Area of Focused Competence (AFC) Diploma

What is an Area of Focused Competence (diploma) program?
An area of focused competence (Diploma) program is a specialized discipline of specialty medicine that addresses a legitimate societal need, but does not meet the Royal College criteria for a specialty, foundation program, or subspecialty. Typically, AFCs (Diplomas) represent either a) supplemental competencies that enhance the practice of physicians in an existing discipline, or b) a highly specific and narrow scope of practice that does not meet the criteria of a subspecialty. In both scenarios, AFCs (Diplomas) do not prepare a physician for practice, but rather recognize areas of supplemental or advanced training.

Typically, AFC (Diploma) programs do not require as much administrative infrastructure and have fewer national programs as compared to specialties or subspecialties. AFCs (Diplomas) are typically 1-2 years in length, but there is an increased emphasis on acquisition of competencies, rather than strict time guidelines, for the completion of an AFC (Diploma) program.

Criteria for Recognition: AFC (Diploma) disciplines

Criterion 1: Evidence of Need – For physicians with advanced skills or narrow scope of practice
  - Defined scope of practice and serving specific populations or a narrow range of conditions
  - Well-defined and recognized health need (currently not being satisfied by any other recognized discipline)
  - Positive contribution towards improving medical care and health outcomes

Criterion 2: Defined Scope – In-depth, application body of knowledge beyond scope of foundational specialty or subspecialty
  - Distinct supplementary medical knowledge and skills characterized by depth and high specificity
  - Unique advanced constellation of competencies that are beyond those typically needed to practice
  - Knowledge base is dynamically founded on evidence and ongoing research
  - Typically requires 12 to 24 months to be acquired

Criterion 3: Relationship to other disciplines – Not a foundation for additional competencies
  - Supplementary competencies
  - Builds upon primary specialties, foundation programs, or subspecialties
  - Typically does not replace practice in an existing discipline, but provides an opportunity to acquire competencies to enhance an existing practice

Criterion 4: Impact on existing specialty system – addition of area of focused competence (diploma) program must not adversely affect existing and related disciplines
  - A proposed AFC (Diploma) discipline that includes competencies which overlap with those in the Objectives of Training of an existing discipline or disciplines MUST obtain the explicit written support of the specialty committee(s) in that discipline or disciplines
  - Recognition of field of medicine will enhance and strengthen the ability to provide effective care and not lead to significant fragmentation of patient care
Criterion 5: Infrastructure and sustainability – Adequate infrastructure to sustain the discipline
- At least one site capable of mounting a training program in Canada
- Identifiable group of experts with capacity to provide a high quality residency experience
- Sufficient ingredients exist for appropriate program infrastructure
- Existence of professional organization(s) capable of advancing the field

Process for Application
The process to apply for an AFC (Diploma) program will mirror the existing processes for recognition of a new primary or subspecialty discipline. Interested applicants, usually consisting of the existing specialty committee in which the AFC (Diploma) program will reside, or an established National Specialty Society or similar national group, will be required to complete and submit the application form. Applicants will also be required to submit, as part of their application, a letter of intent, a draft version of the Competency Training Requirements (CTR), a proposed approach for candidate assessment including a list of possible assessment tools, and the completed application form. Depending on the scope of the proposed AFC (Diploma) and its overlap with existing disciplines, letters of support from impacted specialties and subspecialties may also be required.

Deadlines for the initial expression of interest will be six months before the Committee on Specialties meeting, or May 1st for the October meeting and October 1st for the April meeting, to allow time for the Office of Education to work with the applicant and guide them through the application process. Upon receipt of the draft application by the Office of Education, the application will be reviewed for completeness and the application fee processed. Deadlines for the receipt of the final version of applications will be approximately two months before the Committee on Specialties meetings; the April Committee on Specialties (COS) meeting will have a deadline of February 1st, while the October meeting will have a deadline of September 1st.

The process for review by the COS will involve the same two stages as that for the existing specialty/subspecialty recognition process, with an initial review (Part I) by the COS, and national consultation with stakeholders followed by a second review by the COS for a final decision (Part II). The range of stakeholders consulted will be less extensive than that for specialty/subspecialty applications, and will include specialty committees and related National Specialty Societies (NSSs) for impacted disciplines only, Faculties of Medicine (deans and postgraduate deans), Ministries of Health (MOHs), Medical Regulatory Authorities (MRAs), and residents’ associations.

Following the endorsement at Part II by the Committee on Specialties, the application will require endorsement by the Education Committee, before being implemented. The Executive Committee of Council, and Royal College Council, will be informed of the decision. The current Royal College process for appealing a decision of the COS will be available, as needed.

Royal College Infrastructure and Governance

Part of an existing specialty committee
If approved as a recognized discipline of the Royal College, each AFC (Diploma) program will be supported within the sponsoring specialty committee (SC) (i.e., Cardiology for cardiac electrophysiology).
Part of a new specialty committee if no single parent committee exists or if the AFC (Diploma) program overlaps with several disciplines

Where no single or existing SC is appropriate (i.e., Aboriginal health), a new discipline committee will be created. The process of creating a new committee will be the same as that which exists now, with the creation of an initial working group, followed by formal appointment of a nationally representative discipline committee.

As is the case for specialty and subspecialty disciplines, the SC will be responsible for developing and maintaining the discipline-specific documents for the diploma program, which will include the CTR – to replace the existing Objectives of Training (OTR) and Specialty Training Requirements (STR) documents, the summative portfolio, and the specialty-specific accreditation (SSA) requirements.

Admissions

There are 4 types of eligibility, based on the entry criteria of individual programs:

1. Primary specialty prerequisite (e.g. pediatric pathology)
2. Subspecialty prerequisite (e.g. cardiac electrophysiology)
3. Non-clinical programs such as clinician educator, medical administration, or patient safety (entry limited to those with the "MD" designation)
4. Conjoint programs with the College of Family Physicians of Canada (CFPC) - under development (entry limited to those with Royal College or CFPC certification).

Applicants will need to specify on their application form which of these four types of eligibility applies to their proposed AFC (Diploma) program.

Assessment

AFC (Diploma) programs are based upon a period of medical training and supervision, and like other formal disciplines recognized by the Royal College, require demonstration of proficiency in those skills and competencies outlined in the national standards. Unlike Royal College specialties and subspecialties, however, the AFC (Diploma) programs will not be assessed by comprehensive (written and oral) examinations. AFC (Diploma) program requirements will be assessed using a structured summative portfolio.

The portfolios will be based upon a template developed by the Office of Education that will include a list of available assessment tools that can comprise the portfolio. Each specialty committee will then be responsible for developing their portfolio requirements that document achievement of all competencies and experiences outlined in the AFC (Diploma) Competencies Training Requirements (CTR), and selecting the most appropriate assessment tools based on the requirements being assessed. The portfolio for each AFC (Diploma) discipline will be reviewed and endorsed by the Evaluation Committee before being implemented.

A draft version of the CTR document is required as part of an AFC (Diploma) application. The CTR template is available through the Office of Education by contacting COS@royalcollege.ca. A document outlining the proposed approach to assessment, including a list of possible assessment tools is also required. Portfolios will be developed with individual discipline groups only after the discipline has been formally approved by the Royal College.
Accreditation
Accreditation is the external review of an institution or program, against accepted, established standards, resulting in an evaluation of its overall quality, as well as an (often time-limited) decision about the institution or program's ability to continue to offer education to trainees.

A new accreditation process, including new ‘C’ standards, has been developed for the AFC (Diploma) programs; program evaluation will be based on the specialty-specific standards of accreditation (SSA) driven by the AFC (Diploma) CTR.

Credentialing
A new credential will be conferred for Royal College diplomates, the Diplomate of the Royal College of Physicians and Surgeons of Canada (DRCPSC).

The credentialing process will be similar to that which exists now for specialty and subspecialty disciplines, with the Office of Education reviewing each candidate’s documents to assess eligibility to proceed to the formal assessment stage, the review of the diploma portfolio. A Practice Eligibility Route (PER) will also be implemented for those AFC (diploma) candidates who are already in practice in the discipline.

Fee Structure
The following fees will be introduced as part of a cost-recovery business model:

1. Application Fee for review by Committee on Specialties: $ 14,000 per application (as of April, 2013).
   - The application fee is to be paid in full up front. Reimbursement of application fees will not be provided should an application be rejected by COS.
2. Program Fee for Accreditation: $ 2000 per program/school
3. Credentialing Fee: $ 350 per candidate, including Practice Eligibility Route (PER)
4. Assessment Fee: $ 500 per candidate, including PER
5. Annual Dues: $ 425 per diplomat, per year

Please note that the Royal College does not provide clerical support or financial assistance to complete the application.
IDENTIFICATION OF APPLICANT BODY AND/OR SPONSORING ORGANIZATION

Name of the proposed diploma discipline (in both official languages):

Interdisciplinary Brain Medicine
Médecine interdisciplinaire des maladies du cerveau (to be confirmed)

Name and address of corresponding applicant: *

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Submission date
Signature:

If necessary, please add a separate page with the names and addresses of co-applicants.

* NOTE: Please identify a single address for receipt of all correspondence relating to this application.

Co-applicants to follow in final submission: Ken Shulman, David Hogan, Nir Lipsman, Z. Jeff Daskalakis, Sandra Black, Andrew Howard, Rebecca Anglin, Ron Keren, Shaun Gray
GENERAL INFORMATION (Questions 1 to 6)

1. What is the name of the proposed diploma discipline (in both official languages)?
   Interdisciplinary Brain Medicine
   Médecine interdisciplinaire des maladies du cerveau (to be confirmed)

2. What are the entry criteria for this discipline?
   ☒ Type A: Royal College specialty (please specify):
     - Neurology
     - Psychiatry
     - Neurosurgery
     - Physical Medicine and Rehabilitation
   ☒ Type B: Royal College subspecialty (please specify):
     - Geriatric Medicine
     - Geriatric Psychiatry
   ☐ Type C: Any MD
   ☐ Type D: Conjoint program with the CFPC (still under development)

3. For Type A and Type B above, describe the relationship of this proposed diploma
discipline to the parent specialty(ies) or subspecialty(ies). ☐ N/A
   X: Interdisciplinary Brain Medicine brings together interested practitioners from a variety of
disciplines. Building on the competencies of the parent specialties and subspecialties, it will add to
them in a fashion analogous to aboriginal health where the added competencies gained through the
proposed diploma will enhance and broaden core abilities.

4. Is there a National Specialty Society for the parent specialty(ies) or subspecialty(ies)?
   Yes ☒ No ☐ N/A ☐
   If yes, please specify.
   Canadian Psychiatric Association (CPA)
   Canadian Neurological Society (CNS)
   Canadian Neurosurgical Society (CNSS)
   Canadian Geriatrics Society (CGS)
   Canadian Association of Physical Medicine and Rehabilitation (CAPMR)
   Canadian Academy of Geriatric Psychiatry (CAGP)

5. Is there a National Specialty Society for the proposed diploma discipline?
   Yes ☐ No ☒
   If yes, please identify.
   There is no existing national specialty society for the proposed diploma discipline as a whole. There is
   a Canadian Neuromodulation Society in existence.

6. Describe the relationship between these societies (if applicable).
   The CNS and CNSS share resources and annual meetings within the Canadian Neurological Sciences
   Federation. The CAGP is a member of the Council of Academies of the CPA. The societies are
   otherwise independent from one another.

   The Canadian Neuromodulation Society is fairly small and only deals with a subset of
   neuromodulation specialists, particularly pertaining to surgical neuromodulation.
SPECIFIC INFORMATION (Questions 1 to 10)

1. **Please describe the unique nature of the proposed diploma discipline.**
   (What supplemental competencies or highly specific scope of practice is included that requires distinct recognition? What is the defined and recognized societal health need not currently being satisfied by any other recognized discipline? What positive contribution towards improving medical care and health outcomes does this discipline make?)

Disorders of the brain that feature symptoms of disordered affect / emotion, behaviour, and cognition (ABC)\(^1\) are an important source of human suffering and disability throughout adult life. In Canada, patients with such disorders are cared for by physicians from a number of medical specialties and subspecialties. Although much has been learned regarding the physiology of and pathology affecting the brain in recent years, the new scientific knowledge has not led as quickly to changes in clinical practice. A knowledge translation (KT) gap exists. Part of the solution to crossing this KT gap involves the formal organization and recognition of brain-based medical expertise in disordered ABC. This would allow specialists practicing in clinical neurosciences and related fields to acquire competencies from each other, from related fields, and from ways of thinking about brain diseases with disordered ABC informed by new scientific discoveries. The diploma in Interdisciplinary Brain Medicine (IBM) provides a formal training framework for accomplishing this.

The KT problem is more complex than the need to incorporate more neuroscience training into existing clinical training. Existing clinical models do not necessarily line up with modern scientific understanding of how the brain works. Current nosologies are inadequate, although current disease concepts are reinforced by the worldviews espoused by the traditions of existing medical disciplines. Without sufficient interdisciplinary training, such disciplines thus operate in artificial silos. In practice, this means that the boundaries between the different medical specialties that treat disorders of the brain may not be clear, or that a wide gap may exist between them at times. Although a person suffering from a brain disease with disordered ABC may be treated by two or more different specialists with specific competencies, these specialists need to share a vocabulary and clinical toolset to facilitate the best care. The diploma in IBM provides an opportunity to build this common toolset.

The RCPSC emphasis on Generalism as a philosophy of care is particularly applicable to the IBM proposal. The Diploma in IBM is characterized by a commitment to a breadth of practice and a focus on collaboration as a means of responding to the unmet needs of a patient population that is inherently complex, diverse and initially undifferentiated. The Diplomate in IBM will play a critical role in developing physician competencies for collaboration, with the goal of facilitating better coordinated care and advocating for patients within their local health service and jurisdiction. The specialty of Geriatric Medicine already emphasizes this focus on collaboration, and this diploma allows it to be developed by Diplomates from other specialties, and across the entire adult lifespan.

Examples of the types of patients that could be better served by developing our program follow. These specific examples are by no means exhaustive, and only represent some of the many disorders of ABC:

1) A patient suffering from refractory epilepsy with personality changes and depression requires closely integrated care by a psychiatrist and neurologist. If they ultimately require neurosurgical interventions this would be best done in a coordinated fashion together with

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\(^1\) In the context of this document and the Interdisciplinary Brain Medicine program, “affect behaviour, and cognition (ABC)” are defined broadly: “affect” includes a wide range of observable expressions of arousal, mood, and emotion; “behaviour” involves a range of observable human mannerisms, including reality orientation; and “cognition” involves all cognitive process including but not limited to attention, concentration, initiative, language, memory, visuospatial function, praxis, executive function, mentalizing, and insight, judgment and reasoning.
the psychiatrist and neurologist to ensure optimal management of their seizures as well as their affective and behavioural symptoms both pre-operatively and post-operatively.

2) Another example would be a patient with a conversion disorder (functional neurological disorder) who may be sent to a neurologist for initial investigations and diagnosis, to a psychiatrist for treatment and a physiatrist for rehabilitation.

3) One more example is the patient with a traumatic brain injury who may initially be seen by a neurosurgeon, referred to a neurologist or physiatrist for management of cognitive symptoms, and to a psychiatrist for management of mood symptoms. All of these physicians may ultimately co-manage the patient. If the mood symptoms prove refractory, they may be treated using transcranial magnetic stimulation (rTMS) by any of these physicians who have pursued sufficient training in this technique, or indeed by a neurosurgeon with such training.

4) A fourth example would be a patient with an atypical dementia who may be sent to a geriatrician for an initial diagnosis, to a neurologist to manage motor symptoms, and to a geriatric psychiatrist to manage behavioural symptoms. For the best care of these patients, all of these physicians must collaborate effectively using limited resources efficiently.

5) Another example is a patient receiving deep brain stimulation (DBS) for refractory Parkinson’s disease, whose stimulation parameters cause behavioural disturbances. Such a patient must be co-managed by a neurosurgeon, neurologist, and psychiatrist who all understand the work that each other do very closely in order to address multiple symptom management and maximize the patient’s function. Often, in older patients, these patients will also be seen in multidisciplinary geriatric clinics.

In these examples, it is important for all of the physicians co-managing such complex patients to understand each other’s’ competencies so that the care provided is seamless. It is also important that they share common competencies that allow them to better co-manage such patients, particularly as pertains to clinically-applicable developments in neuroscience. Finally, it is critical that such physicians share a common framework for understanding the organ system that they treat, namely the brain. In all of the above examples, the physicians remain skilled in their own specialty, but by acquiring a shared interdisciplinary framework of competencies, they are better equipped to use their particular skill set within a cohesive health care system where these Diplomates will be key advocates.

In addition to the above examples, consider the patient with progressive multiple sclerosis who has developed clinically significant cognitive impairment, or the patient with stable bipolar affective disorder who has developed mild cognitive impairment. In many mid-sized and smaller communities in Canada, such patients are referred to neurologists and psychiatrists who often do not feel fully equipped to manage their problems, or are referred to geriatricians because it is felt that such patients have a “geriatric profile.” The proposed program would allow specialists in smaller centres who are asked to see such patients who are at the margins of their scope of practice to acquire competencies to become more proficient at assessing and treating such patients.

Thus, the future care of patients with brain diseases that have disordered ABC requires physicians who are trained with competencies acquired from different disciplines. Neurologists, psychiatrists, geriatricians, physiatrists, and neurosurgeons may all be interested treating these disorders and acquiring competencies from each other’s disciplines to enhance their own practices. They will also acquire competencies from other clinical and non-clinical disciplines. More importantly, as the understanding of brain diseases increases, transdisciplinary competencies have and will continue to emerge that are more than the sum of these
interdisciplinary parts. The creation of a milieu that fosters the emergence of transdisciplinary competencies is a unique feature of this program.

The interdisciplinary competencies required to become a Diplomate in Interdisciplinary Brain Medicine can be acquired in a number of different settings. One such setting could be a behavioural neurology or neuropsychiatry clinic. This training setting will be attractive to practitioners wishing to focus on disorders of the brain that feature a complex interplay of affective, cognitive, and behavioural, as well as other neurological symptoms. Unaccredited behavioural neurology and neuropsychiatry (BN&NP) fellowships already exist and can be brought within the fold of this program. In the United States, BN&NP is an accredited subspecialty of either neurology or psychiatry (United Council for Neurologic Subspecialties, 2005). As a further example, neuromodulation clinics are being rapidly developed in a number of centres across the country. Neuromodulatory techniques such as transcranial magnetic stimulation, direct current stimulation, and deep brain stimulation, among others, are being applied to a number of different disorders; psychiatrists, physiatrists, neurologists, and neurosurgeons are all already using these techniques. Although the technical aspects of these techniques are fairly easy to acquire, their application requires a thorough understanding of the brain basis of disordered ABC. A final example of a training setting suited to IBM is an academic or tertiary dementia assessment (memory) clinic. Dementia is an increasingly prevalent disorder of ABC and one of the conditions that brings disorders of ABC to the forefront of public attention. There are many other settings that can be explored in addition to these examples. The program in Interdisciplinary Brain Medicine will provide a framework of clinical competencies that can be used by practitioners wishing to utilize such techniques towards the treatment of different brain diseases with disordered ABC. In addition to these settings, new settings for training will emerge, including community settings.

Diplomates in Interdisciplinary Brain Medicine will be agents of fundamental change in the way service is provided to those who suffer from complex disorders of the brain and mind. They will develop a new level of expertise that provides a richer understanding of the health care system and facilitates the breakdown of artificial silos by creating a better understanding between cognate disciplines. Thus, one of the major roles of the Diplomate is to advocate for and model the integration of colleagues from different but related disciplines (hence ‘Interdisciplinary Brain Medicine’). A common ‘language’ and approach to assessment and management of disorders of ABC will be a unique outcome of this Diploma.

In addition to the major role of collaboration and integration among several disciplines, the Diploma will create a unique set of core competencies that are not available in their totality in any existing specialty or subspecialty. By virtue of the fact that there will be potentially six different routes of entry to the Interdisciplinary Brain Medicine Diploma, Diplomates from each specialty or subspecialty will focus on different competencies that need enhancement in order to satisfy the requirements of the Diploma. The end result however, will be a core set of competencies that are indeed unique. The attainment of the Diploma in Interdisciplinary Brain Medicine will signal to the medical profession and to the public that this Diplomate has acquired special competencies that enhance their particular home discipline, which will nonetheless remain their primary identification within the health care system and the medical profession.

2. Please provide a list of journals and publications that support this special area. (Demonstrate the value that these add to the medical literature. Indicate if they are peer-reviewed, indexed, the scope of distribution [national/international], the subscription volume, and Canadian contribution to these publications. Where meetings or societies are cited indicate the scope of these and the contributions of Canadian physicians to these meetings or societies.)

Several national and international general journals (i.e., BMJ, CMAJ, Lancet, Neurology, Archives of Neurology, Brain, New England Journal of Medicine, JAMA) with large impact factors and interdisciplinary readership already publish many articles pertinent to brain medicine. Other peer reviewed and indexed journals that reflect a multi-disciplinary approach to disorders of the brain and mind include but are not limited to:
• Age and Ageing
• Alzheimer Disease and Associated Disorders
• American Journal of Psychiatry
• Archives of Physical Medicine and Rehabilitation
• Archives of Neurology and Psychiatry
• Brain Injury
• Canadian Geriatrics Journal
• Canadian Journal of Neurological Sciences
• Canadian Journal of Psychiatry
• Cardiovascular Psychiatry and Neurology
• Current Topics in Behavioral Neurosciences
• Dementia and Geriatric Psychiatry
• European Archives of Neurology and Psychiatry
• International Journal of Geriatric Psychiatry
• Journal of the American Geriatrics Society
• Journals of Gerontology
• Journal of Geriatric Psychiatry and Neurology
• Journal of Head Trauma Rehabilitation
• Journal of Integrative Neuroscience
• Journal of Neurology, Neurosurgery and Psychiatry
• Journal of Neuropsychiatry and Clinical Neurosciences
• Journal of Neurorehabilitation and Neural Repair
• Journal of Psychiatry and Neurology
• Journal of the American Geriatrics Society
• Lancet Neurology
• Neuromodulation
• Neurorehabilitation
• PM&R
• Progress in Neurology and Psychiatry
• Psychiatry and Clinical Neurosciences
• Social, Cognitive and Affective Neurosciences
• Stroke
• Topics in Stroke Rehabilitation

Psychology and cognitive sciences are research areas where Canadians excel (ref: The State of Science and Technology in Canada, 2012). Researchers from our country had a high output (produced 7.6% of the world’s papers) of important (nationally ranked 5th on impact factor) published work in these fields for 2005-10.

Relevant and important Canadian publications include:
• National Guidelines for Seniors’ Mental Health (Summary of CCSMH Guidelines) (http://www.ccsmh.ca/pdf/final%20supplement.pdf)
• Recommendations of the 4th Canadian Consensus Conference on the Diagnosis and Treatment of Dementia (CCCDTD) (http://www.alzheimer.ca/~media/Files/national/For-HCP/for_hcp_recos_CCCDTD4_en.pdf)
• Rising Tide: The Impact of Dementia on Canadian Society (http://www.alzheimer.ca/~media/Files/national/Advocacy/ASC_Rising_Tide_Full_Report_e.pdf)
• The Burden of Neurological Diseases, Conditions and Injuries in Canada (https://secure.cihi.ca/free_products/BND_e.pdf)
The Canadian Conference on Dementia (CCD) is a good example of the integration and collaboration between medical specialists engaged in the care of patients with these conditions that we are seeking. Established in 2001, this biennial national conference on dementia brings together specialists & subspecialists in Geriatric Medicine, Geriatric Psychiatry, Psychiatry and Neurology, as well as specialists from allied health disciplines, for two and a half days. Attendees discuss and learn about recent research advances and best practices in the field of dementia. The meeting offers ample opportunity for attendees to network. The conference is supported by a number of the Canadian specialties societies engaged in dementia research and care (Canadian Geriatrics Society, Canadian Academy of Geriatric Psychiatry, Canadian Neurological Society, Consortium of Canadian Centres for Clinical Cognitive Research) as well as the Canadian Institutes of Health Research and the Alzheimer Society of Canada. The conference supports the education of future trainees in IBM through the sponsorship of travel grants. In 2013 (the last time CCD was held) over 30 trainees across medical disciplines received travel grants to attend the conference.

3. Are there training programs and/or established clinical fellowships for this discipline in Canada? Yes ☒ No ☒

(Please describe including where the training takes place, how many trainees/year, what is the duration of the training, what are the sources of funding for these programs.)

There are established, unaccredited fellowships in dementia, behavioural neurology, neuropsychiatry, and neuromodulation at various universities in the country. There is a single fellowship accredited by the American United Council for Neurological Subspecialties in Behavioural Neurology & Neuropsychiatry at the University of British Columbia. None of these existing fellowships encompass the entire breadth of the competencies proposed in this diploma program, but many could do so with some modification to their existing programs. Some such programs have already expressed strong interest in undertaking such modification to broaden the scope of their fellowships and offer concurrent Diploma training.

4. How will the recognition of this proposed diploma discipline affect the parent (sub)specialty(ies) and other related specialties? (Will there be overlap of patient populations, procedures, investigative techniques, areas of research? Please include both positive and negative implications.)

Many of the competencies in the proposed diploma draw from the various parent disciplines. However, only in this program do they all come together. The goal is to allow practitioners from each parent discipline to enhance their competencies by drawing from other disciplines, to allow for a more global and interdisciplinary approach to the treatment of brain disease that cause aberrant affect, behaviour, and cognition across the adult lifespan.

While there may be overlap with the subspecialties of geriatric medicine, psychiatry, and geriatric psychiatry, for interested trainees the AFC diploma will provide an opportunity for more in-depth understanding and skill development in areas such as the neurological examination, neuropsychological assessment, neuroimaging, neurophysiology, neuromodulation and neuropathology. These are examples of ‘enhanced competencies’ compared to what could normally be acquired during the subspecialty training.

The diploma is not limited to the care of older individuals. While brain diseases with disorders of affect, behaviour and cognition are prevalent in later life, they are not exclusive to this stage. Trainees can acquire experience with conditions affecting patients early in adult life, such as traumatic brain injury, multiple sclerosis and epilepsy, which would not be adequately covered in geriatric specialty training. Successful completion of the diploma would broaden the clinical competence to deal with the needs of all adults presenting with these concerns. It would be expected that trainees would acquire experience with disorders of ABC across the adult lifespan,
and in particular, trainees entering from geriatric medicine and geriatric psychiatry should acquire experience with younger adults during their training.

With respect to neurosurgery, neurosurgical modulation of neurologic and psychiatric disease is by nature interdisciplinary. In order to deliver adequate, safe and effective care to patients, neurosurgeons must function as members of a team comprised of allied neuroscience professions. The AFC diploma will provide select neurological trainees with an introduction to this unique clinical and research environment, under the supervision of experts in the field. Trainees interested in this diploma will work with functional neurosurgeons, psychiatrists and neurologists. As a result, the program will not significantly impact the experience of trainees in the general neurosurgery program, and will instead enhance the experience of interested applicants with exposure to the other neuroscience disciplines.

Neurology trainees completing the diploma will have a broader set of clinical tools with which they can practice neurology. It is expected that they will become more expert in psychopharmacology and functional assessment. Likewise, psychiatry trainees will deepen their ability to conduct a neurological examination and interpret neuroimaging studies at a more expert level. All trainees will learn to situate disorders of ABC within a patient with multiple co-morbidities, competencies usually best developed in geriatric medicine. Neurologists, psychiatrists, geriatricians, indeed all diplomates will use the skills learned in the program to better appreciate each others’ roles and collaborate in truly interdisciplinary fashion.

Psychiatry and Neurology trainees can find areas of emphasis within the core competency training requirements of the IBM Diploma that will enhance and complement their training and ability to manage patients with disorders of ABC. Neurology trainees can enhance their psychiatric skills and knowledge while Psychiatry trainees can choose neurological areas of emphasis. In addition, both groups may want to enhance their skills and knowledge in Physical Medicine & Rehabilitation and Geriatric Medicine.

As for physical medicine and rehabilitation, physiatrists are often involved in the management of affect, cognition, and behaviour in the sub-acute and longer-term rehabilitation phases of brain injury. Neuropsychiatric sequelae of injury to the central nervous system are very common as are pre-morbid psychiatric conditions that may have been risk factors for the acquired injury in the first place. These conditions themselves are very common (stroke and TBI incidence about 120,000 new every year in Canada – 3% prevalence of population with a disability from these two conditions). In many centres, the availability of assistance from psychiatric or behaviour neurology may be sparse and the physiatrist takes on the primary management role for all aspects of the physical, cognitive, and behavioural sequelae of the injury. Physiatrists feel that this care could be improved and there are definite deficiencies in the manner in which care for cognitive and neuropsychiatric impairments in both the short and longer-term are provided. There are also substantial numbers of patients with brain impairments (especially brain injury and stroke) that are discharged quickly from acute care with no or minimal follow-up, despite a significant chance for cognitive and behavioural dysfunction that becomes apparent on return to the community and is often the most disabling consequence of their brain insults. At the moment, it seems that non-hospital based brain medicine care, where it exists, is often taken up by allied health disciplines who are offering intensive aphasia training, cognitive rehabilitation, and other modalities such as robotic gait training, peripheral electrical stimulation, etc. Input from physicians skilled in the broader assessment of brain function may be absent, leading to fractionation of care. In view of this, our physiatry colleagues favour any recognized training that will improve care in this area and broadly support an initiative to develop a diplomate in Interdisciplinary Brain Medicine.

Because of the logistical requirements required to unite six different existing adult disciplines under the IBM, this program will be restricted to the adult population at its inception. However, we believe there may be an opportunity in future to expand the IBM AFC into the child and
adolescent population after appropriate consultation with the relevant specialties and sub specialties, and development of appropriate competencies for this population.

5. a) **How would recognition of this diploma discipline affect:** (Impact should be interpreted broadly and include community, the delivery of medical care, cost-savings. Population health data should be included, if applicable.)

   i. **Delivery of medical care?**
   Recognition of this proposed diploma would broaden the scope of practice of the individual parent disciplines and enhance collaboration among health care practitioners and in the community. It would improve the effectiveness and efficiency of health care delivery for this patient population and provide a strong voice advocating for them locally, provincially, and nationally. Additional ways in which the delivery of medical care would be improved are discussed earlier in the proposal.

   ii. **Meeting community needs?**
   Disorders of ABC present an important and increasingly prevalent public health challenge in both developing and developed countries. Traditional psychiatric disorders are thought to contribute to 7.4% of the total loss of disability-adjusted life years (DALYs) globally (Whiteford et al., 2013). Additionally, neurological conditions considered “neuropsychiatric” by the World Health Organization (thus affecting ABC), contribute to an additional 1.98% of total DALYs lost, projected to grow to 2.43% in 30 years (World Health Organization, 2006). This proportion is even higher in high-income countries such as Canada. In comparison, all cancers (malignant neoplasms) together account for just over 5% of total DALYs lost.

   What is currently of great Canadian and international concern is that the prevalence of certain disorders of ABC is increasing, disproportionately so for those disorders that cause greater disability, such as dementia. Recent national and international reports have highlighted the pending “tsunami” of increased dementia prevalence, as well as the fact that health care systems in Canada and abroad are ill-prepared to deal with this tsunami. The concern regarding the increased prevalence of dementia is so great that the Health Ministers of the group of eight most powerful industrialized nations (G8) have recently issued a public declaration identifying dementia research as a joint top priority, with a goal of finding a cure for Alzheimer’s disease by 2025. Physicians, and particularly specialist physicians must take on a leadership role in reorganizing the healthcare system to address such concerns. By acquiring IBM competencies within the collaborator and health advocate role, Diplomates in IBM would acquire the skills necessary to effectively take on such leadership roles.

   Certain disorders of ABC lie at the intersection of multiple established medical disciplines. Patients with Huntington’s disease may be treated by a psychiatrist or neurologist early in their disease, and by a geriatric psychiatrist or geriatrician as they age, in addition to their family physician. This may depend upon individual expertise but may also be random or depend on luck. Patients with traumatic brain injury may also be seen by multiple specialists: a neurologist and/or neurosurgeon may be involved in initial diagnosis and treatment, a physiatrist (rehabilitation specialist) may be involved in ongoing treatment of cognitive symptoms, and a (neuro)psychiatrist may be involved in ongoing treatment of affective and behavioural symptoms. In some instances, the involved specialists may operate as a well-co-ordinated team, but often they may not. If only some these resources can be accessed by an individual, only some of the effects of the injury will be addressed; for example, treatment may focus on a particular affective symptoms such as post-traumatic stress without addressing cognitive symptoms and without addressing the interaction between these symptoms.

   Care of patients with disordered ABC is improved with a broader multidisciplinary approach. For example, multiple sclerosis is classified by the World Health Organization as a “neuropsychiatric”
disease (World Health Organization, 2006), and yet often the focus of treatment is on the physical disability caused by the MS, even though the affective, and cognitive symptoms have the greatest effect on patient quality of life (Lobentanz et al., 2004). The first clinical guidelines for assessing and treating affective and cognitive symptoms in MS have only been published recently and highlight the paucity of well-validated tools available to do so (Minden et al., 2014).

The Diploma in Interdisciplinary Brain Medicine will address these challenges and the gaps that currently exist within the community. Diplomates will facilitate the management of these complex patients by a collaborative team approach and hence address their needs in a more effective and efficient manner improving the quality of care these individuals receive while also improving the cost-effectiveness of the health care services being provided in the community. In this way the Diplomates in IBM will embody the principles and philosophy of Generalism and function as Generalists advocating on behalf of this population.

### iii. Health care budgets?

These conditions are costly. The WHO (2008) The Global Burden of Disease and a recent think tank review by Catala-Lopez et al (Burden of disease. BMC Health Services Research 2011, 11:75) addressed the economic costs and burden of disease. Mental and Neuropsychiatric disorders are the leading cause of disability adjusted life years (DALYs) worldwide. Depression alone accounts for one third of this.

A 2013 article in the New England Journal of Medicine on the monetary costs of dementia in the United States reported that the estimated annual cost per person was $42,000 – 56,000. The total cost of dementia per year in the US (2010) was estimated as $157 – 215 Billion. Extrapolating to the Canadian population, this would be approximately $15.7 -21.5 Billion per year. The demographic projections for the next few decades showing a dramatic increase in the proportion of older adults will make this one of the greatest health care and economic challenges of the coming generation.

Though we cannot say definitively what the impact on health care budgets recognition of this proposed diploma would be, more effective community-based approaches to prevention, management, rehabilitation, and case coordination have the potential of mitigating these costs now and in the future.

**b) What role will the consultant in the proposed diploma discipline play in meeting community needs?**

Patients with disorders of ABC currently do not know to whom to turn. For example, patients with brain injury may initially be managed by a neurosurgeon, are subsequently seen for cognitive rehabilitation by a physiatrist, for associated neurological symptoms by a neurologist, and for associated psychiatric symptoms by a psychiatrist. In an ideal world all of these specialists are accessible and work together, but this is often not the case in reality.

To an extent, this program will allow for capacity building – diplomates will be able to establish themselves in communities as credible local experts who can deal with a variety of affective, behavioural, and cognitive disorders with an integrative approach, or at least with being able to refer to and collaborate with other colleagues more efficiently. Capacity building within primary care is an important priority in Canada. The "shared care" model as pioneered in psychiatry, brings the consultant into direct contact with primary care providers, and can be adopted by diplomates. This model allows for direct engagement and dialogue with family physicians and other health care professionals. The immediacy of the interaction obviates the sequence of (i) request for consultation, (ii) assigning priority according to level of urgency, (iii) providing an appointment with the consultant, (iv) reporting back to referring physician or agency. Direct dialogue with the primary care physician and between specialists allows for negotiation of the most appropriate management strategy.
c) **Describe the academic role of the consultant in this discipline.** *(What would be the requirements for teaching and research, if the specialist was part of an academic/tertiary care centre?)*

Many specialists in this area already practice in academic centres without formal recognition of their area of focused competence. They will continue to practice as they currently do, but now with formal recognition of their area of focused competence. While not every diplomate will pursue an academic career, it is anticipated that the field collectively will make significant contributions to both teaching and research. The interdisciplinary nature of their training and practice will lend itself to the particular needs of this area that straddles many boundaries.

d) **Describe the patient population served by this discipline.** *(This should include variety and volume of patients with supporting information.)*

See V a ii, above where we highlight the potential populations that can be served by Diplomates in IBM. These include the broad range of neurodegenerative disorders (dementias), neuropsychiatric disorders (e.g.–stroke, mood disorders, traumatic brain injuries, sleep disorders) often affecting older adults with complex and multi-faceted conditions.

e) **Please estimate how many physicians are currently practicing the proposed diploma discipline in Canada and in which locations.** *(This should reflect the national physician workforce for the proposed specialty/subspecialty.)*

Please see answer below to question 3b in discipline-specific questions.

f) **Describe the current practice profiles of the physicians engaged in this discipline.**

Physicians currently practicing what will become Interdisciplinary Brain Medicine practice in their home disciplines but have acquired additional competencies that are not fully elaborated in their home discipline, that allow them to deal with complex disorders of affect, behaviour, and cognition. They practice in interdisciplinary, inter-professional, or other collaborative practices. At the core of Interdisciplinary Brain Medicine is an in-depth competence in performing a neurobehavioural/neurocognitive assessment. In fact, the CTRs for this diploma were developed from task analysis of the current practice methods of putative Interdisciplinary Brain Medicine practitioners.

g) **Outline future (5 years and 10 years periods) projected workforce needs (FTEs) for practicing physicians in the proposed field.**

Projected workforce needs are difficult to assess for the wide range of disorders of the brain and mind. However, based on the current long wait times for assessment of Depression, Dementia and Neuropsychiatric disorders, the projected need in the coming decades will be substantially greater than the current workforce can adequately address. One approach to mitigating the discrepancy between current and future demand and supply is to increase the capacity of the current and future physicians to deal with these complex disorders. Greater expertise and confidence among cognate disciplines will make cross referral less necessary. Similarly, the by-product of collaborative training will be the development of collaborative services which will help to mitigate the inevitable shortfall in the workforce.

h) **What is the impact of technology both in terms of requirements to practice and expected impact of future technological development on the need for the proposed diploma?**

The need for this diploma is driven, in part, by emerging technology. With the development and refinement of neuroimaging modalities, clinical brain-illness correlations are more possible than ever. It is important for clinicians dealing with such disease to be able to undertake such correlations, whereas previously only a cursory knowledge of neuroimaging was sufficient. Furthermore, new treatment tools are being developed that allow intervention directly upon the brain – collectively called neuromodulation tools. Training in IBM will prepare a cadre of clinicians best suited for the further incorporation of these tools into routine clinical practice.
6. Why is recognition by the Royal College essential for the success of the proposed diploma discipline?

A number of unaccredited training programmes in (aspects of) this diploma already exist in Canada. The number of such programs is small. Even with the limited number of programs, some of them have difficulty recruiting trainees. Thus, manpower shortage is in part driven by a lack of training opportunities and lack of interest. The creation of an accredited program at the RCPSC might make existing programs more enticing, and would make it easier to create new training sites.

Firstly, creating an accredited program would make it easier for interested trainees to locate training programs. Rather than finding such programs through individual searches, word-of-mouth, and serendipity, the field would be officially established. A prospective trainee could first decide that he or she is interested in this field, and then simply look up the appropriate program. Accredited training would allow physicians who have completed the training program to identify themselves as having received a Diploma from the RCPSC. Formal recognition of this additional training may improve their subsequent job opportunities, particularly since disorders of ABC are underserviced.

Certain jurisdictions may alter physician compensation schemes for physicians who practice in this complex area. For example, in British Columbia, the Doctors of BC Section of Neurology has created fee codes to compensate neurologists who perform comprehensive cognitive assessments. The difficulty has been in properly identifying those neurologists who are qualified to do such assessments (John Falconer, Doctors of BC Section of Neurology President, personal communication, June 8, 2013). Requiring completion of accredited training would be the easiest and least ambiguous mechanism that would allow for this.

Finally, the existence of criteria for a formalized and accredited training program would create a clear blueprint for the creation of new training sites for this diploma. Universities and hospitals would be able to graft new programs onto their existing PGME support system. Training sites would not be required to create a list of training objectives ad hoc.

7. What would be the projected effects on the Canadian health care system from the recognition of the proposed diploma discipline? Include both potential positive and negative impacts.

There is a strong societal impetus for recognition of this AFC. Patients suffering from complex brain conditions with disordered ABC need to be served by better-trained physicians, and we believe physicians who wish to practice in this field will be more drawn to the field once it is formalized and accredited. Another positive impact of this program upon the Canadian health care system is that the training requirements are being designed from the “ground up,” from a relatively agnostic point of view. That is, there is no reference manual or preconceived agenda. Physicians contributing to the design of the program come from a variety of clinical and educational backgrounds related to disorders of ABC and include physicians with expertise in health professions education. This allows a maximum number of relevant points of input into the program design. Another strength is that the design of the program, which allows breadth while maintaining suitable flexibility to tailor the program to different practice realities and training settings.

Weaknesses include the fact that there is no pre-existing national society to back the creation of this program. The endeavour has depended upon a “grass-roots” group of putative practitioners coalescing together and volunteering their time. The new challenge (relevant to question 8 below) will be to create a national forum, if not society, that reflects the multidisciplinary and interdisciplinary nature of this Diploma and new approach to health care of those who suffer from disordered ABC. However, it should be mentioned that several existing National Specialty Societies have recognized the need for the proposed diploma.
8. Please identify Canadian organizations and stakeholders who should be consulted regarding this application. (Other than the groups identified in the Part II, Consultation section. The applicant is required to provide the names and addresses of the identified organizations and stakeholders)

The major stakeholders are the relevant specialty committees: Geriatric Medicine, Geriatric Psychiatry, Physical Medicine and Rehabilitation, Psychiatry, Neurology and Neurosurgery. This is reflected in the name of the proposed Diploma: Interdisciplinary Brain Medicine.
DISCIPLINE SPECIFIC INFORMATION:
A completed application form must include the following:

1. **A draft version of the Competency Training Requirements (CTR) for the diploma discipline.**
   This document should describe the key competencies to be acquired. The CTR template is provided as an example and should be used as a guide. (Please contact COS@royalcollege.ca for the latest version of the template.)
   *Note: A proposed discipline that includes competencies which overlap with those in the OTR of an existing discipline or disciplines MUST include, as part of this application, written letters of support of the specialty committee(s) in that discipline or disciplines.*

   Document attached

2. **A document outlining the proposed strategy for the assessment of competencies to ensure that graduates of postgraduate training programs in this proposed diploma discipline are competent specialists.**
   a) Trainees in Interdisciplinary Brain Medicine will need to demonstrate expert competence in the key competencies of brain medicine. It has been proposed that the Summative Portfolio will comprise multiple sections which could include the following:
      i) An important aspect of assessment will be proof of having mastered the neurocognitive / neurobehavioural assessment, and neurological examination. Multiple sources of proof may be required in the portfolio including
         (1) A videotaped or other recorded encounter with a real or simulated patient that has been formally assessed by the supervisor
         (2) A number of mini-CEX-like encounter logs or other form of work-based assessment that demonstrate that the supervisor has observed the trainee to perform a neurobehavioural / neurocognitive assessment at the expert level
      ii) At least one annotated patient encounter (consultation letter)
      iii) Trainee-driven evidence of accomplishment of certain competency requirements. Trainees could be given Learning Contracts to complete where they will state, “I will demonstrate evidence of competency on competency requirement X by the following Y”
      iv) Subject to approval by the Brain Medicine committee, a standardized clinical examination (OSCE or other) that would be locally developed and administered by each program, but whose results would be included as part of the assessment portfolio.
      v) Central to the Diploma is the Collaborator role which will use the CANMEDS toolkit/toolguide for assessing Collaborator Competencies. Thus, the mini-CEX mentioned above would incorporate the mini Collaborator clinical evaluation exercise (miniCCEx). Additional components of the portfolio focusing on the collaborator role would be the Collaborator Assessment Tool (CAT) and Encounter Cards specifically tailored to IBM.
      vi) It is anticipated that training modules may be created for some of the medical expert competencies requiring knowledge acquisition (e.g., basic science requirements, familiarity with emerging imaging techniques). Documentation of completion of these modules may be included in the portfolio.

3. **Outline the implementation issues for the proposed diploma discipline. Include information on:**
   a) Number of sites capable of mounting a training program in Canada, including the number of training positions estimated at each site.

   Because of the flexible nature of this program, we anticipate that several sites in Canada will be able to offer this program, by building upon existing non-accredited programs in fields which would now be subsumed by Interdisciplinary Brain Medicine (for example, existing training programs in memory clinics, neuropsychiatry divisions, etc.). We anticipate that
existing Canadian fellowship programs in behavioural neurology / neuropsychiatry, dementia, and neuromodulation would be able to offer the AFC Diploma program. These include but are not limited to:

- Université Laval
- McGill University
- University of Toronto
- McMaster University
- Western University
- University of Manitoba
- University of Saskatchewan
- University of Calgary
- University of British Columbia

Universities that offer this Diploma will require clinical and educational facilities that are multidisciplinary in nature and structure and thereby allow the main goals of the Diploma to be realized. Physician-educators from other universities have expressed interest in the program and participated actively in the creation of this proposal. It is therefore believed that they would probably be able to mount a training program as well, in the near future.

Some universities without a full complement of activities for all competencies (e.g., neurostimulation) may collaborate with other sites to offer complete programs making the Diploma potentially implementable across the Canada.

b) Please estimate the number of faculty currently available nationally with expertise in the proposed diploma discipline and identify where they are located across the country.

In discussion with prominent physicians practicing in all of the entry disciplines for this program, it has been determined that faculty do exist in every medical school in the country. Some schools may have only 2-3 faculty with requisite expertise, whereas a few large schools (e.g., UBC, U of Toronto) have upwards of 20. In total, we feel that there are at least 80 qualified faculty, and this is likely a conservative estimate.

As an interdisciplinary field, it is expected that training in brain medicine may also rely on additional physicians from the parent disciplines as well as related disciplines such as neuroradiology, neuropathology, neuroethics, etc.

c) What will be the funding implications for training opportunities?

We anticipate that early adopters of this diploma program will be existing fellowships (see (a) above) that will expand or adjust themselves to fulfill the requirements of the diploma. These fellowships, although few, are already funded through a variety of different mechanisms.

In certain Canadian jurisdictions, such as Quebec, funding is available for physicians wishing to pursue formal post-residency training programs (e.g., Quebec R6 year). It may be that other governments, recognizing the need to train more physicians in this underserved and growing area, will also make funds available for training. It is intuitively more probable that governments would fund formalized, accredited programs over informal or non-accredited programs. Finally, certain groups have already recognized the need to fund additional clinical training in disorders of ABC and will likely be keen to fund accredited training programs in the future. For example, the Canadian Institutes of Health Research have recently announced the creation of the Canadian Consortium for Neurodegeneration in Aging (CCNA) (http://www.cihr-irsc.gc.ca/e/46783.html). A portion of CCNA’s budget will be dedicated towards training, eventually including clinical training (dependent on the availability of funds); the CCNA has already expressed interest in potentially funding a RCPSC diploma program in Interdisciplinary Brain Medicine.
Additionally, public interest in increasing access to care for persons with disorders of ABC is increasing. It is hoped that with a formal program available, institutions will appeal to philanthropists to fund additional training positions. This is already done for some existing non-accredited fellowships.

Finally, because of the flexible, and competency-driven nature of all diploma programs, it is possible that some trainees will elect to self-fund part-time training programs. This already occurs in Canada, and is the model used by certain family physicians who opt to take a mid-career enhanced skills course to change their scope of practice.

d) Please describe any anticipated impacts on Postgraduate Medical Education or practice systems in any region.

We suspect that the number of trainees initially pursuing a diploma will be relatively small. We do not anticipate competition with existing PGME programs or practice systems, and this sentiment has been echoed by the program committees for the feeder programs. Likewise we do not anticipate the small number of trainees will have a significant impact on training opportunities for residents from other disciplines (i.e., they should not lead to trainee overcrowding in clinics or on wards). Brain diseases are a vastly underserved area in medicine meaning that there is much room for growth.

Entry disciplines will retain control over the activities that their trainees may pursue during residency (or subspecialty fellowship) training. For example, training in geriatric medicine is limited in time (two years) during which trainees must acquire a very broad range of competencies. It is therefore probable that the geriatric medicine subspecialty committee would restrict enrollment into the IBM diploma until after completion of subspecialty training. Other entry disciplines, such as psychiatry, that devote more of their training time to elective rotations may (or may not) choose to allow residents to register for the IBM diploma during the senior years of training. It would not be possible to complete all of the training required for the diploma during residency, however.