



DEPARTMENT OF SURGERY

SECTION OF VASCULAR SURGERY

VASCULAR SURGERY (SVA A & SVA B)

Cardiovascular Center

House Officer I
House Officer III
House Officer V

Curriculum/Rotation Goals and Objectives for
Surgery Residents

Vascular Surgery Service

House Officer I

Goal: The common goal of HO I rotation on the SVA A and SVA B services is to develop necessary knowledge, skills and attitudes to care for patients with common and uncommon vascular pathologies, including cerebrovascular disease, abdominal aortic aneurysmal disease, upper extremity disease, and peripheral arterial disease. A knowledge base and understanding of vascular disease factors and post-operative management of affected patients will be developed.

Learning Objectives:

Patient Care:

By the end of the Vascular Surgery rotation, the HO I resident will be able to:

1. Provide patient care that is compassionate, appropriate, and effective for the treatment of vascular surgery patients.
2. Provide initial evaluation and management (under appropriate supervision) of patients with:
 - a. cerebrovascular occlusive disease
 - b. aortic disease
 - c. venous disease
 - d. peripheral arterial disease
 - e. dialysis access
3. Report on the vascular disease processes seen in clinic and be able to identify the primary problem, initiate the work up, and begin on a clinical plan for treatment
4. Interpret diagnostic vascular studies and CT angiograms to evaluate the vascular surgical problem
5. Initiate all applicable orders for a specific patient once admitted to the vascular surgery service
6. Perform as surgeon junior in certain venous insufficiency cases
7. Perform as first assistant in carotid endarterectomies, abdominal aortic aneurysm repairs, amputations, and peripheral vascular bypass cases
8. Recognize and problem solve common post-operative issues in patients undergoing vascular surgical procedures (such as hypotension, low urine output, electrolyte imbalances, post-operative fever, and surgical site infections)
9. Take overnight call and be able to triage common problems in postoperative patients and inform senior residents and faculty of important changes
10. Collaborate with health care professionals, including those from other disciplines, to provide patient-focused care, with a particular attention to the multidisciplinary care of the vascular surgery patient which includes interactions with medical endocrinology, pathology, interventional radiology, vascular medicine, nuclear medicine, cardiology, nephrology, physical medicine and rehabilitation, occupational and physical therapy, and mid-level providers from the clinic and inpatient services

Medical Knowledge:

By the end of the Vascular Surgery rotation, the HO I resident will be able to:

1. Institute therapeutic interventions and perform procedures under supervision for vascular surgery
2. Discuss vascular disease processes seen in clinic and be able to identify the problem, initiate the work up and begin on a clinical plan for treatment

Systems-Based Practice:

By the end of the Vascular Surgery rotation, the HO I resident will be able to:

1. Manage effectively in multiple, diverse, complex systems of care to provide effective treatment, consultation and advocacy for children, adolescents, and families
2. Exhibit progressive improvement in their level of knowledge and skill throughout the rotation
3. Explain the role of systems in delivering optimal health care, including how "system problems" contribute to quality problems
4. Explain how their patient care and other professional practices affect other health care professionals, the health care organization, and the larger society and how these elements of the system affect their own practice
5. Explain how types of medical practice and delivery systems differ from one another, including methods of controlling health care costs and allocating resources
6. Practice cost-effective health care and resource allocation that does not compromise quality of care
7. Advocate for quality patient care and assist patients in dealing with system complexities
8. Collaborate with health care managers and health care providers to assess, coordinate, and improve health care and know how these activities can affect system performance

Practice-Based Learning and Improvement:

By the end of the Vascular Surgery rotation, the HO I resident will be able to:

1. Analyze patient care experience and perform practice-based improvement activities using a systematic methodology (discussed in QI curriculum)
2. Locate, appraise, and assimilate evidence from scientific studies related to their patients' health problems
3. Conduct an effective literature search about a given endocrine surgery topic
4. Describe/design a systematic approach to evaluate the results of one's own practice
5. Use information technology to manage information, access on-line medical information; and support their own education

Professionalism:

By the end of the Vascular Surgery rotation, the HO I resident will be able to:

1. Demonstrate respect, compassion, and integrity; a responsiveness to the needs of patients and society that supersedes self-interest; accountability to patients, society, and the profession; and a commitment to excellence and on-going professional development
2. Demonstrate appropriate sensitivity to the vascular surgery patient population, and understand how their needs may be different from other patients
3. Recognize the importance of timely record keeping and its impact on the quality of vascular surgery care
4. Demonstrate a commitment to ethical principles pertaining to provision or withholding of clinical care, confidentiality of patient information, informed consent, and business practices
5. Demonstrate sensitivity and responsiveness to patients' culture, age, gender, and disabilities

Interpersonal and Communication Skills:

By the end of the Vascular Surgery rotation, the HO I resident will be able to:

1. Create and sustain a therapeutic and ethically sound relationship with patients
2. Demonstrate and employ effective listening skills and elicit and provide information using effective nonverbal, explanatory, questioning, and writing skills
3. Work effectively with others as a member or leader of a health care team or other professional group
4. Interview and evaluate the patient, especially the newly-diagnosed vascular surgery patient or the vascular surgery patient with an immediate life-threatening illness

Vascular Surgery Service

House Officer III

Goal: The common goal of the HO III rotation on the SVA A and SVA B services is to develop necessary knowledge, skills and attitudes to care for patients with common and uncommon vascular pathologies, including cerebrovascular disease, abdominal aortic aneurysmal disease, upper extremity disease, and peripheral arterial disease. A knowledge base and understanding of vascular disease factors and post-operative management of affected patients will be developed. The HO III rotation will provide important experience in emergency room consultation for acute vascular surgery problems and service leadership without to supplement the chief resident/fellow role. There will also be increased participation in mid-level open and endovascular procedures.

Learning Objectives:

Patient Care:

By the end of the Vascular Surgery rotation, the HO III resident will be able to:

1. Provide patient care that is compassionate, appropriate, and effective for the treatment of vascular surgery patients and that is effective for managing and developing an understanding for Vascular Surgery
2. Provide initial evaluation and management of acute Vascular Surgery issues
3. Manage the inpatient consultation service, serving as the initial contact for new consultations, assess, evaluate, and staff patients on the consult list (new and follow up) with the chief resident/attending, and follow up on existing consults
4. Demonstrate specific, more advanced technical skills and proficiency in performance of mid-level open and endovascular operations:
 - a. Carotid endarterectomy
 - b. Femoral-popliteal bypass
 - c. Straightforward EVAR
 - d. Iliac endovascular intervention
5. Demonstrate facility in the use of Castro needle drivers, vascular clamps, fine suture, vascular patches and prosthetics
6. Participate in increasingly complex procedures under supervision
7. Use fluoroscopy, ultrasound and other intraoperative adjuncts safely and effectively
8. Manage hospitalized patients on the inpatient service in the absence of the chief resident

Medical Knowledge:

By the end of the Vascular Surgery rotation, the HO III resident will be able to:

1. Demonstrate improvement in an adequate base of knowledge in the areas of clinical science relevant to Vascular Surgery
2. Institute therapeutic interventions and perform procedures under supervision for vascular surgery
3. Describe medical, operative and interventional therapies for vascular disease to include:
 - a. Aneurysmal Disease
 - b. Peripheral Vascular Disease
 - c. Renovascular Disease
 - d. Visceral Ischemia
 - e. Cerebrovascular Disease

<ul style="list-style-type: none"> f. Thoracic Outlet Syndrome g. Diabetic Foot Problems h. Complications of Vascular Therapy i. Vascular Trauma j. Venous Thromboembolic Disease k. Chronic Venous Insufficiency l. Lymphatic Disease m. Extremity Amputation n. Arteriovenous Fistulae and Malformations
<ul style="list-style-type: none"> 4. Outline foundational knowledge for: <ul style="list-style-type: none"> a. Vascular access techniques b. Vascular anatomy and physiology c. Vascular interventions d. Therapeutic options for the treatment of occlusive and non-occlusive peripheral vascular disease

Systems-Based Practice:

By the end of the Vascular Surgery rotation, the HO III resident will be able to:

1. Explain health care organization affects the surgical practice for surgical patients
2. Coordinate quality health care including discharge planning, social services, rehabilitation, and long term care
3. Discuss the issues surrounding access to health care and the impact of the Affordable Care Act
4. Serve as a patient advocate for quality health care
5. Explain how his/her patient care practices affect other health care providers, organizations and society
6. Practice cost effective health care and resource allocation
7. Follow established practices, procedures, and policies of the Department of Surgery, Section of Vascular Surgery at Cardiovascular Center
8. Maintain complete and accurate patient care related documentation and protect information as determined by HIPAA regulations

Practice-Based Learning and Improvement:

By the end of the Vascular Surgery rotation, the HO III resident will be able to:

1. Initiate self-directed and independent learning to keep abreast of current information and practices relevant to managing Vascular Surgery patients
2. Exhibit progressive improvement in their level of knowledge and skill throughout their rotation
3. Demonstrate the skills of self-education and life-long learning to actively set clear learning goals, pursue them, and apply the knowledge gained to the practice of vascular surgery
4. Investigate and evaluate their own patient care practices and take appropriate steps to address any problems identified
5. Define the limits of his or her personal knowledge and experience and seek help and advice when needed
6. Appropriately receive and respond to constructive criticism
7. Utilize current literature resources to obtain up-to-date information in the care of vascular patients and practice evidence-based medicine
8. Critically review scientific and surgical literature in order to evaluate new data in a meaningful way
9. Reflect on the social and community contexts of health care and effectively respond to the factors that influence patients at the University of Michigan Cardiovascular Center (sociocultural, familial, psychological, legal, economic, environmental, political, and spiritual)
10. Assume responsibility for addressing gaps in his/her knowledge and use information technology and simulation to support his/her learning
11. Participate in the teaching and organization of the weekly Residents Core Curriculum
12. Participate in daily rounds, monthly Vascular M&M conference and other vascular surgery resident

teaching conferences and utilize information to further improve patient care
13. Participate in student teaching

Professionalism:

By the end of the Vascular Surgery rotation, the HO III resident will be able to:

1. Demonstrate caring and respectful compassion for patients, families and other members of the health care team
2. Demonstrate a commitment to the discipline of vascular surgery, patients, and society
3. Act with honor and integrity in professional and personal life
4. Model good leadership in interactions with others and demonstrate a professional attitude
5. Demonstrate a mature and professional approach to ethical issues commonly encountered in a medical center
6. Understand issues related to consent

Interpersonal and Communication Skills:

By the end of the Vascular Surgery rotation, the HO III resident will be able to:

1. Listen and communicate clearly with patients, families, and health care team members using effective verbal, non-verbal, and writing skills
2. Collaborate effectively as a member of the health care delivery team
3. Develop and sustain therapeutic relationships with patients and others
4. Respect patients' right to privacy
5. Understand the special psychosocial needs of the vascular patient at the University of Michigan Cardiovascular Center

Vascular Surgery Service

House Officer V

Goal: The common goal of the HO V rotation on the SVA A and SVA B services is to develop necessary knowledge, skills and attitudes to care for patients with common and uncommon vascular pathologies, including cerebrovascular disease, abdominal aortic aneurysmal disease, upper extremity disease, and peripheral arterial disease. The HO V rotation will provide exposure to the care of the full breadth of vascular surgery via inpatient and emergency room consultation, outpatient clinic exposure, management of the inpatient service, and exposure to complex open and endovascular procedures. The HO V resident will understand and develop specific and more advanced technical skills and demonstrate proficiency in performance of standard open and endovascular operations (open infrarenal aneurysm repair, EVAR, AFB, femoropopliteal bypass, basic endovascular treatment of lower extremity occlusive disease, carotid endarterectomy, visceral revascularization). The HO V resident will further enhance their management skills for these patients and their complications in the peri-operative period as well as during long-term follow up.

Learning Objectives:

Patient Care:

By the end of the Vascular Surgery rotation, the HO V resident will be able to:

1. Provide patient care that is compassionate, appropriate and effective for managing and developing an understanding for vascular surgery
2. Provide initial evaluation and management of acute vascular surgery issues
3. Manage the inpatient service and directing daily patient care at the Cardiovascular Center under the supervision of the attending surgeons
4. Demonstrate facility in the use of most open and common endovascular instruments and equipment
5. Participate in most vascular procedures under supervision
6. Analyze imaging including 3D reconstructions and interpretation of standard ultrasound studies
7. Manage the inpatient team including the mid-level resident, interns, physician assistants, and students

Medical Knowledge:

By the end of the Vascular Surgery rotation, the HO V resident will be able to:

1. Demonstrate an advanced base of knowledge in the areas of clinical science relevant to Vascular Surgery
2. Institute therapeutic interventions and perform procedures under supervision for vascular surgery
3. The Chief year general surgery resident will demonstrate advanced knowledge of the medical, operative and interventional therapies for vascular disease to include:
 - a. Aneurysmal Disease
 - b. Peripheral Vascular Disease
 - c. Renovascular Disease
 - d. Visceral Ischemia
 - e. Cerebrovascular Disease
 - f. Thoracic Outlet Syndrome
 - g. Diabetic Foot Problems

<ul style="list-style-type: none"> h. Complications of Vascular Therapy i. Vascular Trauma j. Venous Thromboembolic Disease k. Chronic Venous Insufficiency l. Lymphatic Disease m. Extremity Amputation n. Arteriovenous Fistulae and Malformations
<p>4. In addition, the resident will demonstrate basic knowledge of:</p> <ul style="list-style-type: none"> a. Vascular access techniques b. Vascular anatomy and physiology c. Vascular interventions d. Therapeutic options for the treatment of occlusive and non-occlusive peripheral vascular disease e. Details of the technical performance of surgical procedures for vascular disease and vascular access f. Appropriate medical, operative, or interventional procedure for specific vascular indication

Systems-Based Practice:

By the end of the Vascular Surgery rotation, the HO V resident will be able to:

1. Explain how the health care organization affects the surgical practice for surgical patients
2. Coordinate quality health care including discharge planning, social services, rehabilitation, and long term care
3. Discuss the issues surrounding access to health care and the impact of the Affordable Care Act
4. Serve as a patient advocate for quality health care
5. Discuss how his/her patient care practices affect other health care providers, organizations and society
6. Practice cost effective health care and resource allocation
7. Follow established practices, procedures, and policies of the Department of Surgery, Section of Vascular Surgery at Cardiovascular Center
8. Maintain complete and accurate patient care related documentation and protect information as determined by HIPAA regulations

Practice-Based Learning and Improvement:

By the end of the Vascular Surgery rotation, the HO V resident will be able to:

1. Initiate self-directed and independent learning to keep abreast of current information and practices relevant to managing Vascular Surgery patients
2. Exhibit progressive improvement in their level of knowledge and skill throughout their rotation
3. Demonstrate the skills of self-education and life-long learning to actively set clear learning goals, pursue them, and apply the knowledge gained to the practice of vascular surgery
4. Investigate and evaluate their own patient care practices and take appropriate steps to address any problems identified
5. Define the limits of his or her personal knowledge and experience and seek help and advice when needed
6. Appropriately receive and respond to constructive criticism
7. Utilize current literature resources to obtain up-to-date information in the care of vascular patients and practice evidence-based medicine
8. Critically review scientific and surgical literature in order to evaluate new data in a meaningful way
9. Reflect on the social and community contexts of health care and effectively respond to the factors that influence patients at the University of Michigan Cardiovascular Center (sociocultural, familial, psychological, legal, economic, environmental, political, and spiritual)
10. Assume responsibility for addressing gaps in his/her knowledge and use information technology and

simulation to support his/her learning
11. Participate in the teaching and organization of the weekly Residents Core Curriculum
12. Participate in daily rounds, monthly Vascular M&M conference and other vascular surgery resident teaching conferences and utilize information to further improve patient care
13. Participate in student teaching

Professionalism:

By the end of the Vascular Surgery rotation, the HO V resident will be able to:

1. Demonstrate accountability to the profession and altruism in interactions with patients, families, colleagues, faculty, and staff
2. Demonstrate caring and respectful compassion for patients, families and other members of the health care team
3. Demonstrate a commitment to the discipline of vascular surgery, patients, and society
4. Act with honor and integrity in professional and personal life
5. Serve as a model of good leadership in interactions with others and demonstrate a professional attitude
6. Demonstrate a mature and professional approach to ethical issues commonly encountered in a medical center and act accordingly
7. Discuss issues related to consent and be able to obtain informed consent for most vascular surgery procedures

Interpersonal and Communication Skills:

By the end of the Vascular Surgery rotation, the HO V resident will be able to:

1. Listen and communicate clearly with patients, families, and health care team members using effective verbal, non-verbal, and writing skills
2. Collaborate effectively as a member of the health care delivery team
3. Develop and sustain therapeutic relationships with patients and others
4. Respect patients' right to privacy and protect that right
5. Understand and respect the special psychosocial needs of the vascular patient at the University of Michigan Cardiovascular Center
6. Listen and communicate clearly with patients, families, and health care team members using effective verbal, non-verbal, and writing skills