

# Assessment of the Survival Rates amongst the Code blue Cases

---

DR. POOJA SINGLA

MBA (HOSPITAL HEALTHCARE MANAGEMENT)

ROLL NO. 0187

GUIDED BY : PROFESSOR TANJUL SAXENA

# INTRODUCTION

---

Disaster: A disaster is any event causing widespread destruction and distress.

A disaster occurs when a hazard impacts on vulnerable people.

The combination of hazards, vulnerability and inability to reduce the potential negative consequences of risk results in disaster.

Certain codes have been identified as a part of disaster management in the hospitals.

As per JCI standards, Indraprastha Apollo Hospital uses following codes for disaster management in the hospital-

**BLUE**

**INDIVIDUAL DISASTER**

**GREY**

**INTERNAL DISASTER**

**RED**

**EXTERNAL DISASTER**

---

|               |                                                                  |
|---------------|------------------------------------------------------------------|
| <b>PINK</b>   | <b>INFANT ABDUCTION / BABY MISSING</b>                           |
| <b>PURPLE</b> | <b>LIKELIHOOD OF PHYSICAL ALTERCATION</b>                        |
| <b>ORANGE</b> | <b>INDICATION OF SUDDEN DETERIORATION IN PATIENT'S CONDITION</b> |
| <b>BLACK</b>  | <b>BOMB THREAT</b>                                               |

Hospital Emergency Codes are used in hospitals around the world to alert the hospital staff to various emergencies. The codes are used to convey essential information quickly and with maximum understanding to staff, while preventing stress and panic among visitors to the hospital.

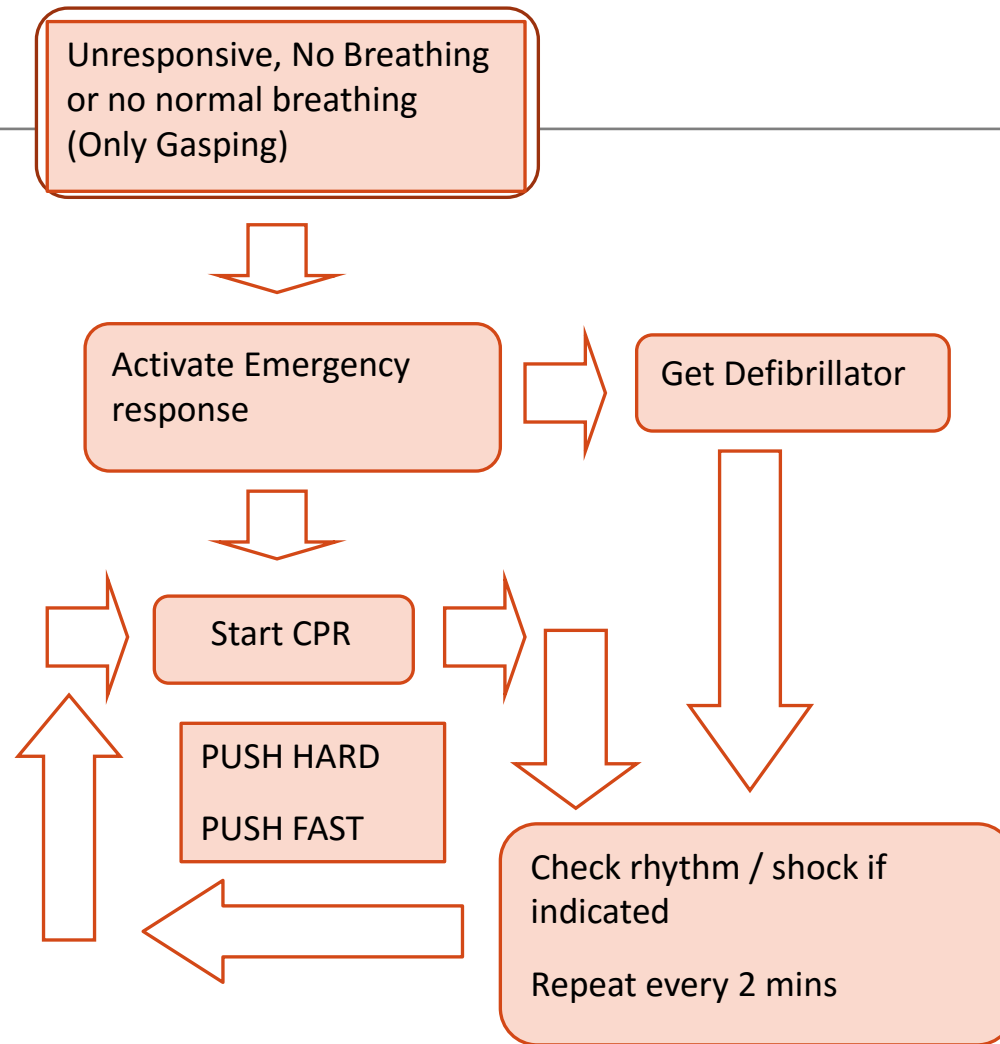
**Code blue:** An emergency situation announced in a hospital or institution in which a patient is in cardiopulmonary arrest, requiring a team of providers (sometimes called a 'code team') to rush to the specific location and begin immediate resuscitative efforts.

---

## **Guidelines for Code Blue**

- In event of sudden patient collapse, BSL shall be initiated by staff members trained to do so and simultaneously instructions be given for a code blue announcement by dialing 66 / 9.
- The announcement for code blue shall be repeated three times on the overhead communication system. Simultaneously, all concerned personnel shall be informed over the dedicated code blue mobiles. Staff is expected to respond as quickly as possible and reach the place of incidence.
- The crash cart with all emergency care equipment and drugs shall be moved instantaneously to the patient bedside.
- The emergency duty doctor / staff nurse shall bring with him the “jump kit” and the defibrillator if desired by the team leader.
- The code blue running sheet shall be filled with the patient’s record.
- The code blue quality review form shall be sent to MS Office.

# ADULT BLS ALGORITHM



## CPR GUIDELINES

---

- C – COMPRESSIONS

Push at least two inches on adult breastbone, 10times per minute, to move oxygenated blood to vital organs.

- A – AIRWAY

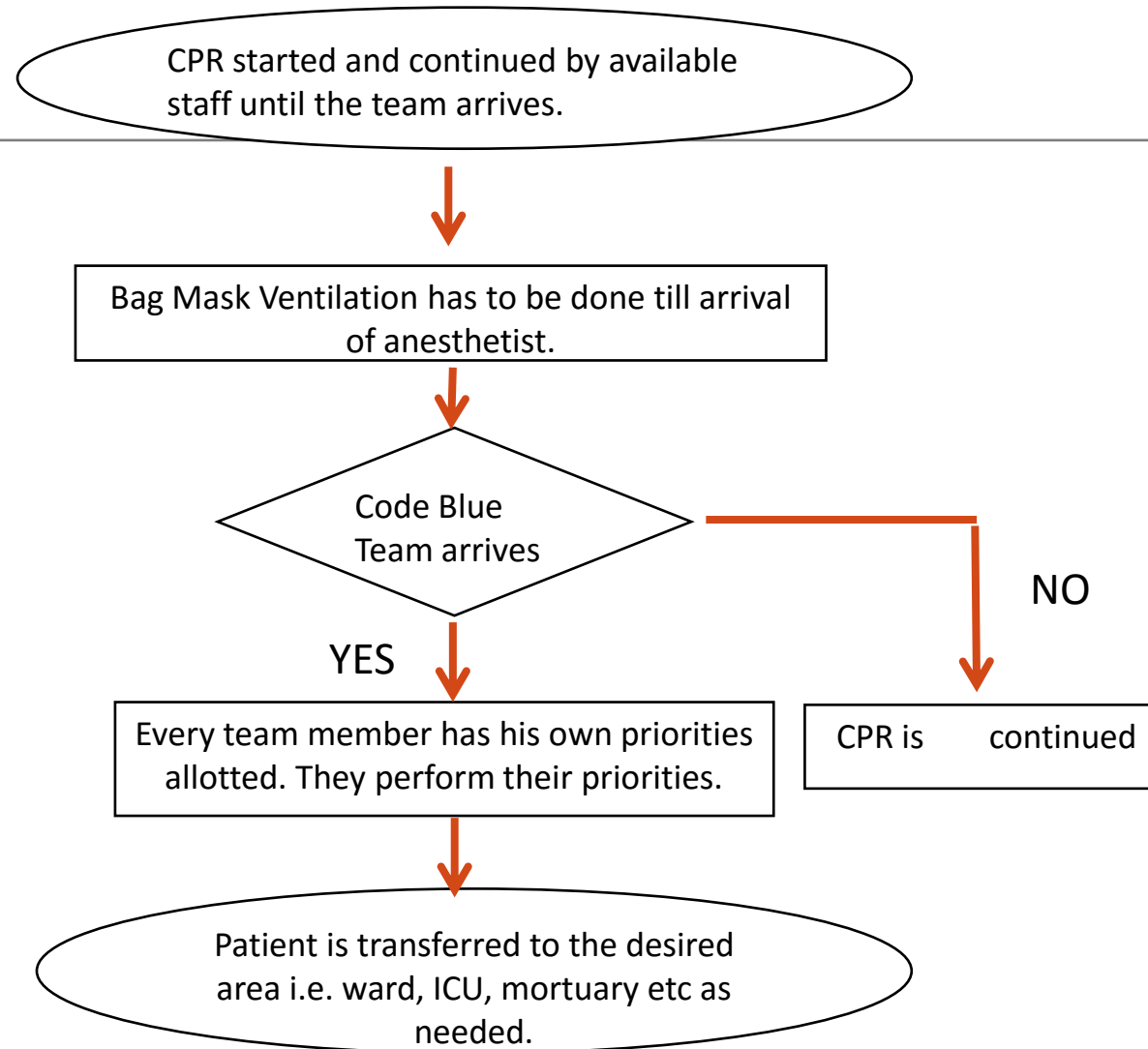
Open the airway and check for breathing or blockage, watch for rise of chest and listen for air movement.

- B – BREATHING

Tilt chin back for the unobstructed passing of air, give two breaths and resume chest compressions.

*\*1 Cycle equals to 30:2 i.e. 30 chest compressions followed by 2 rescue breaths*

# CODE BLUE PROCESS



## **Senior Nurse**

- Start recording events in the code blue running sheet
  - Ensure availability of Glucometer and BP apparatus through other nurses
- 
- Creates labels for blood samples
  - Handover the required medications to the staff nurse
  - Dispatch blood samples to labs as required by the team leader
  - Process the patient for transfer to ICU / Mortuary at the end of the code blue

## **Code Nurse**

- Obtain and open crash cart
- Handover laryngoscope and ET tube to anesthetist
- Administer medications as per Team Leader
- Obtain blood sugar level by Glucometer
- Transfer the patient at the end of the code blue

---

## Team Leader

- Attach defibrillator leads and obtain baseline recording
- Interpret ECG finding and advice medications accordingly.
- Ask nurse to do Glucometer check
- Obtain ECG recordings after every 5 minute interval
- Order DC shocks, medications, tests as required
- Confer with primary consultant at the end of the code blue
- Discussion with patient's family at the end of the code blue
- Write detailed CPR notes and paste ECG recordings in the progress notes at the end of the code blue

---

## **Anesthetist**

- Establish airway and breathing
- Establish venous access if not done so far

## **Residents / CCC**

- Start cardiac massage and rotate every 3-5 minutes
- Start venous access
- Give DC shock as advised by the team leader
- Check vitals as desired by the team leader

---

# RESEARCH QUESTION

What is the current survival rate of the patients suffering with the code blue in the hospital premises?

## AIM

To assess the Code Blue process followed in the hospital.

A solid orange horizontal bar spanning the width of the slide at the bottom.

---

# OBJECTIVES

1. To analyze the code blue process.
2. To find out the survival rate of the patients suffering from Code Blue.
3. To analyze and recommend changes if any loopholes are present.

# RESEARCH METHODOLOGY

---

**Study type** – The study is non-experimental evidence based that is a Retrospective and analytical study.

**Area of study-** Study is conducted in the Indraprastha Apollo Hospital, New Delhi.

## **Data Collection method**

Data is collected from the Code Blue Sheets that are filled and sent to the department by staff of the respective areas of the hospital and also by the monthly Code Blue Announcements given by the telephone exchange and training cell.

**Inclusion/Exclusion criteria** – All the patients suffering from any emergency that leads to a Code Blue are included in the study.

---

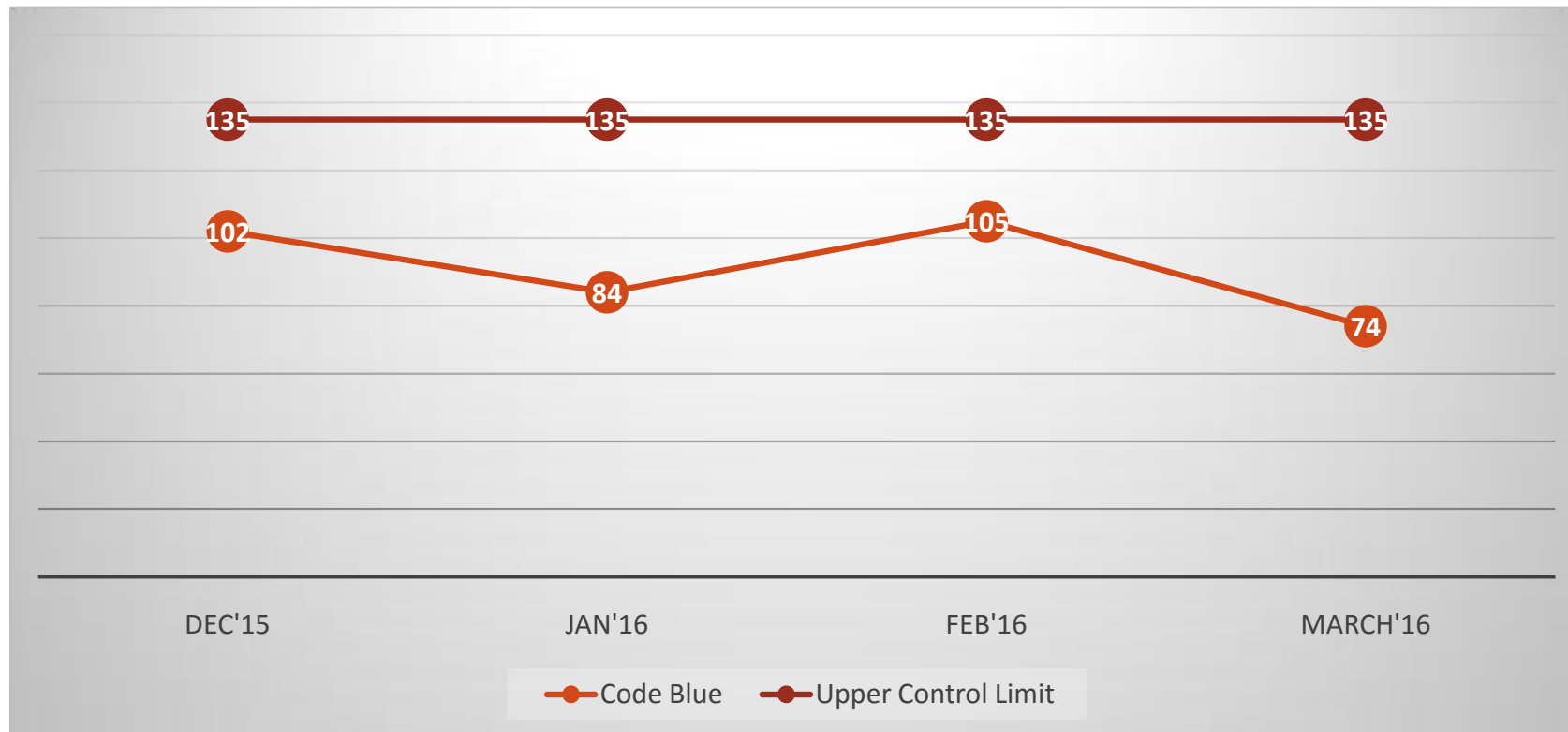
**Sample Size** – 365 cases of code blue that occurred in the hospital

**Study Period** – 4months, December 2015 to March 2016

**Sampling Technique**- Purposive sampling

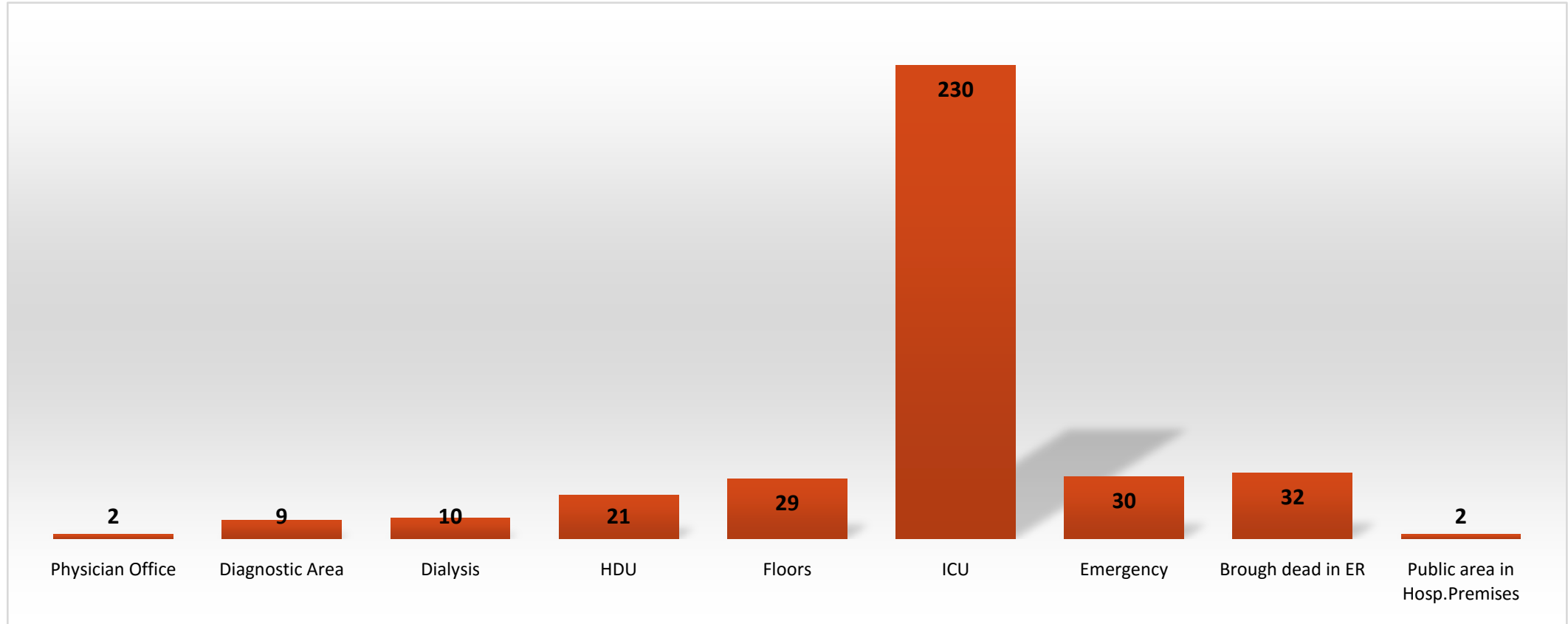
# DATA ANALYSIS

Total No. of Code Blue Cases

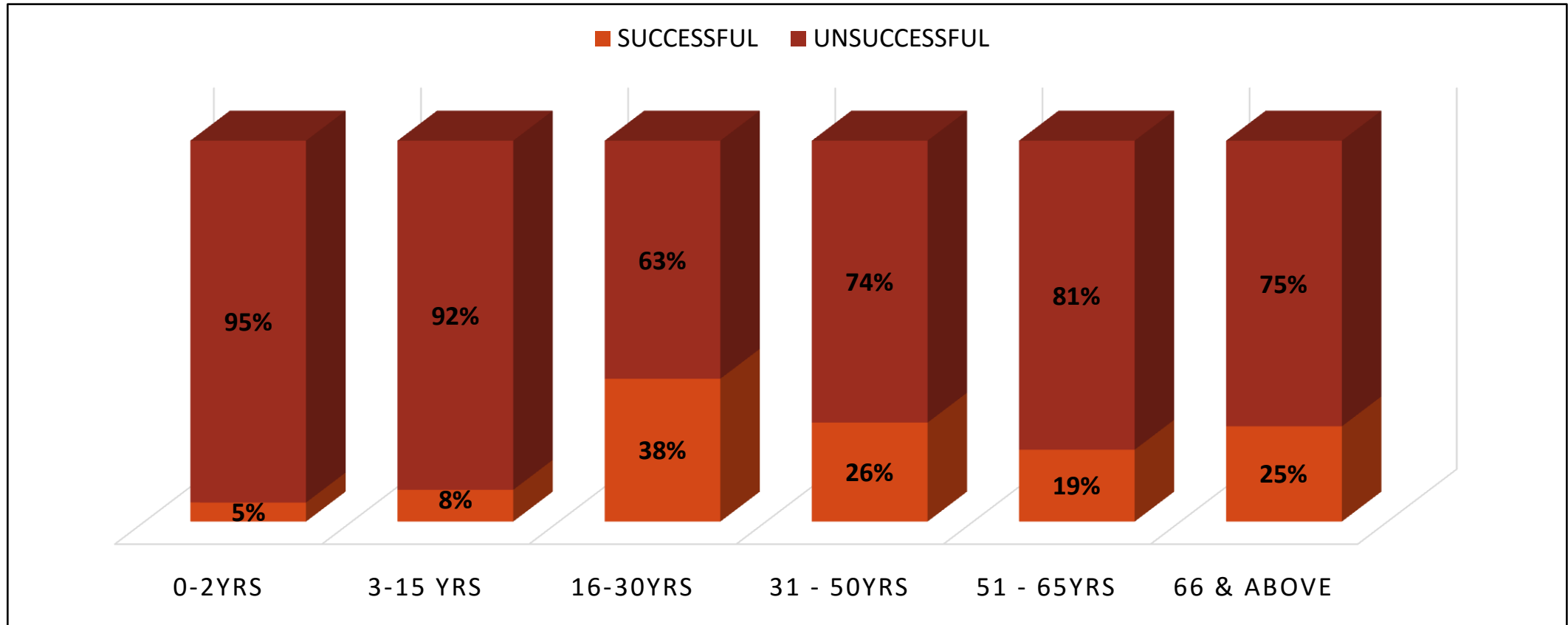


# CODE BLUE AREA WISE

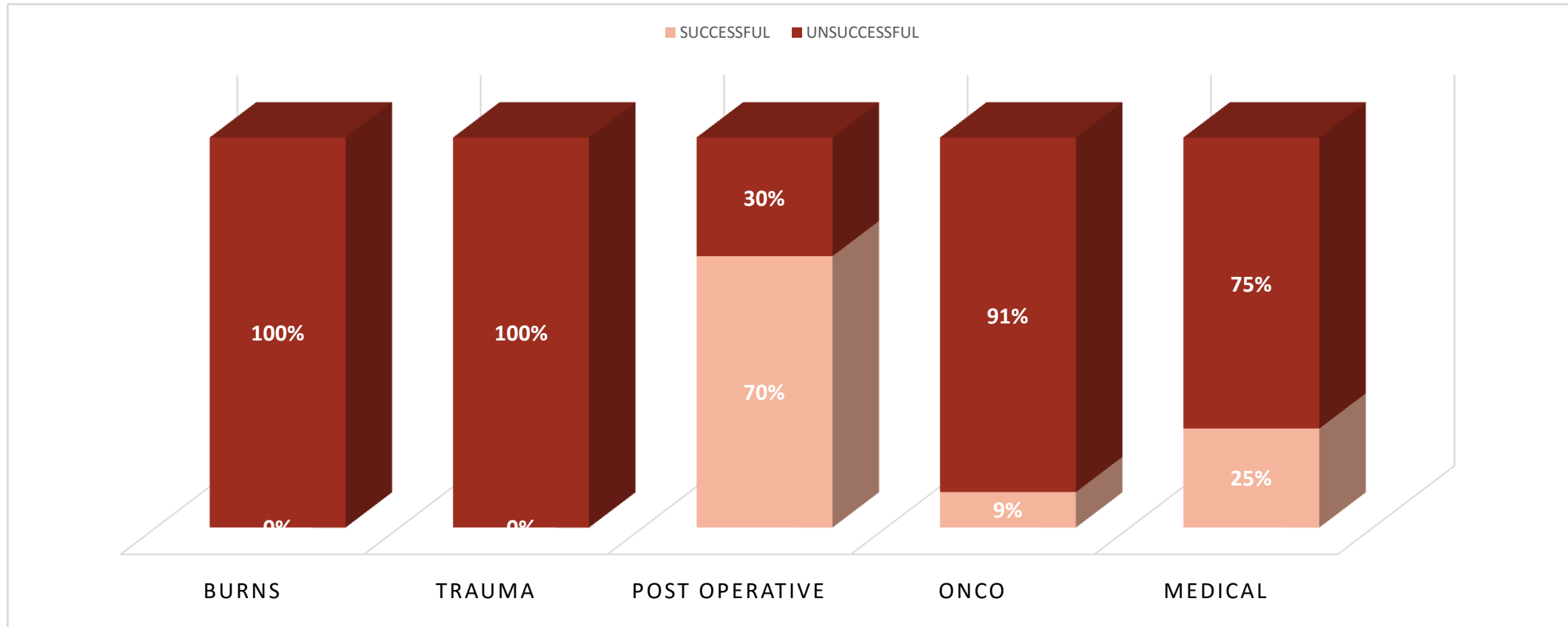
---



# CODE BLUE AGE-GROUP WISE



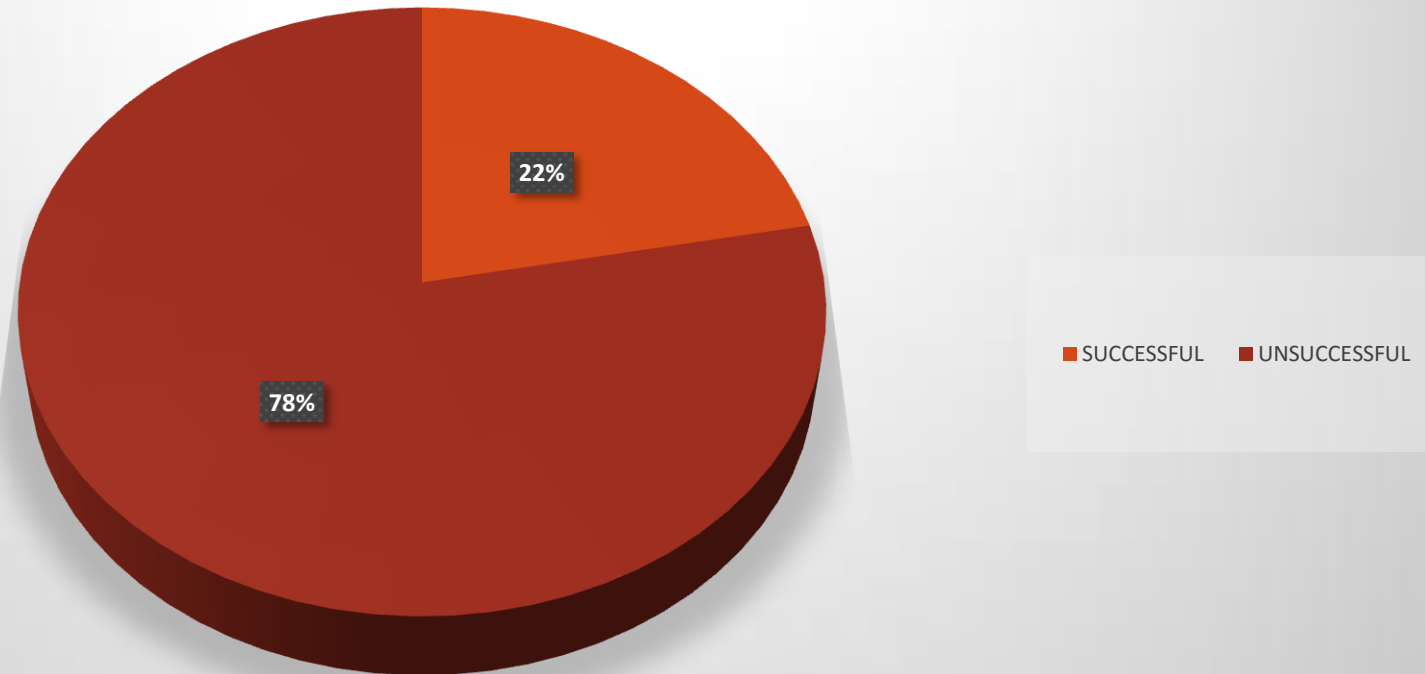
# STATUS OF CODE BLUE DIAGNOSIS WISE



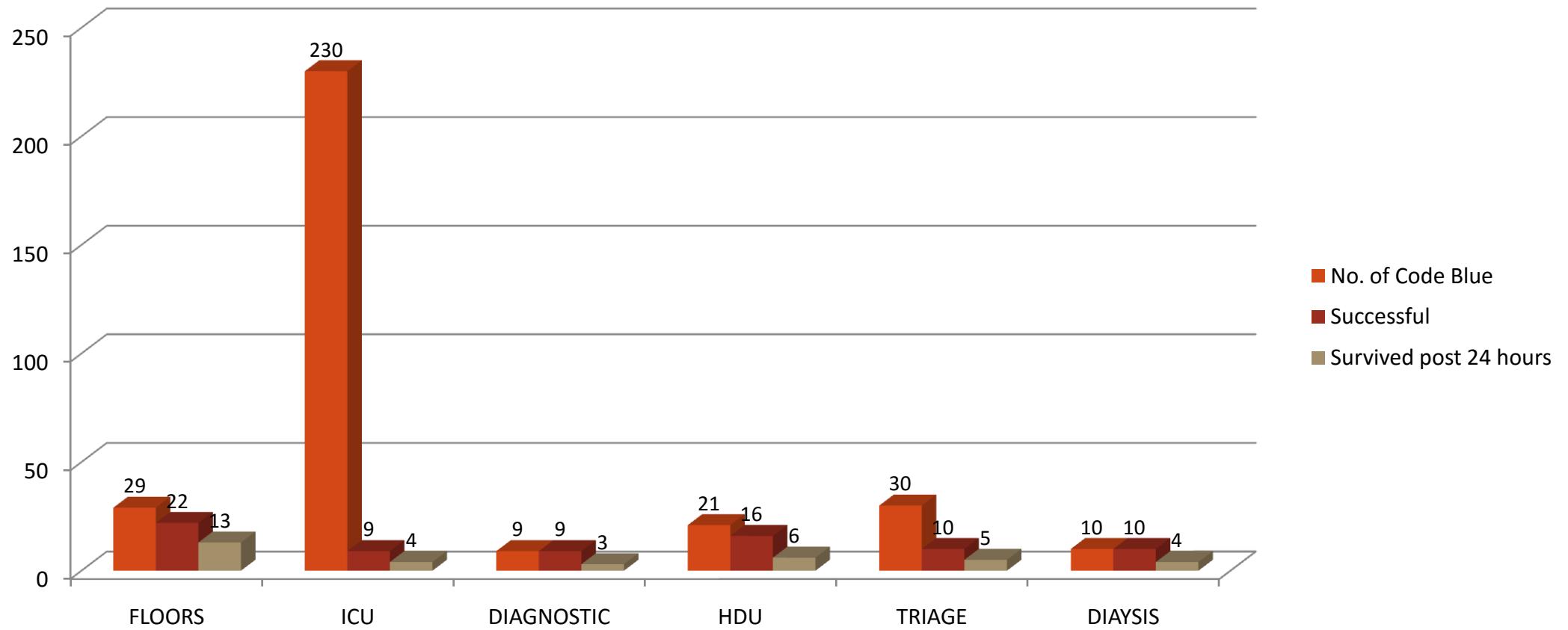
# TOTAL OUTCOME

---

OUTCOME

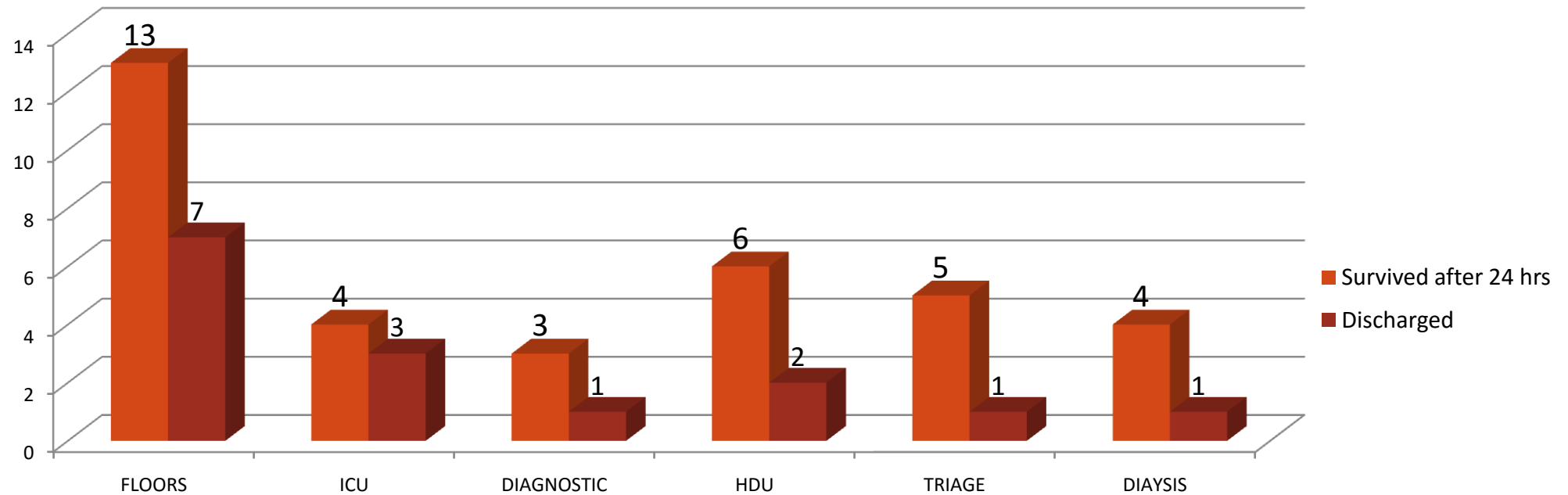


# TWENTY HOURS SURVIVED POST CODE BLUE



# DISCHARGES POST CODE BLUE

---



# CONCLUSION

---

According to the data and its analysis, the maximum no. of code blue cases have occurred in the month of February.

The area with the maximum no. of Code Blue cases is ICU followed by emergency and then wards.

Although ICU has maximum no. of Code Blue, it has got least survival rate that is only 4%. On the other hand, dialysis, physician office, diagnostic areas etc have 100% immediate survival rate.

When we compared the cases on the basis of age of the patient, most successful age group that is with best survival rate has been found to be the young age group, 16-30 years.

---

The worst survival rate has been found for the children aged 15 years or below. The survival rate has been found to be just 6% i.e. out of 30 code blues, only 2 have survived and out of those two, only 1 has successfully discharged.

Most of the children amongst them have suffered from respiratory causes. As per a study, most often, cardiac arrest in children is the result of a primary respiratory cause.

Breathing conditions such as anaphylaxis, apnea, aspiration, asthma, bronchiolitis, epiglottitis, pneumonia, respiratory syncytial virus, smoke inhalation, and suffocation can quickly deteriorate into respiratory failure.

Variable periods of systemic hypoxemia, hypercapnea, and acidosis occur, with progression to bradycardia and hypotension, terminate in to cardiac arrest.

---

All the code blue cases have been categorized in to five diagnoses i.e.

- Medical
- Burns
- Trauma
- Oncology Cases
- Post operative cases

When we compared them on the basis of these diagnoses, the post operative cases have been found out to be most successful with 70% immediate survival rate.

---

The overall Immediate Survival Rate has been found out to be 22% and if we exclude ICU & Emergency from the Total Cases, the Immediate Survival Rate has drastically improved to 84%

We have also analysed the twenty four hour survival rate in these cases.

As far as twenty four hours survival rate is concerned, the overall rate has been found out to be 10% with maximum no. of cases in Wards.

The Overall Survival Rate to discharge has also been analysed and has come out to be 4.11% with maximum no. of cases in wards. It can depend upon factors like age, race, presence or absence of cancer diagnosis and associated co morbidities

Out of 33 Oncology cases of the study, only 1 patient has got successfully discharged.

# RECOMMENDATIONS

---

From the study, it is concluded that the Overall Code Blue Survival Rate has definitely improved as compared to the previous quadrimester. Previously, it was 19% but has improved to 22% for this period.

It has also been concluded from the above study that the hospital also includes the cases of ICU as Code Blue Cases in the study following the usual protocols. But, it actually should not be included in the study as they are not the code blue cases that are announced. The announcements that comes from the exchange are the actual code blue cases.

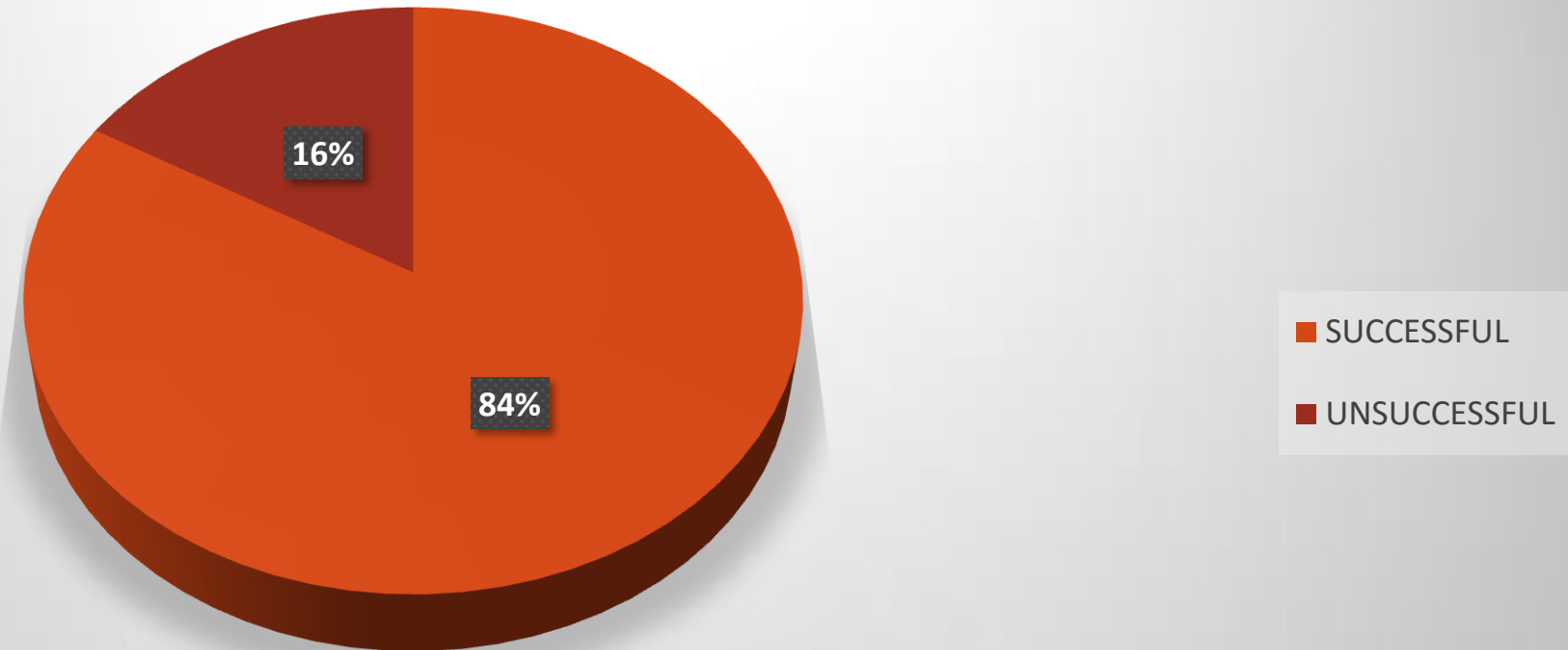
The survival rate including the cases of ICU and emergency comes out to be 22% but when we exclude the cases of ICU & Emergency, the survival rate gets improved to 84% and these are the actual code blue cases that are announced.

So, it has been recommended to the management to exclude these cases from their quarterly study of Code Blue and management has already implemented this change from this quarter only.

# OUTCOME OF CODE BLUE EXCLUDING ICU & EMERGENCY

---

OUTCOME EXCLUDING ICU / Emergency



---

The Survival Rate to discharge is also very less i.e. 4.11%. For this, the management has decided to look in to the diagnostic details of such cases as it can depend upon factors like age, race, presence or absence of cancer diagnosis and associated co morbidities.

For the declining survival rate of pediatric patients:

**1. Training and maintaining skills.**

Enrollment in lifesaving courses such as pediatric basic life support (BLS) and PALS is recommended once every year.

The frequency with which a professional is required to use resuscitation skills also have an impact on the frequency with which training is needed in order to prevent the degradation of knowledge and skills.

**2. Follow 2010 AHA Guidelines for CPR**

Chest compressions first, followed by airway, and then breathing/ventilations



**THANK YOU**