



# *Crash Cart Drugs*

## *Drugs used in CPR*

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# Introduction

- A list of the drugs kept in the crash carts.
- This list has been approved by the Pharmacy and Therapeutic Committee.
- The most important indications, contraindications and dosage and administration of these drugs are reviewed as a reminder for the physicians, nurses and pharmacists who serve on cardiac arrest (code) teams or who are involved in other emergency situations.



# Crash Cart

## Definition

### Crash Cart

- A crash cart - is a special cart (with drawers) containing emergency drugs and equipment needed when a cardiac-pulmonary arrest occurs.
- It provides an easier access to the emergency drugs and equipment.

## Purpose

- To have the crash cart and Defibrillator constantly ready for use in case of life threatening condition such as cardiopulmonary arrest.
- To establish standard practice, which is required to maintain and utilize the crash cart and the defibrillator.

# Crash Cart

## Procedure:

### 1. The cart is inspected for the following External contents:

- 1.1. Portable suction apparatus with connecting tubing if not available in each patient's room.
- 1.2. Portable monitor/defibrillator unit with charged batteries, multi-function cable, multifunction pads (pedi, adult or both as appropriate), pacer cable (if pacer capable machine), ECG electrodes, appropriate sized paddles (adult, pediatric), defibrillation gel, monitor paper, blood pressure cuff (adult carts), SpO<sub>2</sub> probe.



# Crash Cart

## Procedure:

- 1.3. Sharps container.
- 1.4. Cardiopulmonary Resuscitation records
- 1.5. Emergency Crash Cart Check Sheet.
- 1.6. List of cart contents.
- 1.7. **Emergency drug information sheets as appropriate for unit**

## Crash Carts



## Crash Cart Medicines



## Crash Cart & Drawer Accessories



Drawer 1:  
Medications

Drawer 3:  
Syringes  
Needles

Drawer 5:  
IV Fluids  
Angiocaths

Drawer 6:  
Gloves  
Face masks





# Crash Cart Drugs







# Intraosseous (IO) Access

In older children and adults:

- Distal radius and ulna
- Proximal tibia.



# Transtracheal Administration TT

1. Lipid-soluble drugs such as lidocaine, epinephrine, atropine, and naloxone ("LEAN") can be given via the endotracheal tube.
2. Flush with a minimum of 5 mL normal saline followed by 5 assisted manual ventilations.

# Medications

**1. Adenosine**      **6mg/2ml**  
**5 amp.**

**For symptomatic SVT**

**6 mg over 1-3 sec. Monitor ECG**

**If no response within 1-2 min**

**Repeat: 12 mg, Rapid IV/IO bolus**

**Remarks: Rapid IV push**

**Max dose 12 mg**



# Medications

## 1. Adenosine

- AV nodal conduction block and interrupts reentry circuits.
- Wide safety margin because of its short half-life.
- Adenosine may also be given by IO route.

# Medications

## 2. Amiodarone

150 mg/3ml  
6 vial

For refractory pulseless VT/VF

5 mg/Kg rapid

300 mg IV/IO; over 3 min. (dilute in 20-30ml).

Monitor ECG and BP

For perfusing tachycardia

Loading 5 mg/kg over 20-60 min

Max 15 mg/kg/day IV





# Medications

## 2. Amiodarone

- Slows AV conduction, prolongs QT interval, and slows ventricular conduction (widens the QRS).
- Amiodarone causes hypotension. The severity of the hypotension is related to the infusion rate and is less common with the aqueous form of amiodarone:
  1. It should be administered slowly to a patient with pulse.
  2. May be given rapidly to a patient with cardiac arrest or ventricular fibrillation (VF).

# Medications

## 2. Amiodarone

- Monitor the ECG because complications may include:
  1. Bradycardia,
  2. Heart block,
  3. Torsades de pointes ventricular tachycardia (VT).
- Use extreme caution when administering with another drug causing QT prolongation, such as **procainamide**.
- Adverse effects may be long lasting because the half-life is up to 40 days.



# Medications

## 3. Atropine

**0.02 mg/kg**

**1 mg IV, IO, TT**

**Total dose of 3 mg.**

Atropine Sulfate	1mg/ml single dose vial (5 amp)
Atropine Sulfate Syringe	10ml .1mg/ml 18g Safety Injector

- Parasympatholytic drug that accelerate sinus or atrial pacemakers and increases AV conduction.
- Small doses of atropine (<0.1 mg) may produce paradoxical bradycardia (block of presynaptic M<sub>1</sub> receptors).
- Avoid large dose in coronary patients as excessive tachycardia may aggravate ischemia and/or cause ventricular arrhythmia.

# Medications

## 4. Calcium

(10%, 1 g/10 mL)

20 mg/kg

500mg – 1 gm IV slowly

Calcium Chloride	10% 10ml 100mg/ml single dose vial (2)
Calcium Chloride Syringe	10% 1.36mEq/ml (100mg/ml) 18G. Safety injector (2)
Calcium Gluconate	10% 10ml 100mg/ml single dose vial (2)

- For symptomatic hypocalcemia, hyperkalemia and Ca channel blockers overdose.
- In critically ill children, **calcium chloride** may provide greater bioavailability than calcium gluconate.
- Preferably administer calcium chloride via a **central venous catheter** because of the risk of sclerosis or infiltration with a peripheral venous line



# Medications

## 5. Dobutamine

## 6. Dopamine

**2-20  $\mu\text{g/kg/min}$**

- +ve inotropics
- $\alpha$  adrenergic effect at higher doses

<b>Dobutamine</b>	<b>250 mg/ml 20ml Vials (2)</b>
<b>Dopamine</b>	<b>200mg, 40mg/ml 5ml vial (2)</b>
<b>Dopamine</b>	<b>400mg, 40mg/ml 10mlvial (2)</b>

# Medications

## 7. Epinephrine (1mg/10 mL)

1 mg/ml  
15 ampoules

For bradycardia

1mg of 1:10,000 IV/IO,

Maximum dose: 1 mg IV/IO, 10 mg TT

For asystolic or pulseless arrest

0.01 mg/kg, repeat every 3-5 min



Epinephrine	1ml 1:1,000 1mg/ml ampoule
Epinephrine Syringe	10ml 1:10,000 18ga x 3 1/2"
Epinephrine Syringe	10ml 1:10,000 18 ga Safety Injector (2)



# Medications

## 7. Epinephrine

- Vasoconstriction → increases aortic diastolic pressure and thus coronary perfusion pressure.
- Administer all catecholamines through a secure line, preferably into the **central circulation**; local ischemia, tissue injury, and ulceration may result from tissue infiltration.
- **Do not mix catecholamines** with sodium bicarbonate; alkaline solutions inactivate them.
- In patients with a perfusing rhythm, epinephrine causes tachycardia and may cause ventricular ectopy, tachyarrhythmias, hypertension, and vasoconstriction

# Medications

## 8. Glucose

0.5-1 g/kg IV/IO

**D10W: 5–10 mL/kg**

**D25W: 2–4 mL/kg**

**D50W: 1–2 mL/kg**

- Check blood glucose concentrations during and after arrest.

<b>D5W 100ml/IV Bag</b>	<b>D5W 100ml/IV Bag (5% Dextrose)</b>
<b>D5W 250 ml IV Bag</b>	<b>5% in water 250ml</b>
<b>D5W 500 ml IV Bag</b>	<b>500ml IV Bag (5% Dextrose)</b>
<b>Dextrose</b>	<b>50% 50ml 500mg/ml single dose vial</b>
<b>Dextrose Syringe</b>	<b>50% 50ml 500mg/ml 18ga Abboject</b>



## LIGNOCAINE

<b>DESCRIPTION</b>	Antiarrhythmic Sodium channel blocker; leads to a reduction in Action Potential production resulting in slowed cardiac conduction. Also produces local anaesthetic effect	
<b>INDICATIONS</b>	Failure of defibrillation and adrenaline to revert pulseless VT/VF Sometimes used as prophylaxis in the setting of recurrent VF/VT	
<b>DOSE</b>	<b><i>ADULT</i></b>	<b><i>CHILD</i></b>
	1mg/kg 0.5 mg/kg may be considered as an additional bolus	1mg/kg
<b>ADMINISTRATION</b>	IV bolus at rate of 25-50mcg/min	IV or intraosseous bolus
<b>CONTRAINDICATIONS</b>		
<b>ADVERSE EFFECTS</b>	Hypotension Bradycardia heart block seizures asystole slurred speech altered consciousness muscle twitching	
<b>NOTES</b>	ARC recommendations it is at the discretion of the Medical officer / accredited RN as to the choice of antiarrhythmic administered of Lignocaine or Amiodarone	