

PGY-6 (1st Year)
GOALS AND OBJECTIVES
VANDERBILT UNIVERSITY MEDICAL CENTER
VASCULAR SURGERY PROGRAM

ROTATION-BASED GOALS AND OBJECTIVES

A. VANDERBILT HOSPITAL VASCULAR SURGERY SERVICE
COMPETENCY BASED GOALS (1st Year)

Patient Care and Procedural Skills.

The fellow must be able to provide patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health. First-year fellows must be able to:

- ✓ demonstrate manual dexterity appropriate for their educational level.
 - Demonstrate expertise in the open surgical, endovascular and medical management of all manner of patients with vascular disease.
- ✓ develop and execute patient care plans appropriate for their educational level. This includes:
 - managing a variety of vascular surgical patients using a systematic approach, including recognizing and assessing symptoms and signs, ordering appropriate tests and procedures, evaluating data, and initiating appropriate actions.
 - recognizing the signs of clinical instability and implementing appropriate plan of action for diagnosis and treatment.
 - managing medically complex vascular patients in the ICU.
- ✓ develop essential operative skills that can be acquired only through personal experience and education. This includes:
 - performing major vascular reconstructive procedures that reflect an adequate representation of contemporary practice as well as a breadth and balance of experience in the surgical care of vascular diseases.
 - assuming a significant role in the following aspects of patient management: *determination or confirmation of the diagnosis; provision of preoperative care; selection and accomplishment of the appropriate operative procedure; direction of postoperative care; and accomplishment of sufficient follow-up to be acquainted with both the course of the disease and the outcome of its treatment.* Participation only in the operation, without preoperative and postoperative care, is inadequate and contrary to the spirit of surgical education.
- ✓ have continuity of primary responsibility for patient care including ambulatory care, inpatient care, referral and consultation, and utilization of community resources. This includes:
 - Ambulatory care: Attend a staff member's weekly clinic and document attendance.
 - Inpatient care: Make hospital rounds and have full knowledge of medical problems of all patients under his/her care.

- ✓ act as teaching assistant for junior residents when operative experience justifies a teaching role.
- ✓ receive education in the special diagnostic techniques for the management of vascular disease. This includes:
 - understanding the methods, indications, and techniques of angiography, CT scanning, MRI and MRA, and other vascular imaging modalities. Fellows should be competent in the assessment of the vascular portion of such images.
 - Demonstrating the ability to interpret hemodynamic and angiographic data and use these data to make decisions regarding medical, interventional cardiac and surgical treatments.
- ✓ receive education in management of the special population of patients presenting with vascular disease.

Medical Knowledge

Fellows must demonstrate knowledge of established and evolving biomedical, clinical, epidemiological and social-behavioral sciences, as well as the application of this knowledge to patient care. First-year fellows:

- ✓ must become competent in interpretation of noninvasive vascular studies as noted in Overall Education Goals
- ✓ must be able to critically evaluate and demonstrate knowledge of pertinent scientific information in two formats:
 - Prepare, conduct and participate in scheduled weekly educational conferences (see below)
 - Participate in the assessment of his or her fund of medical knowledge by taking the annual VSITE.
- ✓ will participate in the weekly educational conferences that will provide the basis for education in the entire vascular system, as outlined in the written curriculum. Instruction in each area should be associated with relevant patient exposure and presented in “case conferences” throughout the academic year.
 - First-year fellow(s) will be responsible for planning and scheduling the Basic and Clinical Science Conference topics according to the written curriculum guidelines, with the input and final approval by the program director.
- ✓ must have instruction and become knowledgeable in the fundamental sciences, including anatomy, biology, embryology, microbiology, physiology, and pathology as they relate to the pathophysiology, diagnosis, and treatment of vascular lesions. The specific areas covered are detailed in the APDVS written curriculum for basic and clinical science.
- ✓ must have instruction in and be able to demonstrate critical thinking in the design of experiments and evaluation of data, as well as in the technological advances that relate to vascular surgery and the care of patients with vascular diseases. The first-year fellow is required to have a clinical or basic science project that contributes new knowledge at a level to merit publication and/or be eligible for presentation at a regional or national meeting (see overall goals and objective).

- ✓ must participate in regular organized clinical teaching, such as ward and clinical conferences.
- ✓ must actively prepare, present, and participate in weekly educational conferences that provide a review of vascular surgery as well as recent advances. Attendance at these conferences is required. Participation by both fellows and faculty will be documented. Assignments for specific conferences will be made on a monthly basis. The conferences are scheduled as below:

Tuesday Multidisciplinary Aortic Conference 0630-0730		Proctor/Planner various
Wednesday Departmental M/M 0630-0730		Proctor/Planner various
VA Case Conference 0730-0900		Proctor/Planner PGY5
Thursday Vascular conference 0700-0800		Proctor/Planner
Week # 1	Basic and Clinical Science	Faculty / PGY6 Fellow
Week # 2	Basic and Clinical Science	Faculty/ PGY6 Fellow
Week # 3	M/M conference	Faculty/ PGY7 Fellow
Week # 4	Basic and Clinical Science	Faculty / PGY6 Fellow
Journal Club 5 times/year 1730-1900		Proctor/Planner Faculty/PGY6 Fellow
Friday Departmental Grand Rounds 0700-0800		Proctor/Planner various
Quarterly 0630-0800	Multidisciplinary M/M	System Leadership

Practice-Based Learning and Improvement

Fellows must demonstrate the ability to investigate and evaluate their care of patients, to appraise and assimilate scientific evidence, and to continuously improve patient care based

on constant self-evaluation and life-long learning. Fellows are expected to develop skills and habits to be able to meet the following goals:

- ✓ identify strengths, deficiencies, and limits in his or her knowledge and expertise. Assess learning needs, as demonstrated by the following:
 - Quarterly assessment of procedural skills and training needs.
 - Quarterly progress meeting with Program Director.
- ✓ set learning and improvement goals
 - Pursue a personal program of self-study and professional growth with guidance from the teaching staff and Program Director
 - Begin working with faculty on at least one research project before the end of the first year (see Overall Goals and Objectives)
 - Develop critical skills in basic and clinical research in vascular disease, including the methodology used for both retrospective and prospective investigations, statistical analysis of data, methods of funding research, and writing of abstracts and manuscripts
- ✓ systematically analyze practice using quality improvement methods, and implement changes with the goal of practice improvement
 - Begin to discuss and plan quality improvement project for the care of vascular patients
 - Participate in Divisional, Departmental and System-Wide M/M Conferences (see above schedule)
 - Demonstrate knowledge of the principles of continuous quality improvement by applying those principles the design, implementation, and assessment of a quality improvement project
- ✓ incorporate formative evaluation feedback into daily practice
 - Demonstrate an ability to critically analyze the vascular literature in order to practice evidence based medicine
- ✓ locate, appraise, and assimilate evidence from scientific studies related to their patients' health problems
 - Be able to explain decisions regarding treatment and management of surgical patients by citing relevant research, standards, and protocols
 - Know the basic aspects and principles of Evidence Based Surgery, including, as demonstrated by the ability to:
 - i. Ask a focused question.
 - ii. Describe levels of evidence.
 - iii. Describe the evidence based surgery process.
 - iv. Apply evidence based surgery process to clinical decisions
 - Initiate a clinical study in concert with one of the faculty that may be continued with the goal of publication in a peer-reviewed journal (see Overall Goals and Objectives)
- ✓ use information technology to optimize learning:
 - be able to perform a PubMed search and literature review on the surgical treatment of vascular surgical diseases and treatments

- Perform reviews of clinical topics from the literature to be presented at vascular teaching conference
- ✓ critique personal practice outcomes
 - initiate quality improvement project, as noted above
- ✓ demonstrate recognition of the importance of lifelong learning in surgical practice.
 - Demonstrate sound surgical judgment based on superior knowledge, rational thinking, and the surgical literature

Interpersonal and Communication Skills

Fellows must demonstrate interpersonal and communication skills that result in the effective exchange of information and collaboration with patients, their families, and health professionals. Fellows are expected to:

- ✓ communicate effectively with patients, families, and the public, as appropriate, across a broad range of socioeconomic and cultural backgrounds
 - Clearly, accurately, and respectfully communicate with patients and appropriate members of their families in the inpatient and outpatient setting about identified disease processes (including complications), the expected courses, operative findings, and operative procedures.
 - Deal effectively with sensitive issues such as advanced directives, brain death, end-of-life care, and permission for postmortem examination.
 - Understand the special psychological needs of the vascular patient
- ✓ communicate effectively with physicians, other health professionals, and health related agencies. This includes:
 - Clearly, accurately, and succinctly present pertinent information to faculty and other residents regarding newly admitted patients.
 - Keep other care team members aware of progress of all patients and alert them of new problems on the service.
 - Clearly, accurately, and respectfully communicate with nurses and other hospital employees.
 - Clearly and accurately teach medical students about the pathophysiology of common diseases and condition of vascular surgery patients and options for treatment.
 - Develop skills in the formal presentation of medical information at Vascular Care Conference, M & M Conference, and Vascular Journal Club.
 - Develop effective presentation skills, in the form of lectures or discussions of various vascular topics to a variety of audiences including medical students, residents, and physicians at teaching rounds, conferences, grand rounds, or local postgraduate courses.
- ✓ work effectively as a member or leader of a health care team or other professional group.
 - Should be able to coordinate a team in the critical care unit to provide care for the critically ill patient.
 - Demonstrate leadership skills and serve as a role model for junior residents and medical students on your team

- Effectively teach medical students and interns principles and protocols regarding pre- and post- operative management of surgical patients.
- Teach junior residents and medical students about pathophysiology of diseases and conditions
- Instruct junior residents in basic diagnostic and interventional angiographic procedures
- ✓ act in a consultative role to other physicians and health professionals
 - Clearly, accurately, and respectfully communicate with referring and consulting physicians, including residents
- ✓ maintain comprehensive, timely, and legible medical records.
 - Maintain clear, concise accurate, and timely medical records including (but not limited to) admission history and physical examination notes, consultation notes, progress notes, written and verbal orders, operative notes, and discharge summaries.
 - Write electronic orders, notes, and coordinate discharge plans.
- ✓ counsel and educate patients and families of vascular surgery patients and options for treatment.
 - Be capable of communicating information related to outcome of interventions in elderly patients to the elderly patients themselves and to their family members.
 - Develop the ability to discuss complications such as risk of rupture of an aortic aneurysm, the risk of stroke of carotid disease, the risk of amputation following bypass; demonstrate the ability to communicate such information to an elderly patient (or their family) that may have the limitation of cognitive functions or limitations in hearing or understanding.
- ✓ effectively document practice activities.
 - Be responsible for planning the weekly Vascular Teaching conferences.

Professionalism

Fellows must demonstrate a commitment to carrying out professional responsibilities and an adherence to ethical principles. Fellows are expected to:

- ✓ Treat patients, families, and all members of the health care team with compassion, integrity and respect.
 - Act as a role model for medical students and junior residents.
 - Display a consistent degree of professional behavior during patient and colleague interactions.
- ✓ Be responsive to patient needs that supersedes self-interest.
- ✓ Demonstrate respect for patient privacy and autonomy.
 - Demonstrate altruism in patient care and the use of discretion in private and public communications.
 - Describe the implications of the Health Insurance Portability and Accountability Act of 1996 (HIPPA) regulation regarding patient privacy and confidentiality
- ✓ Demonstrate accountability to patients, society and the profession
 - Be properly and professionally attired at all times while engaged in patient care

- ✓ Demonstrate sensitivity and responsiveness to a diverse patient population, including, but not limited to, diversity in gender, age, culture, race, religion, disabilities, and sexual orientation.
- ✓ Demonstrate sensitivity to age, gender, and culture of other health care professionals
- ✓ Demonstrate high standards of ethical behavior
 - Demonstrate honesty with all individuals at all times.
 - Maintain high ethical behavior in all professional activities
- ✓ Demonstrate the ability to establish informed consent with patients, including knowledge of:
 - i. Ethical principles and issues involved.
 - ii. How to communicate risk.
 - iii. Common situations in which religion, gender, race, and age factor into informed consent discussions.
- ✓ Demonstrate commitment to the continuity of patient care by carrying out individual professional responsibilities, including assuring that those responsibilities are fully and accurately conveyed to others involved in the team management of the patient
- ✓ Adhere to the Vanderbilt University Medical Center code of conduct, demeanor, behavior, and attire
- ✓ Remain compliant with all required training designated by the institution and the residency program.
- ✓ Demonstrate understanding of the institutional policy on duty hours and remain compliant with all duty hour regulations.
- ✓ Reliably be present in pre-arranged places of pre-arranged times except when actively engaged in the treatment of a medical or surgical emergency. The fellow must notify the appropriate supervisor if he or she cannot be present.
- ✓ Attend all mandatory conferences.
- ✓ Participate in vascular residency program and faculty reviews.
- ✓ Participate in quarterly and annual program reviews.
- ✓ Adhere to Social Media Policy as outlines by Vanderbilt University House Staff Office/GME.

System-Based Practice

Fellows must demonstrate an awareness of and responsiveness to the larger context and system of health care, as well as the ability to call effectively on other resources in the system to provide optimal health care.

Fellows are expected to:

- ✓ work effectively in various health care delivery settings and systems relevant to vascular surgery
 - Know how types of medical practice and delivery systems differ from one another, including methods of controlling health care costs and allocating resources; be aware of differences between the University and VA Hospitals
 - Demonstrate proficiency in use of electronic medical record systems for all aspects of patient care

- Understand how the healthcare organization affects vascular surgery practice.
- Demonstrate cost effective health care
- ✓ coordinate patient care within the health care system relevant to vascular surgery
 - Appropriately utilize, in a timely and cost efficient manner, ancillary services including social services, discharge planning, physical therapy, nutrition services, pharmacy, and physician extenders on the vascular floor and throughout the hospital
- ✓ incorporate considerations of cost awareness and risk-benefit analysis in patient and/or population based care as appropriate
- ✓ advocate for quality patient care and optimal patient care systems
 - understand principles of vascular surgery and laboratory quality assurance practices
- ✓ work in interprofessional teams to enhance patient safety and improve patient care quality
 - Advocate for quality patient care and assist patients in dealing with system complexities; have the knowledge to partner with health care managers and health care providers to assess, coordinate, and improve health care and know how these activities can affect system performance
 - Communicate with referring physicians and consultants regarding patient care
- ✓ participate in identifying system errors and implementing potential systems solutions.
 - Advocate for quality patient care and assist patients in dealing with system complexities
- ✓ practice high quality, cost effective patient care;
 - Summarize the financial costs, the risks, and benefits of the proposed diagnostic studies and therapeutic procedures
 - Demonstrate an understanding of primary types of purchasers, insurers, providers, and users in the US healthcare system
- ✓ demonstrate a knowledge of risk-benefit analysis
- ✓ demonstrate an understanding of the role of different specialists and other health care professionals in overall patient management

Technical Skills

Fellows will be able to demonstrate technical competency in open and endovascular procedures which include, but are not limited to:

- ✓ Toe amputations.
- ✓ Major leg amputations.
- ✓ Varicose vein surgery.
- ✓ Develop surgical skills, including familiarity with operative exposure, dissection, endarterectomy, suturing, grafting, and thrombectomy.
- ✓ Demonstrate familiarity with basic guide wires, catheters, and other devices used for diagnostic and therapeutic interventional procedures.

- ✓ Develop familiarity and skill with basic fluoroscopic imaging, guidewire management, diagnostic arteriography and venography, angiography suite and interventional device inventory management under the guidance of faculty vascular surgeons.
- ✓ To perform under supervision diagnostic arteriography and venography of the abdomen and lower extremities.
- ✓ To demonstrate expertise with percutaneous puncture and with diagnostic arteriography of the abdomen and lower and upper extremities.
- ✓ Perform routine ultrasound examinations of the arteries and veins of the neck, abdomen, and extremities to evaluate carotid, aorta, vena cava, iliac vessels, and extremity vessels.
- ✓ Perform graft imaging for follow-up of arterial reconstruction.
- ✓ Be competent to independently perform basic duplex and hemodynamic vascular laboratory examinations.
- ✓ Exposure of major arterial vessels for repair and/or reconstruction.
- ✓ Uncomplicated arterial repair or anastomosis.
- ✓ Femoral endarterectomy
- ✓ Exposure and repair of traumatically injured extremity arteries and veins.
- ✓ Exposure of abdominal aorta through transabdominal and retroperitoneal exposure.
- ✓ Spine exposures for orthopedic/neurosurgical procedures.
- ✓ SFA popliteal and tibial PTA and stenting.
- ✓ Femoral to above knee popliteal bypass with vein and prosthetic grafts.
- ✓ Carotid endarterectomy.
- ✓ Sclerotherapy of telangiectasias and varicose veins.
- ✓ Stab avulsion phlebectomy of varicose veins.
- ✓ Catheter based ablation and open surgery of the greater and lesser saphenous vein.
- ✓ Perform under supervision, balloon angioplasty, and stenting of iliac and lower extremity arteries.
- ✓ Perform under supervision thrombin injection of femoral pseudoaneurysms.
- ✓ Become proficient with the use embolic protection devices during endovascular procedures
- ✓ Become proficient with catheter directed thrombolysis procedures. To perform under supervision catheter directed thrombolysis procedures.
- ✓ Obtain angiographic access with minimal assistance and learn how to navigate catheters over the aortic bifurcation and achieve first, second, and tertiary order selective cannulation.
- ✓ Perform carotid balloon angioplasty and stenting with cerebral protection devices.
- ✓ Perform vena cava filter placement.
- ✓ Femoral to below knee popliteal and tibial bypass with vein, prosthetic grafts, and cryopreserved homografts.
- ✓ Open and endovascular repair of abdominal aortic and iliac aneurysms.
- ✓ Open and endovascular repair of popliteal aneurysms.
- ✓ Upper extremity bypass and endovascular procedures, including treatment of failing angio access.
- ✓ Extra-anatomic bypass and anatomic bypass for aortic/iliac obstructive disease.

- ✓ Endovascular repair of thoracic aortic pathology.
- ✓ Exposure and repair of suprarenal, thoracic and thoracoabdominal aortic aneurysms.
- ✓ Perform surgery for thoracic outlet syndrome when indicated.
- ✓ Repair of venous and arterial injuries in the extremities, neck, chest, and abdomen.
- ✓ Perform arch aortogram with selective catheterization of cerebral vessels.
- ✓ Mechanical thrombectomy with and without thrombolysis.
- ✓ Selective catheterization of branch arteries for embolization.
- ✓ Venous thrombolysis and stenting when indicated.
- ✓ Open repair of acute and chronic thoracic and thoracoabdominal aortic dissection.
- ✓ Open and endovascular repair of visceral and renal artery stenosis/occlusions.
- ✓ Complex open repair of suprarenal AAA and re-do aortic aneurysm/occlusive disease procedures.
- ✓ Infected bypass graft removal and reconstruction.
- ✓ Carotid body tumor excision.
- ✓ Upper extremity bypass and direct cervical brachiocephalic reconstruction.
Endovascular treatment of same.
- ✓ Complex extremity, abdominal and visceral embolization procedures.
- ✓ Obtain competence to perform all procedures on the ACGME vascular/endovascular surgery case log forms.

**B. VA ENDOVASCULAR AMBULATORY SERVICE
COMPETENCY BASED GOALS (1st Year)**

Patient Care and Procedural Skills.

The fellow must be able to provide patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health. First-year fellows must be able to:

- ✓ demonstrate manual dexterity in endovascular procedures.
- ✓ develop and execute patient care plans appropriate for their educational level. This includes:
 - recognizing the appropriateness of endovascular techniques to treat a variety of vascular conditions.
 - managing a variety of vascular surgical patients using a systematic approach, including recognizing and assessing symptoms and signs, ordering appropriate tests and procedures, evaluating data, and initiating appropriate actions.
 - recognizing the signs of clinical instability and implementing appropriate plan of action for diagnosis and treatment.
- ✓ develop essential operative skills that can be acquired only through personal experience and education. This includes:
 - performing endovascular reconstructive procedures that reflect an adequate representation of current trends as well as a breadth and balance of experience in the surgical care of vascular diseases.
 - assuming a significant role in the following aspects of patient management: *determination or confirmation of the diagnosis; provision of preoperative care; selection and accomplishment of the appropriate operative procedure; direction of postoperative care; and accomplishment of sufficient follow-up to be acquainted with both the course of the disease and the outcome of its treatment.* Participation only in the operation, without preoperative and postoperative care, is inadequate.
- ✓ have continuity of primary responsibility for patient care including ambulatory care, discharge planning, referral and consultation, and utilization of community resources. This includes:
 - Ambulatory care: Attend weekly vascular ambulatory clinic at the VA Hospital.
 - Inpatient care: Make daily rounds and have full knowledge of medical problems of all patients requiring admission to the hospital.
- ✓ act as teaching assistant for junior residents when operative experience justifies a teaching role.
- ✓ receive education in the special diagnostic techniques for the management of vascular disease. This includes:
 - understanding the methods, indications, and techniques of angiography, CT scanning, MRI and MRA, and other vascular imaging modalities. Fellows should be competent in the assessment of the vascular portion of such images.

- demonstrate ability to interpret hemodynamic and angiographic data and use these data to make decisions regarding medical, interventional cardiac and surgical treatments.
- ✓ receive education in management of the special population of patients presenting with vascular disease.

Medical Knowledge

Fellows must demonstrate knowledge of established and evolving biomedical, clinical, epidemiological and social-behavioral sciences, as well as the application of this knowledge to patient care. First-year fellows:

- ✓ must participate in regular organized clinical teaching, such as ward and clinical conferences noted in PGY6 Goals and Objectives for Vanderbilt University Hospital.

Practice-Based Learning and Improvement

Fellows must demonstrate the ability to investigate and evaluate their care of patients, to appraise and assimilate scientific evidence, and to continuously improve patient care based on constant self-evaluation and life-long learning. Fellows are expected to develop skills and habits to be able to meet the following goals:

- ✓ set learning and improvement goals
 - Pursue a personal program of self-study and professional growth regarding endovascular techniques with guidance from the teaching staff and Program Director
- ✓ systematically analyze practice using quality improvement methods, and implement changes with the goal of practice improvement
 - Participate in Divisional, Departmental and System-Wide M/M Conferences
 - Present service complications and mortalities in the M/M conferences.
- ✓ locate, appraise, and assimilate evidence from scientific studies related to their patients' health problems
 - Be able to explain decisions regarding treatment and management of surgical patients by citing relevant research, standards, and protocols
- ✓ use information technology to optimize learning:
 - Perform reviews of clinical topics from the literature to be presented at vascular teaching conference
- ✓ demonstrate recognition of the importance of lifelong learning in surgical practice.
 - Demonstrate sound surgical judgment based on superior knowledge, rational thinking, and the surgical literature

Interpersonal and Communication Skills

Fellows must demonstrate interpersonal and communication skills that result in the effective exchange of information and collaboration with patients, their families, and health

professionals. Fellows are expected to adhere to policies noted in PGY6 Goals and Objectives for Vanderbilt University Hospital

Professionalism

Fellows must demonstrate a commitment to carrying out professional responsibilities and an adherence to ethical principles. Fellows are expected to adhere to policies noted in PGY6 Goals and Objectives for Vanderbilt University Hospital.

System-Based Practice

Fellows must demonstrate an awareness of and responsiveness to the larger context and system of health care, as well as the ability to call effectively on other resources in the system to provide optimal health care.

Fellows are expected to:

- ✓ work effectively in various health care delivery settings and systems relevant to vascular surgery
 - Know how medical practice and delivery systems in the VA Hospital differ from other systems, including methods of controlling health care costs and allocating resources; be aware of differences between the University and VA Hospitals
 - Demonstrate proficiency in use of VA electronic medical record system for all aspects of patient care
 - Demonstrate cost effective health care
 - Demonstrate efficient and timely evaluation of vascular patients.
- ✓ coordinate patient care within the health care system relevant to vascular surgery
 - Appropriately utilize, in a timely and cost efficient manner, ancillary services at the VA Hospital, including social services, discharge planning, physical therapy, nutrition services, pharmacy, and physician extenders on the vascular floor and throughout the hospital
- ✓ incorporate considerations of cost awareness and risk-benefit analysis in VA-based care as appropriate
- ✓ work in interprofessional teams to enhance patient safety and improve patient care quality
 - Advocate for quality patient care and assist patients in dealing with system complexities; have the knowledge to partner with health care managers and health care providers to assess, coordinate, and improve health care and know how these activities can affect system performance
 - Communicate with referring physicians and consultants regarding patient care
- ✓ participate in identifying system errors and implementing potential systems solutions.
 - Advocate for quality patient care and assist patients in dealing with system complexities
- ✓ practice high quality, cost effective patient care;

- Appropriately utilize, in a timely and cost-efficient manner, ancillary services, including social services, discharge planning, physical therapy, nutrition services, pharmacy, and physician extenders.
- Summarize the financial costs, the risks, and benefits of the proposed diagnostic studies and therapeutic procedures
- Demonstrate an understanding of primary types of purchasers, insurers, providers, and users in the US healthcare system
- ✓ demonstrate a knowledge of risk-benefit analysis
- ✓ demonstrate an understanding of the role of different specialists and other health care professionals in overall patient management

Technical Skills

Fellows will be able to demonstrate technical competency in endovascular procedures which include, but are not limited to:

- ✓ Varicose vein surgery.
- ✓ Demonstrate familiarity with basic guide wires, catheters, and other devices used for diagnostic and therapeutic interventional procedures.
- ✓ Develop familiarity and skill with basic fluoroscopic imaging, guidewire management, diagnostic arteriography and venography, angiography suite and interventional device inventory management under the guidance of faculty vascular surgeons.
- ✓ Develop proficiency with percutaneous arterial and venous cannulation of the upper and lower extremity.
- ✓ Perform under supervision diagnostic arteriography and venography of the abdomen and lower extremities.
- ✓ SFA popliteal and tibial PTA and stenting.
- ✓ Catheter based ablation and open surgery of the greater and lesser saphenous vein.
- ✓ Perform basic and complex angiographic procedures at the VA outpatient cath lab.
- ✓ Perform under supervision, balloon angioplasty, and stenting of iliac and lower extremity arteries.
- ✓ Perform under supervision thrombin injection of femoral pseudoaneurysms.
- ✓ Become proficient with the use embolic protection devices during endovascular procedures
- ✓ Become proficient with catheter directed thrombolysis procedures. To perform under supervision catheter directed thrombolysis procedures.
- ✓ Obtain angiographic access with minimal assistance and learn how to navigate catheters over the aortic bifurcation and achieve first, second, and tertiary order selective cannulation.
- ✓ Perform carotid balloon angioplasty and stenting with cerebral protection devices.
- ✓ Perform vena cava filter placement.
- ✓ Endovascular repair of abdominal aortic and iliac aneurysms.
- ✓ Endovascular repair of popliteal aneurysms.
- ✓ Upper extremity endovascular procedures, including treatment of failing angio access.
- ✓ Endovascular repair of thoracic aortic pathology.

- ✓ Perform arch aortogram with selective catheterization of cerebral vessels.
- ✓ Mechanical thrombectomy with and without thrombolysis.
- ✓ Selective catheterization of branch arteries for embolization.
- ✓ Venous thrombolysis and stenting when indicated.
- ✓ Endovascular repair of visceral and renal artery stenosis/occlusions.
- ✓ Complex extremity, abdominal and visceral embolization procedures.