ASCEND
HEALTH INFORMATION TECHNOLOGY

Device Interface Overview

Hemo – Mac-Lab (EP)

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Introduction

The device interface supports import from the GE Mac-Lab system via Mac-Lab Versions 6.5, 6.8, 6.9, 6.9.6, and Altix 7.0 (with v7.0 HL7). It supports the EP knowledge base version 8.0.

Key features

- A macro-based strategy is used to record procedural narrative
- Inventory used populates the device selection list in the report menu, within the procedure narrative
- Inventory used imports into the inventory table in the report

Import scope

- Patient demographics
  - Study date (disabled by default)
  - Date of birth (disabled by default)
  - Age, BSA, BMI (disabled by default)
  - Gender (disabled by default)
  - Race (disabled by default)
  - Height, weight
- Lab results
- Complications
- Administered medications
  - Medication name
  - Dose, units, rate, rate units
  - Medication route
  - Summation of medications
- Contrast type and volume given
- Fluoroscopy and radiation
  - Fluoroscopy time
  - Fluoroscopy dose
  - Cine dose
  - Total dose
- EP Device implant, explant, exchange procedures
  - Inventory used (accessible in procedure narrative)
  - Inventory used (imported into inventory table)
  - Procedural step macro mapping

Inventory handling for procedures

Inventory may be entered into Mac-Lab before the rest of the case, and, apart from lesion interventions, there is nothing to identify which procedure is associated with which inventory element. *Inventory cannot directly import into the procedure narrative.* In the Mac-Lab device interface, inventory items are classified and placed into the appropriate drop-down pick-lists in the procedure narrative, so that users can reconcile the inventory use within the procedures while the report is being generated. Therefore, inventory items cannot directly import in context.

Inventory imports as a block into the inventory table. The following fields are supported:

Mac-Lab inventory description (5.1) = ASCEND model
Mac-Lab inventory part number (5.2) = ASCEND model number
Mac-Lab inventory manufacturer (5.4) = ASCEND manufacturer
Mac-Lab inventory serial number (5.5) = ASCEND serial number
Mac-Lab inventory category = ASCEND category

Procedural device interface macro mapping

The overall procedure is recorded under the Mac-Lab "Procedures" tab and is used for billing purposes (export in Event Procedure section of Mac-Lab HL7), whereas the procedure steps for any given procedure are recorded in the "Macro" section of Mac-Lab, as Mac-Lab quick reports that export in the Mac-Lab Event Log (export in the Event Log section of Mac-Lab HL7). ***The ASCEND device interface supports the import of the procedure steps recorded as Mac-Lab macros (from the Mac-Lab Event Log).***

The device interface supports the import of a designated set of procedure steps that are mapped to an associated set of device interface macros. When the Mac-Lab user records a procedure, the HL7 report will contain the procedure step name. The interface will pass these to the reporting application. It iterates over all the procedure steps and if it finds a procedure mapping that matches by procedure name, it then records a corresponding ASCEND procedural (device interface) macro, and the procedure will then appear in the physician report. The procedures appear in the report sorted by the time stamp.

The ASCEND device interface macros are configurable and can be edited, added, or removed.

Configurable items

ASCEND uses global configuration states to include/exclude specific sections within the device interface.

Representative device implant report

A representative device implant report, after import into the knowledge base and assuming that nothing is disabled, is provided below.

Cardiac Care Institute
St. Eligius

West Campus Cardiac Care Center
999 Campus Dr. Chicago, IL 60688
Phone: (312) 555-9876
Fax: (312) 555-7890

Electrophysiology Study with ICD Implantation

Patient:	Barbara Allen	**Study date:**	11/09/2019	**Height:**	130 cm (51.2 in)
MRN:	#1366354 (MRN)	**Birth date:**	12/19/1959	**Weight:**	55 kg (121.3 lb)
Accession:	#1110287968abc	**Age:**	59 year(s)	**BSA:**	1.44 m²
Patient location:	3E	**Birth gender:**	Female	**BMI:**	32.5 kg/m²
Study status:	Same day	**Patient status:**	Outpatient	**HR:**	52 bpm
Facility:	West Campus			**BP:**	130/82

Responsible physician: Jerry L. Schmidt, MD
Referring physician: Martin F. de Kort III, MD
Ordering physician: Robert M. Kec II, MD

Labs, prior tests, procedures, and surgery:

Blood tests: Hemoglobin (recent) of 12.3 g/dl. Platelet count (recent) of 130 th/µL. International normalized ratio (INR) (recent) of 1.07. Serum creatinine (recent) of 1.88 mg/dl. Blood urea nitrogen (recent) of 24 mg/dl. Serum potassium (K) (recent) of 4.2 mEq/L.

Study data: Race: White. Patient unit: 3E. Study status: Same day. Consent: The risks, benefits, and alternatives to the procedure were explained and informed consent was obtained.

Procedures performed:
- Defibrillator lead implantation (right ventricle).
- Lead implantation (right atrium).
- Dual-chamber cardioverter defibrillator implantation.
- Defibrillation threshold testing.

Procedure:

1. The planned puncture sites were prepped and draped in the usual sterile manner.
2. Left subclavian vein access was obtained. The access site was infiltrated with 2% lidocaine. The vessel was cannulated using the modified Seldinger technique. A sheath was advanced into the vessel.
3. A right ventricular defibrillator lead was implanted. Under fluoroscopic guidance, it was advanced to the right ventricle.
4. A right atrial lead was implanted. Under fluoroscopic guidance, it was advanced to the right atrium.
5. A dual-chamber cardioverter defibrillator was implanted; it was then anchored to the underlying fascia with nonabsorbable sutures.
6. Defibrillation threshold testing was performed.
7. The wound was closed.

Study completion: Administered medications: Midazolam , at a rate of 2 mcg/min , IV. Fentanyl, at a rate of 12.5 mcg/min, IV. Contrast: Visipaque 320 20 ml (single dose). Discharge: The patient was transferred to the telemetry unit.

Radiation exposure:
- Fluoroscopy time: 16.6 min.
- Total time: 16.6 min.

Inventory:

Model
Amplia Quad ICD
CapsureFix Novus 5076-52
Sprint Quattro 6953M-62

801 Warrenville Road
Suite 200
Lisle, Illinois 60532
(844) 413-2610
information@ascendhit.com