Health Human Resources for Emergency Medicine- A Framework for the Future

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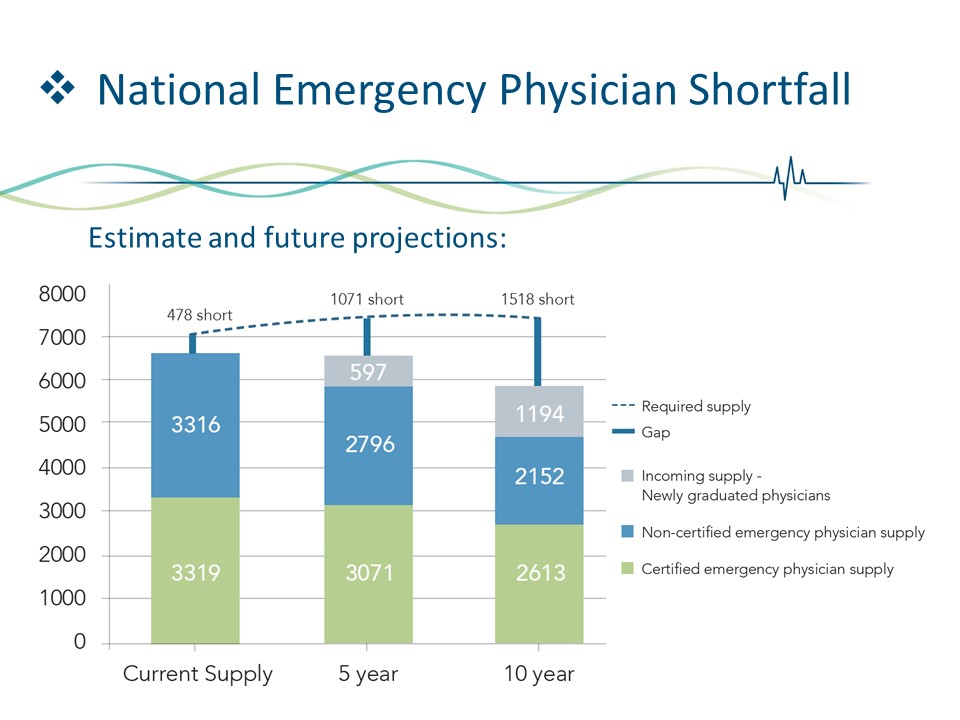
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**Introduction**

In June of 2016, the Collaborative Working Group on the Future of Emergency Medicine presented its final report at the CAEP annual meeting in Quebec City. The CWG report made a number of recommendations concerning physician Human Health Resource (HHR) shortfalls in Emergency Medicine, specific changes for both the FRCPC and CCFP-EM training programs, HHR needs in rural and remote hospitals, future collaboration of the CCFP-EM and FRCPC programs and directions for future research. All recommendations were endorsed by CAEP, the Royal College of Physicians and Surgeons of Canada [RCPSC], and the College of Family Physicians of Canada [CFPC]. The CWG report was published in CJEM1 and has served as a basis for ongoing discussion in the Emergency Medicine community in Canada.

The CWG identified an estimated shortfall of 478 emergency physicians in Canada in 2016, rising to 1071 by 2020 and 1518 by 2025 assuming no expansion of EM residency training capacity.



Decisions affecting residency training positions are made at the provincial Ministry of Health [MOH] level, in collaboration with their prospective Postgraduate [PG] medical school deans. Each province has a different approach to this work, and the decision-making process is under increasing scrutiny as health systems struggle to maintain and improve services. What has hitherto been an opaque and “organic” process, often serving individual program needs, and based on flawed historical (billing-based) full time equivalent (FTE) data and methodology2, is now being held more accountable by Hospital/Regional Health Authority leaders, whose mandate is to serve the health care needs of the public. To gather existing data on the physician workforce and training programs and to make accurate predictions for future physician HHR needs, the RCPSC has spearheaded a ‘Specialty Workforce Collaborative’ (SWC), including the CFPC and all relevant stakeholders, and has convened a number of HHR Dialogues to work towards evidence based national HHR planning for all disciplines.3 CAEP is participating in both the SWC, and the HHR process.

In 2017 the CAEP board struck a new committee - The Future of Emergency Medicine in Canada [ FEMC] to advocate with appropriate stakeholders to implement the CWG recommendations and to continue with this important work. The terms of reference and current membership are attached as Appendix A and Appendix B; respectively.

As part of this work, FEMC led a workshop at CAEP 2018 in Calgary to develop a regional approach to HHR advocacy, recognizing different realities in each province and region. There was wide representation at this workshop and a rich and passionate discussion amongst those present. This paper represents the output of the workshop and will guide subsequent deliberations by FEMC.

It is clear from this workshop and subsequent meetings that FEMC must focus its research and advocacy efforts toward achieving the following overarching goal: “to optimize timely access to high quality emergency care for the patients and populations that we serve”. As a means to that end, the following three goals will be the focus of this committee: 1) defining the various categories of ED care in Canada, 2) defining the numbers of FTEs required for each category, and 3) making recommendations for physician training and certification to meet the HHR needs for now and the future.

**Current Status of Emergency Medicine Residency Programs in Canada**

Residency training programs in Emergency Medicine were established in Canada in the early 1980’s as a response to serious concerns about the quality of care being provided in many “ERs”, and the significant gap in any formal training programs at the time. Over the years they have evolved and filled an important need in our Health Systems, are well regarded by educational leaders, and are highly sought after by medical students. In 2018, the CAEP Board of Directors published a position paper outlining the history of EM in Canada, relevant EM definitions and roles in modern acute care Health Systems, and the importance of Emergency Medicine Certification.2 In 2018, the Canadian Resident Matching Service [CARMS] reported that PGY1[RCPSC] positions in Emergency Medicine were in the highest demand of all residency positions.3

**The number of government-funded FM/EM spots nationally varies from a low of 110 to 132 spots per year with 127 spots offered in the 2018 match (2019 data not yet released by CARMS but should be forthcoming and available).4 There are approximately 200 individual applicants nationally, of which the vast majority (>98%) are PGY2's in a Canadian Family Medicine residency program. Each year approximately one third (70) of Canadian applicants go unmatched. It is unclear how many of these 70 Family Medicine graduates per year will practice emergency medicine despite going unmatched.5 Nevertheless, this represents a substantial number of trainees willing to accept further training that would lead to EM certification. Surveys of current FM/EM residency programs reveal that there is capacity to accept most of these unmatched residents.**

**Table 1. Number of residency positions filled for 2018 by medical school**

|  |  |  |  |
| --- | --- | --- | --- |
| University | FRCPC Residency Positions6,7 | CCFP-EM Residency Positions4 | Total Residency Positions |
| University of British Columbia | 12 | 8 | 20 |
| University of Alberta | 6 | 6 | 12 |
| University of Calgary | 4 | 8 | 12 |
| University of Saskatchewan | 3 | 9 | 12 |
| University of Manitoba | 4 | 6 | 10 |
| Western University | 4 | 10 | 14 |
| McMaster University | 6 | 7 | 13 |
| University of Toronto | 10 | 7 | 17 |
| Northern Ontario School of Medicine |  | 6 | 6 |
| Queen’s University | 4 | 8 | 12 |
| University of Ottawa | 9 | 5 | 13 |
| McGill University | 2 | 10 | 12 |
| Université Laval | 2 | 7 | 9 |
| Université du Sherbrooke |  | 8 | 8 |
| Université de Montréal | 4 | 12 | 16 |
| Dalhousie University | 2 | 4 | 6 |
| Memorial University of Newfoundland |  | 5 | 5 |
| Total | **72** | **126** | **197** |

Residency programs require both university infrastructure support and sufficient capacity in training sites in order to expand their numbers. Many residency programs in other disciplines have maximized the use of their training sites and options for expansion are limited. This is not the case for Emergency Medicine. A recent survey of both the FRCPC EM and CCFP-EM program directors indicated that on average, all programs can expand by 2-3 positions per year, for an approximate 50 increase in national EM certification positions, without new investments in infrastructure of expansion of training sites. Therefore, provincial Ministries of Health could expand the number of EM training positions by re- allocation from other residency program positions, where there are a clear excess of limited employment opportunities or demand for training. Alternatively, Ministries could provide new investment to support Emergency Medicine. It must be noted that any expansion of the CCFP-EM program must include targeted EM funding for all three years of training, otherwise Canada faces the unintended consequence of the expansion of Emergency Medicine physicians with the reduction of graduation of new family physicians, who are vitally needed to support and advance primary care.

A related strategy to help address the EM HHR gap could be for provincial MOHs to also create new EM Canadian International Medical Graduate training positions for students from international medical schools.

A novel CCFP-EM training program was also created in Medicine Hat, Alberta.8 It consists of a one-year curriculum intended to produce Emergency Physicians who will obtain a CCFP-EM certification. It exists outside of an official PG medical education program and receives funding directly from Alberta Health Services. The program resembles a traditional CCFP-EM year of training with block rotations in Pediatric and Adult EM and longitudinal rotations in Plastic Surgery, Anaesthesia, Surgery, and Ophthalmology. The curriculum includes a combination of monthly rounds and CPD courses. This is a good example of a local provincial response to HHR needs without considering how this model might align either with existing residency training programs or other programs designed to support physicians already in practice.

**Unique Challenges in Rural Canada**

Staffing of EDs and other facilities that deliver emergency care in rural and remote areas of Canada is a difficult issue for MOH and serious concern for local communities. We know that a very small number of physicians with EM residency training practice in these resource-limited settings. Emergency care is typically provided by family physicians with EM competencies achieved in their two-year FP residency, supplemented by related courses. The Society of Rural Physicians of Canada (SRPC), the CFPC, and CAEP have examined this issue both separately and in collaboration and suggest ways of developing novel approaches to both residency training and continuing professional development [CPD] to support physicians in the delivery of emergency care in these settings. CAEP has developed a set of Emergency Medicine Definitions/Statements2 which should set the future direction to support physicians in rural Canada who provide ED care as part of their practice.

Apart from the necessary step of increasing training positions leading to EM certification, another focus must be to support the improvement of emergency care delivered by rural family physicians by developing mentoring and clinical experiences pathways which support achievement of practice-eligible EM certification as described in the following examples:

The Supplemental Emergency Experience [SEME] program is offered through the University of Toronto, and funded by the Ontario Ministry of Health and Long-Term Care [MOHLTC]. Since 2012, it has offered a three-month continuing medical education experience for family physicians in practice who wish to advance their emergency medicine skills.9 To date, 109 physicians have completed the program, 76% of whom are within five years of completing their family medicine training. SEME has received very favorable physician evaluations with respect to the training experience itself and to its impact on improving confidence to practice in rural settings. At five years after completion of the SEME program, 82% of SEME participants are practicing emergency medicine [providing ED care as part of their practice] with 67% practicing in communities with populations less than 50,000.10 Since the goal of SEME is to enhance the skills of practicing physicians in smaller communities while sustaining the retention of such physicians, it appears the program has been successful. However, SEME is continuously at risk of not being funded long term, given the ongoing constraints on funding at the MOHLTC in Ontario.

Another example is the Nanaimo Practice Eligible Program [PEP], developed over the past 10 years and supported by the Nainamo Emergency Physician Association. It is a supportive, semi-structured educational experience for family physicians who are working toward obtaining CCFP-EM certification, and consists of 400 hours per year of graduated responsibility in a regional emergency department. Other experiences consist of Simulation training, Journal Clubs, Ultrasound skills training, practice exams and customized rotations such as Critical Care and Anaesthesia. The Nanaimo PEP receives no financial support from MOH, universities, or regional health authorities. It relies solely on the in-kind support of local physicians, nurses and clerical staff. Twenty of the twenty-three physicians enrolled in the program have successfully obtained CCFP-EM certification.

It should be noted that these example programs are in many ways an “interim solution” and have arisen due to the challenges faced by both the RCPS EM programs and the CCFP and CCFP-EM programs to address the needs of “patient zero” as referred to in the CWG report. The CWG group felt strongly that at the end of residency training – “patient zero” should receive the same high standard of care by graduates of all three training programs.

Additional strategies include ongoing CPD support to rural physicians ranging from ATLS/PALS, to needs based short programs utilizing simulation [used by TREKK in the PedsPac program for pediatric EM]11 and finally real time support of clinical decision making through decision support networks like the BC Emergency Medicine Network and through provincial telemedicine links.12

**Other Factors Influencing HHR planning in Emergency Medicine**

1. **Physician Retention and Burn Out**

Physician wellness is an important issue for all specialties, especially as the medical work force continues to age and younger physicians seek a better work/life balance. There is increasing evidence that Emergency Medicine is a specialty with a high rate of burn out, and this burnout may be due to factors other than work/life balance.13,14 There are concerns that the ongoing overcrowding that exists in urban EDs in Canada, with the attendant increase in adverse patient events,15,16 and medico-legal jeopardy17,18 could contribute to physician retention problems. The sense of having no control over important factors contributing to patient wait times and dissatisfaction contributes to stress and difficult ethical dilemmas in the ED. In rural EDs, burnout may be influenced by a lack of real-time support and limited availability of high quality, relevant CPD. The issue of shift work has been addressed by many ED physician groups with large scale adoption of “casino shifts” and reduction or elimination of night shift work for physicians over age 55. Variable shift scheduling vs fixed blocks also allows for improved work-life balance. HHR planning must take into account an attrition rate of FTEs in EM as careers progress over time, and there is a need to improve modifiable factors to minimize this. FEMC recognizes that increased attention and research is necessary in this important area.

1. **Administration, Education and Research Mandates of Emergency Medicine**

Another factor that must be considered in HHR planning, and has often been under represented in past analyses is that, as part of their professional commitment, many Emergency Physicians do other work besides clinical shifts. The most recent CMA survey19 suggests that on average, EPs workload is divided with about 60% of their time spent on clinical shifts and another 40% spent on other related professional activities [i.e. research, education, administration, leadership], although this is a small sample size and likely skewed towards academic centres. It is likely that the clinical/other time commitment ratio changes depending on the type of ED [Level 1-4]. If the growing issue of burnout is not addressed, we may see a trend towards a higher proportion of Emergency Physicians focusing on other related clinical work [urgent care, hospitalist care, sports medicine, etc.] as their careers progress.

1. **Alternative Health Providers in the ED**

Nurse practitioners and Physician Assistants are well established in many EDs across Canada. They provide variable types of services in different settings, and collaborate well with their ED physician colleagues. In some settings their main role is supporting elder care and/or post-ED continuing care in patients with complex medical and/or social service needs. In other settings, they may help with low acuity, fast-track type patients. Regardless, the training and competencies of mid-level providers is not equivalent to that of residency trained Emergency Physicians and therefore, when future state modeling is done, how mid-level providers are integrated into systems will be important as a supplemental strategy, but it will have little impact on determining the number of Emergency Physicians required to achieve the overarching goal of improving 24/7/365 access to high quality emergency care.20

**FRCPC vs CCFP-EM Residency Training**

The CWG conducted an extensive survey of ED chiefs, ED physicians and residents as part of their work. A substantial proportion of the survey respondents reported discontent with the current two residency training approaches and the narrative section displayed many passionate responses to this issue. Nevertheless, the CWG did not recommend a single training program. Both training programs attract high quality trainees and have strengths and limitations well outlined in the CWG report. Both Colleges have accepted the CWG recommendations and have improved their collaboration with each other. The CFPC has committed to review the EM content and training in both the CCFP and CCFP-EM program and the RCPSC has currently implemented the ’Competency by Design’ program which includes prescribed competencies that address the concerns raised by the CWG report.

FEMC believes that there is an important role for graduates of each program and that continued dialogue on the value of one program over another is a distraction from the most important issue – the ongoing shortage of residency training positions to support EM patients in the future. Working with the assumption that the two coordinated and optimized training programs would complement each other, and that the Emergency Health ecosystem is more robust and resilient when the relative ratios are optimally balanced between the two pathways, then we can thoughtfully address the question: what is the optimal ratio for each training program in EM Physician Resource Planning recommendations?

**Categorization of Emergency Departments**

Canada has a vast geography and variable population densities, which has a significant impact on the mix and distribution of EDs in a region. Busy urban full service EDs have different HHR needs than small rural EDs. Data from Manitoba, Ontario and Nova Scotia suggests that 50% or more of all EDs in those provinces are smaller or rural facilities. Depending on the definition of small and rural, it is estimated that up to 10% of the total number of ED visits in that province may occur in those settings. It is clear that Physician Resource Planning cannot take place without Clinical Services Planning [CSP] including the siting, sizing, and synergizing of EDs in a given region. HHR and CSP have a chicken and egg relationship- they are interdependent in time sequencing and prioritization. You can’t have one without the other, and they are of equal importance. The ideal number and mix of the physician types will be relative to the categorization and distribution of EDs and other emergency care facilities (which may not be defined as an ED per se) in a given region.

The concept and importance of categorization goes back many years in the context of EM systems design and planning. The landmark 1966 report by the Institutes of Medicine [IOM] about trauma entitled “Accidental Death and Disability; the Neglected Disease of Modern Society” recommended “the development of a mechanism for inspection, categorization, and accreditation of emergency departments on a continuing basis.”21 This strategy has proven effective in improving population health outcomes for major trauma, and reducing mortality. Similar evidence is now available for STEMI, stroke, and cardiac arrest. In 2006, the IOM repeated the call for categorization in its Future of Emergency Care series in the section entitled “Hospital Based Emergency Care- At the breaking point”.22 Following up on this, the Society for Academic Emergency Medicine [ SAEM] held a consensus conference entitled “Integrated Networks of Emergency Care”23 to stress the importance of system design in improving access to quality emergency care in a health system.

In many provinces, and other countries there have been many stops and starts to moving forward in a coordinated and evidenced based manner on this subject. There will always be political and socio-economic issues to balance in making decisions on the siting and sizing of hospitals and EDs. For the purpose of discussion, FEMC proposes, subject to further definition that there are roughly four ‘levels’ of EDs to be considered in planning a regional/provincial system. They include Level 1- large urban tertiary/teaching, Level 2 – busy regional and/or suburban, Level 3- full service community, and Level 4 – smaller rural. There will be smaller facilities where emergency care is delivered that may not actually qualify for the term ‘emergency department’. The important point for this context is that HHR must occur in close alignment with CSP so that the overarching goal is designing Health Systems to optimize timely access to high quality emergency care for the patients and populations that we serve.

**Regional HHR Approach and Issues**

1. **Atlantic Canada**

All four Atlantic provinces face significant shortages in EPs with Nova Scotia perhaps the best characterized at approximately 30 FTEs to cover all their full service Level 1, 2, and 3 EDs, and the equivalent of another 20 to cover the small rural Level 4s as well. There is limited understanding of this shortfall at the MOH level, and none of the provinces are committed to any significant expansion of the current EM residency training programs (though the NS has just approved one more FR spot per year). There does appear to be a slowly growing understanding that physician services planning is intimately related to clinical services planning at the provincial level, and the provinces are small enough in this region that a province-wide strategy is possible. Ideally, there should be an Atlantic Canada approach to HHR planning and testing of the FTE model under development by FEMC may be a good pilot for the rest of Canada.

1. **Quebec**

Quebec faces many unique challenges with a very directive MOH and actual reductions in both the FRCPC and CCFP-EM program in the past few years. Attrition of residency graduates outside of the province continues to be a significant problem. FEMC has developed an HHR report for Quebec which may be helpful with the MOH since it is not clear that government understands that there is a shortfall. Any regional planning must involve AMUQ, the FMOQ [ Federation of Family Physicians] and ASMUQ [ Federation of Emergency Medicine Specialists] with the provincial Assistant Deputy Minister. The current process for actually practicing EM in Quebec is difficult, with very prescriptive HHR plans that often paradoxically include a mandatory component of primary care practice for emergency physicians.

1. **Ontario**

The province of Ontario does not have regional health authorities, but is organized into 14 Local Health Integration Networks [ LHINs]. There is a provincial lead for Emergency Medicine and all 14 LHINs have a local lead for Emergency Medicine. They all meet regularly as an advisory group with MOHLTC officials at the table. This group has been effective over the years at advocating with respect to many issues in Emergency Medicine. The Ontario HHR data from the CWG report has been used by the ED LHIN advisory group to advocate for expansion of EM residency training programs with limited success to date. In Ontario, MOHLTC remains focused on the needs of small rural and remote EDs and keeping them open and staffed. It should be noted that many of these small EDs are the size of community EDs in other provinces. They have supported programs like SEME with this goal in mind. The MOHLTC and also the Ontario PG deans have indicated more support for expansion of the CCFP-EM program, since they believe the current FRCPC programs are of sufficient size to support current needs. The process for allocation of residency positions remains unclear. The PG deans of the five medical schools meet and make recommendations, but final funding decisions are in the hands of the MOHLTC. Recent changes in the LHIN structure in Ontario have created uncertainty in the routes for advocacy for EM HHR issues.

There has been some preliminary work at the categorization of EDs, but no agreement or draft proposal at the present time.

**Western Canada**

The FEMC workshop at CAEP had one subgroup for Western Canada, but it is clear that each province has different issues and priorities, so an approach needs to be developed for each of the four provinces. HHR shortages are present currently in some large urban, and rural and regional centres across western Canada. In BC, there is difficulty recruiting sufficient numbers of EP’s in urban centres, and several Quebec FRCPC graduates who are not permitted to work in Quebec have found a position in BC. Some of the larger centres in other western provinces, especially those with medical schools, are in a more reasonable position. There has been some very limited expansion of training positions in BC recently, but none in Alberta, and limited support in Saskatchewan or Manitoba. A single, one-time position has been made available in BC for an integrated 3-year program within the CFPC. A new program is being developed to support family physicians to deliver EM care in rural areas, which may have applications across Canada. Consolidation of rural EDs is at varying stages of progress across the prairies, which could impact HHR needs significantly.

**Conclusions**

The work of FEMC is to fundamentally answer the question “How do our health systems optimize timely access to high quality emergency care for the patients and populations that we serve?” Because having an adequate supply of Emergency Physicians is essential to answering that question, CAEP must take a leadership role in creating a principled vision for HHR planning, while advising on the multiple complexities and pragmatics of working towards such a vision.

We need to remind the EM community, the government funding bodies (i.e. provincial Ministries of Health) and the faculties of medicine postgraduate deans that in 2016, the CWG predicted a HHR shortfall of 1000 FTE in EM by 2020 and an over 1500 FTE shortfall by 2025. These 2016 estimates are proving accurate when compared to the real-life, real-time FTE shortages seen currently around the country in EDs. Existing EM training positions must be urgently increased by 2-3 positions per site, until the system is stabilized. Graduates of both the FRCPC and CCFP-EM programs are needed to meet the increasing demand in acuity and complexity of patient care in Canada. Categorization of EDs in order to define the type and number of ED physicians required is essential to inform provincial Clinical Service Plans [ CSP] for Emergency Medicine. This work is in variable states of development across Canada and needs to be more transparent and collaborative as all regions can learn from each other. A clear definition of an FTE in EM, and how it may be modifiable in various clinical (and clinical/academic) settings, is required and currently underway by FEMC.

Innovative approaches are required in rural Canada, which should include: focused CPD, real time decision support and a long-term goal of creating pathways to certification/competency specific to the local practice setting.

Final decisions on residency programs numbers and clinical service plans for EM are made at a provincial and regional level, and ongoing advocacy at both the PGME and MOH level are required. Local advocacy will be the key to success and the development of detailed, regional HHR plans is a critical goal.

In summary, FEMC has set the following three goals as we work towards the overarching purpose – to improve timely access to high quality emergency care:

1. To define and describe categories of EDs in Canada
2. Define the FTEs required by category of ED in Canada
3. Recommend ideal combination of training and certification for emergency physicians in Canada

A fourth goal supports the other three goals:

1. Urge further consideration and implementation of the CWG-EM recommendations related to coordination and optimization of the current two training programs.

We believe that goals one and two can largely be accomplished by the CAEP annual meeting in 2020 and goal number three by the CAEP annual meeting in 2021. Goal 4 is ongoing with both the Royal College and the College of Family Physicians of Canada. We urge the EM community across Canada to engage with our committee to support improved access and EM care for all Canadians.

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**Appendix A**

**Future of EM Committee (FEMC)**

**February 8, 2017**

Board approved on 2017-02-16

To be reviewed before 2022-02-16

# Mandate:

To work in an advisory capacity to the CAEP board to prioritize and action the CWG-EM recommendations and recommend to the CAEP Board a strategy that includes medium and long term FEMC planning.

To work in a leadership and advocacy capacity to action the strategy, priorities and plan of the FEMC as directed by the CAEP board.

To help CAEP continue to maintain a leadership role in facilitating communication and collaboration between the Colleges, their EM-relevant committees and the post-grad deans.

To be an advocate and leader in EM training and HHR needs and work with the Colleges on Collaboration, communication and accountability.

# Committee Roles and Responsibilities

* Review the CWG-EM report to determine CAEP’s strategy for prioritization, advocacy, and action on the CWG-EM recommendations, including priorities for the FEMC committee.
* Take a leadership role and act as a point of communication, accountability and organization between the Colleges and between their EM-relevant committees.
* Establish a medium and long term plan based on the CWG-EM recommendations.
* Advocate and take a leadership role in addressing the HHR needs as presented in the CWG-EM report. Communicate coordinate and collaborate with the Colleges on this and establish a communication linkage with all Canadian Deans of Post Graduate Medical Education. \*
  + Advocate at the national, provincial, and medical school level, for training spots and to communicate the message on the HHR shortfall in Canadian EM.
* Communicate progress to the CAEP membership, and the public, by working with the Public Affairs committee.

*\*NOTE: CAEP will need to lead efforts to advocate for training spots at a national and provincial level; however political ramifications over the 3 year vs. 5 year training programs and government funding must be considered, and thus the CWG-EM recommendation regarding the colleges need to coordinate & collaborate on clarifying the roles, distinctions, and common competencies of their programs is essential as this is inexorably intertwined with determining how to address the HHR shortfall (and in particular how increased resources should be parsed out)*

**Appendix B**

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| **Committee Members** | |
| Chair | Douglas Sinclair |
| Vice-Chair | Peter Toth |
| AMUQ Representative | Judy Morris |
| RCPSC Representative | Kirk Magee |
| CFPC Representative | John Foote |
| Public Affairs Representative | David Petrie |
| Member at Large | David Messenger |
| Member at Large | Jill McEwen |
| CAEP Past President | Paul Pageau |
| CAEP President | Alecs Chochinov |
| CAEP President Elect | Kirsten Johnson |
| CAEP Executive Director | Lynn Garrow |