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Contact Name
E. Sander Connolly Jr

Contact Email Address
esc5@columbia.edu

Name of Sponsoring Board(s):
American Board of Neurological Surgery (ABNS)
American Board of Radiology (ABR)
American Board of Psychiatry and Neurology (ABPN) - is supportive. ABPN is currently deciding on whether to participate in the initial sponsorship or simply offer their support. They eventually, see themselves as likely collaborators.

1. Provide the name of the proposed area of focused practice:

   Neuroendovascular Surgery (NES)
   Also known as Endovascular Surgical Neuroradiology (ESNR, as designated by ACGME)
   Also known as Endovascular Neurosurgery (ENS), Interventional Neuroradiology (INR), Interventional Neurology (IN)

2. State the purpose of the proposed area of focused practice and include the rationale for how this area of focused practice is different than a subspecialty, in two paragraphs or less:

   Neuroendovascular procedures, designed to treat cerebrovascular diseases, require specialized training, the use of ionizing radiation for visualization, specialized procedural monitoring, unique documentation, and familiarity with a broad variety of technological devices many of which do not have FDA approval but can be used under local IRB approval with humanitarian or other use exemption. Although NES addresses some common causes of adult death and disability, such as ischemic stroke (AIS), it also addresses a multitude of uncommon and rare conditions such as cerebral artery aneurysms, arteriovenous malformations, and dural arteriovenous fistulas. The most common cases most often require urgent or emergent care, in contrast to the less common cases. This confounds centralization/regionalization efforts, resulting in a very challenging environment for adequate training and independent clinical practice given the need for maintenance of technical skills and experience using constantly evolving technologies. The purpose of FP in NES is to help support physicians committed to this trade through ongoing education and evaluation. FP aims to develop and maintain their safety and effectiveness. NES represents a focused practice more than a subspecialty as increasing numbers of physicians practicing NES spend a significant portion of their time performing non-NES tasks related to their primary specialty (neurosurgery-ABNS, neurology-ABPN, radiology-ABR). Examples of such non-NES tasks include ICU care, microsurgery, and diagnostic neuro-radiological readings, to name a few.
3. Focused practice usually falls under one of these areas. Please describe which of the following this application addresses.
   a. Evolving area of practice
   b. Area of practice limited in scope or size
   c. Specialized procedure

Evolving area of practice, limited in scope and size, with use of specialized procedures, are all apt descriptors when applied to NES. Both the procedures being performed, the devices being utilized and the indications for treatment are evolving at a rapid pace. Some procedures are becoming more common (e.g. thrombectomy for acute ischemic stroke [AIS]) while others are becoming less common (e.g. angioplasty for intracranial stenosis). The time window for ischemic stroke intervention seems to be expanding in highly select populations leading to an increase in procedural need, while it appears that carotid stenting for asymptomatic stenosis may soon be shown to be contraindicated. To date the combination of new indications and the sun setting of older ones has resulted in a fairly stable need for practitioners but this same number of practitioners is being worn down by the recent need for 24/7/365 coverage for AIS. Whether this will result in the need for increased size of the work force performing these highly specialized procedures remains to be seen but it is possible that further progress with robotics and telemedicine may result in a scope and size that is still quite limited. Currently, we project approximately 200 neurosurgeons participating in this focused practice program.

4. Please outline the eligibility criteria required of candidates in the proposed area of focused practice, as it pertains to the following:

4a. Certification in a specialty or subspecialty by an ABMS Member Board:

A minimum of one year, dedicated NES/ESNR training with broad exposure to the range of cerebrovascular disease is required after completion of an ACGME residency program in Neurological Surgery

1.) NES/ESNR Training – Ideally this will take place in an ACGME accredited or ACGME recognized and SNS/CAST-NESAC accredited program. For those neurosurgeons wishing to participate who did not complete an ACGME or SNS/CAST accredited program, a subcommittee of the ABNS and SNS-CAST will review the training history prior to allowing practice data submission and application for the written exam. It is suspected that applicants will be held to similar training case minimums (250 proctored interventional treatment procedures with 40 aneurysm treatments [10 ruptured], 20 intracranial AVM/AVF/Tumor embolizations, 25 intracranial/extracranial stents with at least 5 of each, 30 acute stroke treatments, 10 intracranial infusions for vasospasm, stroke or chemotherapy, 10 extracranial embolizations and 5 spinal angiograms or embolizations).

4ai. If diplomates of multiple ABMS Member Boards would be allowed to apply for this area of focused practice, please list those Member Boards:

American Board of Psychiatry and Neurology (ABPN) American Board of Radiology (ABR)

4b. What specialty and/or subspecialty certificate(s) will a diplomate be required to hold in order to be eligible for this area of focused practice?

A candidate for focused practice in NES will have to be board eligible in neurological surgery and the ABNS will have to confirm this. Board eligibility is needed to sit for the written exam and begin practice case submission. In order to participate in NES-FP the candidate must be board certified by the ABNS in neurological surgery.

4c. Clinical practice experience (both in terms of time and patient volume) in the area of focused practice, beyond initial training:

To attain and maintain competence in NES Focused Practice, 50% of the participating physician's time must be spent in the assessment, clinical management, and procedural care of patients with cerebrovascular disease who are eligible for NES procedures (Fiorella D, et al. J Neurointerv Surg 5(4): 315-8, 2012). It is also expected that they perform at least 20 interventions annually. Prior to entry into focused practice candidates who have completed their fellowship will provide their primary board with two full years of NES case lists for review and query as needed.
4d. Additional qualifications (if any):

In addition to fellowship training, primary board certification/subspecialty certification and clinical practice focus, those participating in NES FP will be expected to demonstrate evidence of participation in the following:

1.) Local peer-review process such as Morbidity and Mortality conference
2.) National registries such as RedCap NVI, N2QOD NVQI, or other quality registry compliant with Patient Safety Organization requirements
3.) Clinical research
   a.) IRB-approved use of HDE devices
   b.) IRB-approved sponsored clinical research
   c.) NIH-sponsored multi-center clinical trials

5. With regard to Board-based assessment for candidates prior to awarding this area of focused practice, which assessment methods would be required? (Check all that apply)

Examination (Written)
Participation in a registry
Submission and review of case lists

5a. Please describe the rationale behind the method(s) required in the assessment process:

The Society of Neurological Surgery, Committee on Advanced Subspecialty Training (CAST) recently convened an advisory committee entitled Neuroendovascular Surgery Advisory Council (NESAC) with 9 stakeholders from the three primary ABMS Specialty boards: ABNS, ABPN, and ABR. NESAC was tasked with development of the multi-disciplinary training curriculum. NESAC also collaborated with the ABNS to create a primary written examination to be given after completion of a CAST accredited and ACGME fellowship. This certification examination will be administered on a single day once a year as a secure examination. Success on this examination, as well as submission of two years of consecutive NES cases is a pre-requisite for awarding a designation of FP in NES. Prior to entry into focused practice candidates who have completed their fellowship will provide their primary board with two full years of NES case lists for review and query as needed.

6. Please outline the Maintenance of Certification (MOC) program planned for this area of focused practice:

Rapid technological evolution of imaging equipment and devices has allowed NES to develop in a relatively unregulated manner in close association with industry stakeholders who have funded most Continued Medical Education (CME) and many clinical research trials and protocols. While there is growing evidence for the efficacy of NES procedures when properly applied and correctly performed, making this a main-stream practice worthy of recognition, it is critical that physicians performing these procedures be accountable for the requisite knowledge base and technical expertise necessary for safe and effective practice. ABNS believes that an annual MOC process consisting of an adaptive written examination, submission of case lists with the ability for patient chart query for audit and participation in device and/or trial registries will accomplish this goal. This MOC program will consist of an annual adaptive written examination, submission of NES case lists with the ability for patient chart query for audit, evidence of participation in device and/or trial registries as well as participation in local peer-review process such as Morbidity and Mortality conference.

7. Document the professional and scientific status of this area of focused practice by addressing (a) through (d) below.
7a. Please describe how the existence of a body of scientific medical knowledge underlying the proposed area of focused practice is in large part distinct from, or more detailed than, that of other areas in which certification or focused practice are offered:

Emerging from technical reports and case series in the 1990s, NES/ESNR has a growing body of scientific evidence including randomized, controlled, multi-center trials for many medical conditions amenable to treatment by physicians in this area of focused practice. Evidence for this can be seen in the existence of several specialty journals that only deal with NES (e.g. The Journal of NeuroInterventional Surgery [ISSN 1759-8478; Impact Factor 2.96]; Interventional Neurology [ISSN 1664-9737; Interventional Neuroradiology ISSN 1591-0199]. Several medical societies including Society of NeuroInterventional Surgery (SNIS), Joint Cerebrovascular (CV) Section of AANS and CNS, and Society of Vascular and Interventional Neurology (SVIN), have collaborated together or in part to develop training standards and standards of practice in this evolving discipline. The societies also engage in joint educational conferences. The multi-disciplinary nature of the evolving NES/ESNR specialty in 3 separate ABMS specialties is especially in need of a defined unified Focused Practice.

7b. Explain how this proposed area of focused practice addresses a distinct and well-defined patient population and care need:

Patients with complex cerebrovascular diseases often require the expertise of physicians with training in several disciplines including but not limited to neurosurgery, neurology, neuroradiology, critical care, physical medicine and rehabilitation, radiation and medical oncology. Emergency treatment of patient with acute ischemic stroke is potentially the area of greatest impact for physicians with training and technical skills in NES/ESNR. There are approximately 800,000 strokes per year in the United States according to American Heart Association statistics. Up to 40% of acute ischemic strokes must be assessed for potential emergency thromboembolectomy by an NES/ESNR physician. Other cerebrovascular diseases often amenable to NES/ESNR procedures include some cerebral aneurysms, arterio-venous malformations, dural arterio-venous fistulas and symptomatic atherosclerosis affecting the cerebrovasculature. While the latter diseases are less prevalent, their incidence still makes these conditions an important component of neurological services at many major medical centers. Often striking relatively younger patients, the quality-adjusted life-year impact of these less common conditions is significant. Simply put, NES services are a critical component of the treatment and prevention of ischemic and hemorrhagic stroke as well as other neurological diseases such as neuro-oncologic conditions and neuro-spinal degenerative disease such as spondylosis.

7c. Please provide information about the group of diplomates concentrating their practice in the area of focused practice, if known:

7ci. The projected number of such diplomates (along with the source(s) of the data):

A 2008 work force analysis suggested that there were approximately 400 physicians practicing NES/ESNR procedures in the United States and that the number of physicians with interest in practicing or training to practice NES/ESNR was accelerating. The authors expressed concern that the number of physicians had out-stripped the incidence and prevalence of patients with many of the most complex cerebrovascular diseases requiring treatment despite the increasing coverage demands for emergency stroke services. As of 2016 the estimated number of providers is close to 800, most of who practice within a 50-mile radius of major metropolitan areas covering more than 95% of the US population. Approximately 40 NES fellows are graduating yearly from US training programs. In 5 years and 10 years, the number of NES may reach 1,000 and 1,200, respectively. Currently, there are approximately 14,000 thrombectomy procedures performed in the US but the number might double or triple due to aging populations and improved patient selection with advanced imaging (average AIS treatment per provider 15-30 per year with many performing very few complex procedures).

7cii. The annual rate of change of such diplomates in the recent past and projected annual rate of change for the near future (along with the source(s) of the data):

Because most NES/ESNR programs are non-ACGME training programs, and the published training requirements in ESNR have not been enforced or required in clinical practice for hospital credentialing, the number of physicians who practice part or full-time NES/ESNR is unknown. Surveys conducted by SNIS in 2012 suggested there were approximately 1000 physicians who identified themselves as NES/ESNR specialists and the number of physicians training in self-designated fellowships in 2012 may be as high as 100 per year. Focused practice recognition would serve the public in helping to identify for certain who is practicing in this arena.
7ciii. The current geographic distribution of this group of diplomates, its projected spread in the next five (5) years, and an explanation of how you arrived at this projection:

Like many medical specialties, NES/ESNR physicians congregate in metropolitan areas. The distribution may change significantly in the next five years based on acute stroke trial data, which indicates the need for very rapid intervention, possibly precluding triage or transfer of patients to CSCs or other major metropolitan medical centers. That said, technologies such as robotically assisted remote intervention could lead to considerable centralization of care. Predictions about the future are difficult.

7d. Please identify the existing national societies that have a principal interest in the area of focused practice:

Specialty boards: ABNS, ABPN, ABR
Medical Societies: AANS, CNS, SNS, AAN, ASNR, SNIS, SVIN

7di. Indicate the existing national societies’ size and scope, along with the source(s) of the data:

SNIS - 900 members
SVIN - 300 members
CV Section of AANS/CNS - 500 members
ASNR - 8000 members
AANS - 4000 members

7dii. Indicate the distribution of academic degrees held by their members, along with the source(s) of the data:

A doctorate in Medicine (MD or DO) is a pre-requisite for ACGME-approved residency training and subsequent eligibility for ABMS certification. Some physicians will have added qualifications in Vascular Neurology (ABMS), Neurocritical care (UCNS), and Neuroradiology (ABMS). Additional academic qualifications might include Master of Science (MS), Doctorate of Philosophy in biological sciences or engineering (PhD), or Master of Public Heath (MPH). Historically, the majority of NES/ESNR physicians were Radiologists. During the last 10-15 years, the number of Neurosurgeons and Neurologists has been increasing. At present, SNIS, the multi-disciplinary society including Radiologists, Neurologists, and Neurosurgeons, showed an increasing number of Neurologists and Neurosurgeons who now represent nearly half of the SNIS membership. Because many randomized trials have shown the superiority of NES/ESNR for severe stroke, Neurologists are training in NES/ESNR in the greatest numbers and may eventually represent the largest group of providers.

7diii. Indicate the relationship of the national societies’ membership with the proposed focused practice designation:

Members of described national societies would be candidates for NES/ESNR focused practice through their respective primary ABMS board after meeting all of the pre-requisites.

8. Please describe how the cognitive knowledge, clinical and interpersonal skills, professional attitudes, and practical experience of diplomates in this area of focused practice will be distinct from diplomates in other specialties, subspecialties, and areas of focused practice in terms of:
8a. Clinical competence:

The knowledge, skills, attitudes and experience acquired by NES/ESNR Focused Practitioners as a result of dedicated study and experience under professional mentorship at medical centers with demonstrated expertise in cerebrovascular disease will result in a level of clinical competence unparalleled at the point of focused practice embarkation. The ongoing focused education and assessment provided through the ABMS FP pathway will serve to further enhance and refine this competence as will the oversight provided by continuous case submission. The latter will not only confirm ongoing focus of the practice but also provide a means for focusing learning tools and assessment and allow for ongoing assurance of professionalism in FP. Repeated exposure to the full range of cerebrovascular diseases is important feature of NES/ESNR FP and is critically important for the development of both cognitive and procedural competence. The ABMS NES/ESNR Focused Practitioner will benefit from the input and oversight of fellow physicians from their parent board much in the way that the NES/ESNR fellow in training benefits from similar combined oversight of training standards through The Society of Neurological Surgeons Committee on Advanced Specialty Training (SNS-CAST) which has worked in concert with the ACGME (see Stroke by Day AL, et al. in 2017).

8b. Scope of practice:

The knowledge, skills, attitudes and experience acquired by NES/ESNR Focused Practitioners as a result of a limited scope of practice which includes at least 50% of their time and cases in this area sets these practitioners apart from their colleagues who out of necessity perform these procedures and take care of these patients less frequently. NES/ESNR procedures are but one component of the multi-disciplinary care needed to adequately care for and treat individuals with complex or symptomatic cerebrovascular diseases. Research indicates that patient outcomes are better at institutions with teams of physicians possessing specific, deep and broad expertise in cerebrovascular diseases and the necessary volume of patients needed to develop efficacy and efficiency of care. Comprehensive Stroke Centers (CSCs) are designed and monitored by JCAHO to offer the full range of medical and surgical services to meet the needs of this patient group but not all CSC have will be fully staffed by NES/ESNR focused practitioners. Moreover, the number of CSCs is limited by cost and patient volume and it is likely that NES/ESNR focused practitioners will provide an even greater service and be of greater impact at the many other centers in the U.S. that are not CSCs by covering many of these simultaneously with physician extenders.

8c. Body of knowledge and skills:

The fundamentals knowledge and skills needed to provide rudimentary NES/ESNR patient care may be, to varying degrees, possessed by those graduating from ACGME residencies in Neurological Surgery, Neurology followed by Vascular Neurology or Neuro-critical Care training, or Radiology with subsequent training in Neuroradiology. That said, it is generally appreciated that a NES/ESNR fellowship (ACGME accredited or CAST accredited) is needed for most practitioners to provide comprehensive services in a safe and efficient manner. Neurologists gain technical prowess, Radiologists gain technical prowess and clinical and critical care training, and Neurosurgeons gain specialized technical prowess and a better understanding of radiation biology. Fellowship training, while in most cases necessary, is far from sufficient. Independent practice with repeated exposure to evolving technologies is necessary to master both the knowledge and skills of NES/ESNR and is the reason NES/ESNR FP will distinguish this type of practitioner from one who may be called upon to perform some of the procedures and assessments as part of non-FP practice.

9. For (a) through (e) below, please project the need for and the effect of the proposed new focused practice on the existing patterns of certification or other areas of focused practice. Please indicate how you arrived at your response.

9a. Please indicate whether there is any overlap between this area of focused practice and existing subspecialty certifications or other areas of focused practice.

There is no overlap with any current subspecialty certificate or focused practice designation. We anticipate that the American Board of Radiology and/or the American Board of Psychiatry or Neurology may submit an application for focused practice in this area in their respective specialties (e.g. Radiology and Neurology) as their diplomates may also practice in this area. We have agreed to collaborate with them on the requirements for qualifications and assessment.
9b. Please outline plans for evaluation of the impact of the proposed area of focused practice on your own programs of specialty and subspecialty certification and any other areas of focused practice:

The intended impact of NES/ESNR FP is to create rigorous unified standard of life long education, training and assessment for diplomats who perform these procedures. The fact that the training standards and initial assessment of those applying for FP are already uniform and standardized is a real benefit. The impact on current certification should be minimal given that this new FP pathway will not limit the practice of non-FP physicians. The potential for unintended untoward consequences with regard to limitations on manpower and access to care in low population density suburban and rural communities is essentially nil as many of the centers providing stroke care already employ physicians without primary board certification. As part of this FP application, we plan to work with The Joint Commission that certifies primary (PSC) and comprehensive stroke centers (CSC) as well as stroke ready hospitals (SRH) to determine how ABMS NES/ESNR FP can enhance access to and the quality of the highest quality care.

9c. Please outline plans for evaluation of the impact of the proposed area of focused practice on other Member Boards’ programs of specialty and subspecialty certification and any other areas of focused practice:

Focused practice in NES/ESNR is meant to harmonize the training requirements and methods for education and assessment in practice across the three primary ABMS specialties (ABNS, ABPN, and ABR). This will offer tremendous benefit to interested physicians who wish to dedicate their clinical practice and research to treatment of patients with cerebrovascular diseases treated endovascularly and enhance public safety. It will also help to clarify for the public the training backgrounds and professional competences of physicians who offer both emergency and elective cerebrovascular services. As all the major stakeholders are co-sponsors, we are certain that the impact (positive or negative) of FP will be immediately apparent to all and the FP program can be optimized efficiently and expeditiously.

9d. The impact of the proposed area of focused practice on practice, both existing and long-term, specifically:

9d.i. Access to care (please include your rationale):

Recent demonstration of clinical efficacy of NES/ESNR procedures requires an increase in the access to care, especially for patients with acute ischemic stroke. While the temporal window for intervention may be longer in a subset of patients, most patients need to be treated locally as transfer to a distant CSC is not feasible. While many of the procedures performed outside of CSCs in PSCs will likely be performed by those not participating in NES/ESNR FP, creating a FP for this type of treatment will allow the field to identify those completely committed to the field and these individuals may work with the Joint Commission to ensure that best practices are followed in CSCs. Furthermore, when time permits, the Joint Commission may direct patients to centers where FP physicians are in residence, thereby increasing access to the highest quality care without impacting overall access in a negative way.

9d.ii. Quality and coordination of care (please include your rationale):

NES/ESNR procedures have relevance in the context of the multi-disciplinary approach to evaluation and treatment of patients with complex cerebrovascular disease. For example, the treatment of cerebral artery aneurysms requires that experts coordinate the application of open surgical procedures with aneurysm clipping and endovascular treatment with coil occlusion. Neurocritical care must incorporate the role of NES/ESNR for treatment of delayed ischemic neurological disease (DIND) with cerebral angioplasty and intra-arterial vasodilators and medical treatments such as hypertensive therapy, calcium channel blockers, hypothermia, and vascular volume expansion. Developing a NES/ESNR FP should help identify those individuals most capable of interfacing with the wide variety of other medical experts who are critical to the care of these patients.

9d.iii. Benefits to the public (please include your rationale):

The primary beneficiary of NES/ESNR FP will be the public. Consumers of both emergency and elective services have limited ability to evaluate the cognitive and technical capabilities of their medical providers. In the absence of focused practice, no mechanism exists to evaluate NES/ESNR providers and to promote lifelong specialization and learning. Focused practice will offer a mechanism to reward interested providers regardless of their initial training background by providing them with tools to maintain and develop their competence and expertise.

9e. Please explain the effects, if known, of the proposed area of focused practice on:
9ei. **Immediate costs and their relationship to the probable benefits (please indicate your methodology):**

The costs are principally related to case ascertainment and the delivery and grading of an MOC formative examination/adaptive learning tool. The former requires the development and maintenance of a database, which has already been developed by ABNS (ABNSlog). This will be provided at cost to all FP physicians regardless of primary board affiliation through their parent board as other primary boards apply for this designation within their specialty. The MOC learning tool / exam is designed to educate FP participants and assess their recall and screen for cognitive decline. It is especially focused on providing annual updates related to knowledge needed at one’s finger tips to provide safe and effective emergency on-call care, but will also provide updates related to decision making for elective disease processes. This test has already been constructed by ABNS with the help and input of SNS-CAST. It will be made available to diplomats of the other boards at cost (nominal), and will be developed, going forward with ABPN and ABR, perhaps utilizing their diplomats already serving on the CAST-NESAC committee, which oversees NES/ESNR training programs. The immediate costs are therefore likely to be nominal and completely borne by the diplomats participating with no additional outlay by ABMS or the member boards. Balancing these nominal costs against the potential for improved outcomes in one of the most costly disease processes is a "no-brainer.”

9eii. **Long-term costs and their relationship to the probable benefits (please indicate your methodology):**

The long-term costs beyond database and MOC exam maintenance are principally related to case ascertainment and the time of those board members evaluating the professionalism issues that may arise related to under-performance or over-performance of procedures when this is linked to poor outcomes or excessive cost. It is envisioned that this cost will also be reasonable when judged against the societal benefit and this too will be passed on in a nominal way to the diplomat and potentially the institution benefiting from their expertise.

9f. **Please explain the effects if this area of focused practice is not approved:**

If this NES/ESNR FP pathway is not approved by ABMS then diplomats will gain their certification, MOC and recognition through SNS-CAST. Ceding this to another organization would in essence make the ABMS and the member boards irrelevant in this area and would likely have far reaching implications for the relevance of the ABMS member boards as SNS-CAST provides additional certifications in areas such as Neurocritical Care and Spinal Surgery, to name a few.

10. **Please indicate how the proposed area of focused practice will be evaluated periodically (e.g., every five years) to assure that the area of focused practice remains viable:**

Every five years, any boards with approved focused practice designations will meet and re-evaluate if NES/ESNR FP is worth continuing and if so what additional features should be considered. Some important metrics will include: 1) the number of participants; 2) the effect on access and quality; 3) the cost of the program to diplomats and member boards. It is possible that evolution in technology may obviate the need for FP in this area. It is also possible that evolving technologies and the need for even more specialized knowledge and training may suggest a need to view this practice as a separate sub-specialty. Neither however is likely.

11. **Please list key stakeholder groups from which ABMS may wish to solicit commentary on the proposed area of focused practice:**

American Association of Neurological Surgeons, American Academy of Neurology, American Society of Neuroradiology, Radiological Society of North America

**To be completed for areas of focused practice for which formalized training is currently available to meet some of the requirements for clinical experience and patient volume:**

12. **Please provide the following information for those training programs that have a primary educational effort devoted to the proposed area of focused practice, along with their geographic locations and the source(s) of the data:**
12a. Please list the names of training programs in the proposed area of focused practice:

As of April 2017, the SNS-CAST-NESAC committee has certified 21 training programs and they include: (Cedars Sinai, U of Washington, UCSD, Brigham and Women's, Emory, Ohio State, Penn State, Rush, UMDNJ, SUNY-Buffalo, Thomas Jefferson, U of Florida, U of Miami, U of Tennessee, U of Utah, U of Wisconsin, Washington Univ, U of Pittsburgh, MUSC, Indiana U, and Mount Sinai). In addition to these programs, there are 2 training programs approved by the ACGME: (U of Minnesota and Med College of Wisconsin). In addition the SNIS/SVIN websites lists 14 programs at: (UCSF, UCLA, Baptist-Jacksonville, Mayo-Jacksonville, U of Maryland, Lahey Clinic, U of Mass â€” Worcester, U Michigan, Capital Health â€” Trenton, Lutheran â€” Brooklyn, Cornell, UT â€” Houston, JFK â€” Edison, NJ and St. Louis University. These programs are neither CAST nor ACGME approved. There are also many programs that are not advertised. Some of these programs are robust and others less so.

12b. Indicate the total number of trainee positions available currently (along with the source(s) of the data):

Many but not all of the training programs listed above offer 2 training positions per year. However, as noted above, the exact number of trainees per year in the United States remains unknown. Moreover, some who are training do so in unregulated ESNR fellowships resulting in the potential for exponential growth limited only by economic market forces. In 2008, it was estimated that between 80 and 100 NES/ESNR fellows were engaged in training per year in the U.S. In the case of those training in non-CAST or ACGME accredited fellowships, the ABNS will evaluate the applicant on a case-by-case basis with attention to ensuring that similar training case minimums are obtained (250 proctored interventional treatment procedures with 40 aneurysm treatments [10 ruptured], 20 intracranial AVM/AVF/Tumor embolizations, 25 intracranial/extracranial stents with at least 5 of each, 30 acute stroke treatments, 10 intracranial infusions for vasospasm, stroke or chemotherapy, 10 extracranial embolizations and 5 spinal angiograms or embolizations).

12c. Provide the number of trainees completing the training annually (along with the source(s) of the data):

Please see forgoing description in Item 12b.

12d. Organization(s) providing accreditation or oversight for training programs:

To date, despite the recognized need, only the SNS-CAST-NESAC committee working in conjunction with the ACGME provides assessment and credentialing of training programs. NESAC, started in 2015, was the culmination of multi-disciplinary discussions among educators from ABNS, ABR and ABPN since 2010. The ACGME pathway for ESNR certification was initially established almost 15 years before, in 2000. For a variety of reasons, only approximately 6 ESNR programs applied for and received ACGME accreditation and only 2 have kept their accreditation active. One of the requirements for SNS-CAST-NESAC accreditation is a program director who is SNS-CAST-NESAC certified and SNS-CAST-NESAC has certified 113 individuals with primary board certification in Neurological Surgery, Neurology, and Radiology. Currently, a grandfathering pathway is open to those wishing to apply for SNS-CAST-NESAC individual recognition but this will close at the end of the year, 2020.

13. How much additional clinical experience is required beyond training?

Like many procedurally oriented disciplines, training and acquisition of experience do not conclude at the end of residency or fellowship. Ongoing mentoring is desirable and encouraged for all and focused practice in NES/ESNR is a mechanism to recognize and reward specialized practice with specialized life-long learning and maintenance of certification. Given the rapid evolution of this field both cognitively and technically, the initiation of a FP program is especially worthwhile.
John A. Kaufman, MD
Portland, Oregon
Jeanne M. LaBerge, MD
San Francisco, California
James B. Spies, MD, MPH
Potomac, Maryland

Medical Physics
J. Anthony Seibert, PhD
Sacramento, California

Valerie P. Jackson, MD, FACR
Executive Director

Associate Executive Directors

Diagnostic Radiology & Subspecialties
Kay H. Vydareny, MD

Interventional Radiology
Anne C. Roberts, MD

Radiation Oncology
Paul E. Wallner, DO

Medical Physics
G. Donald Frey, PhD
June 12, 2017

Lois Margaret Nora, MD, JD, MBA
President and CEO
American Board of Medical Specialties

Dear Dr. Nora:

This letter is to inform you that the American Board of Psychiatry and Neurology (ABPN) will consider becoming a co-sponsor with the American Board of Neurological Surgery and the American Board of Radiology in a Focused Practice in Neuroendovascular Surgery. It is our understanding that a letter of intent concerning this Focused Practice will be submitted to your office by the American Board of Neurological Surgery before the June 16 deadline.

Sincerely,

Larry R. Faulkner, MD
President and CEO
ABPN
June 20, 2017

Lois Margaret Nora, MD, JD, MBA
President and CEO
American Board of Medical Subspecialties

Dear Dr. Nora,

The Brain Aneurysm Foundation (BAF) was established in 1994 as a public charity based on a close relationship between patients and healthcare professionals. It is the nation's premier nonprofit organization solely dedicated to providing awareness, education, support, and research funding to improve the care of patients with one of the most common causes of hemorrhagic stroke, affecting 1 in 50 people.

As advocates for the highest quality patient care, we are writing to you in support of ABMS recognition of focused practice in Neuroendovascular Surgery (NES) through the American Board of Neurosurgery (ABNS), the American Board of Radiology (ABR) and the American Board of Psychiatry and Neurology (ABPN).

The endovascular care of cerebrovascular disease is performed by several disciplines within the ABMS, but while the training requirements have been standardized through the ACGME and more recently through SNS-CAST, it is well-recognized that the ongoing development and maintenance of skills and judgment in this rapidly evolving field is not currently supported or recognized by any formal organization. While SNS-CAST has recently offered to perform this function, the Brain Aneurysm Foundation believes that the ABMS through the joint leadership of its member boards and their MOC processes would be of great benefit to practitioners and the public alike.

The endorsement by the ABMS of focused practice in Neuroendovascular Surgery will support the unique training, experience and achievement required to care for patients with brain aneurysms and other life-threatening and life-limiting types of stroke. The ABMS endorsement is consistent with the BAF's efforts to improve care through education, support and research.

The BAF supports recognition by the ABMS of focused practice Neuroendovascular Surgery through the ABNS, ABR and ABPN, and asks that the ABMS endorse this effort. Thank you for this consideration.

Sincerely,

Christine J. Buckley
Executive Director
Brain Aneurysm Foundation

Christopher S. Ogilvy, MD
Executive Director, Medical Advisory Board
Brain Aneurysm Foundation
Application for Focused Practice Neuroendovascular Surgery

Name:

Date of Birth:

Medical School and Date of Graduation:

Residency and Date of Graduation:

Non-Neuroendovascular Surgical Fellowship/s and Date/s of Graduation (if any):

Neuroendovascular Fellowship and Date of Graduation:

Date Passed Primary Neuroendovascular Cognitive Exam:

Dates of Case Submission (2 consecutive years):
   Please include all procedural cases as excel spreadsheet (ICD-10, CPT codes)

Attestation that all the above are true (Signature)