges that contributed to this negative impact include:

Challenges getting faculty to complete EPAs (lack of timely completion, unwillingness to complete)

The administrative workload experienced by residents (documenting and tracking EPAs and all their sub-components)

Finding opportunities to complete EPAs (rare occurrence of some EPAs, numbers too high, strict criteria)

Seeing value in CBD/EPAs (a check-box exercise, extra work with little to no added benefit)

Feedback inadequacies (lack on in-the-moment feedback, lack of meaningful feedback)

With the goal of improving the resident training experience, we are interested in learning more about the aspects of CBD that are **currently** having the most impact (positive or negative) on the quality of your residency education.

Question 1– What aspects of CBD have the greatest **negative** impacts on the quality of your residency education?

Question 2 – What aspects of CBD have the greatest **positive** impacts on the quality of your residency education?

Question 3 - Which of the following proposed adaptations would have the greatest **positive** impact on the quality of your residency education? (Please select all that apply)

- Eliminate Transition to Practice (TTP) stage in core programs for trainees moving into subspeciality programs
- Eliminate EPA assessments in Transition to Discipline (TTD) stage, and design curriculum to align with required training experiences
- Decrease total number of EPA assessments.
- Increase focus on non-EPA assessments and/or "old assessment tools" such as ITERS, field notes, written tests, etc.
- Eliminate or reduce number of contextual variables.
- Remove milestones from assessment forms to aid in efficiency of documentation.
- Remove achievement / competency thresholds for entrustment scales on forms and for progression decisions
- Remove achievement thresholds (minimum EPA assessment #s).
- Remove requirement for entrustment scales on forms and allow narrative-only assessments.
- Mandate communication process improvements between Competence Committees and residents following resident review to ensure transparency and facilitate coaching over time.
- Mandate longitudinal faculty coaches/academic advisors for all residents.
- Introduce "no stakes moments" where feedback/coaching forms may go to resident only and not the competence committee.

- Other (please specify):

Question 4 – What positive or negative changes, if any, have you experienced in the way that CBD is implemented in your program over the last year?

Appendix B: Project Team

RDoC Team Members	Royal College Team Members
Study Co-Leads **Brittany Benson, MD, MSc,** Resident Representative, RDoC **Jimmy Yimeng Guo, MD, MSc, FRCPC,** Resident Representative, RDoC **Kimberly Williams, MD, MSc, FRCPC,** Former President, RDoC **RDoC Staff** **Victoria Clarke, Hons. BA, MPA,** Director of Strategic Communications **Leslie Cuthbertson, BSc, MBA**, Chief Executive Officer **Jonathan Perron-Clow, BSocSc, MA** Director of Programs, Medical Education	**Study Co-Leads** **Tim Dalseg MD, MMEd, FRCPC**, Clinician Educator, Royal College **Andrew K. Hall MD, FRCPC, MMEd, DRCPSC,** Clinician Educator, Royal College **Royal College Staff** **Christina Baird, Hons BA,** Senior Communications Advisor, Communications and Marketing **Stacey Brzezina, Hons BA, MA,** Program Evaluation Analyst, Education Strategy, Innovations and Development Unit **Christa McMillin, Hons BA, MA**, Manager, Education Strategy, Innovations and Development Unit **Sinthiya Selvaratnam, BSc, MPH** Program Evaluation Analyst, Education Strategy, Innovations and Development Unit