**Procedure Guidelines**

<table>
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<th>Protocol Title:</th>
<th>Electrical Cardioversion</th>
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<td>Original Adoption Date:</td>
<td>05/2002</td>
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<td>Past Protocol Updates</td>
<td>05/2002</td>
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<td>Date of Most Recent Update:</td>
<td>December 26, 2013</td>
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<tr>
<td>Medical Director</td>
<td>Chad Torstenson M.D.</td>
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**Indications:**
1. For situations where there is a rapid rhythm associated with inadequate cardiac output and signs of poor perfusion
2. Unstable ventricular tachycardia, chest pain or hypotension
3. SVT refractory to ADENOSINE with presence of chest pain or hypotension
4. Wide complex tachycardia with presence of chest pain or hypotension

**Contraindication:**
1. Atrial Fibrillation – unless authorized by On-Line Medical Control

**Precautions:**
1. All of the precautions for defibrillation apply.
2. A patient who is alert and oriented is probably perfusing adequately. Pharmacological intervention is the first modality of a stable patient.
3. If sinus rhythm is achieved only transiently with cardioversion, subsequent cardioversion at higher energy setting will be of no additional value. Leave the energy setting the same and consider alteration of other variables.
4. Beware of patients with chronic atrial fibrillation. They will not cardiovert easily and are almost certainly decompensated for another reason.
5. Sinus tachycardia is a symptom of an underlying problem. The patient must be treated for the underlying cause. Initial treatment should be for shock if perfusion is poor. Cardioversion is not indicated.

**Procedure:**
1. Remove all clothing covering the patient’s chest. Dry chest if necessary. If the patient has excessive chest hair, clip or shave to ensure proper adhesion of electrodes.
2. Attach ECG electrodes and monitor in lead II.
3. Apply Quik-Combo pads according to instructions. Ensure that electrodes are in good contact with the patient’s skin and are not covering any part of any other cables.
4. Ensure the Quik-Combo pads are securely attached to multi-function cables.
5. Consider Pain Management protocol if the patient is not hypotensive.
6. Place selector switch to DEFIB position. Monitor ECG in lead II.
7. Select desired energy level using current AHA ACLS guidelines.
8. Press the SYNC softkey. SYNC marker will appear on the monitor above each detected R-wave to indicated where discharge will occur. Verify that markers are clearly visible on the monitor and their location is appropriate and consistent from beat to beat. If necessary, use LEAD button and SIZE button to establish settings that yield the best display. **Unless otherwise configured, the unit automatically goes out of sync mode after each shock or if the selector switch has been moved to PACER or OFF. You will need to press the SYNC button again to reactivate sync mode.**
9. Press the CHARGE button. Changing the selected energy while the unit is charging or charged will cause the defibrillator to disarm itself. Press the CHARGE button again to charge the unit.
10. After charging to selected energy, the SHOCK button will light along with an audible tone and the energy ready “SYNC XXXJ READY message will be displayed on the screen. The defibrillator is now ready.
11. Warn all persons in attendance of the patient to “Stand clear” prior to discharge. Verify that no one is in contact with the patient, monitoring cables or leads, bed rails, or any other potential current pathways.
12. Deliver the shock by pressing and holding the SHOCK button. The discharge will occur on the next detected R-wave.
13. Monitor for change in rhythm and treat accordingly.

**Side Effects and Special Notes:**
1. Erythema or irritation of skin will occur, particularly if good lubrication and skin contact are not achieved.
2. Cardioversion is rarely indicated in children.
3. Tachycardias are particularly devastating in patients with artificial valves that cannot move fast, therefore causing circulatory backflow
4. Ventricular fibrillation and asystole are rare complications of cardioversion and usually occur in the setting of a digitalis-toxic patient.