Summer Internship

At

Fortis Memorial Research Institute (FMRI), Gurgaon, Haryana

(April 4th to June 17th, 2022)

"A study on effectiveness of CPR in FMRI Hospital, Gurgaon, Haryana"

A Report

By

Dr. Malvika Lodhi (PG/21/55)

PGDM (Hospital and Health Management)

2021-2023

International Institute of Health Management Research, New Delhi

Fortis MEMORIAL
RESEARCH INSTITUTE
GURUGRAM

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June 17, 2022

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Dr. Malvika Lodhi** has undergone an internship in the **"Department of Medical Administration"** from **April 04, 2022 to June 17, 2022** at **Fortis Memorial Research Institute, Gurgaon**.

During this period, she exhibited a high level of professionalism and a tremendous zest for learning.

We wish **Dr. Malvika Lodhi** all the best in her future endeavors.

With Best Wishes,

Shivani Dhir
SBU Head-Learning & Development

Fortis Hospitals Ltd. Gurgaon

Head of Department

Medical Superintendent
Fortis Memorial Research Institute
Sector - 44, Gurgaon - 122002
Haryana (India)

FEEDBACK FORM

(Organization Supervisor)

Name of the Student: Dr. Malvika Lodhi

Summer Internship Institution: Fortis Memorial Research Institute, Gurugram.

Area of Summer Internship: Medical Administration

Attendance: Regular

Objectives met: - Completed project on CPR effectiveness.
- Maintained monthly record of mortalities.
- Maintained record of patient counselling in ICU.

Deliverables: Met all the objectives ensuring zero complaints and ability to take extra responsibilities.

Strengths: Hard working, sincere, ambitious and determined.

Suggestions for Improvement: -

Assistant Medical Superintendent
Fortis Memorial Research Institute
Sector-44, Gurugram-122002, Haryana

Signature of the Officer-in-Charge (Internship)

Date: 16-06-22
Place: FMRI, Gurugram

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FEEDBACK FORM

(IIHMR MENTOR)

Name of the Student: Dr. Malvika Lodhi

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Strengths: Hard working, sincere, ambitious, determined.

Suggestions for Improvement: Always work more minutely on Power mapping

Signature of the Officer-in-Charge (Internship)

Date: 21/07/22
Place: IIHMR, Delhi

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Certificate of Approval

The Summer Internship Project of titled **"A STUDY ON EFFECTIVENESS OF CPR"** at **"FORTIS MEMORIAL RESEARCH INSTITUTE, GURUGRAM"** is hereby approved as a certified study in management carried out and presented in a manner satisfactorily to warrant its acceptance as a prerequisite for the award of **Post Graduate Diploma in Health and Hospital Management** for which it has been submitted. It is understood that by this approval the undersigned do not necessarily endorse or approve any statement made, opinion expressed, or conclusion drawn therein but approve the report only for the purpose it is submitted.

Dr. Nikita Sabherwal
Associate Dean (Training)
Associate Professor (Hospital Administration)
IIHMR, Delhi

Acknowledgement

A summer internship is a golden opportunity for learning and self-development. I consider myself fortunate for having been provided with an opportunity to undergo summer training at FMRI Hospital, Gurgaon, Haryana.

In this organization, I have had the privilege to get to know many people who generously hared their experiences and knowledge with me.

I would like to express my sincere gratitude to Dr Priyanka Kundrai (DMS)&Dr. Nisha Sharma (AMS)in the Medical Administration Department for their continuous guidance, who inspite of being busy with their duties, took the time to hear and guide me, gave helpful advice and constructive comments throughout the project and without their help, the completion of the project was highly impossible.

I would also like to acknowledge my mentor and Associate Dean (Training) - IIHMR Delhi, Dr. Nikita Sabherwal and Associate Dean Academics- IIHMR Delhi, Dr. Sumesh Kumar for their kind assistance and support throughout the training. I convey my deepest gratitude to Dr. Sidharth Sekhar Mishra (Assistant professor, IIHMR Delhi) for his constant guidance and motivation.

I would also like to thank my family and friends who helped me in developing this project.

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ABBREVIATIONS

BMT- Bone Marrow Transplant

CPR- Cardiopulmonary resuscitation

CCR- Cardio-cerebral resuscitation

ROSC- Return of spontaneous circulation

ACLS- Advance cardiac life support

ICU- Intensive care unit

ECMO- Extracorporeal Membrane Oxygenation

ENT- Ear Nose Throat

FMRI- Fortis Memorial Research Institute

IPD- In-Patient Department

OPD- Outpatient department

ER- Emergency

NICU- Neonatal Intensive care unit

PICU- Paediatric Intensive care unit

LTP- Liver Transplant

CTVS- Cardiothoracic and vascular surgery

MABGIS – Minimal access bariatric and gastrointestinal surgery

NABH- National Accreditation Board for Hospitals & Healthcare Providers

NABL- National Accreditation Board for Testing and Calibration Laboratories

OBSERVATIONAL LEARNING

INTRODUCTION

ABOUT FORTIS MEMORIAL RESEARCH INSTITUTE, GURUGRAM

Fortis Healthcare Limited – an IHH Healthcare Berhad Company – is a leading integrated healthcare services provider in India. It is one of the largest healthcare organisations in the country with 36 healthcare facilities (including projects under development), 4000 operational beds and over 400 diagnostics centres (including JVs). Fortis is present in India, United Arab Emirates (UAE) & Sri Lanka. The Company is listed on the BSE Ltd and the National Stock Exchange (NSE) of India. It draws strength from its partnership with global major and parent company, IHH, to build upon its culture of world-class patient care and superlative clinical excellence. Fortis employs 23,000 people (including SRL) who share its vision of becoming the world's most trusted healthcare network. Fortis offers a full spectrum

of integrated healthcare services ranging from clinics to quaternary care facilities and a wide range of ancillary services.

Fortis Memorial Research Institute (FMRI), Gurugram, is a multi-super speciality, quaternary care hospital with an enviable international faculty, reputed clinicians, including super-sub-specialists and speciality nurses, supported by cutting-edge technology. FMRI is an advanced centre of excellence in Robotic Surgery, Neurosciences, Oncology, Renal Sciences, BMT, Organ Transplants, Orthopaedics, Cardiac Sciences and Obstetrics & Gynaecology. Set on a spacious 11-acre campus with a potential to grow to 1000 beds, this 'Next Generation Hospital' is built on the foundation of 'Trust' and rests on the four strong pillars of Talent, Technology, Infrastructure and Service.

TECHNOLOGY & INFRASTRUCTURE

Da Vinci Robot

3-Tesla MRI

15 Operation Theatres

Comprehensive ECMO and Critical Care Programme

Elekta Linear Accelerator

Brain Suites

VISION: To be the best healthcare destination "Saving & Enriching lives."

MISSION: To be a globally respected and known healthcare organisation for Clinical Excellence and Distinctive Patient support.

VALUES:

- ✓ **Patient Centricity**

  Treat patients with a Commitment to the best outcomes and experience.

  Patients and their guardians were treated with compassion, care and understanding.

- ✓ **Integrity**

  Be principled, open and honest.

  Model and live our 'Values'.

  Demonstrate moral courage to speak up and do the right things.

- ✓ **Teamwork**

  Proactively support each other and operate as one team

  Respect and value people at all levels with different opinions, experiences, and backgrounds.

  Put organisation needs before self-interest and department

- ✓ **Ownership**

  Take initiative and go beyond the call of duty

  Deliver commitment and agreement made.

- ✓ **Innovation**

  Continuously improve and innovate to exceed the expectations of an organisation.

  Adopt a 'can-do' attitude.

- ✓ **Accreditation and Affiliations:** FMRI is accredited and affiliated with NABH(National Accreditation Board for Hospitals) and JCI (Joint Commission International) following their policies to improve patient safety and quality of health care in the national and international community.

SCOPE OF SERVICES:

- ➢ Paediatrics
- ➢ Nephrology
- ➢ Oncology
- ➢ Neurology
- ➢ Neurosurgery
- ➢ Internal Medicine
- ➢ BMT
- ➢ Gynaecology
- ➢ ENT
- ➢ Endocrinology
- ➢ Pulmonology
- ➢ Dental
- ➢ Orthopaedics

- Cardiology
- Dermatology
- General Medicine
- Nuclear Medicine

The floor structure at Fortis Hospital, Gurugram is as follows,

BASEMENT

- Parking
- Radiation Oncology

LOWER GROUND FLOOR

- Chemo daycare lounge
- Emergency and trauma
- Multispeciality OPDs
- Nuclear medicine
- Oncology and Fortis Bone and joint institute
- OPD pharmacy & ATM
- Open lab and sample collection
- Paediatrics
- Physiotherapy
- Radiology & Imaging
- Stem cell lab

UPPER GROUND FLOOR

- Admissionistration
- Bloom IVF centre
- Food court
- Minimal access, Bariatrics & GI surgery
- Health4U

- International Patient Lounge
- IPD Admission and discharge lounge
- Obstetrics and Gynaecology OPD
- Pharmacy
- Retail therapy & ATM

FIRST FLOOR

- Blood bank and clinical laboratory
- BMT &Hematology OPD
- Bone marrow transplant ICU
- Delivery rooms and nursery
- Dialysis
- HDU &Daycare
- Meditorium
- NICU & PICU
- Nightangle ward
- Opthalmology& Dental OPD
- Private birthing suites

SECOND FLOOR

- Cath lab and Heart Commond centre
- Brain suites
- DSA lab
- Endoscopy suite
- HDU &Daycare
- ICU & Transplant ICUs
- Operating rooms

THIRD FLOOR

- Insignia rooms – 301 to 367

FOURTH FLOOR

- Executive rooms – 401 to 469

FIFTH FLOOR

- Deluxe suite
- Executive suite
- Maharaja Suite
- Presidential suite
- Signature Apartment

GENERAL FINDINGS ON LEARNING

On a general observation, the following learnings are found in different departments.

- MRD: Medical Record Department
  - Located in the basement of the hospital
  - Deals with the record of data of all patients
  - There are different colour coding for discharged patients (Green) expired patients (Blue) and medico-legal patients (Pink).
  - Documents are stored digitally also.
- H4U: Health for you
  - Health for you guide patients regarding different packages and facilities.
  - Provide Annual Health check-ups and pre-employment health check-ups.
- PHARMACY: There are 4 pharmacies in the hospital.
  - Two OPD pharmacies one on the upper ground and one on the lower ground floor.
  - Two IPD pharmacies are both located in the basement.

- In IPD pharmacy there are drug store, consumable store and consingnment and implant store
- Turn around time for pharmacy clearance is 10 mins.

- DISCHARGE :
  - Physical move out after doctor's round
  - Discharge process –
  - Step 1 – doctor's round
  - Step 2 – report to nursing staff
  - Step 3 – generation of the billing activity sheet
  - Step 4 – billing department (bills from different areas are complied)
  - Step 5 – Discharge intimation in HIS
  - Step 6 – bill settlement
  - Step 7- physical moveout
  - Step 8 – housekeeping
  - Turn around time for cash patients is 90 minutes and 4 hours for TPA patients
- ICU: INTENSIVE CARE UNIT.
  - There are a total of 9 ICUs in the hospital
  - ICU4 ICU5 ICU6 ICU7 ICU8 ICU9 are located on the 2nd Floor.
  - NICU PICU and BMT ICU are located on the 1st floor.
  - ICU 4 is a Surgical ICU
  - ICU 5 in Cardiology and medical ICU
  - ICU 7 is a medical ICU

- HOSPITAL COMMITTEE:
  - Hospital management committee
  - Quality patient and safety committee
  - Safety committee
  - MRD committee
  - Internal review committee
  - Mortality and morbidity committee
  - CPR analysis committee

- Hospital infection control committee
- OT committee
- Pharmacotherapeutic committee
- Blood transfusion committee
- Credentiality and previlaging committee
- Validation committee

CONCLUSIVE LEARNING, LIMITATIONS AND SUGGESTIONS

LEARNING:

- The healthcare institution has aided me in understanding the complexity of hospital operations.
- In order to function properly, hospitals need a robust management structure.
- To keep the hospital up to standard and to improve the quality of care for patients, regular quality improvement processes are essential.
- All records should be kept up to date, and all procedures should be tracked.

LIMITATIONS:

- There could be an error due to the manual form of documentation in the hospital.
- Work is delayed in sectors like MRD due to a lack of staff.

PROJECT REPORT

INTRODUCTION

Despite considerable breakthroughs in prevention, cardiac arrest remains a substantial public health problem and a leading cause of mortality in many parts of the world. The vast majority of cardiac arrest victims are adults, however, thousands of infants and children suffer either an in-hospital or out-of-hospital cardiac arrest each year. Cardiopulmonary resuscitation (CPR) is a sequence of lifesaving actions that improve the likelihood of survival following cardiac arrest. Following a cardiac arrest, successful resuscitation necessitates a coordinated set of activities. Resuscitation encompasses a broad spectrum of individual stakeholders and groups. Victims, family members, rescuers, and healthcare personnel are among those involved. An effective resuscitation strategy requires these individuals and groups to work in an integrated fashion and act as a system of care.

Fortis Hospital follows the guidelines for CPR given by American Heart Association (AHA). AHA has developed these guidelines for resuscitation providers that will reach the patient when there is an emergency that will require CPR.

These guidelines also reaffirm that CPR is an emergency procedure which is the hallmark of cardiac arrest management and even stated the importance of chest compressions. This also includes the clinical care of the cardiac arrest patients as well as after the successful resuscitation of cardiac arrest.

Some recommendations are given by AHA for the lay rescuers who are not certified or trained and have little or no access to the resuscitation equipment. On the other hand, more recommendations are provided for the trained persons like doctors, and nurses who have already received the resuscitation training, functioning with or without the resuscitation equipment and drugs. AHA also included the recommendations for after-care for ROSC whether it is successful or unsuccessful.

It is strongly recommended that untrained or lay rescuers perform only compressions CPR or more precisely called CCR (cardio cerebral resuscitation). However medical professionals and lay rescuers are encouraged to give two rescue breaths in between each 30 chest compressions. While CPR with the rescue breaths is more beneficial than CCR. During

COVID – 19 times, the rescue breaths were not recommended in adult cardiac arrest cases as they may transmit COVID-19.

According to the new guidelines of AHA, chest compressions are even faster than in the past. The new standard is to compress the chest at least two inches on each push, at a rate of 100 compressions per minute.

There has been an update in recommendation related to the sequence of chest compression given by the rescuer. The sequence has been changed from A-B-C (Airway- Breathing- Chest compression) to C-A-B (Chest compression- Airway- Breathing). The rescuer should start the CPR with 30 compressions rather than maintaining the airway so that there should not be any delay in chest compressions and increase the chest compressions to 2 inches in depth for adults and 1.5 inches for infants.

RATIONALE:

Although the optimal approach to CPR may vary, depending on the rescuer, the victim, and the available resources, the fundamental challenge remains to be how to achieve early and effective CPR. The study is conducted to find the effectiveness of CPR in Fortis Memorial Research Institute and related discrepancies.

RESEARCH QUESTION:

What is the success rate of CPR given to the patients in Fortis Memorial Research Institute during the period of 2 months?

SPECIFIC OBJECTIVES:

- To evaluate the gaps in CPR documentation.
- To review the ACLS-trained staff.
- To give suitable recommendations if needed.

RESEARCH METHODOLOGY

Meaning of Research Methodology:

In simple terms methodology can be defined as, giving a clear-cut idea of what methods or processes the researcher are going to carry out in his or her research to achieve research objectives. In order to plan for the whole research process at the right point of time and to advance the research work in the right direction, a carefully chosen research methodology is very critical. Research methodology maps out the whole research work and gives credibility to the whole effort of the researcher.

More over methodology guides the researcher to involve and to be active in his or her particular field of enquiry.

Right from selecting the topic and carrying out the whole research work to recommendations; research methodology drives the researcher and keeps him on the right track. The entire research plan is based on the concept of the right methodology.

SAMPLING DESIGN

- Study design- Observational study
- Study setting – FMRI hospital, Gurgaon, Haryana
- Duration of study- 2 months
- Study population- Patients in IPD, OPD & ER
- Sample size- 65
- Sampling technique- Simple Random Sampling

DATA COLLECTION TOOL

Structured questionnaire, administered by the CPR team which contains questions about demographics, circulation, investigations & Result ROSC of patients who have undergone CPR.

METHOD OF DATA COLLECTION

Primary data was collected on a daily basis through CPR record forms which were filled by the CPR team in ICUs, Wards and ER at FMRI hospital during the period of 2 months.

DATA COMPILATION, ANALYSIS & INTERPRETATION

During the period of study CPR records of a total of 65 patients were analysed and below mentioned are the finding compiled.

TABLE 1: FINAL OUTCOME OF CPR

OUTCOME	COUNT	PERCENTAGE
EXPIRED	58	89%
ALIVE	7	11%
TOTAL	65	100%

GRAPH 1: FINAL OUTCOME OF CPR

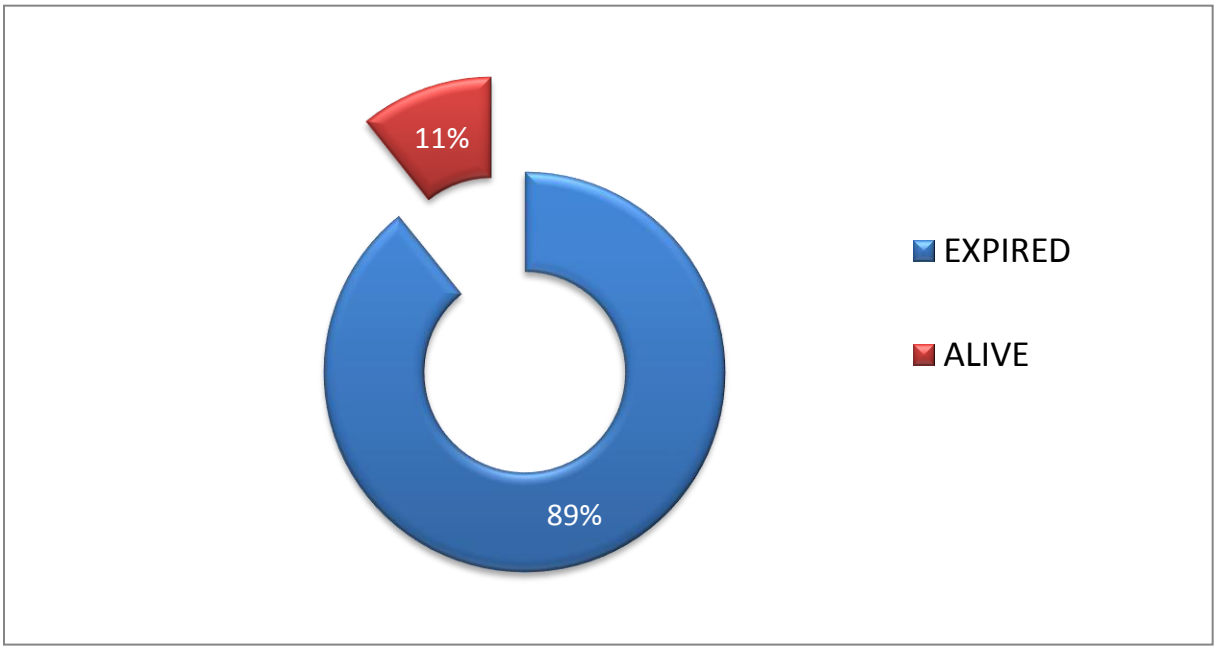
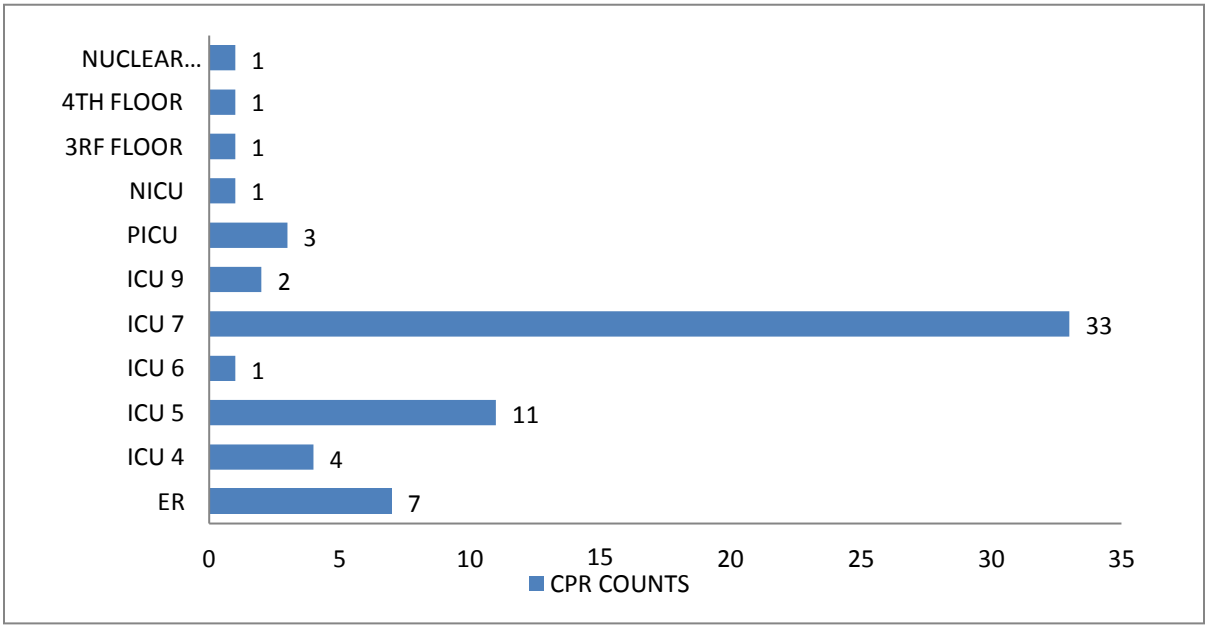


Table 1 and Graph 1 represent the outcome of CPR given to a total of 65 patients, from which 58 (89%) got expired and 7 (11%) were alive.

TABLE 2: CPR ACCORDING TO LOCATION

LOCATION	COUNTS	PERCENTAGE
ER	7	11%
ICU 4	4	6%
ICU 5	11	17%
ICU 6	1	2%
ICU 7	33	51%
ICU 9	2	3%
PICU	3	5%
NICU	1	2%
3rdFLOOR	1	2%
4thFLOOR	1	2%
NUCLEAR MEDICINE	1	2%
TOTAL	65	100%

GRAPH 2: CPR ACCORDING TO LOCATION



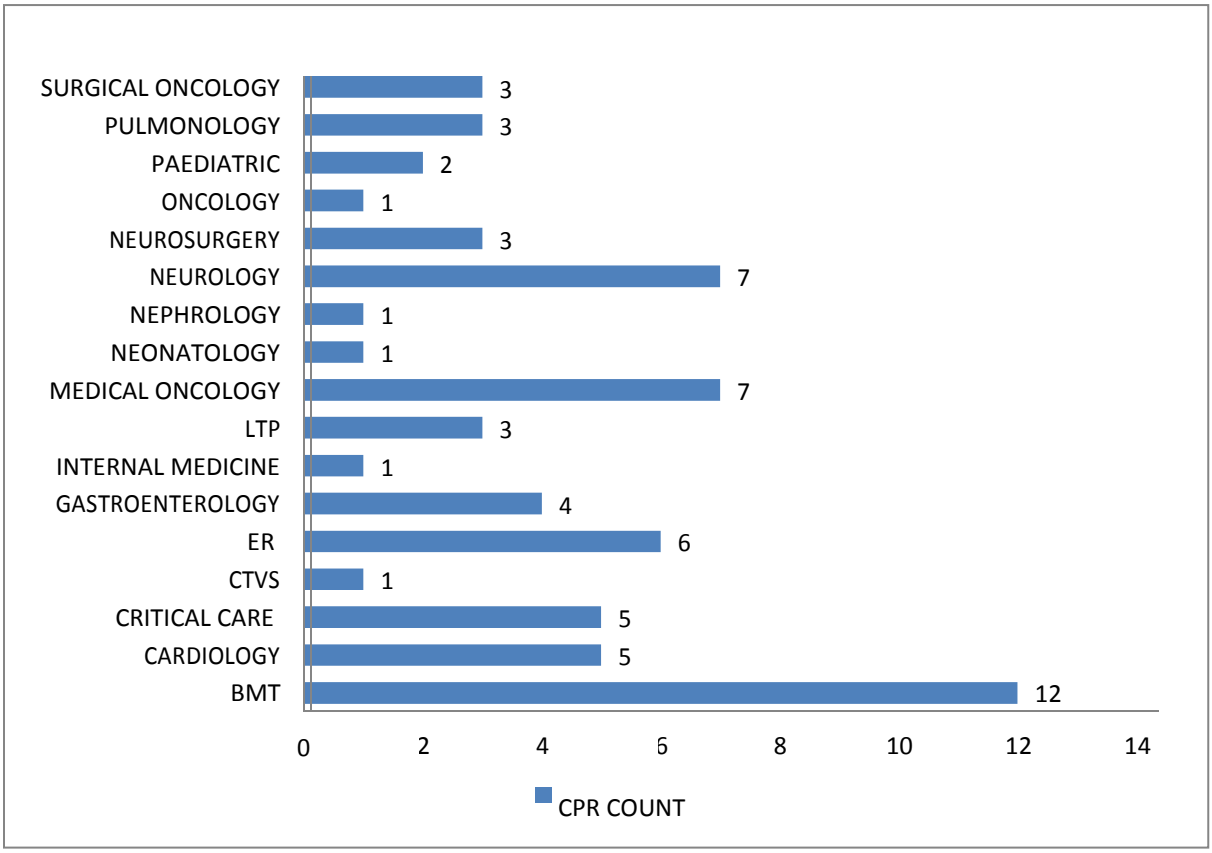
As shown above in Table 2 and Graph 2,

Analysis of CPRs according to the location, out of total 65 CPRs maximum number of CPRs were given in ICU-7 (51%) followed by ICU-5 (17%), ER (11%) & ICU-4 (6%). And it was also observed that minimum numbers of CPRs were given in ICU-6 (2%), NICU (2%), 3RD Floor (2%), 4TH Floor (2%), & Nuclear Medicine (2%).

TABLE 3: CPR ACCORDING TO THE SPECIALITY

SPECIALITY	CPR	PERCENTAGE
BMT	12	18%
CARDIOLOGY	5	8%
CRITICAL CARE	5	8%
CTVS	1	2%
ER	6	9%
GASTROENTEROLOGY	4	6%
INTERNAL MEDICINE	1	2%
LTP	3	5%
MEDICAL ONCOLOGY	7	11%
NEONATOLOGY	1	2%
NEPHROLOGY	1	2%
NEUROLOGY	7	11%
NEUROSURGERY	3	5%
ONCOLOGY	1	2%
PAEDIATRIC	2	3%
PULMONOLOGY	3	5%
SURGICAL ONCOLOGY	3	5%
TOTAL	65	100%

GRAPH 3: CPR ACCORDING TO THE SPECIALITY



From the Table 3 and Graph 3 above it is evident that maximum CPRs were given in BMT speciality (18%) with highest count of 12. Followed by Medical Oncology and Neurology with count 7 (11%) for each.

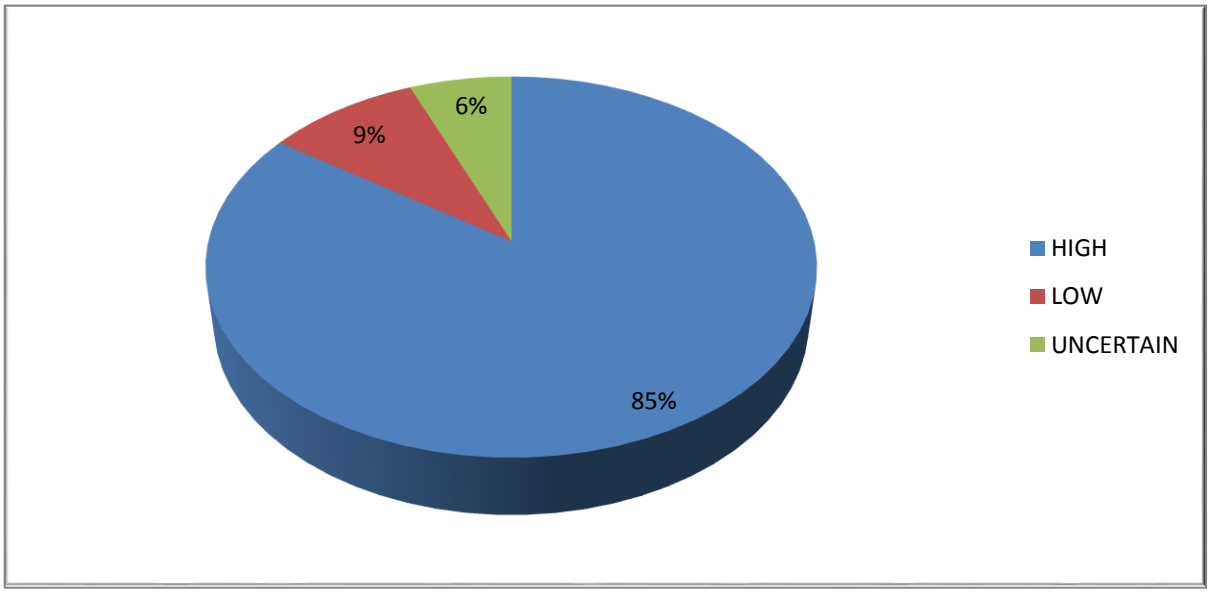
However, it was found that further specialities Oncology, Nephrology, Neonatology, CTVS and Internal Medicine have least count of CPRs 1 (2%).

TABLE 4: PATIENT'SLIKELIHOOD OF ARREST

Likelihood of Arrest	**NO. OF PATIENTS**	**PERCENTAGE**
HIGH	55	85%
LOW	6	9%

UNCERTAIN	4	6%
TOTAL	65	100%

.GRAPH 4: PATIENT'S LIKELIHOOD OF ARREST

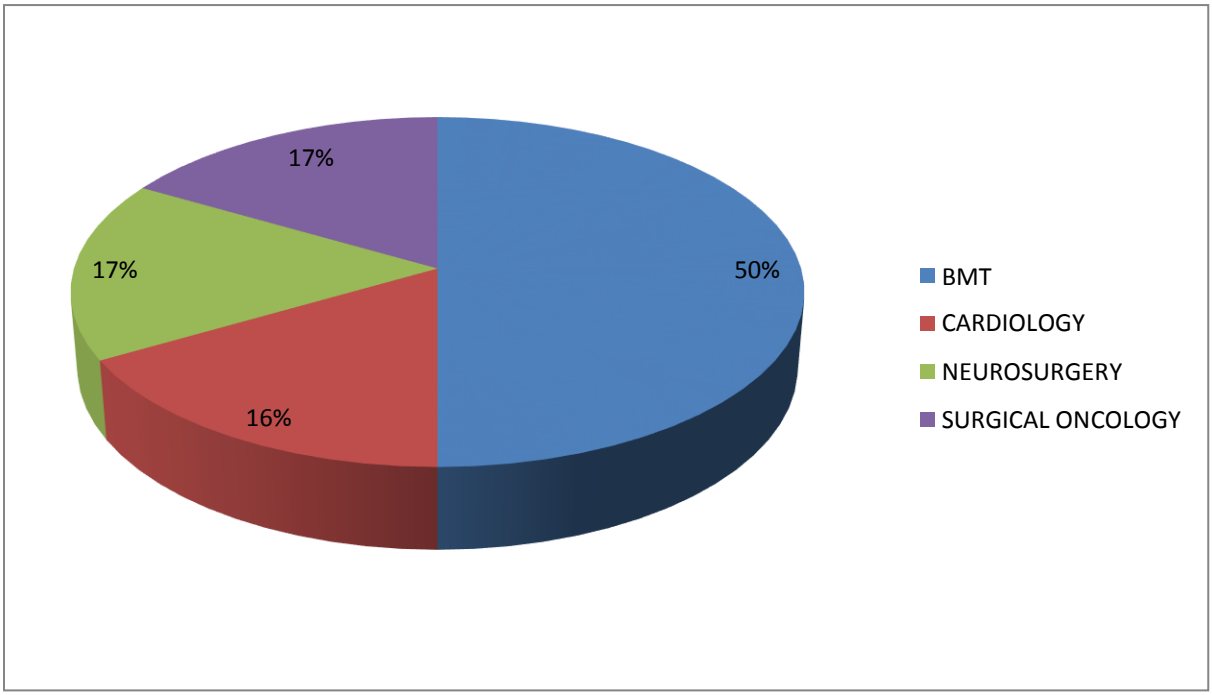


As it is clear from Table 4 and Graph 4 above maximum patients were at high risk of Arrest (85%). Only 6% of patients were at an uncertain risk of arrest, while, 9% of patients were at a low chance of arrest.

TABLE 5: PATIENT'S WITHLOW CHANCES OF ARREST

SPECIALITY	PATIENTS WITH LOW EXPECTENCY OF ARREST	PERCENTAGE
BMT	3	50%
CARDIOLOGY	1	17%
NEUROSURGERY	1	17%
SURGICAL ONCOLOGY	1	17%
TOTAL	6	100%

GRAPH 5: PATIENT'S WITH LOW CHANCES OF ARREST

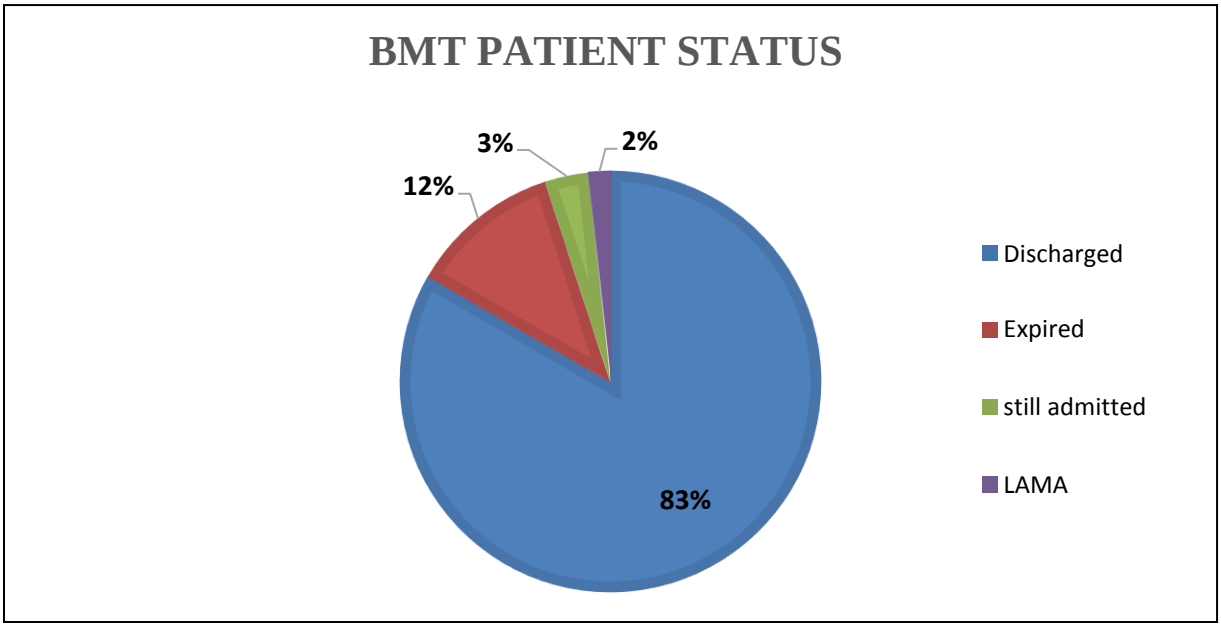


As is seen from the above Table 5 and Graph 5, 3 patients (50%) of BMT were having low expectancy of the arrest. And cardiology, neurology and surgical oncology specialities were having 1 patient (17%) each with a low expectancy of the arrest.

TABLE 6: Status of patients in BMT department

BMT patient status	Counts	Percentage
Discharged	50	83%
Expired	7	12%
still admitted	2	3%
LAMA	1	2%
Total	60	100%

GRAPH 6: Status of patients in BMT department

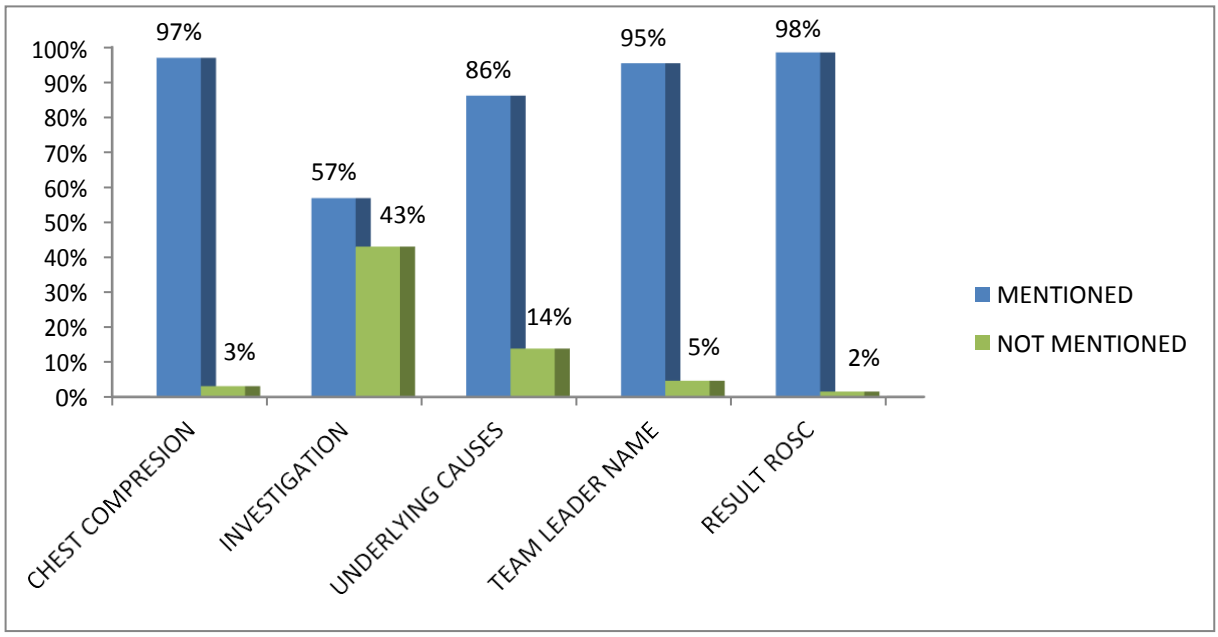


As is seen from above table 6 and graph 6, a total of 60 patients were admitted under BMT speciality, the maximum number of patients were discharged (83%), while 12% got expired.

TABLE 7: FORM ANALYSIS OF CPR RECORD

PARAMETER	COMPLIANCE	PERCENTAGE	NON COMPLIANCE	PERCENTAGE
CHEST COMPRESSION	63	97%	2	3%
INVESTIGATION	37	57%	28	43%
UNDERLYING CAUSES	56	86%	9	14%
TEAM LEADER NAME	62	95%	3	5%
RESULT ROSC	64	98%	1	2%

GRAPH 7:FORM ANALYSIS OF CPR RECORD



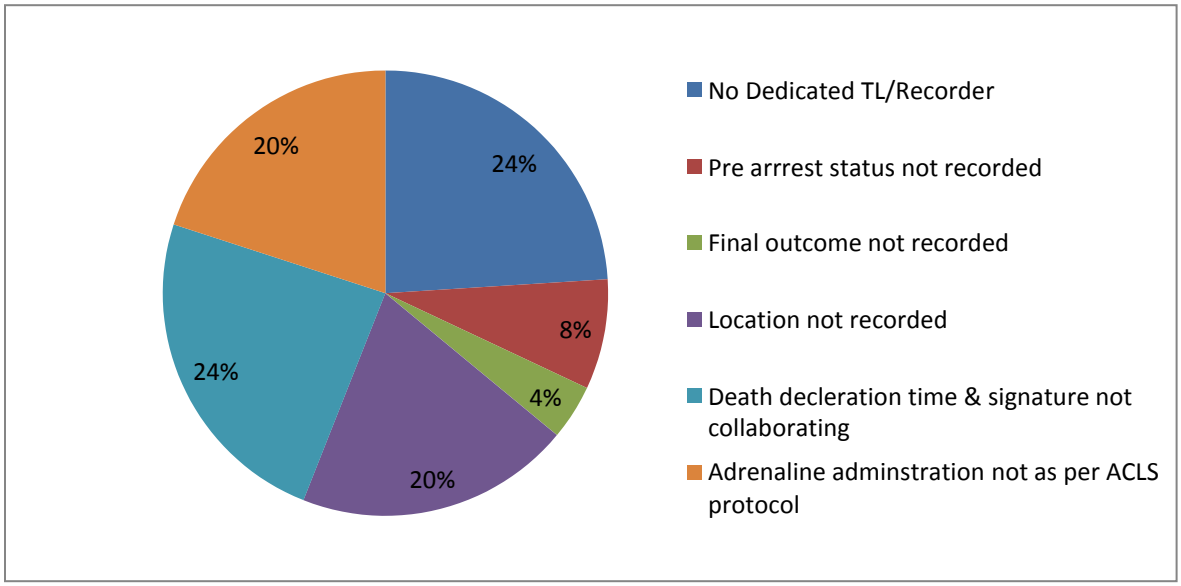
As seen in Table 7 and Graph 7, On analysis of CPR record forms it was observed that the maximum number of compliance was found in ROSC (98%) and the minimum number of compliance was seen in Investigation (57%).

On the other hand, the maximum number of non-compliance was found in Investigation (43%) while the minimum in Result ROSC (2%)

TABLE 8: GAPS IN CPR FORMS

PARAMETER	COUNTS	PERCENTAGE
No Dedicated TL/Recorder	6	24%
Pre arrrest status not recorded	2	8%
Final outcome not recorded	1	4%
Location not recorded	5	20%
Death decleration time & signation not collaborating	6	24%
Adrenaline adminstration not as per ACLS protocol	5	20%

GRAPH 8: GAPS IN CPR FORMS

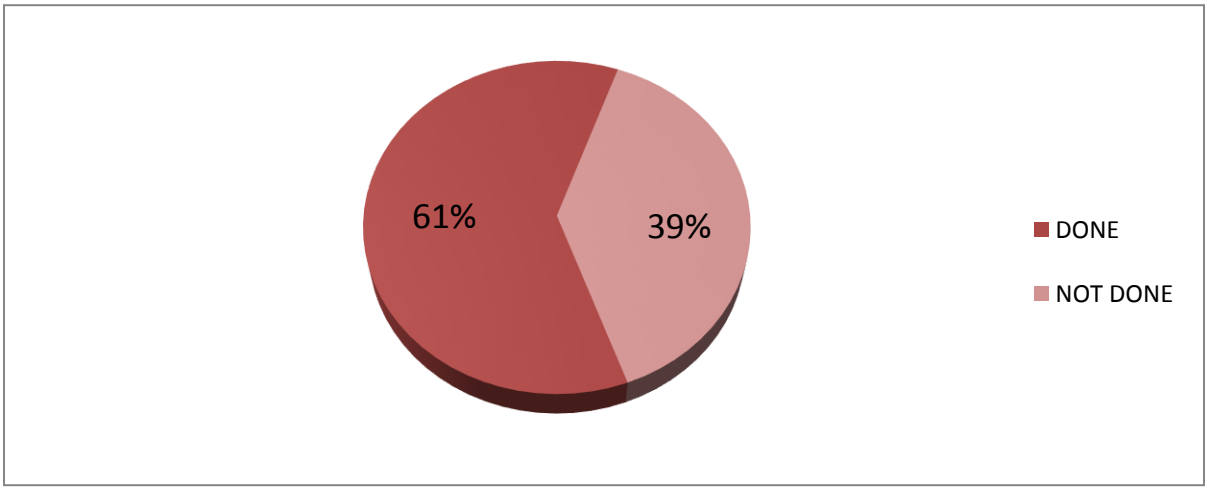


The above-shown Table 8 and Graph 8, depict gaps in form with 24% discrepancies in both TL/recorder details and death declaration time & signature while only 4% in recording the final outcome.

TABLE 9: ACLS CERTIFICATION OF DOCTORS IN THE CPR TEAM

ACLS CERTIFICATION	NO. OF DOCTORS	PERCENTAGE
DONE	36	61%
NOT DONE	23	39%
TOTAL	59	100%

GRAPHS 9: ACLS CERTIFICATION OF DOCTORS



As seen in Table 9 and Graph 9, an analysis of ACLS certification of doctors in CPR team was done and it was observed that 61% of doctors were ACLS certified while 39% of doctors were not certified for the same.

CONCLUSION

From the above data collected and the results which we got from the study we can say that:

- Out of the total 65 CPRs given, only 7 (11%) patients were alive, while 58 (89%) patients got expired.
- ICU-7, being a medical ICUholds 51% of total patients given CPR. Followed by the ICU-5 (17%), it was also observed that 11%of patients requiring CPR came through the emergency department. ICU 4 being surgical had 4 (6%) CPRs in total.
- After assessing the specialities, the majority of patients (18%) were in BMT, followed by Neurology (11%), and Medical oncology (11%). It can be concluded that most critical patients requiring CPR were in the BMT speciality.
- Further patients were evaluated on the likelihood of arrest and it was observed that 9% of patients were at low risk of arrest and still required CPR, also 50% of low-risk patients were from BMT speciality. from which it can be concluded that the patient's pre-arrest status was not recorded accurately. Further on evaluation of BMT patients, it was analysed that a maximum of the patients (83%) got discharged while 12 % of them got expired.
- The prevalent method of CPR is documented in the Cardiopulmonary Resuscitation Record form which entails the details of different parameters (Time of event recognized, pre-arrest status, likelihood of arrest, time of chest compression started, investigations etc). Relevant details needed to be filled in by the recorder along with the team leader. Further form is reviewed by a senior member of CODE BLUE team.
- After assessing the compliance in all parameters can be clearly observed that the investigation parameter had the least compliance (57%) in all the forms followed by the underlying causes (86%). Some other discrepancies were also noted while reviewing (No dedicated team leader in CPR record form and review form(24%), location not recorded(20%), pre-arrest status not recorded (8%), death declaration time & signature not collaborating (24%), a final outcome not recorded (4%) from which it can be concluded that recorder was not very careful while filling all the parameters.
- During the observational process, it was found that in 20% of cases adrenaline administration was not as per ACLS protocol. For which further analysis was done on

ACLS certification of doctors. From this, it can be concluded that 39% of doctors are not ACLS trained and certified.

RECOMMENDATIONS

CPR is a critical process in the field of healthcare and is directly related to the quality of patient care services. Thus to provide improved healthcare, the issues mentioned before must be solved. The following recommendations are proposed to enhance the effectiveness of CPR:

- Concerning the likelihood of arrest, negligence has been observed in recording the pre-arrest status of the patient
- Regular monitoring and special nursing care should be given to BMT patients, as it is seen that a large number of patients who falls under this speciality require CPR besides being at low risk of arrest.
- To increase the compliance of all the parameters, forms should be rechecked and counter-signed by designated staff.
- Regular training of documentation should be conducted for recorders for the proper filling of CPR forms.
- Periodic audits should be done by reviewing a limited sample of cases.
- In-house ACLS training of the doctors should be done, and yearly audits can be conducted on the ACLS status of staff.
- CPR committee meetings should be done every month for gap analysis and effective management.

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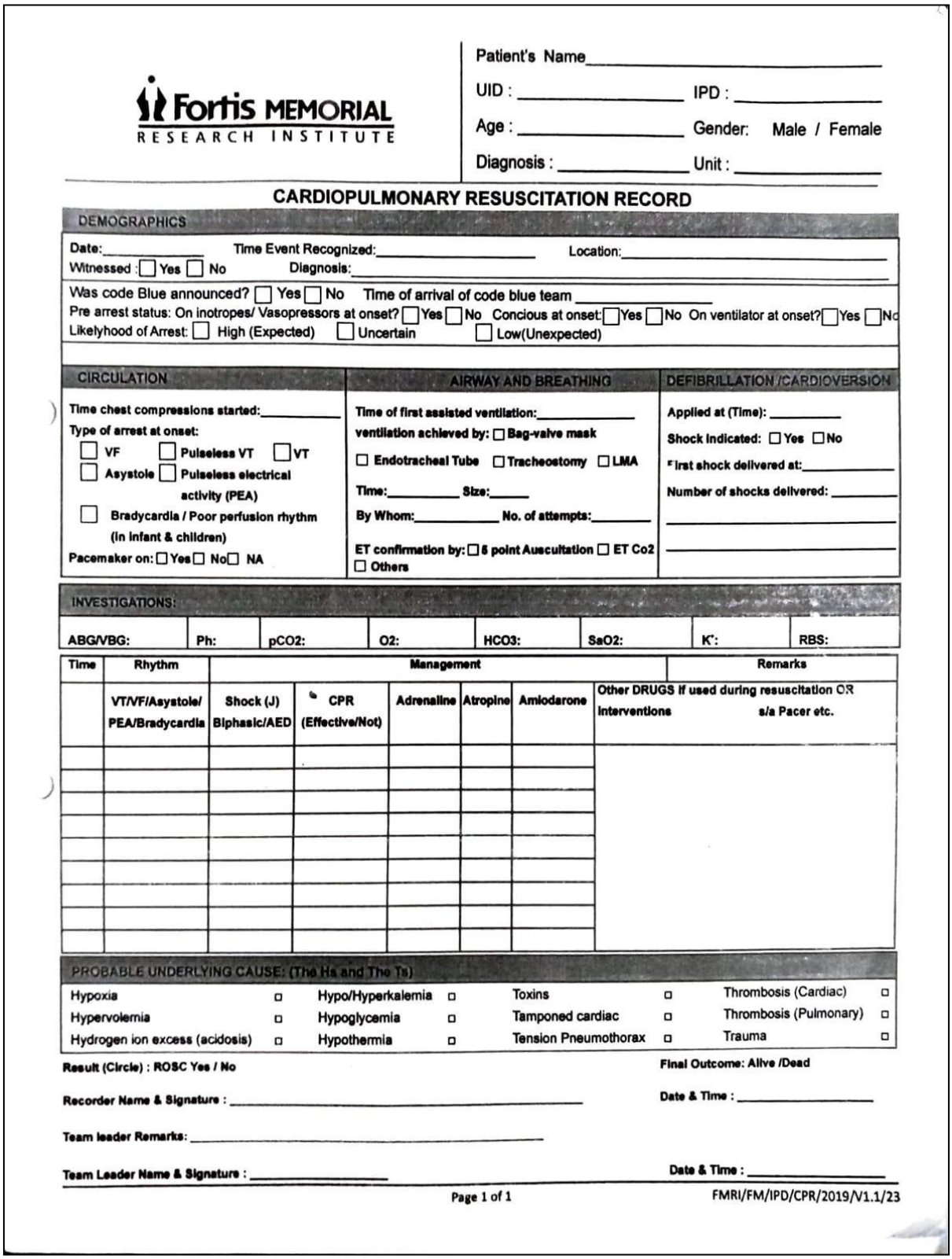
Annexure



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Patient's Name _____

UID : _____ IPD : _____

Age : _____ Gender: Male / Female

Diagnosis : _____ Unit : _____

CARDIOPULMONARY RESUSCITATION RECORD

DEMOGRAPHICS

Date:_____ Time Event Recognized:_____ Location:_____

Witnessed : ☐ Yes ☐ No Diagnosis:_____

Was code Blue announced? ☐ Yes ☐ No Time of arrival of code blue team _____

Pre arrest status: On inotropes/ Vasopressors at onset? ☐ Yes ☐ No Concious at onset: ☐ Yes ☐ No On ventilator at onset? ☐ Yes ☐ No

Likelyhood of Arrest: ☐ High (Expected) ☐ Uncertain ☐ Low(Unexpected)

CIRCULATION

Time chest compressions started:_____

Type of arrest at onset:

☐ VF ☐ Pulseless VT ☐ VT

☐ Asystole ☐ Pulseless electrical activity (PEA)

☐ Bradycardia / Poor perfusion rhythm (in infant & children)

Pacemaker on: ☐ Yes ☐ No ☐ NA

AIRWAY AND BREATHING

Time of first assisted ventilation:_____

ventilation achieved by: ☐ Bag-valve mask

☐ Endotracheal Tube ☐ Tracheostomy ☐ LMA

Time:_____ Size:_____

By Whom:_____ No. of attempts:_____

ET confirmation by: ☐ 6 point Auscultation ☐ ET Co2 ☐ Others

DEFIBRILLATION /CARDIOVERSION

Applied at (Time): _____

Shock Indicated: ☐ Yes ☐ No

First shock delivered at:_____

Number of shocks delivered: _____

INVESTIGATIONS:

ABG/VBG:	Ph:	pCO2:	O2:	HCO3:	SaO2:	K*:	RBS:

Time	Rhythm	Management					Remarks
	VT/VF/Asystole/ PEA/Bradycardia	Shock (J) Biphasic/AED	CPR (Effective/Not)	Adrenaline	Atropine	Amiodarone	Other DRUGS if used during resuscitation OR Interventions s/a Pacer etc.

PROBABLE UNDERLYING CAUSE: (The Hs and The Ts)

Hypoxia	☐	Hypo/Hyperkalemia	☐	Toxins	☐	Thrombosis (Cardiac)	☐
Hypervolemia	☐	Hypoglycemia	☐	Tamponed cardiac	☐	Thrombosis (Pulmonary)	☐
Hydrogen ion excess (acidosis)	☐	Hypothermia	☐	Tension Pneumothorax	☐	Trauma	☐

Result (Circle) : ROSC Yes / No

Final Outcome: Alive /Dead

Recorder Name & Signature : _____

Date & Time : _____

Team leader Remarks: _____

Team Leader Name & Signature : _____

Date & Time : _____

Page 1 of 1

FMRI/FM/IPD/CPR/2019/V1.1/23

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CPR Review Form

Patient's Name: _____

UID: _____ IPID: _____

Age: _____ Gender: Male / Female

D.O.A.: _____ Unit: _____

(To be filled by team leader)

☐ Did ACLS team arrive within 5 minutes? ☐ Yes ☐ No

☐ Airways: ☐ Delay ☐ Multiple intubation attempts - # of attempts = _____ ☐ Aspiration
☐ Multi-placement /Displacement ☐ Trauma/Injury ☐ Other
Comments: _____

☐ Vascular Access: ☐ Delay ☐ Infiltration/ Disconnection ☐ Pneumothorax ☐ Inadvertent Arterial cannulation ☐ Other
Comments: _____

☐ Chest Compression : ☐ Delay ☐ Inadequate depth/force to generate pules ☐ Rib fracture ☐ No Board ☐ Other
Comments: _____

☐ Defibrillation: ☐ Initial Delay ☐ Problem with defibrillator access ☐ Personnel not available to operate defibrillator
☐ Equipment Malfunction ☐ Problem with Pad or paddle Placement ☐ Indicated not given
☐ Given not indicated ☐ Wrong energy level ☐ Other
Comments: _____

☐ Medications : ☐ Delay ☐ Selection ☐ Dose ☐ non-Availability ☐ Other
Comments: _____

☐ Leadership : ☐ Delay in identifying leader ☐ Knowledge Roles ☐ Knowledge of Medications
☐ Knowledge of equipment ☐ Poor Team Work ☐ Protocol deviation ☐ Other
Comments: _____

☐ Equipment: ☐ Availability ☐ Function ☐ Other
Comments: _____

☐ Documentation:
Comments: _____

☐ Any Other Issue: _____

Code Blue Team Leader Name & Signature.....Date.....Time.....

(To be filled by the reviewer)

ANALYSIS	GAPS	ACTION POINTS

Review Completed by.....Date.....Time.....

FMRI/FM/IPD/CPR-RF/2019/V1.0/23A