

Remediation of Residents in Difficulty: A Retrospective 10-Year Review of the Experience of a Postgraduate Board of Examiners

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Abstract

Purpose

To determine, through a 10-year review, (1) the prevalence of residents in difficulty, (2) characteristics of these residents, (3) areas of residents' weakness, and (4) outcomes of residents who undergo remediation.

Method

A retrospective review of resident records for the University of Toronto Faculty of Medicine's (UT-FOM) Board of Examiners for Postgraduate Programs (BOE-PG) was done from July 1, 1999 to June 30, 2009 using predetermined data elements entered into a standardized form and analyzed for trends and significance. Outcomes for residents in difficulty were

tracked through university registration systems and licensure databases.

Results

During 10 years, 103 UT-FOM residents were referred to the BOE-PG, representing 3% of all residents enrolled. The annual prevalence of residents referred to the BOE-PG ranged from 0.2% to 1.5%. The CanMEDS framework was used to classify areas of residents' weaknesses and organize remediation plans. All 100 residents studied had either medical expertise (85%) or professionalism (15%) weaknesses or both. Residents had difficulties with an average of 2.6 CanMEDS Roles, with highest frequencies of Medical Expert (85%) Professional

(51%), Communicator (49%), Manager (43%), and Collaborator (20%). Often, there were multiple remediation periods, with an average of six months' duration. Usually, remediation was successful; 78% completed residency education, 17% were unsuccessful, and 5% remained in training.

Conclusion

Residents in difficulty have multiple areas of weakness. The CanMEDS framework is an effective approach to classifying problems and designing remediation plans. Successful completion of residency education after remediation is the most common outcome.

The identification and remediation of residents in difficulty is a challenge faced by all postgraduate medical

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education (i.e., residency) programs. A recent review of the literature about remediation of physicians across the continuum from medical school to practice concluded that there is a "paucity of evidence to guide best practices of remediation in medical education at all levels."¹ Nonetheless, the literature regarding the remediation of residents reveals the importance of early identification and intervention,²⁻⁴ the development of individualized, targeted remediation plans,^{5,6} and the establishment of a comprehensive framework for remediation⁷ that has a very rigorous process.⁸

The University of Toronto Faculty of Medicine (UT-FOM) established an arm's length Board of Examiners for Postgraduate Programs (BOE-PG) in 1995 to objectively review the cases of postgraduate students in academic difficulty at UT-FOM and to determine the appropriate course of action, which could include remediation, probation, or dismissal. The BOE-PG is composed of senior faculty, resident (learner) representatives, and the vice

dean—postgraduate programs (ex-officio, nonvoting). Members are not current residency program directors. This approach is consistent with the work of Paice,⁹ who recommends that the decision for remedial training should be based on objective evidence reviewed by a panel that does not include the educator who has raised the concerns.

The function of the BOE-PG is comparable to the role of "referee" as outlined in the framework for approaching residents in difficulty proposed by Smith et al⁷; the referee focuses on ensuring competence, both for the protection of patients and also of the program. At the end of a remediation period there are several possible outcomes. On the basis of the report by the program director to the BOE-PG about the resident's progress in the remediation period, the BOE-PG could decide (1) to return the resident to the regular training program (successful), (2) to continue in a further remediation period (either remediation or remediation with probation), (3) to place the resident on probation, or (4) to dismiss the resident from the residency training program.

The primary objective of our study was to review the experience of the BOE-PG over the previous 10 years to determine the prevalence of residents in difficulty, the characteristics of these residents, and the efficacy of the remediation intervention. Most of the published studies on the prevalence of residents in difficulty have been based on single types of residency programs such as family medicine,¹⁰ internal medicine,¹¹ psychiatry,¹² and general surgery.¹³ Our study compiled data on residents in difficulty from all 74 residency programs at UT-FOM and included a systematic qualitative analysis of the demographics of the residents, areas of weakness, BOE-PG decisions, and outcomes for the residents.

The secondary objective of our study was to explore trends in the prevalence and complexity of cases referred to the BOE-PG by looking at length of time for remediation, and the impact of changes in the BOE-PG approach over time.

Method

We completed a retrospective review of the remediation records of all residents referred to the BOE-PG over the 10-year period from July 1, 1999 to June 30, 2009. For educational outcomes, we reviewed residents' records across a 12-year period ending in 2011.

A resident in difficulty who is referred to the BOE-PG is identified by a failure to meet the strict criteria in one or more CanMEDS Roles. The CanMEDS Roles describe general competencies endorsed by the Royal College of Physicians and Surgeons of Canada (RCPSC) and the College of Family Physicians of Canada (CFPC).¹⁴ The competencies are organized into seven key roles—Medical Expert, Communicator, Manager, Collaborator, Health Advocate, Scholar, and Professional—and are the basis for the goals, objectives, and in-training assessments for all our postgraduate medical education programs. The CanMEDS Roles are used as the organizational framework for the individual formal remediation plans developed by the residency program director. Our review included all postgraduate medical trainees in a residency educational program accredited by the RCPSC or CFPC. Predetermined data elements—including postgraduate year of training, funding status, program,

CanMEDS area of weakness, form of documentation submitted to BOE-PG, decision of BOE-PG, and whether further referrals to BOE-PG were continuous or interrupted—were entered into a standardized form.

The data sources we reviewed for each resident included all material submitted by the program director to the BOE-PG, the BOE-PG meeting minutes, and recommendation and decision letters. The material submitted by the program director included narrative summary reports, in-training evaluation reports, and individual resident remediation plans. To understand the outcome of remediation, the registration records for these residents were reviewed to determine completion dates and program. Additionally, we searched licensure databases on public Web sites to determine active licensure status.

A resident's demographic characteristics included the type of residency training program and the level of training when initially referred to the BOE-PG. Additionally, the remediation documents were analyzed with respect to the nature and scope of the residents' weakness(es) using the CanMEDS Roles and competencies as the classifying framework. Other features of interest were BOE-PG decisions with respect to remediation; remediation with probation, probation, or dismissal; the length of remediation period or probation period recommended by

the BOE-PG; the number of remediation periods per resident; and, when there were multiple remediation periods, whether they were continuous in time or interrupted over the entire training period. Also explored were the "outcomes" for residents, including resignation, transfer, dismissal, successful completion in the same program or another residency program, and registration/licensure as a medical practitioner.

We compiled and recorded data in an electronic database for statistical analysis and completed a quality review of data classification and data entry.

Results

During the 10-year period, 103 residents were referred to the BOE-PG, representing 3% of the total number of residents enrolled at UT-FOM during that time. Three cases were excluded from the study—two because the BOE-PG had ruled that formal remediation was not warranted, and the third because the resident transferred to another university before the BOE-PG held its meeting. Figure 1 describes, by year, when the 100 residents in the study were initially referred to the BOE-PG. There was an increase in the number of residents referred to the BOE-PG over successive years, with 71 of the 100 residents in the study referred to the BOE-PG during the last five years of the study.

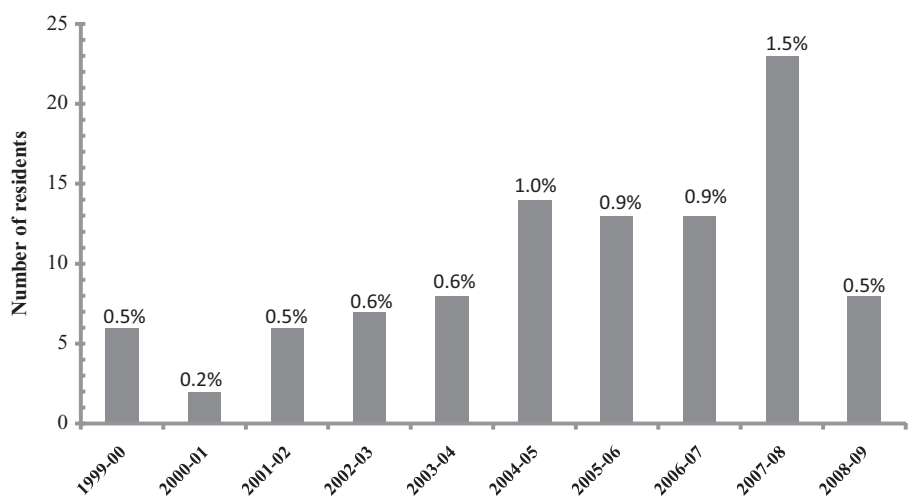


Figure 1 Number of new cases of residents in difficulty who were referred for remediation to the Board of Examiners for Postgraduate Programs (BOE-PG) of the University of Toronto Faculty of Medicine (UT-FOM), 1999–2009 (total number of residents = 100). Each bar indicates the number of new cases referred to the BOE-PG for the study period. Above each bar is the percentage that the number of new cases is of the total population of residents enrolled in that department for the study period.

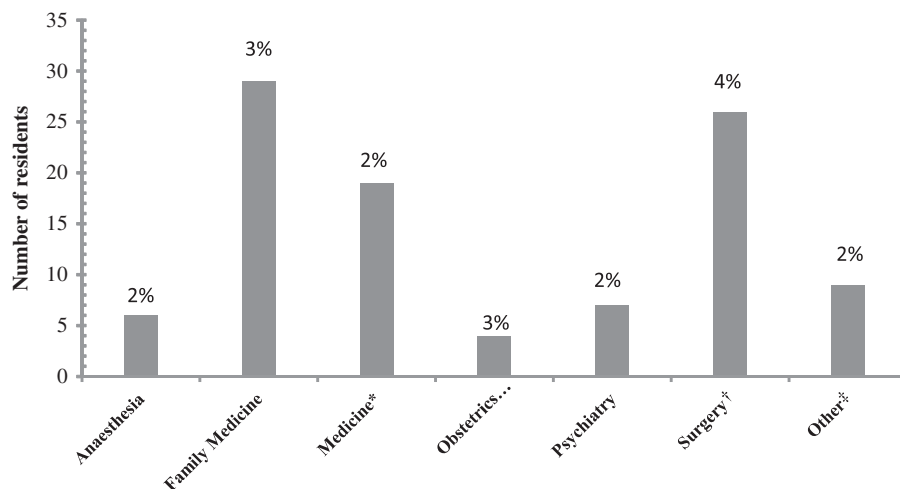


Figure 2 Number of new residents in difficulty referred for remediation to the Board of Examiners for Postgraduate Programs (BOE-PG) of the University of Toronto Faculty of Medicine (UT-FOM), by department, 1999–2009 (total number of residents = 100). Each bar indicates the number of new cases from a given department that were referred to the BOE-PG for a specific year. Above each bar is the percentage that the number of new cases is of the total population of residents enrolled in all UT-FOM programs that year.

*Medicine: cardiology, dermatology, core internal medicine, hematology, medical oncology, neurology, physical medicine and rehabilitation.

† Surgery: cardiac, general, neurosurgery, orthopaedic, plastic, thoracic, urology, vascular.

‡ Other: anatomical pathology, community medicine, medical biochemistry, ophthalmology, radiation oncology, diagnostic radiology, pediatric infectious diseases, pediatric rheumatology.

The 100 residents came from 27 of 74 (36%) specialty and subspecialty residency programs (including family medicine specialties) and 13 of 17 (76%) departments. Figure 2 shows the breakdown of these residents by department.

Residents referred to the BOE-PG were from all five residency year levels, with 26 residents initially being referred at the first-year level and 25 residents at the fifth-year level. The remaining 49 residents were initially referred fairly equally at the second- to fourth-year levels (18%, 14%, and 17%, respectively). Seventeen of 26 (65%) residents referred in their first year were from family medicine, which is a two-year program. Family medicine and medicine together accounted for 23 of 26 (88%) residents who were referred in their first year. In contrast, residents in surgical programs tended to be referred in their more senior years of residency, with 17 of 42 (40%) referred at the fourth- and fifth-year levels.

With respect to types of decisions for the first period of remediation, 79 of the 100 residents studied were given decisions of remediation, 15 were given remediation with probation, and 6 were placed on probation. Immediate dismissal at the

time of initial referral did not occur for any case. A little over half (53) of the residents had a single remediation period. Thirty-two had one or more additional remediation periods following the first. In a small number of cases (15), the residents were referred back to the BOE-PG for a further remediation period at a later date. The length of time individual residents spent in remediation,

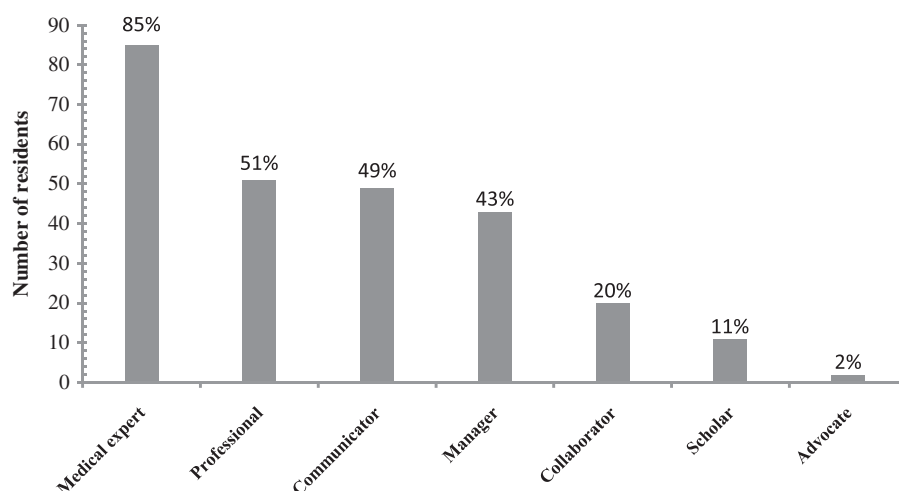


Figure 3 Numbers of residents with weaknesses in each of seven CanMEDS Roles, University of Toronto Faculty of Medicine, 1999–2009 (total number of residents = 100). Above each bar is the percentage of residents who presented weakness in a particular role. Seventy residents had weakness in more than one CanMEDS Role, which is why the percentages across bars total more than 100%.

remediation with probation, or probation is summarized below:

- For the 91 residents who were remediated only, the shortest remediation period was 2 months and the longest was 21 months (mean, 6 months; mode, 6 months).
- For the 18 residents who had remediation with probation, the shortest remediation period was 2 months and the longest was 16 months (mean, 8 months; mode, 3, 6, and 12 months).
- For the 7 residents who were placed on probation, the shortest period of probation was 4 months and the longest was 52 months, which was the remainder of that individual's residency (mean, 13 months; mode, 6 months).

The number of remediation periods reported above (116) is greater than the number of cases studied, to account for residents who returned to the regular training program before being referred back to the BOE-PG.

Analysis using CanMEDS Roles as the classifying framework showed that all 100 residents studied had a weakness in medical expertise (85%), professionalism (51%), or both. Figure 3 shows the number of residents with weaknesses in each of seven CanMEDS Roles. Seventy residents had weakness in more than one CanMEDS Role, with an average of weaknesses in 2.6 roles per trainee.

Table 1

Remediation Outcomes of the Residents Seen by the Board of Examiners for Postgraduate Medical Education (BOE-PG), University of Toronto Faculty of Medicine (UT-FOM), 1999–2009*

Remediation outcome	Number of residents
Completed residency after remediation	
Original program at UT-FOM	76
Transferred program at UT-FOM	2
Total	78
Ongoing residency education as of November 2011	
Original program at UT-FOM	3
Transferred to programs at UT-FOM	2
Total	5
Did not complete residency education	
Dismissed	4
Withdrew	13
Total	17
Total residents seen by BOE-PG	100

*The BOE-PG was established to objectively review the cases of residents in academic difficulty at UT-FOM and to determine the appropriate type of remediation. The 100 residents were those who were in difficulty at UT-FOM from July 1, 1999 to June 30, 2009.

Table 1 provides an overview of the remediation outcomes for the 100 residents studied. The 17 unsuccessful residents came from nine different residency programs. Of the 78 who successfully completed residency education, 52 were, at the time this report was written, registered in Canada with their provincial regulatory authority, 6 are unknown and were not traceable following their completion, and 20 have been internationally funded (we presume that many or all in this group are working in their home countries; we were not able to obtain information about their activities).

Discussion

Prevalence of residents in difficulty

The overall prevalence of residents in difficulty referred to the BOE-PG during the 10-year period was found to be 3%. To our knowledge, our study is the first to determine the prevalence of residents in difficulty in all residency training

programs within a large medical school. Previous studies have focused on single types of residency programs. In a 25-year family medicine study, Reamy and Harman¹⁰ concluded that the prevalence of residents in difficulty was 9.1% among their 230 residents. Similarly, Yao and Wright¹¹ reported a 6.9% prevalence of “problem residents” within internal medicine residency programs. Roback and Crowder¹² reported a 5.8% prevalence of “unacceptable performance” by residents in psychiatry training programs across a four-year period. Our study was a systematic documentary analysis and, therefore, was not subject to self-reporting biases. We found that the prevalence of residents in difficulty was similar across the major teaching departments (e.g., medicine, surgery, family medicine, obstetrics–gynecology), ranging from 2% to 4%, with the exception of pediatrics, which reported no residents in difficulty during the study period.

The prevalence of residents in difficulty found in our study was notably lower than that reported elsewhere. This is likely related in part to the strict identification criteria we used in this study and to differences in university and program structures and processes. For example, in some programs, residents with weaknesses are managed with informal or structured interventions at the program level.

The results of our study show that there was an increase in the number of residents referred to the BOE-PG over successive years. Although there have been increases in the number of residents in this same period, there was also an increase in the percentage of residents seen by the BOE-PG. One possible explanation for this could be an increased awareness and acceptance of the formal BOE-PG process by program directors who view the BOE-PG as a clear “remediation option.” This would be consistent with the findings of Dudek et al,¹⁵ who identified lack of remediation options as a possible factor underlying the reluctance of supervisors to report residents who performed poorly.

Residency year at referral to the BOE-PG

The importance of early identification and intervention is a consistent theme in the remediation literature. Reamy and Harman’s¹⁰ 25-year study on family medicine residents in difficulty identified

43% at the first-year level. Sixty-five percent (65%) of first-year residents who were referred to the BOE-PG from 1999 to 2009 were from the family medicine program. This percentage represents only 1.8% (17 out of 952) of family medicine residents across the 10-year study period.

The differences across programs of early (e.g., first-year) versus late (e.g., fourth-year) referrals need further study. For example, just over half of all residents from surgery programs (56%) were referred to the BOE-PG at the third-year level or higher. Residents from all programs had some intervention at the residency program level to address their weaknesses before formal referral to the BOE-PG; hence, initial identification of residents in difficulty generally occurs earlier than the BOE-PG referral. The year of residency when residents were referred to the BOE-PG was fairly consistent over each of the 10 years of the study.

CanMEDS areas of weakness

In addition to early identification of residents in difficulty, it is important that the area of weakness be clearly identified to facilitate the development of effective, targeted remediation plans.⁶ Our literature search did not yield other published longitudinal studies of multiple resident groups where the nature of difficulties experienced by residents requiring remediation was reported explicitly using the CanMEDS framework. Ratan et al⁵ presented a similar concept in their model for a comprehensive program of remediation in the United States, suggesting that it may be helpful to link the components of remediation programs to the competencies of the Accreditation Council for Graduate Medical Education.

Using the CanMEDS framework, we found that the CanMEDS competency (also called CanMEDS Role) most often identified as an area of weakness was that of Medical Expert (85% of cases), followed by Professional (51% of cases). Professionalism issues identified in our study included, but were not limited to, reliability, responsibility, attendance, truth telling, teamwork, boundary issues, privacy, and record keeping. In their study of family medicine residents, Reamy and Harman¹⁰ found the most common area of weakness to be “insufficient fund of knowledge,”

followed by “attitudinal problems.” Yao and Wright¹¹ identified “insufficient medical knowledge” as the most frequently reported difficulty of problem residents in internal medicine. In a study of general surgery residents with performance problems, Williams et al¹³ found that the most common difficulties were “relations with health care workers,” followed by “insufficient knowledge” and issues with communication. Other areas of weakness we identified that have been less emphasized in previous studies include the CanMEDS competencies of Communicator (49%), Manager (43%), and Collaborator (20%).

The majority (70%) of the residents in our study had a weakness in more than one CanMEDS competency, consistent with previous studies that have shown that residents in difficulty often have multiple areas of weakness.^{11,12} Williams and colleagues¹³ study of general surgery residents found that residents in difficulty often had problems that included more than one area of performance and were multifaceted. In our study, we identified weakness in an average of 2.4 CanMEDS competencies for each resident who successfully completed residency after remediation. We found that the subgroup of residents who did not complete their training programs, either because of dismissal or withdrawal, had a nominal but not significant difference in the average number of areas of weakness (average of 2.8 areas, $P = .294$). We also found that the subgroup of residents who did not complete their training programs because of dismissal or withdrawal had a nominal but not significant difference in weakness in the Professional competency (10 of 17) compared with those residents who successfully completed their residency programs (34 of 78; $P = .314$).

During the last three years of the study, the BOE-PG modified its approach through the introduction of a standardized remediation reporting template for program directors from all subspecialty programs that focused the framework for remediation on the CanMEDS Roles. We investigated the impact that this intervention had on the identification of areas of weakness. The average number of competencies with weakness per resident before intervention was 2.5 and after intervention was 3.5 ($P = .003$), which suggests that the CanMEDS template had a very significant

impact in identifying additional areas of weakness that were addressed in remediation plans.

Time and outcomes of remediation

Paice⁹ makes a distinction between “targeted” and “remedial” training in the United Kingdom, noting that remedial training most commonly extends the duration of training by 12 months. In our study, the average duration was 6 months for remediation periods and 8 months for remediation with probation periods. Close to half (47%) of the residents in difficulty required more than one remedial period. For the group of residents in our study who were ultimately successful in completion of training and obtaining a license to practice, the longest time spent in remediation was 21 months and, in remediation with a component of probation, 15 months. Although the BOE-PG ultimately decides on the success of remediation, it is the residency programs themselves, working within the guidelines of their national training requirements, that determine the amount of a resident’s time in remediation, if any, that can be credited toward that individual’s residency education. We know that a total of 723 months of remediation, either including or not including probation, were assigned by the BOE-PG during the 10-year period. How this translates into the time and costs of actual extended periods of training will be the subject of future study.

From the results of our study, residents, faculty, and program directors can be assured that the majority of residents (78) who were referred to the BOE-PG were successful in completing their original residency program (76 residents) or another residency education program (2 residents). Only 17 residents in our study did not complete their training programs because of dismissal (4) or withdrawal (13).

Of the 78 residents that successfully completed their programs, we were able to determine that more than half (49) have an independent medical license in the local jurisdiction (i.e., Ontario), 1 is registered as a resident in the local jurisdiction, 2 are registered in other provinces, and 20 are international visa students who would have left the jurisdiction after their residency education.

Limitations and future research

A limitation in comparing this study with others is the absence of standard definitions for, or a consistent approach to, remediation of residents in Canada or internationally. Another limitation was the difficulty in determining outcome measures, in part due to the number of international visa students who left our jurisdiction to work in other health care systems following their residency training.

Our study prompted questions that require further research. Currently, there are almost no data that reveal how physicians who were in remediation during their studies succeed in professional practice after residency.¹⁶ Are they confident and competent physicians? Do they later run into problems professionally? This information may be difficult to obtain but would be useful for outcome measurements on current practice. It would be interesting to determine whether there is a difference in the prevalence of residents in difficulty between those who are international medical graduates and those who are Canadian-trained physicians and whether weaknesses in the CanMEDS competencies are the same for both groups. More important, it would be beneficial to know what program directors and faculty can do to improve remediation processes. Finally, a question that requires further inquiry is whether earlier referral to the BOE-PG results in a more effective remediation strategy, as defined by successful completion of residency education, a subject that we plan to address in a further study.

Conclusion

The findings of this systematic, comprehensive, longitudinal study of residents referred to the BOE-PG at UT-FOM strongly suggest that the overall prevalence of residents in difficulty in Canadian residency education is low. The CanMEDS framework, particularly when used with a standardized reporting template, is an effective tool for identifying and categorizing the areas of resident weakness. Most residents in our study had multiple areas of weakness, with 100% of the BOE-PG-referred residents having either Medical Expert or Professional weaknesses or

both. Our findings strongly suggest that, in most cases, resident remediation is successful.

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