NORTHERN NEW ENGLAND CARDIOVASCULAR DISEASE STUDY GROUP CABG/Valve

SS# _____ Zip code _____

Surgeon _____

Date of admit _____ Date of cath _____

Date of surg _____ Discharge date _____

TYPE OF PROCEDURE- ALL

Primary procedure(s) ..... [ ] (1=CABG; 2=Valve; 3=CABG/Valve)

Other procedure [ ] [ ] [ ] (0=none; 1=VSD; 2=ASD; 3=Carotid endar.; 4=LV aneur repair; 5=aortic graft/tube; 6=Surg. tx of arrythmias, not Maze; 7=AICD placement; 8= TMR; 9= Maze; 10= LVAD; 11=PCI; 66=Other)

PRE-OP DATA-ALL PROCEDURES
Use the code 888 for unknown

Sex ..... [ ] (0=male; 1=female)
Height..... [ ] (cm)
Weight..... [ ] (kg)
Race..... [ ] (1=Caucasian; 2=African American; 3=Hispanic; 4=Asian; 5=Native American; 66=other)
Smoker in last year..... [ ] (0=no; 1=yes)
Known CAD ..... [ ] (0=no; 1=yes)
NYHA class pre-op..... [ ] (1-4)
COPD requiring tx ..... [ ] (0=no; 1=yes)
Pre-op renal hx ..... [ ] (0=no; 1=yes, dialysis; 2= yes, history of renal insufficiency; 3=yes, both)
CHF prior to surgery..... [ ] (0=no; 1=yes, this admit; 2=prior to admit; 3=current & past)
Peptic ulcer prior to surgery [ ] (0=no; 1=yes)
Vascular disease ..... [ ] (0=no; 1=yes, cerebrovas dis; 2=yes, LE dis; 3=yes, renal artery stenosis; 4=yes, no info)
Any aortic aneurysm ..... [ ] (0=no; 1=yes, current; 2=yes, history)
Known carotid disease..... [ ] (0=no; 1=yes bruit only; 2=yes, by imaging; 3=yes, prior carotid endarterectomy)
% stenosis..... [ ] (%)
Diabetes..... [ ] (0=no; 1=yes, no seq; 2=yes, w/ seq)
If DM, what tx..... [ ] (0=none; 1=diet only; 2=oral/nasal meds; 3=insulin)
Hypertension..... [ ] (0=no; 1=yes, on medication; 2=yes, no medication.; 3=yes, no info. on medication)
Cancer (exclude nonmelanoma) [ ] (0=no; 1= yes)
Atrial fibrillation ..... [ ] (0=no; 1=yes, new onset; 2=yes, chronic; 3=yes, history only)
Ventricular arrhythmia ..... [ ] (0=no; 1=yes, vfib; 2=yes, vtach; 3=yes, other)
Prior neurologic event..... [ ] (0=no; 1=TIA; 2=CVA 3=TIA&CVA)
Hx of bleeding disorder ..... [ ] (0=no; 1=yes, HIT; 2=yes, other/unk)
Cardiomegaly..... [ ] (0=no; 1=yes)
Angina this admit..... [ ] (0=no 1=yes, stable 2=yes, unstable)
M.I within 21 days?..... [ ] (0=no; 1=yes, enzymes; 2=yes, pathological findings; 3=both; 4=yes, documented in chart)
If yes, ECG changes..... [ ] (0=no; 1=Q-wave or ST-elevation; 2=ST-depres.; 3=ST changes, no other data)
If yes, when?..... [ ] (1=<=6 hrs; 2= >6hrs & <24 hrs; 3=1-2d; 4=3 -7d; 5=8=21d)
M.I.>21 days? ..... [ ] (0=no; 1=yes, Q-waves; 2=yes, pathologic findings; 3=yes, both; 4=yes, documented in chart
Cardiogenic shock..... [ ] (0=no; 1=yes, refractory; 2=yes, hemodynamic instability; 3=yes, no info.)
Failed medical treatment.... [ ] (0=no; 1=yes)
Objective evidence of cardiac ischemia..... [ ] (0=no; 1=yes)
Pre-op LVH ..... [ ] (0=no; 1=yes, EKG; 2=yes, Echo; 3=yes, method unknown)
Pre-op IVCD (by EKG) ..... [ ] (0=none; 1=LBBB; 2=RBBB; 3=other IVCD)

USE ADDRESSOGRAPH if possible

First Name _____

Last name _____

DOB _____

Medical record number _____

PRIOR PROCEDURES- ALL PROCEDURES

Prior CABG ..... [ ] (0=no; 1=yes)
Prior angioplasty (or attempt) ..... [ ] (0=no; 1=yes, this admit; 2=yes, prior to admit; 3=yes, no info.; 4=yes, both)
Prior aortic valve surgery..... [ ]
Prior mitral valve surgery ..... [ ]
Prior tricuspid valve surgery..... [ ]
Prior pulmonic valve surgery ..... [ ]
(0=no; 1= replacement 2= repair; 3=other prior valve surgery; 4=balloon valvuloplasty; 5= yes, no info.)

CARDIAC CATHETERIZATION DATA- ALL PROC.

Ejection fraction..... [ ] (%)
LVEDP (pre-dye, post A-wave) ..... [ ] (mm Hg)
Left main disease, % stenosis ..... [ ] (%, 0=if none)
Dominance ..... [ ] (0=right/balanced/ indeterminate; 1=left)
LAD stenosis..... [ ] (%)
Proximal LAD stenosis..... [ ] (%)
Circumflex stenosis..... [ ] (%)
Proximal circumflex stenosis ..... [ ] (%)
RCA stenosis..... [ ] (%)
PDA stenosis ..... [ ] (%)
Ramus stenosis..... [ ] (%) (666= no ramus)

	AOR	MIT	TRI	PUL
Pre-op stenosis				

(0=none/trace; 1=mild; 2=moderate; 3=severe; 4=stenosis, amt unkn)

	AOR	MIT	TRI	PUL
Pre-op regurgitation				

(0=none/trace; 1=mild; 2=moderate; 3=severe; 4=regurgitation, amt unkn),

	AOR	MIT	TRI	PUL
Acute or chronic regurgitation				

(1=acute; 2=chronic; 8=not applicable)

CARDIAC CATHETERIZATION DATA- VALVE ONLY

Etiology of valve disease [ ] (0=unknown; 1=degenerative; 2=rheumatic; 3=congenital; 4=endocard.; 5=ischemic; 6=aortic dissection; 7=mech. valve failure; 8=tissue valve failure; 9=non-structural prosthetic mismatch; 66=other)

	AOR	MIT	TRI	PUL
Pre-op valve area (sq cm)				
Pre-op mean gradient (mmHg)				

Pre-op PCWP..... [ ] (mmHg)
P.A. systolic pressure ..... [ ] (mmHg)
P.A. diastolic pressure..... [ ] (mmHg)
Mean P.A. pressure ..... [ ] (mmHg)
End-systolic LV dimension..... [ ] (mm)
End-diastolic LV dimension..... [ ] (mm)

Symptoms (circle all that apply): Angina SOB CHF Syncope Asymptomatic Other Symptoms

NNECDSG CABG/Valve form (definitions attached) 11/01/07 version 6.0

MR #_____

TYPE OF PROCEDURE-VALVE ONLY

	AOR	MIT	TRI	PUL
Valve replacement				

0=none; 1=std.replacement; 2=Ross proc.; 3=root, replacement; 66=other

Valve repair				

0=none; 1=repair w/ring; 2=repair w/o ring ; 3= ring only; 66=other

Valve/Ring type				

Tissue: 1=homograft/autograft (Ross); 2=homograft only; 3=pericardial; 4=stented porcine; 5=stentless porcine; 66=other tissue valve

Mechanical: 21=Medtronic Hall; 22=St. Jude; 23=Carbomedics; 67=other, mechanical valve

Ring: 31=Cosgrove; 32=Baxter; 33=Carpentier-Edwards; 34=Edwards; 35=Duran; 36=St. Jude; 37=Medtronic Hall; 38=Hancock; 39= Seguin; 40= Taylor, 41=Cos-; grove-Edwards; 68=other ring

Device size (mm)				

THERAPY (0=no; 1=yes; 888=unknown; 999= contraindicated)	**Pre**	**Intra/ OR**	**Post**
IV NTG w/in 24hrs			
Oral/Patch NTG w/in 24hrs			
IV heparin w/in 24hrs			
Thrombolytic w/in 48hrs			
Any Antiarrhythmic drugs			
Ca^{++} channel blockers, pre=w/in 24hrs, post=discharge			
ARBS/ACE Inhibitors, pre=w/in 24hrs, post=discharge			
ASA, pre=w/in 7 days, post=discharge			
Clopidogrel/Thienopyridines, pre=w/in 24hrs, post=discharge			
Anti-IIb/IIIa w/in 24hrs			
Beta-blockers, pre=w/in 24hrs, post=discharge			
Lipid-lowering agent, pre=w/in 24hrs, post=discharge			
Antibiotic, intra= within 1 hr prior to incision; post= stopped within 48 hrs after end of surgery			
RBCs, # units transfused			
Platelets, # units transfused			
FFPs, # units transfused			

Was an IABP inserted?..... (0=no; 1=yes, preop; 2=yes, intraop; 3=yes, postop)

Reason for IABP (1=unstable refractory angina; 2=cardiogenic shock; 3=failure to wean; 4=high risk patient; 5=refractory ventricular failure; 6=mechanical complications due to MI; 66=other)

Pre-induction heart rate?..... (bpm)

Blood Sugar (mg/dL)	**Day of Surg**	**POD 1**	**POD 2**
Highest blood sugar			
Blood sugar- 6am			

Continuous insulin infusion? ..... (0=no; 1=yes)

HbA1c, <= 6 wks pre & prior to transfusion..... (%)

LABS	**High Pre**	**Last Pre**	**Post**	**Disc.**
WBC (thousands), last preop, highest postop				
Creatinine, mg/dL(highest preop, last preop, highest postop, last)				
Troponin (last preop, 24hr post) circle: **T or I**				

PROCEDURE DATA-ALL PROCEDURES

Priority at operation ..... (1=emergency; 2=urgent; 3=non-urgent)

Type of incision..... (0=sternotomy; 1=ministernotomy; 2=anter-thoracotomy; 3=posteriolateral; 4=other thoracotomy)

Method of pericardiotomy . (0=midline; 1=pericard. flap; 2=thymic flap)

SV graft harvest procedure . (0=no; 1=open; 2=endo; 3=both)

Radial harvest procedure..... (0=no; 1=open; 2=endo; 3=both)

Left IMA used ..... (0=no; 1=yes, ped; 2=yes, free; 3=yes, no info)

Right IMA used ..... (0=no; 1=yes, ped; 2=yes, free; 3=yes, no info)

If IMA not used, why not? . (1=pt too old; 2=LAD<50%; 3=IMA already used; 4=pt. too unstable; 5=IMA unsuitable; 66=other)

No. of distal anastomoses .....

If only a single bypass, was it for LM stenosis (0=no; 1=yes)

Aortic assessment ..... (0= not done; 1=TEE; 2=epiaortic; 3=palpation; 4=TEE & Epiaortic

	Asc	Arch	Des	Unkn. Location
Atheroma grade				

(use code for technique: **TEE:** 1=normal; 2= mod. thick; 3= atheroma<5mm; 4= atheroma ≥5mm; 5= mobile atheroma; **Epiaortic:** 6= mild; 7= moderate; 8= severe; 9= uninterpretable; **Palpation:** 10= mild; 11= moderate; 12= severe; 13= uninterpretable)

PUMP DATA- ALL PROCEDURES

Pump support ..... (0=off pump; 1=on pump; 2=off/on)

Conversion to CPB?..... (1=patient unstable; 2=graft failure; 3=poor exposure; 66=other)

Total clamp time ..... (minutes)

Total pump time ..... (minutes)

Return to bypass pump? ..... (0=no; 1=yes)

If yes, for how long? (minutes)

If yes, why?..... (0=hemodynamic instability; 1=other surgical reason)

POST-OP DATA- ALL PROCEDURES

Admit to CTICU _____:_____(m/d/y:hh:mm)

Initial Extubation _____:_____(m/d/y:hh:mm)

Trans. from CTICU_____:_____(m/d/y:hh:mm)

Was pt. re-intubated? ..... (0=no;1=yes≤ 24 hrs; 2=yes, >24hrs)

	On Arrival	4 hrs	48 hrs
Cardiac Index (1/min/m^2, 999= no PA catheter)			
MAP (999= no PA catheter)			
Inotropes (number of)			

Smoking Cessation advice/counseling (0=no; 1=yes, 2=NA)

IN-HOSPITAL OUTCOMES- ALL PROCEDURES

Return to OR ..... (0=no; 1=yes,bleeding; 2=yes, graft revision; 3= tracheotomy; 4=tamponade; 5=pacemaker; 6=valve revision; 66=other cardiac; 67= other non-cardiac)

Neurologic event.. (0=no; 1=Intraop/Postop CVA; 2=TIA; 3=Stupor/Coma; 4=neurologic changes noted)

If Neurologic deficit, >72hrs (0=no; 1=yes)

Mediastinitis or sternal dehisc requiring re-op ..... (0=no; 1=yes,mediastinitis; 2=yes, dehisc.; 3=both)

Post-op leg wound infection (0=no; 1=yes)

Post-op afib ..... (0=no; 1=yes, treated; 2=yes, no treat.; 3=yes, treatment unknown)

Post-op dialysis-new ..... (0=no; 1=yes)

Post-op pneumonia..... (0=no; 1=yes)

Post-op STEMI(Q-wave) MI. (0=no; 1=yes)

HIT..... (0=no; 1=yes)

Discharge status ..... (1=dead; 2=home; 3=rehab; 4=SNF; 5=nursing home; 6=acute care facility; 7=hospice care; 66=other; 99=alive, destination unknown)

DEFINITIONS

TYPE OF PROCEDURE

Other procedures: VSD: Ventricular Septal Defect repair; **ASD:** Atrial Septal Defect repair; **Surgical treatment of arrhythmias**: ablation or resection of conduction system not Maze; **AICD placement:** Automatic Implantable Cardioverter/Defibrillator implantation; **TMR:** Transmyocardial Revascularization; **Maze:** referred to as Maze procedure used to treat afib. **LVAD:** Left Ventricular Assist Device; **Other:** any significant cardiovascular surgery not included in this list.

PRE-OP

Smoker: Five or more cigarettes a day at any time during the past year.

Known CAD: Angina, previous MI or >50% stenosis of a major vessel

NYHA classification: I: Patients who have heart disease without limitation of physical activity. Ordinary activity does not cause symptoms. **II:** Patients with heart disease with slight limitation of physical activity. Ordinary physical activity causes fatigue, dyspnea, palpitation or angina pectoris. **III:** Patients with heart disease who have marked limitation of activity and experience symptoms with less than ordinary activity. They do not have symptoms at rest. **IV:** Patients who cannot engage in any physical activity without symptoms and may have symptoms at rest.

COPD requiring treatment: Chronic obstructive pulmonary disease or asthma requiring inhalers, theophyllines/aminophyllines, or steroids.

Pre-op renal history: Dialysis:On peritoneal or hemo-dialysis prior to surgery. **History of renal insufficiency:** any time prior to procedure. If not mentioned in chart code it as 888.

CHF prior to surgery: Physician's statement in medical record indicating Congestive Heart Failure during current admission, and prior to surgery clinically manifested by one or more features including exertional dypsnea or fatigue, bilateral pedal edema, orthopnea, paroxysmal nocturnal dyspnea, acute pulmonary edema, or rales.

Peptic ulcer prior to surgery: Known current problem requiring treatment.

Vascular disease: Cerebrovascular disease: prior CVA, prior TIA, prior carotid surgery, carotid stenosis by history or radiographic studies, or carotid bruit; **LE (lower extremity disease):** claudication, amputation, prior lower extremity bypass, absent pedal pulses or lower extremity ulcers; **Renal artery stenosis:** narrowing of the renal artery.

Aortic Aneurysm: Current: Any current aortic aneurysm at any location. **History:** Any previous repair.

Carotid disease: **% stenosis:** Use last measurement, if available give percent, if only range, record the midpoint of the range.

Diabetes: Documented in medical record or patient history. **Diabetes with sequelae**: Diabetes with renal disease, retinopathy, peripheral neuropathy, gastroparesis, or peripheral circulatory disease.

Hypertension: Documented in medical record or patient history.

Cancer (excluding nonmelanoma): Physicians statement in the medical record indicating leukemia, lymphoma, solid cancer, metastatic or multiple cancers as a current medical problem.

Atrial Fibrillation: Sustained atrial fibrillation requiring treatment with digoxin, beta/calcium channel blockers, anti-arrhythmics or cardioversion.

Ventricular arrhythmia (life threatening): VFib: Ventricular fibrillation requiring cardioversion. **VTach:** Tachycardia requiring cardioversion or a recurrent ventricular tachycardia in patients who have tried and failed drug or device therapy. Either event is within 2 weeks of procedure.

Prior Neurologic event: TIA: abrupt onset of focal or global neurological symptoms caused by ischemia or hemorrhage resolving ≤24hrs; **CVA:** Loss of neurological function caused by ischemic event persisting > 24 hours or leaving residual signs.

Hx of bleeding disorder: HIT: heparin-induced thrombocytopenia. Other/unk: Hemophilia, DIC.

Cardiomegaly: A heart/lung ratio on CxR >50%; a moderately or severely dilated heart on echo; a dilated heart on radionuclide studies.

Angina this admit: Stable: Patient is asymptomatic only when treated with anti-anginal medication or has a stable pattern of symptoms when treated with anti-anginal medication, but angina significantly interferes with quality of life and medication is poorly tolerated. **Unstable:** Physician's statement in medical record indicating unstable angina during current admission, and prior to surgery; clinically manifested by new onset angina, rest angina, angina of increasing frequency and/or intensity, angina lasting ≥20 minutes despite medication occurring within two weeks of an MI.

M.I. within 21 days: Either **One** of the following criteria satisfies the diagnosis for an acute, evolving or recent **MI: Enzyme-** Typical rise and gradual fall (troponin) of more rapid rise and fall (CK-MB) of biochemical markers of myocardial necrosis with at least **one** of the following: a) ischemic symptoms; b) development of pathologic Q waves on the ECG (Q-wave MI: Development of an Q waves in leads V1 through V3, or the development of a Q wave ≥ 30ms(0.03 s) in leads I, II, aVL, aVF, V4, V5, or V6. (Q-wave changes must be present in any 2 contiguous leads and be ≥ 1mm in depth); c) ECG changes indicative of ischemia (ST- segment elevation (STEMI: New or presumed new ST-segment elevation at the J point in 2 or more contiguous leads with the cutoff points ≥0.2 mV in leads V1, V2, or V3, or ≥0.1 mVin other leads) or depression); or d) coronary artery intervention OR **Pathologic findings** of an acute MI.

M.I.>21 days: 1) Development of new pathologic **Q waves** on serial ECGs. The patient may or may not remember previous symptoms. Biochemical markers of myocardial necrosis may have normalized, depending on the length of time that has passed since the infarct developed. or 2) **Pathologic findings** of a healed or healing MI.

Cardiogenic Shock: Refractory: Systolic BP<80 and /or Cardiac Index<1.8 despite maximal treatment (inotropes and/or IABP). **Hemodynamic Instability:** IV inotropes and/or IABP necessary to maintain Systolic BP>80 and /or CI>1.8.

Failed medical therapy: Patients with NYHA or CCS Class II-IV angina who show evidence of ischemia while on medical therapy, have angina that is inadequately responsive to medical therapy (patient and physician agree that angina significantly interferes with the patient's occupation or ability to perform usual activities), are intolerant of medical therapy because of uncontrollable side effects. Patients with unstable or post-infarction angina who can not be safely weaned from intravenous heparin or nitroglycerine.

Objective evidence of cardiac ischemia: On ETT at ≤ stage 2 Bruce or 6 METS a) ≥1 mm ST segment depression in ≥2 leads; b) EKG changes lasting ≥3 minutes into recovery; c) ≥10 mm Hg decrease in systolic BP or BP response to exercise ≤130 mm Hg; d) ventricular tachycardia; e) angina. **On thallium ETT** a) reversible defects in ≥2 areas or a large defect in one area; b) increased lung uptake; c) cavity dilatation. **On stress Echo** a change in systolic wall function from normal to hypo/akinetic, hypokinetic to akinetic or recruitment of function in at least 2/16 segments. **On stress, radionuclide testing** a) a reduction in EF ≥0.10; b) development of segmental wall motion abnormalities; c) cavity dilatation. Unstable or post-MI angina.

CARDIAC CATHERIZATION DATA

Left main disease, % stenosis: If a range is specified on angiography report give an integer midpoint of the range.

Dominance: PDA is subsumed under the right coronary distribution in right dominant anatomy, and under the circumflex distribution in left dominant anatomy. Balanced or indeterminate (not ascertainable or missing) anatomy is treated as right dominant for purposes of classification of single/double/triple vessel disease. An intermediate or ramus is considered a diagonal branch of the LAD distribution.

LAD: Left Anterior Descending artery. **RCA:** Right Coronary Artery. **PDA:** Posterior Descending Artery.

Proximal LAD stenosis: Stenosis in the LAD prior to the 1st septal perforator.

Proximal circumflex disease: Proximal to first marginal.

Pre-op stenosis: Aortic: Mild>=1.5 cm2; Moderate 1-1.4 cm2; Severe <1 cm2. Mitral: Mild>=2 cm2; Moderate 1- 1.9cm2; Severe <1cm2.

Pre-op regurgitation: Mild, Moderate or Severe as documented on cardiac catheterization or echocardiography.

Acute or Chronic regurgitation: As reported by MD (in p rogress notes, in operative notes, perfusionists notes, discharge summary) or in the cardiac catheterization or echocardiography report.

DEFINITIONS (continued)

CARDIAC CATHERIZATION DATA- VALVE ONLY

Etiology of valve disease: Degenerative – deterioration of cardiac valve generally due to the aging process, i.e. calcification, fibrosis. **Rheumatic** – fibrosis/calcification of valve leaflets or cusps due to the rheumatic process, causing fusion of the commissures or fusion of the subvalvular chordal apparatus.
Congenital – a valve abnormality that the patient was born with. **Endocarditis** – presence of vegetation, pus, perforated leaflet or cusp, or abscess, observed at the time of surgery in patients with active or documented history of infectious endocarditis (positive blood cultures may or may not occur depending on course of antibiotic treatment).
Ischemic – presence of severe coronary artery disease and mitral regurgitation due to: a) papillary muscle dysfunction or disruption or b) ischemic ventricular impairment with dilated left ventricle, mitral anular dilatation and restricted leaflet motion. **Aortic dissection** – aortic valvular regurgitation due to dissecting hematoma involving the aortic root.
Mechanical valve failure – usually involves poppet dislodgement. **Tissue valve failure** – deterioration or changes intrinsic to the prosthetic valve such as calcification, fibrosis, leaflet/cusp tear, or suture dehiscence within the valve component. **Non-structural prosthetic mismatch** – inappropriate sizing of prosthetic; **Other**- any other etiology not listed above

THERAPY

RBCs: any transfusion of RBC during this admission
IABP: Intraortic balloon pump: implant of pulsation balloon device. Intra-op: while in the operating room; Post-op: after departure from the operating room.
Highest blood sugar: highest during time periods, some patients will just have one blood sugar a day.
Blood sugar 6am: 1st fasting blood sugar obtained in the morning.
Continuous insulin infusion: used anytime during or after the procedure.

LAB DATA

Antibiotics: Intra: Prophylactic antibiotics given within 1 hr. of surgical incision (2 hrs. if vancomycin) **Postop:** if prophylactic antibiotics given were they d'cd within 48 hrs. after end of surgery.
WBC: Last pre-operative measurement of WBC taken before procedure. Highest post-op- highest recorded post-op WBC
Creatinine: Highest in the pre-operative period. Last pre-operative creatinine measurement taken before procedure, documented in medical record or patient history. Highest post-op- highest recorded post-op creatinine. Last creatinine prior to discharge.
Troponin: Circle T or I. Last Preop= Prior to incision; Post-op= ≤ 24hours after procedure
HbA1c: Any recorded HbA1c up to 6 weeks prior to procedure or during admission but prior to transfusion.

PROCEDURE DATA- ALL PROCEDURES

Priority: Emergency: Medical factors relating to the patient's cardiac disease dictate that surgery should be performed within hours to avoid unnecessary morbidity or death. Examples: failed PTCA with acute coronary insufficiency and/or hemodynamic instability, similar situation in absence of PTCA. This case should take precedence in time over an elective case, open a new room, or be done at night, if necessary. **Urgent:** Medical factors require patient to stay in hospital to have operation before discharge. The risk of immediate morbidity and death are not present. Examples: threatening pathologic anatomy such as high grade Left Main Coronary Disease, particularly with moderately severe symptoms or history of life threatening arrhythmia (VF) related to ischemia. May have intra-aortic balloon pump or intravenous nitroglycerin as part of treatment program. This case might be done in the next available surgical slot but would not necessarily take precedence over an elective case and could possibly wait for several days. **Non-urgent:** Medical factors indicate the need for operation but the clinical picture allows discharge from the hospital with readmission at a later date for more elective surgery. Little risk of incurring morbidity or death outside of the hospital with good medical management and restricted physical activities.
Radial harvest procedure and/or SV graft harvest procedure: No: not harvested. **Open:** open harvest method on one or both used. **Endo:** endoscopic method on one or both used. **Both:** used 2 different methods to harvest either one or both.
Single artery bypass of LM: Aortocoronary bypass of lesion in LM coronary artery with no other significant lesions bypassed, as documented in operative report.
Atheroma grade: State grading by method of each area of the aorta (Asc=; Arch=; Des=; Unknown (have grade but do not know area)). **TEE Grade:** 1= normal; 2=moderate thick; 3=atheroma<5mm; 4=atheroma≥5mm; 5=mobile atheroma. **Epiaortic/Palpation Grading:** Mild= localized thickening less than 3 mm; Moderate= intimal thickening of 3-5 mm; Severe= an area of thickening of greater than 5 mm in one or more segments and one or more of the following: marked calcification, protruding or mobile atheroma, ulcerated plaques, thrombi, or circumferential involvement of most or all of the aorta.

PUMP DATA- ALL PROCEDURES

Pump support: off/on: patient was converted from off pump to on pump.
Total clamp time: The sum of all time(s) when the aortic cross clamp is in place.
Total pump time: Time (in minutes) from point pump is turned on until it is turned off, or sum of these if bypass reinitiated.
Return to pump: Returned to cardiopulmonary bypass after initial complete separation.

POST-OP- ALL PROCEDURES

Time to extubation: Hours from leaving the O.R. to extubation
Cardiac index: On arrival: First one taken in the ICU
Inotropes on arrival: Number of inotropes the patient is on when he arrives to the ICU.
Inotropes: epinephrine, milrinone, amrinone, dobutamine, dopamine, levophed
MAP: Mean arterial pressure
Please note: The 48 hr time periods for CI, MAP and Inotropes is for patients who have not been discharged from the ICU.
Smoking cessation advice/counseling- Patients with a history of smoking cigarettes, who are given smoking cessation advice or counseling during their hospital stay.

IN_HOSPITAL OUTCOMES- ALL PROCEDURES

Return to OR: Bleeding: Performance of median sternotomy to assess bleeding after initial departure from OR. **Tamponade:** Fluid in the pericardial space compromising cardiac filling, and requiring intervention. This should be documented by either: a. echo showing pericardial fluid and signs of tamponade such as right heart compromise, or b. systemic hypotension due to pericardial fluid compromising cardiac function.
Neurologic deficit: Intra/Postop CVA: Diagnosis documented by MD and defined by the following: new focal neurological deficit which appears and is still at least partially evident > 24 hours after its onset, occurring during or following the CABG procedure and established prior to discharge. **TIA:** abrupt onset of focal or global neurological symptoms caused by ischemia or hemorrhage resolving ≤ 24 hrs. **Stupor/Coma:** stupor- a lowered level of consciousness manifested by the subject's responding only to vigorous stimulation; coma- patient cannot be aroused and is consistently unconscious. **Neurologic changes noted:** Deterioration in intellectual function, confusion, agitation, dementia/delirium, memory deficit, seizure (not as a result from low blood sugar)
Mediastinitis or sternal dehiscence requiring re-operation: Mediastinitis (two of the following with no other recognized cause: (a) Organisms and white blood cells seen on gram stain aspirated fluid; (b) Positive deep culture; (c) Radiographic evidence of infection). **Sternal dehiscence** requiring re-operation.
Post-op leg wound infection: Leg incision infection requiring dressings and treatment with antibiotics.
Post-op afib: Must have one of the following: Afib persisting for more than 4 hrs. or with hemodynamic instabilty requiring treatment; or tachycardia requiring treatment; or recurrent episodes of afib.
Post-op dialysis-new: A new peritoneal or hemo-dialysis that occurred after the procedure.
Post-op pneumonia: The presence of a new lobar infiltrate on chest x-ray and pure growth of a recognized respiratory pathogen or 4+ growth of a recognized pathogen in the presence of mixed growth.
Post-op STEMI (Q-wave) MI: A new Q wave on ECG or ST elevation.
HIT: Heparin-induced thrombocytopenia: an immune-mediated disorder characterized by the formation of antibodies against the heparin-platelet factor 4 complex.
Post-op discharge status: SNF= skilled nursing facility