VASCULAR SURGERY - MCVH and VAMC
PGY-3, PGY-4 and PGY-5

MCVH – There is either a PGY-3 or PGY-4 on the vascular service.
VAMC – There is a PGY-5 on the vascular service.

Medical Knowledge: Demonstrates knowledge about established and evolving biomedical, clinical, and cognate (e.g. epidemiological and social-behavioral) sciences; applies this knowledge to patient care; demonstrates an investigatory and analytic thinking approach to clinical situations; and demonstrates a commitment to lifelong learning.

Knowledge:
- Mastery of surgical pathophysiology, anatomy and physiology of the vascular system, including congenital and acquired diseases.
- Demonstrate ability to formulate and implement a diagnostic and treatment plan for diseases of the vascular patient with arterial, venous, and lymphatic disease.
- Demonstrate familiarity with surgical literature and extensive areas of basic surgical disease in vascular surgery.
- Must relate basic medical knowledge to patient care. Residents must critically evaluate and demonstrate knowledge of pertinent scientific information.
- Analyze and present complications at weekly Death and Complication Conference
- Exhibit knowledge base sufficient to teach junior level residents and students on the service.
- Demonstrate surgical competence by the use of significant surgical knowledge and advanced skill to achieve a performance that produces appropriate and anticipated outcomes.
- Exhibit knowledge and principles of non-invasive laboratory diagnosis.
- Discuss basic principles of Doppler Ultrasound in preparation for performing bedside arterial and venous Doppler testing.
- Demonstrate the capacity to integrate surgical continuity of care principles into the total care plan for all surgical patients.
- Through leadership and teaching, demonstrate understanding of the significance of the natural history of vascular disease, the consequence of surgical care (both positive and negative), and the influence of continuity of care upon surgical outcomes.
- Exhibit the capability to integrate surgical continuity of care principles into the total care plan for all surgical patients.
- Incorporate the knowledge of ethical, legal, economic, and/or social factors into the activities of the entire surgical team for all components of surgical care.
- Demonstrate an understanding to manage the infected aortic grafts.
- Understand management of DVT and indications for IVC interruption.

Patient Care: Demonstrate patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health.

Compassionate Patient Care:
- Demonstrates caring and respectful behaviors when interacting with patients and/or their families.
- Incorporates the patient preferences in making decisions about diagnostic and therapeutic interventions.
- Develops and executes patient care plans appropriate for chief resident.

Appropriate Patient Care:
- Gathers essential and accurate information about patients.
- Evaluates patients with complex vascular indications and presents a differential diagnosis.
- Compare laparoscopic versus open procedures for each case.
- Makes informed decisions about diagnostic and therapeutic interventions based on patient information and preferences, up-to-date scientific evidence, and clinical judgment.
- Develops and carries out patient management plans.
• Demonstrate knowledge of the indications and contraindications for various medications used in the preparation and performance of procedures.
• Coordinate the overall care of patients for the team of residents and students.

Effective Treatment and Health Promotion:
• Performs competently all essential medical and invasive procedures.
• Provides health care services aimed at preventing health problems and maintaining health
• Works with health care professionals, including those from other disciplines, to provide Patient-focused care.

Technical Skills in Patient Care:
• Demonstrates knowledge, psychomotor skills and judgment related to his/her role in the performance of operative surgical procedures.
• Demonstrates manual dexterity appropriate for PGY 3-5.
• Arrives in the OR prepared for the cognitive components of his/her role in individual operative surgical procedures.
• Demonstrates the ability to proceed through various steps of operative procedures in a manner that is consistent with the flow of the operation.
• Demonstrates the ability to make appropriate and timely decisions with respect to the operative procedure.
• Demonstrate competence in the most complex vascular cases (see below)
• Demonstrates an understanding of the benefits and limitations of operative surgical techniques.
• Assist attending staff with complex surgical procedures.
• Evaluate patients for arterial, venous, and lymphatic disorders.
• Perform the preoperative assessment and postoperative care of patients undergoing major vascular surgical procedures.
• Manage complications of common major vascular procedures (carotid endarterectomy, aortic reconstruction, lower extremity bypass, dialysis access thrombosis).

Practice-Based Learning and Improvement: Investigates and evaluates patient care practices, appraises and assimilates scientific evidence, and improves his/her patient care practices.

Investigates And Evaluates Patient Care Practices:
• Analyzes practice experience using a systematic methodology.
• Obtains and uses information about their population of patients and the larger population from which patients are drawn.

Appraises and Assimilates Scientific Evidence Relevant To Patient Care:
• Locates, appraises, and assimilates evidence from scientific studies related to their Patients' health problems.
• Applies knowledge of study designs and statistical methods to the appraisal of clinical studies and other information on diagnostic and therapeutic effectiveness.
• Performs practice-based improvement activities using a systematic methodology.
• Uses information technology to manage information, access on-line medical information; and support his/her own education.
• Facilitates the learning of junior level residents.
• Exhibit and recognize the importance of lifelong learning in surgical practice.

Improves Patient Care Practices:
• Demonstrates the ability to analyze personal practice outcomes to improve patient care.
• Performs practice-based improvement activities using a systematic methodology.
• Uses information technology to manage information, access on-line medical information; and support his/her own education.
Facilitates the learning of junior level residents.

**Interpersonal and Communication Skills:** Demonstrate interpersonal and communication skills that result in effective information exchange and collaboration with patients, their families, and other health professionals.

- Demonstrates skill and sensitivity for appropriate counseling and educating patients and their families in a variety of clinical situations.
- Creates and sustains therapeutic and ethically sound relationships with patients and families.
- Works effectively with others as a leader of the health care team and/or other professional groups.
- Effectively and promptly documents practice activities.
- Presents all patients and conference material in a concise, organized, chronologic, logical and knowledgeable manner.
- Utilizes input from all collaborative interactions with all personnel contributing to the surgical patient care.
- Exhibits surgical team leadership.
- Contribute via effective teaching and example to the educational efforts of the surgical residency.
- Evaluates the performance and competence of all members of the surgical residency team.

**Professionalism:** Demonstrate a commitment to carrying out professional responsibilities; adhere to ethical principles, and sensitivity to a diverse patient population.

- Demonstrates respect, compassion and integrity; a responsiveness to the needs of patients and society that supercedes self-interest; accountability to patients, society and the profession; and a commitment to excellence and on-going professional development.
- Demonstrates a commitment to ethical principles pertaining to provision or withholding of clinical care, confidentiality of patient information, informed consent, and business practices.
- Demonstrates sensitivity and responsiveness to patients' culture, age, gender, and disabilities.
- Exhibits professionalism through timely completion of required administrative responsibilities (evaluations, recording hours, chart documentation, medical record dictations, etc.).
- Maintain positive relationships.
- Demonstrate accountability for actions and decisions.

**Systems-Based Practice:** Demonstrates an awareness of and responsiveness to the larger context and system of health care and effectively calls on system resources to provide care that is of optimal value.

**Awareness and Responsiveness to the Health Care System:**

- Understands how patient care and other professional practices affect other health care professionals, the health care organization, and the larger society. Understand how these elements of the system affect their own practice.
- Knows how types of medical practice and delivery systems differ from one another, including methods and controlling health care costs and allocating resources.

**Utilization of System Resources:**

- Practices cost-effective health care and resource allocation that does not compromise quality of care.
- Advocates for quality patient care and assist patients in dealing with system complexities.
- Partner with health care managers and health care provides to assess, coordinate, and improve health care and understands how these activities can affect system performance.

**Procedure Benchmarks:** Residents at the PGY3 through PGY5 must be able to perform the procedures listed, in most cases, independently with little supervision.

**PGY 4/5 Benchmarks**
- Demonstrate understanding of exposure of thoracic great vessels and indications for subclavian to revascularization.
- Demonstrate the appropriate incisions and exposure of: abdominal aorta and its branches, portal venous system, peripheral arterial system, extracranial carotid system, arteriovenous fistula.
- Obtain vascular control of major vessels, including: ruptured abdominal aortic aneurysm, inferior vena cava, popliteal artery, internal carotid artery, subclavian artery, vertebral artery.
- Demonstrate knowledge of pre-op, intra-op, and post-op management of ruptured AAA.
- Exhibit knowledge and understanding of exposure of SMA, Celiac, and Renal arteries.
- Illustrate the operative exposure of major vessels.
- Demonstrate ability to manage graft and suture materials.
- Exhibit ability to obtain vascular control of Aorta and Vena Cava vessels.
- Participate in endarterectomy and bypass grafting.
- Discuss and demonstrate the role of adjunctive measures in operative procedures including arteriography, angioscopy, and thrombolytic therapy.

**PGY3**

- Demonstrate skill in basic vascular surgical techniques, including: suturing anastomoses, balloon catheter thrombectomy, handling of autogenous vein and prosthetic graft material, closure of vascular incisions (in situ bypass, femoral incisions, and carotid surgery).
- Participate in surgery for varicose vein disease, including: ligation and stripping, microphlebectomy, management of venous ulcers, management of superficial thrombophlebitis.
- Participate in amputations with specific attention to: selection of level required for healing, indications for primary amputation, technique of digit, metatarsal, and mid-foot amputations, technique of below- and above-knee amputation.
- Demonstrate proficiency in hemoaccess procedures for dialysis.
- Participate in thromboendarterectomy and thrombectomy procedures.
- Evaluate indications for and management of patients undergoing sympathectomy procedures.

**Assessment:** Residents will be assessed throughout the program. The results will be utilized to improve resident performance. Residents will be evaluated on competence in patient care, medical knowledge, practice-based learning and improvement, interpersonal and communication skills, professionalism, and systems based practices. The process of using assessment results to achieve progressive improvement in residents’ competence and performance, and direct experience for progressive responsibilities for patient management.

**1) PATIENT CARE**

(a) Weekly basic science conference
(b) New Innovations evaluations by Faculty (including mid-rotation feedback sessions)
(c) Weekly attending rounds

**2) MEDICAL KNOWLEDGE**

(a) Annual ABSITE
(b) Written evaluation by faculty (including mid-rotation feedback sessions)
(c) Faculty evaluation weekly vascular conference
(d) Mock oral exam
(e) Weekly attending rounds

**3) PRACTICE-BASED LEARNING**

(a) Faculty evaluation
(b) Weekly D and C
(c) Weekly attending rounds

**4) PROFESSIONALISM**

(a) Faculty critique of weekly Vascular conference
(b) 360 evaluations
c) By Faculty (including mid-rotation feedback sessions)
d) By other resident staff members

5) INTERPERSONAL RELATIONSHIPS & COMMUNICATION
   a) 360 evaluations
   b) By Faculty (including mid-rotation feedback sessions)

6) SYSTEMS-BASED PRACTICE
   a) Combined Vascular/Radiology/conference
   b) Faculty evaluation
   c) Department of Surgery D and C
Medical Knowledge: Demonstrates knowledge about established and evolving biomedical, clinical, and cognate (e.g. epidemiological and social-behavioral) sciences; applies this knowledge to patient care; demonstrates an investigatory and analytic thinking approach to clinical situations; and demonstrates a commitment to lifelong learning.

Knowledge:
- Basic understanding of surgical pathophysiology, anatomy and physiology of the vascular system, including congenital and acquired diseases.
- Begin to formulate and implement a diagnostic and treatment plan for diseases of the vascular patient with arterial, venous, and lymphatic disease.
- Demonstrate familiarity with surgical literature and extensive areas of basic surgical disease in vascular surgery.
- Must relate basic medical knowledge to patient care. Residents must critically evaluate and demonstrate knowledge of pertinent scientific information.
- Exhibit knowledge base sufficient to teach students on the service.
- Exhibit knowledge and principles of non-invasive laboratory diagnosis.
- Discuss basic principles of Doppler Ultrasound in preparation for performing bedside arterial and venous Doppler testing.
- Demonstrate the capacity to integrate surgical continuity of care principles into the total care plan for all surgical patients.
- Through leadership and teaching, demonstrate understanding of the significance of the natural history of vascular disease, the consequence of surgical care (both positive and negative), and the influence of continuity of care upon surgical outcomes.
- Exhibit the capability to integrate surgical continuity of care principles into the total care plan for all surgical patients.
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- Gathers essential and accurate information about patients.
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- Compare laparoscopic versus open procedures for each case.
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- Develops and carries out patient management plans.
- Demonstrate knowledge of the indications and contraindications for various medications used in the preparation and performance of procedures.

Effective Treatment and Health Promotion:
- Performs competently all essential medical and invasive procedures appropriate for PGY.
- Provides health care services aimed at preventing health problems and maintaining health.
- Works with health care professionals, including those from other disciplines, to provide Patient-focused care.
Technical Skills in Patient Care:

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- Demonstrates manual dexterity appropriate for PGY 1
- Arrives in the OR prepared for the cognitive components of his/her role in individual operative surgical procedures.
- Demonstrates the ability to proceed through various steps of operative procedures in a manner that is consistent with the flow of the operation.
- Demonstrates the ability to make appropriate and timely decisions with respect to the operative procedure.
- Begins to understand of the benefits and limitations of operative surgical techniques.
- Assist attending staff with complex surgical procedures.

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Procedure Benchmarks: Residents at the PGY 1 must be able to perform the procedures listed, in most cases, independently with little supervision.

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- Participate in surgery for varicose vein disease, including: ligation and stripping, microphlebectomy, management of venous ulcers, management of superficial thrombophlebitis.
- Participate in amputations with specific attention to: selection of level required for healing, indications for primary amputation, technique of digit, metatarsal, and mid-foot amputations, technique of below- and above-knee amputation.
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