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RE: SFD LP12 Guidelines:

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I. AED / Advisory

Comment

The LP12 defibrillator / monitor, when used in the AED mode, is a semiautomatic defibrillator that uses a Shock Advisory System. This software algorithm analyzes the patient's ECG rhythm and indicates whether or not it detects a shockable rhythm.

Indications

The AED mode is to be used only on patients in cardiopulmonary arrest.

Contraindications

In the AED mode the LP12 is contraindicated for use on pediatric patients less than fifteen years old.

In the AED mode the LP12 is not to be used on patients who are breathing, have a pulse, and / or are conscious.

Note: All Seattle Medic One LP12 Defibrillator/Monitors are configured to default to the Manual Mode when you turn it on.

Procedure for Selecting the LP12 AED / Advisory Mode

The firefighter should immediately, disconnect the **Quik-Combo** electrode leads from the LP500 and attach to the therapy cable of the LP12.

Press **On**

Press **Advisory** Activates Continuous Patient Surveillance System (CSS)

In the Advisory mode, LP12 **immediately displays the rhythm for the medic and simultaneously enables the firefighter to continue to monitor and defibrillate VF or VT.**

Press **Analyze** Activates the Shock Advisory System (SAS)

Follow screen message prompts.

Note: In the Advisory Mode, the LP12 operates like the LP300 with visual screen prompts.

II. Manual

Note: All Seattle Medic One LP12 Defibrillator/Monitors are configured to default to the Manual Mode when you turn it on.

Switching from AED / Advisory to Manual Mode

To change to manual mode when the defibrillator is in AED mode, press one of the following.

Energy Select

Charge

Pacer

Advisory (green light on will turn off)

Note: The LP12 is in the Manual Mode once you have pushed any of the buttons listed above.

A. Defibrillation

Comment

A direct current defibrillator applies a brief, high-energy pulse of electricity to the heart muscle. The LifePak 12 defibrillator/monitor delivers this energy through disposable electrode paddles applied to the patient's chest.

Indications

Defibrillation is the primary method of terminating certain potentially fatal arrhythmias, including ventricular fibrillation and symptomatic ventricular tachycardia.

Contraindications

Defibrillation is contraindicated in the treatment of Pulseless Electrical Activity (PEA), Idioventricular or Ventricular escape rhythms.

Defibrillation Sequence

Refer to Plan A Guidelines

B. Synchronized Cardioversion

Comment

Delivery of energy in the synchronized mode is a method for treating supraventricular tachycardia, atrial fibrillation, atrial flutter, and in relatively stable patients, ventricular tachycardia.

Indications

Narrow Complex Tachycardia with a rate of > 150
with associated Chest pain, SOB, Diaphoresis, Hypotension, and / or Decreased LOC.

Contraindications

Synchronized Cardioversion is a relative contraindication with patients on Digoxin.

Synchronized Cardioversion Procedure

Press **On**

Note: All Seattle Medic One LP12 Defibrillator/Monitors are configured to default to the Manual Mode when you turn it on.

Attach monitoring limb leads and defibrillation electrode paddles.

Obtain a 12 Lead ECG and transmit to the Medic 1 Dr.

Consider use of sedation with analgesics.

Select Lead II or lead with greatest QRS complex amplitude.

Press **Sync.** Confirm the Sync LED blinks with each detected QRS

Observe the ECG rhythm. Confirm that a triangle sense marker appears near the middle of each QRS complex.

Press **Energy Select** Initial energy selection: **100J**

Press **Charge**

Press and **hold Shock button until discharge occurs** with the next detected QRS complex. Release the Shock button.

Note: If discharge button is not pressed within 60 seconds, the stored energy is internally removed.

If you change the energy selection after charge has started, the energy is removed internally.

Press Charge to restart charging.

Re-evaluate the patient and ECG rhythm.

PSVT

Pharmacological Adjunct

Adenosine	First Dose	6mg	followed by 20cc Bolus of LR
	Second Dose	12mg	followed by 20cc Bolus of LR

Neosynephrine 10mg diluted in 9cc of LR. [1mg /cc]
0.5mg increment to be repeated x 1

Rapid A-Fib/Flutter

Pharmacological Adjunct

Diltiazem	First Dose	20mg over 2 minutes
	Second Dose	25mg over 2 minutes (15 minutes after 1 st dose)

C. Noninvasive Pacing

Comment

A noninvasive pacemaker is a device that delivers an electrical stimulus to the heart, causing cardiac depolarization and myocardial contraction. The energy is delivered through the same electrode paddles used for defibrillation placed on the chest.

Indications

Noninvasive pacing therapy is indicated for patients with symptomatic bradycardia.

Contraindications

Noninvasive pacing is contraindicated for the treatment of ventricular fibrillation. Severe hypothermia associated with bradycardia is a relative contraindication to pacing with a patient with bradycardia.

Symptomatic Bradycardia

Definition: Bradycardic rhythms with a rate < 60 beats/min., with associated Chest pain, SOB, Diaphoresis, Hypotension, and / or Decreased LOC.

Treatment: Atropine 0.5 mg increments up to 2.0 mg

Type II Second-degree AV Heart Block or Third-degree AV Heart Block refractory to Atropine

1. Demand Pacing

In the demand mode, the LP12 defibrillator/monitor/pacer inhibits pacing output when it “senses” the pt’s own beats. (intrinsic QRSs)

Apply **Quik-Combo** electrodes
anterior-lateral or anterior-posterior

Consider use of sedation with analgesics if patient is uncomfortable.

Press **PACER**

Observe the ECG rhythm. Confirm that a triangle sense marker appears near the middle of each QRS complex. If the sense markers do not appear or are displayed in the wrong location (for example on the T wave), adjust the ECG size, or select another lead.

Press **RATE** or rotate Selector to select the desired pacing rate.

Note: Default pacing rate **60**
Range 40-170ppm
Rate button changes the rate in 10ppm increments.
Selector button changes the rate in 5ppm increments

Press **CURRENT** or rotate selector to increase the current until electrical capture occurs. For each delivered pacing stimulus, the Pacer indicator flashes off and a positive pace marker displays on the ECG waveform.

Note: Default current **0**
Range 0- 200mA
Current button changes the current in 10mA increments.
Selector changes the currents in 5mA increments.

Palpate patient's pulse and blood pressure to access mechanical capture.

Other Pharmacological Adjuncts

Epinephrine Drip	2 mg in 250cc D5W, titrate to HR (60) & BP (90)
Isoproterenol Drip	2 mg in 250cc D5W, titrate to HR (60) & BP (90)

Torsades de Pointes:

Definition: Torsades de pointes are a form of polymorphic ventricular tachycardia in which the QRS complex appears to twist about the isoelectric baseline.

Treatment: **Magnesium Sulfate** "Drug of Choice"
1gm in 10cc of D5W IV push (Up to 6 gms may be required to suppress Torsades)

2. Non-Demand **Overdrive Pacing**

“Asynchronous or nondemand mode” can be selected if electrical artifact interferes with proper sensing of QRS complexes. This means that the pacemaker generates pacing pulses at the selected rate regardless of the patient’s ECG rhythm.

To change from Demand to Non Demand Mode

Press	Option
Turn Selector	Pacing
Press Selector	Mode
Turn Selector	Non Demand

Press **RATE** or rotate the Selector to select the desired pacing rate.

Note: Default pacing rate **60**
Range 40-170ppm

Rate button changes the rate in 10ppm increments.
Selector button changes the rate in 5ppm increments.

Select the Overdrive Pacing rate faster than the Torsades rate.

Press **CURRENT** or rotate Selector to increase the current until electrical captures occurs.

Note: Default current **0**
Range 0-200mA

Current button changes the current in 10mA increments.
Selector changes the currents in 5mA increments.

Reduce Overdrive Pacing Rate after confirming capture.

Synchronized cardioversion starting @ 200J may be attempted if the treatment of Torsades is refractory to Magnesium Sulfate and Overdrive Pacing.

III. 12 Lead Electrocardiogram

Comment

The Lifepak 12 defibrillator/monitor incorporates the GE/Marquette Medical System 12 SL ECG analysis program. A 12 Lead ECG is useful in the early detection and prompt treatment of patients with acute myocardial infarction. When transmitted from the field, this procedure has been shown to shorten time to in-hospital Percutaneous Coronary Intervention (PTCA, Stent, etc.) and/or Thrombolytic therapy administration.

Indications

12 Lead ECGs shall be acquired and transmitted to the Medic One Doctor at Harborview Medical Center for all patients who will be transported for cardiac events, and for patients who are evaluated for SVT prior to receiving permission to administer and after rhythm conversion for:

Adenosine
Diltiazem
Synchronized Cardioversion

Contraindications

None Known

A. Transmit Procedure:

HMC Landline

Connect the standard telephone cable that is hard wired to the back of the LP12 to the analog telephone outlet with the RJ11 plug.

Option: Utilize the RJ11 “double female” which is attached to the distal end of the telephone cable if connecting to the RJ11 plug of the phone cable from the wall outlet.

Press	Transmit
Press Selector	Data
Turn Selector & Press	Site
Turn Selector & Press	HMC Landline
Turn Selector & Press	Send

Harborview Medical Center Paging System

The medics have 2 paging systems to alert the physician at Harborview to go to the radio room. One is a Seattle Fire Department pager on their dispatch system, which is reserved for when the paramedics are too busy to use the primary system. This method requires radio traffic by contacting the dispatcher and tasking the dispatcher to page the M1 or TR Dr.

The primary system and preferred method is to page Medical Control directly on the digital pager.

With the Nextel i325 IS phones, the Turbo dialing paging sequence for the M1 and TR Dr including the Medic Unit signature have been programmed for economy of motion without involving the Fire Alarm Center.

Cellular Phone Turbo Dialing Options

Note: Press # and hold for 2 seconds

Intubated: 38-42mmHg

Intubated c head injury: 35 mmHg

VII. LP12 Resuscitation Downloading

Refer to LIFENET DT Express