Welcome

Here is some helpful information for you as you rotate through Vascular Diseases and Surgery. We anticipate this to be a pleasant learning experience. If there is anything we can do to help you or if we can answer any questions, please don’t hesitate to ask. We hope your experience is both enjoyable and challenging.

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<th>General Information</th>
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<tr>
<td><strong>Division Office</strong></td>
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<tr>
<td>701 Prior Hall</td>
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<tr>
<td>376 West 10th Avenue</td>
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<tr>
<td>Columbus, Ohio 43210</td>
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<tr>
<td><strong>Main Phone</strong></td>
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<tr>
<td>(614) 293-8536</td>
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<tr>
<td><strong>Main Fax</strong></td>
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<td>(614) 293-8902</td>
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<tr>
<th><strong>Clinic Addresses</strong></th>
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<tr>
<td><strong>Arterial Clinic:</strong></td>
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<tr>
<td>Outpatient Care @ Upper Arlington</td>
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<tr>
<td>1800 Zolliger Rd, 2nd Floor</td>
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<tr>
<td>Columbus, Ohio 43221</td>
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<tr>
<td>Telephone: (614) 293-8536</td>
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<td>Fax: (614) 293-8902</td>
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| **Inmate/Interpreter Clinic:** |
| Ross Heart Hospital |
| Ambulatory Care Center (ACC) |
| 452 W. 10th Avenue, First Floor |
| Columbus, Ohio 43210 |
| Telephone: (614) 293-8536 |
| Fax: (614) 293-8902 |

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<th><strong>Outlying Clinic Addresses</strong></th>
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<tr>
<td><strong>Samaritan Regional Hospital</strong></td>
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<tr>
<td>1025 Center Street</td>
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<tr>
<td>Ashland, Ohio 44805</td>
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<tr>
<td>Telephone: (419) 289-0491</td>
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<td>Fax: (419) 207-2604</td>
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| **Varicose Vein/Venous Clinic:** |
| Vein Solutions |
| Outpatient Care @ Upper Arlington |
| 1800 Zolliger Rd, 1st Floor |
| Columbus, Ohio 43221 |
| Telephone: (614) 366-8346 |
| Fax: (614) 366-6360 |

| **Limb Salvage & Vascular Intervention Clinic:** |
| University Hospital East |
| 181 Taylor Ave, First Floor ACC |
| Columbus, Ohio 43205 |
| Telephone: (614) 293-8536 |
| Fax: (614) 293-8902 |

| **Samaritan Regional Hospital** |
| Mary Rutan Hospital |
| 205 Palmer Avenue |
| Bellefontaine, Ohio 43311 |
| Telephone: (937) 592-4015 |
Fayette Memorial Hospital
1430 Columbus Avenue
Washington Court House, Ohio 43160
Telephone: (740) 333-2755
Fax: (740) 333-2997

Memorial Hospital of Union County
HVC @ Marysville
500 London Avenue, Suite 0
Marysville, Ohio 43040
Telephone: (937) 642-5490
Fax: (937) 578-2800

Outlying Clinic Addresses continued

Wyandot Memorial Hospital
885 N. Sandusky Avenue
Upper Sanducy, Ohio 43351
Telephone: (419) 294-5887
Fax: (419) 294-6777

Physicians

Patrick Vaccaro, M.D., M.B.A., Chief
Pager: (614) 346-1835
Phone: (614) 293-5130
Clinic Days: Tuesday at Upper Arlington, 8 a.m. – 4 p.m.
Wednesday at Vein Solutions, 8 a.m. – 4 p.m.
Friday at Vein Solutions, 8 a.m. – 4 p.m.

Hosam F. El Sayed, M.D.
Pager: (614) 691-7718
Phone: (614) 293-5544
Clinic Days: Monday at Upper Arlington 9:30 a.m.- 4 p.m.
Tuesday at Vein Solutions, 8 a.m. – 4 p.m.
2nd and 4th Thursday OSU HVC @ Marysville 8 a.m. – 4 p.m.

Michael Go, M.D.
Pager: (614) 346-3027
Phone: (614) 366-1795
Clinic Days: Monday at UHC ACC, 9:30 a.m. – 4 p.m.
Tuesday at UHE Limb Salvage Clinic, 12 p.m. – 4 p.m.
1st Wednesday at Fayette Memorial Hospital, 8 a.m. – 4 p.m. Friday at
Friday @ UHE Vascular Interventional Clinic, 1 p.m. - 4 p.m.
Mounir Haurani, M.D.
Pager: (614) 346-7351
Phone: (614) 293-5134
Clinic Days: Monday at Vein Solutions, 9:30 a.m. – 4 p.m.
1st Wednesday at Upper Sandusky, 9 a.m. – 12 p.m. Odd months
2nd & 4th Wednesday at Bellefontaine, 8 a.m. – 4 p.m.
Friday at Upper Arlington, 8 a.m. – 4 p.m.

Cameron Rink, Ph.D.
Phone: (614) 293-4722

Bhagwan Satiani, M.D.
Pager: (614) 293-PAGE, ext 0716
Phone: (614) 293-5137

Jean Starr, M.D.
Pager: (614) 293-PAGE, ext 1870
Phone: (614) 293-5807
Clinic Days: 1st Wednesday at Upper Sandusky, 9 a.m. – 12 p.m.
2nd & 4th Wednesday at Ashland Clinic, 11 a.m. – 4 p.m.
(may have angiograms scheduled prior to clinic)
Thursday at Upper Arlington, 8:30 a.m. – 4 p.m.

Erin Zahorujko, P.A. (Dr. Go University Hospital East)
M, T, Th, F 6am-6pm
Pager: (614) 346-1164
Phone: (614) 257-3275

Vascular Fellows
Sr. Ghaleb Darwazek, M.D.
Phone: (614) 293-5473
Pager: (614) 730-6916

Jr. Daisy Chou, M.D.
Phone: (614) 293-8525
Pager: (614) 730-6623

Vascular NP's:
6am-2:30pm Deanna Kunkel, CNP
(614)366-7343 Spectra 366-1888
12pm-8:30pm Luftie "Tia" Cela, CNP
(614)293-6246 Spectra 366-0022

Clinical Case Manager for PVS, 5th Floor
(calls prior to post op visit)
Becky Skaggs, RN
Phone: (614) 366-4972
Clinical Case Manager for Office
(calls after 1st post op visit)
Jessica Rine, R.N.
(Drs. El Sayed and Vaccaro)
Phone: (614)366-2825

Kathy Wilson, R.N.
(Drs. Haurani and Starr) also covers for Dr. Go on Wednesday's when Erin is out
Phone: (614) 293-5135

Research Coordinator
Isac Kunnath
Phone: (614) 293-8906
Pager: (614) 346-4898

Social Service
Carrie Stegal
Phone: (614) 293-7043
Pager: (614) 346-3312

Division Administrator/Residency Coordinator
Dawn M. Sagle
Phone: (614) 293-5136

Secretaries
Katie Falk
Dr. Vaccaro
(614) 293-6166

Deanna “DeDe” Halstead
Drs. Haurani and Starr
(614) 293-8895

Kait Harnish
Drs. El Sayed and Go
(614) 6988
Vascular Lab
Lead Tech: Dennis Kiser
First floor, Ross Heart Hospital
Phone: (614) 293-8523
Fax: (614) 293-6230

Vascular Rehab
Ross Heart Hospital, Room 2266
Phone: (614) 293-8807

Lead Tech: Thomas "Tyler" Mason
University Hospitals East
Phone: (614) 257-3680

Orientation to the Service
Dr. Hosam El Sayed conducts an orientation to the Vascular Diseases and Surgery service the first Monday of your rotation at 9:00 a.m. for all the new residents and medical students. If you have any questions during your rotation, please feel free to contact prior interns.

Standard Operating Procedures of the Vascular Surgery Service
General
Hard work, discipline, teamwork and attention to detail characterize the Vascular Surgery service. We deal with local changes of a generalized degenerative process. Attention to coronary, cerebral and renal disease is imperative. Many patients are critically ill and their health status is precarious. The principles learned on this service are applicable to any future surgical services.

Organization
Dr. Vaccaro is chief of the Division, Dr. Starr is Program Director of the Fellowship training program, Dr. El Sayed is the Associate Program Director of the Fellowship training program. Dr. Go is the Director of Vascular Services for University Hospital East. Dr. Satiani is the Director of the Non-Invasive Laboratory for the Ross Heart Hospital and University East, and Dr. Starr is the Director of Endovascular Services at the Ross Heart Hospital. Drs. El Sayed, Go, Haurani, Starr, and Vaccaro are the staff surgeons. They care for all major problems concerning patients, bring any interdepartmental problems to their attention please.

Rounds
On your first day of rotation please meet the vascular team at 5:30 am for rounds, rounds begin every morning at 6:00 a.m., on 5th floor Ross Heart Hospital in front of 5056. Always be available and contact previous intern for patient list and questions. Pagers and the service phone must be answered promptly. Fellows, senior residents and interns
• are expected to attend rounds. Attending rounds are held on Wednesdays at 7 a.m., rotating between attendings.

Conferences
Residents will participate in the educational activities of the Department of Surgery, specifically

1. General Surgery Grand Rounds (Thursday 6:30 a.m. weekly)
2. General Surgery Morbidity and Mortality Conference (Thursday 7:30 a.m. weekly)
3. Special Visiting Professor Conferences (usually Thursday 9 a.m. as scheduled)

Residents will participate in the educational activity of the Division of Vascular Diseases & Surgery Service specifically:

**Monday 7am-9am:** Vascular Grand Rounds, Vascular M&M, Interesting Case Conference, Pre-Operative Case Conference, Angio Conference, Vascular Research Conference, Aortic Center of Excellence Conference, VQI Conference and Vascular Lab Lectures.

**Wednesday:** Team Rounds weekly with attending and **MANDITORY** Vascular Lab Orientation with Dr. Satiani the 3th Wednesday of every month

Vascular books, journals and reference materials are available in our division fellow’s office or in 701 Prior Hall. The physicians have their personal office libraries. **These materials are not to leave the Division Office without the owner’s permission.**

Goals of the Education Program in the Division of Vascular Diseases and Surgery

These goals are not meant to be all inclusive and do not take the place of the educational goals and requirements for General Surgery. The following information is intended as a broad outline of responsibilities.

1. **General**
   • Progressive assumption of personal responsibility for the care of patients with vascular disease in a supervised setting.
• Acquisition of knowledge relevant to vascular diseases through participation in didactic and clinical lectures, clinical patient rounds, journal clubs and independent study.
• Acquisition of technical skills relevant to vascular surgery through supervised performance of surgical cases appropriate to level of training.

2. **Specific Medical Students**

• Learn how to conduct a thorough vascular exam and understand non-invasive vascular laboratory testing.
• Become familiar with the evaluation and management of aneurysmal disease of the abdominal aorta along with atherosclerosis and its effects on the circulatory system.
• Learn the presentation of carotid disease and the options for management.
• Learn the differences between intermittent claudication, chronic limb ischemia and acute limb ischemia and the medical and surgical options for management.
• Learn how to interpret angiograms and CT scans of the abdomen.
• Review basic arterial anatomy of the aorta, the upper and lower extremities, and the carotid circulation.
• Spend one day per week in patient clinics seeing patients preoperatively and postoperatively to provide experience in continuity of patient care.

3. **General Surgery Residents (PGY1)**

**Patient Care**

• The resident should be able to gather appropriate information in a compassionate fashion to construct a comprehensive history of the patient’s vascular disorder
• The resident should perform a comprehensive physical examination with emphasis on the physical findings particular to vascular disease and should include the use of Doppler ultrasound to calculate an ankle brachial index.
• The resident should assume responsibility for the care of all vascular patients on the ward, including admission history and physical examinations, daily progress notes, and discharge summaries.
• The resident will participate in the Vascular Diseases & Surgery Outpatient Clinic one day per week. During that time activities will include examination and evaluation of new patients, perioperative and postoperative care of established patients, and surgical consultations under the supervision of attending surgeons.
• While the primary focus will be non-operative patient care, the resident, under appropriate supervision, will perform procedures such as major extremity amputations, ligation and stripping of varicose veins, complex wound closure and debridement deemed appropriate to the level of training and skills of the resident.
• Discharge orders should be placed by 10:00 a.m.
Medical Knowledge
• The resident should be able to recognize and diagnose common vascular disorders including intermittent claudication, transient cerebral ischemic attacks, non-disabling strokes, amaurosis fugax, acute extremity arterial insufficiency, acute mesenteric insufficiency, ruptured abdominal aortic aneurysm, and thromboembolic disease.
• The resident should generate a differential diagnosis and properly sequence actions for patient care.
• The resident should be able to utilize vascular noninvasive testing results including arterial dopplers, carotid duplex scanning, and venous duplex imaging.
• The resident should demonstrate knowledge regarding the indications for the treatment of common vascular disorders including medical and surgical approaches.

Practiced-Based Learning and Improvement
• The resident will learn how to effectively utilize institutional educational resources and begin to apply literature and evidence based concepts as well as experimental evidence to their daily practice of vascular surgery.
• Residents will demonstrate the ability to use electronic information including handheld computers, web-based resources, and common electronic databases to support patient care and self-education.
• The resident will develop and maintain a willingness to learn from failures and use failures to improve both personal performance and the overall process of patient care.
• The resident will attend our vascular conference every Monday morning, general surgery grand rounds and morbidity & mortality conferences every Thursday.

Interpersonal and Communication Skills
• Residents will demonstrate interpersonal and communication skills that result in the effective exchange of information and collaboration with patients, their families, and other health professionals. Daily communication with the Clinical Case Manager for the division regarding plan of care, possible discharges and any needs identified by the team is essential.
• Residents will obtain histories and informed consent, inform patients of their diagnosis and treatment plan, make case presentations, and write concise and legible consultative and progress notes.
• Residents will work effectively with other members of the healthcare team in the delivery of seamless care and develop effective communication and interaction with the ancillary support staff.
Professionalism

- All residents will demonstrate personal integrity, honesty, accountability, respect, compassion, patient-advocacy and dedication to patient care and well-being that supersedes self-interest.

- All residents will demonstrate a commitment to excellence and continuous professional development.
- All residents will demonstrate commitment to ethical principles pertaining to the provision of vascular care, patient confidentiality, and informed consent.
- All residents are expected to demonstrate sensitivity and responsiveness to patient’s culture, age, gender and disabilities.
- All residents will demonstrate respect and a professional demeanor in relationship with colleagues.
- All residents will develop lifelong learning skills through the application of basic science concepts to clinical management, critical reading and critical thinking.
- Residents are expected to demonstrate a basic understanding of the ethical, economical and legal aspects of vascular care.

Systems-Based Practice

- The resident will develop a basic understanding of the local, regional, national and international economic, societal, and clinical impact of vascular disease.
- The resident will understand the organization, supervision and coordination of the delivery of vascular care both in and out of the hospital setting.
- The resident will develop an appreciation for the benefits of a multidisciplinary approach to the delivery of vascular care.
- The resident should be able to arrange for appropriate consults for vascular patients.
- The resident should be able to arrange for appropriate support services commonly used by vascular patients such as social service, discharge planning, and Physical Medicine rehabilitation.

4. General Surgery Residents (PGY2)

Patient Care

- The resident will assume increased responsibility in patient care, particularly regarding patients in the intensive care unit and those being evaluated in the emergency department.
- The resident will build upon his/her basic understanding of vascular disease and integrate this increased knowledge into daily practice.
- The resident will participate in the Vascular Diseases & Surgery Outpatient Clinic one day per week. During that time activities will include examination and evaluation of new patients, perioperative and postoperative care of established patients, and surgical consultation under the supervision of attending surgeons.
The resident will develop skills that allow for the establishment of advanced forms of intravascular access, including arterial lines, central venous lines, and pulmonary artery catheters.

The resident will participate in more advanced operative procedures and will be exposed to the basic principles of catheter-based procedures.

The resident will be the first to see all consults and staff them with the appropriate attending in a timely fashion.

**Medical Knowledge**

- The resident should be able to explain the indications for common interventional procedures as well as the risk/benefit ratio in comparison to open surgical procedures.
- The resident should demonstrate knowledge of the common complications of open and endovascular procedures.
- The resident should demonstrate knowledge of the indications for medical management of common vascular disorders including claudication, cerebrovascular disease and thromboembolic disorders.
- The resident should recognize common angiographic abnormalities including atherosclerosis, embolism, aneurysm and dissection.

**Practice-Based Learning and Improvement**

- The resident will continue in learning how to effectively utilize institutional educational resources and begin to apply literature and evidence based concepts as well as experimental evidence to their daily practice of vascular surgery. Textbooks, journal articles, and Selected Readings in General Surgery pertaining to vascular diseases should be included.
- Residents will demonstrate the ability to use electronic information including handheld computers, web-based resources, and common electronic databases to support patient care and self-education.
- The resident will develop and maintain a willingness to learn from failures and use failures to improve both personal performance and the overall process of patient care.
- The resident will attend our vascular conference every Monday morning, general surgery grand rounds and morbidity & mortality conferences every Thursday.

**Interpersonal and Communication Skills**

- Residents will demonstrate interpersonal and communication skills that result in the effective exchange of information and collaboration with patients, their families, and other health professionals.
• Residents will obtain histories and informed consent, inform patients of their diagnosis and treatment plan, make case presentations, and write concise and legible consultative and progress notes.
• Residents will work effectively with other members of the healthcare team in the delivery of seamless care and develop effective communication and interaction with the ancillary support staff.
• The resident will build upon his/her fundamental understanding of the above concepts. In addition the resident will develop more comprehensive communication skills with sub-specialty services.

**Professionalism**
• All residents will demonstrate personal integrity, honesty, accountability, respect, compassion, patient-advocacy and dedication to patient care and well-being that supersedes self-interest.
• All residents will demonstrate a commitment to excellence and continuous professional development.
  All residents will demonstrate commitment to ethical principles pertaining to the provision of vascular care, patient confidentiality, and informed consent.
  All residents are expected to demonstrate sensitivity and responsiveness to patient’s culture, age, gender and disabilities.
  All residents will demonstrate respect and a professional demeanor in relationship with colleagues.
• All residents will develop lifelong learning skills through the application of basic science concepts to clinical management, critical reading and critical thinking.
• Residents are expected to demonstrate a basic understanding of the ethical, economical and legal aspects of vascular care.

**System-Based Practice**
• The resident will develop a basic understanding of the local, regional, national and international economic, societal, and clinical impact of vascular disease.
• The resident will understand the organization, supervision and coordination of the delivery of vascular care both in and out of the hospital setting.
• The resident will develop an appreciation for the benefits of a multidisciplinary approach to the delivery of vascular care.
• The resident should be able to arrange for appropriate consults for vascular patients.
• The resident should be able to arrange for appropriate support services commonly used by vascular patients such as social service, discharge planning, and Physical Medicine rehabilitation.
• The resident will develop a deeper understanding of the above concepts. In addition the resident will develop and understanding of the patient’s environmental factors affecting the healthcare system.
5. **General Surgery Residents (PGY3)**

**Patient Care**
- The resident should assume the overall responsibility for knowing the daily progress and plans of all patients on the service.
- The resident will continue to build upon his/her basic understanding of vascular disease and integrate this increased knowledge into daily practice.
- The resident will participate in the Vascular Diseases & Surgery Outpatient Clinic one day per week. During that time activities will include examination and evaluation of new patients, perioperative and postoperative care of established patients, and surgical consultation under the supervision of attending surgeons.
- The resident will participate in more advanced operative procedures and will develop increased operative skills. Under appropriate supervision, the resident will perform common vascular exposures, angio access procedures, embolectomies, simple arterial reconstructions including patch angioplasties and arterial anastomoses.
- The resident will assist the PGY 2 in seeing consults as necessary and staff them with the appropriate attending in a timely fashion.

**Medical Knowledge**
The resident should be able to perform a detailed preoperative assessment of comorbid conditions in patients undergoing major vascular procedures to include the
need for cardiac evaluation, interpretation of common cardiac function tests, and be able to use this information to plan the safest procedure with appropriate monitoring. The resident should interpret and correctly use vascular noninvasive testing including carotid and venous duplex.

- The resident should demonstrate detailed knowledge about angiographic anatomy of the upper and lower extremities, the abdominal aorta and its branches, the brachiocephalic vessels and their branches, the extracranial cervical arteries, and the major intracranial branches of the carotid arteries.

- The resident should demonstrate detailed knowledge of critical care as it relates to the recovery of vascular patients in the perioperative period.

**Practice-Based Learning and Improvement**

- The resident will continue in learning how to effectively utilize institutional educational resources and begin to apply literature and evidence based concepts as well as experimental evidence to their daily practice of vascular surgery. Textbooks, journal articles, and Selected Readings in General Surgery pertaining to vascular diseases should be included.

- Residents will demonstrate the ability to use electronic information including handheld computers, web-based resources, and common electronic databases to support patient care and self-education.

- The resident will develop and maintain a willingness to learn from failures and use failures to improve both personal performance and the overall process of patient care.

- The resident will attend our vascular conference every Monday morning, general surgery grand rounds and morbidity & mortality conferences every Thursday.

**Interpersonal and Communication Skills**

- Residents will demonstrate interpersonal and communication skills that result in the effective exchange of information and collaboration with patients, their families, and other health professionals.

- residents will obtain histories and informed consent, inform patients of their diagnosis and treatment plan, make case presentations, and write concise and legible consultative and progress notes.

- residents will work effectively with other members of the healthcare team in the delivery of seamless care and develop effective communication and interaction with the ancillary support staff.

- The resident will build upon his/her fundamental understanding of the above concepts. In addition the resident will develop more comprehensive communication skills with sub-specialty services.
• Professionalism
  • All residents will demonstrate personal integrity, honesty, accountability, respect, compassion, patient-advocacy and dedication to patient care and well-being that supersedes self-interest.
  • All residents will demonstrate a commitment to excellence and continuous professional development.
  All residents will demonstrate commitment to ethical principles pertaining to the provision of vascular care, patient confidentiality, and informed consent.
  All residents are expected to demonstrate sensitivity and responsiveness to patient’s culture, age, gender and disabilities.
  All residents will demonstrate respect and a professional demeanor in relationship with colleagues.
  • All residents will develop lifelong learning skills through the application of basic science concepts to clinical management, critical reading and critical thinking.
  • Residents are expected to demonstrate a deeper understanding of the ethical, economical and legal aspects of vascular care.

• System-Based Practice
  • The resident will develop a basic understanding of the local, regional, national and international economic, societal, and clinical impact of vascular disease.
  • The resident will understand the organization, supervision and coordination of the delivery of vascular care both in and out of the hospital setting.
  • The resident will develop an appreciation for the benefits of a multidisciplinary approach to the delivery of vascular care.
  • The resident should be able to arrange for appropriate consults for vascular patients.
  • The resident should be able to arrange for appropriate support services commonly used by vascular patients such as social service, discharge planning, and Physical Medicine rehabilitation.
  • The resident will develop a deeper understanding of the above concepts. In addition the resident will develop and understanding of the patient’s environmental factors affecting the healthcare system.
  • The resident should demonstrate knowledge about cost effectiveness of diagnostic tests and preoperative evaluations in managing complex vascular problems.
  • The resident should be able to communicate with consultants, referring physicians and families.
6. General Surgery Residents (PGY4)

Patient Care
- The resident should know all of the patients on the service. He/she must see all new admissions and be aware of the problems and progress of all patients.
- The resident will continue to build upon his/her in-depth understanding of vascular disease and integrate this increased knowledge into daily practice.
- The resident will participate in the Vascular Diseases & Surgery Outpatient Clinic one day per week. During that time activities will include examination and evaluation of new patients, perioperative and postoperative care of established patients, and surgical consultation under the supervision of attending surgeons.
- Under appropriate supervision, the resident should be able to perform advanced vascular operations.

Medical Knowledge
The resident should be able to demonstrate advanced knowledge of the medical and surgical management of vascular diseases.

The resident should understand the natural history of common vascular problems including but not limited to asymptomatic aneurysm, asymptomatic carotid stenosis, transient ischemic attacks, asymptomatic renal artery stenosis, claudication, rest pain and tissue loss.

The resident should demonstrate detailed knowledge about the etiology, diagnosis and treatment of the diabetic foot.
- The resident should recognize angiographic abnormalities of an advanced nature pertaining to vascular disease.
- The resident should demonstrate knowledge about the indications and outcomes for vascular operations and endovascular procedures including lower extremity revascularization, aneurysm repair, carotid endarterectomy, mesenteric and renal bypass, and varicose vein treatments.
- The resident will make all presentations at Morbidity and Mortality Conference in an informed fashion.

Practice-Based Learning and Improvement
- The resident will continue in learning how to effectively utilize institutional educational resources and begin to apply literature and evidence based concepts as well as experimental evidence to their daily practice of vascular surgery. Textbooks, journal articles, and Selected Readings in General Surgery pertaining to vascular diseases should be included.
Residents will demonstrate the ability to use electronic information including handheld computers, web-based resources, and common electronic databases to support patient care and self-education.

The resident will develop and maintain a willingness to learn from failures and use failures to improve both personal performance and the overall process of patient care.

The resident will attend our vascular conference every Monday morning, general surgery grand rounds and morbidity & mortality conferences every Thursday.

Residents will consistently analyze their clinical experience of practice, identify areas for improvement and take appropriate educational steps to strengthen these weaknesses.

Residents will critically evaluate information in the surgical literature as it pertains to vascular conditions.

**Interpersonal and Communication Skills**

Residents will demonstrate interpersonal and communication skills that result in the effective exchange of information and collaboration with patients, their families, and other health professionals.

Residents will obtain histories and informed consent, inform patients of their diagnosis and treatment plan, make case presentations, and write concise and legible consultative and progress notes.

Residents will work effectively with other members of the healthcare team in the delivery of seamless care and develop effective communication and interaction with the ancillary support staff.

The resident will build upon his/her fundamental understanding of the above concepts. In addition the resident will develop more comprehensive communication skills with sub-specialty services.
The resident will make oral presentations at Morbidity & Mortality Conference in a clear and concise fashion.

**Professionalism**
All residents will demonstrate personal integrity, honesty, accountability, respect, compassion, patient-advocacy and dedication to patient care and well-being that supersedes self-interest.
- All residents will demonstrate a commitment to excellence and continuous professional development.
- All residents will demonstrate commitment to ethical principles pertaining to the provision of vascular care, patient confidentiality, and informed consent.
- All residents are expected to demonstrate sensitivity and responsiveness to patient’s culture, age, gender and disabilities.
- All residents will demonstrate respect and a professional demeanor in relationship with colleagues.
- All residents will develop lifelong learning skills through the application of basic science concepts to clinical management, critical reading and critical thinking.
- Residents are expected to demonstrate a deeper understanding of the ethical, economical and legal aspects of vascular care.

**System-Based Practice**
- The resident will develop a basic understanding of the local, regional, national and international economic, societal, and clinical impact of vascular disease.
- The resident will understand the organization, supervision and coordination of the delivery of vascular care both in and out of the hospital setting.
- The resident will develop an appreciation for the benefits of a multidisciplinary approach to the delivery of vascular care.
- The resident should be able to arrange for appropriate consults for vascular patients.
- The resident should be able to arrange for appropriate support services commonly used by vascular patients such as social service, discharge planning, and Physical Medicine rehabilitation.
- The resident will develop a deeper understanding of the above concepts. In addition the resident will develop and understanding of the patient’s environmental factors affecting the healthcare system.
- The resident should demonstrate knowledge about cost effectiveness of diagnostic tests and preoperative evaluations in managing complex vascular problems.
- The resident should be able to communicate with consultants, referring physicians and families
7. **First-Year Vascular Resident (PGY6)**

**Patient Care**

- The resident will know all of the patients on the service. He/she must see all new admissions, be aware of the problems and progress of all patients, and share that information with the attending staff each morning.
- The resident will build upon his/her understanding of vascular disease in an expansive fashion and integrate this increased knowledge into daily practice.
- The resident will participate in the Vascular Diseases & Surgery Outpatient Clinic one-half day per week. During that time activities will include examination and evaluation of new patients, perioperative and postoperative care of established patients, and surgical consultation under the supervision of attending surgeons. Under appropriate supervision, the resident should be able to perform all open index vascular operations, and will be introduced to the skills necessary to perform diagnostic angiography. As the year progresses, mastery of these skills should be achieved and therapeutic endovascular interventions will be introduced.
- The resident will round each morning with the vascular team to expedite patient discharge by noon and reduce length of stay.
- The resident will deliver patient care that is compassionate, appropriate and effective for the treatment of health problems and the promotion of health. Feedback will be given daily by the attendings during rounds and conferences, particularly morbidity and mortality conference. The attendings will provide written evaluations quarterly, and these assessments will be discussed with the resident by the Program Director.

**Medical Knowledge**

- The resident should be able to demonstrate detailed, advanced knowledge of the medical and surgical management of vascular disorders.
- The resident should understand the natural history of rare and common vascular disorders. The resident will be introduced to the basic science and clinical curricula provided by the APDVS through lecture, seminar and independent study.
- The resident will recognize angiographic abnormalities of an advanced nature in all vascular beds pertinent to vascular surgery and be introduced to MRA and CTA interpretation.
- The resident will demonstrate knowledge of the indications and outcomes for all index vascular operations and endovascular procedures.
- The resident will present at Vascular Morbidity & Mortality Conference in an informed fashion. The resident will show an understanding of established and evolving biomedical, clinical, and cognitive sciences and the application of this knowledge to patient care.
The resident will begin acquiring performance and interpretation skills in the noninvasive vascular lab.

**Practice-Based Learning and Improvement**
- The resident will continue to learn how to effectively utilize institutional educational resources and apply literature and evidence based concepts as well as experimental evidence to their daily practice of vascular surgery. Textbooks, journal articles, and websites pertaining to vascular disorders should be included.
- Residents will demonstrate the ability to use electronic information including handheld computers, web-based resources, and common electronic databases to support patient care and self-education.
- The resident will develop and maintain a willingness to learn from failures and use failures to improve both personal performance and the overall process of patient care. The resident will attend our vascular conference every Monday, general surgery grand rounds and morbidity & mortality conferences every Thursday. Residents will consistently analyze their clinical experience of practice, identify areas for improvement and take appropriate educational steps to strengthen these weaknesses. Quarterly attending evaluations will also be used in this assessment. The goal is to improve practice and patient care outcomes.
- Residents will critically evaluate information in the surgical literature as it pertains to vascular conditions during journal club and independent reading.
- The resident will take the Vascular Surgery In-Training Exam yearly, and use the review of missed questions as a self-teaching tool.

**Interpersonal and Communication Skills**
- Residents will demonstrate interpersonal and communication skills that result in the effective exchange of information and collaboration with patients, their families, and other health professionals.
- Residents will obtain histories and informed consent, inform patients of their diagnosis and treatment plan, make case presentations, and write concise and legible consultative and progress notes.
- Residents will work effectively with other members of the healthcare team in the delivery of seamless care and develop effective communication and interaction with the ancillary support staff.
- The resident will build upon his/her fundamental understanding of the above concepts. In addition the resident will develop more comprehensive communication skills with sub-specialty services.
The resident will make oral presentations at Vascular Morbidity & Mortality Conference in a clear and concise fashion.

Goals are to develop a good bedside manner, effective communication and listening skills, teach residents to act in the best interest of the patient, and to demonstrate sensitivity to the patient’s ethnicity, age, and disabilities. The resident must learn to communicate in a sincere and compassionate manner.

The resident must be able to teach medical students and fellow trainees in an effective manner.

**Professionalism**

All residents will demonstrate personal integrity, honesty, accountability, respect, compassion, patient-advocacy and dedication to patient care and well-being that supersedes self-interest.

All residents will demonstrate a commitment to excellence and continuous professional development.

All residents will demonstrate commitment to ethical principles pertaining to the provision of vascular care, patient confidentiality, and informed consent.

All residents are expected to demonstrate sensitivity and responsiveness to patient’s culture, age, gender and disabilities.

All residents will demonstrate respect and a professional demeanor in relationship with colleagues.

All residents will develop lifelong learning skills through the application of basic science concepts to clinical management, critical reading and critical thinking.

Residents are expected to demonstrate a deeper understanding of the ethical, economical and legal aspects of vascular care.
System-Based Practice

- The resident will develop an advanced understanding of the local, regional, national and international economic, societal, and clinical impact of vascular disease.
- The resident will understand the organization, supervision and coordination of the delivery of vascular care both in and out of the hospital setting.
- The resident will develop an appreciation for the benefits of a multi-disciplinary approach to the delivery of vascular care.
- The resident should be able to arrange for appropriate consults for vascular patients.
- The resident should be able to arrange for appropriate support services commonly used by vascular patients such as social service, discharge planning, and Physical Medicine rehabilitation.
- The resident will develop a deeper understanding of the above concepts. In addition the resident will develop and understanding of the patient’s environmental factors affecting the healthcare system.
- The resident should demonstrate knowledge about cost effectiveness of diagnostic tests and preoperative evaluations in managing complex vascular problems.
- The resident should be able to communicate with consultants, referring physicians and families.

8. Second-Year Vascular Residents (PGY7)

Goals and learning objectives for second year vascular residents will be essentially the same as those of first year residents but in a more enriched fashion and with a few modifications.

Patient Care

- The resident will know all of the patients on the service. He/she must see all new admissions, be aware of the problems and progress of all patients, and share that information with the attending staff each morning.
- The resident will build upon his/her understanding of vascular disease in an expansive fashion and integrate this increased knowledge into daily practice.
- The resident will participate in the Vascular Diseases & Surgery Outpatient Clinic one-half day per week. During that time activities will include examination and evaluation of new
patients, perioperative and postoperative care of established patients, and surgical consultation under the supervision of attending surgeons.

- Under appropriate supervision, the resident should be able to perform all open index vascular operations, and will be introduced to the skills necessary to perform diagnostic angiography. As the year progresses, mastery of these skills should be achieved and therapeutic endovascular interventions will be introduced.

- The resident will round each morning with the vascular team to expedite patient discharge by noon and reduce length of stay.

- The resident will deliver patient care that is compassionate, appropriate and effective for the treatment of health problems and the promotion of health. Feedback will be given daily by the attendings during rounds and conferences, particularly morbidity and mortality conference. The attendings will provide written evaluations quarterly, and these assessments will be discussed with the resident by the Program Director.

- The resident will make all service assignments, including operating room and clinic coverage.

**Medical Knowledge**

- The resident should be able to demonstrate detailed, advanced knowledge of the medical and surgical management of vascular disorders.

- The resident should understand the natural history of rare and common vascular disorders. The resident will be introduced to the basic science and clinical curricula provided by the APDVS through lecture, seminar and independent study.

- The resident will recognize angiographic abnormalities of an advanced nature in all vascular beds pertinent to vascular surgery and be introduced to MRA and CTA interpretation.

- The resident will demonstrate knowledge of the indications and outcomes for all index vascular operations and endovascular procedures.

- The resident will present at Vascular Morbidity & Mortality Conference in an informed fashion. The resident will show an understanding of established and evolving biomedical, clinical, and cognitive sciences and the application of this knowledge to patient care.
• The resident will continue the acquisition of noninvasive vascular lab skills in an enriched fashion and be qualified to read at the attending level when finished with training.

**Practice-Based Learning and Improvement**

• The resident will continue to learn how to effectively utilize institutional educational resources and apply literature and evidence based concepts as well as experimental evidence to their daily practice of vascular surgery. Textbooks, journal articles, and websites pertaining to vascular disorders should be included.

• Residents will demonstrate the ability to use electronic information including handheld computers, web-based resources, and common electronic databases to support patient care and self-education.

• The resident will develop and maintain a willingness to learn from failures and use failures to improve both personal performance and the overall process of patient care.

• The resident will attend our vascular conference every Monday morning, general surgery grand rounds and morbidity & mortality conferences every Thursday.

• Residents will consistently analyze their clinical experience of practice, identify areas for improvement and take appropriate educational steps to strengthen these weaknesses. Quarterly attending evaluations will also be used in this assessment. The goal is to improve practice and patient care outcomes.

• Residents will critically evaluate information in the surgical literature as it pertains to vascular conditions during journal club and independent reading.

• The resident will take the Vascular Surgery In-Training Exam yearly, and use the review of missed questions as a self-teaching tool.

• At the end of this year the resident will be a competent, independent operator.

**Interpersonal and Communication Skills**

• Residents will demonstrate interpersonal and communication skills that result in the effective exchange of information and collaboration with patients, their families, and other health professionals.
• Residents will obtain histories and informed consent, inform patients of their diagnosis and treatment plan, make case presentations, and write concise and legible consultative and progress notes.

• Residents will work effectively with other members of the healthcare team in the delivery of seamless care and develop effective communication and interaction with the ancillary support staff.

• The resident will build upon his/her fundamental understanding of the above concepts. In addition the resident will develop more comprehensive communication skills with sub-specialty services.

• The resident will make oral presentations at Vascular Morbidity and Mortality Conference in a clear and concise fashion.

• Goals are to develop a good bedside manner, effective communication and listening skills, teach residents to act in the best interest of the patient, and to demonstrate sensitivity to the patient’s ethnicity, age, and disabilities. The resident must learn to communicate in a sincere and compassionate manner.

• The resident must be able to teach medical students and fellow trainees in an effective manner.

**Professionalism**

• All residents will demonstrate personal integrity, honesty, accountability, respect, compassion, patient-advocacy and dedication to patient care and well-being that supersedes self-interest.

• All residents will demonstrate a commitment to excellence and continuous professional development.

• All residents will demonstrate commitment to ethical principles pertaining to the provision of vascular care, patient confidentiality, and informed consent.

• All residents are expected to demonstrate sensitivity and responsiveness to patient’s culture, age, gender and disabilities.

• All residents will demonstrate respect and a professional demeanor in relationship with colleagues.

• All residents will develop lifelong learning skills through the application of basic science concepts to clinical management, critical reading and critical thinking.

• Residents are expected to demonstrate a deeper understanding of the ethical, economical and legal aspects of vascular care.
**System-Based Practice**

- The resident will develop an advanced understanding of the local, regional, national and international economic, societal, and clinical impact of vascular disease.
- The resident will understand the organization, supervision and coordination of the delivery of vascular care both in and out of the hospital setting.
- The resident will develop an appreciation for the benefits of a multi-disciplinary approach to the delivery of vascular care.
- The resident should be able to arrange for appropriate consults for vascular patients.
- The resident should be able to arrange for appropriate support services commonly used by vascular patients such as social service, discharge planning, and Physical Medicine rehabilitation.
- The resident will develop a deeper understanding of the above concepts. In addition, the resident will develop and understanding of the patient’s environmental factors affecting the healthcare system.
- The resident should demonstrate knowledge about cost effectiveness of diagnostic tests and preoperative evaluations in managing complex vascular problems.
- The resident should be able to communicate with consultants, referring physicians and families.

**Clinical Case Manager:**

Every service has a Clinical Case Manager assigned to them at The Ross Heart Hospital. One of the primary functions of the Clinical Case Manager is through put of the patient thru the hospital and outpatient system.

For the Vascular Division, the inpatient Clinical Case Manager currently conducts telephone triage during the day while the fellows and surgeons are in surgery on all post-operative patients (only patients that have recently had surgery and have not seen the doctor in the office yet) all other calls are routed to the office Clinical Case Manager to care for our patients. Critical calls may be funneled through the resident staff during operative hours as well. Also included in the task of the in-patient Clinical Care Manager is utilization review whereby the Clinical Case Manager serves as a
third party liaison for cost containment and financial reimbursement. Please be sure to check with the in-patient Clinical Case Manager if there is any question on how to code a discharge (either as observation or inpatient on the discharge screen). The codes from the hospital and physician must match to allow for reimbursement.

Be aware that procedures such as first rib resections, renal artery stent placements etc are to be considered inpatients if they meet Interqual criteria. The Clinical Case Managers are very familiar with this process and will be able to help you make a determination on patient status.

There is also a social worker assigned to the service/division and her pager is #3312. This pager covers Ross and “the house”. The weekend non-Ross “house” Clinical Care Manager pager is 614-770-8251.

Discharge planning and care coordination is a large part of the in-patient Clinical Care Manager job. This is done in conjunction with the Social Worker on our service, Carrie Stegal. Carrie will help arrange and coordinate transfers to other facilities. She also assists patients and families with managing the emotional stress and concerns when a loved one is hospitalized. Social Service will also assist patients with Advanced Directive issues. The Electronic Discharge Summary is critical to the successful transition of the patient upon discharge from the hospital. This document must be reviewed in its entirety for content and medication directions before finalized. Finalization is done by a physician and becomes a part of the patient’s medical record. Vein surgeries although outpatients have a discharge instruction set that may be picked to populate a discharge set. Other outpatient procedures have standard discharge forms utilized in their respective care area.

In order to provide quality and timely care of our patients, communication between team members is essential. This is to help coordinate the care of the patients on the service. Please discuss the plan of care with the Clinical Case Manager as she is able to facilitate many of the details involved in moving the patient through the system. Reports should reflect the reason this patient still requires an acute inpatient hospital stay and any plans for discharge. If the Clinical Case Manager has not contacted you to obtain report and you are going to be in surgery, please call report to his or her voice mail. A person to-person call or meeting is preferable but a
voice mail is preferable to no call. Clear lines of communication help support the hospital’s mission of “Home by Noon”.

Remember the Clinical Case Manager is a constant on a service with rotational interns, residents and medical students and are part of your service team. They can tell you what usual practice is for their assigned surgeons.

**Angiograms**

Most patients will have angiograms from the OSU system and these can be viewed on EasyViz or Heart IT. However, there will be patients who had their angio at another facility. Please make every effort to obtain these films; check with our resident, secretary, or nurses in the office regarding LifeImage software. Dr. Haurani also performs angiograms at Bellefontaine, Dr. El Sayed at Marysville, and Dr. Starr at Ashland and will bring these films back to the office. Many times, if the patient is a transfer from another facility or surgeon, the angio will have been done at another facility. **Residents are responsible for finding and organizing films for the OR.**

Patients undergoing angiograms need to have a creatinine drawn / GFR calculated. Patients with GFR <50 will be brought to the hospital four hours prior to the scheduled angiogram for hydration. Patients requiring hydration will be hydrated for a total of 4 hours pre-angiogram and five hours post-angiogram. Hydration orders are as follows unless otherwise specified by the attending physician

0.9 NaCl @ 125 cc/hr x 3 hours then increase rate to 3 ml/kg/hr x 1 hour pre-procedure; then decrease to 1 ml/kg/hr.

The pretreatment orders may be found in IHIS in the Pre-Procedure Order Set.

**Admissions**

The Vascular Service admits 50 plus patients per month. Our patients are admitted to the 5th floor of the Ross Heart Hospital which acts as our ICU
Please inform the appropriate secretary of any cases that are added on by residents or by the fellows.

Admission List Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PP</td>
<td>Prisoner</td>
</tr>
<tr>
<td>ADS</td>
<td>Admission Day Surgery</td>
</tr>
<tr>
<td>ASU</td>
<td>Ambulatory Surgery</td>
</tr>
</tbody>
</table>

If the patient has been seen in the clinic prior to admission, there will be a clinic chart in the Division office. **UNDER NO CIRCUMSTANCES ARE THESE CHARTS TO BE REMOVED FROM THE DIVISION OFFICE.** Please see the attending secretary if you need to review or copy information from a clinic chart.

Most of the patients will be admission day of surgery admissions. No insurance plan, including Medicare, allows for an admission the day before surgery without a documented medical need. Patient convenience is not considered a medical necessity. In most cases, the preoperative workup such as stress tests, pulmonary function studies, angiograms etc will be done as outpatients prior to admission.

Appropriate Level of Care (ALOC) Orders:
ALOC orders need to be entered on all surgical patients (both day of surgery admission and outpatient surgeries) and must be completed prior to the procedure/surgery. If the patient is a planned procedure/surgery, the office clinical case managers will enter the order and it will be signed by the attending.

Consults

All new consults should be discussed with the Fellow before the attending. Consults should also be staffed the same day especially if the consult is received by 10 am. The patients on the consult list are also “our” patients and should be seen daily or as often as indicated by the patient’s condition.
When a vascular service patient is seen by consulting services, make sure any recommendations for follow up care are approved by the attending and are added to the EDI so that continuity is not lost and the patient receives the recommended care.

**Documentation**

Daily documentation of the patient’s status and current plan of care is required daily in IHIS. If you use the copy option in IHIS, be sure the information copied is correct otherwise the original charting error is carried through the new note and you are responsible. The hospital coding service may request certain information to assist in the coding and billing process. Usually this involves documentation regarding a co-morbid condition. The documentation specialist reviews the charts and may ask for clarification of diagnosis. This should be done in the progress notes when requested. This documentation will affect how the hospital is reimbursed for services.

All medical student notes must be signed daily by an MD. Progress notes should be on the chart by 10:00 am, including the day of discharge.

All Discharge Orders should be placed by 10:00 am to facilitate completing the “Home By Noon” initiative.

**Vascular Lab Tests**

Normal lab working hours are 8:00 am – 4:30 pm Monday through Friday. From 4:30 pm to 5:30 pm there is only one tech in the lab and most of this time is utilized for urgent patients. Vascular lab techs are physically present on Saturdays and Sundays 8:00 am to 12:00 noon. They are on call on Saturdays and Sundays until 6 pm. On holidays a technician is on call from 8 am to 6 pm. Any time a vascular lab tech is called in, it must be approved by the Vascular Attending on call. Attending and Vascular Tech schedules for weekends and holidays are posted on Web Exchange on the One Source Website. Vascular attendings and the UH Operator have the tech home phone numbers and pager number.

Postoperative ABI’s are done the first postoperative day as reflected in the post operative order set. Please do not ask for a routine postoperative ABI on a Saturday unless it will impact patient care.
Please use discretion in using the lab for “urgent” tests and be courteous as they are professionals and are able to help your patients. If you have any problem with the lab or personnel, please contact Dr. Satiani, the Medical Director of the PV lab.

**Preoperative Preparation**

The Vascular Surgery Service plays an integral role in the preoperative preparation of our patients. **Prior to surgery, all patients must have an H&P completed within 30 days AND updated within 24 hours of surgery.** All patients must also have a consent completed, including name of procedure, risks, patient and physician signature, and time and date. This can be completed at any time prior to surgery. All patients must have the site of surgery marked the day of surgery by the attending. Finally, all patients should have a preoperative order set completed prior to surgery. It is the responsibility of the Vascular Surgery Service to ensure that all these requirements are met on the day of surgery.

Do not treat this process as a technical requirement that you have to simply “get done.” This is both a clinically important duty and an educational process, as you will be the last line of defense to catch problems or issues that may make proceeding with surgery unsafe for the patient.

To facilitate the pre-op process, it is expected that a representative from the team be present in the PACU to complete these duties for the first cases of the day at 6:30 am on Mondays and 6:00 am all other weekdays, without need for a page or call from Operative Prep and Recovery (OPR). The OPR will have the first case of the day patients ready and waiting for the team member at these times. For subsequent cases after the first cases of the day, the OPR will call the 3-3013 phone to let the team know a patient is ready for pre-op.

**The pre-op process:**

**H&P:**
Most outpatients will have either an office progress note or H&P completed by the attending at the time of their outpatient visit, but some will not. If present, they will be located in IHIS. Inpatients will have an H&P completed in IHIS at the time of admission. The
H&P if necessary and the update should be completed by the Vascular Surgery Service at the time of pre-op.

**Consent:**
Most outpatients will have a completed consent done by the attending at the time of their outpatient visit, but some will not. If present, they will be located in IHIS. If not present they should be completed by the Vascular Surgery Service at the time of pre-op. Inpatients will not have completed consents done by the attending, and these should be done the day prior to surgery by the team.

**Site Marking:**
All patients should have the operative site marked by the attending in the pre-op holding area.

**Preoperative Order Sets:**
Most outpatients will have a preoperative order set, including hydration, blood products available, and antibiotics, entered by the office before the date of surgery, but some will not. Preoperative order sets should be checked and entered if necessary by the team at the time of pre-op. Inpatients will not have completed preoperative order sets entered by the office, and these should be done the day prior to surgery by the team.

In Epic under “Order Set” search “OSU IP PVS” to find a comprehensive list of PVS Order Sets.
Below is the list of PVS in-patient Order Sets Pre-op or Pre-procedure:

<table>
<thead>
<tr>
<th>Protocol Name</th>
<th>Protocol ID</th>
</tr>
</thead>
<tbody>
<tr>
<td>OSUIP PVS: PRE PROCEDURE VASCULAR SURGERY DIAGNOSTIC - INTERVENTIONAL</td>
<td></td>
</tr>
<tr>
<td>OSUIP PVS: PREOP ABDOMINAL AORTA GROIN INCISION LE AMPUTATION VASCULAR PROCEDURES ADMISSION DAY SURGERY</td>
<td>2676</td>
</tr>
<tr>
<td>OSUIP PVS: PREOP CAROTID ENDARTERECTOMY WITH PROSTHETIC ADMISSION DAY OF SURGERY</td>
<td>2676</td>
</tr>
</tbody>
</table>

Routine labs for preoperative patients include: CBC, Chem 7, PT/PTT and lipid profiles on selected patients. Also required is an EKG within the last 6 months and a chest x-ray within one year for all major surgical procedures. Many of our patients also will require cardiac clearance by either a stress test or heart cath. This is usually done prior to admission and the results sent over to the hospital. If there is a question regarding clearance issues for preop patient, please contact the division office.

Patients scheduled for a carotid endarterectomy who have had a previous contralateral carotid endarterectomy may require a vocal cord check before proceeding. Check with the attending surgeon. This is usually done prior to admission. Be sure there is documentation regarding the vocal cord check on the chart.

If a patient is on Heparin preoperatively, check with the attending as to when the Heparin drip is to be discontinued.

**Research Studies**

There are currently several industry sponsored research studies being done by the Division of Vascular Surgery. Our research coordinator and division secretary can help coordinate any needed testing etc to be completed on these patients while hospitalized. Summaries of the research inclusion/exclusion criteria for each study are available in the clinics and from the Research Coordinator Isac Kunnath, 293-8906.

**Preoperative Antibiotics**

All major vascular procedures involving the abdominal aorta, procedures requiring a groin incision, procedures requiring a prosthetic graft (including carotid endarterectomy with a bovine patch), and lower extremity amputation will require preoperative IV antibiotics. Patients with pre-existing prosthetic grafts will require...
antibiotics prior to undergoing an angiogram. Patients undergoing a stent procedure may also require pre-procedure antibiotics if access is gained via a pre-existing bypass. The division follows the recommendations of the Epidemiology Department in the use of preoperative antibiotics. You may view the entire antibiotic grid on OneSource under the Department of Epidemiology, Bugs & Drugs Tab, Antimicrobials, Antibiotic Grid/Orders, and Vascular Surgery.

http://www-pharmacy.osumc.edu/asp/preopatb/preOpAtbResults.php

**OSUMC Cardiothoracic and Vascular Preoperative Antibiotic Orders: 04-24-2011**

The optimal time to start all antibiotics listed is 15-60 minutes prior to incision; Vancomycin 60-120 minutes prior to incision. If the case is delayed, the physician may re-dose agent 1 time prior to incision; EXCEPT Gentamycin or Vancomycin. Prophylactic antibiotics need to be given regardless of other antibiotics prescribed for the patient; consideration should be given prior to dose/time especially if patient is receiving Vancomycin, Amikacin, Gentamycin or Tobramycin (see table on page 27)

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Agent</th>
<th>Infusion Time</th>
<th>Dose</th>
<th>Re-dose if still in OR or if EBL is greater than ½ blood volume</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vascular Surgery – Involving abdominal aorta, groin incision, lower extremity amputation, vascular access for hemodialysis</td>
<td>Cefazolin and Vancomycin</td>
<td>15-30 Minutes 60-120 Minutes</td>
<td>2 gm IV/IB 1.5 gm IV/IB</td>
<td>4 hrs (1 gram) 12 hrs (1 gram)</td>
</tr>
<tr>
<td>If severe allergy to PCN or cephalosporin</td>
<td>Clindamycin</td>
<td>15-30 Minutes 900 mg IV/IB</td>
<td>5 hrs (900 mg)</td>
<td></td>
</tr>
<tr>
<td>Carotid endarterectomy with prosthesis</td>
<td>Cefazolin</td>
<td>15-30 Minutes 2 gm IV/IB</td>
<td>4 hrs (1 gram)</td>
<td></td>
</tr>
</tbody>
</table>
Preoperative Scrubs with Hexaclens (Chlorhexadine Gluconate 4%).

Preoperative scrubs should be done on all preoperative patients, with the exception of carotid patients, the night prior to surgery and the day of surgery. Patients will receive a prescription for the scrub if the surgery is being done as a same day surgery admission. The scrub will need to be done on all preoperative patients, with the exception of carotid patients, the night prior to surgery and the day of surgery. Patients will receive a prescription for the scrub if the surgery is being done as a same day surgery admission. The scrub will need to

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Agent</th>
<th>Infusion Time</th>
<th>DOSE</th>
<th>Re-dose if still in OR, or if EBL is greater than 1/2 blood volume</th>
<th>Post-operative duration of antibiotics from initial pre-operative dose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Open abdominal aorta repair or vascular bypass</td>
<td>Vancomycin and Cefazolin</td>
<td>120 min 2 gm IVPB</td>
<td>3 gm IVPB = 120 kg</td>
<td>4 hrs (2 gm) = 120 kg</td>
<td>24 hrs</td>
</tr>
<tr>
<td>Endovascular abdominal aorta repair</td>
<td>Cefazolin</td>
<td>15-30 min</td>
<td>2 gm IVPB</td>
<td>3 gm IVPB = 120 kg</td>
<td>4 hrs (2 gm) = 120 kg</td>
</tr>
<tr>
<td>Lower extremity amputation</td>
<td>Cefazolin</td>
<td>15-30 min</td>
<td>2 gm IVPB</td>
<td>3 gm IVPB = 120 kg</td>
<td>4 hrs (2 gm) = 120 kg</td>
</tr>
<tr>
<td>AV fistula placement for hemodialysis access</td>
<td>Cefazolin</td>
<td>15-30 min</td>
<td>2 gm IVPB</td>
<td>3 gm IVPB = 120 kg</td>
<td>4 hrs (2 gm) = 120 kg</td>
</tr>
<tr>
<td>AV graft placement for hemodialysis access</td>
<td>Vancomycin</td>
<td>120 min 2 gm IVPB</td>
<td>3 gm IVPB = 120 kg</td>
<td>4 hrs (2 gm) = 120 kg</td>
<td>NA</td>
</tr>
<tr>
<td>Visceral stripping or ablation</td>
<td>Cefazolin</td>
<td>15-30 min</td>
<td>2 gm IVPB</td>
<td>3 gm IVPB = 120 kg</td>
<td>4 hrs (2 gm) = 120 kg</td>
</tr>
<tr>
<td>Carotid endarterectomy with prosthesis</td>
<td>Vancomycin</td>
<td>120 min 1.5 gm IVPB</td>
<td>3 gm IVPB = 120 kg</td>
<td>4 hrs (2 gm) = 120 kg</td>
<td>24 hrs</td>
</tr>
<tr>
<td>If severe PCN or cephalosporin allergy</td>
<td>Clindamycin</td>
<td>15-30 min</td>
<td>900 mg IVPB</td>
<td>5 hrs (900 mg)</td>
<td>24 hrs</td>
</tr>
</tbody>
</table>
be ordered on all inpatient surgery patients and is included on the preoperative order set.

**Blood Requisition**

A good rule of thumb is **do not over-order blood products**. In an attempt to avoid unnecessary blood setups, please use the following guidelines when ordering blood or blood products:

**Open Aortic, Mesenteric and/or Renal Bypass**
Type and cross 2 units

**Endovascular Infrarenal Aortic Repair** Type and cross

**BKA/AKA**
Type and cross

**Open Thoracic Aneurysms**
Type and cross 4 units PRBC, 4 units FFP, 2–4 platelet packs

**Endovascular Thoracic Aortic Repair**
Type and cross for 2 units PRBC

**Leg Bypass Surgeries**
Type and cross

In order to have blood products prepared and on-hold for the OR, the following orders must be placed on In-Patients:

**OR Blood Products – Day of Surgery**

The Following two orders will come up.

- Type and Cross
• OR Blood Products To Prepare

The first one orders the type and cross, the second one notifies the blood bank to prepare the blood. Please note: In order for blood products to be prepared for the OR day of surgery, the OR Blood Products To Prepare order must be completed.

Transfusions

Please use the following general guidelines when deciding whether or not to transfuse a postoperative patient.

• Transfuse patients with a Hemoglobin of 8 if: they are over age 65 or have cardiovascular disease or have respiratory compromise.

• Transfuse all patients with a hemoglobin <7.

• If there is any question or concern, please talk to the attending surgeon.
Postoperative Bed Placement

Most of our patients will be in the Ross Heart Hospital postoperatively. Some will go directly to a room; others will go to the Operative Prep and Recovery area before being placed in a bed. Listed below is the general guideline for the different procedures:

**Carotids**
Operative Prep/Recovery
Bed w/ telemetry

**Infra-inguinal Bypass**
Operative Prep/Recovery
Bed w/ telemetry

**Aortic Reconstruction**
Direct to either bed in the Ross or SICU

**Renal Revascularization**
Direct to either bed in the Ross or SICU

**Endovascular Reconstruction**
Operative Prep/Recovery
Bed w/ telemetry

**Amputations**
Operative Prep/Recovery
Bed w/ telemetry

Order Sets

There are several postoperative order sets available in IHIS for Vascular Surgery procedures. These order sets contain the general care recommendations and should be reviewed with each specific patient’s needs in mind. **Please use the order sets when entering postoperative orders as the order set reflects the care the Division surgeons expect for our patients.** It is important to review what is in the order set and update any changes when changing orders (preop to postop). Listed below are the order sets currently available:
ADM Med (has generic admission orders for all patients and is found under the “Order Sets” tab in IHIS)
Frequent PVS Preop Orders (found under the “Pick Lists” on the “Order Sets” page in IHIS
Post Carotid Surgery
Post LE Bypass
Post Aortic Surgery (AAA and ABF)
Post Endo / Stent
Post LE Amputation

Associated Sets:
Freq LE Bypass Orders
Freq Preop PVS Orders
Freq PVS Stent Orders

Discharge outpatient instructions for vein surgery patients

Please avoid using “routine” daily lab orders and daily chest x-ray orders. Labs and x-rays should be ordered based on the patient status and need not because it has “always been done this way”. Appropriate ordering of labs and diagnostic tests can significantly impact the cost of hospitalization.

Aortic endograft patients follow a protocol for follow up CTA scans after surgery. Unless there is a reason such as a concern about an endoleak, the initial postoperative CTA scan will be done at the first postoperative visit. It should be arranged along with the follow up appointment and added to the discharge instructions. Patients will need to have a creatinine and GFR done within 10 days of the CTA scan and they will need a prescription given for the blood work at their discharge.

Infrarenal aortic endograft repair - order CTA abdomen an pelvis with venous phase Thoracic endovascular aortic repair - order CTA aneurysm survey (chest/abdomen/pelvis) with venous phase and 4 view thoracic spine with obliques to check for stent fracture

General Postoperative Considerations

1. Infection Control
   According to the Epidemiology Department most surgical sites should have the original surgical dressing left in place for greater
than 24 hours. If the dressing must be changed within the first 24 hours, **sterile technique** must be used.

**Do not use the same scissors from patient to patient without cleaning the scissors between patients.**

Please use gloves when changing any dressing. **You do not have a personal force field that repels MRSA or other bacteria! Washing hands between patient rooms during rounding as well must be strictly adhered to.**

2. **Peptic Ulcer Prophylaxis**
   All patients undergoing abdominal/thoracic surgery should receive routine ulcer prophylaxis. Other patients with a past history of peptic ulcers should also receive prophylactic treatment.

3. **Cerebral Reperfusion Syndrome**
   Following carotid endarterectomy, some patients develop reperfusion syndrome. This is more common with bilateral tight lesions and represents a defect in BP auto regulation. Patients get a severe headache secondary to hypertension. They are at risk for stroke, due to cerebral hemorrhage. When suspected, these patients need aggressive BP control. Stop all anticoagulants and antiplatelet agents. The risk period is usually in the first 3 – 5 days. Patients with suspected reperfusion syndrome should be discharged on Dilantin 100 mg po TID x 14 days.

4. **Limb Compartment Syndrome**
   Following reperfusion of very ischemic limbs, muscle swelling may occur. This may be sufficient to compromise arterial, venous or neural integrit. This is critical as failure to recognize this complication and treat it results in irreversible ischemia to the muscles and nerves. On exam these patients will have pain on passive range of motion of the toes or foot. The earliest features are pain in the muscle groups and tense swelling, and then characteristically there is loss of sensation in affected peripheral nerves. Most commonly this is the deep peroneal nerve, which supplies the 1st web space on the dorsal aspect of the foot. The **last** signs are loss of palpable pulses and then loss of Doppler signals. Compartment syndrome may require a
fasciotomy to alleviate the pressure in the compartment. If a compartment syndrome is suspected, notify the fellow or attending immediately. Also be vigilant for Myoglobinuria which needs early recognition and aggressive treatment with hydration, alkalinization of urine with sodium bicarb and Mannitol diuresis.

Length-of-Stay Goals

Open aortic repair ..................................5–6 days
Endovascular AAA repair .....................1 day
Carotid endarterectomy/stent ..............1 day
Femoral popliteal bypass ..................2–3 days Femoral
tibial bypass .................................2–4 days Femoral femoral bypass
........................................1–2 days
BKA/AKA........................................2–4 days
Peripheral interventions ..................Outpatient
Renal Interventions .........................23-hour observation TEVAR
.................................................3 days

Length of stay goals may be impacted by many factors and should be used as a reference only. Discharges will be affected by the patients mobility, home situation, placement needs etc. Please communicate any concerns you may have with the Clinical Case Manager assigned to that patient.

Some factors to remember that will prolong the length of stay are listed below. Please keep these things in mind when you are rounding.

1. **Anticoagulation**
   Some patients will require anticoagulation postoperatively. Be sure the initial Coumadin doses are started in a timely fashion. Many times the patient may be released on Lovenox if they are not yet therapeutic on Coumadin. **Before a decision is made on Lovenox, check with the Clinical Case Manager to see if the patient has medication coverage with their insurance.** Lovenox is very expensive and many patients with Medicare
only can’t afford it. If a patient qualifies, sometimes arrangements can be made to provide patients with Lovenox through the Patient Assistance Program.

2. **Late Consults**  
   Late decisions regarding home care, placement, home IV antibiotics etc can adversely affect length of stay. The sooner Case Management and Social Service can see a patient that may need referrals to another facility post discharge, the quicker the discharge can occur.

   Late consults to other services in the hospital can also impact stay. Make sure there is clear communication between all members of the service regarding what other consults may be required prior to discharge. The consults should be entered as early as possible so the patient may be seen in a timely manner.

3. **IV Access for Home IV Antibiotics**  
   **Do not insert a PICC line without knowing a payer source for home IV therapy.** Remember Medicare does not cover home antibiotic therapy. If home IV antibiotics or TPN etc are planned, please discuss this with the assigned Clinical Case Manager so insurance coverage can be checked. When considering home IV antibiotics keep in mind that the fewer doses per day required, the easier it will be for a home health agency to assume care. It is usually necessary that there be someone in the home that can be taught how to do the infusion if there is more than a daily dose required.

4. **Transportation**  
   Most of our patients are elderly and may depend on other family members to provide transportation to and from the hospital. The sooner we can let patients and families know of pending discharges, the easier it may be for them to make arrangements to be off work etc. Also keep in mind that many of our patients come from outside the Columbus area. It may take the family several hours to arrive to pick up a patient that has been released.

5. **Not Communicating with the Clinical Case Manager**  
   This is the number one reason for delays in discharge. The Clinical Case Manager helps coordinate all the actions needed to get a patient safely discharged. It is very helpful to know when
there is a tentative discharge date in order to assure that all needs are addressed prior to the planned discharge. Clinical Case Managers will also track Length of Stay, Procedural delay and Discharge Delay for Escalation procedure as needed. If you are having trouble getting timely testing, consults, etc. please address these concerns with the Clinical Case Manager.

**Discharge Information**

**Electronic Discharge Instructions**

It is the goal of OSU to have as many patients as possible ready for discharge by 12 noon. Sometimes this is not possible especially if we are waiting to see how patients are tolerating diets, ambulation etc. This goal should be kept in mind as your day is being planned so that the electronic discharge instructions can be finalized and prescriptions written in a timely manner.

The Clinical Case Manager will complete patient instruction portion of the discharge instructions. The resident is responsible for the remaining segment of the discharge instructions including medications. The Clinical Case Manager do not finalize the EDI. Remember the EDI is a legal document finalized by you. Be sure to review the information and make sure all pertinent information is contained therein before you finalize the document. A complete list of the discharge medications must be included in the EDI. It is not acceptable to use “Resume your home medications” in lieu of a complete med list.

**Follow-Up Appointments**

Most patients with an uncomplicated postoperative course will follow up with their surgeon in 2 – 3 weeks. The exceptions to this are amputations, carotid endarterectomy, and endovascular reconstruction patients that follow up within one month. Reasons for earlier follow up may include high-risk wounds or an ongoing clinical problem.

As a general rule, the patients local MD is not to remove the vascular staples unless this has been cleared with the attending surgeon.

Patients living outside the Columbus area may see their surgeon at one of the outlying clinics. Locations of the outlying clinics include Ashland, Bellefontaine, Fayette, Marysville and Wyandot.
Different surgeons cover each clinic so if there is any question where the follow up appointment is to be scheduled, check with the assigned physician secretary.

**Outpatient Anticoagulation Management**

If the patient was on Coumadin preoperatively, please check with the attending about when to restart anticoagulation.

The Division of Vascular Surgery physicians **do not** monitor outpatient coumadin regulation. Outpatient coumadin monitoring should be done by the patients’ family doctor, (specified nephrologist, or cardiologist), or anticoagulation clinic whenever possible.

If the patient does not have a family physician, every effort will be made to arrange for a new family doctor prior to discharge. There are several items that need attention when discharging a patient on coumadin. First, it should be documented in the chart and the EDI who will be assuming regulation as an outpatient and when the first blood draw will be done. This needs to be communicated to the patient and/or caregiver so arrangements can be made to get the patient to the lab or office where the blood will be drawn.

Secondly, if the patient is not having their blood drawn by home health, they will need a prescription for a PT/INR to be taken to their local lab. The lab will need the family doctors fax number written on the script in order to assure the result reaches the appropriate person. Also an ICD9 code is needed in order for the lab to bill for the test.

Listed below are common ICD10 codes used for outpatient anticoagulation:

- Long-term anticoagulation ..................Z79.01
- DVT .............................................I80.1#
- Chronic venous insufficiency .............I87.2
- Coag deficits. .............................D66
- Atrial fibrillation .........................I48.91
- Circulating anticoagulants ..............D68.32
The patient will also need a prescription for the Coumadin. A prescription for 1mg and 5mg tablets allow for easier dose adjustments after discharge. These tablets are scored and can be easily broken in half.

**Interventional Stent Procedures**

Patients undergoing a peripheral or renal stent will be placed on Plavix 75mg daily for one month post procedure as long as it is not contraindicated. Patients who receive a carotid stent may be on Plavix indefinitely post procedure.

**Graduated Compression Stockings**

Graduated venous compression hose are not stocked by the Medical Center or the satellite Walgreen Pharmacy so not available for in house patients. Ace bandages are utilized until discharge. The approximate cost for a pair of knee-high compression hose is around $70.00. If the patient must have them in house, a family member will need a prescription to obtain them from a local vendor such as Crosby’s or Columbus Prescription. If you have any questions regarding this process, discuss this with the Clinical Case Manager.

We hope that this information is helpful to you during your rotation on the Vascular Surgery Service. If you have any suggestions for what other things would be helpful for others coming on to the service, please do not hesitate to let us know. We are always open to suggestions that would improve the care we provide our patients.

** If you find any errors within this information please contact Dawn Sagle at (614) 293 8536 or Dawn.Sagle@osumc.edu so we can correct this immediately. Thank you!