1. **Condition:**

   This policy applies to the Nursing Units that have emergency “crash” carts and defibrillators.

2. **Purpose:**

   To ensure proper response to medical emergencies (“Code Blue”) by having properly equipped crash carts that are readily accessible and by having routine drills for staff to practice proper response to medical emergencies.

3. **Policy:**

   3.1. There is a standardized crash cart located within the hospital departments (Appendix I). That crash cart contains a full collection of hospital approved emergency tools and medications which are kept locked.

   3.2. According to hospital policy, those medications can only be administered by an appropriately licensed professional (MD or RN) with current ACLS training.

   3.3. Maintenance and replacement of crash cart medications are the pharmacy’s responsibility.

4. **Procedure**

   4.1. CPR committee locates crash carts in any area of the facility's buildings and grounds where consumers are scheduled to congregate.

       4.1.1. The proximity of the crash cart is close enough that staff can access the cart within three minutes.

       4.1.2. The crash carts are each properly locked so as to ensure that supplies and medications are safe and secure.

       4.1.3. If possible, there should be no more than one locked door between the patient and the cart.

       4.1.4. The locked door should be master keyed for the building so that the key is available to all staff.
4.2. Drawers of crash carts are to be clearly labeled to identify contents by general categories (drugs, cardiac/chest procedures, circulation, breathing, and airway).

4.2.1. Special procedure trays are kept on the bottom shelf in selected units.

4.2.2. Drawers are organized and arranged from top to bottom in the following order: medications, airway, circulation, IV solution and tubing, miscellaneous.

4.2.3. All units will set up their carts to include age-appropriate equipment based on the ages of patients to be served, as needed using the appropriate supplies from the appendices.

4.2.4. The pediatric equipment indicated in appendix IV will be maintained for those adult units and patient care areas that routinely see a mixture of pediatric and adult patients. Pediatric Code sheets are generated for each patient.

4.3. Each hospital department is responsible for properly stocking their crash carts in compliance with the approved list of medications and supplies (Appendix II).

4.4. Equipment should be checked daily by licensed nursing staff in the outpatient clinics and every shift in the inpatient areas.

4.5. Cart inspections are documented on a form designed by the hospital for this purpose.

4.6. Defibrillator load checks will be performed every shift with the defibrillator plugged in and unplugged. Units that do not function on a 24-hour basis will test the defibrillator plugged in and unplugged once each workday. Refer to Appendix IV for test loads.

4.7. All carts will be opened and checked for contents once monthly and following each use. Sterile items will be checked for package integrity and expiration date. Items with expiration dates expiring within the month will be replaced.

4.8. Laryngoscopes will be checked prior to placement on the cart and monthly.

4.9. Oxygen cylinders are replaced when the tank has < 500 psi. Full tanks are obtained from General Stores on an exchange basis.

4.10. The medication drawer will not be opened if it is sealed and intact.

4.11. Designated Pharmacy staff is responsible for stocking the emergency drug kit with the approved list of contents.

4.12. Unused kits are opened and inspected by pharmacy staff at least once every 90 days.

Inspections are documented on a form designed by the hospital for this purpose.

4.13. Pharmacy is notified when the drug kit seal has been broken or removed.
4.14. Medications used from the kit are documented in the physician's orders and the opened kit is sent to the pharmacy to be restocked and sealed.

4.15. Extra drug kits are stored for use when the pharmacy staff is not available to restock the crash carts.

Hospitals may, as needed, have written instructions regarding how this task is completed.

5. Procedures:

5.1. The cart is inspected for the following External contents:

5.1.1. Portable suction apparatus with connecting tubing. If wall suction is not available in each patient’s room, then a wall auction apparatus may also be kept in the bottom large drawer of the cart.

5.1.2. Portable monitor/defibrillator unit with charged batteries, multifunction cable, multifunction pads (pedi, adult or both as appropriate), pacer cable (if pacer capable machine), EKG electrodes, appropriate sized paddles (adult, pediatric), defibrillation gel, monitor paper, blood pressure cuff (adult carts), SpO2 probe.

5.1.3. Sharps container.

5.1.4. Cardiopulmonary Resuscitation records Appendix VII

5.1.5. Emergency Crash Cart Check Sheet. Appendix VIII.

5.1.6. List of cart contents.

5.1.7. Emergency drug information sheets as appropriate for unit. (Appendix ? for adults Nd appendix ? for pediatrics)

5.1.8. Cardiac board on the back of the cart.

5.2. Cart contents according to appropriate appendix.

5.2.1. Adult - Appendix III

5.2.2. Pediatric - Appendix IV

5.2.3. Newborn - Appendix V

5.2.4. Optional pediatric/newborn supplies for adult areas. – Appendix VI

5.3. Replacement of Stock

5.3.1. Medications

5.3.1.1. As soon as possible after opening the emergency cart, the master charge sheet, located inside the medication drawer, will have a patient label placed in the lower right hand
corner of this form. Pharmacy will be called to replace the medication drawer with a new sealed drawer.

5.3.1.2. The used medication drawer will be returned to Pharmacy at this time.

5.3.1.3. Pharmacy will provide the medication drawer restocked and sealed in a clear security wrap.

5.3.1.4. Pharmacy will place a label indicating the name and expiration date of the first medication to expire, the date and initials of the person filling and checking the medication drawer. This label will be affixed to the upper left-hand corner of the drawer.

5.3.2. Supplies

5.3.2.1. As soon as possible after opening the emergency cart, the master supply charge sheet, located inside the Cart Book, will have a patient label placed in the lower right hand corner of this form.

5.3.2.2. The unit staff will take the crash cart with the patient-labeled master supply charge sheet, to Sterile Processing to exchange for a complete cart.

5.3.2.3. As of this date, only the adult emergency carts are restocked in this manner. The unused supplies will be returned to Sterile Processing at this time.

5.4. Once all items have been replaced, the cart will be locked with a new numbered lock by pharmacy.

The new lock number will be recorded on the crash cart checklist.

6. Forms/Attachments:

6.1. Cart contents according to appropriate appendix.

6.1.1. Adult - Appendix I

6.1.2. Pediatric - Appendix II

6.1.3. Newborn - Appendix III

6.1.4. Optional pediatric/newborn supplies for adult areas. – Appendix IV

6.2. Adult Emergency Drug Indications – Appendix V
<table>
<thead>
<tr>
<th>Drug</th>
<th>Conc.</th>
<th>Unit</th>
<th>Dose</th>
<th>Preparation</th>
<th>administration</th>
<th>Stability</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Adenosine</strong></td>
<td>6mg/2ml</td>
<td>Vial</td>
<td>Adult: 0.1 mg/kg then 0.2 mg/kg Max 1st: 6 mg Max 2nd: 12 mg after 1-2 min for 2 dose</td>
<td>Undiluted</td>
<td>Rapid IV bolus injected over 1-2 sec follow each dose with 5ml NS flush</td>
<td>Discard unused portion</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Pediatric: 0.05-0.1 mg/kg Max single dose of 0.3 mg/kg repeat at DD rate of 0.05-0.1 mg/kg/dose q 1-2 min</td>
<td></td>
<td>After each dose flush with 5 ml</td>
<td>discarded unused portion</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Infant: 6 mg then 12 mg after 1-2 min for 2 dose Max 1st: 6 mg Max 2nd: 12 mg</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Adrenaline</strong></td>
<td>1mg/ml</td>
<td>ampoule</td>
<td>1 mg q 3-5 min Max 0.2 mg/kg</td>
<td>Each 1 mg diluted in 10 ml</td>
<td>After each dose flush with 5 ml</td>
<td>discarded unused portion</td>
</tr>
<tr>
<td></td>
<td>0.1mg/ml</td>
<td>syringe</td>
<td>0.01 mg/kg q 3-5 min Max 1 mg</td>
<td>0.01-0.03 mg/kg</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Amiodarone</strong></td>
<td>150mg/3ml</td>
<td>ampoule</td>
<td>1st: 300 mg (6 ml) 2nd: 150 mg (3ml) in 3-5 minutes; Max: 2 g/day</td>
<td>undiluted</td>
<td></td>
<td>in polyolefin or glass: within 24 hr in PVC: within 2 hr</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>5-15 mg/kg; max: 300 mg</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Aminophylline</strong></td>
<td>250mg/10ml</td>
<td>ampoule</td>
<td>5-6 mg/kg over 20-30 min Max 5-6 mg/kg over 20-30 min</td>
<td>Undiluted or diluted up to 20 ml D5W</td>
<td>Over 20-30 min</td>
<td>48 hours at room temp, in conc. &lt; 40 mg/mL</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>5-6 mg/kg over 20-30 min</td>
<td>5-6 mg/kg over 20-30 min</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Atropine</strong></td>
<td>0.5mg/ml</td>
<td>ampoule</td>
<td>0.5-1 mg q 3-5 min max 3 mg</td>
<td>dilute in at least 10 ml of sterile water</td>
<td>rate of 1 mg over 1 min</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>0.02mg/kg q 5 min</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Bretylium Tosylate</strong></td>
<td>50mg/ml</td>
<td>vial</td>
<td>5 mg/kg over 1 min 1 to 10 mg/kg and repeated at 15-30 min Max 30 mg/kg</td>
<td>Undiluted or diluted (each dose with 50 ml or more of D5W or NS</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>5 mg/kg over 8-10 min Max 40 mg/kg/day</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Ca Chloride</strong></td>
<td>Ig/10ml</td>
<td>ampoule</td>
<td>8-16 mg/kg (5-10 ml) q 10 min</td>
<td>20 mg/kg (0.2 ml/kg) over 10-20 seconds repeated once after 10 min</td>
<td>Slow IV at a rate not &gt; 0.5-1 ml/min</td>
<td></td>
</tr>
<tr>
<td><strong>Ca Gluconate</strong></td>
<td>Ig/10ml</td>
<td>ampoule</td>
<td>0.5-0.8 g q10 min if needed</td>
<td>0.6-1 ml/kg</td>
<td>Slow IV at a rate not exceeding 1.5 ml/min</td>
<td></td>
</tr>
<tr>
<td><strong>Dextrose</strong></td>
<td>50%</td>
<td>vial</td>
<td>10-25 g</td>
<td>0.5-1 g</td>
<td>0.25-0.5 g</td>
<td>max rate 0.5 g/kg/hr</td>
</tr>
<tr>
<td></td>
<td>5%</td>
<td>bag</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>5%</td>
<td>bag</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Dobutamine</strong></td>
<td>250mg/5ml</td>
<td>vial</td>
<td>5-20 mg/kg/min. adjust rate at 2-10 min interval Max 40 mg/kg/min</td>
<td>Diluted with at least 50ml of D5W,NS</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2-20 mg/kg/min. max 40 mg/kg/min</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dopamine Freseias</td>
<td>200mg/5ml</td>
<td>vial</td>
<td>2-5 mg/kg/min LFL by 5-10 mg/kg/min at 10-30 min Max 20-50 g/kg/min</td>
<td>1-5 mg/kg/min! by 2.5-3 mg/kg/min Max 15-20 mg/kg/min</td>
<td>20 mg/kg/min</td>
<td>Diluted (5-10 ml of 40 mg/ml or 10 ml of 50 mg/ml with 250, 500, or 1000 ml of NS, D5W)</td>
</tr>
<tr>
<td>-------------------</td>
<td>-----------</td>
<td>------</td>
<td>-------------------------------------------------</td>
<td>-------------------------------------------------</td>
<td>-------------</td>
<td>-----------------------------------------------------------------</td>
</tr>
<tr>
<td></td>
<td>250mg/25ml</td>
<td>ampoule</td>
<td>20-40 mg over 1-2 min, 1 mg/kg/dose 1 by 0.5-1 mg IV over 3 min q</td>
<td>undiluted over 1-2 min</td>
<td>discard after 24</td>
<td></td>
</tr>
<tr>
<td></td>
<td>20mg/2ml</td>
<td>ampoule</td>
<td>1 mg/kg/day q</td>
<td>IV bolus, diluted to 50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hydrocortisone</td>
<td>100mg/2ml</td>
<td>vial</td>
<td>0.5 - 2 g q 2-6 hr</td>
<td>1-5 mg/kg/day q</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>300mg/4ml</td>
<td>ampoule</td>
<td>1 mg (5ml) in 250 ml of D5W</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.2nl/ml</td>
<td>ampoule</td>
<td>2-10 mg/min</td>
<td>1 mg/kg/min</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2meq/ml</td>
<td>ampoule</td>
<td>0.1-1 mg/kg/min 1 by 0.1 mg/kg/min 1 g/kg/min.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lidocaine</td>
<td>100mg/5ml</td>
<td>syringe</td>
<td>1st: 1-1.5 mg/kg</td>
<td>1 mg/kg max</td>
<td>undiluted or diluted (2)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1g/5ml</td>
<td>syringe</td>
<td>1 mg/kg slowly then 10</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>4meq/ml</td>
<td>ampoule</td>
<td>1-2 g (8 min/kg) or 4 ml over 5-20 min repeated once</td>
<td>25-30 mg/kg IV over 10-20 min Max 2 g</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mg sulfate</td>
<td>4meq/ml</td>
<td>ampoule</td>
<td>25-30 mg/kg IV over 10-20 min Max 2 g</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.1mg/1mg</td>
<td>ml</td>
<td>rate should not &gt; 150 mg/min</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Naxolone</td>
<td>0.02mg/ml</td>
<td>ampoule</td>
<td>0.4 mg over 3-5 min q 2-3 min for 3-5 doses</td>
<td>2 mg q 2-3</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.1mg/ml</td>
<td>ml</td>
<td>Undiluted or diluted with sterile water, NS or D5W. (2 mg to 500 ml give a conc. 0.004 mg/ml)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Norepinephrine</td>
<td>0.1mg/ml</td>
<td>ml</td>
<td>0.5-1 mg/kg/min Max 30 mg/kg/min</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bitartrate</td>
<td>4mg/4ml</td>
<td>ampoule</td>
<td>1 mg/kg/min</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.05-1 mg/kg/min. Max 2 mg/kg/min</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Phenytoin (Sodium)</td>
<td>250mg/5ml</td>
<td>ampoule</td>
<td>10-20 mg/kg</td>
<td>15-20 mg/kg rate not &gt; 1-3 mg/kg/min</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>250mg/ml</td>
<td>ampoule</td>
<td>Better undiluted or add to NS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Potassium CMoride</td>
<td>2meq/ml</td>
<td>vial</td>
<td>40-60 meq/1</td>
<td>250 meq/m2/day or 1 meq/kg/hr</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>250mg/ml</td>
<td>ampoule</td>
<td>1-2 meq/kg/day not &gt; 30 meq/L</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Procainamide HC1</td>
<td>1g/10ml</td>
<td>vial</td>
<td>10-15 mg/kg over 30 min max 17 mg/kg</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>20 mg/kg/min q 10 min</td>
<td>diluted before infusion</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Propranolol</td>
<td>1mg/ml</td>
<td>ampoule</td>
<td>1-3 mg q 2 min for 3 doses</td>
<td>0.01-0.1 mg/kg over 10 min max 3 mg</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.01 mg/kg over 10 min max 3 mg</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sodium</td>
<td>4.2g/84ml</td>
<td>vial</td>
<td>1 meq/kg over 1 meq/kg</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>10mmd/10 ml (4.8%)</td>
<td>Dilute solution 0.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Verapamil</td>
<td>2.5mg/ml</td>
<td>vial</td>
<td>2.5 - 5 mg IV over 2 min, followed by 3-10 mg in 15-30 min Max 20 mg</td>
<td>0.1 - 0.3 mg/kg over 2 min 1st dose not &gt; 5 mg. 2nd dose not &gt; 10 mg given 30 min after 1st dose</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>20 mg/kg/min q 6-8 hr max 1 mg</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**APPENDIX - II**
INTERNAL POLICIES AND PROCEDURES
CONCURRENCE / NON-CONCURRENCE FORM

To be completed by initiating department/person.

From: ___________________________(department/person) Tel. Extension No.: _____ Date: ______________

Name of Policy and Procedure: ____________________________________________________________ Number: ________________

☐ New Document  ☐ Revised Document  ☐ Reviewed Document (no changes done)

Comments: (a brief summary of purpose of the document or changes made)

____________________________________________________________________________________

____________________________________________________________________________________

____________________________________________________________________________________

To be completed by the reviewers (affected departments).

You are requested to review the attached document(s) as there could be an effect or impact upon your department if the action is initiated. Please sign if you concur (agree) with the document, date and forward to the next person on the list. If you do not agree with the document, please provide an explanation and send your written comments to the sender (initiating) department.

<table>
<thead>
<tr>
<th>DIRECT TO</th>
<th>Please check the appropriate box</th>
<th>Signature</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHARMACY DEPARTMENT</td>
<td>□ Concur  ☐ Non-concur *</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>□ Concur  ☐ Non-concur *</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>□ Concur  ☐ Non-concur *</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>□ Concur  ☐ Non-concur *</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>□ Concur  ☐ Non-concur *</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>□ Concur  ☐ Non-concur *</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>□ Concur  ☐ Non-concur *</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>□ Concur  ☐ Non-concur *</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>□ Concur  ☐ Non-concur *</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Non-concurrence must forward written comments to the originating department/person.
**ADULT EMERGENCY CART**

**Adult Drawer 1 – Medications**

- Adenosine 6mg/2ml vial 5
- Amiodarone 150mg/3ml ampule 5
- Diphenhydramine 50mg/ml vial 1
- Epinephrine 1mg/ml 30ml vial 1
- Flumazenil 0.5mg/5ml vial 1
- Magnesium Sulfate 1gm/2ml vial 2
- Naloxone 4mg/10ml vial 1
- Norepinephrine 4mg/4ml ampule 1
- Sodium Chloride NaCl flushed pre-filled syringes 10
- Procainamide 1gm/10ml vial 2
- Solumedrol 125mg/vial 1
- Vasopressin 20U/ml 1ml vial 2
- Dopamine 400mg/250ml D5W premix drip 1

***If pharmacy is unable to obtain premix drips we will stock with:***

- 2 x 200mg Dopamine vials (40mg/ml 5ml vials)
- Lidocaine 2gm/500ml premix 1

**Bristoejects: with male luer lock adapters:**

- Atropine 0.1mg/ml 10ml syringe 4
- Calcium Chloride 100mg/ml 10ml syringe 2
- Dextrose 50% 50ml syringe 1
- Epinephrine 1:10,000 1mg/10ml syringe 6
- Etomidate 2mg/ml 20ml syringe 1
- Epinephrine 2% 20mg/ml (100mg/5ml) syringe 2
- Sodium Bicarbonate 1mEq/ml 50ml syringe 2

**Adult Drawer 2 – Breathing and Airway (large drawer)**

- Ambu bag with mask (can attach to cart if bottom shelf needed)
- O2 Nasal cannula
- O2 Flow meter with adapter (xmas tree)
- Oral airways: one each ~ 10 cm, 9 cm, 8 cm, 7 cm
- Adult Laryngoscope Handle
- #3 straight blade
- #3 & #4 curved blade
- 10cc syringe
- 1 adult Stylet (14 fr.)
- 2 C cell batteries
- Laryngeal Mask Airways: Size 3, 4, 5
- 20cc syringe
- 2 Padded tongue blades
- 1 Roll 1≈ adhesive tape or pre-made ET tube holder
- Skin prep wipes or benzoin
- 2 pr. exam gloves
- 1 Yankauer tonsil suction
- 2 #14 suction catheters
- Salem sump tube, 16 Fr
- Lubricant
- Straight connector
- Toomey syringe
Endotracheal tubes, 2 each size: 6.0, 7.0, 7.5, 8.0, 8.5, 9.0
Tracheostomy tubes, 1 each size: Adult Shiley Blue Box: #6, #8.
Inner Cannulas, 1 of each size: Shiley #6, #8
(Ortopex is discontinued – unless special order for a patient)
1 Adult End-tidal CO2 Detector

**Adult Drawer 3 – Circulation: IV supplies (small drawer)**

Angiocaths, 2 each: 14G, 16G, 18G, 20G, 22G
2 3-Way stopcocks
Blood tubes: 3 SST, 1 lt. blue, 1 lavender
2 ABG kits, 2 heparinized aspirators
Needles: 6 18G, 6 22G
Alcohol swabs
Tape
Butterflies, 2 each: 21G, 23G, 25G
2 IV start kits
Syringes: 2 TB, 6 3cc, 6 5cc, 6 10cc, 2 20cc, 1 60cc
Non-coring Huber Needles-1 each: 22 ga 1 inch, 20ga 1 inch

**Adult Drawer 4 - Circulation: IV solutions and tubing (large drawer)**

1 Lactated ringers 1000 ml
2 Normal saline 1000 ml
2 Normal saline 250 ml
2 D5W 500 ml
2 D5W 250 ml
IV Tubing:
2 Macrodrrip
3 Microdrrip
2 Horizon cassettes
2 Extension tubing (needless)
1 Buretrol
1 Blood pump tubing
Armboards: 1 long, 1 short

**Adult Drawer 5 – Cardiac, Chest Procedures (large drawer)**

6 EKG electrodes
2 Restraints
Sterile gloves, 2 pair each size: small, medium, and large
2 Masks with face shields or masks and eye protection
2 Scalpels with blades
Dressings: 4x4 10 pk, 2 4X4, 2 4X4 drain sponge, 2 2X2
Chlorohex/prep solution
Sutures, 2 each: 000 silk with needle, 0 silk with needle
Cardiac needle 20 G
Sterile towels
Petroleum gauze
Cutdown tray
3 - lumen CVP catheter kit
Chest tubes, 1 each: 28 Fr, 32 Fr
**External Contents of Adult Cart**

Cardiac Monitor/Defibrillator Unit  
Zoll Paste  
Multifunction Cable  
EKG Cable  
Pacer Cable  
Multifunction Pads – 1 Adult  **(IMPERATIVE: check expiration dates)**  
EKG Electrodes – 2 sets  
O2 Sat (SpO2) Probe  
Sphygmomanometer/Manual Blood Pressure Cuff  
Sharps Container  
Cardiac Monitor Paper – 2 rolls  
Cart Documentation Binder/Clipboard/Checklist  
Portable Suction (Some units may elect to also keep a wall suction in the bottom drawer).  
Oxygen E-cylinder Tank (replace when < 500 psi)  
Oxygen Tank Wrench  
Backboard (Back of Cart)

**Adult Transport Box for Monitored Patients**

**Medications:**  
Epinephrine 1:10,000 1mg/10ml syringe 2  
Amiodarone 150mg/3ml ampule 2  
Lidocaine 2% 20mg/ml (100mg/5ml) syringe 2  
Atropine 0.1mg/ml 10ml syringe 2  
Narcan 4mg/10ml vial (narcan 0.4 mg) 1  
NaCl 0.9% 10cc flush syringe 8

**Equipment:**  
Oral airways: one each - 10 cm, 9 cm, 8 cm, 7 cm  
1 - roll cloth tape 1"  
10 - alcohol swabs  
4 - chlorhexidine swabs  
4 - 2X2's  
4 - filter needles 18 Ga blunt  
4 - needles 18 Ga blunt  
4 - needles 20 Ga safety  
4 - 10cc syringes  
4 - 3cc syringes  
4 - needleless adapters Clave  
1 - IV start kit  
Angiocaths: two each size: 18 Ga, 20 Ga  
1 - NS 500  
2 - Horizon IV tubing  
1 – Adult ambu bag/mask device (manual resuscitator with variable volume reservoir and adult mask)  
2 – 14 fr. Suction catheters
PEDIATRIC EMERGENCY CART

**Pediatric Drawer 1 – Medications**

- Adenosine 6mg/2ml vials 3
- Calcium Chloride 10% (1gm/10ml) vials 2
- Calcium Gluconate 10% (998mg/10ml) vials 1
- Diphenhydramine 50mg/ml vial 1
- Dobutamine RTU 2000 mcg/ml 1
- Dopamine RTU 1600 mcg/ml 1
- Epinephrine 1mg/1ml 30ml MDV 1
- Flumazenil 0.5mg/5ml vial 1
- Methylprednisolone 40mg vial 1
- Naloxone 0.02mg/ml 1ml ampule 1
- Naloxone 0.4mg/ml 1ml ampule 2
- Norepinephrine 4mg/4ml ampule 1
- Sodium Chloride 0.9% vial 10ml flush SDV 4
- Atropine 0.5mg/5ml syringe 3
- Calcium Chloride 1gm/10ml syringe 1
- Dextrose 25% 10ml syringes 4
- Epinephrine 1mg/10ml syringes 3
- Lidocaine 100mg/5ml syringe 3
- Sodium Bicarbonate 1mEq/ml 10ml syringe 3
- Sodium Bicarbonate 0.5mEq/ml 50ml syringe 1
- Magnesium sulfate 1/gram/2 ml 1
- Amiodarone 150 mg/3 cc 1
- Vasopressin 20units/ml 1 ml/vial 1

**Pediatric Drawer 2 – Breathing and Airway (small drawer)**

- Pedi-paddles for those units using Lifepack 6
- Endotracheal un-cuffed tubes 2 each: 2.5, 3.0, 3.5, 4.0, 4.5, 5.0, 5.5, and 6.0
- Endotracheal cuffed tubes 2 each: 3.0, 3.5, 4.0, 5.0, 5.5 and 6.0
- 1 peds Laryngoscope handle Heine recommended
- 1 adult Laryngoscope handle Heine recommended
- 1 each straight blades: 0, 1, 2, 3
- 1 each curved blades: 1, 2, 3
- stylets 2 each size: 2.5 mm and 4 mm ID
- 1 roll of 1-inch tape
- 2 C batteries
- 1 Magill Forceps
- 1 can stomahesive spray
- 1 each size ETCO2 detector: Peds; Adult

**PICU only:**

- 1 peds intubation tray
- 1 adult intubation tray
- 2 Laryngoscope Replacement Bulbs
**Pediatric Drawer 3 - Airway/Breathing (large drawer)**

- Tracheostomy tubes (Bivona) - 1 each size: NEO: 3.0, 3.5  
  - 1 each size: PED: 3.5, 4.0, 4.5, 5.0, 5.5  
- LMA: 1 each of size: 1, 1.5, 2, 2.5, 3 and 4  
- Adult & Pedi & Infant AMBU bags (Laerdal recommended): 1 each (May be hung on outside of cart)  
- 1 Oxygen flow meter  
- 1 Yankauer tonsil suction  
- Suction Catheters: 1 each size: 6 Fr., 8 Fr., 10 Fr., 14 Fr.  
- Nasal airways – 1 each size: 6mm, 8.5mm  
- Oral airways – 1 each size: 5cm, 6cm, 7cm, 8cm  
- 4 K-Y Gel packets  
- Butterfly (needle aspiration) kits (2) – kit includes 1 each: 21 Ga. Butterfly  
- Stopcock  
- 20 cc syringe  
- Chlorohex swab  
- Box with syringes and needles (include sharp needles)  
- 2 of the 14 gauge Accuvance IV catheters (for needle decompression)

**Pediatric Drawer 4 – Circulation (small drawer)**

- 2 Intraosseous (I.O.) needles  
- 2 T-connectors  
- 2 Horizon tubing  
- 1 Buretrol  
- 1 I.V. filter  
- 2 of 60 cc syringes  
- Extension tubing – 2 each size: 30 inch and 60 inch  
- 1 IV bag spike  
- 3 packets 2X2 gauze  
- 3 packets 4X4 gauze  
- Other I.V. start items: stopcock, clave, tourniquet, alcohol swabs, Chloroprep, Tegaderms  
- 1 inch tape  
- Assorted syringes-4 each: 10cc, 5cc, 3cc, 1cc  
- Non-coring Huber Needles-1 each size: 22 ga ¾ inch, 20 ga 1 inch

**Pediatric Drawer 5 – Circulation/Special (small drawer)**

- I.V.Fluids, Normal Saline 500 cc (2bags)  
- Toomey syringe  
- Feeding tubes-1 each size: 5 Fr., 8 Fr. (both 42 inch length)  
- 4 Packs K-Y gel  
- Flashlight with batteries  
- 2 “D” cell batteries

**Pediatric ICU only:**

- Wirecutters  
- Zoll internal paddles (3 sizes)  
- Intracardiac needles
Pediatric Drawer 6 – Invasive Procedures (large drawer)

Cutdown Tray
2 of 4 Fr., 8 cm double lumen CVL
2 of 5 Fr., 8 cm double lumen CVL
Chlorhexidine bottle
Surgical Airway Tray
2 Packages of sterile O.R. towels
Sterile gloves- 2 each size: 6, 6 1/2, 7, 7 1/2, 8
Blades- 2 each size: #10, #11, #15
Silk suture- 2 each size: 3.0, 4.0
2 Chest tube clamps

Pediatric Cardiac ICU Only:
Transvenous pacing set-up

Pediatric Bottom Shelf – Large Trays
Suction set-up

Pediatric Cardiac ICU Only:
2 Cardiac arrest trays
2 Rib Spreaders: 1 large, 1 small
Zoll cable (sterile) for internal paddles

External Contents of Pediatric Cart
Cardiac Monitor/Defibrillator with Defibrillator paste
Cables: Multifunction cable; EKG cable; Pacer cable if applicable to defibrillator
Multi-function pads-1 each: adult & pediatric (IMPERATIVE: check expiration dates)
2 packs EKG leads (NOT the pre-wired pediatric leads)
O2 sat (SpO2) probe
Cardiac Monitor Paper – 2 rolls or packs
Cart Documentation Binder/Clipboard/Checklist
Oxygen E-cylinder tank (replace when < 500 psi) with Oxygen wrench
Portable Suction Set-up
Sharps Container
Backboard (Back of Cart)
Kidney basins

Pediatric Transport Box for Monitored Patients

Medications:
None medications- nurse to take whatever is appropriate to the patient.
Equipment:
1 - Roll cloth tape 1"
10 - Alcohol swabs
Needles, two each size: 20 Ga safety, needle less Clave adaptors
Syringes, two each size: 10cc, 3cc
1 - IV start kit
Angiocaths: two each size: 22 Ga, 20 Ga
1 – Pedi ambu bag (laedrel recommended)/mask device and Pedi mask
1 - 6 fr. Suction catheter
CO2 detectors- 1 adult and 1 pedi
4 - Replacement ECG electrodes
NEWBORN INTENSIVE CARE MILCARE CART

**Neonatal Drawer 1 – Medications**

Adenosine 6mg/2ml vials 3  
Calcium Chloride 10% (1gm/10ml) vials 2  
Calcium Gluconate 10% (998mg/10ml) vial 1  
Diphenhydramine 50mg/ml vial 1  
Dopamine 200 mg/5 ml 1  
Dobutamine 250 mg/5 ml 1  
Epinephrine 0.1mg/ml ampules 3  
Flumazenil 0.5mg/5ml vial 1  
Naloxone 0.02mg/ml 1ml ampule 1  
Sodium Chloride 0.9% vial 10ml flush SDV 4  
Atropine 0.5mg/5ml syringe 3  
Dextrose 25% syringe 1  
Lidocaine 100mg/5ml syringe 3  
Sodium Bicarbonate 0.5 mEq/ml 10ml syringe 3  
Digoxin 10 mcg/1 ml 1

**Neonatal Drawer 2 - Respiratory, Airway**

Endotracheal Tubes - 2 each: 2.0, 2.5, 3.0, 3.5, 4.0, and 4.5  
1 LMA: Size 1  
2 Stylette  
Oral Airways - 1 each: infant 6.0, neonatal 5.0  
CPAP mask: Neonate 1, Infant 1, Microneonate 1  
CPAP bag and manometer 1 each  
2 Feeding tube 8 French  
2 Feeding tube 5 French  
Pedi Laryngoscope Handle  
Disposable blades: 1 each #0, #1 Straight Blades  
Suction Catheters: 2 each: 6Fr, 8Fr, 10Fr

**Neonatal Drawer 3 - Circulation, Umbilical Catheter Supplies**

Umbilical Artery Catheters (Polyurethane) - 2 each: 3.5, 4.0, 5.0  
Sutures - 3 each: 4-0 Silk, 4.0 Prolene, 4.0 Vicryl, 5.0 Vicryl,  
3-Way stopcocks  
3 umbilical tape

**Neonatal Drawer 4 - Circulation, IV Supplies**

Syringes: 10 TB, 5 x 3cc, 5 x 5cc, 5 x 10cc, 10 x 20cc, 4 x 60cc  
20 Blunt fill needles (18G); 10 Blunt fill filter needles (18G)  
5 Extension Set (T-Connectors)  
2 Betadine swabs  
Alcohol wipes  
1 1" roll cloth tape
1 Intraosseous needle
3 3-way stopcocks
I.V. Fluids- 2 each: D5W 50 cc, NaCl 100cc
2 Bag Spikes

**Neonatal Drawer 5 - Breathing and Airway**

Gloves 3 each: 6 1/2, 7, 8
4X4=s, 2X2=s (10 each)
1 Betadine bottle
2 Sterile water 4 oz.
6 Transparent dressing/biocclusive (3 lg 6cm X 7cm) (3 sm 4.4cm X 4.4 cm)
1 Roll 1=} adhesive tape
1 Mini-vol. extension set
2 Each: Straight connectors; Y- Connectors
Thoracic Catheters: 2 x 12 Fr, 2 x 10 Fr, 2 x 8 Fr, 2 x 12 Fr
2 Petroleum Gauze
2 Suture removal kit
5 #11 Blades

**Neonatal Bottom Shelf - Specialized Procedure Trays**

2 UAC
2 Neonatal Thoracotomy
1 Pedi Pack
1 Peds Cutdown
1 Neonatal tray
1 Water Seal chest drain
2 Sterile Gowns
2 Sterile Towels

**External Contents of Neonatal Cart**

Cardiac Monitor/Defibrillator
Defibrillator Paste
Multifunction Cable
EKG Cable
Pacer Cable
2 Pedi Multifunction Pads **(IMPERATIVE-Check expiration date)**
Cardiac Monitor Paper – 2 rolls
Sharps Container
Cart Documentation Binder/Clipboard/Checklist
Oxygen E-cylinder Tank (with Oxygen tank wrench On E cylinder)

**Neonatal Transport Box for Monitored Patients**

Medications

10 ml sterile water for injection 3
10 ml 0.9% sodium chloride for injection 3
Narcan 0.4mg/ml 1
Epinephrine 1:1000 1mg/ml in 10ml syringe 1
Epinephrine 1:10,000 0.1mg/ml in 10ml syringe 1
Sodium Bicarbonate 4.2% 5mEq/10ml 1
Atropine 0.1mg/ml 1mg/10ml 1
Equipment:

1 – Bulb syringe
2 – Meconium aspirators
Suction Catheters, two each size: 6 Fr., 8 Fr., 10, Fr.
1 – Suction tubing with connector taped to bag
Masks, one each size: neonatal, infant
Oral Airway, one each size: small infant, large infant
Endotracheal Tubes, two each size: 2.5, 3.0, 3.5, one each size: 4.0, 4.5
2 – Stylets (packaging intact)
ETT Stabilizers, two each size: Small, Large (“H” taped to plasticized paper)
1 – Pneumothorax needling set-up (20cc syringe, stop-cock, 25G butterfly)
Laryngoscope Handle
Laryngoscope Blades, one each size straight: #0, #1
Two Each: Laryngoscope bulbs, Batteries, size “C”
Umbilical Catheters, two each size: 3.5 Fr., #5
1 – 250ml 0.9% sodium chloride injection
1 – Pkg electrodes
1 – Razor
4 – Transparent dressings for IV’s
2 – T-port extension sets
4 – Prn adaptors
2 – Clave needle free injection sites and 2 – clave needle free extension sets
Gauze Sponges, five each size: 2x2, 4x4
Masks, caps, gloves
Feeding tubes, two each size: #5 Fr., #8 Fr.
Syringes: #2 – 60cc, #2 – 20cc, #5 – 10cc, #5 – 5cc, #3 – 3cc, #10 – 1cc
Needles, five each size: 18Ga. 25Ga. filter needles
Five each: cotton balls, rubber bands
15 – Alcohol swabs
6 – Betadine swabs
1 – White tape
3 – Cord clamps
2 - #11 surgical blades
2 – 4.0 silk sutures
2 – Cotton umbilical tape
OPTIONAL PEDIATRIC/NEWBORN SUPPLIES FOR ADULT AREAS

Pediatric Ambu bag
Pediatric laryngoscope handle
Straight Blades 0,1,2,3
1 each size Pediatric stylet: neo 6 fr.; pedi 10 fr.
LMA: 1, 1.5, 2, 2.5
Nasal cannulas: infant and peds
Non-breather mask
Oral airways: 2 child, 2 infant
Endotracheal tubes, 1 each: 3.0, 3.5, 4.0, 4.5, 5.0
1 each size Suction catheters: 14 fr.; 10 fr.; 8 fr.; 6 fr.
1 each size Feeding tubes: 8 fr.; 5 fr.
Syringes: 4 x TB, 2 x 20cc
2 Intraosseous needles 15G
2 each size Angiocaths: 22G; 24G
Bulb Syringe
2 Blankets
Cord Clamp
ADENOSINE Antiarrhythmic
In PSVT: Bolus: 6 mg rapid IV push, if no reponse in 1-2 minutes, administer dose of 12 mg. Repeat 12 mg dose a second time if required. Give through IV site nearest to heart. Follow each dose with rapid flush of 20ml NS. Stocked in 6 mg/2ml vials or syringes.

AMIODARONE Antiarrhythmic
Bolus: 300mg IV push or IO for cardiac arrest from VF or pulseless VT unresponsive to CPR, shock, and vasopressor. May follow with additional doses of 150mg IV push or IO. For control of hemodynamically stable VT, polymorphic VT with a normal QT interval, and wide-complex tachycardia of uncertain origin: and for , reentry SVT unresponsive to adenosine, vagal maneuvers, and AV nodal blockade: Bolus: 150 mg loading dose in 100cc D5W and infuse over 10 minutes.

DO NOT MIX WITH SALINE.
IV infusion: 450mg Amiodarone in D5W 250ml. Initial infusion 1 mg/min x 6 hours (33 ml/hr x 6 hours), then 0.5 mg/min (17 ml/hr). NO SALINE. Stocked in 150mg/3ml vials

ATROPINE Anti-cholinergic
Used for symptomatic bradycardia or for PEA: 0.5 to 1 mg IV push, repeat at 3 to 5 minute intervals to maximum of 3 doses or 3 mg. May be given via endotracheal tube. Stocked in 1 mg/10 ml syringes.

DEXTROSE Anti-hypoglycemic
10 to 25 Gm IV push. Repeat dose as necessary depending on symptoms and blood glucose levels. Stocked in 50% 50ml (25 Gm) syringes

DOPAMINE Vasopressor
After resumption of spontaneous circulation: IV infusion: Usual dose in code situation is 5 to 20 mcg/kg/minute. Contraindicated in hypovolemia. Effects of drug varies with dose:
- 2 - 5 mcg/kg/minute for renal perfusion
- 5 – 10 mcg/kg/min for increased cardiac output
- 10 – 20 mcg/kg/min for peripheral vasoconstriction
Assess urine output as dose approaches 20 mcg/kg/min.

EPINEPHRINE Adrenergic agent, vasoconstrictor
Used in pulseless arrest rhythms, VF, pulseless VT, Asystole, and PEA: 1 mg IV or IO every 3 – 5 minutes. May be given via endotracheal route. Stocked 1 mg/ 10ml 1:10,000 syringe

ETOMIDATE
Ultra short acting, nonbarbiturate hypnotic for rapid onset deep sedation for Rapid Sequence Intubation. Usual dose 0.2 – 0.6 mg/kg (approximately 30 mg for 70 kg patient). Give rapid IV push. Expect onset within 30 seconds with peak effect at 1 minute. Duration 3 – 5 minutes. Stocked 2 mg/ml, 40 mg syringe.

FLUMAZENIL Antidote for benzodiazepines
Initial dose 0.2 mg (2 ml) IV push over 15 seconds. If desired level of consciousness is not obtained after waiting additionally 45 seconds, repeat second dose of 0.2 mg (2 ml). Repeat at 60 second intervals as necessary to a maximum dose of 1 mg (10 ml). Use with caution in patients with a history of seizures and in patients with long history of benzodiazepine use.
LIDOCAINE  Alternative anti-arrhythmic
For treatment of ventricular ectopy, VT, and VF. Initial dose: 0.5-1.5 mg/kg, repeat 0.5-0.75 mg/kg every 5 to 10 minutes as necessary, up to a maximum total dose of 3 mg/kg. A maintenance infusion of 1 to 4 mg/minute (15 - 60 ml/hr) may be used if initial dose is effective in terminating the arrhythmia. Use with caution and reduce dose in elderly patients and patients with renal insufficiency. Stocked as 100mg/2ml syringes and as premixed drips, 2 Gm per 500ml.

MAGNESIUM
Recommended for treatment of torsades de pointes VT with or without cardiac arrest. May be effective for rate control in patients with atrial fibrillation with rapid ventricular response. Not helpful for treatment of nontorsades pulseless arrest. Give 1 to 2 Gm diluted in D5W over 5 to 60 minutes. Slower rates are preferable in the stable patient. Stocked in 1 Gm/2ml vials

NALOXONE Antidote for opioids
Is full opiate antagonist. May be given IV, IM SQ, or by intranasally using mucosal atomization device. Initial dose of 0.4 to 2 mg, repeat at 2 to 3 minute intervals. Use smaller doses (0.1-0.2 mg) in postoperative patients to avoid large cardiovascular changes. Will cause withdrawal in opioid dependant persons. If no response after 10mg, question diagnosis.

NOREPINEPHRINE (LEVOPHED) Vasopressor
To support blood pressure after return to spontaneous circulation. Prepare IV infusion of 4 mg/250ml. Initial dose 2 to 12 mcg/minute (7.5 to 45 ml/hr) and titrate to adequate blood pressure. Monitor urine output. Adequate hydration is imperative. Stocked in 4 mg/4 ml vial or ampoule.

SODIUM BICARBONATE Buffer
Used in metabolic acidosis: Not considered first-line therapy in cardiac arrest. Whenever possible, bicarbonate therapy should be guided by the bicarbonate concentration of calculated base deficit obtained from blood gas analysis or laboratory measurement. Special resuscitation situations in which bicarbonate can be beneficial include preexisting metabolic acidosis, hyperkalemia, or tricyclic antidepressant overdose. Usual initial dose 1 mEq/kg IV push. Incompatible with dopamine, norepinephrine, and amiodarone. Stocked in 50 mEq/50 ml syringes.

VASOPRESSIN Non-adrenergic peripheral vasoconstrictor.
40 units IV push may replace first or second dose of epinephrine to produce vasoconstriction and increased blood flow to the brain during CPR for VF or pulseless VT. Use epinephrine to follow up in 3 to 5 minutes if there is no response to vasopressin. Stocked in 20 unit/1ml vials (2)
APPENDIX - I

LOCATION OF CRASH CARTS IN KKUH

- Pharmacy Department
- Radiology Department
- Laboratory Department
- Emergency Department
- Cath Lab
- Critical Care
- Medical College Female / Male
- Operating Room
- OR – Receiving Area
- OR – Recovery Room
- All the in-patient wards
- Administration Area
- Medical Education Area
- Fire and Safety Department
- Main Entrance for the hospital