

RED CARDS

Third Edition
Revised September 2007

INTRODUCTION

The following information is supplied to give structure to the care of vascular surgery patients. Recognize that patients may have unique characteristics that necessitate modification of their treatment. The attending is available to answer questions, direct, and guide patient care. The suggested structure is provided to help you remember the basics, not to keep you from thinking about the individual patient.

RED CARDS are also available on-line:

<http://www.med.uvm.edu/surgery/downloads/redcards.doc>

Refer to the online **RED BOOK** at the following address for **Service Learning Objectives and References**: <http://www.med.uvm.edu/surgery/downloads/RedBook2006.pdf>

Medical student Learning Objectives and Expectations are posted on COMET.

WEEKLY SCHEDULE

Clinics

Monday	Stanley, Bertges, Adams on selected dates
Tuesday	Shackford, Steinthorsson
Wednesday	Adams, Bertges (4 th week of month, AM only)
Thursday	Adams and Steinthorsson (PM only)
Friday	Stanley, Bertges (1 st , 2 nd , 3 rd week of month, AM only), Ricci on selected dates

Main OR

Monday	Steinthorsson
Tuesday	Stanley
Wednesday	Bertges (1 st , 2 nd , 3 rd week of month), Shackford (4 th week of month)
Thursday	1,2,3 rd and 5 th day of month (attending will vary)
Friday	Adams (1 st , 2 nd , 3 rd week of month), Bertges (4 th week of month)
Ricci will be scheduled as needed	

Interventional Procedures

Tuesday	IR suite 830 a.m.; Bertges and Adams (alternating weeks)
Thursday	Cardiac cath lab 12 noon

WEEKLY SCHEDULE

Conferences

M, T, W, F	8:00 AM	Daily Patient Care Conference with Attendings, ACC Level 5
Thursday	7:30-8:30 AM	Grand Rounds (Davis Auditorium)
	8:30-9:30	M+M Conference (Davis Auditorium)
	9:30-10:30	Attending walk rounds with med students Residents free for floor care
	10:30-11:30	Angio conference and QA review (Abrams)
Friday	1:00-2:00 PM	Shackford: Teaching Rounds with students (SICU)

IMPORTANT PHONE NUMBERS + PAGERS

OR internal 847-3590

Shep 3 847-5544

Vasc Clinic MD Line 847-7320

Karen Norful 847-7097

ACC MD dictation room:

OR external 847-3580

IR suite 847-3663

Vasc Lab 847-8692

Karrie Rich 847-2252

line #1 847-0378

OR# 8 4-0462

Vasc Lab Fax 847-3581

Cathy Petersen 847-2478

line #2 847-5716

Name	Office	Pager		Office	Pager
Adams	7-9931	2732	Stanley	7-7095	8408
Bertges	7-1002	9364	Steinthorsson	7-5259	1039
Ricci	7-5155	8438	Janet		0072
Shackford	7-7098	8191	Amy		8443
			Red pager		2416

GENERAL RED TEAM RESPONSIBILITIES

Attend 8 AM Patient Care Conference with attending(s) in ACC.

Each resident will spend at least 1/2 day per week in clinic. Resident will not operate unless this has been documented.

RED 2416 pager is to be carried by a resident physician at all times. The floor resident should carry the pager, not the clinic resident.

Operating resident must meet the patient before the OR and be in room by 7:30 a.m. for induction and prep with films on PACS.

Keep up with Vascular Surgery curriculum throughout year and especially when on service. Materials are available including a reading list and technical training points.

Chief Resident Responsibilities

- **Chief will round with team in the morning and is expected to see all patients.**
- Closely supervise service. Know all major events concerning service patients. Set schedules for residents to attend clinic. Review case list for upcoming week with attending at Thursday conference to assign assistants at surgery.
- Be responsible for daily notes by team. Document any significant change in condition.
- While requests for consults will be attending to attending, the chief will be aware of progress and management of all active consults.
- Review patient issues and treatment plans with resident covering nights and weekends. Update Sign Out sheets daily.
- Prepare for all operative cases including history, exam, images and all options for revascularization. Assign formal presentation of one upcoming case for preceding Thursday conference to chief or junior resident.
- If dictating case do same day of surgery.
- Present M+M for service after discussing case(s) with attendings.
- Email attendings weekly on Monday to solicit list of films for review on Thursday.

Junior Resident Responsibilities

- See consults and new admissions promptly.
- Work with chief and attendings to establish therapies and workup.
- Prepare for all operative cases including history, exam, images and all options for revascularization.
- If dictating case do same day of surgery.
- Help direct intern with day-to-day care of patients. Inform chief/attending of any major changes in clinical condition of patients on service.
- Be responsible, along with chief, for patient documentation. This includes daily notes, notes documenting changes in clinical condition, pre-op and post-op notes.
- Follow active consults and keep team aware of clinical issues.
- When covering service on nights and weekends, be familiar with patient issues and exams, and personally round on service patients and active consults.

Intern Responsibilities

- Be responsible for day-to-day care of patients.
- Take part in documentation of daily notes, pre-op and post-op notes on service patients.
- Be aware of active consults and issues.
- When covering service on nights and weekends, be familiar with patient issues, exams, and personally round on service patients and active consults.

Medical Student Responsibilities

- Refer to 3rd and 4th Year Medical Student Learning Objectives posted on COMET.
- Refer to 3rd and 4th Year Medical Student Expectations posted on COMET.
- Contact your Preceptor the day prior to the start of your rotation to learn his or her schedule for the coming week(s).
- Be prepared for presentations on walk rounds with Attending, Thursday 9:30 AM
- All attendings are aware of Red Service conferences and surgical rotation conferences designed for you. Operative and clinic experiences are to be built around these conferences. We have many inpatients. **Talk to and examine your patients.** Collect historical and physical examination data. Do not simply obtain this from the chart.

Nurse practitioner (NP) Role:

The NP on the vascular service has inpatient and outpatient care responsibilities, and is overseen by the attendings. As a permanent member of the Vascular Team, the NP is critical to continuity of care and understands the best-practice guidelines for patient care preferred by each attending.

NP Responsibilities:

- Acts as liaison between attending and team.
- Rounds in morning with residents sharing responsibility for daily notes, dressings, day-to-day patient care, calling consultants, and discharge summaries.
- Reviews patient issues, treatment plans, and discharge needs with case managers, physical therapists, care coordinators, charge nurse, social workers, office staff, and nurses.
- Oversees patient's discharge: ensures patient is given discharge instructions, communicates with PCP and outside hospitals.
- Rounds with attending if requested. Communicates pt/family and discharge concerns.
- Responsible for all scheduled clinic pre-ops.
- Responsible for Quality Assurance: maintains SATS database and reviews at Conference.

Physician Assistant (PA) Role: The vascular PA has inpatient and outpatient care responsibilities including assisting at surgery, and is overseen by the attendings. As a permanent member of the Vascular Team, the PA is critical to continuity of care and understands the best-practice guidelines for patient care preferred by each attending.

PA Responsibilities:

- Acts as liaison between attending and team.
- Responsible for outpatient clinic. Pts referred to PA clinic by attendings + to be seen on the same day as attending's clinic. Pts will be seen by attending every 4th appointment.
- Assist attendings as needed with operative cases, procedures and percutaneous cases.
- Rounds in morning with residents and NP sharing responsibility for daily notes, dressings, day-to-day patient care, calling consultants, and discharge summaries.
- Reviews patient issues, treatment plans + discharge needs with case managers, physical therapists, care coordinators, charge nurse, social workers, office staff + nurses.
- Oversees patient's discharge: ensures patient is given discharge instructions, communicates with PCP and outside hospitals.
- Facilitate communication between inpatient hospital course and vascular clinic.
- Rounds with attending if requested. Communicates pt/family and discharge concerns.

PRE-OPERATIVE NOTES AND ORDERS

Pre-operative Notes

In-house patients

All in-house patients must have a pre-op note prior to surgery written by a resident. Clinic notes from attending should be on chart when available. Pre-ops on in-house patients should be completed and signed off by the operating resident. All pre-op notes must contain information regarding labs, EKGs, pertinent films, and studies that support the decision, indications for surgery, and the risk of surgery.

Day-of-surgery patients

All day-of-surgery-admission patients should have a pre-op note completed and signed by the operating resident. Residents are responsible for checking that a current H+P, consent, and antibiotic order are on the chart and that the operative site is marked in pre-op holding area.

General Information about Pre-operative Orders:

- IV fluids for in-house patients unless contraindicated (i.e., CHF, renal failure).
- Medications to be taken morning of surgery (in general all cardiac meds with sips).
- Insulin dosing:
Night before surgery: (1) NPH: give usual dose minus 5 u. (2) Mixed long and short acting insulins: give usual dose minus 5 u. (3) Lantus: usual dose minus 5 u.
(4) Hold oral hypoglycemics.
DOS: (1) NPH: 50% regular dose. (2) Mixed long and short acting insulins: if FS < 200, no insulin. If FS >200, give 50% regular dose. (3) Lantus: usual dose minus 5 u.
(4) Hold oral hypoglycemics.
- Plavix: stop 7 days before surgery.
- Coumadin: stop 5 days before surgery, order INR before surgery (check with surgeon).
- Lovenox: stop at least 24 hrs before surgery.

General Information about Pre-operative Orders, continued:

- Consider *all patients* for ASA and beta blockade (metoprolol starting at 25mg BID) unless contraindicated. Titrate to goal of HR <70. Give oral beta blocker AM of surgery. Do not hold ASA for OR. Instead the vast majority of vascular patients should receive ASA pre-op and post-op.
- Give all patients prophylactic antibiotic 1 hr before incision; continue for 24 hrs post-surgery then D/C. (Kefzol unless allergic, then Vancomycin).
- Verify Consent on chart and Mark operative site.
- For all pre-ops done in-hospital on patients scheduled for future DOSA all paperwork should go to Karrie Rich in ACC Vascular Clinic (phone 847-2252).
- Consider Cholesterol panel, coordinating statin rx with PCP

PREPARATION FOR SPECIFIC PROCEDURES

Document orders and information listed below in pre-op note.

Aortic Surgery

- NPO after MN
- Kefzol 1 gm IV q8; give w/i one hour before incision, continue 24 hrs then D/C
- Stop Plavix 7 day before surgery
- Continue ASA through perioperative period
- Consider all patients for beta blockade (metoprolol) titrate to HR <70
- CBC, Lytes/ BUN/CR, EKG, CXR prealbumin for select cases
- T+C 4 U PRBC for aneurysms, T+C 2 U PRBC for occlusive disease
- CT/MRA or angio available
- Cardiac evaluation as appropriate
- Document pulse exam pre-op (ABI/PVR if necessary)
- Patients with symptomatic COPD may need PFT, ABG pre-op
- Consider Cholesterol panel, coordinating statin rx with PCP

Lower Extremity Bypass

- NPO after MN
- Kefzol 1 gm IV q8; give w/i one hour before incision, continue 24 hrs then D/C
- Stop Plavix 7 days before surgery
- Continue ASA through perioperative period
- Consider all patients for beta blockade (metoprolol) titrate to HR<70
- CBC, Lytes/ BUN/CR/GLC, EKG, CXR
- If diabetic check HbA1C (if >7% consult diabetes nurse educator, if >8% consult endocrinology)
- Consider prealbumin and albumin to identify patients at high nutritional risk
- T+S
- Vein mapping marked and reported on chart
- Angiogram/CTA/MRA available at time of surgery
- Clearly documented pre-op ABI/PVR/duplex
- Consider Cholesterol panel, coordinating statin rx with PCP

Carotid Endarterectomy (CEA)

- NPO after MN
- Kefzol 1 gm IV q8; give w/i one hour before incision, continue 24 hrs then D/C
- Stop Plavix 7 days prior to surgery
- Continue ASA through perioperative period
- Consider all patients for beta blockade (metoprolol) titrate to HR <70
- CBC, LUTES/BUN/CR, EKG, CXR
- Duplex report on chart with angio/CTA/MRA available if done
- Clearly document neurological exam pre-op (include Cranial Nerves)
- Consider Cholesterol panel, coordinating statin rx with PCP

TOS Surgery

- Pre-op testing should be specific to patient's age and comorbidities. Often, labs and studies are not needed.
- CBC, INR for patients on coumadin for effort thrombosis.

Dialysis Access

- NPO after MN, no IVF necessary
- No IV or blood draw operative arm
- Kefzol 1 gm IV q8; give w/i one hour before incision
- Stop Plavix 7 days before surgery
- CBC Lytes/BUN/CR/ EKG
- Ultrasound report on chart

VV Surgery

- NPO after MN
- Kefzol 1 gm IV x1; give w/i one hour before incision
- Many patients are young, healthy + do not require hematologic or serologic studies.
- Labs, EKG, CXR only if age, comorbidities dictate.
- Patient not to be brought into room before veins marked by attending.

GENERAL DISCHARGE INSTRUCTIONS

- F/U appts: schedule to coincide with suture removal, graft imaging, or ultrasound. Complicated wounds may require F/U sooner. *Clarify ANY question with attending.*
 - Groin/Leg: staples/sutures out no sooner than POD #14
 - Abdominal: staples usually out POD #7
 - CEA: absorbable suture, F/U in 3 weeks for duplex and office appointment.
 - LE bypass: suture/staple removal around POD #14, graft imaging at 1 month, wound check (ulcer or toe amp site) after 2 – 4 weeks
- Refer to VNA if necessary
- Nutrition: Give 24 hrs notice to case manager if D/C on IV meds, tube feeds, or Lovenox. Prescribe Ensure shakes for all nutritionally compromised patients.
- Activity: Patient should not drive until follow-up
 - Leg bypasses or groin incisions: elevate leg to reduce edema.**
- Medications: Clarify D/C meds + notify PCP of any changes. Consider ASA and β -blockers for all pts. If coumadin/lovenox give specific instructions for dosing + F/U. Prescribe adequate pain medication (40-50 oxycodone is common)
- **All patients should see their PCP in 7-10 days.**

POST-OP ORDERS AND DISCHARGE INSTRUCTIONS FOR SPECIFIC PROCEDURES

Write EDD (estimated day of D/C) in post-op orders to coordinate D/C in a timely fashion.

Aortic Surgery

General: I&O sheet (Janet/Amy will provide): Update daily. Tape to wall at bedside. Ensure sheet transferred to floor. Daily wt on all pts.

Cards/Heme: Hct and ABG immediately, 4 hrs and 8 hrs post op. Beta blockers for all pts. Titrate to HR<70. ASA PR until PO. Notify attending of any transfusion.

Respiratory: Order IS on all pts. OOB POD 1-2.

GI: If retroperitoneal approach, d/c NGT after extubation. Keep NGT until return of bowel fct. Check with attending prior to d/c NGT. All meds IV until return of bowel function.

ID: Kefzol 1 gm IV q 8 for total of 24 hours. Include pre op dose.

Lines: D/C art line, central line POD 1-2 per attending. D/C Foley when epidural is d/c'd

Prophylaxis: PPI until D/C. Lovenox 40 SC Daily. POD#1. **D/C 24 hr before epidural removed.** NOTE: use heparin SC for pt with renal failure.

Aortic Surgery, continued

Discharge planning:

Order PT judiciously; if pt able to get OOB with nursing, do not order PT. NOTE: PT turnaround time can be 24+ hours, therefore, ensure that pt is getting OOB.

*Social work/Acute Rehab consult per PT rec's. Order Psychiatry consult if pt is on hemodialysis.

*Abd staples out POD 7. Groin staples not before POD 14. Check with attending prior to d/c'ing.

*Apply full length 1/2" steri strips in a non-occlusive manner. Groins: dry dressings QD and prn.

Pt may shower with dressings off, pat dry, and reapply dressing. No soaking. VNA prn for dsgrs.

*Beta blockade for 4 weeks post op, if non on chronically.

*Resume all pre op meds. Inform PCP with changes. Offer to fax summary. *Prescribe percocet/dilaudid, at least 50 tabs, with colace 100 BID while on pain meds.

All patients should receive copy of Discharge Instructions Do's and Don'ts.

Endovascular AAA Repair (EVAR)

General: Observe in PACU. Transfer to monitor bed

Cards/Heme: Hct in PACU; Hct, platelets, BUN, CR in AM. ASA QD, beta-blocker

GI: Clears night of surgery, reg diet in AM. IVF until AM

GU: D/C Foley POD #0

ID: Prophylactic antibiotics for 24 hrs then D/C

Wound Care: Leave dressings on 24 hrs unless saturated

Discharge planning:

D/C if medically fit POD #1

Perioperative beta-blocker for 1 month

F/U in 3-4 weeks with endovascular AAA CT

All patients should receive copy of Discharge Instructions Do's and Don'ts.

Lower Extremity Bypass

General: Document post-op exam (graft + distal pulses,ABI) in brief op note. Draw schematic of bypass. **How do I know graft is open?** Patency based on pulse/Doppler exam and ABI. Any change should be communicated to attending. Graft imaging if vein graft (usually POD #3). If prosthetic ABI only with duplex at attending discretion.

Cards:Heme: Hct in PACU + 4 hrs post op. If dextran , should be Dextran 40@25 cc/hr for 24-48 hours. ASA daily.

Resp: IS at bedside.

GI: Diet as tolerated with dietary supplements as indicated

GU: d/c Foley POD 1

ID: Kefzol 1 gm IV Q8 for 24 hours. Include pre op dose.

Proph: Lovenox starting POD 1. No SCD on operative leg.

Activity: Goal to minimize edema while promoting ambulation. If bypass to *tibial* vessel, then bed rest 24 hrs. If bypass to *pedal* vessel (DP or PT below ankle), then bed rest for 48 hrs with foot elevated. Otherwise, OOB POD 1. Most pts will need PT consult. Order Social Work/Acute Rehab per PT recommendations, call case manager

Lower Extremity Bypass, continued

Wound Care: Leave dressing on for 48 hrs unless saturated. Dry gauze to groin(s) at all times
No circumferential dressings. TED stockings per attending.
No leg sutures/staples to be removed before POD #14

Discharge planning:

F/U should be scheduled to coincide with wound check, suture removal, and/or graft imaging

Medications: ASA daily, beta blocker for one month if not on chronically. If coumadin, ensure who will follow INR, where and when pt should get INR draw. Document in d/c summary.

Resume all pre op meds. Call PCP with changes. Offer to fax summary. F/U with PCP in 1-2 weeks *No driving until f/u.*

All patients should receive copy of Discharge Instructions Do's and Don'ts.

Carotid Endarterectomy (CEA)

Use standard post-op orders for CEA.

General: Goal is to discharge pt POD 1. In PACU for observation including cardiac monitor for 4 hrs post-op (must be written). If on neo or nipride gtt, will need ICU bed.

Cards/Heme: Control SBP: <100- start NEO, >160-start NIPRIDE. ASA in all pts, given immediately in PACU. Beta blocker to titrate HR to <70.

Neuro: neuro checks, vital signs q 15 X 4, q30 X 4, q1 hr X 4, then q 4 hr.

ID: Kefzol 1 gm q 8 IV x 24 hours. Include pre op dose.

GI: IVF at KVO, Saline lock when tolerating PO. Advance clears to regular as tol on DOS

Medications: Resume pre-op meds (especially antihypertensives) as soon as appropriate
Percocet 1-2 PO q4 hr prn or tylenol.

Wound Care: Drain out POD #1 (if used). Cover wound with Telfa and Tegaderm. Instruct pt to peel off outer dressing in 3 days and not to remove steri strips

Discharge Anticipate D/C home POD#1. F/U 3 weeks after surgery with carotid duplex.

See PCP w/i one wk. Analgesics as needed.

All patients should receive copy of Discharge Instructions Do's and Don'ts.

TOS Surgery

Post-op chest x-ray

Diet as tolerated. IV to KVO

Pain control important (move towards PO pain meds as possible)

Discharge

F/U appt in 1 week

Pt may peel off outer dressing in 2 days

Pt may use arm sling for comfort and elevate UE on 2 pillows at home

VV Surgery RF ablation (Closure) + Stripping

Elevate operative leg in PACU (and also at home)

Encourage ambulation every 20-30 minutes POD #0

All patients should receive copy of "Discharge Instructions Following RF Ablation"

Amputation

General: PCA for analgesia then convert to oral meds. Bed rest for 24 hrs with elevation of operative leg. Social work/PT/rehab consults day of admit.

Cards/Heme: Beta blocker to titrate HR to <70. ASA daily. Lovenox until D/C (unless renal failure then heparin SQ).

GU: Foley out POD #1

ID: Prophylactic antibiotics for 24 hrs then D/C

If amputation done for infection continue antibiotics until wound examined

Endo: If diabetic check HbA1C (if >7% consult diabetes nurse educator, if >8% consult endocrinology)

Wound Care: Dressing change per attending (usually POD #2-3)

Xeroform over staples until discharge to rehab. Kerlix and ACE wrap

Knee immobilization for BKA.

Staples/sutures should not come out before POD #21

Dialysis Access

Leave dressing on for 48 hrs. No circumferential dressings.

Elevate arm to reduce edema.

Follow-up in clinic at 2-4 wks.

All patients should receive copy of Discharge Instructions Do's and Don'ts.

Interventional Procedures

Pre-procedure: Check CR + GFR. If GFR <60 then hydrate with IV sodium bicarb (3 amps in 850 ml of D5W at 3 ml/kg/hr one hour prior to procedure then 1 ml/kg/hr for 4-6 hrs after).

Hold diuretics + NSAIDS 24hrs before and after. Hold metformin 24hrs before + 48 hrs after.

Post-procedure orders: IVF, Bedrest for 4 hrs with leg straight, may elevate HOB 20 degrees after 2 hrs, Ambulate after 4 hrs and examine prior to D/C, May remove dressing day after procedure and shower.

Residents may be called to evaluate pts s/p diagnostic and interventional arteriography.

Assessment: evaluate groin for hematoma and extremity for pulses or Doppler signals

BLOOD ORDERING AND TRANSFUSION GUIDELINES FOR VASCULAR SURGERY

Master Blood Ordering Schedule for Vascular Surgery

AAA repair	4 units	Aortofemoral bypass (occlusive disease)	2 units
EVAR	2 units	Leg bypass	T+S
CEA	none	AKA/BKA	T+S
AV fistula/graft	none	TOS/1 st rib resect	T+S

The FAHC transfusion “threshold” is Hct of ≤ 21 for pts with stable volume status. Individual vascular surgery patients may have different transfusion needs. As a general rule you should discuss any plans for transfusion (especially in a non-emergent case) with the attending.

GENERAL INFORMATION FOR ORDERING STUDIES IN THE VASCULAR LAB

Vascular Lab Phone Number: 847-8692

Vascular Lab Fax Number: 847-3581

The vascular lab operates from 8am to 5pm, Monday-Friday.

One member of the team should contact the Lead Vascular Tech (pager 9948) each morning after 8 AM conference to discuss any in-patient vascular lab studies.

General information needed information when ordering vascular lab studies is on the patient's blue card. The ordering provider should complete the requisition and fax it to the lab. Do not rely on unit secretaries. Please use vascular lab requisition. Include following information:

Patient name

DOB

MRN

Location of patient

Attending physician's and resident's name and pager number.

Pulse Volume Recordings (PVR)

If the patient has never been seen in the lab, a full arterial evaluation is needed. This study will provide pressures, indices, and waveforms of the arms and legs. ABIs are part of PVR exam.

Please indicate the type and position of bypass grafts being imaged. This is important because prosthetic grafts require ABI and imaging of anastomosis only. Vein grafts require imaging the entire graft. If you do not know what material is used, please indicate that you do not know.

All patients with new or revised bypass grafts should have ABI and graft image prior to leaving the hospital, unless specifically instructed not to by attending.

Vein Maps

Requests for vein mappings on patients who are pre-op for arterial bypass grafts will require the following information, if known:

Date of surgery

Target outflow vessel

Has either greater saphenous vein been harvested for previous surgery?

Which leg is being operated on?

Alternate sites for vein harvest if greater saphenous vein is not available

Vein maps for dialysis access to be done per lab protocol. Note prior access procedures

Venous Exams to Rule Out DVT

Requests for these exams require the following information:

Appropriate indications/symptoms.

Rule-out of PE and rule-out DVT are not appropriate indications.

Which limb is to be studied?

Is patient in traction? Does patient have a cast?

Is patient on ventilator?

Carotid Exams

These exams require the following information:

Appropriate indications/symptoms

Previous carotid surgery?

Is the patient able to understand and follow instructions? (i.e., dementia?)

Renal Exams

These exams require the following information:

Appropriate indications/symptoms, HTN, renal failure.

These patients should be NPO after midnight.

Mesenteric Exams

These exams require the following information:

Appropriate indications/symptoms: post-prandial pain, weight loss, loss of appetite, nausea, diarrhea.

These patients must be fasting

