REDUCING THE NUMBER OF UNMATCHED CANADIAN MEDICAL GRADUATES

A WAY FORWARD

APPROVED BY AFMC BOARD OF DIRECTORS

January 2018

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ABOUT AFMC

The Association of Faculties of Medicine of Canada (AFMC) represents the country's 17 faculties of medicine and is the national voice for academic medicine. Our organization was founded in 1943 and functions to support individually and collectively Canada's medical schools through promotion of medical education, research, and clinical care.

EXECUTIVE SUMMARY

Immediate attention is required to address the growing number of Canadian Medical Graduates (CMGs) who go unmatched after the 2nd iteration of the Canadian Resident Matching Service (CaRMS) match. In 2009 the number of unmatched CMGs was 11. This number has grown steadily since, reaching **46 in 2016** and **68 in 2017**. Unmatched CMGs from previous years compete for the same positions as current year CMGs thus the situation is projected to worsen.

Data modelling based on current match factors (i.e. no changes in number of graduates, PGY1 positions, matching patterns, current match rules, etc.) indicates that **by 2021 the number of current year unmatched CMGs is projected to exceed 140 while prior year unmatched CMGs will exceed 190.**

With a view to identifying immediate, feasible and implementable solutions, in May 2017 the Association of Faculties of Medicine of Canada (AFMC) established an AFMC Resident Matching Committee (ARMC) Technical Subcommittee (TS) reporting to the ARMC to a) examine and identify the specific causal factors contributing to unmatched CMGs, b) outline implications of continued unmatched CMGs, and c) develop recommendations to address the issue. The ARMC TS conducted a detailed CaRMS match data analysis, examined other relevant data sources, and interviewed over 25 undergraduate (UG), postgraduate (PG) and government representatives from across the country to better understand the policy and physician resource planning context in each province.

The ARMC Technical Subcommittee identified some of the key contributing or compounding factors:

- From 2012 to 2017, the ratio of UG graduates to PG entry positions has fallen from 1 to 1.1, to 1 to 1.026.
- There is a higher proportion of Quebec graduates who match outside of Quebec than graduates from the rest of Canada who match to a residency program in Quebec.
- International Medical Graduates (IMGs) are filling positions in the 2nd iteration of the match that were originally CMG positions left vacant after the 1st iteration.
- More US medical graduates (USMGs) match to Canadian residency positions each year than CMGs match to US residency programs.

Some key observations about the growing number of unmatched CMGs include:

- Allocation of, and matching to, Canadian residency positions is a highly complex system. There are many stakeholders involved and each has different priorities that are not necessarily aligned.
- We have a national match system based on national standards of accreditation and certification yet it relies on provincial decisions on funding of positions and eligibility.
- Provincial policy decisions can be key drivers to the outcome of the national match.
- Some faculties are able to find solutions for their own unmatched graduates while others are unable to do so; to date there is no national strategy to address match outcomes.
- We are seeing a year-over-year accumulation of unmatched CMGs, progressively reducing the likelihood of current year graduates matching.
- Over 2/3 of unmatched CMGs are applicants who could match if positions in their chosen programs were available (see Figure 5 in the report).

The AFMC supports the need to do everything we reasonably can to match qualified yet unmatched CMGs. This report outlines options/strategies considered by the AFMC and subsequent recommendations that can be implemented almost immediately.

The following principles were committed to in shaping our recommendations:

- Medical students in Canadian medical schools should be supported on their path to a meaningful (clinical or non-clinical) career that contributes to the improved health of Canadians;
- Faculties of Medicine should support their graduates on their path to a meaningful (clinical or non-clinical) career that contributes to the improved health of Canadians; and
- Pursuant to its commitment to social accountability the AFMC should support new policy to improve the current matching system to support their graduates on their path to a meaningful (clinical or non-clinical) career that contributes to the improved health of Canadians.

With the understanding that implementation may vary by province, **collective immediate action is required to reverse the trend of unmatched CMGs.**

<u>Recommendations to Reduce Number of Unmatched Canadian Medical Graduates:</u>

Ensure Sufficient Entry into the System

1. That provincial funders collectively work to increase the number of residency positions for Canadian medical graduates to return to a minimum national ratio of 1.1 entry PG positions for every current year Canadian medical graduate, aligned with population health needs.

Changes to Match Processes

2. Maintain the separation of Canadian medical graduate and international medical graduate streams in the 2nd iteration of the resident match.

Support for Unmatched Canadian Medical Graduates

3. That faculties take responsibility for creating appropriate structures, policies and procedures to enable them to support their unmatched Canadian medical graduates, including but not limited to, access to electives and to extensive Student Affairs Office guidance.
4. That faculties report back to the AFMC Board of Directors on the successful implementation of their support processes by October 2018.

Implementation of Best Practices in Applications and Selection

5. The AFMC endorses the Best Practices in Applications and Selection (BPAS) Report and recommendations.
6. That Faculties report back to the AFMC on their successful implementation of the BPAS recommendations by October 2018.
7. The AFMC supports efforts to improve alignment between, and transitions from, undergraduate to postgraduate programs.

Improve Flexibility for Residents to Transfer from One Program to Another

8. That provincial funders work on creating a dedicated pool of positions each year to ensure flexibility for transfers.
9. The AFMC supports working on a proposal for a pan-Canadian transfer system for residents.

Pan-Canadian Planning

10. The AFMC supports the facilitation of pan-Canadian planning and is committed to the principle of preserving the integrity and fairness of a national match.

As part of their social accountability mandate, it is critical that the Faculties of Medicine continue to have opportunities for dialogue and to work with their provincial governments on physician resource plans, as well as participate in pan-Canadian strategies to plan for the right number, mix and distribution of physicians who will provide the best care to patients and meet population health needs. Most provinces are at various stages of physician resource planning and are focussed on their provincial needs; pan-Canadian discussions and national planning have begun at the level of the Physician Resource Planning Advisory Committee, co-chaired by AFMC and the province of Ontario which reports to the Federal/Provincial/Territorial Committee on Health Workforce (CHW). This report and the strategies implemented for unmatched CMGs are an important consideration in these national discussions.

DECREASING UG:PG RATIO AND INCREASING UNMATCHED CMGS

There has been a steady increase in the number of CMGs who do not match to a postgraduate (PG) entry residency position in Canada after the 1st and 2nd iterations of the CaRMS match. The number of unmatched CMGs was relatively stable until 2011, between 10-20 per year. In the last two years, this number has grown to 46 in 2016 and 68 in 2017.

Historically, the resident match had at least 10% more postgraduate positions for every Canadian medical graduate, i.e. a minimum ratio of 1 UG : 1.1 PG position. In fact, some provinces historically planned based on a 1:1.2 ratio (e.g. Nova Scotia).

Historically, with a minimum 1:1.1 ratio, CMGs who remained unmatched were able to be absorbed into the system through the post-match process or in the following year of the match. The UG:PG ratio began to dip below the 1:1.1 ratio in 2012 and in the last two years has fallen below 1:1.03. Excluding French language positions from the ratio, the ratio for English language positions in the match is below 1:1.

METHODOLOGY

Increasing unmatched CMGs is of significant concern to the medical education community. The AFMC Resident Matching Committee (ARMC) established the ARMC Technical Subcommittee in 2017 to a) examine and identify the specific causal factors contributing to unmatched CMGs, b) outline implications of continued unmatched CMGs, and c) develop recommendations to address the issue. See *Appendix 1* for the ARMC and Technical Subcommittee terms of reference and membership.

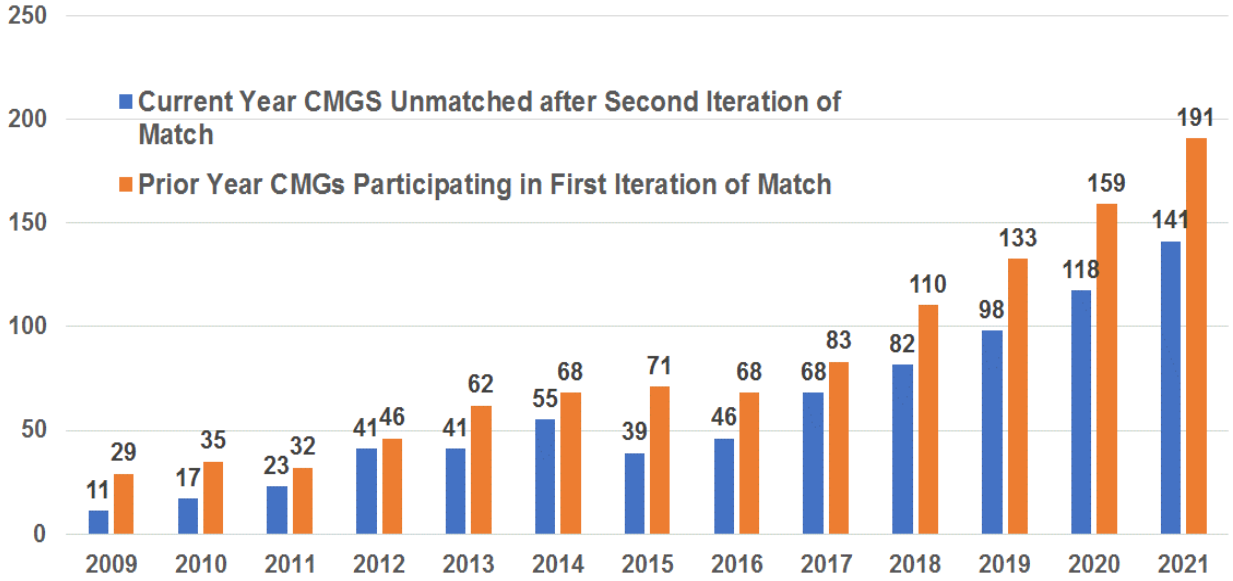
The ARMC Technical Subcommittee conducted a detailed CaRMS match data analysis, examined other data sources (e.g. CAPER), and modelled various changes to match eligibility and decision rules to determine their impact on match results. In addition, interviews were conducted with UG, PG and government representatives across the country to better understand the policy and physician resource context in each province. Twenty-five individuals were interviewed with representation from every province and each group.

SITUATION IS PROJECTED TO QUICKLY GET WORSE

Left unattended, the number of unmatched CMGs is expected to grow. Based on current match factors (i.e. no changes in: number of graduates, PGY1 positions, matching patterns, current match rules, etc.) data modelling indicates that the number of unmatched CMGs after the 2nd iteration is projected to exceed 140 by 2021, with over 190 prior year graduates participating in the match that year. The ratio of PG positions to eligible candidates[1] is projected to fall below 1:1 by 2019. See *Appendix 2* for data modelling assumptions.

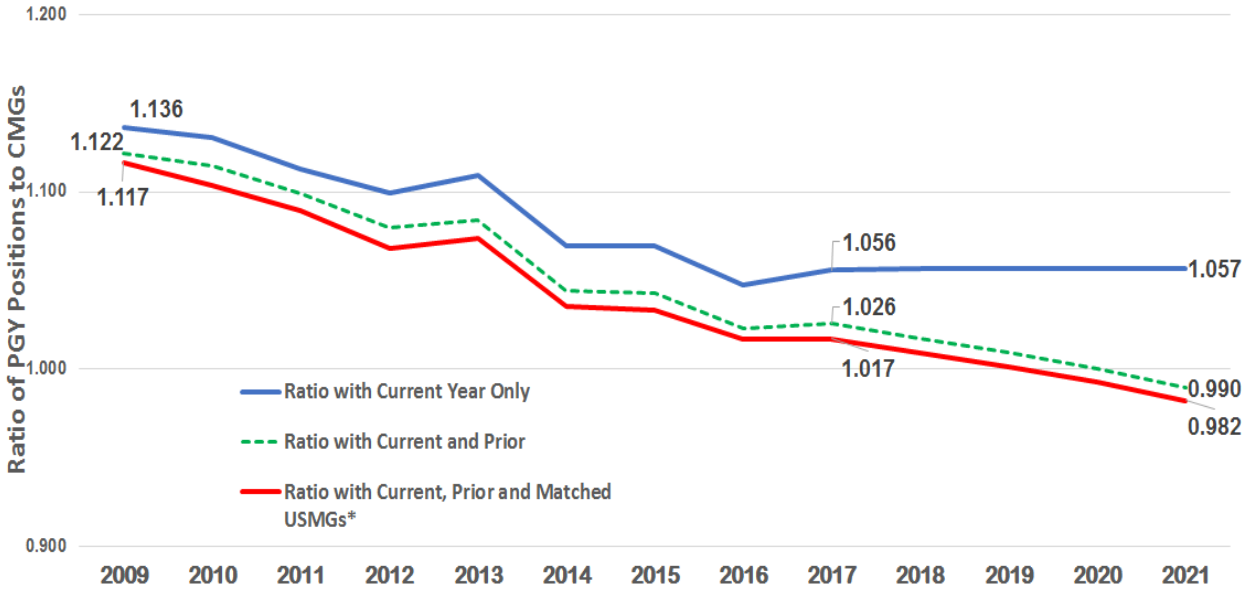
[1] US Medical Graduates (USMGs), Prior Year Graduates and Current Year Graduates.

Figure 1: Actual and Forecast Growth in Current and Prior Unmatched CMGs



Source: ARMC Technical Subcommittee

Figure 2: Change in First Iteration Ratio: Actual and Forecast - Current year CMGs, Prior year CMGs and USMGs



Source: ARMC Technical Subcommittee

COMPLEXITY OF MATCHING ENVIRONMENT

i) Multiple Stakeholders with Different Priorities

The primary stakeholders involved in, and impacted by, the increasing number of unmatched CMGs each have different priorities.

Stakeholder	Some Priorities (examples in no specific order)
Patients	▪ Right care at the right time and place
Provincial Governments	▪ Population health needs ▪ Right number, mix and distribution of physicians ▪ Cost containment
Learners	▪ To match to first choice discipline ▪ Career choice ▪ Flexibility to switch career choice ▪ Manageable costs (electives, match interview process)
IMGs	▪ Access to PG positions ▪ Eligibility to practice in Canada
UGME	▪ Quality and breadth of competence in UG learners ▪ Matched students ▪ Meaningful, educational electives
Student Affairs Offices	▪ Access to accurate physician HR data ▪ Access to reliable information re: program selection processes and requirements ▪ Balanced student needs, well-being and career management decisions
PGME	▪ Quality and breadth of competence in PG learners ▪ Capacity to train residents ▪ Flexibility for transfers ▪ Best Practices in Admissions and Selection (BPAS) and selection transparency
Residency Programs	▪ Best candidate ▪ Manageable number of applications and interviews

Note: The Canadian Resident Matching Service (CaRMS) supports the above stakeholders by providing a national mechanism to match CMGs and all eligible applicants to residency positions in Canada.

ii) Examples of Actions Impacting the Match

Actions increasing or decreasing the number of PG positions available, or shifts in students' and programs' match strategy, will affect the number of positions that fill each year. The match is also impacted by varying priorities and actions of individual schools and provinces. Based on stakeholder priorities, certain actions have been taken, certain behaviours have been elicited, and the unintended consequence is a growing number of unmatched CMGs.

Examples of actions based on stakeholder priorities	Impact/Result	Behaviours
Un-linked decisions re: UG / PG expansion / contraction, e.g. UG expansion not necessarily linked to 1 to 1 increase in PG spots in a number of provinces, or isolated decrease in PG positions in Ontario	Decreasing ratio of UG:PG positions More CMGs unmatched after the 2nd iteration More and more unmatched CMGs vying for a tighter and tighter match ratio each year Increased cost to students and programs for electives and program interviews	High stress situation for students Increased number of program applications per student (avg 19 per CMG in 2017) Changing match strategy: PG programs use # of electives as a selection criteria; students target all electives in one discipline to improve their odds at getting their desired program Provinces/schools finding solutions for their own unmatched graduates; no national planning
Govt mandated work parameters to improve access to physicians, e.g. Bill 140 and Bill 20 in Quebec	Increased number of Quebec FM vacancies that can only be filled by French speaking CMGs (58 unfilled French language positions in 2017) More CMGs vying for, and filling, English speaking positions	Higher number of Quebec graduates matching to residency programs outside the province (9-11% of Quebec grads match outside the province each of last 3 years) compared to graduates from other provinces matching to Quebec programs (1-2% each of last 3 years) Higher number of unfilled Quebec family medicine positions (58 unfilled French language positions in 2017 out of a total 64 unfilled positions nationally)

Examples of actions based on stakeholder priorities	Impact/Result	Behaviours
CMG focus on one desired career choice with no parallel plan[2] Many CMGs interested in same specialty but there are not enough spots	CMGs unmatched after the 2nd iteration (in 2017, 56.5% of positions were in disciplines where the first-choice discipline demand exceeded the supply. This is the first time in several years that this has occurred.) Note: CMGs focussing on a desired career choice isn't new or unusual, however, it has become more of an issue now that the UG:PG ratio has fallen below 1:1.1 There is a mismatch between personal career aspirations and physician resource needs / number of positions available	Changing match strategy: students targeting all electives to improve their odds at getting their desired program; students don't enter the 2nd iteration and choose to sit out for a year in order to apply the following year to their desired specialty; they can then avail themselves of the 5th year options available. Discussion/debate re: how to create more alignment with provinces' physician HR needs; what other career options exist for the small number of medical students who do not go on to become a practising physician; how to support unmatched students to achieve a successful match outcome in a subsequent year.
Blending of positions and applicants during the 2nd iteration of the match (i.e. CMGs, IMGs, transfers)	Potentially increased number of unmatched CMGs IMGs are more likely to match to vacant 2nd iteration positions (see Figure 7)	Discussion/debate re: ethical/legal ramifications of giving priority to CMGs; program ability to choose the best candidates; lack of flexibility to support transfers, thus previously matched residents re-enter the 2nd iteration as a transfer mechanism.

iii) Provincial Approaches and Trends vs. Pan Canadian Approach

Some provinces have one medical school working with one health authority, whereas others have the added complexity of multiple schools working together with government. Most provinces are at various stages of physician resource planning and are focussed on their provincial needs; pan-Canadian discussions and national planning have begun at the level of the Physician Resource Planning Advisory Committee (PRPAC). PRPAC reports to the Federal/Provincial/ Territorial Committee on Health Workforce, which AFMC co-chairs. Unique provincial challenges and resultant policy decisions can be key drivers to the outcome of the match. For example, we have seen a trend where there is a higher proportion of Quebec graduates who match outside of Quebec than graduates from the rest of Canada who match to a residency program in Quebec.

[2] Note: Parallel planning is not without risk to students and requires program support/alignment. Some programs/disciplines 'penalize' students with parallel plans, questioning their commitment to the program.

Figure 3: Graduates Matched In/Out of Quebec

Rest of Canada Graduates				Quebec Graduates		
Year	Matched to Quebec	Matched outside of Quebec	%	Matched to Quebec	Matched outside of Quebec	%
2017	26	1901	1%	783	96	11%
2016	27	1917	1%	807	82	9%
2015	32	1909	2%	773	87	10%

Source: CaRMS

Note: 1) The number of applicants applying to Quebec French language positions is a limitation to the number of out-of-Quebec students matching to Quebec programs because only French speaking applicants are eligible to apply. 2) Compared to all other provinces, Quebec has the lowest percentage of its matched applicants leaving to a position outside Quebec; in 2017, almost 90% of Quebec graduates matched to a residency program within the province. 3) Based on provincial physician HR planning, Quebec will reduce its UG enrolment by 17 positions each of the next three years (total 51 entry positions), with linked PG reductions occurring in 3-4 years' time.

While Quebec is dealing with unfilled French language family medicine positions (58 in 2017), Ontario has a significant number of unmatched current year CMGs (35 in 2017) and prior year CMGs (18 in 2017). Although we have a national match, it operates on provincial eligibility/funding criteria. Some provinces/schools have found solutions for their own unmatched graduates; to date there is no national strategy, planning or implementation to address match outcomes. There is clear need for discussion about pan-Canadian approaches that preserves the integrity and fairness of a national match.

iv) US Medical Graduates Advantaged in Match to Canadian Residency Positions

Because of a US/Canada reciprocity agreement, Canadian citizens or permanent residents who have graduated from an accredited U.S. medical school have equivalent rights and opportunities as current year CMGs during the matching process. Since the CaRMS match occurs prior to the US match each year, CMGs and USMGs will already have their Canadian matching decision before the US match takes place. This is an advantage for USMGs and a disadvantage for CMGs.

More USMGs match to Canadian residency positions each year than CMGs match to US residency programs. Over the past 8 years, an average of approximately 25 US medical graduates without prior training match to Canadian residency positions each year. An average of approximately 12 CMGs without prior training match to US residency programs. Discussion is required with a view to creating equity between the number of USMGs matching in Canada and the number of CMGs matching in the US.

Figure 4: USMGs and CMGs Matched Through Reciprocity Agreement

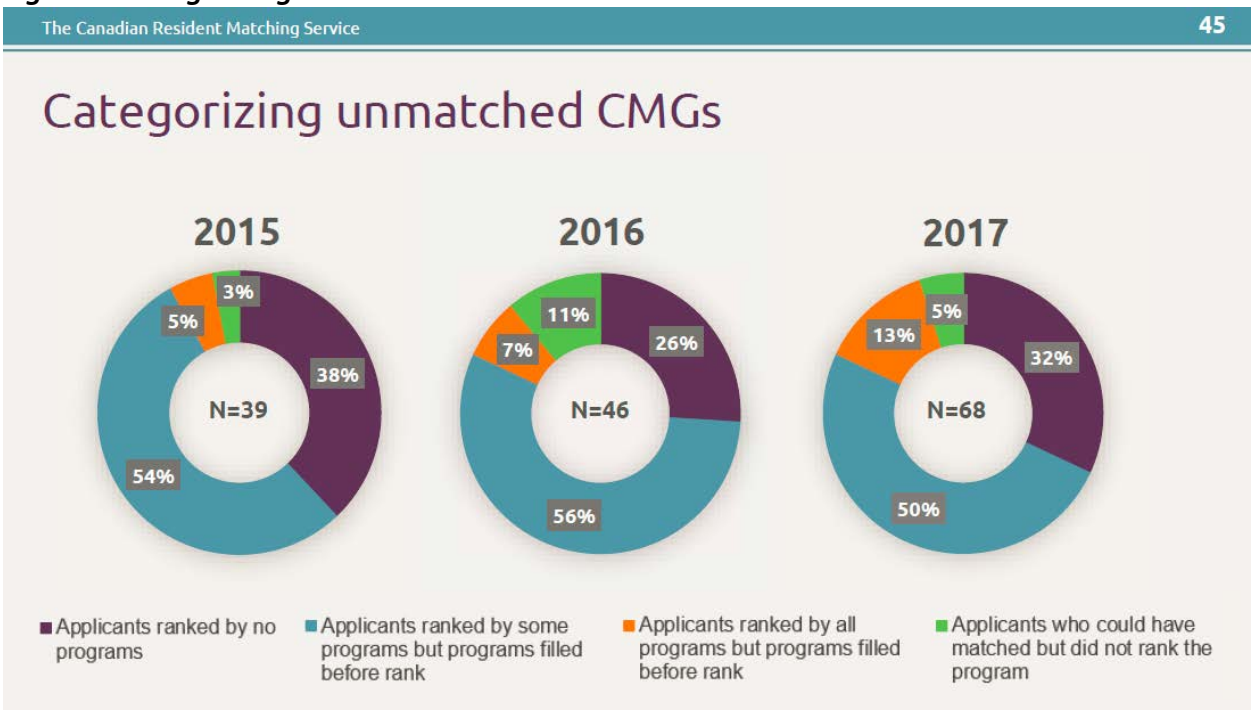
	Total # of USMGs Matched to Canadian Residency Positions	Total # of CMGs Matched to US Residency Positions
2017	24	7
2016	18	13
2015	26	17
2014	27	6
2013	25	14
2012	31	12
2011	22	11
2010	25	18

Source: CaRMS

v) Qualified CMGs Go Unmatched

Over the past 3 years, 62-74% of CMG applicants in the 2nd iteration are ranked by some or all programs that filled. Therefore, about 2/3 or more of unmatched CMGs are applicants who could have matched if positions in those programs were available.

Figure 5: Categorizing Unmatched CMGs



Source: CaRMS

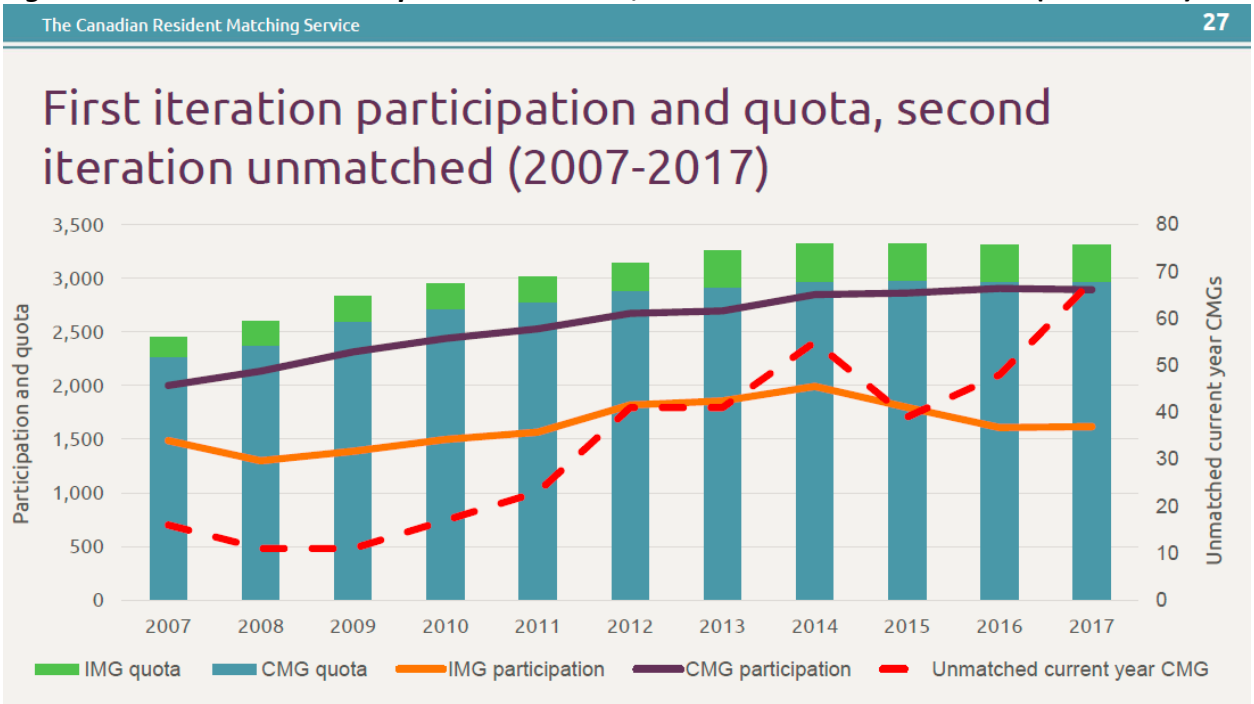
Various strategies are being implemented across the country by Faculties of Medicine to support unmatched medical graduates which range from 5th year programs, entry into graduate programs, one-on-one counselling, etc. A summary of unmatched CMG supports is available from AFMC upon request.

vi) International Medical Graduates are an Important Provincial Resource

International Medical Graduates (IMGs) are Canadian citizens/permanent residents who have graduated from a non-LCME accredited school. In most provinces, IMG quotas were made available as supernumerary to CMG quotas to provide access to medical practice and assist with physician resource priorities.

IMG quotas have remained fairly steady the past 5 years. Exceptions include Newfoundland and Manitoba who implemented a small reduction in their IMG quota recently in order to increase their CMG quota. IMG participation in the match was relatively steady until 2014 when it dropped by approximately 20% as new IMG assessment criteria/exams were introduced in many provinces.

Figure 6: First Iteration Participation and Quota, Second Iteration Unmatched (2007-2017)



Source: CaRMS

Since approximately 2007, in most provinces, IMGs have been eligible to fill positions in the 2nd iteration of the match that were originally CMG positions left vacant after the 1st iteration. As a temporary measure to address the growing number of unmatched CMGs, discussion is required about IMG eligibility for vacant CMG positions.

Figure 7: Proportion of IMG Vacancies after the 1st Iteration and Proportion of IMGs Matching during the 2nd Iteration

	1st Iteration Vacancies			2nd Iteration Matches			
	IMG Vacancies	CMG Vacancies	% that are IMG Vacancies	Current Year CMG matches	Prior Year CMG Matches	IMG matches	% that are IMG Matches
2017	16	203	**7%**	70	32	53	**34%**
2016	29	184	**14%**	77	20	65	**40%**
2015	21	195	**10%**	55	18	70	**49%**
2014	15	213	**7%**	73	16	75	**46%**

Source: AFMC Technical Subcommittee

vii) Electives and PG Program Selection

Electives are intended to provide students with a means to address self-identified or formally specified weaknesses, explore a variety of clinical practice environments and disciplines, achieve breadth of scope in knowledge skills and attitudes, and accomplish personal goals not covered by mandated curricular elements. Postgraduate programs use elective experiences and reference letters in admissions decisions. There are perceptions that programs value electives in their discipline as an indication that students have a legitimate interest in their discipline; furthermore, reference letters generated from within the discipline are often seen as key elements of admissions decisions.

Students who desire high demand residencies often will use all available elective time to visit as many programs within that discipline as possible. This creates a liability for students who do not match to that discipline, as they have little experience or exposure to be competitive in other disciplines. Students also incur significant cost in elective applications (paying for and reserving many more elective experiences than they will ultimately use).

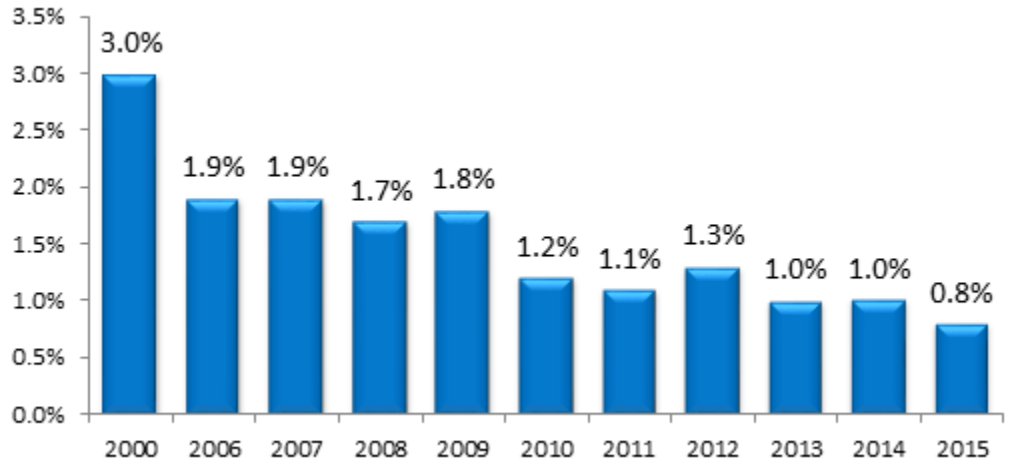
A Best Practices in Applications and Selection (BPAS) Report was developed in 2013 intended to inform and strengthen PG programs' selection processes, and create more evidence-based approaches to admission into residency programs (see *Appendix 3* – BPAS).

viii) Previously Matched Residents Re-entering Match as Transfers

Each year there are matched residents who seek to "transfer" from their current discipline and/or school, based on a desire to switch their career path or other personal/professional reasons. Postgraduate Deans are supportive of the need to preserve these opportunities and have developed national guidelines to support the process. Based on the interviews of UG, PG and government representatives across the country, there is a progressively limited capacity for transfers within a faculty, between programs within a province and inter-provincially in some provinces (Ontario, Quebec, the Maritimes and Newfoundland), while other provinces have some flexibility to accommodate local transfers (British Columbia, Alberta, Saskatchewan and Manitoba). Since Family Medicine training programs are at full capacity in many provinces,

transfers have been quite limited, even in those provinces with some flexibility to accommodate them. A recent study by CAPER highlights the decline in transfers in recent years.

Figure 8: Transfers Between Specialties Occurring Each Year as Percent of all Trainees



Source: CAPER
Note: This includes transfers between broad specialties but also within broad specialties, excluding subspecialisation. For example, a change between IM and Anaesthesia is included but a change from IM to Rheumatology is not.

Previously matched residents having the ability to re-enter the R1 CaRMS Match in the 2nd iteration is an increasingly important mechanism, from the resident's perspective, to transfer into another program. The number of matched residents who were CMGs, using the 2nd iteration for transfer, doubled from 10 in 2014 to 20 in 2017. While very important from the transfer perspective, in a match system with a decreasing UG:PG ratio, this opportunity for previously matched residents displaces more current year CMGs.

ix) International Medical Students in Canadian Medical Schools

Students from other countries are accepted by some Canadian medical schools outside of the provincial funding envelope. They become graduates of a Canadian medical school. Should these individuals stay in Canada, and are employed for more than 12 months, they can apply for permanent resident status. Permanent residents who are graduates of Canadian medical schools are eligible for the CaRMS match. From a 2017 survey from our 17 faculties, the potential number of graduates is 43 per year. These graduates may become another significant pressure on the resident matching system.

OPTIONS AND STRATEGIES

Assuming that medical education stakeholders wish to ensure that qualified and willing graduates from Canadian medical schools have access to a residency position at year of graduation, various options and strategies can be considered to achieve this goal. The options laid out below span a range of straight-forward to bold; without prejudice they are all included to stimulate thought and discussion. These strategies are ones that can be considered and, if supported, implemented almost immediately with the desired goal of reducing the number of, and providing supports to, unmatched CMGs.

A multi-pronged approach will be needed, and some more impactful measures tested, in order to stem the flow of unmatched CMGs. Some strategies would need to be implemented as single-year pilots, monitored closely and evaluated to see if they achieve the desired outcome as changes to the rules and policies may also lead to unpredictable changes in decision-making behaviours.

	Option/ Strategy	Description	When	Potential Impact
Increase Number of CMG Positions				
a)	Re-establish minimum ratio of 1:1.1	Identify funding to begin to increase PG positions, moving to minimum 1:1.1 ratio Responsible: Provincial governments	Begin during CaRMS cycle 2018; reach steady state by 2022	High likelihood of reducing # of unmatched CMGs. Note: many individuals interviewed indicated that they would like to return to a 1:1.1 or greater ratio, however funding not available.
b)	One-time addition of PG positions to address the current unmatched CMGs	Identify one-time funding to add supernumerary PGY1 positions in disciplines aligned with population health needs and allocated to schools pro-rata Responsible: Fed/provincial governments	CaRMS 2018 cycle Note: 2019 and 2020 CaRMS cycles TBD	High likelihood of reducing # of unmatched CMGs. Note: buys time so that situation doesn't get worse while other short and long-term strategies are implemented.
c)	Shift a portion of IMG quota into CMG quota	On a time-limited basis, provincial governments shift some portion of their IMG allocation over to their CMG allocation Responsible: Provincial	CaRMS 2018 - 2020 with annual evaluation	High likelihood of reducing # of unmatched CMGs. Note: revenue neutral.

	Option/ Strategy	Description	When	Potential Impact
		governments and Faculties		
Change Match Policies re: Ranking and Reversions				
d)	Separate CMG and IMG streams in the 2nd iteration	After the 1st iteration, keep all vacant positions in their original streams, i.e. do not blend CMG and IMG positions. Note: need to build in flexibility for transfers. Responsible: Faculties in consultation with provincial governments	CaRMS 2018 - 2020 with annual evaluation	Medium-High Notes: 1) revenue neutral, 2) likely to have more impact than (d) or (f), 3) CaRMS to confirm if 2018 implementation possible.
Re-examine Canada/US Reciprocity				
e)	Create equity in the number of USMGs matched to Canadian residency programs	Based on a 3 year rolling average, set a number and establish a mechanism to ensure equity / reciprocal match numbers. Responsible: AFMC and Faculties	CaRMS 2018 - 2020 with annual evaluation	High Note: would require discussion with American partners
Support Students and their Career Choices				
f)	Support unmatched students	Implement pan-Canadian approaches to support unmatched CMGs, such as UG 5th year, etc. Responsible: Faculties	CaRMS cycle 2018 onwards	High level of reassurance for students
g)	Career counselling	Provide reliable information and resources to Student Affairs offices, facilitating discussions with medical students (beginning in Yr1 and at regular intervals throughout medical school) re: career options within medicine, population health needs, and the need for parallel plans[2]. Continue to explore nationally the concept that every graduate should have a successful career.	CaRMS cycle 2018 onwards	High level of reassurance for students

	Option/ Strategy	Description	When	Potential Impact
		Responsible: Faculties with consultation, where appropriate, national planning bodies		
h)	Address PG program selection criteria	Increase transparency and move to Best Practices in Applications and Selection (BPAS) in PG selection processes. Implement a pan-Canadian electives policy that ensures electives are used by students to explore personal development rather than a job interview. Responsible: Faculties	CaRMS cycle 2018 onwards	High level of reassurance for students
i)	Increase opportunity for transfers	Create more flexibility to accommodate transfers outside of R1 CaRMS Match. Responsible: Provincial governments and Faculties	CaRMS cycle 2018 onwards	High level of reassurance for students

Note: As part of the implementation of any of the above options/strategies, details/impact by province may differ, and policy and legal implications will need to be investigated and considered.

When considering the AFMC's recommendations in the next section, one could ask: If there are no longer sufficient residency positions, why not simply reduce medical school enrolment? Notwithstanding the fact that undergraduate enrolment reductions would take 3-4 years to create 'extra room' in residency programs, the question of how many, and what types of, physicians are needed provincially and nationally is highly complex and requires careful collaborative planning. Since the late '90s, when provinces moved aggressively to increase family medicine positions and establish distributed medical education models, we have seen successful outcomes such as fewer unattached patients and improved access to care in rural and smaller communities across the country. Caution will be required in all physician resource planning discussions so as not to destabilize or reverse these successes.

RECOMMENDATIONS

Following a robust review of all the available match data, data driven projections, key informant interviews in all provinces, and options and strategies considered in this report, the

AFMC recommends the following measures to reduce the number of, and increase support to, unmatched CMGs:

Recommendations to Reduce Number of Unmatched Canadian Medical Graduates

Ensure Sufficient Entry into the System

1. That provincial funders collectively work to increase the number of residency positions for Canadian medical graduates to return to a minimum national ratio of 1.1 entry PG positions for every current year Canadian medical graduate, aligned with population health needs.

Changes to Match Processes

2. Maintain the separation of Canadian medical graduate and international medical graduate streams in the 2nd iteration of the resident match.

Support for Unmatched Canadian Medical Graduates

3. That faculties take responsibility for creating appropriate structures, policies and procedures to enable them to support their unmatched Canadian medical graduates, including but not limited to, access to electives and to extensive Student Affairs Office guidance.
4. That faculties report back to the AFMC Board of Directors on the successful implementation of their support processes by October 2018.

Implementation of Best Practices in Applications and Selection

5. The AFMC endorses the Best Practices in Applications and Selection (BPAS) Report and recommendations.
6. That Faculties report back to the AFMC on their successful implementation of the BPAS recommendations by October 2018.
7. The AFMC supports efforts to improve alignment between, and transitions from, undergraduate to postgraduate programs.

Improve Flexibility for Residents to Transfer from One Program to Another

8. That provincial funders work on creating a dedicated pool of positions each year to ensure flexibility for transfers.
9. The AFMC supports working on a proposal for a pan-Canadian transfer system for residents.

Pan-Canadian Planning

10. The AFMC supports the facilitation of pan-Canadian planning and is committed to the principle of preserving the integrity and fairness of a national match.

CONCLUSION

In the absence of a rapid return to the 1:1.1 ratio, there is no easy solution to address the growing number of unmatched CMGs. The consequence of inaction will lead to even more unmatched CMGs, projected to exceed 140 by 2021, with over 190 prior year graduates participating in the match that year. In developing solutions, it may be useful for all medical education stakeholders to consider a future, pan-Canadian desired state that addresses collective priorities:

- Right number, mix and distribution of physicians to meet population health needs
- PG capacity to train physicians
- Minimum 1.1 PG: 1 UG national ratio to optimize resident match outcomes
- Investment in UG education leads to a PG match for every willing and qualified CMG
- Commitment of PG positions for IMGs
- PG Program ability to select the best candidates
- Increased transparency on program selection criteria
- Flexibility within the PG system to accommodate transfers
- Learners in careers aligned with their strengths, personal interests and societal needs
- Educationally relevant electives
- Appropriate supports for unmatched candidates
- Matching service/process that is flexible and enables desired state

Multi-stakeholder commitment and involvement in solutions are needed moving forward. The AFMC has considered a variety of options that are feasible and implementable, and we are pleased to present and discuss the above recommendations, which have the potential to make a significant and positive difference in reducing the number of, and providing increased support to, unmatched CMGs.

DEFINITIONS

Association of Faculties of Medicine of Canada (AFMC)

The AFMC represents Canada's 17 faculties of medicine and is the voice of academic medicine in Canada.

AFMC Resident Matching Committee (ARMC)

The ARMC is an AFMC committee established to review and discuss resident allocation, selection and matching.

ARMC Technical Subcommittee

The ARMC Technical Subcommittee is a subcommittee of the ARMC established to a) examine and identify the specific causal factors contributing to unmatched CMGs, b) outline implications of continued unmatched CMGs, and c) develop recommendations to address the issue.

Best Practices in Applications and Selection (BPAS)

BPAS are principles and guidelines intended to inform and strengthen postgraduate programs' selection processes, and create more evidence-based approaches to admission into residency programs.

Canadian Medical Graduate (CMG)

A CMG is a graduate of a LCME accredited medical school in Canada.

Canadian Resident Matching Service (CaRMS)

CaRMS is a national, independent, not-for-profit, fee-for-service organization that provides a fair, objective and transparent application and matching service for medical training throughout Canada.

Committee on Health Workforce (CHW)

The Committee on Health Workforce is a Federal/Provincial/Territorial (F/P/T) committee that reports to the F/P/T Conference of Deputy Ministers (CDM) and: provides a national forum for strategic discussion, information sharing, and action on priority F/P/T issues; provides policy and strategic advice to CDM on health workforce issues, including the planning, organization and delivery of health services; responds to requests for advice from CDM; and identifies emerging issues in health human resources and health delivery and develops recommendations for jurisdictions related to the committee's mandate.

Current Year Graduates

Current year graduates are medical students graduating from a Canadian/US medical school in the current year.

International Medical Graduates (IMGs)

IMGs are Canadian citizens/permanent residents who have graduated from a non-LCME accredited school.

Physician Resource Planning Advisory Committee (PRPAC)

The PRPAC is a pan-Canadian and broadly representative committee reporting to the Federal/Provincial/Territorial (F/P/T) Committee on Health Workforce that works in collaboration with other relevant stakeholders to: provide the opportunity for stronger pan-Canadian collaboration in support of common physician resource priorities; inform and assist jurisdictions (governments and their partners) in physician resource planning and decision-making; and, support proactive efforts to align supply, mix and distribution to meet the changing health care needs of the populations they serve.

Prior Year Graduates

Prior year graduates are medical students who graduated from a Canadian/US medical school in a prior year who do not have any postgraduate training.

Transfer

A matched resident, i.e. already in a postgraduate training program, may seek to "transfer" from their current discipline and/or school to another discipline and/or school, based on a desire to switch their career path or other personal/professional reasons.

US Medical Graduates (USMGs)

USMGs are Canadian Citizens or Permanent residents who have graduated from an accredited US medical school; they have equivalent rights and opportunities as current year CMGs during the matching process.

APPENDIX 1: TERMS OF REFERENCE

AFMC COMMITTEE ON RESIDENT MATCHING

Terms of Reference 2015

(Revised and approved by the AFMC Board February 2016)

A. MATCH PROCESS

The process by which medical students apply for a residency position and residents apply for many subspecialty positions in Canada is outsourced to the Canadian Resident Matching Service (CaRMS). [3]It is a not-for-profit corporation with a 12 member board from 8 different organizations. AFMC is represented by three board members (1 Dean, 1 Postgraduate (PG) Dean and 1 Undergraduate (UG) Dean). The CaRMS Chair of the Board, historically, has been the AFMC Dean Representative.

CaRMS provides a resident match service for which it enters into an identical institutional agreement, or contract, with each of our faculties. Each eligible applicant to the match, whether a graduate from a Canadian, US or International school; signs an individual agreement with CaRMS. Residency positions may be offered to graduates from Canadian, U.S. and international medical schools (applicants) who are registered with the Canadian Resident Matching Service (CaRMS) and meet the eligibility requirements established by the faculties of medicine and the provincial medical regulatory authorities.

CaRMS is an application and matching program that provides a system for the confidential submission, review and ranking of documents and ranking of applications to one or more postgraduate medical residency program (participating residency programs) operated by a Canadian faculty of medicine (institution). The following matches are included in the matching program: R1 Main Residency Match (R1 match), Family Medicine/Emergency Medicine Match (FM/EM match), Medicine Subspecialty Match (MSM), and Pediatric Subspecialty Match (PSM).

The costs for the match are shared between the students and the faculties. Faculties are charged based on a flat administrative fee, a per student fee, a per program fee, and a per applicant fee. Students are charged a match and verification fee as well as a per program fee.

B. MANDATE

The AFMC Resident Matching Committee mandate is to review and discuss resident allocation, selection and matching.

[3] CaRMS runs a subspecialty match for Pediatric Subspecialties, Medical Subspecialties and the Family Medicine Emergency stream. Entry to subspecialty (second entry) programs in Surgery, Ob/Gyn, Diagnostic Radiology, and Psychiatry are managed outside of CaRMS

C. ACCOUNTABILITY

The Committee is accountable to the Board through the Board Executive and will supply copies of its plans, minutes, reports and other documents as appropriate. Information will also be provided to AFMC Committees on postgraduate, undergraduate, student affairs and all other stakeholders as appropriate.

D. AUTHORITY

The Committee has the authority to review the Terms of Reference and make recommendations for changes to the Board of Directors, draft a work plan for approval by the Board of Directors, review materials and make recommendations related to resident matching in Canada and advise the Board of major issues related to its mandate, as well as regularly assess its progress and adjust the work plan. It will review the match process provided by CaRMS and the Institutional Agreement with CaRMS and make recommendations as requested by the Board.

E. RULES OF PROCEDURE

The Committee will always attempt to function by consensus. Should this fail, Robert's Rules of Procedure will apply.

F. RESPONSIBILITIES

The Committee will discuss and make recommendations on all aspects of the resident match in Canada, as required. This includes, but is not limited to, the items listed in the Institutional Agreement with CaRMS.

G. MEMBERSHIP

1. Representation

1.1 An effort will be made to ensure representation from a wide range of faculties and will include at a minimum: 2 deans, 2 Postgraduate (PG) Deans, 2 Undergraduate (UG) Deans, 2 Student Affairs (SA) Deans. It will also include 2 Residents; one from Resident Doctors of Canada (RDoc) and one from la Fédération des médecins résidents Québec (FMRQ), 2 Students; one from the Canadian Federation of Medical Students (CFMS), one from la Fédération médicale étudiante du Québec (FMEQ) and one representative from the CaRMS organization. A representative from the UG and PG managers will also be invited to join.

1.2 Each representative will be eligible to serve a three (3) year term, renewable once.

H. CHAIR

The Chair of the AFMC Resident Matching Committee will be the AFMC President and CEO or his/her designate. The Chair is responsible for convening all meetings and will act as a spokesperson for the Committee and the liaison to CaRMS.

I. NOMINATIONS

Nominations will be sought by the Faculties of Medicine and the RDoc, CFMS, FMEQ and FMRQ organizations. The AFMC Board will approve the members of the Committee.

J. SUPPORT

Administrative support to the committee will be provided by AFMC staff.

ARMC MEMBERSHIP - AUGUST 30, 2017

Name	Affiliation
Dr. Geneviève Moineau	President & CEO, AFMC, Chair
Dr. Mike Strong	Dean, Schulich School of Medicine & Dentistry Chair, AFMC Board of Directors
Dr. Trevor Young	Dean, Faculty of Medicine University of Toronto
Dr. Bernard Jasmin	Interim Dean, Faculty Medicine, University of Ottawa
Dr. Glen Bandiera	PG Dean, University of Toronto
Dr. Matthieu Touchette	PG Dean, Université Laval
Dr. Gary Tithecott	UG Dean, Schulich, Chair, AFMC UGME Committee
Dr. Beth-Ann Cummings	UG Dean, McGill University
Dr. Melissa Forgie	UG Dean, University of Ottawa
Dr. Leslie Nickell	SA Dean, University of Toronto, Chair SA Committee
Dr. Melanie Lewis	SA Dean, University of Alberta
Dr. Franco Rizzuti	President, CFMS
Mr. Henry Annan	Incoming President, CFMS
Dr. Jessica Ruel-Laliberté	FMRQ
Dr. Phillipe Simard	Vice-president, FMEQ
Dr. Irfan Kherani	RDoC
Ms. Rani Mungroo	RDoC
Mr. John Gallinger	CaRMS
Mr. Ryan Kelly	CaRMS
Ms. Caroline Abrahams	PG Manager
Ms. Cathy Oudshoorn	UG Manager
Mr. Jon Kimball	Director of Data and Information Services, AFMC
Dr. Sarita Verma	VP, Education, AFMC

AFMC Resident Matching Committee (ARMC)

TECHNICAL SUBCOMMITTEE ON REDUCING THE NUMBER OF UNMATCHED CANADIAN MEDICAL GRADUATES

CONTEXT:

The AFMC Resident Matching Committee (ARMC) was convened in 2014 as a multi-stakeholder group to examine all issues related to allocation, selection and matching into Canadian residency positions. An emerging issue for the Committee is the increasing number of Canadian Medical Graduates who are unmatched after the second iteration of CaRMS. A Match Data Subcommittee of the ARMC has reviewed CaRMS data to better understand the trends and developed match outcome simulations using different matching assumptions. Subsequent to the 2017 match outcome, with a record number of unmatched CMGs, increased efforts are required to examine all of the factors, at a national and provincial level, contributing to the high numbers of unmatched CMGs. In response, the Technical Subcommittee was expanded and its scope increased to become the Subcommittee on Reducing the Unmatched Canadian Medical Graduate.

The Subcommittee is accountable to the AFMC Committee on Resident Matching but its work will also inform the F/P/T Physician Resources Planning Advisory Committee (PRPAC) through the dual role of Subcommittee Chair, who also serves as co-Chair of PRPAC.

PURPOSE:

The purpose of the Subcommittee is to examine and identify the specific causal factors contributing to Unmatched Canadian Medical Graduates, outline implications of continued unmatched CMGs, and develop recommendations to address the issue.

KEY TASKS

- Consolidate existing work from PRPAC, ARM Data Subcommittee and any other relevant groups or stakeholders who have examined unmatched Canadian Medical Graduates.
- Undertake an Environmental Scan of current provincial eligibility criteria for the first and second iterations of the PGY1 CaRMS match.
- Review key contributing UG and PG factors and match related protocols nationally, identifying misalignment/capacity/systems issues.
- Identify key policy decisions at a provincial and national level that impact on demand for and supply of PGY1 applicants and positions.
- Identify implications of a continuation of unmatched CMG trends.
- Develop options to reduce the number of unmatched CMGs in the future and associated implications.

TIMELINES

- It is expected that the ARMC Technical Subcommittee will deliberate from June 2017 to September 2017 with a draft report with options and recommendations developed by mid-August 2017 and finalized for submission by the end of September 2017.

MEMBERSHIP

- Chair – President and CEO of the AFMC or delegate
- CaRMS representatives (2) (CEO and technical expert)
- AFMC, Director of Data and Information Services
- PG Manager representative (1)
- PG Dean (2)
- UG Dean (1)
- RDOC/FMRQ (1 – 2)
- CFMS/FMEQ (1 – 2)
- UE Student Affairs Dean (2)
- Project Manager – MK Whittaker, external consultant

ACCOUNTABILITY

- The ARMC Technical Subcommittee will report to the AFMC ARM Committee with a liaison to the PRPAC through the Subcommittee Chair and co-Chair of PRPAC.

DELIVERABLES

- Draft report with short term options – mid August 2017
- Final Report with Options and Recommendations on Strategies to Address the Optimization of Matching to Canadian Residency Positions – September 2017

ARMC-TS MEMBERSHIP - AUGUST 30, 2017

Name	Affiliation
Dr. Geneviève Moineau	President & CEO, AFMC, Chair
Dr. Glen Bandiera	PG Dean, University of Toronto
Dr. Armand Aalamian	PG Dean, McGill University
Dr. David Musson	UG Dean, NOSM
Dr. Gary Tithecott	UG Dean, Schulich, Chair, AFMC UGME Committee
Dr. Melanie Lewis	SA Dean, University of Alberta
Dr. Leslie Nickell	SA Dean, University of Toronto, Chair SA Committee
Dr. Franco Rizzuti	CFMS
Mr. Henry Annan	CFMS
Dr. Irfan Kherani	RDoC
Ms. Rani Mungroo	RDoC
Mr. John Gallinger	CaRMS
Mr. Ryan Kelly	CaRMS
Ms. Caroline Abrahams	PG Manager
Ms. Mary-Kay Whittaker	Project Support
Mr. Jon Kimball	Director of Data and Information Services

APPENDIX 2: ASSUMPTIONS RE: DATA MODELLING OF UNMATCHED CMGs, 2018-2021

Forecasts were developed to simulate a continuation of the current patterns of applicants to, and quota for CMGs in the first iteration of the CaRMS match. The purpose of the forecasts is to illustrate the potential "cumulative" effect of continued unmatched CMGs across Canada with a fixed number of PGY1 opportunities.

Forecasts are based on the following assumptions:

- No change in # of "current" Canadian Medical Graduates to 2021
- No change in # of PGY1 positions for CMGs to 2021
- No changes in # of positions for IMGs to 2021
- No change in # of IMG applicants to 2021
- A ratio of the number of "prior year grads" in the first iteration to the # of current year unmatched CMGs after the second iteration in the previous year was calculated for the previous four years. This ratio of 1.62 was applied to the following four years to estimate the number of prior year graduates in the first iteration of a match. (Note that this excludes residents seeking transfer)
- An annual rate of increase in the % of current year CMGs unmatched after the second iteration was calculated to estimate the number of CMGs who will go unmatched after the second iteration over the next four years.
- An estimate of the number of USMGs in the first iteration (eligible for CMG positions) was based on a four-year average of matched USMGs (23 annually)

Findings:

- Using assumptions above, the ratio of PGY1 positions to eligible candidates will fall below 1 to 1 by 2019 including USMGs, Prior Year Graduates and Current Year Graduates
- Excluding USMGs the ratio falls below 1 to 1 by 2020
- Assuming no change in policy, quotas and applicant and selection patterns, the number of unmatched CMGs after the second iteration will exceed 140 by 2021

APPENDIX 3: BEST PRACTICES IN APPLICATIONS AND SELECTION (BPAS)

For full report: **http://pg.postmd.utoronto.ca/wp-content/uploads/2016/06/BestPracticesApplicationsSelectionFinalReport-13_09_20.pdf**

A. PRINCIPLES

a. Selection criteria and processes should reflect the program's clearly articulated goals.
b. Selection criteria and processes should reflect a balance of emphasis on all CanMEDS competencies.
c. Selection criteria used for initial filtering, file review, interviews and ranking should be as objective as possible.
d. Selection criteria and processes should be fair and transparent for all applicant streams.
e. Selection criteria and processes should promote diversity of the resident body (e.g. race, gender, sexual orientation, religion, family status,) be free of inappropriate bias, and respect the obligation to provide for reasonable accommodation needs, where appropriate.
f. Programs should choose candidates who best meet the above criteria, and are most able to complete the specific residency curriculum and enter independent practice.
g. Multiple independent objective assessments result in the most reliable and consistent applicant rankings.
h. Undergraduate and postgraduate leaders and communities must engage in collaborative planning and innovation to optimize the transition between UG and PG as well as between specialty and subspecialty PG programs for all learners.
i. Postgraduate programs must be well informed of educational needs of individual candidates to allow effective and efficient educational programming.
j. Recognizing that past behaviour and achievements are the best predictors of future performance, efforts should be made to include all relevant information (full disclosure) about applicants' past performance in application files.
k. Applicants should be well informed about specialties of interest to them, including heath human resources considerations.
l. Programs must consider and value applicants with broad clinical experiences and not expect or overemphasize numerous electives in one discipline or at a local site.
m. Diversity of residents across PGME programs must be pursued and measured.

B. BEST PRACTICES

Transparency

1. Programs must define the goals of their selection processes and explicitly relate these to overall program goals.
2. Programs should define explicitly in which parts of the application/interview process relevant attributes will be assessed.
3. Programs should explicitly and publicly state the processes and metrics they use to filter and rank candidates, including on program and CaRMS websites.

4. Programs should maintain records that will clearly demonstrate adherence to process (for example, for audit purposes).
5. If programs systematically use information other than that contained in application files and interviews, this must be consistent, fair and transparent for all applicants.
6. Programs using such information must have a process to investigate and validate such information prior to considering it for selection processes.
7. Programs should have a specific practice regarding retention and protection of records that is consistent with locally applicable policy, regulations and laws.

Fairness

8. Each component (e.g. application file documents, interview performance, etc.) of the candidate's application should be assessed independently on its own merits, using information contained only in that component.
9. Programs must abide by the Guidelines for management of Conflict of Interest in Admissions decisions.*

Selection Criteria

10. Programs must establish a comprehensive set of program-specific criteria that will allow thorough assessment of all candidates.
11. Selection criteria must include elements specific to each specialty that are validated to predict success in that field (for example, hand-eye coordination for procedural disciplines).

Process

12. Criteria, instruments, interviews and assessment/ranking systems must be standardized across applicants and assessors within each program.
13. Assessments should be based on demonstrable skills or previous behaviours, both of which are known to be predictive of future behaviours.
14. Applicant assessment should be based on multiple independent samples and not on the opinion of a single assessor.
15. Programs should regularly assess the outcomes of their process to determine if program goals and BPAS principles (e.g. Diversity) are being met.

Assessors

16. Selection teams must be comprised of individuals with a breadth of perspectives that reflect program goals.
17. Assessors must be trained in all aspects of the process relevant to their contribution, including the program goals, selection process, assessment criteria, and assessment/ranking systems.

Assessment Instruments

18. Programs must strive to incorporate objective assessment strategies proven to assess relevant criteria.

Knowledge Translation

19. Best practices should be shared among different specialties and programs.
20. Innovations in Application and Selection should be done in a scholarly manner that will allow eventual peer-reviewed dissemination.

Ranking

21. Programs must have a process to receive (and, when appropriate, investigate, validate and then produce for consideration to the selection committee) information from any source that alleges improper behaviour of candidates.
22. Programs should establish clear criteria for determining 'do not rank' status.
23. Programs should rank candidates in the appropriate order based on assessment and not based on whom committee members think will rank the program highly.
24. Ranking must be done using pre-defined and transparent processes.

*Faculty members who have leadership roles in undergraduate medical education should not participate in admissions deliberations. If this is not possible, then they must disclose their conflict of interest and the nature of their involvement in undergraduate education to the Vice Dean, Undergraduate Medical Education, Vice or Associate Dean, Postgraduate Medical Education, AND to the admissions committee. They must refrain from providing any information they acquire by virtue of their undergraduate leadership roles, and focus only on that information they acquire as clinical teachers and supervisors of individual learners, or as members of the admissions committee. Admissions committee members, program directors and/or training committees must identify inappropriate information when it is disclosed and ensure it is NOT used for decision-making purposes.