Mac-Lab Hemo for EP

Imported Data Elements

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Table of Contents

Introduction

The Mac-Lab Hemo system data elements that are supported for import into ASCEND are listed in the following tables.

Scope of Mac-Lab Import

Patient Demographics, fluoroscopy

Patient Demographics

Seg	OBR Phase Name	OBX Type	Report finding
PID	*N/A*	*N/A*	Race (disabled by default)
PID	*N/A*	*N/A*	Date of birth (disabled by default)
OBX	Patient Demographics	PT-SEX	Gender (disabled by default)
OBX	Patient Demographics	PT-AGE	Age (disabled by default)
OBX	Patient Demographics	PT-HT-CM	Height
OBX	Patient Demographics	PT-WT-KG	Weight
OBX	Patient Demographics	PT-BSA	BSA (disabled by default)

Fluoroscopy, radiation

Seg	OBR Phase Name	OBX Type	Report finding
OBX	XRay Summary	XRAY-FLTIME	Fluoroscopy time
OBX	XRay Summary	XRAY-DIAGFLTIME	Diagnostic fluoroscopy time
OBX	XRay Summary	XRAY-INTFLTIME	Interventional fluoroscopy time
OBX	XRay Summary	XRAY-FLDOSE	Fluoroscopy dose
OBX	XRay Summary	XRAY-CINEDOSE	Cine dose
OBX	XRay Summary	XRAY-TOTDOSE	Total dose

Other, miscellaneous

Seg	OBR Phase Name	OBX Type	Report finding
OBX	*Any*	Event_Vitals	Heart rate

Lab Results

Blood Lab Results

Seg	OBX Type	Qualifier	Report finding
OBX	EVENT	Creatinine=	Creatinine (mg/dl)
OBX	EVENT	BUN=	BUN (mg/dl)
OBX	EVENT	Hemoglobin=	Hemoglobin (g/dl)
OBX	EVENT	Platelets=	Platelets (th/ul)
OBX	EVENT	INR=	INR
OBX	EVENT	Potassium=	Potassium (meq/L)
OBX	EVENT	PT	PT (sec)
OBX	EVENT	Sodium	Sodium (mEq/l)

Procedure Import

Procedural Step Macros

Mac-Lab Macro Superset	ASCEND report	ASCEND string for Mac-Lab	ASCEND Macro Name
L Brachial artery access	Left brachial artery access. The access site was infiltrated with 2% lidocaine. The vessel was entered with the modified Seldinger technique.	{Acc.A.Brach.L}	QR.ML.Acc.A.Brach.L
R Brachial artery access	Right brachial artery access. The access site was infiltrated with 2% lidocaine. The vessel was entered with the modified Seldinger technique. A catheter was inserted into the vessel.	{Acc.A.Brach.R}	QR.ML.Acc.A.Brach.R
L Femoral artery access	Left femoral artery access. The access site was infiltrated with 2% lidocaine. The vessel was entered with the modified Seldinger technique. A sheath was advanced into the vessel and used for catheter placement.	{Acc.A.Fem.L}	QR.ML.Acc.A.Fem.L
R Femoral artery access	Right femoral artery access. The access site was infiltrated with 2% lidocaine. The vessel was entered with the modified Seldinger technique. A sheath was advanced into the vessel and used for catheter placement.	{Acc.A.Fem.R}	QR.ML.Acc.A.Fem.R
L Radial artery access	Left radial artery access. The access site was infiltrated with 2% lidocaine. The vessel was entered with the modified Seldinger technique. A 20 gauge angiocath catheter was inserted into the vessel.	{Acc.A.Rad.L}	QR.ML.Acc.A.Rad.L
R Radial artery access	Right radial artery access. The access site was infiltrated with 2% lidocaine. The vessel was entered with the modified Seldinger technique. A 20 gauge angiocath catheter was inserted into the vessel.	{Acc.A.Rad.R}	QR.ML.Acc.A.Rad.R
Arterial access	Arterial access.	{Acc.A}	QR.ML.Acc.A
Micropuncture Used	[Vessel]. The vessel was entered with a Micro needle.	{Acc.Micro}	QR.ML.Acc.Micro
Transseptal puncture	Transseptal catheterization. Transseptal access was obtained.	{Acc.Septal}	QR.ML.Acc.Septal
Sheath Insertion	[Vessel]. A sheath was advanced into the vessel.	{Acc.Sheath}	QR.ML.Acc.Sheath
Ultrasound guided access	[Vessel]. The vessel was entered with ultrasound guidance.	{Acc.US}	QR.ML.Acc.US
L Brachial vein access	Left brachial vein access. The access site was infiltrated with 2% lidocaine. The vessel was entered with the modified Seldinger technique. A sheath was advanced into the vessel.	{Acc.V.Brach.L}	QR.ML.Acc.V.Brach.L
R Brachial vein access	Right brachial vein access. The access site was infiltrated with 2% lidocaine. The vessel was entered with the modified Seldinger technique. A sheath was advanced into the vessel.	{Acc.V.Brach.R}	QR.ML.Acc.V.Brach.R
L Femoral vein access	Left femoral vein access. The access site was infiltrated with 2% lidocaine. The vessel was entered with the modified Seldinger technique. A sheath was advanced into the vessel.	{Acc.V.Fem.L}	QR.ML.Acc.V.Fem.L

Mac-Lab Hemo System Imported Data Elements

Mac-Lab Macro Superset	ASCEND report	ASCEND string for Mac-Lab	ASCEND Macro Name
R Femoral vein access	Right femoral vein access. The access site was infiltrated with 2% lidocaine. The vessel was entered with the modified Seldinger technique. A sheath was advanced into the vessel and used for intravenous fluid administration and catheter placement.	{Acc.V.Fem.R}	QR.ML.Acc.V.Fem.R
L Internal Jugular vein access	Left internal jugular vein access. The access site was infiltrated with 2% lidocaine. The vessel was entered with the modified Seldinger technique. A sheath was advanced into the vessel and used for catheter placement.	{Acc.V.IJ.L}	QR.ML.Acc.V.IJ.L
R Internal Jugular vein access	Right internal jugular vein access. The access site was infiltrated with 2% lidocaine. The vessel was entered with the modified Seldinger technique. A sheath was advanced into the vessel and used for catheter placement.	{Acc.V.IJ.R}	QR.ML.Acc.V.IJ.R
Contrast Injected for L Subclav access	Left subclavian vein access. The vessel was entered with visualization by radiocontrast dye infusion.	{Acc.V.SC.L.Ctr}	QR.ML.Acc.V.SC.L.Ctr
L Subclavian vein access	Left subclavian vein access. The access site was infiltrated with 2% lidocaine. The vessel was entered with the modified Seldinger technique. A sheath was advanced into the vessel.	{Acc.V.SC.L}	QR.ML.Acc.V.SC.L
R Subclavian vein access	Right subclavian vein access. The access site was infiltrated with 2% lidocaine. The vessel was entered with the modified Seldinger technique. A sheath was advanced into the vessel and used for catheter placement.	{Acc.V.SC.R}	QR.ML.Acc.V.SC.R
Access Obtained	Access	{Acc}	QR.ML.Acc
Sedation Provided by Anesthesia	Sedation. General anesthesia was administered by anesthesiology staff.	{Anesthesia}	QR.ML.Anesthesia
Pulmonary Artery Angio	Right heart catheterization was performed with pulmonary angiography. A catheter was advanced to the right ventricle under fluoroscopic guidance. With the catheter in the main pulmonary artery, contrast was injected.	{Angio.PA}	QR.ML.Angio.PA
Cardioversion	Cardioversion.	{Cardioverted}	QR.ML.Cardioverted
L Carotid Sinus Massage	Carotid sinus massage (left) was performed.	{CarotidMassage.L}	QR.ML.CarotidMassage.L
R Carotid Sinus Massage	Carotid sinus massage (right) was performed.	{CarotidMassage.R}	QR.ML.CarotidMassage.R
RHC w/ unspecified method	Right heart catheterization was performed. A 7 Fr Swan Ganz catheter was advanced to the pulmonary artery under fluoroscopic guidance. Resting hemodynamics were obtained. Measurements included pressures, arterial and venous oxygen saturation samples, and cardiac output. The catheter remained in place throughout the procedure for continuous monitoring of pulmonary artery pressure.	{Cath.RV.CO}	QR.ML.Cath.RV.CO

Mac-Lab Hemo System Imported Data Elements

Mac-Lab Macro Superset	ASCEND report	ASCEND string for Mac-Lab	ASCEND Macro Name
RHC w/ Assumed Fick	Right heart catheterization was performed. A 7 Fr Swan Ganz catheter was advanced to the pulmonary artery under fluoroscopic guidance. Resting hemodynamics were obtained. Measurements included pressures, arterial and venous oxygen saturation samples, and cardiac output (by Fick using assumed VO2). The catheter remained in place throughout the procedure for continuous monitoring of pulmonary artery pressure.	{Cath.RV.Fick.A}	QR.ML.Cath.RV.Fick.A
RHC w/ Fick	Right heart catheterization was performed. A 7 Fr Swan Ganz catheter was advanced to the pulmonary artery under fluoroscopic guidance. Resting hemodynamics were obtained. Measurements included pressures, arterial and venous oxygen saturation samples, and cardiac output (by Fick using measured VO2). The catheter remained in place throughout the procedure for continuous monitoring of pulmonary artery pressure.	{Cath.RV.Fick.M}	QR.ML.Cath.RV.Fick.M
RHC w/ thermodilution	Right heart catheterization was performed. A 7 Fr Swan Ganz catheter was advanced to the pulmonary artery under fluoroscopic guidance. Resting hemodynamics were obtained. Measurements included pressures, arterial and venous oxygen saturation samples, and cardiac output (by thermodilution). The catheter remained in place throughout the procedure for continuous monitoring of pulmonary artery pressure.	{Cath.RV.Thermo}	QR.ML.Cath.RV.Thermo
RHC (NOS)	Right heart catheterization was performed. A 7 Fr Swan Ganz catheter was advanced to the pulmonary artery under fluoroscopic guidance. Resting hemodynamics were obtained. Measurements included pressures and arterial and venous oxygen saturation samples. The catheter remained in place throughout the procedure for continuous monitoring of pulmonary artery pressure.	{Cath.RV}	QR.ML.Cath.RV
Celox bandage used	Hemostasis. Vessel closure was achieved with a Celox bandage device.	{Celox}	QR.ML.Celox
Central Line Placed	Central venous access. A catheter was inserted into the vessel.	{CentralLine}	QR.ML.CentralLine
Skin Adhesive Applied	Wound closure. The skin was approximated with Dermabond (2-octyl cyanoacrylate).	{Closure.Adhesive}	QR.ML.Closure.Adhesive
Consent Signed and On Chart	The risks, benefits, and alternatives to the procedure were explained and informed consent was obtained.	{Consent}	QR.ML.Consent
Knife blade count confirmed	All instrument counts were correct.	{Count.Blade}	QR.ML.Count.Blade
Electrosurgical Tip count confirmed	All instrument counts were correct.	{Count.ESurg}	QR.ML.Count.ESurg

Mac-Lab Hemo System Imported Data Elements

Mac-Lab Macro Superset	ASCEND report	ASCEND string for Mac-Lab	ASCEND Macro Name
Injectable needle count confirmed	All needle counts were correct.	{Count.Needle}	QR.ML.Count.Needle
Raytek count confirmed	All sponge counts were correct.	{Count.Raytek}	QR.ML.Count.Raytek
Seldinger needle count confirmed	All needle counts were correct.	{Count.Seldinger}	QR.ML.Count.Seldinger
Post Procedure Sponge Count Confirmed	Needle, sponge, and instrument counts were correct.	{Count.Sponge}	QR.ML.Count.Sponge
Suture count confirmed	All sponge counts were correct.	{Count.Suture}	QR.ML.Count.Suture
Post procedure counts confirmed	All counts of disposable supplies were correct.	{Count}	QR.ML.Count
Defibrillation	Defibrillation.	{Defibrillated}	QR.ML.Defibrillated
ICD Implant 1 lead	Right ventricular defibrillator lead implantation. Under fluoroscopic guidance, it was advanced to the right ventricle. Single-chamber cardioverter defibrillator implantation. The device was attached to the lead(s) and implanted; it was then anchored to the underlying fascia with nonabsorbable sutures.	{Dev.ICD.Imp.1}	QR.ML.Dev.ICD.Imp.1
ICD Implant 2 lead	Right ventricular defibrillator lead implantation. Under fluoroscopic guidance, it was advanced to the right ventricle. Right atrial lead implantation. Under fluoroscopic guidance, it was advanced to the right atrium. Dual-chamber cardioverter defibrillator implantation. The device was attached to the lead(s) and implanted; it was then anchored to the underlying fascia with nonabsorbable sutures.	{Dev.ICD.Imp.2}	QR.ML.Dev.ICD.Imp.2
BiVent ICD Implant	Biventricular cardioverter defibrillator implantation. The device was attached to the lead(s) and implanted; it was then anchored to the underlying fascia with nonabsorbable sutures.	{Dev.ICD.Imp.BiV}	QR.ML.Dev.ICD.Imp.BiV
ICD Implantation	Cardioverter defibrillator implantation. The device was attached to the lead(s) and implanted; it was then anchored to the underlying fascia with nonabsorbable sutures.	{Dev.ICD.Imp}	QR.ML.Dev.ICD.Imp
ICD Generator Change	Device explantation. The cardioverter defibrillator was detached from the lead(s) and explanted. Cardioverter defibrillator implantation. The device was attached to the leads and implanted; it was then anchored to the underlying fascia with nonabsorbable sutures.	{Dev.ICD.Replace}	QR.ML.Dev.ICD.Replace
Loop Recorder Removal	Device explantation. The loop recorder was explanted.	{Dev.LoopRec.Exp}	QR.ML.Dev.LoopRec.Exp
Loop Recorder Insertion	Loop recorder implantation. The device was implanted.	{Dev.LoopRec.Imp}	QR.ML.Dev.LoopRec.Imp

Mac-Lab Hemo System Imported Data Elements

Mac-Lab Macro Superset	ASCEND report	ASCEND string for Mac-Lab	ASCEND Macro Name
Pacemaker Extraction	Device explantation. The permanent pacemaker was detached from the lead(s) and explanted.	{Dev.PPM.Exp}	QR.ML.Dev.PPM.Exp
Pacer Implant -1 lead	Right ventricular pacing lead implantation. Under fluoroscopic guidance, it was advanced to the right ventricle. Single-chamber permanent pacemaker implantation. The device was attached to the lead(s) and implanted; it was then anchored to the underlying fascia with nonabsorbable sutures.	{Dev.PPM.Imp.1}	QR.ML.Dev.PPM.Imp.1
Pacer Implant -2 lead	Right ventricular pacing lead implantation. Under fluoroscopic guidance, it was advanced to the right ventricle. Right atrial pacing lead implantation. Under fluoroscopic guidance, it was advanced to the right atrium. Dual-chamber permanent pacemaker implantation. The device was attached to the lead(s) and implanted; it was then anchored to the underlying fascia with nonabsorbable sutures.	{Dev.PPM.Imp.2}	QR.ML.Dev.PPM.Imp.2
BiVent Pacer Implant	Biventricular permanent pacemaker implantation. The device was attached to the lead(s) and implanted; it was then anchored to the underlying fascia with nonabsorbable sutures.	{Dev.PPM.Imp.BiV}	QR.ML.Dev.PPM.Imp.BiV
Permanent Pacemaker Implant	Permanent pacemaker implantation. The device was attached to the lead(s) and implanted; it was then anchored to the underlying fascia with nonabsorbable sutures.	{Dev.PPM.Imp}	QR.ML.Dev.PPM.Imp
Pacemaker Generator Change	Device explantation. The device was detached from the lead(s) and explanted. Permanent pacemaker implantation. The device was attached to the leads and implanted; it was then anchored to the underlying fascia with nonabsorbable sutures.	{Dev.PPM.Replace}	QR.ML.Dev.PPM.Replace
DFT Test	Defibrillation threshold testing was performed.	{Dev.Tested.DFT}	QR.ML.Dev.Tested.DFT
Device tested	Device testing was performed. Two-way communication was established between the device and its programmer.	{Dev.Tested}	QR.ML.Dev.Tested
Patient Disposition: Cath Lab Holding	The patient was transferred to cath lab holding.	{Disp.CLHolding}	QR.ML.Disp.CLHolding
Patient Disposition: Critical Care Bed	The patient was transferred to the intensive care unit.	{Disp.ICU}	QR.ML.Disp.ICU
Patient Disposition: Other	The patient was discharged to other location.	{Disp.Other}	QR.ML.Disp.Other
Patient Disposition: Recovery Area	The patient was transferred to the recovery unit.	{Disp.Recov}	QR.ML.Disp.Recov
Patient Disposition: Regular Bed	The patient was transferred to an outpatient bed.	{Disp.RegBed}	QR.ML.Disp.RegBed

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Mac-Lab Macro Superset	ASCEND report	ASCEND string for Mac-Lab	ASCEND Macro Name
Patient Disposition: Telemetry Bed	The patient was transferred to the telemetry unit.	{Disp.Tele}	QR.ML.Disp.Tele
Distal pulses checked	Hemostasis. Distal pulses were unchanged.	{DistalPulses}	QR.ML.DistalPulses
All equipment removed	All non-implanted equipment used during the procedure was removed.	{EquipRem}	QR.ML.EquipRem
Diag Catheter Inserted	A catheter was placed.	{Ins.DiagCath}	QR.ML.Ins.DiagCath
Diag Catheter Exchanged	Catheter exchange.	{Exch.DiagCath}	QR.ML.Exch.DiagCath
Diag Catheter Removed	A catheter was removed.	{Rem.DiagCath}	Qr.ML.Rem.DiagCath
Coronary Sinus Cannulated	Coronary sinus angiography. A steerable catheter was advanced into the coronary sinus.	{Insert.CSLeadDel}	QR.ML.Insert.CSLeadDel
Peripheral wire inserted	A wire was placed.	{Insert.Wire.Periph}	QR.ML.Insert.Wire.Periph
LAA Epicardial Cath	Lariat pericardial access. A long, thin-walled needle was advanced until access to the pericardial space was obtained. A wire was inserted into the pericardial space and the access site was dilated. A soft tip sheath was advanced over the wire into the pericardial space and left in position for the subsequent procedure.	{LAAO.EpiAccess}	QR.ML.LAAO.EpiAccess
LAA Occlusion Device	Watchman left atrial appendage occlusion device. Watchman device size had been estimated by a pre-procedure TEE. The transseptal sheath was exchanged for the 12 Fr Watchman delivery system, which was advanced into the left atrium. The Watchman device was delivered into the left atrium. TEE imaging was repeated in multiple views and correct positioning of the device was observed with no Doppler jets into the left atrial appendage. A tug test was performed to determine the security of the device. The case was paused for 10 mins. TEE measurements were then repeated. Adequate compression was observed. The device was released and permanently delivered.	{LAAO.Internal}	QR.ML.LAAO.Internal
LAA Loop Closure	Lariat appendage closure. An endocardial magnet wire was advanced to the apex of the left atrial appendage. An epicardial magnet wire was advanced through the pericardial catheter and manipulated toward the left atrial appendage until a connection with the endocardial magnet wire was achieved. The Lariat suture device was inserted into the pericardium over the epicardial magnet wire and positioned over and around the left atrial appendage. The balloon was inflated. Positioning of the Lariat was confirmed in multiple views to be proximal to the endocardial magnet wire balloon. The loop of the Lariat was closed and no flow was observed into the left atrial appendage. The suture was deployed. The suture was tightened according to protocol. The Lariat device was removed. The sheath was removed over a wire and a drain was placed in the pericardial space.	{LAAO.LoopClose}	QR.ML.LAAO.LoopClose

Mac-Lab Hemo System Imported Data Elements

Mac-Lab Macro Superset	ASCEND report	ASCEND string for Mac-Lab	ASCEND Macro Name
Lead Disconnect	Lead disconnection. The lead was disconnected.	{Lead.Disconn}	QR.ML.Lead.Disconn
Laser Lead Extraction	Lead extraction. The lead was successfully extracted using a laser sheath.	{Lead.Extract.Laser}	QR.ML.Lead.Extract.Laser
Lead Extraction	Lead extraction. The lead was successfully extracted.	{Lead.Extract}	QR.ML.Lead.Extract
Atrial Lead Implant	Lead implantation. Under fluoroscopic guidance, it was advanced to the atrium.	{Lead.Imp.Atrial}	QR.ML.Lead.Imp.Atrial
LV Lead Implant	Left ventricular lead implantation. Under fluoroscopic guidance, it was advanced to the left ventricle.	{Lead.Imp.LV}	QR.ML.Lead.Imp.LV
RV Lead Implant	Right ventricular lead implantation. Under fluoroscopic guidance, it was advanced to the right ventricle.	{Lead.Imp.RV}	QR.ML.Lead.Imp.RV
Lead Implant	Lead implantation.	{Lead.Imp}	QR.ML.Lead.Imp
Lead Inspection	Lead inspection. The lead was visually inspected.	{Lead.Inspected}	QR.ML.Lead.Inspected
2% Lido to Site	Local anesthesia. 2% lidocaine was administered to the access site.	{Local.2}	QR.ML.Local.2
1% Lido to L Groin	Local anesthesia. 1% lidocaine was administered to the left groin.	{Local.Fem.L}	QR.ML.Local.Fem.L
2% Lido to R Groin	Local anesthesia. 2% lidocaine was administered to the right groin.	{Local.Fem.R.2}	QR.ML.Local.Fem.R.2
1% Lido to R Groin	Local anesthesia. 1% lidocaine was administered to the right groin.	{Local.Fem.R}	QR.ML.Local.Fem.R
1% Lido to R Jugular area	Local anesthesia. 1% lidocaine was administered to the right internal jugular vein access site.	{Local.IJ.R}	QR.ML.Local.IJ.R
1% Lido to R Radial Area	Local anesthesia. 1% lidocaine was administered to the right radial artery access site.	{Local.Rad.R}	QR.ML.Local.Rad.R
1% Lido to Site	Local anesthesia. 1% lidocaine was administered to the access site.	{Local}	QR.ML.Local
Patient Origin: Emergency Room	The patient was admitted from the emergency department.	{Origin.ER}	QR.ML.Origin.ER
Patient Origin: Transfer from Other Hospital	The patient was transferred from an acute care facility.	{Origin.Transfer}	QR.ML.Origin.Transfer
PA pressure sensor implanted	Successful insertion of pulmonary artery sensor.	{PASensor}	QR.ML.PASensor
Pericardiocentesis	Pericardiocentesis. A long, thin-walled needle was advanced, until fluid was aspirated from the pericardial space. Pericardial fluid was obtained, and samples were sent for analysis.	{PCentesis}	QR.ML.PCentesis
Pocket created using blunt dissection	Pocket construction. Using blunt dissection, the subcutaneous tissue was dissected to the prepectoral fascia and a pocket was constructed.	{Pocket.Blunt}	QR.ML.Pocket.Blunt
Wound Closure	Wound closure.	{Pocket.Closure}	QR.ML.Pocket.Closure
Pocket Irrigated with Antibiotic Solution	Wound closure. The pocket was irrigated with gentamicin and bacitracin.	{Pocket.Irrigate}	QR.ML.Pocket.Irrigate

Mac-Lab Hemo System Imported Data Elements

Mac-Lab Macro Superset	ASCEND report	ASCEND string for Mac-Lab	ASCEND Macro Name
Prior Pkt Opening	Pocket opening. The pocket was opened.	{Pocket.Prior}	QR.ML.Pocket.Prior
Pocket Formed	Pocket construction.	{Pocket}	QR.ML.Pocket
Cardiac Rehab Reccommended	There was written documentation of a referral for the patient to an outpatient cardiac rehabilitation program.	{Rec.Rehab}	QR.ML.Rec.Rehab
Smoking Cessation Education provided to Pt	Patient management should include counseling to assist with smoking cessation.	{Rec.SmokeCess}	QR.ML.Rec.SmokeCess
Atrial Lead Revision	Atrium lead revision. The lead was manipulated.	{Rev.Lead.Atrial}	QR.ML.Rev.Lead.Atrial
LV Lead Revision	Left ventricle lead revision. The lead was manipulated.	{Rev.Lead.LV}	QR.ML.Rev.Lead.LV
RV Lead Revision	Right ventricle lead revision. The lead was manipulated.	{Rev.Lead.RV}	QR.ML.Rev.Lead.RV
Lead Revision	Lead revision. The lead was manipulated.	{Rev.Lead}	QR.ML.Rev.Lead
Foley inserted	Initial setup. The patient was brought to the laboratory. A Foley catheter was inserted.	{Setup.Foley}	QR.ML.Setup.Foley
Grounding Pad Applied	Initial setup. The patient was brought to the laboratory. A grounding pad was placed.	{Setup.Ground}	QR.ML.Setup.Ground
Pt placed on O2	Supplemental oxygen. Oxygen was administered throughout the procedure.	{Setup.Oxygen}	QR.ML.Setup.Oxygen
ECG leads and Multifunction pads applied	Initial setup. The patient was brought to the laboratory. Surface ECG leads were monitored. Self-adhesive defibrillation pads were applied.	{Setup.Pads}	QR.ML.Setup.Pads
Patient prepped and draped in sterile manner	Skin preparation. The planned puncture sites were prepped and draped in the usual sterile manner.	{Setup.Prep}	QR.ML.Setup.Prep
L Brachial artery exchange	Sheath exchange. The left brachial artery sheath was exchanged.	{Sh.Ex.A.Brach.L}	QR.ML.Sh.Ex.A.Brach.L
R Brachial artery exchange	Sheath exchange. The right brachial artery sheath was exchanged.	{Sh.Ex.A.Brach.R}	QR.ML.Sh.Ex.A.Brach.R
L Femoral artery exchange	Sheath exchange. The left femoral artery sheath was exchanged.	{Sh.Ex.A.Fem.L}	QR.ML.Sh.Ex.A.Fem.L
R Femoral artery exchange	Sheath exchange. The right femoral artery sheath was exchanged.	{Sh.Ex.A.Fem.R}	QR.ML.Sh.Ex.A.Fem.R
L Radial artery exchange	Sheath exchange. The left radial artery sheath was exchanged.	{Sh.Ex.A.Rad.L}	QR.ML.Sh.Ex.A.Rad.L
R Radial artery exchange	Sheath exchange. The left radial artery sheath was exchanged.	{Sh.Ex.A.Rad.R}	QR.ML.Sh.Ex.A.Rad.R
L Brachial vein exchange	Sheath exchange. The left brachial vein sheath was exchanged.	{Sh.Ex.V.Brach.L}	QR.ML.Sh.Ex.V.Brach.L
R Brachial vein exchange	Sheath exchange. The right brachial vein sheath was exchanged.	{Sh.Ex.V.Brach.R}	QR.ML.Sh.Ex.V.Brach.R
L Femoral vein exchange	Sheath exchange. The left femoral vein sheath was exchanged.	{Sh.Ex.V.Fem.L}	QR.ML.Sh.Ex.V.Fem.L
R Femoral vein exchange	Sheath exchange. The right femoral vein sheath was exchanged.	{Sh.Ex.V.Fem.R}	QR.ML.Sh.Ex.V.Fem.R
L Internal Jugular exchange	Sheath exchange. The left internal jugular vein sheath was exchanged.	{Sh.Ex.V.IJ.L}	QR.ML.Sh.Ex.V.IJ.L
R Internal Jugular exchange	Sheath exchange. The right internal jugular vein sheath was exchanged.	{Sh.Ex.V.IJ.R}	QR.ML.Sh.Ex.V.IJ.R
Sheath Exchange	Sheath exchange.	{Sh.Ex}	QR.ML.Sh.Ex

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Mac-Lab Macro Superset	ASCEND report	ASCEND string for Mac-Lab	ASCEND Macro Name
L Radial Sheath Removed	Left radial artery hemostasis. The sheath was removed.	{Sh.Rem.A.Rad.L}	QR.ML.Sh.Rem.A.Rad.L
R Radial Sheath Removed	Right radial artery hemostasis. The sheath was removed.	{Sh.Rem.A.Rad.R}	QR.ML.Sh.Rem.A.Rad.R
Sheath removed in recovery	Hemostasis. The sheath was removed in the recovery room.	{Sh.Rem.Recov}	QR.ML.Sh.Rem.Recov
Sheath Removed	Hemostasis. The sheath was removed.	{Sh.Rem}	QR.ML.Sh.Rem
Sheaths secured to be pulled in holding	Hemostasis. The sheath was removed in the holding area.	{Sh.Secured}	QR.ML.Sh.Secured
Sheath sutured in place	Hemostasis. The sheath was sutured in place.	{Sh.Sutured}	QR.ML.Sh.Sutured
Angioseal Deployed	Hemostasis. The sheath was removed. Vessel closure was achieved with an an Angioseal device.	{Stasis.Angioseal}	QR.ML.Stasis.Angioseal
Hemostasis w/ C-clamp	Hemostasis. The sheath was removed. C-clamp compression was applied.	{Stasis.CClamp}	QR.ML.Stasis.CClamp
Closure Device Deployed	Hemostasis. Vessel closure was achieved with a closure device.	{Stasis.Closure}	QR.ML.Stasis.Closure
Hemostasis w/ Fem-stop	Hemostasis. The sheath was removed. Fem-Stop compression was applied.	{Stasis.Femstop}	QR.ML.Stasis.Femstop
Hemostasis w/ Hemoband	Hemostasis. The sheath was removed. Hemoband compression was applied.	{Stasis.Hemoband}	QR.ML.Stasis.Hemoband
Hemostasis w/ Manual Pressure	Hemostasis. The sheath was removed. Manual compression was applied.	{Stasis.Manual}	QR.ML.Stasis.Manual
Mynx Deployed	Hemostasis. Vessel closure was achieved with a Mynx device.	{Stasis.Mynx}	QR.ML.Stasis.Mynx
Perclose	Hemostasis. The sheath was removed. Vessel closure was achieved with a Perclose device.	{Stasis.Perclose}	QR.ML.Stasis.Perclose
Starclose	Hemostasis. The sheath was removed. Vessel closure was achieved with a Starclose device.	{Stasis.Starclose}	QR.ML.Stasis.Starclose
Hemostasis (NOS)	Hemostasis. The sheath was removed.	{Stasis}	QR.ML.Stasis
Leads Sutured In Place	Lead implantation. It was secured using non-absorbable suture.	{Sutured.Lead}	QR.ML.Sutured.Lead
Transesophageal Echocardiogram	Transesophageal echocardiography was performed.	{TEE}	QR.ML.TEE
Swan catheter inserted	A Swan Ganz catheter was placed.	{Ins.Swan}	QR.ML.Ins.Swan
Swan-Ganz Bipolar Pacing Catheter Inserted	Temporary pacing. A new Swan-Ganz Bipolar Pacing was inserted through the sheath and advanced to position under fluoroscopic guidance. Pacing was achieved. Threshold verification and amplitude adjustment was performed.	{Temp.Pacing.Swan}	QR.ML.Temp.Pacing.Swan
Temporary Pacemaker	Temporary pacing. Pacing was achieved. Threshold verification and amplitude adjustment was performed.	{Temp.Pacing}	QR.ML.Temp.Pacing

Mac-Lab Hemo System Imported Data Elements

Mac-Lab Macro Superset	ASCEND report	ASCEND string for Mac-Lab	ASCEND Macro Name
Intracardiac Ultrasound	Intracardiac echocardiography was performed. A transducer catheter was introduced through the sheath and advanced to the right atrium.	{US.ICA}	QR.ML.US.ICA
Balloon Occlusion Venogram	Venography was performed. Contrast was injected, using a balloon occlusion technique. Images were obtained.	{Veno.BalOcc}	QR.ML.Veno.BalOcc
Coronary Sinus Venogram	Coronary sinus angiography.	{Veno.CS}	QR.ML.Veno.CS
Hepatic Venogram	Venography was performed. Contrast was injected into the hepatic vein. Images were obtained.	{Veno.Hepatic}	QR.ML.Veno.Hepatic
IVC Venogram	Inferior vena cava venography was performed. Contrast was injected by hand into the inferior vena cava vein. Images were obtained in multiple projections.	{Veno.IVC}	QR.ML.Veno.IVC
L Lower Extremity Venogram	Left lower extremity venography was performed. Contrast was injected by hand. Images were obtained in multiple projections.	{Veno.LE.L}	QR.ML.Veno.LE.L
R Lower Extremity Venogram	Right lower extremity venography was performed. Contrast was injected by hand. Images were obtained in multiple projections.	{Veno.LE.R}	QR.ML.Veno.LE.R
Portal vein venogram	Venography was performed. Contrast was injected into the portal vein. Images were obtained.	{Veno.Portal}	QR.ML.Veno.Portal
SVC Venogram	Superior vena cava venography was performed. Contrast was injected by hand into the superior vena cava. Images were obtained in multiple projections.	{Veno.SVC}	QR.ML.Veno.SVC
L Upper Extremity Venogram	Left upper extremity venography was performed. Contrast was injected by hand. Images were obtained in multiple projections.	{Veno.UE.L}	QR.ML.Veno.UE.L
R Upper Extremity Venogram	Right upper extremity venography was performed. Contrast was injected by hand. Images were obtained in multiple projections.	{Veno.UE.R}	QR.ML.Veno.UE.R
Venogram	Venography was performed. Images were obtained.	{Veno}	QR.ML.Veno

Import to Report Supply Menus

Device import dependence on procedure and folder name

The categories in the Mac-Lab Hemo equipment folder and subfolders must match the categories exactly. The categories are listed in the first column below. The ASCEND interface is case insensitive.

Mac-Lab categories (subfolders)	ASCEND report finding	ASCEND procedure
Sheaths Access & Sheath Supplies Introducer	Sheath name Needle name	Access Sheath exchange Intracardiac echo Transseptal access Coronary sinus angiogram Upper extremity venogram
Wires Introducer	Wire name	Sheath exchange
Contrast	Contrast agent	Contrast given
Catheters Guide Catheters Diagnostic Catheters	Catheter name	Access Coronary sinus angiogram Upper extremity venogram Transseptal access Transseptal catheterization Access/catheter table
Closure Closure Devices Hemostasis Devices Hemostasis/Closure Devices Miscellaneous	Closure device	Vascular hemostasis
EP Items EP Supplies	Model name (lead)	Lead disconnection Lead inspection Lead revision Lead implantation
EP Items EP Supplies	Model name (device)	Device explantation Device implantation Device testing/NIPS

Medications and contrast

Medication route of administration

For medications, the import records the route of administration if it is a recognized term.

Name	Report finding
PO	oral
IV	intravenous
Subcut	subcutaneous
Nasal cannula	intranasal
Topical	transdermal
IA	Intra-arterial

Mac-Lab Hemo System Imported Data Elements

Name	Report finding
SL	sublingual
IC	intracoronary

Medication units

Mac-Lab units	Report
g	g
mcg	mcg
mcg per kg per min	mcg/kg/min
mcg per min	mcg/min
mEq	mEq
mg	mg
ml	ml
ml/min	ml/min
ml per hr	ml/hr
l per min	L/min
units	units
units per hr	units/hr

Note: Medication entries without units will **NOT** import.

Local anesthetics

Local anesthetic medications that are not drip, import as a local anesthesia procedure with the volume injected. The medications imported as local anesthetics are:
- Xylocaine
- Lidocaine (Including Lidocaine w/ Epinephrinei, and Lidocaine Hydrochloride)
- Carbocaine
- Sensorcaine
- Bupivacaine

Any variation of concentrations is supported, whether they are recorded as a prefix or suffix to the agent name, e.g. 2% lidocaine or Lidocaine 2%.

The Hemo system does not separate the local anesthetics from other medications but they all export as Event_Medication.
- If any of the medications listed in the local anesthesia section export from the device **with a concentration and subcutaneous route**, the medications import as local anesthetics. If the **route is not subcutaneous**, the medications import as unlisted medications.
- If any of the medications listed in the local anesthesia section export from the device **without a concentration**, the medications import as unlisted medications.

Default list of complications

Seg	OBX Type	Value of Segment 5.1	Report finding
OBX	Event_Complication	No complications	No complications
OBX	Event_Complication	NO COMPLICATIONS	No complications
OBX	Event_Complication	None	No complications
OBX	Event_Complication	Vessel occlusion of access site	Vessel occlusion
OBX	Event_Complication	No distal pulse at access site	No distal pulse
OBX	Event_Complication	Arterial dissection	Dissection
OBX	Event_Complication	Dissection of access site	Dissection
OBX	Event_Complication	CORONARY EMBOLUS(air or thromb)	Unlisted
OBX	Event_Complication	Embolization	Embolization
OBX	Event_Complication	Peripheral emboli	Peripheral emboli
OBX	Event_Complication	Cholesterol emboli	Cholesterol emboli
OBX	Event_Complication	Pseudoaneurysm of access site	Pseudoaneurysm
OBX	Event_Complication	AV Fistula of access site	AV fistula
OBX	Event_Complication	Hematoma bleeding	Hematoma
OBX	Event_Complication	Retroperitoneal bleeding	Retroperitoneal
OBX	Event_Complication	External bleeding	External bleeding
OBX	Event_Complication	Periprocedural MI	Myocardial infarct
OBX	Event_Complication	Dissection	Vessel dissection
OBX	Event_Complication	Cardiogenic shock	Cardiogenic shock
OBX	Event_Complication	Congestive Heart Failure	CHF
OBX	Event_Complication	Tamponade	Tamponade
OBX	Event_Complication	PERICARDIAL TAMPONADE	Tamponade
OBX	Event_Complication	Hypotension	Hypotension
OBX	Event_Complication	Arrhythmia (NOS)	Arrhythmia
OBX	Event_Complication	OTHER ARRHYTHMIA REQ. TREATMENT	Arrhythmia
OBX	Event_Complication	Asystole	Asystole
OBX	Event_Complication	Atrial fibrillation	Atrial fibrillation
OBX	Event_Complication	Bradycardia	Bradycardia
OBX	Event_Complication	BRADYCARDIA requiring tx	Bradycardia
OBX	Event_Complication	Atrial Flutter	Atrial flutter
OBX	Event_Complication	Ventricular Tachycardia	VT
OBX	Event_Complication	Ventricular tachycardia	VT
OBX	Event_Complication	Supraventricular Tachycardia	SVT
OBX	Event_Complication	Ventricular Fibrillation	VF
OBX	Event_Complication	Ventricular fibrillation	VF
OBX	Event_Complication	Second degree AV Block	2° AV block
OBX	Event_Complication	Third degree AV Block	3° AV block
OBX	Event_Complication	Contrast Reaction (Minor)	Contrast reaction
OBX	Event_Complication	DYE REACTION – MILD	Contrast reaction
OBX	Event_Complication	DYE REACTION – SEVERE	Contrast reaction
OBX	Event_Complication	Hypersensitivity (unspecified)	Allergic reaction
OBX	Event_Complication	TIA	TIA
OBX	Event_Complication	Cerebrovascular accident	CVA
OBX	Event_Complication	Bleeding (unspecified)	Bleeding
OBX	Event_Complication	Pneumothorax	Pneumothorax
OBX	Event_Complication	Respiratory failure/distress	Respiratory distress
OBX	Event_Complication	Renal failure	Renal failure
OBX	Event_Complication	DEATH	Death
OBX	Event_Complication	Death (unspecified)	Death
OBX	Event_Complication	Death due to infection	Death

Seg	OBX Type	Value of Segment 5.1	Report finding
OBX	Event_Complication	Cardiac Death	Cardiac
OBX	Event_Complication	Death due to valvular complication	Valvular
OBX	Event_Complication	Death due to vascular complication	Vascular
OBX	Event_Complication	Death due to renal complication	Renal
OBX	Event_Complication	Neurologic Death	Neurologic
OBX	Event_Complication	Death due to pulmonary complication	Pulmonary
OBX	Event_Complication	Vasovagal reaction	Vagal reaction
OBX	Event_Complication	Access Perforation, Extravasation	Perf, extravasation
OBX	Event_Complication	Access Perforation, No extravasation	Perf, no extra
OBX	Event_Complication	Anaphylaxis	Anaphylaxis
OBX	Event_Complication	Urticaria	Urticaria
OBX	Event_Complication	Angioedema	Angioedema
OBX	Event_Complication	Pulmonary Edema	Unlisted
OBX	Event_Complication	Emergency vascular surgery	Unlisted
OBX	Event_Complication	BUNDLE BRANCH BLOCK	Unlisted
OBX	Event_Complication	CARDIAC PERFORATION	Perforation
OBX	Event_Complication	CVA OR TIA (neurologic event)	Unlisted
OBX	Event_Complication	C.A.B.G. FOR FAILED PTCA	Unlisted
OBX	Event_Complication	ADVERSE REACTION TO SEDATION	Unlisted
OBX	Event_Complication	Adverse drug reaction	Unlisted

Medications – Default List

OBX 5.1	Report name	OBX 5.1	Report name
abciximab	Abciximab	bretylium	Bretylium
reopro	Abciximab	bretylol	Bretylium
acebutolol	Acebutolol	buclizine	Buclizine
acyclovir	Acyclovir	buprenorphine	Buprenorphine
adenosine	Adenosine	calcium carbonate	Calcium carbonate
ajmaline	Ajmaline	calcium chloride	Calcium chloride
alfentanil	Alfentanil	calcium gluconate	Calcium gluconate
alteplase	Alteplase	carvedilol	Carvedilol
amikacin	Amikacin	ancef	Cefazolin
amiodarone	Amiodarone	cefazolin	Cefazolin
amlodipine	Amlodipine	cefprozil	Cefprozil
norvasc	Amlodipine	cefuroxime	Cefuroxime
amoxicillin	Amoxicillin	cephalexin	Cephalexin
amphotericin	Amphotericin	cetirizine	Cetirizine
ampicillin	Ampicillin	chloral hydrate	Chloral hydrate
argatroban	Argatroban	chlorpromazine	Chlorpromazine
aspirin	Aspirin	ciprofloxacin	Ciprofloxacin
asa	Aspirin	clarithromycin	Clarithromycin
atenolol	Atenolol	clindamycin	Clindamycin
atropine	Atropine	clopidogrel	Clopidogrel
azimilide	Azimilide	co-trimoxazole	Co-trimoxazole
vasopressin	Vasopressin	cyclizine	Cyclizine
azithromycin	Azithromycin	d5/0.45	D5/0.45
benztropine	Benztropine	d 5 w	D5W
bepridil	Bepridil	d5w	D5W
bisoprolol	Bisoprolol	dalteparin	Dalteparin
bivalirudin	Bivalirudin	desloratadine	Desloratadine
angiomax	Bivalirudin	dexamethasone	Dexamethasone

Mac-Lab Hemo System Imported Data Elements

OBX 5.1	Report name
diazepam	Diazepam
digoxin	Digoxin
lanoxin	Digoxin
cardizem	Diltiazem
diltiazem	Diltiazem
dimenhydrinate	Dimenhydrinate
benadryl	Diphenhydramine
diphenhydramine	Diphenhydramine
dipyridamole	Dipyridamole
disopyramide	Disopyramide
dobutamine	Dobutamine
dofetilide	Dofetilide
dolasetron	Dolasetron
dopamine	Dopamine
doxycycline	Doxycycline
droperidol	Droperidol
inapsine	Droperidol
edrophonium	Edrophonium
encainide	Encainide
enoxaparin	Enoxaparin
lovenox	Enoxaparin
adrenaline	Epinephrine
epinephrine	Epinephrine
eptifibatide	Eptifibatide
integrilin	Eptifibatide
erythromycin	Erythromycin
esmolol	Esmolol
etomidate	Etomidate
etomidate_inactive	Etomidate
felodipine	Felodipine
fentanyl	Fentanyl
sublimaze	Fentanyl
fexofenadine	Fexofenadine
flecainide	Flecainide
fluconazole	Fluconazole
flumazenil	Flumazenil
romazicon (flumazenil)	Flumazenil
romazicon	Flumazenil
fondiparinux	Fondiparinux
lasix	Furosemide
ganciclovir	Ganciclovir
gatifloxacin	Gatifloxacin
gentamicin	Gentamicin
glycopyrrolate	Glycopyrrolate
granisetron	Granisetron
haloperidol	Haloperidol
heparin	Heparin
hydralazine	Hydralazine
hydralazine hcl	Hydralazine
hydrocortisone	Hydrocortisone
cortisol	Hydrocortisone
hydromorphone	Hydromorphone
dilaudid	Hydromorphone
hydroxyzine	Hydroxyzine

OBX 5.1	Report name
ibutilide	Ibutilide
isoproterenol	Isoproterenol
isuprel	Isoproterenol
isoprenaline	Isoproterenol
isosorbide dinitrate	Isosorbide dinitrate
isosorbide mono	Isosorbide mono
isradipine	Isradipine
ketamine	Ketamine
ketoconazole	Ketoconazole
labetalol	Labetalol
labetolol	Labetalol
lepirudin	Lepirudin
levofloxacin	Levofloxacin
lidocaine	Lidocaine
xylocaine	Lidocaine
lidocaine (antiarrhythmic)	Lidocaine
lidocaine hydrochloride	Lidocaine
loratadine	Loratadine
lorazepam	Lorazepam
magnesium oxide	Magnesium oxide
magnesium sulfate	Magnesium sulfate
meclizine	Meclizine
meperidine	Meperidine
demerol	Meperidine
methohexital	Methohexital
methylprednisolone	Methylprednisolone
solu medrol	Methylprednisolone
metoclopramide	Metoclopramide
reglan	Metoclopramide
reglan (metoclopramide)	Metoclopramide
metoprolol	Metoprolol
lopressor	Metoprolol
toprol	Metoprolol
metronidazole	Metronidazole
mexiletine	Mexiletine
midazolam	Midazolam
versed	Midazolam
midodrine	Midodrine
milrinone	Milrinone
minocycline	Minocycline
minoxidil	Minoxidil
moricizine	Moricizine
morphine	Morphine
nadolol	Nadolol
nadroparin	Nadroparin
nalbuphine	Nalbuphine
naloxone	Naloxone
narcan (naloxone hydorchloride)	Naloxone
netilmicin	Netilmicin
nicardipine	Nicardipine
cardene	Nicardipine

Mac-Lab Hemo System Imported Data Elements

OBX 5.1	Report name
nicardene	Nicardipine
nifedipine	Nifedipine
procardia	Nifedipine
nimodipine	Nimodipine
nitrofurantoin	Nitrofurantoin
nitroglycerin	Nitroglycerin
ntg	Nitroglycerin
nitro paste	Nitroglycerin
nitroprusside	Nitroprusside
nipride	Nitroprusside
norepinephrine	Norepinephrine
levophed	Norepinephrine
ondansetron	Ondansetron
zofran (ondansetron)	Ondansetron
zofran	Ondansetron
oxybutynin	Oxybutynin
papaverine	Papaverine
phenytoin	Phenytoin
pindolol	Pindolol
potassium chloride	Potassium chloride
prednisolone	Prednisolone
prednisone	Prednisone
procainamide	Procainamide
compazine (prochlorperazine)	Prochlorperazine
prochlorperazine	Prochlorperazine
promethazine	Promethazine
phenergan	Promethazine
propafenone	Propafenone
propofol	Propofol
diprivan	Propofol
propranolol	Propranolol
inderal	Propranolol

OBX 5.1	Report name
protamine	Protamine
quinidine gluconate	Quinidine gluconate
quinidine sulfate	Quinidine sulfate
lexiscan	Regadenoson (Lexiscan)
reteplase	Reteplase
ribavirin	Ribavirin
ns	Saline
scopolamine	Scopolamine
sodium bicarbonate	Sodium bicarbonate
sodium bicarb	Sodium bicarbonate
sotalol	Sotalol
streptokinase	Streptokinase
sufentanil	Sufentanil
tenecteplase	Tenecteplase
tetracycline	Tetracycline
theophylline	Theophylline
aminophylline	Theophylline
thiopental	Thiopental
ticlopidine	Ticlopidine
timolol	Timolol
tinzaparin	Tinzaparin
tirofiban	Tirofiban
tocainide	Tocainide
urokinase	Urokinase
valacyclovir	Valacyclovir
vancomycin	Vancomycin
verapamil	Verapamil
warfarin	Warfarin
oxygen	Oxygen
bupivacaine	Bupivacaine
sensorcaine .25%	Bupivacaine