

Life-Saving Cart “Crash-Cart”

**Mr. R. Surendra Naik, Mr. Avadhesh Kumar Yadav, Dr. Meena K. Krishnan, Mrs. Pushpa Tirkey,
Mr. Imran Ansari, Mr. Rajendra Kumar Sahu**

Mahamana Pandit Madan Mohan Malviya Cancer Centre, Varanasi, Uttar Pradesh, India
avadheshkumar1382@gmail.com

Abstract: *Crash Cart is one life-saving which is prepared for saving the life of patients in the hospitals. A crash cart means storing and transporting Vital equipment and Emergency drugs which may require during cardiac pulmonary arrest occurs. Or respiratory arrest conditions. In the hospital word “CODE BLUE” is used as indicating symbol for a cardiopulmonary emergency. It provides an easily accessible position that is central to the patient care area. For treating easily The objective of writing this conceptual article is to identify what the crash cart consists of and identify how to arrange crash cart contents according to the policy of the hospital board.*

Keywords: Crash Cart, Crash Trolley, Emergency Cart

I. INTRODUCTION

Crash Cart is one life-saving which is prepared for saving the life of patients in the hospitals. A crash cart means storing and transporting Vital equipment and Emergency drugs which may require during cardiac pulmonary arrest occurs. Or respiratory arrest conditions. In the hospital word “CODE BLUE” is used as indicating symbol for a cardiopulmonary emergency. It provides an easily accessible position that is central to the patient care area (1). For treating easily

OBJECTIVES

The objective of writing this conceptual article is -

- To identify what the crash cart consists of.
- To identify how to arrange crash cart contents according to the policy of the hospital board.
- To determine the role of the nurse during preparing and checking the crash cart.
- To know the maintenance of the crash cart.

FUNCTIONS AND IMPORTANCE OF CRASH CART -

The function of a crash cart is to provide a mobile station within the hospital that contains everything needed to treat a life-threatening situation, the advantage of mobility is that it allows the treatment to come to the patient when needed (2).

POLICY

Every healthcare institution has a written policy for checking and maintaining of Crash cart.

- Crash cart must be checked by the head nurse/staff nurse on every shift and documentation of checklist to be carried out by all nurses as well as charge Nurses.
- Standardization must be maintained.
- Defibrillators must be checked by technicians or nursing officers, and the biomedical department regularly or as necessary.
- Crash cart items must be checked monthly for expiry dates. As per hospital policy
- Each unit will have a crash cart placed in an easily accessible location.

MAINTENANCE

Following is the maintenance routine that should be completed at least monthly: -

- Expiry date on medications should be checked on the first day of the month or weekly as per hospital policy.
- Expired medication should be removed and replaced

- The defibrillator pads on the AED or the defibrillator should be checked for expiry
- The battery charge on the monitor and or AED should be checked and documented (3).

THE CART IS INSPECTED FOR THE FOLLOWING EXTERNAL CONTENTS: -

- Portable suction apparatus with connecting tubing if not available at each patient's bedside.
- O2 cylinder full with flowmeter and its key.
- Portable monitor/defibrillator unit with charge batteries, multifunctional cables (if pacer capable machine) ECG electrodes, appropriately sized paddles [adults and pediatric], defibrillators gel, monitoring paper, BP cuff, spo2 probe.

CART SHOULD HAVE

- Sharp container
- CPR records
- Emergency cart check sheets
- List of the cart contents
- Emergency drug information sheet as appropriate for units

CRASH CART



Figure 1 Crash Cart

Image Source - <https://www.indiamart.com/proddetail/blue-emergency-trolley-21065358955.html>

**ARRANGEMENT
AT THE TOP**

- Defibrillator
- Spo2 Probe
- ECG Electrodes
- AMBU Bag [Adult and Paediatric]
- Oxygen Mask [Venturi Mask of Different Flow Rates]
- Non-Rebreathing Mask
- Bains Circuits [Adult and Paediatric]
- At Our Hospital Settings
- All Kinds of Resuscitative Fluids Are Kept on Top

- Gelospan
- 3% Sodium Chloride Solution
- Mannitol and All Other Intravenous Fluids

MIDDLE SPACE

COLOUR FULL BOXES OF EMERGENCY DRUGS LIKE

- Atropine
- Adrenaline
- Amiodaron,
- adenosine.
- Dopamine
- Dobutamine

DEFIBRILLATOR [ECG leads, electrodes, paddles, conducting gel
WORKSPACE AREA

DEFIBRILLATOR

It is the electrical device used to deliver shock via means of conducting paddles to revive normal conduction of the human heart.



Figure 2 Defibrillator

Image source - <https://www.indiamart.com/proddetail/philips-defibrillator-16262778133.html>

TYPES

- Monophasic
- Biphasic
- The manual defibrillator is also provided with modes like
- Cardioversion
- Pacer

Chest leads

Ecg electrodes

Conducting gel

Ecg reading paper

Defibrillator paddles

FIRST DRAWER

ALL EMERGENCY DRUGS THAT CAN SAVE LIFE THAT ARE



Figure 3 First Drawer

Image Source - <https://www.medik-medical.com/emergency-medical-carts/medical-emergency-crash-cart-red-color.html>

1. Noradrenaline
2. Calcium Gluconate
3. Sodium Bicarbonate
4. Diltiazem
5. Dextrose [25% And 50%]
6. Aminophylline
7. Deriphylline
8. Lidocaine [xylocaine]
9. Labetalol
10. Mannitol
11. Esmolol
12. Phenytoin
13. Midazolam
14. Lorazepam
15. Scolin
16. Propofol/ thiopentone
17. Ketamine
18. Tab - Ecosprin
19. Tab amlodipine
20. Tab atorvastatin

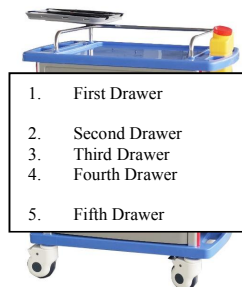


Figure 4 Drawer of crash Cart

Image source - <https://www.medicare.co.za/product/emergency-nursing-trolley/>

SECOND DRAWER

Less essential drugs of supportive management

- Potassium chloride
- Magnesium SULPHATE
- Hydrocortisone
- Lasix
- Ondansetron/ Granisetron
- Dexamethasone
- Vitamin k
- Tranexamic acid
- NTG {NITROGLYCERINE}
- Heparin

THIRD DRAWER

Vein puncture set -

- Syringes of all volumes [2ML.5ML.10 ML.20 ML.50 ML]
- Intravenous cannula of all sizes [14 .16G 18G.20G.22G. 24G]
- Gloves sterile in all sizes [6.6.5.7.7.5 8.0 8.5]
- Ryle’s tube all sizes [6fr 8fr 10fr 12fr 14fr 16fr 18fr 20fr 22fr 24[]]
- Suction catheters [5FG 6 FG 8 FG 10 FG 12 FG 14 FG 16 FG 18 FG 20 FG 22 FG 24 FG].
- Foleys catheters of all sizes [Silicon. non-silicon]
- Scalp veins
- Needles All sizes [14G 16G 18G 20G 22G 24G 26G] etc.

II. CANNULA SIZES

Cannula Sizes



Figure 5 IV CANNULA SIZES

Image source - <https://www.medilogbiohealth.com/2022/02/cannula.html>

RYLES TUBES AND SIZES



Figure 6 Ryle tube size with Colour Coding

Image Source - <https://www.omnia-health.com/product/rts08-20-ryle%E2%80%99s-tube-stomach-tube-nasogastric-introduction>



Figure 7 Suction Catheter size with colour codes.

Image source - <https://www.indiamart.com/proddetail/suction-catheter-22962662391.html>

FOLEY'S CATHETER AND SIZES

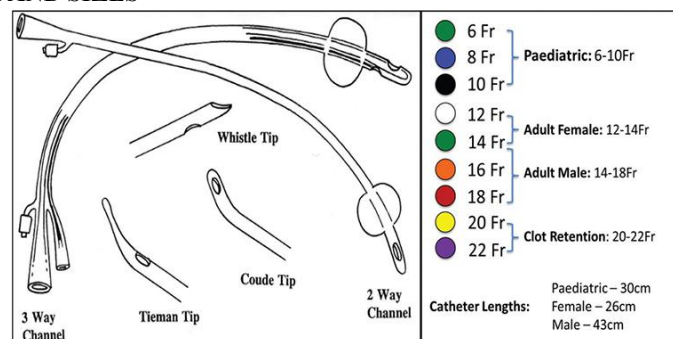


Figure 8 Urinary Catheter size with colour codes

Image source - <https://www1.racgp.org.au/ajgp/2018/march/ins-and-outs-of-urinary-catheters>

FOURTH DRAWER

- AMBU bag with mask reservoir and tubing's [adult and paediatric]
- ET tubes of various sizes
- Nasopharyngeal airways
- Tracheostomy tube of all sizes
- Goodles airway
- LMA [laryngeal mask airway]
- Laryngoscope with blades All sizes
- Xylocaine jelly
- Stylet
- Maggles forceps [adult and pediatric]
- Tube ties
- Tube sticking

LARYNGOSCOPE

- It should checked daily for its functioning and all sizes of blade compatible to handle
- Bulb should be functional
- Types of blades commonly used o makintosh [curved blades] o miller [Straight blades]

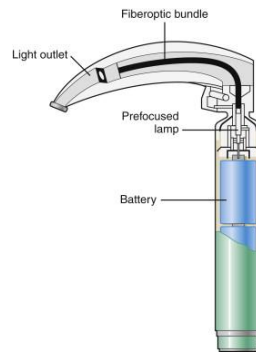


Figure 9 laryngoscope

Image source - <https://aneskey.com/intubation-equipment/>

DIFFERENCE OF LMA AND ENDOTRACHEAL TUBE

- It fits over the glottis and parts of esophagus helps in ventilation
- Do not requires laryngoscope for its placement
- It is used for shorter duration than ET and tracheostomy tube
- Chances of aspiration are high because it covers both esophagus and glottis.
- Causes less damage to vocal cords and lower airway It goes into the trachea and helps in ventilation
- It can be used for 5-7 days longer than

LMA {LARYNGEAL MASK AIR WAY}

- It reduces the chances of aspiration and complication related to it
- It causes more damage to the vocal cord and trachea

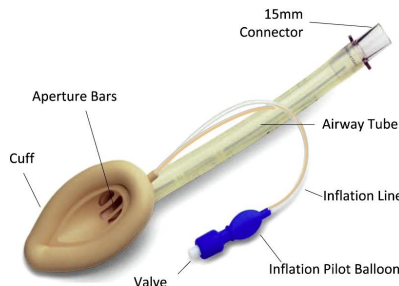


Figure 10 LMA

Image Source - <https://www.anesthesiology.theclinics.com/article/S1932-2275%2810%2900017-0/fulltext>

TRACHEOSTOMY TUBE

A tracheostomy is performed for several reasons, all involving restricted airways. It may be done during an emergency when your airway is blocked. Or it could be used when a disease or other problem makes normal breathing impossible (4).

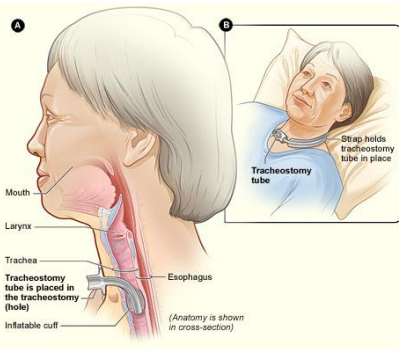


Figure 11 Tracheostomy tube

Image Source - https://commons.wikimedia.org/wiki/File:Tracheostomy_NIH.jpg

Conditions that may require a tracheostomy include:

- Anaphylaxis
- Birth Defects of The Airway
- Burns of The Airway from Inhalation of Corrosive Material
- Cancer in The Neck
- Chronic Lung Disease
- Coma
- Diaphragm Dysfunction
- Facial Burns or Surgery
- Infection
- Injury to The Larynx or Laryngectomy
- Injury to The Chest Wall
- Need for Prolonged Respiratory or Ventilator Support
- Obstruction of The Airway by A Foreign Body
- Obstructive Sleep Apnoea
- Paralysis of The Muscles Used in Swallowing
- Severe Neck or Mouth Injuries
- Tumour's
- Vocal Cord Paralysis

Nursing management:

- Nurses on duty should Check crash cart each shift before taking handover from previous shift duty staffs.
- Nurses on duty should Check the drugs and expiry dates and replace them as per guidelines.
- Nurses on duty should Check the defibrillator and its functional statuses
- Nurses on duty should Check the inventory properly and document it.
- Nurses on duty should Replace the fewer items [medicine, equipment's].

III. CONCLUSION

The crash cart arrangement and maintenance is priority of work which should be done by every nurse, A good maintenance of a crash Cart can save time and effort in an emergency. A piece of good knowledge and crash cart arrangement and its equipment may help the nurses in life-saving conditions of patients. Overall, we can say that better management of crash carts can save the life of patients.

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