

Requires director's approval. Contact Pearl Adams – Pearl.Adams@uth.tmc.edu

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| Faculty In Charge Of Course: | Naveed Saqib, MD |
| Participating Faculty: | Rana Afifi, M.D., Gustavo Oderich, M.D., Naveed Saqib, M.D., Gordon Martin, M.D., Hazim Safi, M.D. |
| Location: | Memorial Hermann Hospital – TMC and Memorial Hermann Medical Plaza or Memorial Hermann Southeast Hospital |
| Offered: | Blocks 1-8, 11, and 13 |
| Max. # Students/Period: | 2 |

Course Objective

Material Covered:

The curriculum for senior medical students on the vascular surgery service provides broad exposure to the specialty. Students follow patients through the initial consultation – from the office, emergency ward, and hospital transfer – through treatment and recovery. Students learn the differential diagnoses, physical exam, and initial evaluation of patients with vascular disease. UT vascular surgeons run the outpatient and inpatient vascular ultrasound laboratory and students will learn about the indications for ordering different vascular studies and how they are interpreted. Once the student arrives at the correct diagnosis, they will learn about the different treatment options, including medical therapy, open surgical and endovascular treatments. Students can expect to see a complex mix of pathologies including:

- Vascular Trauma
- Complex thoracic and abdominal aortic disease
- Occlusive disease of the aortic arch and brachiocephalic arteries
- Mesenteric arterial disease
- Cerebrovascular disease
- Extremity arterial disease
- Venous insufficiency
- Thoracic outlet disease
- Hemodialysis and peritoneal dialysis access
- Thoracic and abdominal spine exposures

Students will round on selected vascular patients in the Memorial Hermann Heart and Vascular Institute (HVI) and perform procedures under direct supervision from the faculty. There is also option to rotate at Memorial Hermann Southeast Hospital. Morning rounds are usually completed by 7:30am when the operating room cases begin (8:30am on conference days). Basic skills include suturing, anatomical dissection of tissues, insertion of central lines, arterial cannulation, placement of appropriate incisions for various exposures, and basic endovascular skills. Through office-based continuity clinics, students will be able to see patients during the recovery period. Vascular clinic days are Monday, Tuesday, Wednesday, and Thursday although the sub-intern is only expected to attend one day per week.

Hospital and office-based patient care is enhanced by the didactic educational series. The student is expected to spend 30 hours per week on direct patient care under faculty supervision. At least 5 hours of didactic teaching per week are included in the sub-intern curriculum.

Skills Acquired:

The objectives of the course are to foster critical thinking about vascular diseases; proper evaluation of the vascular patient; ability to communicate patient status during rounds and in clinic; and performance of basic procedures. Students will be evaluated based on their participation in the educational conferences, continuity clinics, rounds, and in the operating room. Evaluations will emphasize progress made towards accomplishment of course objectives rather than rote memorization of facts. Formal mid-rotation feedback by the course directors will allow students the opportunity to focus on areas needing attention and will reinforce progress already made.

Activities Of Elective

Number Of New Patients/Student/Week: 10-15

Responsibilities Of Student For Assigned Patients:

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| Does history/physical: | Yes |
| Who critiques: | Participating faculty |
| Follows patients, with appropriate notes as needed: | Yes |
| Who supervises: | Participating faculty |
| Does student see ambulatory patients: | Yes |

| Procedures | Observe | Perform |
|---------------------------|----------------|----------------|
| Basic suturing | X | X |
| Central line insertion | X | X |
| Arterial cannulation | X | X |
| Basic endovascular skills | X | X |
| Complex arterial repairs | X | |

Scheduled Duties of Student:

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| Frequency of rounds on patients | Daily |
| Presents patients to preceptor or attending physician | Yes |
| Weekly schedule of required teaching sessions | <ul style="list-style-type: none"> • Imaging Conference (3rd Wednesday) • Journal Club (1st Wednesday) • Aortic / Genetic Vascular Disease (2nd Wednesday) • Multidisciplinary Peripheral Artery Disease Conference (quarterly) • Basic Science Lecture Series (every Thursday) • Morbidity & Mortality (every Thursday) • Student Teaching Conference (every Thursday) • Grand Rounds (every Friday) • Student Teaching Rounds (every morning before Rounds) |

Describe Optional Rounds And Activities, If Any:

There are opportunities to participate in research and quality improvement projects.

Other Required Activities:

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| Reading/review of current literature | Yes |
| Writing or presenting a paper | No |

How Is Student Evaluated:

Students are observed closely enough by faculty to evaluate their performance meaningfully. Mid-rotation feedback is encouraged for all students, but feedback in writing is required for any students identified as having deficiencies, as soon as the deficiency is identified.

Students receive daily feedback during daily rounds and during procedures. Students will be asked to discuss patients seen in consultation and will receive immediate feedback based on their assessments. There will be formal mid-course and final evaluation by the course directors.

Who Evaluates Students:

Students should expect feedback from nurse practitioners, residents, fellows, course directors, and participating faculty.

Unique Features Of This Elective:

This course allows the senior student to participate in the range of vascular surgery from a faculty perspective – in the office, hospital wards, and operating room. The HVI Vascular Ultrasound Laboratory is run by our vascular surgeons and this allows the student to participate in performance of ultrasound-guided procedures, diagnosis, and interpretation. As one of the largest vascular surgery groups in Houston, the UT Division of Vascular and Endovascular Surgery performs over 3000 cases per year with more than 1000 cases per year at Memorial Hermann Hospital HVI. Two vascular operating rooms with fixed imaging equipment (Hybrid ORs) are operational on a daily basis. Additional cases in the main hospital OR include vascular trauma, spine exposures, and cases done in conjunction with other services, such as oncology resections requiring vascular reconstruction. Our service is one of the busiest aortic centers in the country performing a range of complex aortic reconstructions. This exposes the senior student to both complex and routine vascular surgery disease with exposure in managing patients in dedicated cardiovascular operating rooms and intensive care units.