

## ISSN: 2349-5162 | ESTD Year : 2014 | Monthly Issue **JETIR.ORG** JOURNAL OF EMERGING TECHNOLOGIES AND **INNOVATIVE RESEARCH (JETIR)**

An International Scholarly Open Access, Peer-reviewed, Refereed Journal

# Streamlining the contents of resuscitation cart in a super specialty centre in North India

Dr. Biraj Chandra Paul<sup>1</sup> (DNB), Dr. Nishant Sharma<sup>2\*</sup> (MD), Dr. Gurpreet Singh<sup>3</sup> (MBBS), Dr. I.B. Singh (MHA)<sup>4</sup>, Dr. Keshav Goyal (DM)<sup>5</sup>

<sup>1</sup>Senior Resident, <sup>2</sup> Senior Resident, <sup>3</sup> Junior Resident, <sup>4</sup> Additional Medical Superintendent, <sup>5</sup> Additional Professor <sup>1-3</sup>Hospital Administration, <sup>4</sup>Cardiothoracic & Neurosciences Centre, <sup>5</sup>Neuro-Anaesthesia and Critical Care

<sup>1-5</sup>AIIMS, New Delhi, India

\* Corresponding author: Dr. Nishant Sharma, Senior Resident, Hospital Administration, AIIMS, New Delhi, India drnishant79@gmail.com

Abstract: The equipment and medications that would be required to treat a patient in the first thirty minutes or so of a medical emergency are stored in resuscitation cart. The study was conducted in all the patient care areas of the super specialty hospital. Resuscitation cart policy and checklist were developed by seeking inputs from all the stakeholders and validating the same using the available literature. A training program was conducted and a total of 13 resuscitation carts were inspected against the approved checklist for checking its contents in both pre and post intervention periods. Resuscitation cart policy and checklist were prepared, validated by the domain experts and implemented. The compliance of all 13 resuscitation cart in terms of their contents increased from 77.82% to 97.87% with p value of <0.05 which is statistically significant. Maintaining resuscitation carts as per the checklist is a continuous process which will contribute to patient safety.

Index Terms - Resuscitation cart, Resuscitation care, Code Blue, Emergency medicines, Streamlining, Super specialty centre, Quality improvement

## I. INTRODUCTION

Time is of essence when life of a patient who suddenly collapses, is at stake. Successful resuscitation of patients depends on timely response by the medical team and appropriate medication delivery. The equipment and medications that would be required to treat a patient in the first thirty minutes of a medical emergency are kept in readiness in resuscitation carts. The resuscitation cart is the commonly used term to describe a self-contained, mobile unit that contains virtually all of the materials, drugs, and devices necessary to perform a code blue. The configuration of resuscitation carts may vary, but most will be a waist high or chest high wheeled cart with multiple drawers.<sup>1</sup>

An effective emergency care/ code blue depends on how resuscitation carts are provisioned and response team's knowledge of the cart layout.<sup>2</sup> All resuscitation carts contain must contain the following basic list of items:

- a) Basic airway equipment
- b) Intravenous access equipment
- c) Medications utilized in the treatment of cardiac arrest including epinephrine and amiodarone
- d) Medications utilized to treat cardiac dysrhythmias
- e) Monitor equipment with a defibrillator Medications to treat allergic reactions.

Additionally, carts being utilized for specialized areas may add or subtract from the basic list.

There was no standardization of resuscitation cart as observed during ward rounds in our super specialty hospital. The specific medications and organization of medications varied in the drawers of all the resuscitation carts. There was no defined checklist for inspecting the contents of the resuscitation cart and there was no policy for the maintenance of contents of a resuscitation cart in the hospital.

## **II. MATERIALS & METHODS:**

The study was conducted in all the patient care areas of the super specialty hospital which included inpatient wards, Intensive care Units (ICUs), Cath Laboratories, Operation Theatres (OTs) as well as the outpatient department (OPD). The study was carried out with an objective of streamlining the contents of the resuscitation carts by developing a policy and a checklist.

The policy for maintenance of contents of the resuscitation cart was developed by obtaining inputs from the all the stakeholders and then comparing the same to the existing literature. This policy was implemented in the hospital after obtaining the requisite administrative approvals.

Similarly, a checklist was developed to enable the inspection of contents of resuscitation carts at periodic intervals. Again the inputs were sought from the stakeholders and the same was validated by domain experts.

A training programme was conducted on the implementation of the resuscitation cart policy and checklist for the entire nursing staff of the patient care areas that were included in the study. The training programme consisted of theory lecture as well as hands-on demonstration sessions at the resuscitation carts.

The validated signed checklist was distributed to all the nursing in-charges of respective patient care areas for inspection of the resuscitation carts and their compliance was measure in both pre and post intervention periods. The data was entered into MS Excel and cleaned in Microsoft Excel 2016. Analysis was done in Stata 11 (Stata Corp, College Station, Texas, USA). Data was analyzed using descriptive statistics and has been presented as proportions while bi variable analysis between two categorical variables was done using chi square test and p value less than 0.05 was considered significant.

### **III. OBSERVATIONS & RESULTS:**

## **Resuscitation cart Policy**

**1.** <u>**Purpose:**</u> To insure availability of all drugs, equipment and supplies necessary to initiate advanced lifesupport measures and ensure uniformity of emergency resuscitation carts throughout the hospital.

2. <u>Scope:</u> All patient care areas

## 3. Policy:

Resuscitation carts shall be available in all key patient care areas to initiate emergency life-support measures. Resuscitation cart in all patient care areas should be arranged in a uniform manner as per the checklist provided and should be located in a specific location that is easily accessible.

Two registers must be maintained for each resuscitation cart:

i. Register for daily checking (in each shift) based on the checklist.

ii. Register for maintaining record of opening the resuscitation cart with details of incident. Designated nursing staff in the patient care area shall be responsible for:

a) Notifying after content(s) of resuscitation cart has/have been used.

b) Ensuring that medicines consumed are replenished within 1 hour of use.

c) Ensure resuscitation cart is moving freely. The wheels should be in good condition and repair, if necessary should be arranged timely.

d) Checking the presence and expiration date of all items on carts at least once every month and replacing short-expiry medicines with fresh stock.

e) Checking for near expiry medicines and other consumables and replacing it with new stock. Any drug whose expiry is within 3 month should be immediately replaced.

f) Signing of resuscitation cart register daily in each shift after verifying the availability of contents as per the checklist by a designated staff.

g) Checking internal and external contents of cart, including quantity and expiration date.

h) Checking oxygen cylinder and its attachment to the resuscitation cart every day.

i) The defibrillator and cardiac monitor shall be checked and appropriately documented for performance of both, the battery and electrical current once every 24 hours. The defibrillator shall

remain plugged into an electrical outlet at all times, except during battery testing. The Machinery and Equipment Stores shall be contacted immediately when a defibrillator is found to be non-functional for prompt action by the vendor concerned. A loaner defibrillator shall be obtained from other areas.

j) Checking all drawers of the resuscitation cart are properly labelled e.g. name of the medicines with quantity and expiry dates.

k) Checking all external contents of cart shall be checked and verification documented once every 24 hours except when the unit is closed.

An incident report shall be generated after any unauthorized entry into the cart or when routine supplies are found to be missing from the cart.

Any request for change in resuscitation cart contents, shall be reviewed by multi-disciplinary meeting of all the stakeholders.

If any item to be replenished in the crash is not available in the Store section, requisition must be sent to the store immediately and that item must be obtained on loan from other areas.

## **Resuscitation cart checklist:**

The following checklist was prepared and validated in consultation with all the stakeholders:

S.No	Article	Quantity	Dose	Packaging
	ТОР	SHELF		
1	AMBU Bag kit with mask	One each		
2	Oxygen Mask(0-4)	One each		
3	Gloves(5.5-7.5)	Two each		
4	Facemask (all sizes)	One each		
5	Defibrillator	One each		
	MIDDLE SHELF(Color	ured cups from left to	o right)	
6	Inj Atropine	10	0.6mg/ml	one ml
7	Inj Adrenaline	10	1.8mg/ml	one ml
8	InjPheniramine Maleate	10	22.75mg/ml	two ml
9	InjDeriphyllin	10		
10	Inj Furosemide	10	10mg/ml	two ml
11	Inj Hydrocortisone	5	100mg/ml	
	SIDE (IN	CLOTH BAG)		-
12	Bougie	two each		
13	Suction Catheter	two each		
	<b>TOP DRAWER</b>	(LEFT IN ACCESS)		
14	Syringes(2,5,10,50ml)	five each		
15	I.V. Cannula(16-24G)	two each		
16	Alcohol Swabs	10		
17	Elastoplast Tape	1		
18	IV Sets	5		
19	Three Way	5		
20	Hydrocath	2		
21	Extension Line	two each		
	TOP DRAWER (RIGHT)	- AIRWAY MANAG	EMENT	-
22	Laryngoscope with blade	one each		
23	Battery cell (Big and small)	two each		
24	Endotracheal Tube(all sizes)	one each		
25	Airway(0, 1, 2 & 3)	one each		
26	Nasopharyngeal Airway(4-8)	one each		
27	Tracheostomy Quick Set	one		
28	Oxygen enriched Mask	one		
29	Tracheostomy Tube	one each		

JETIR2111235 Journal of Emerging Technologies and Innovative Research (JETIR) <u>www.jetir.org</u> b262

#### © 2021 JETIR November 2021, Volume 8, Issue 11 5162)

30     Magil Forceps     one       31     Ryles Tube(10.12,14 & 16)     one each	5162)				
32 Stylet one each Image: strain of the stra	30	Magill Forceps	one		
33     Tie for fixation     one     net       34     Proseal LMA(ADULT)     one     net       35     I-Gel al sizzes     one each     net       36     T-piece     one     net       36     Injobazepam     5     Sing/ml     two ml       38     Inj Dazepam     5     4mg/ml     two ml       39     25%, 50%     Dextrose     five each     month       40     Inj Pomethazine     5     2mg/ml     two ml       41     Inj Admasteron     5     2mg/ml     two ml       42     Inj Sodium Bicarbonate     5     7.50%     ten ml       43     Inj Aminophylline     2     mm     net ml       44     Inj Aminophylline     2     Smg/ml     one ml       45     Inj Magnesium Sulphate     2     Smg/ml     one ml       46     Inj Haloperidol     2     Smg/ml     into ml       5     Inj Minophylline     2     Smg/ml     into ml       6     Inj Dotat					
34     Proseal LMA(ADULT)     one     Image: state of the st			one each		
35     I-Get all sizes     one each one     one       36     T-piece     one     in       MIDDLE DRAWER (LEFT) NON-CARDIAC DRUGS       37     Inj Daxamethasone     5     4mg/ml     two ml       39     25%, 50% Dextrose     five each     two ml       40     Inj Pormethazine     5     2mg/ml     two ml       41     Inj Ondansetron     5     2mg/ml     two ml       42     Inj Sodium Bicarbonate     5     7.50%     ten ml       43     Inj Calcium Gluconate     5     10%     ten ml       44     Inj Aminophylline     2     5mg/ml     one ml       45     Inj Magnesium Sulphate     2     5mg/ml     one ml       46     Inj Magnesium Sulphate     5     10mg/ml     five ml       50     Inj Sodium Valproate     5     10mg/ml     five ml       51     Inj Adenosine     2     Smg/ml     two ml       54     Inj Adenosine     2     Smg/ml     ten ml       54     I					
36     T-piece     one     middle DRAWER (LEFT)-NON-CARDIAC DRUGS       37     Inj Diazepam     5     Smg/ml     two ml       38     Inj Dexamethasone     5     Smg/ml     two ml       39     25%, 50% Dextrose     five each     ml     Mag/ml     two ml       39     10% Osfuen Bicarbonate     5     25mg/ml     two ml     Ml       41     Inj Codium Bicarbonate     5     7.50%     ten ml     Ml       42     Inj Sodium Bicarbonate     5     10%     ten ml     Ml       43     Inj Calcium Gluconate     5     10%     ten ml     Ml       44     Inj Aniophylline     2     50%     two ml     Ml       45     Inj Phenytoin     10     50mg/ml     one ml     Ml       46     Inj Magnesium Sulphate     5     10mg/ml     five ml     Ml       47     Inj Magnesium Sulphate     5     10mg/ml     two ml     Ml     Ml     Mn     mn     mn     Mn     Mn     mn     Mn		× /			
MIDDLE DRAWER (LEFT)- NON-CARDIAC DRUGS       37     Inj Dazenami       38     Inj Dexamethasone       39     Izj Dexamethasone       39     Izj Dexamethasone       39     Izj Dexamethasone       39     Izj Dexamethasone       30     Izj Dexamethasone       31     Inj Calcium Gluconate       41     InjOndansetron       42     Inj Sodium Bicarbonate       5     7.50%       43     Inj Calcium Gluconate       5     10%       44     Inj Aminophylline       2     Somg/ml       45     Inj Phenytoin       10     Somg/ml       46     Inj Haloperidol       2     Somg/ml       47     Inj Magnesium Sulphate       5     10mg/ml       48     Inj Netoclopramide       2     Somg/ml       49     Inj Protamine Sulphate       5     10mg/ml       5     10mg/ml       60     Inj Natoxone       2     Somg/ml <t< td=""><td></td><td></td><td></td><td></td><td></td></t<>					
37     Inj Diszepan     5     5mg/ml     two ml       38     Inj Dexanethasone     5     4mg/ml     two ml       39     25%, 50% Dextrose     five each     25mg/ml     two ml       40     Inj Promethazine     5     25mg/ml     two ml       42     Inj Sodium Bicarbonate     5     7.50%     ten ml       41     Inj Aminophylline     2	36	1			
38     Inj Dexamethasone     5     4mg/ml     two ml       39     25%, 50% Dextrose     five each     two ml       41     Inj Formethazine     5     25mg/ml     two ml       41     Inj Codium Bicarbonate     5     7.50%     ten ml       42     Inj Sodium Bicarbonate     5     7.50%     ten ml       43     Inj Calcium Gluconate     5     10%     ten ml       44     Inj Aminophylline     2     5     10%     ten ml       44     Inj Magnesium Sulphate     2     Smg/ml     one ml     4       47     Inj Metoclopramide     2     Smg/ml     two ml     5       48     Inj Metoclopramide     2     Smg/ml     two ml     5       50     Inj Sodium Valproate     5     10mg/ml     five ml     5       51     Inj Adenosine     2     Somg/ml     there ml     5       54     Inj Sonoane     2     Somg/ml     three ml     5       54     Inj Mitro-glycerin     2 </td <td>07</td> <td></td> <td></td> <td></td> <td>1</td>	07				1
39     25%, 50% Dextrose     five each     2       40     Inj Promethazine     5     25mg/ml     two ml       41     InjOndansetron     5     2mg/ml     two ml       42     Inj Sodium Bicarbonate     5     7.50%     ten ml       43     Inj Calcium Gluconate     5     10%     ten ml       44     Inj Aminophylline     2     5     10%     ten ml       45     Inj Phenytoin     10     50mg/ml     one ml     10       46     Inj Magnesium Sulphate     2     50%     two ml     10       47     Inj Magnesium Sulphate     2     5mg/ml     two ml     11       48     Inj Netoclopramide     2     5mg/ml     two ml     11       49     Inj Netoclopramide     2     5mg/ml     two ml     11       49     Inj Adenosine     2     3mg/ml     two ml     11       51     Inj Dopatine     2     5mg/ml     two ml     15       54     Inj Kor-Adrenaline <td< td=""><td></td><td></td><td></td><td></td><td></td></td<>					
40     Inj Promethazine     5     25mg/ml     two ml       41     Inj Ondansetron     5     2mg/ml     two ml       42     Inj Sodium Bicarbonate     5     7.50%     ten ml       43     Inj Calcium Gluconate     5     10%     ten ml       44     Inj Aminophylline     2     5mg/ml     one ml       45     Inj Phenytoin     10     50mg/ml     one ml       46     Inj Magnesium Sulphate     2     5mg/ml     two ml       48     Inj Metoclopramide     2     5mg/ml     two ml       49     Inj Protamine Sulphate     5     10mg/ml     five ml       50     Inj Sodium Valproate     5     10mg/ml     five ml       51     Inj Adenosine     2     50mg/ml     three ml       54     Inj Notro-glycerin     2     50mg/ml     three ml       55     Inj Nor-Adrenaline     2     50mg/ml     three ml       56     Inj Dopamine     2     50mg/ml     three ml       51     Inj N			-	4mg/ml	two ml
41InjOndansetron5 $2mg/ml$ two ml42Inj Sodium Bicarbonate57.50%ten ml43Inj Calcium Gluconate510%ten ml44Inj Aminophylline25ml44Inj Phenytoin1050mg/mlone ml45Inj Phenytoin1025mg/mlone ml47Inj Magnesium Sulphate250%two ml48Inj Metoclopramide25mg/mltwo ml49Inj Protanine Sulphate510mg/mlfive nl50Inj Sodium Valproate510mg/mlfive nl51Sodium Valproate510mg/mlfive nl52Inj Adenosine25mg/mltwo ml53Inj Adenosine25mg/mlthe nl54Inj Nito-glycerin25mg/mlthe nl55Inj Dopamine250mg/mlfive ml56Inj Dopamine250mg/mlfive ml57Inj Nor-Adrenaline210mg/mlfive ml58InjEsmolol210mg/mlfive ml59InjEsmolol210mg/mlfive ml61Inj Esoxin215% w/vten ml63Inj Esoxin215% w/vten ml64Inj Ditasem210mg/mlfive ml65Inj Esoxin215% w/vten ml66Inj Streptokinase21167					
42     Inj Sodium Bicarbonate     5     7.50%     ten ml       43     Inj Calcium Gluconate     5     10%     ten ml       43     Inj Aminophylline     2     5     10%     ten ml       44     Inj Aminophylline     2     50mg/ml     one ml       45     Inj Phenytoin     10     50mg/ml     one ml       46     Inj Haloperidol     2     5mg/ml     two ml       48     Inj Menesium Sulphate     5     10mg/ml     five ml       50     Inj Sodium Valproate     5     10mg/ml     five ml       50     Inj Adenosine     2     3mg/ml     two ml       51     Inj Adenosine     2     3mg/ml     two ml       52     Inj Adenosine     2     3mg/ml     two ml       53     Inj Dopamine     2     30mg/ml     thre ml       54     Inj Dopamine     2     30mg/ml     thre ml       55     Inj Dopamine     2     10mg/ml     thre ml       56     InjExplocard		5			
43Inj Calcium Gluconate510%ten ml44Inj Aminophylline2 $\cdots$ $\cdots$ 45Inj Phenytoin10 $50mg/ml$ one ml46Inj Haloperidol2 $5mg/ml$ one ml47Inj Magnesium Sulphate2 $5mg/ml$ two ml48Inj Netoclopramide2 $5mg/ml$ two ml49Inj Protamine Sulphate510mg/mlfive ml50Inj Sodium Valproate5 $\cdots$ $\cdots$ 51Inj Adenosine2 $mg/ml$ two ml53InjAniodarone2 $5mg/ml$ two ml54Inj Nito-glycerin2 $5mg/ml$ the ml55Inj Dopamine2 $50mg/ml$ five ml56InjDobutamine2 $50mg/ml$ five ml57Inj Nor-Adrenaline2 $50mg/ml$ five ml58InjEsmolol2 $10mg/ml$ five ml59InjExolol2 $10mg/ml$ five ml60Inj KCL3Img/mlfive ml61Inj Digoxin2 $5^{5}$ $\cdots$ 62InjExplorine1 $10mg/ml$ one ml63Inj Explorine5 $\cdots$ $\cdots$ 64Inj Phenylephrine1 $10mg/ml$ one ml65Inj Explorina5 $\cdots$ $\cdots$ 66Inj Explorina5 $\cdots$ $\cdots$ 71Tab Aspirin 325mg5 $\cdots$ $\cdots$ 72Hea		5			
44Inj Aminophylline2Inj Prenytoinone ml45Inj Phenytoin10 $S0mg/ml$ one ml46Inj Haloperidol2 $Smg/ml$ one ml47Inj Magnesium Sulphate2 $S0\%$ two ml48Inj Metoclopramide2 $S0\%$ two ml49Inj Protamine Sulphate510mg/mlfive ml50Inj Sodium Valproate510mg/mlfive ml51Inj Adenosine2 $Smg/ml$ two ml52Inj Adenosine2 $S0mg/ml$ three ml53InjAmiodarone2 $S0mg/ml$ three ml54Inj Nitro-glycerin2 $S0mg/ml$ three ml55InjDopamine2 $S0mg/ml$ three ml56InjDobutamine2 $S0mg/ml$ five ml57InjDobutamine2 $S0mg/ml$ three ml58InjEsmolol210mg/mlfive ml59InjXylocard210mg/mlfive ml60Inj KCL3Img/mlfive ml61Inj Digoxin215% w/vten ml63InjEsmolol510mg/mlone ml64Inj Phenylephrine110mg/mlone ml65Inj Streptokinase210mg/mlone ml66Inj Streptokinase210mg/mlone ml71Xylocaine Jelly11172Head Ring Gel (adul/peads)11 <td></td> <td>5</td> <td></td> <td></td> <td></td>		5			
45     Inj Phenytoin     10     50mg/ml     one ml       46     Inj Haloperidol     2     5mg/ml     one ml       47     Inj Metoclopramide     2     50%     two ml       48     Inj Metoclopramide     2     5mg/ml     two ml       49     Inj Protamine Sulphate     5     10mg/ml     five ml       50     Inj Sodium Valproate     5     1     five ml       51     Inj Andonone     2     3mg/ml     two ml       52     Inj Adenosine     2     3mg/ml     there ml       53     Inj Amiodarone     2     50mg/ml     there ml       54     Inj Dopamine     2     50mg/ml     three ml       55     Inj Dopamine     2     50mg/ml     five ml       56     InjDobutamine     2     50mg/ml     there ml       57     Inj Nor-Adrenaline     2     10mg/ml     then ml       59     InjEsmolol     2     10mg/ml     ten ml       60     Inj KoL     3		5		10%	ten ml
46     Inj Haloperidol     2     5mg/ml     one ml       47     Inj Magnesium Sulphate     2     5mg/ml     two ml       48     Inj Metoclopramide     2     5mg/ml     two ml       49     Inj Protamine Sulphate     5     10mg/ml     five ml       50     Inj Sodium Valproate     5     10mg/ml     five ml       50     Inj Adenosine     2     3mg/ml     two ml       51     Inj Aniodarone     2     50mg/ml     three ml       53     Inj Dopamine     2     50mg/ml     three ml       54     Inj Dopamine     2     50mg/ml     five ml       55     Inj Dopamine     2     50mg/ml     five ml       56     InjDobutamine     2     50mg/ml     five ml       57     Inj Nor-Adrenaline     2     10mg/ml     five ml       58     InjEsmolol     2     10mg/ml     five ml       60     Inj KCL     3     Img/ml     five ml       61     Inj Ephodrine     5					
47Inj Magnesium Sulphate250%two ml48Inj Metoclopramide2 $5mg/ml$ two ml49Inj Sodium Valproate510mg/mlfive ml50Inj Sodium Valproate510mg/mlfive ml51Inj Adenosine23mg/mltwo ml52Inj Adenosine23mg/mltwo ml53InjAmiodarone23mg/mlthree ml54Inj Nitro-glycerin25mg/mlten ml55Inj Dopamine2 $5mg/ml$ ten ml56InjDobutamine2 $5mg/ml$ five ml57Inj Nor-Adrenaline2 $5mg/ml$ ten ml58InjEsmolol210mg/mlfive ml60Inj KCL31mg/mlfive ml61Inj Digoxin215% w/vten ml62InjDiltiazem215% w/vten ml63Inj Labetalol510mg/mlone ml64Inj Ephedrine510mg/mlone ml65Inj Streptokinase210mg/mlone ml66Inj Streptokinase210mg/mline71Xylocane Jelly11172Head Ring Gel (adult/peads)1173Spatula21174Hand Sanitizer11175Povidone Iodine11176Benzoin S0ml111				<u> </u>	
48     Inj Metoclopramide     2     5mg/ml     two ml       49     Inj Protamine Sulphate     5     10mg/ml     five ml       50     Inj Sodium Valproate     5     10mg/ml     five ml       50     Inj Naloxone     2     3mg/ml     two ml       51     Inj Adenosine     2     3mg/ml     two ml       52     Inj Adenosine     2     50mg/ml     three ml       53     Inj Adenosine     2     50mg/ml     three ml       54     Inj Nitro-glycerin     2     50mg/ml     three ml       55     Inj Dopamine     2     40mg/ml     five ml       56     InjEsmolol     2     10mg/ml     three ml       57     Inj Ner-Adrenaline     2     10mg/ml     three ml       57     Inj Stroglycerin     2     10mg/ml     three ml       58     InjEsmolol     2     10mg/ml     three ml       60     Inj KCL     3     Img/ml     three ml       61     Inj Digoxin     2					
49Inj Protamine Sulphate510mg/mlfive ml50Inj Sodium Valproate5450Inj Sodium Valproate2410Inj Naloxone23mg/mltwo ml52Inj Adenosine2 $3mg/ml$ three ml53Inj Adinodarone2 $5mg/ml$ three ml54Inj Nitro-glycerin2 $5mg/ml$ three ml55Inj Dopamine2 $40mg/ml$ five ml56InjDobutamine2 $50mg/ml$ five ml57Inj Dor-Adrenatine2 $50mg/ml$ five ml58InjEsmolol2 $10mg/ml$ five ml59InjXylocard2 $10mg/ml$ five ml60Inj KCL3Img/mlfive ml61Inj Digoxin2 $15\% w/v$ tten ml62InjDiltiazem2 $10mg/ml$ one ml63Inj Labetalol5 $0$ md64Inj Phenylephrine1 $10mg/ml$ one ml65Inj Streptokinase2 $0$ md66Inj Streptokinase2 $0$ $0$ 70Respule Asthalin5 $0$ $0$ 71Xylocaine Jelly1 $0$ $0$ 73Spatula2 $0$ $0$ 74Hand Sanitizer1 $0$ $0$ 75Povidone Iodine1 $0$ $0$ 76Benzoin SOml1 $0$ $0$ <t< td=""><td></td><td></td><td></td><td></td><td></td></t<>					
50     Inj Sodium Valproate     5     2       41     Inj Naloxone     2     3mg/ml     two ml       52     Inj Adenosine     2     3mg/ml     two ml       53     InjAdenosine     2     3mg/ml     throw ml       54     Inj Mitro-glycerin     2     50mg/ml     three ml       54     Inj Nitro-glycerin     2     50mg/ml     three ml       55     Inj Dopamine     2     40mg/ml     three ml       56     InjDobutamine     2     50mg/ml     three ml       57     Inj Nor-Adrenaline     2     10mg/ml     three ml       58     InjEsmolol     2     10mg/ml     ten ml       59     InjXylocard     2     10mg/ml     three ml       61     Inj Digoxin     2     15% w/v     ten ml       62     InjDilitizem     2     15% w/v     ten ml       63     Inj Ehedrine     5         64     Inj Phenylephrine     1     10mg/ml     one ml					
41     Inj Naloxone     2     Image: constraint of the second seco				10mg/ml	five ml
MIDDLE DRAWER (LEFT)- CARDIAC DRUGS       52     Inj Adenosine     2     3mg/ml     two ml       53     InjAniodarone     2     S0mg/ml     three ml       54     Inj Mitro-glycerin     2     Smg/ml     three ml       55     Inj Dopamine     2     40mg/ml     five ml       56     InjDobutamine     2     50mg/ml     five ml       57     Inj Nor-Adrenaline     2     50mg/ml     five ml       58     InjEsmolol     2     10mg/ml     ten ml       59     InjXylocard     2     10mg/ml     ten ml       60     Inj KCL     3     Img/ml     five ml       61     Inj Digoxin     2     15% w/v     ten ml       62     InjDiltiazem     2     15% w/v     ten ml       63     Inj Labetalol     5     1     1       64     Inj Phenylephrine     1     10mg/ml     one ml       65     Inj Ephedrine     5     1     1       66     Inj Streptokinase			-		
52     Inj Adenosine     2     3mg/ml     two ml       53     InjAmiodarone     2     50mg/ml     three ml       54     Inj Nitro-glycerin     2     50mg/ml     three ml       55     Inj Dopamine     2     40mg/ml     five ml       56     InjDobutamine     2     50mg/ml     five ml       57     Inj Nor-Adrenaline     2     50mg/ml     five ml       58     InjEsmolol     2     10mg/ml     ten ml       59     InjXylocard     2     10mg/ml     ten ml       60     Inj KCL     3     Img/ml     five ml       61     Inj Digoxin     2     15% w/v     ten ml       62     InjDiltiazem     2     15% w/v     ten ml       63     Inj Labetalol     5     1     1       64     Inj Phenylephrine     1     10mg/ml     one ml       65     Inj Ephedrine     5     1     1       66     Inj Streptokinase     2     1     1 <td>41</td> <td><b>j</b></td> <td></td> <td></td> <td></td>	41	<b>j</b>			
53     InjAmiodarone     2     50mg/ml     three ml       54     Inj Nitro-glycerin     2     5mg/ml     ten ml       55     Inj Dopamine     2     40mg/ml     five ml       56     Inj Dopamine     2     50mg/ml     five ml       57     Inj Nor-Adrenaline     2     50mg/ml     five ml       58     InjEsmolol     2     10mg/ml     ten ml       59     InjXylocard     2     10mg/ml     ten ml       60     Inj KCL     3     1mg/ml     five ml       61     Inj Digoxin     2     15% w/v     ten ml       62     InjDiltiazem     2     two ml     63       63     Inj Labetalol     5         64     Inj Phenylephrine     1     10mg/ml     one ml       65     Inj Expetokinase     2         66     Inj Streptokinase     2         70     Respule Asthalin     5 <t< td=""><td></td><td></td><td></td><td></td><td>Γ</td></t<>					Γ
54     Inj Nitro-glycerin     2     Sing'ml     ten ml       55     Inj Dopamine     2     40mg/ml     five ml       56     InjDobutamine     2     50mg/ml     five ml       57     Inj Nor-Adrenaline     2     50mg/ml     five ml       58     InjEsmolol     2     10mg/ml     ten ml       59     InjEsmolol     2     10mg/ml     ten ml       59     InjEsmolol     2     10mg/ml     ten ml       60     Inj KCL     3     Img/ml     five ml       61     Inj Digoxin     2     15% w/v     ten ml       62     InjDitazem     2     two ml     6       63     Inj Labetalol     5     10mg/ml     one ml       64     Inj Phenylephrine     1     10mg/ml     one ml       65     Inj Ephedrine     5     1     1       66     Inj Streptokinase     2     1     1       67     Tab Aspirin 325mg     5     1     1		j			
55     Inj Dopamine     2     40mg/ml     five ml       56     InjDobutamine     2     50mg/ml     five ml       57     Inj Nor-Adrenaline     2     50mg/ml     five ml       58     InjEsmolol     2     10mg/ml     ten ml       59     InjXylocard     2     10mg/ml     firfty ml       60     Inj KCL     3     Img/ml     five ml       61     Inj KCL     3     Img/ml     five ml       62     InjDiditazem     2     15% w/v     ten ml       63     Inj Labetalol     5         64     Inj Phenylephrine     1     10mg/ml     one ml       65     Inj Streptokinase     2         66     Inj Streptokinase     2         67     Tab Aspirin 325mg     5         70     Respule Budecort     5         71     Xylocaine Jelly     1         73 <t< td=""><td></td><td></td><td></td><td></td><td></td></t<>					
56     InjDobutamine     2     50mg/ml     five ml       57     Inj Nor-Adrenaline     2     10mg/ml     ten ml       58     InjEsmolol     2     10mg/ml     ten ml       59     InjXylocard     2     fifty ml       60     Inj KCL     3     Img/ml     five ml       61     Inj Digoxin     2     15% w/v     ten ml       62     InjDiltiazem     2     15% w/v     ten ml       63     Inj Labetalol     5     1     1       64     Inj Phenylephrine     1     10mg/ml     one ml       65     Inj Ethedrine     5     1     1       66     Inj Streptokinase     2     1     1       67     Tab Aspirin 325mg     5     1     1       68     Respule Ipratropium Bromide     5     1     1       70     Respule Ipratropium Bromide     5     1     1       71     Xylocaine Jelly     1     1     1       73 <td< td=""><td></td><td></td><td></td><td></td><td></td></td<>					
57Inj Nor-Adrenaline2 $58$ InjEsmolol2 $10mg/ml$ ten ml $59$ InjXylocard2 $10mg/ml$ fifty ml $60$ Inj KCL3Img/mlfive ml $61$ Inj Digoxin2 $15%w/v$ ten ml $62$ InjDiltiazem2two ml $63$ Inj Labetalol5 $10mg/ml$ one ml $64$ Inj Phenylephrine1 $10mg/ml$ one ml $65$ Inj Streptokinase2 $10mg/ml$ one ml $66$ Inj Streptokinase2 $10mg/ml$ one ml $66$ Inj Streptokinase2 $10mg/ml$ one ml $67$ Tab Aspirin 325mg5 $10mg/ml$ one ml $70$ Respule Jpatropium Bromide5 $10mg/ml$ $10mg/ml$ $70$ Respule Ipratropium Bromide5 $10mg/ml$ $10mg/ml$ $71$ Xylocaine Jelly1 $10mg/ml$ $10mg/ml$ $73$ Spatula2 $10mg/ml$ $10mg/ml$ $74$ Hand Sanitizer1 $10mg/ml$ $10mg/ml$ $74$ Hand Sanitizer1 $10mg/ml$ $10mg/ml$ $74$ ECG electrode $20$ $10mg/ml$ $10mg/ml$ $79$ Torch1 $100mg/ml$ hundred ml		5 I			
58     InjEsmolol     2     10mg/ml     ten ml       59     InjXylocard     2     fifty ml       60     Inj KCL     3     Img/ml     fifty ml       60     Inj KCL     3     Img/ml     five ml       61     Inj Digoxin     2     Isway     ten ml       62     InjDiliazem     2     two ml     1       63     Inj Labetalol     5         64     Inj Phenylephrine     1     10mg/ml     one ml       65     Inj Ephedrine     5         66     Inj Streptokinase     2         67     Tab Aspirin 325mg     5         LOWER DRAWER(LEFT)-MISC       68     Respule Ipartopium Bromide     5         70     Respule Budecort     5          71     Xylocaine Jelly     1          73     Spatula     2				50mg/ml	five ml
59InjXylocard2fifty ml60Inj KCL3Img/mlfive ml61Inj Digoxin2 $15\%$ w/vten ml62InjDiltiazem2two ml63Inj Labetalol5		× · · · · · · · · · · · · · · · · · · ·			
60Inj KCL3Img/mlfive ml $61$ Inj Digoxin2 $15%$ w/vten ml $62$ InjDiltiazem2two ml $63$ Inj Labetalol5 $64$ Inj Phenylephrine1 $10mg/ml$ one ml $65$ Inj Ephedrine5 $66$ Inj Streptokinase2 $66$ Inj Streptokinase2 $67$ Tab Aspirin 325mg5LOWER DRAWER(LEFT)-MISC $68$ Respule Asthalin5 $69$ Respule Ipratropium Bromide5 $70$ Respule Budecort5 $71$ Xylocaine Jelly1 $72$ Head Ring Gel (adult/peads)1 $73$ Spatula2 $74$ Hand Sanitizer1 $75$ Povidone Iodine1 $76$ Benzoin 50ml1 $77$ Stethoscope1 $78$ ECG electrode20 $79$ Torch1100ml $80$ InjParacetamol1100ml				10mg/ml	
61Inj Digoxin2 $15%$ w/vten ml $62$ InjDiltiazem2two ml $63$ Inj Labetalol5					
62InjDiliazem2two ml63Inj Labetalol5		3			
63     Inj Labetalol     5				15%w/v	
64Inj Phenylephrine110mg/mlone ml65Inj Ephedrine566Inj Streptokinase267Tab Aspirin 325mg5LOWER DRAWER(LEFT)-MISC68Respule Asthalin569Respule Ipratropium Bromide570Respule Budecort571Xylocaine Jelly172Head Ring Gel (adult/peads)173Spatula274Hand Sanitizer175Povidone Iodine176Benzoin 50ml177Stethoscope178ECG electrode2079Torch1100mlhundred ml		<u>y</u>			two ml
65Inj Ephedrine5066Inj Streptokinase2067Tab Aspirin 325mg50LOWER DRAWER(LEFT)-MISC68Respule Asthalin5069Respule Ipratropium Bromide5070Respule Budecort5071Xylocaine Jelly1072Head Ring Gel (adult/peads)1073Spatula2074Hand Sanitizer1075Povidone Iodine1076Benzoin 50ml1077Stethoscope1078ECG electrode20079Torch1100ml80InjParacetamol1100ml			5		
66Inj Streptokinase267Tab Aspirin 325mg5LOWER DRAWER(LEFT)-MISC68Respule Asthalin569Respule Ipratropium Bromide570Respule Budecort571Xylocaine Jelly172Head Ring Gel (adult/peads)173Spatula274Hand Sanitizer175Povidone Iodine176Benzoin 50ml177Stethoscope178ECG electrode2079Torch1100ml80InjParacetamol1100ml			1	10mg/ml	one ml
67Tab Aspirin 325mg5ILOWER DRAWER(LEFT)-MISC68Respule Asthalin5I69Respule Ipratropium Bromide5I70Respule Budecort5I71Xylocaine Jelly1I72Head Ring Gel (adult/peads)1I73Spatula2I74Hand Sanitizer1I75Povidone Iodine1I76Benzoin 50ml1I77Stethoscope1I78ECG electrode20I79Torch1100ml80InjParacetamol1100ml					
LOWER DRAWER (LEFT)-MISC68Respule Asthalin569Respule Ipratropium Bromide570Respule Budecort571Xylocaine Jelly172Head Ring Gel (adult/peads)173Spatula274Hand Sanitizer175Povidone Iodine176Benzoin 50ml177Stethoscope178ECG electrode2079Torch180InjParacetamol1100mlhundred ml					
68Respule Asthalin5Image: constraint of the system69Respule Ipratropium Bromide5Image: constraint of the system70Respule Budecort5Image: constraint of the system71Xylocaine Jelly1Image: constraint of the system72Head Ring Gel (adult/peads)1Image: constraint of the system73Spatula2Image: constraint of the system74Hand Sanitizer1Image: constraint of the system75Povidone Iodine1Image: constraint of the system76Benzoin 50ml1Image: constraint of the system77Stethoscope1Image: constraint of the system78ECG electrode20Image: constraint of the system79Torch1Image: constraint of the system80InjParacetamol1100ml	67		=		
69Respule Ipratropium Bromide5Image: constraint of the system70Respule Budecort5Image: constraint of the system71Xylocaine Jelly1Image: constraint of the system72Head Ring Gel (adult/peads)1Image: constraint of the system73Spatula2Image: constraint of the system74Hand Sanitizer1Image: constraint of the system75Povidone Iodine1Image: constraint of the system76Benzoin 50ml1Image: constraint of the system77Stethoscope1Image: constraint of the system78ECG electrode20Image: constraint of the system79Torch1Image: constraint of the system80InjParacetamol1100ml				1	1
70Respute Budeort5571Xylocaine Jelly1172Head Ring Gel (adult/peads)1173Spatula2174Hand Sanitizer1175Povidone Iodine1176Benzoin 50ml1177Stethoscope1178ECG electrode20179Torch1100ml80InjParacetamol1100ml		1			
71Xylocaine Jelly1172Head Ring Gel (adult/peads)1173Spatula2174Hand Sanitizer1175Povidone Iodine1176Benzoin 50ml1177Stethoscope1178ECG electrode20179Torch1100ml80InjParacetamol1100ml					
72Head Ring Gel (adult/peads)173Spatula274Hand Sanitizer175Povidone Iodine176Benzoin 50ml177Stethoscope178ECG electrode2079Torch180InjParacetamol1100mlhundred ml					
73Spatula274Hand Sanitizer175Povidone Iodine176Benzoin 50ml177Stethoscope178ECG electrode2079Torch180InjParacetamol1100mlhundred ml			1		
74Hand Sanitizer1Image: constraint of the second s			1		
75Povidone Iodine1176Benzoin 50ml1177Stethoscope1178ECG electrode20179Torch1180InjParacetamol1100ml					
76Benzoin 50ml1Image: Constraint of the second sec			-		
77Stethoscope178ECG electrode2079Torch180InjParacetamol1100ml			1		
78ECG electrode2079Torch180InjParacetamol1100mlhundred ml			1		
79     Torch     1        80     InjParacetamol     1     100ml     hundred ml			1		
80 InjParacetamol 1 100ml hundred ml			20		
			1		
LOWER DRAWER(RIGHT)-ANAESTHETIC DRUGS	80	5	1		hundred ml
		LOWER DRAWER(RIGHT)	-ANAESTHETIC	DRUGS	

#### © 2021 JETIR November 2021, Volume 8, Issue 11 5162)

81	InjThiopentone Sodium	2	1gm	
82	Inj Ketamine	2	50mg/ml	two ml
83	Inj Midazolam	2	1mg/ml	five ml
84	Inj Fentanyl	5	50mg/ml	ten ml
85	InjLorazepam	5		
86	InjPropofol 1%	1	10mg/ml	ten ml
87	Inj Morphine	2	15mg/ml	one ml
88	InjRocuronium	2	4mg/ml	two ml
89	Inj Succinylcholine	2	50mg/ml	ten ml
90	InjEtomidate	2		
91	Xylocaine 2%	1		
	B	<b>BOTTOM TABLE</b>		
92	Kidney Tray	1		
93	Dressing Pack	1		
94	IV Fluids DNS, RL & NS	one each		

A total 13 resuscitation carts were inspected against the approved checklist for measuring the compliance in terms of their contents, during the pre and post intervention periods. The compliance of individual items of the resuscitation is described in Table-1.

It was observed that during the post intervention period, the compliance to all items was 100% except kidney tray and tracheostomy quick set, which was not found in any of the resuscitation carts in post intervention period. Although the compliance was always better or at least equal to the pre intervention period, significant difference was seen only in three items, which were I-Gel, Inj Adenosine and Tab Aspirin 325mg, the p value being 0.019 in all three.

S.No	Item	Quantity	Pre (n)	<b>Pre</b> (%)	Post (n)	Post (%)	p value
1	AMBU Bag kit with mask	One each	13	100.00	13	100	1
2	Oxygen Mask(0-4)	One each	13	100.00	13	100	1
3	Gloves(5.5-7.5)	Two ea <mark>ch</mark>	13	100.00	13	100	1
4	Facemask (all sizes)	One each	11	84.62	13	100	0.768
5	Defibrillator	One each	11	84.62	13	100	0.768
6	Inj Atropine	10	13	100.00	13	100	1
7	Inj Adrenaline	10	13	100.00	13	100	1
8	InjPheniramine Maleate	10	13	100.00	13	100	1
9	InjDeriphyllin	10	13	100.00	13	100	1
10	Inj Furosemide	10	13	100.00	13	100	1
11	Inj Hydrocortisone	5	13	100.00	13	100	1
12	Bougie	two each	10	76.92	13	100	0.648
13	Suction Catheter	two each	13	100.00	13	100	1
14	Syringes(2,5,10,50ml)	five each	13	100.00	13	100	1
15	I.V. Cannula(16-24G)	two each	13	100.00	13	100	1
16	Alcohol Swabs	10	7	53.85	13	100	0.309
17	Elastoplast Tape	1	7	53.85	13	100	0.309
18	IV Sets	5	13	100.00	13	100	1
19	Three Way	5	11	84.62	13	100	0.768
20	Hydrocath	2	7	53.85	13	100	0.309
21	Extension Line	two each	10	76.92	13	100	0.648
22	Laryngoscope with blade	one each	13	100.00	13	100	1
23	Battery cell (Big and small)	two each	10	76.92	13	100	0.648
24	Endotracheal Tube(all sizes)	one each	13	100.00	13	100	1
25	Airway(0, 1, 2 & 3)	one each	13	100.00	13	100	1

Table-1: Percentage compliance of individual items in resuscitation cart (pre and post interventions)

## © 2021 JETIR November 2021, Volume 8, Issue 11 5162)

<b>5162)</b> 26	Nasopharyngeal Airway(4-8)	one each	8	61.54	13	100	0.414
20	Tracheostomy Quick Set	one	8 4	30.77	0	0	0.414
28	Oxygen enriched Mask	one	6	46.15	13	100	0.083
29	Tracheostomy Tube	one each	11	84.62	13	100	0.768
30	Magil Forceps	one	10	76.92	13	100	0.648
31	Ryle's Tube(10,12,14 & 16)	one each	10	76.92	13	100	0.648
32	Stylet	one each	10	92.31	13	100	0.886
33	Tie for fixation	one	12	100.00	13	100	1
34	Proseal LMA(ADULT)	one	5	38.46	13	100	0.14
35	I-Gel all sizes	one each	2	15.38	13	100	0.019
36	T-piece	one	12	92.31	13	100	0.886
37	Inj Diazepam	5	12	92.31	13	100	0.886
38	Inj Dexamethasone	5	12	92.31	13	100	0.886
39	25%, 50% Dextrose	five each	12	92.31	13	100	0.886
40	Inj Promethazine	5	9	69.23	13	100	0.529
41	InjOndansetron	5	12	92.31	13	100	0.886
42	Inj Sodium Bicarbonate	5	13	100.00	13	100	1
43	Inj Calcium Gluconate	5	12	92.31	13	100	0.886
44	Inj Aminophylline	2	10	76.92	13	100	0.768
45	Inj Phenytoin	10	13	100.00	13	100	1
46	Inj Haloperidol	2	4	30.77	13	100	0.083
47	Inj Magnesium Sulphate	2	9	69.23	13	100	0.529
48	Inj Metoclopramide	2	11	84.62	13	100	0.768
49	Inj Protamine sulphate	5	5	38.46	13	100	0.14
50	Inj Sodium Valproate	5	10	76.92	13	100	0.768
51	Inj Naloxone	2	7	53.85	13	100	0.309
52	Inj Adenosine	2	2	15.38	13	100	0.019
53	InjAmiodarone	2	11	84.62	13	100	0.768
54	InjNitroglycerin	2	9	69.23	13	100	0.529
55	Inj Dopamine	2	11	84.62	13	100	0.768
56	InjDobutamine	2	11	84.62	13	100	0.768
57	Inj Nor-Adrenaline	2	13	100.00	13	100	1
58	InjEsmolol	2	8	61.54	13	100	0.414
59	InjXylocard	2	13	100.00	13	100	1
60	Inj KCL	3	12	92.31	13	100	0.886
61	Inj Digoxin	2	9	69.23	13	100	0.529
62	InjDiltiazem	2	6	46.15	13	100	0.217
63	Inj Labetalol	5	12	92.31	13	100	0.886
64	Inj Phenylephrine	1	9	69.23	13	100	0.529
65	Inj Ephedrine	5	9	69.23	13	100	0.529
66	Inj Streptokinase	2	4	30.77	13	100	0.083
67	Tab Aspirin 325mg	5	2	15.38	13	100	0.019
68	Respule Asthalin	5	12	92.31	13	100	0.886
69	Respule Ipratropium Bromide	5	6	46.15	13	100	0.217
70	Respule Budecort	5	12	92.31	13	100	0.886
71	Xylocaine Jelly	1	12	92.31	13	100	0.886
72	Head Ring Gel (adult/peads)	1	4	30.77	13	100	0.083
73	Spatula	2	9	69.23	13	100	0.529
74	Hand Sanitizer	1	13	100.00	13	100	1
75	Povidone Iodine	1	9	69.23	13	100	0.529
76	Benzoin 50ml	1	7	53.85	13	100	0.309
77	Stethoscope	1	13	100.00	13	100	1
78	ECG electrode	20	13	100.00	13	100	1
79	Torch	1	12	92.31	13	100	0.886
80	InjParacetamol	1	11	84.62	13	100	0.768
JETIR2	2111235 Journal of Emerging	Fechnologies and	d Innovati	ve Research	n (JETIR) <u>w</u>	ww.jetir.org	b265

## © 2021 JETIR November 2021, Volume 8, Issue 11 5162)

81	InjThiopentone Sodium	2	9	69.23	13	100	0.529
82	Inj Ketamine	2	12	92.31	13	100	0.886
83	Inj Midazolam	2	13	100.00	13	100	1
84	Inj Fentanyl	5	11	84.62	13	100	0.768
85	InjLorazepam	5	7	53.85	13	100	0.309
86	InjPropofol 1%	1	12	92.31	13	100	0.886
87	Inj Morphine	2	10	76.92	13	100	0.768
88	InjRocuronium	2	11	84.62	13	100	0.768
89	Inj Succinylcholine	2	10	76.92	13	100	0.768
90	InjEtomidate	2	7	53.85	13	100	0.309
91	Xylocaine 2%	1	13	100.00	13	100	1
92	Kidney Tray	1	0	0.00	0	0	0
93	Dressing Pack	1	13	100.00	13	100	1
94	IV Fluids DNS, RL & NS	one each	13	100.00	13	100	1

Overall compliance of each resuscitation cart was calculated and it was observed that during the preintervention period it ranged from 54.24% to 94.68%. During the post-intervention period, the compliance was 97.87% in all 13 resuscitation carts. (Table-2). The overall compliance during the pre and post intervention periods were 77.82% and 97.87% respectively and the difference was statistically significant with a p value of <0.5. (Figure 3)

Table-2: Comparison of pre and post intervention compliance percentage of each resuscitation cart.

Sl. No	Resuscitation cart Number	Pre (n)	<b>Pre</b> (%)	Post (n)	<b>Post (%)</b>
1	1	74	78.72	92	97.87
2	2	67	71.28	92	97.87
3	3	51	54.25	92	97.87
4	4	78	82.98	92	97.87
5	5	59	62.76	92	97.87
6	6	8 <mark>6</mark>	91.49	92	97.87
7	7	<mark>89</mark>	94.68	92	97.87
8	8	67	71.28	92	97.87
9	9	68	72.34	92	97.87
10	10	82	87.23	92	97.87
11	11	84	89.36	92	97.87
12	12	65	69.15	92	97.87
13	13	81	86.17	92	97.87

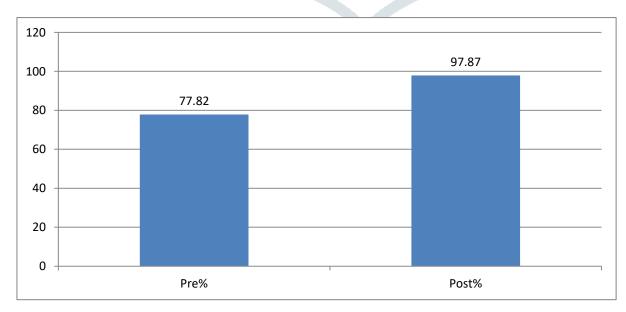


Figure 1: Overall pre and post intervention compliance against the approved checklist

## © 2021 JETIR November 2021, Volume 8, Issue 11 5162)

## **IV. DISCUSSION:**

This resuscitation cart policy and standardization in the checklist would promote safety and efficiency during a code blue event. It has been observed that the total compliance percentage of all 13 resuscitation cart contents have increased from 77.82% to 97.87% with p value of <0.05 which was statistically significant. All 13 resuscitation carts were made compliant for all the items as per checklist except tracheostomy quick set and kidney trays, which were not supplied in the hospital Stores section. However, these two items will also be made compliant once these are procured through Stores section.

In a study conducted by Aimee M. Pearson, Jeff K. Caird and Andrew Mayer titled Resuscitation cart Drug Drawer Layout and Design in 2012 concluded that a number of similarities and differences were found for drug usage and resuscitation cart drug drawer layout across hospitals.<sup>2</sup> In another study the Pennsylvania Patient Safety Authority identified 56 reports over the course of a 12-month reporting period of 2008 specifically related to emergency equipment; 35 reports referenced issues with emergency carts and 21 reports referenced issues with missing supplies or malfunctioning equipment during an emergency situation.<sup>3</sup> In a similar study conducted by Capt (Brig) Akash Raj et al, published in February 2019, it was observed that none of the hospitals in the study followed the standard checklist for resuscitation cart.<sup>4</sup>

### V. RECOMMENDATIONS:

1. Look alike and sound alike (LASA) medicines to be identified as per The US Food and Drug Administration (FDA) and Institute for Safe Medication Practices (ISMP) and they might be kept in separate drawers in the resuscitation cart in order to avoid medication error.<sup>5</sup>

2. High alert medications and concentrated electrolytes to be identified as per Institute for Safe Medication Practices (ISMP) list and they might be put with stickers in the container in order to avoid mistakes during use as these medications having devastating consequences in case of error.<sup>6</sup>

3. All hospital must have Code blue team with defined roles and response time

4. Risk assessment with identifying the risk points like staff training and educational needs, location of resuscitation cart and contents of the resuscitation carts to be done. Evaluate and analyse the risks to determine the best solution and implement it and to continuously re-assess it.<sup>7</sup>

5. Staff members who provide patient care are to be trained in resuscitative techniques and the level of training appropriate to their role.

## **VI.** LIMITATIONS:

One limitation of this study is that look alike, sound alike and high alert medicines were not identified in this study in the checklist which needs further deliberation by domain experts.

### **VII.** CONCLUSION:

Maintaining resuscitation carts as per the checklist is a continuous process which will contribute to patient safety. The staff concerned must be familiar with all the items stored in the resuscitation cart. The location of the resuscitation cart must be accessible and the policy as well as the for resuscitation carts must be displayed appropriately. All resuscitation carts must be inspected in each shift by the respective nursing staff, which will help in sustaining the compliance. As resuscitation guidelines change and technologies advance, the resuscitation cart contents will also require modification.

### VIII. REFERENCES:

1. ALCS medical training. Resuscitation cart. [Online]. Available from: https://www.aclsmedicaltraining.com/crash-carts/ [Accessed 27 November 2020].

2. Aimee M., Pearson Jeff K., Mayer A. Resuscitation cart Drug Drawer Layout and Design. Healthcare Human Factors and Simulation Laboratory W21C Research and Innovation Centre University of Calgary, Canada. [Online] September 1 2012;56(1): 792-796. Available from: https://journals.sagepub.com/doi/abs/10.1177/1071181312561165 [Accessed 27 November 2020].

3. Pennsylvania patient safety authority. Clinical Emergency: Are You Ready in Any Setting?. Pennsylvania Patient Safety Advisory. June 2020;7(2): 52-60.

4. Raj A., Saini R., Singh M. Evaluation Of Availability And Effectiveness Of Resuscitation Cart In Public And Pvt Hospitals. Paripex - Indian Journal Of Research. 2019;8(2): 20-24.

5. Institute for safe medication practices. FDA and ISMP Lists of Look-Alike Drug Names with Recommended Tall Man Letters. [Online]. Available from: https://www.ismp.org/sites/default/files/attachments/2017-11/tallmanletters.pdf [Accessed 27 November 2020].

https://forms.ismp.org/Tools/institutionalhighAlert.asp [Accessed 27 November 2020].

7. The joint commission, division of health care improvement. Quick Safety. Crash-cart preparedness. Weblog. [Online] Available from: https://www.jointcommission.org/-/media/tjc/documents/newsletters/quick\_safety\_issue\_32\_20171pdf.pdf [Accessed 27 November 2020].

