

BRIGHAM AND WOMEN'S HOSPITAL VASCULAR FELLOWSHIP ROTATIONS GOALS AND OBJECTIVES

The Vascular Fellowship at the Brigham and Women's Hospital is a two year training program aimed at providing comprehensive education and training in the management and treatment of vascular disease. The specific subjects to be covered within the clinical, and basic science curriculum are presented under a different cover and have been established by the Association of Program Directors in Vascular Surgery (APDVS; <http://www.vascularweb.org/APDVS/Pages/Curricula.aspx>). Through clinical experience, reading and conference attendance and presentation, it is expected the resident will become familiar with all content covered in these curricula.

CORE TEACHING OBJECTIVES:

All experiences are structured to ensure that the vascular residents understand and achieve the core competencies for vascular surgery residents as defined by the ACGME and RRC for Vascular Surgery. Although these competencies are generally achieved through the normal conduct of the residency, focused attention on their content is necessary to ensure their successful acquisition:

Patient Care: By the end of this fellowship, trainees will be able to demonstrate proficiency in:

- Pre-operative management in both the clinic and in the role of consultant for inpatients. This will include medical management, patient selection, pre-operative testing, patient selection and therapeutic alternatives.
- Planning and conducting a wide array of open surgical procedures.
- Catheter-based modalities performed in the operating room and endovascular suite, including endovascular exclusion of abdominal aortic aneurysms, inferior vena cava filter placement and angioplasty and vascular stenting of all relevant vascular beds.
- Incisive use of noninvasive and radiologic imaging modalities.
- Intra-operative technical training in all aspects of open and endovascular clinical care, with graded responsibility in the operating room and endovascular suite, and as a teaching assistant with junior vascular resident and general surgery residents.
- Post-operative patient management, including the all aspects of post-operative care on the wards and in the outpatient clinic setting, including the management of surgical and endovascular complications.
- Understanding the complimentary roles of percutaneous and open technology, and when to use one versus the other versus a combined hybrid approach to care.

Residents progress will be closely monitored and daily feed back as well as bi-annual formal evaluations will be reviewed and discussed.

Medical Knowledge: By the end of this fellowship, trainees will be able to demonstrate an understanding of:

- Expert knowledge base in all aspects of clinical vascular surgery and vascular biology.

This will be achieved through daily teaching in conference, on the inpatient wards, in the operating room, in the outpatient clinic and in the endovascular suite in the cardiac catheterization laboratory. Reading and self-teaching is an essential component of this accrual process. The residents are supplied a copy of the APDVS clinical and basic science curricula as a specific and comprehensive guide for areas and topics of necessary expertise. Medical knowledge is tested and evaluated on a daily basis with continual feedback. Formal evaluations are made bi-annually and via the annual in-service exam (VSITE).

Practice Based Learning and Improvement: By the end of this fellowship, trainees will understand and implement:

- An investigation and evaluation of their own patient care. Care must be guided by a combination of acquired experience as well as an evidence-based approach, which is strongly emphasized through all aspects of patient care and teaching on the service.
- A critical evaluation of patient care complications through Morbidity & Mortality (M & M) conferences.
- Utilization of scholarly literature reviews in preparation for teaching conferences and patient management.
- Investigational skills through planning and conducting clinical research and presenting at least one paper at a regional or national meeting, with an intended associated publication.

Interpersonall and Communication Skills: By the end of fellowship, trainees will be able to demonstrate;

- Effective communication between attendings and residents.
- Ability to facilitate exchange of information between all care givers, including general surgery residents, physician's assistants, nurses, consultants and allied staff.
- Teaching skills through leading the daily vascular teaching rounds (Monday, Tuesday, Thursday, Friday), a weekly teaching conference and inpatient ward walk rounds.
- Skills in patients and families education around treatment and disease processes.

Daily mentorship and feedback on effective communication will be stressed. Formal evaluations will occur bi-annually.

Professionalism: By the end of the fellowship, trainees will be able to interpret and execute professional behavior through:

- A consistent commitment to ethical principles while meeting patient care and training obligations.
- Demonstrating a sensitivity to the needs of colleagues and patients.

The residents will be held to the highest professional standards and will be guided by daily mentorship and feedback.

System Based Resources: By the end of this fellowship, trainees will have the ability to:

- Develop and demonstrate an effective understanding of the impact of patient care within the larger context of the local (Brigham and Women's Hospital, Shapiro Cardiovascular Center) and larger (regional and national) health care system.
- Understand optimal resource utilization and cost-effective care is essential to achieve optimal value in health care. As such, the residents will be challenged daily to justify and supply care in a fashion that maximizes resources and attains the highest value.

FELLOWSHIP CURRICULUM/CLINICAL EXPERIENCES:

The initial twelve months of the vascular fellowship will consist of full-time participation in the vascular surgery service at Brigham and Women's Hospital. The vascular resident will be involved in the full array of clinical exposure with the objective of understanding the evaluation and diagnosis of all forms of vascular disease and proper ambulatory, hospital and post-intervention management of patients while making appropriate use of medical, radiological and surgical tools. The resident will understand the complimentary roles of the percutaneous and open and differential modalities. He will become proficient in planning and conducting a wide array of open surgical procedures.

ENDOVASCULAR INTERVENTION:

The resident will spend a second year focused on the fundamentals of percutaneous arterial and venous access, the diagnostic modalities of angiography, venography and intravascular ultrasound, and percutaneous and hybrid arterial and venous therapeutic interventions. This will lead to expert skills in the areas of angioplasty, stent placement, endograft use, thrombolysis and embolization. This rotation will be supervised by faculty from the Division of Vascular and Endovascular Surgery. There will be collaboration with interventional cardiologists who are focused on the management of peripheral vascular disease and interventional nephrologists who are focused on the management of dialysis access. The rotation will expand upon the core experience of catheter-based interventions performed in the operating room during the first year. It will be expected that finishing residents will meet the suggested guidelines for volume and experience as defined by the APDVS and that finishing residents will be fully qualified for credentialing in endovascular surgery.

NONINVASIVE VASCULAR LABORATORY:

During the first year, the resident will be actively involved in vascular laboratory interpretation through ongoing routine review of clinical cases and formal exposure and presentation during clinical conferences. During the second year, the resident will be expected to spend one day per week working in the vascular lab obtaining hands-on experience in performing vascular laboratory studies. It is anticipated that the resident will become proficient in performing ultrasound studies and interpreting noninvasive vascular laboratory studies of all kinds through participation in the longitudinal exposure to the noninvasive diagnostic laboratory. The second-year resident will also participate in a 5-day review course run annually by the Brigham and Women's Hospital Vascular Laboratory on Non-Invasive Vascular Diagnostic Imaging. This course is a comprehensive hands-on review of current clinical practice of non-invasive diagnostic imaging for vascular specialists. It is expected that finishing residents will be well-qualified to obtain the required Registered Physician in Vascular Interpretation certification.

ELECTIVE ROTATIONS:

The resident will have the opportunity to participate in elective opportunities to supplement and enhance their education. Such rotations may be on- or off-campus and may be supported in part or fully by the residency program after appropriate review and approval. Evaluations from the resident and the recipient institutions for such electives also will be required at the conclusion of each elective. Each resident will be expected to identify electives by the end of his first year and to conduct an elective during the second year of the fellowship.

LONGITUDINAL PROJECTS:

The resident will be expected to maintain activity in a clinical research project through the fellowship, with an average of one presentation and publication per year. The resident will be expected to undertake reading of vascular surgical texts and journals and to attend appropriate post-graduate courses, including various vascular surgery review courses, in preparation for their vascular board examinations. Other meetings may include the annual national and regional vascular meetings. Elective participation in speciality courses, such as in clinical research design, and participation in other relevant projects is encouraged.

EVALUATION:

Residents progress towards achievement of the stated objectives will be evaluated:

- Daily for formative feedback and ongoing development.
- By rotation evaluations completed by faculty bi-annually.
- Bi-annual reviews with the Fellowship Director

- At the conclusion of the fellowship, the trainee will be required to obtain Registered Physician in Vascular Interpretation (RPVI) certification.