Internship Training

at

NAVIN HOSPITAL, VAISHALI

STUDY TO ANALYSE THE DISCHARGE

PROCESS OF INTENSIVE CARE UNIT PATIENTS

by

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Enroll No. PG / 17 / 075

Under the guidance of

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Post Graduate Diploma in Hospital and Health Management

2017-19

International Institute of Health Management Research New Delhi

(Completion of Dissertation from respective organization)

The certificate is awarded to

DR. VIJETA ARORA

in recognition of having successfully completed her Internship in the department of

HOSPITAL MANAGEMENT

and has successfully completed his/her Project on

STUDY TO ANALYSE THE DISCHARGE PROCESS OF INTENSIVE CARE UNITS PATIENTS

Date 30 APRIL 19

Organisation NAVIN HOSPITAL, VAISHALI

She comes across as a committed, sincere & diligent person who has a strong drive & zeal for learning.

We wish her all the best for future endeavors.

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This is to certify that DR. VIJETA ARORA student of Post Graduate Diploma in Hospital and Health Management (PGDHM) from International Institute of Health Management Research, New Delhi has undergone internship training at NAVIN HOSPITAL , VAISHALI from 1 FEB 19 to 30 APR 19 .

The Candidate has successfully carried out the study designated to her during internship training and her approach to the study has been sincere, scientific and analytical. The Internship is in fulfillment of the course requirements.

I wish her all success in all her future endeavors.

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The following dissertation titled **"STUDY TO ANALYSE THE DISCHARGE PROCESS OF INTENSIVE CARE UNIT PATIENTS"** at **"NAVIN HOSPITAL"** 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 dissertation only for the purpose it is submitted.

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This is to certify that **Dr. VIJETA ARORA,** a graduate student of the **Post-Graduate Diploma in Health and Hospital Management** has worked under our guidance and supervision. She is submitting this dissertation titled " STUDY TO ANALYSE THE DISCHARGE PROCESS OF INTENSIVE CARE UNIT PATIENTS " at " NAVIN HOSPITAL " in partial fulfillment of the requirements for the award of the **Post- Graduate Diploma in Health and Hospital Management.**

This dissertation has the requisite standard and to the best of our knowledge no part of it has been reproduced from any other dissertation, monograph, report or book.

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This is to certify that the dissertation titled STUDY TO ANALYSE THE DISCHARGE PROCESS OF INTENSIVE CARE UNIT PATIENTS and submitted by DR.VIJETA ARORA Enrollment No. PG /17/075 under the supervision of DR. MAHESH CHOUDHARY for award of Postgraduate Diploma in Hospital and Health Management of the Institute carried out during the period from 1 FEB 19 to 30 APR 19. Embodies my original work and has not formed the basis for the award of any degree, diploma associate ship, fellowship, titles in this or any other Institute or other similar institution of higher learning.

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Name of the Student:

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ABSTRACT

Study to Analyse the Discharge Process of

Intensive Care Unit Patients

INTRODUCTION: ICU is the most important and critical area of a hospital, Discharge process of icu patients is more tedious process as involved with serious patients and utilization of expensive resources to produce better outcomes .

AIM: The present study aims to find out the length of stay of ICU patients and exploring the reasons behind delayed discharge

OBJECTIVES: Objectives of the study are :-

1) To study the discharge process of ICU patients and criteria followed in transition from icu to ward .
2) To analyse the reasons for longer stay in icu.

METHODOLOGY: Study was done in Navin hospital in ICU department, 50 patients were selected through convenience sampling , descriptive study design adapted to understand discharge process from icu by the collection of data in the form of date of admission in icu , reasons for admission, date of discharge to ward and from hospital , number of discharge including deaths and average length of stay calculated . Tools used to facilitate the process were observation , structured questionairre for ICU staff to know their awareness regarding the discharge process of ICU patients , checklist follow up analysed while transitions of patients from icu to wards.

RESULTS: Average length of stay for icu patients was found to be 2.8 days and ALOS for hospital was 4 days by adopting formula , ALOS = No. of inpatient days of icu patients / no. of discharges including deaths . Out of 50 patients 20 patients

directly got discharged from icu and 30 discharged after transferred to ward. By considering alos , reasons for delays in the discharge process sought in two groups controllable and uncontrollable . Controllable reasons for delays were non communication (prior intimation of discharge among ICU staff , accounts dept, billing etc) , wards unavailability (improper process flow) , TPA claims taken longer time to clear the process , financial problems of patients to pay the bills . Uncontrollable reasons were medical condition of patients.

RECOMMENDATIONS: Tie up with nearby industrial firms in Corporate social responsilbility activities to fund the needy and improve the process as well as utilization of resources well.

KEYWORDS: ICU, Average length of stay, discharge process .

ACKNOWLEDGEMENTS

I , DR. VIJETA ARORA , is extremely thankful the team of Navin hospital and especially my mentor in the hospital , Dr. Mahesh Choudhary , Director of the Navin hospital in helping throughout my dissertation work and shaping it in fruitful work .

Immensely grateful and thankful to my mentor in the college, Dr. Manish Priyadarshi , Associate Professor , for two years of continuous guidance and support in directing my journey of this post graduate course . He is not only best mentor, he is the good human being who enlightened and supported me to tackle hurdles of my life as calmly and confidently as he does.

Also , a lend my thanks to most important persons in my life ,GOD , my parents , Reema (my sister), Dr, Ravi (my husband) and my beloved son , TANAY for constant support , love and bearing me throughout my post graduation course .

DR. VIJETA ARORA

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ABBREVIATIONS

- ICU – Intensive care unit
- ALOS – Average length os stay
- Pts. – Patients
- ECHO - Echocardiogram
- OT – Operation theatre
- TMT – Thermo mechanical treatment
- USG - Ultrasound

STUDY TO ANALYSE THE DICHARGE PROCESS OF INTENSIVE CARE UNIT PATIENTS

DR. VIJETA ARORA

NAVIN HOSPITAL

NAVIN HOSPITAL(a unit of Navin Meditech Pvt. Ltd.), Vaishali, Ghaziabad situated in the most progressive NCR satellite town. The unit is a state of art multi-specialty 100 bedded hospital providing a depth of expertise in complete spectrum of advanced medical and surgical interventions with a comprehensive mix of in-patients and out-patients services

Mission of the Navin Hospital is to provide best in class treatment and the patient is assured of getting the right help, guidance and support to educate and treat them holistically to good health.

This hospital aims at provide all types of medical facilities under one roof at an affordable cost for all sections of the society. there are teams of reputed consultants in various specialties and super specialties so as to ensure round the clock care of patients. also, there are critical care experts to cater any road traffic accidents, emergencies, trauma cases with dedicated staff of doctors and nurses, paramedical staff and all kind of latest equipments and technologies.

Departments of hospital: -

1. Internal medicine
2. Orthopedics
3. Pediatrics

4. Obstetrics and Gynecology
5. Dentistry
6. Radiology
7. Dermatology
8. Emergency and Trauma Centre

Super Specialty services available in hospital are :

1. Cardiology
2. Neurology
3. Psychology
4. Plastic surgery
5. Gastrology
6. Nephrology
7. With support of 24 hours'path lab,ambulance,pharmacy, dialysis facility.
8. In house CT Scan, ECHO, TMT,USG,PFT.
9. Medical ICU (12 bedded),NICU, HDU with all modern equipments
10. Fully equipped labour room
11. Modular state of art OT

HIGHLIGHTS OF HOSPITAL

- 3 Modular Operation theatres with latest and updated technologies , extended with Preanaesthesia clinic (PAC) to Post anaesthesia clinic and 15 bedded ICU where patients are closely followed by experts team .
- Non Invasive Cardiology (Diagnostics Cardiology) procedures offered :-

2 D ECHO and Color Doppler

TMT , Exercise and Dobutamine Stress Echocardiogram

Holter Examination , Ambulatory BP monitoring

- Interventional Cardiology

  Coronary,carotid,renal and peripheral Angiographies

  Coronary, carotid, renal and peripheral stenting

  Balloon Mitral and Pulmonary valvuloplasty

  Intravascular ultrasound

- Cardiac and Vascular surgery

  Off pump Cardiac Bypass Surgery

  On pump Cardiac Bypass Surgery

  Valve replacement and valve repair

  Aortic aneurysm surgery

- Department of Dentistry

  Curative treatments include Orthodontic and Facial Reconstructionfor trauma cases and maxillofacial injuries

  Elective program includes Facial dermatology, Plastic surgery and Facial enhancement (Face lifts and Feature reshaping)

- Obstetrics and Gynaecology services :-

  Antenatal, Perinatal and Postnatal care

  Antenatal Education program

  Fetal assessment and Ultrasonography

  Painless Delivery

  Management of High risk pregnancies

- Brain and Spine surgeries

Experienced neurosurgeons

Latest equipments like operating microscope , high speed drill and stereotaxy to take care of all surgeries

- Prompt nutritional intervention

  Customized diet counseling for in-patients and out-patients

  Customized feeds for patients on Ryles tube

  Diet counseling for clients at executive health check

  Ante-natal nutritional counseling for pregnant women

  Community nutrition programs

  And many more services for the society available round the clock .

BACKGROUND

ICU , is a resource extensive , service intensive amd most critical area , where there is lots of activities going on related to patient care . Data is any activity being carried out in a hospital for e.g. number of admissions in hospital, number of discharges, number of operations done etc. but how this data can be meaningful? To have meaningful data we form indicators analysed over predetermined scale.ICU being most important and critical zone of hospital also have performance indicators to efficiently utilize the " capital intensive " care of ICU and reflect the aspirations of hospital care providers though their services . Length of stay in ICU is one of the indicators, defined as total occupied bed days / number of patients DISCHARGED IN a given time frame. Appropriateness of Length of stay as a outcome measure was considered by Joint Commission on Accreditation of Healthcare Organizations (JCAHO). length of stay properly stratified on basis of diseases and conditions and properly analyzed could be a sensitive parameter throwing up light over deficiency in processes and techniques in ICU. Discharge process when observed throughout gives this data i.e. length of stay. Developing,monitoring, auditing and improving these indicators is a dynamic process and plays major role in quality management of ICU.

INTRODUCTION

ICU , Intensive Care Unit is the most important and critical area of a hospital as it is highly equipped and requires larger number of trained and skilled staff for management of critically ill patients or constant observation of patients who are liable to become critically . The common man being it a patient or patient's relatives, most layman thought is that when person is in ICU than he is not well or his health is not improving, this mindset reveals the trauma a patient and their relatives face regarding admission in ICU. Timely discharge from ICU is important as it not only affect the patient himself exposing to risk of nosocomial infections, longer hospital stay days bearing expensive treatment, also blocking its availability for other patient who is more in need of that ICU bed. For any facility to work successfully requires well planned utilization of services, staff and equipment with good communication at each step. Appropriate utilization of ICU beds is essential but also complex and challenging task asICU resources are limited and expensive.

Russell described two themes relating to ICU readmissions – decreased resources on the general wards, and lack of communication between the ICU and ward staff . In the same terms , Elliot et al. conducted unstructured interviews of 21 nurses across the ICU, hospital wards and in educational and managerial positions and identified five contributory themes relating to icu readmissions : premature discharge from ICU, delayed medical care at the ward level, heavy nursing workloads, lack of adequately qualified staff and highly demanding patients. So, icu readmissions is also one of the major factor contributing in re- utilization of icu resources (after discharge is done from icu) . Giving a view to be considered while discharge that the patient is ready to be discharged from from icu , fit enough to start taking care of their basic daily activities (washroom , walking , taking bath , eating by themselves)

The discharge criteria in the intensive care unit require: -

1) Substantial resolution of the problem responsible for admission
2) Prolonged medical stability observed
3) Establishment of status in which intensive care and supervision is no longer required
4) Discontinuation of medications or need for mechanical ventilation.

Benefits of effective discharge process are -

- For the patients :-

  Needs are met , able to maximize independence , feel themselves part of the care process i.e. an active partner , eradicating gaps between them and care providers leading to reduction of nursing staff burden .

- For the carer(s):-

  Feel valued as a partner in care process , feel confident of continued support in their caring role , gets the priviledge to avail rights to be informed about treatment plan , care plan , discharge process etc.

- For the staff :-

  Can develop new soft skills which can help them in knowing the patient better and provide them the best care . Also , their expertise knowledge could be useful for patient and family to be a handholder in entire healthcare process to be achieved through speedy recovery and good health .

  Discharge process observed gave rich data of timing of admission , timing of discharge , number of patients admitted as well as discharged , through this

primary data collected the Average length of stay was collected (indicator to be measured in this study) to know the reasons behind delaying discharge processes .

KEYWORDS – ICU Admission, Critical Care, ALOS, Hospital Discharge .

OBJECTIVES

Objective of this study are :-

1. To understand the discharge process from ICU and criteria followed in transition from ICU to ward
2. To analyse reasons for longer stay in ICU (delayed discharge)

LITERATURE REVIEW

ICU resources are those resources that provide intensive care to critically ill, injured, physiologically unstable or potential to be unstable patients. So admitting on ICU bed is not just limited to bed, it also includes full complement of professional staff, capacities for physiological monitoring and invasive diagnostic and therapeutic through interventions expensive equipment's.

Amongst the various studies done by now and still being carried out to assess the strategies to improve the quality and reduce costs of ICU services by changing the way care is provided to critically ill patients, attention has been focused on patients prolonged length of stay in the ICU. Prolonged stay in ICU can adversely affect the health status by increasing the risks of infections i.e. hospital acquired infections, complications leading to mortality.Also, logistically seen, it impacts the ICU bed availability (prolonged lead time), cancellations of elective surgeries to b scheduled as per ICU bed availability so patient can be admitted to ICU after surgery and most important is to utilize effectively and efficiently ICU resources.

ICU Outcomes provides more valuable inputs in developing more improved and robust model for patient centred outcomes, with more accurate predictions regarding resource usage, patient health improvement predictions and also to evaluate which alternate line of treatment to be carried with safety, quality and reasonable cost.

Discharge criteria as decided by the hospital says that the discharge would be in the written order by the treating physician and when he confirms to it that substantial resolution of the problem has occurred for which the patient was admitted , prolonged medical stability was observed and there was no more need for mechanical ventilator

support . but still these criteria's are not enough to complete the discharge process , many other factors are to be incorporated while the discharge decision is to be made .

Few of the categories taken in consideration while discharge is to be planned observed at other hospitals:-

1. Timing of discharge, both day vs night and weekday vs weekend

   The effect of time of discharge from the ICU has been reviewed both in terms of mortality rates and readmission rates. discharge in the evening or night hours are an independent factor for increased mortality, and readmission. Patient discharged in evening may be more comprehended than in morning so more chances of readmission, same seen as patient risk of readmission seen if discharged at weekend. premature discharge may be affected by increased burden on the ICU capacity, including readmissions, high potential patients and resulting in over utilization of ICU services. (6, 7 , 8, 10)

2. The effectiveness of discharge to specialty facilities such as step down units

   Step down units are variously referred to as "high-dependency units", "intermediate care units" or transitional care units". Da Silva MC alongwith two more authors foun in one of his study , Characterization of patients discharged to Step down units comprises of ongoing neurologic, circulatory or respiratory conditions, high severity of illness scores , which shows requirement of continuum of care for longer term . T0here is evidence of success with weaning from mechanical ventilation and for decreasing ICU bed utilization without increasing mortality or readmissions also in fewer studies , (15 , 16) still more is been researched in these directions .

3. The causes and risk factors for readmission to the ICU

   Readmission to the ICU after initial discharge commonly seen due to respiratory failure, cardiovascularfailure, sepsis or neurological issues, premature discharge from ICU, delayed or untimely care in the wards, heavy nursing workloads or lack of adequately qualified staff. Prevention of readmissions requires greater efforts not just on services and service provider views but also measuring them on indicators like patient acuity or general severity–of-illness scoring systems (APACHE) to correlate with mortality(17 , 18 , 19)

4. ICU outflow limitations

   One of the study conducted by Levin et all, showed that among 856 attempts to discharge 703 patients over a period of 16 months, 153 attempts of discharge could not be completed within 24 hours. 46 percent of the failures to discharge were associated with lack of beds on the floors or lack of agreement with the accepting teams eg. Wards outside the ICU. (20)

METHODOLOGY

Hospital setting –

This study was conducted at Navin hospital , a 100 bedded hospital with state of –art infrastructure and wide basket of services available for patient care situated in Vaishali , NCR , in an Intensive Care Unit , which is 15 bedded unit with all the latest equipments , instruments , technologies and trained and qualified staff .

Sample size –

Due to limitations in sharing of such an intensive area of a hospital , sample size was restricted by 50 patients . So , convenience **sampling design** was considered in this case to obtain the samples . 50 patients in ICU observed for their discharge process . Descriptive study design chosen to descriptively analyse the observed data and surveyed data through questionnairre and checklist as instruments .

Inclusion criteria -

Due to lower sample size discharge process of ICU patients was seen for both the case i.e. discharged from icu to home as well as discharge from icu to wards to home .

Exclusion criteria –

Inpatient department (wards) patient not included in this study .

Respondents –

1 Intensivist , 5 consultant doctors , 1 Nurse –incharge and 10 nurses interviewed with a **questionnaire** for assessing their awareness regarding the discharge process of icu patients . Also , the **checklist** made was observed to be followed while every discharge planned from icu .

Outcomes expected

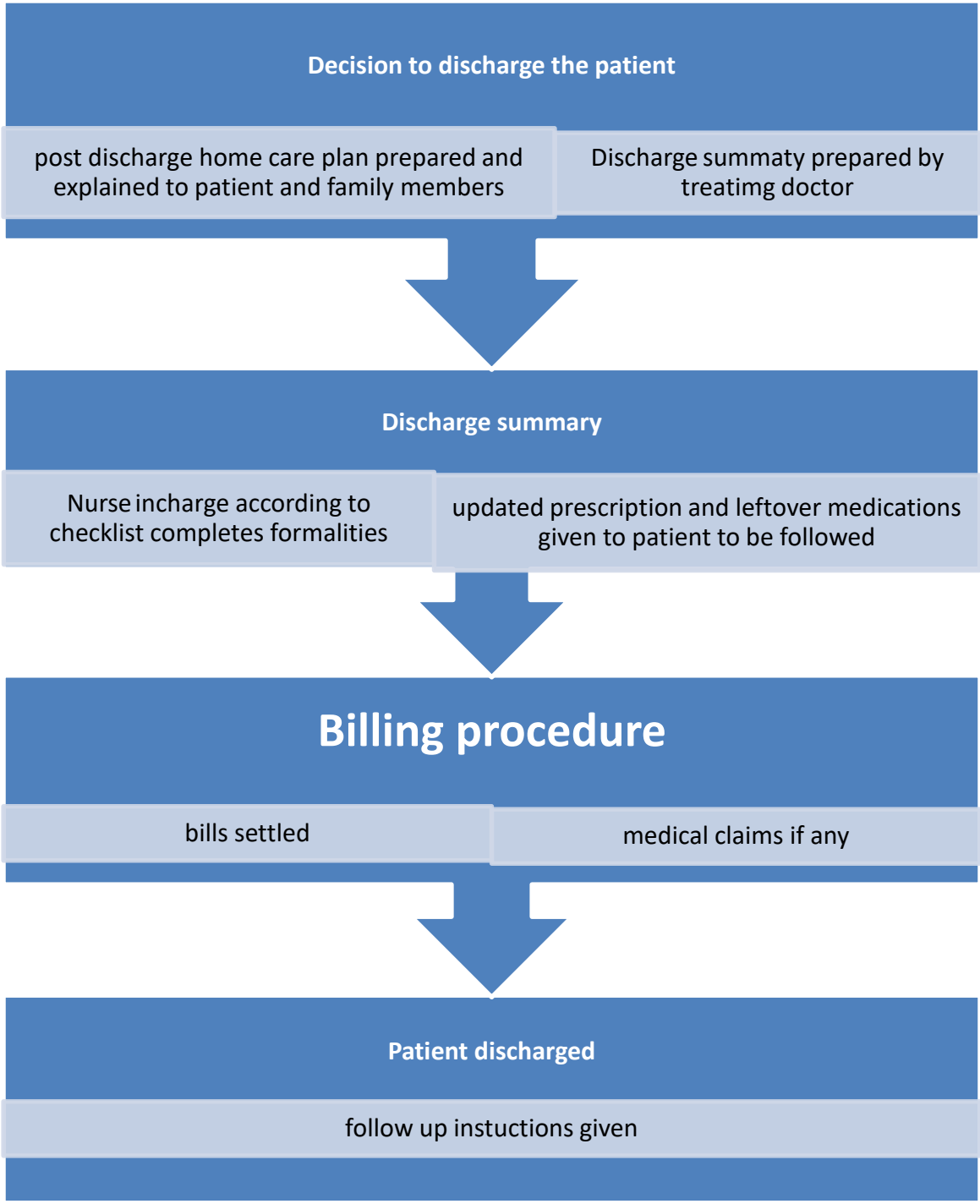
- Discharge process followed for icu patients
- Average length of stay in icu

- Reasons for longer stay in ICU

Descriptive study conducted in NAVIN HOSPITAL,Vaishali, for three months time frame from 1 February 19 to 30 April 19. Descriptive approach towards understanding discharge process of patients from ICUthat is observation method of collecting data supported with interviews and questionnaires, and checklist been followed while discharge criteria. On the basis of document of hospital – Policy of admission and discharge in ICU 50 patient records (sample size) analysed regarding their discharge process from ICU and data recorded as timing of admission in ICU, Discharge from ICU, Discharge from ward and length of stay. Independent variables are time of admission in ICU, discharge from ICU, discharge from ward and dependent variable is the average length of stay in hospital. 50 patient selected through convenience sampling(sampling method), observed throughout discharge process and recorded data in observation data sheet (given in Instrumentation)

Firstly, through observation of the discharge process followed in hospital, discharge planning map traced is as follows

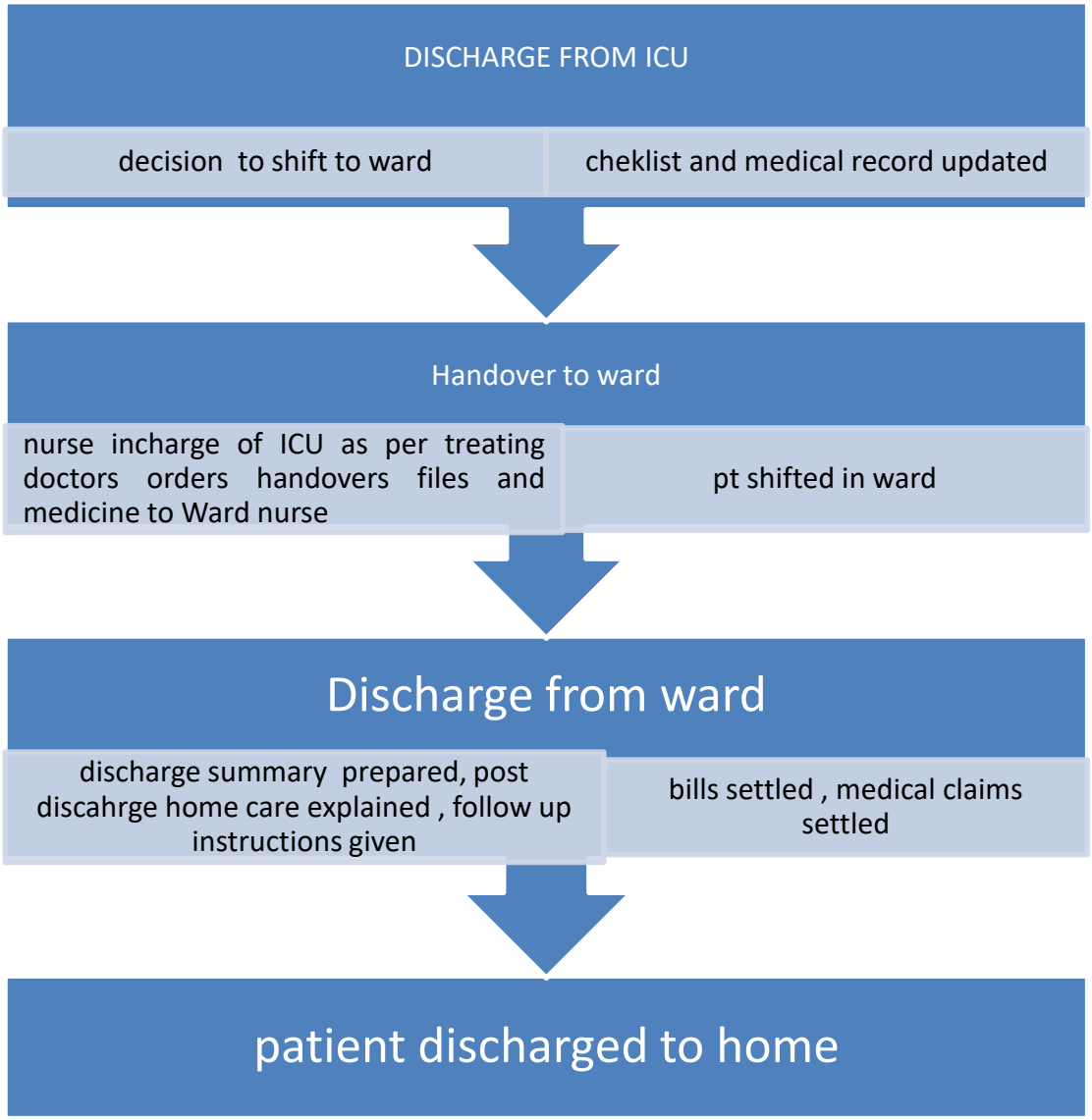
Figure 1 DISCHARGE PROCESS OF ICU PATIENTS



Discharge process observed was , icu admission of patient with a medical problem , stay in icu (inpatient days) with all available treatment facilities under supervision of experienced and trained staff , patient medically fit for discharge without need for further stay in ward (discharge planning). Discharge summary prepared by

consultant doctor or resident doctor duly signed by consultant doctor , billing procedure , post discharge care instructions along with follow up instruction given and finally patient discharged.

Figure 2 TRANSFER PATIENTS TO WARD (ICU> WARD > HOME)



When the patient is admitted in icu with medical condition, given treatment as per need assessment done by team of doctors, patient stable but still requires subsequent days of supervision or observation for ruling out any chances of risks of readmissions . With satisfied doctor and patient, discharge given.

Table 1 Discharge process

DISCHARGED PATIENTS	NUMBER OF PATIENTS
DIRECTLY FROM ICU	20
ICU – WARD – HOME	30

20 patients discharged directly from the ICU were medically fit and stable enough not further requiring need of nursing observation , LAMA cases as well Death of patient in icu .

Data collected was analysed with help of Excel.

Respondents selected for interviewing with the st

ructured questionnaire to support the observations in the study and providing qualitative outcomes .

Respondents -

1 1 Intensivist,

2 5 Consultant Doctors,

3 1 Nurse – In charge

4 10 nurses

interviewed with structured questionnaire(given in Annexure) to understand the discharge process understanding of staff and awareness among then regarding reasons for delaying of discharge process as well as amendment of under laid policy of hospital by the staff effectively.

RESULTS

Thorough observation helped in understanding and mapping out discharge process of patients from ICU to either wards or directly to home.

1 50 patients observed for throughout their admissionin ICU to discharge from ICU and ward.

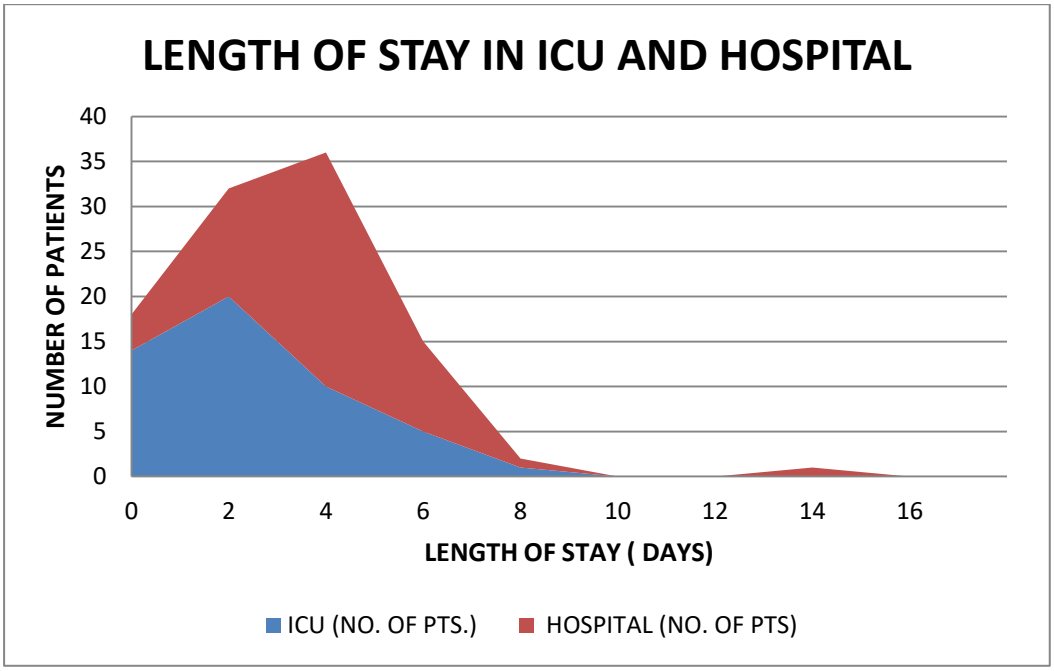
2 Out of 50, 2 cases delayed the discharge process from ICU because of their medical complexities and observing their severity of illness treating doctor and intensivist took decision for delay.

3 5 deaths occurred in these 3 months and

4 6 LAMA cases recorded; Reasons of LAMA were financial issues on patient side, complexity of cases requiring transfer to another hospital, patient willingness to leave giving no reasons for leaving.

Major outcomes

1. **Length of stay ICU and Hospital**: length of stay of patients determines the health condition and severity of disease in the patients. As per analysis of data average length of stay in ICU observed was 2.8 days and average length of stay in hospital was 4 days (ICU + WARD) .



REASONS FOR LONGER STAY IN ICU (Delayed discharge)

- Most common reason found was availability of ward beds

  Ward bed is not vacant or ready to transfer patient from icu

- To avoid discharge over night or after hours

  To prevent the patient be anxious or suffer any kind of uneasiness due to discharge from icu after hours (after 6 pm) , may affect the patient by disturbances in sleep , delirium etc.

- Awaiting reviews from other team members or criticality of patient

  When the patient admitted with multi organ failure or critically ill to be involved with team of experts , so , if any of the experts has a thought that that

point of discharging may not be favourable for patient . Discharge of that patient is to be finalized by whole team to avoid any risk to patient (collective decision)

- Operational process reasons

  When consultant has given orders for discharge and all discharge papers sent to accounts for clearance , time taken to get clearance from TPA , final bill settlement and paid by relatives etc.

- Delay in preparation of icu discharge summary
  - Non communication among staff –Cosultant Doctor in the early morning round examines the patient and asks resident doctor to follow up with him on afternoon round regarding stability of condition so that he could allow discharge , in afternnon resident doctors shift changes and neither of 3 persons got connected on same terms resulting in delayed discharge .
  - Due to over workload on nursing staff or consultant decision and orders given late in after hours .
- Patient's relatives are not in affordable condition to settle bills

  Time taken to arrange money for clearing bills is also major reason now a days .

2. **Checklist procedure followed**: Checklist followed while every discharge either to home or ward was seen to be followed in every cases and the results of the questionnaire support the data that patients and their family members are completely aware of the policies of admission and discharge process of ICUas well as in best way providing medical care to the patients.

   Column yes is assigned for following of checklist in every case , no is marked if any procedure not followed or required not to be done in particular case . So ,

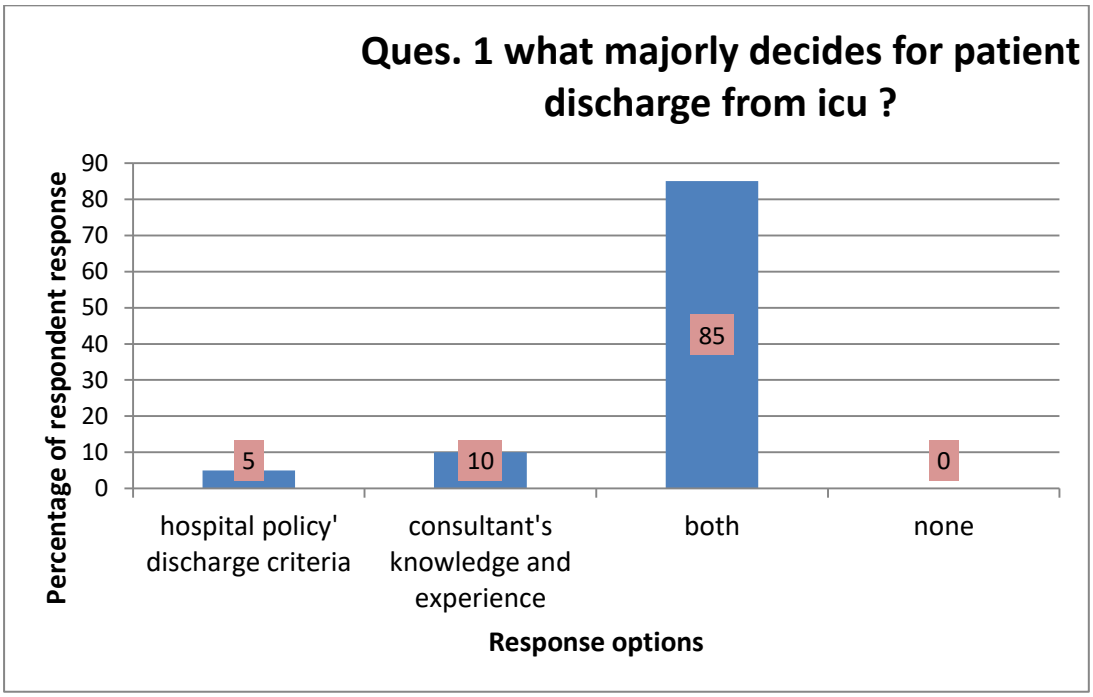
been exhaustive concept regarding this study , its been used here descriptively to know following of procedures done as per policies and without any human error . Its been followed in every cases as per there need assessment , remarks too added wherever required or any important information to be highlighted is added in remarks for example , one of the filled checklist is been shown here .

S.NO	Discharge CHECKLIST	YES	NO	REMARKS
1.	Admission form	Y		4feb19 / 11.30 am / 2623/19 UHID No. /icu bed no.4
2.	Discharge summary	-		7 feb19/ chest pain relieved ,diabetes in control ,patient stable
3.	General Consent form	Y		Signed
4.	Initial assessment	Y		Chest pain
5.	Progress notes	Y		Chest pain relieved , diabetes in control ,
6.	Surgical safety checklist	Y		Checked

7.	Informed consent form	Y		Signed by wife
8.	Blood sugar charting	Y		140 g fasting 162 g pp
9.	Vital signs record	Y		130 / 94 mm hg
10.	Nursing assessment sheet	Y		1 pm
11.	Pain assessment and mang	Y		
12.	Venous access documentation	Y		
13.	Medication administration record	Y		Medication to be continued
14.	Input and output chart	Y		
15.	Nutrition assessment form	Y		Diet chart provided by dietician
16.	Blood transfusion flowsheet	-	-	-
17.	Investigation report	Y		ECG report , biochem test reports, angiography
18.	Copy of bill	Y		Attached
19.	Bill paymnent reciept	Y		
20.	Misc. form (TPA, LAMA, MLC, DEATH certificate)	Y		Copy of TPA FORM

3. Questionnairre response

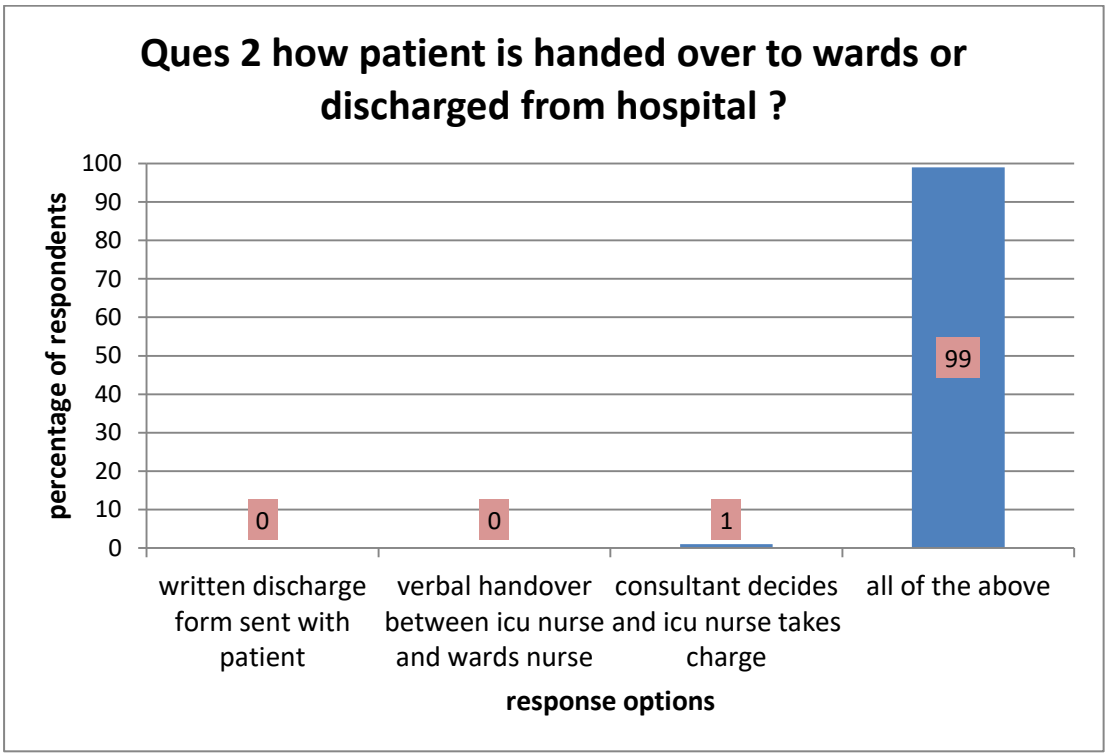
1. What majorly decides for the patient discharge from icu ?



Question 1 asked about hospital's discharge criteria in response to this 85 percent answered both hospital policy formed for discharge criteria and process as well as doctor's knowledge and experience are required for decision regarding discharge of patient , 10 percent thought doctor's knowledge and experience is important for decision of patient's discharge

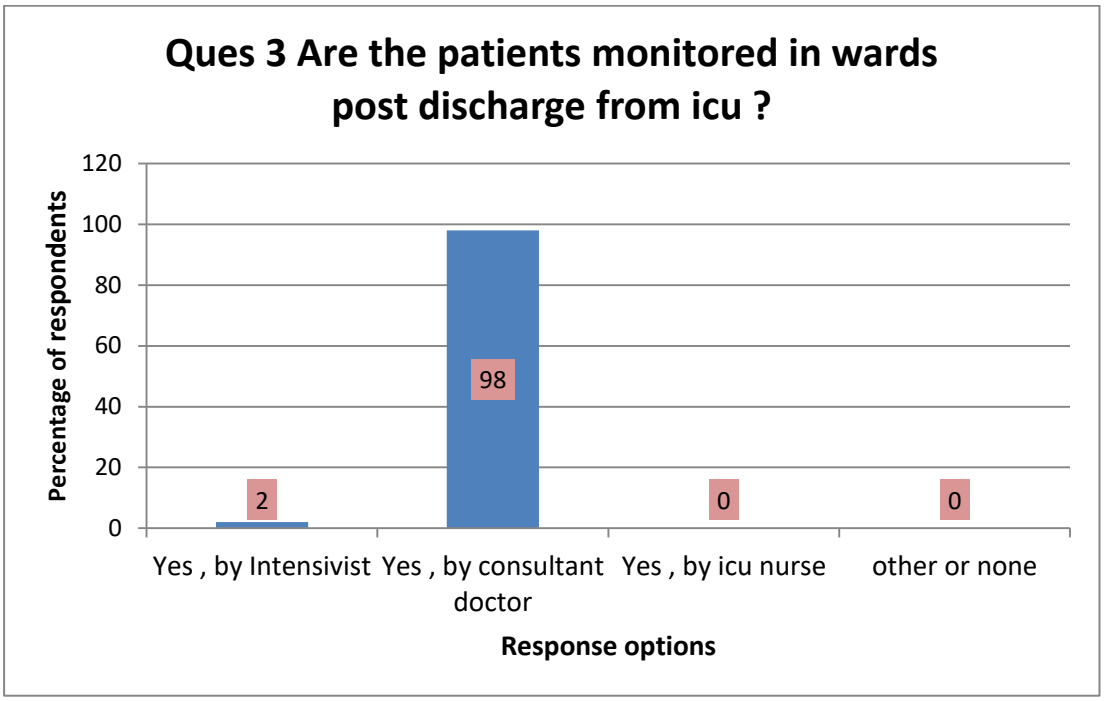
Hospital discharge criteria as per provided in hospital's discharge policy document says , check for the recovery of patient as he is fit enough to be discharged directly from icu or need further observation (in wards) then discharged ,home care to be availed are instructed , transport facility if required , medications to be continued with all dosage , timings and administration form , handover of any patient property (if submitted) , medical certifications , discharge summary alongwith billing receipts and TPA claim papers . s per bservation , al+l these are checked and taken into an account while the discharge is planned .

2. How patient is handed over to wards or discharged from hospital ?



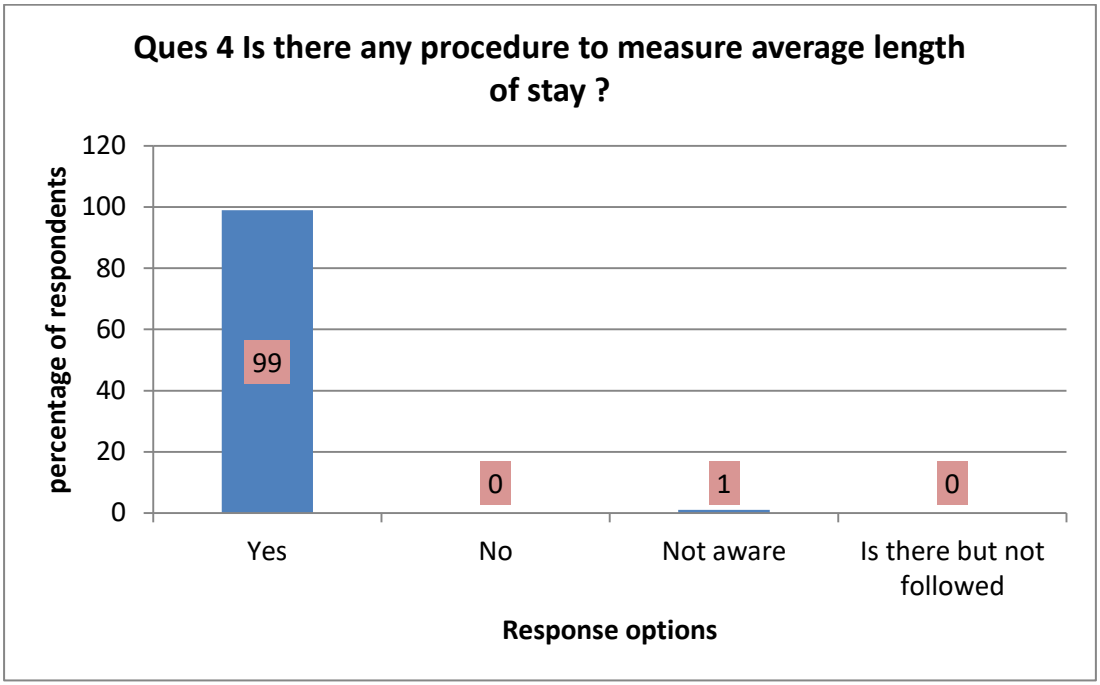
Question 2 was about how patient is handed over to ward or discharged , 99 percent response was all of the above reasons , reasons were written discharge form sent with patient , verbal communication among ICU nurse and ward nurse , consultant decides and ICU nurse take charge. While the transfer checklist is checked sample of checklist is in annexure .

3. Are the patients monitored in wards post discharge from icu ?



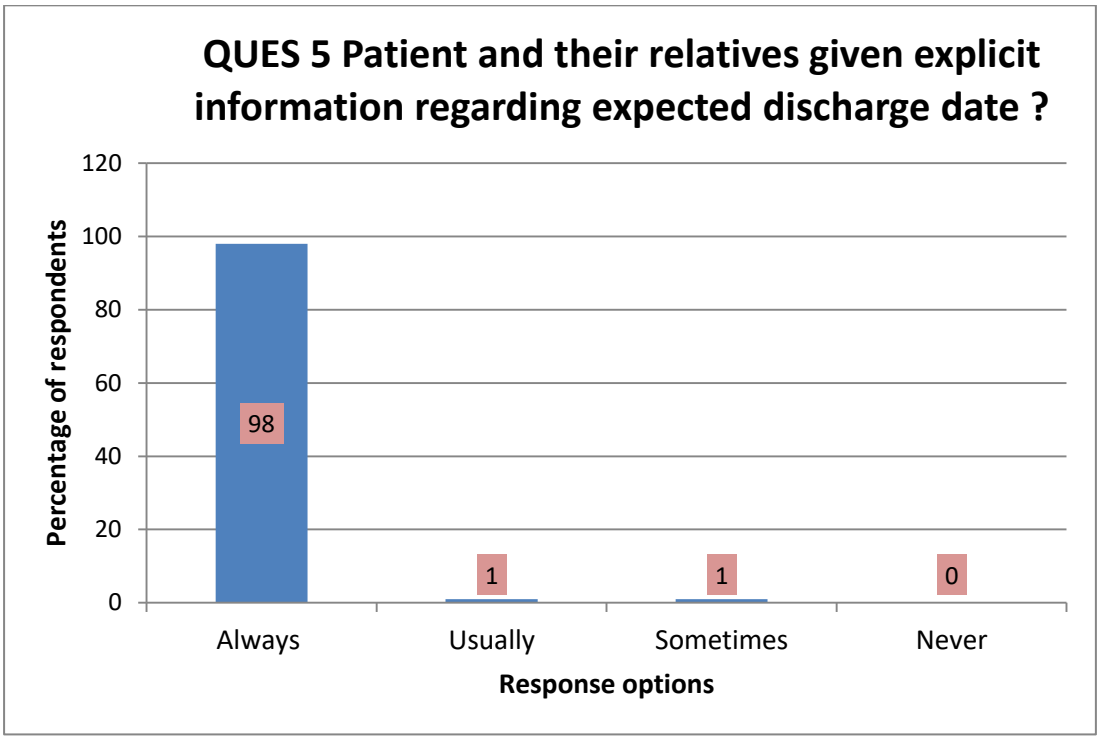
Ques 3 asked ICU patient's follow up for which 98 percent correctly answered that consultant had followed up patient in ward after discharge from ICU . This is important question regarding continuum of care and responsibilities known by concerned staff assigned for that patient

4. was is there any procedure to measure average length of stay in hospital ?



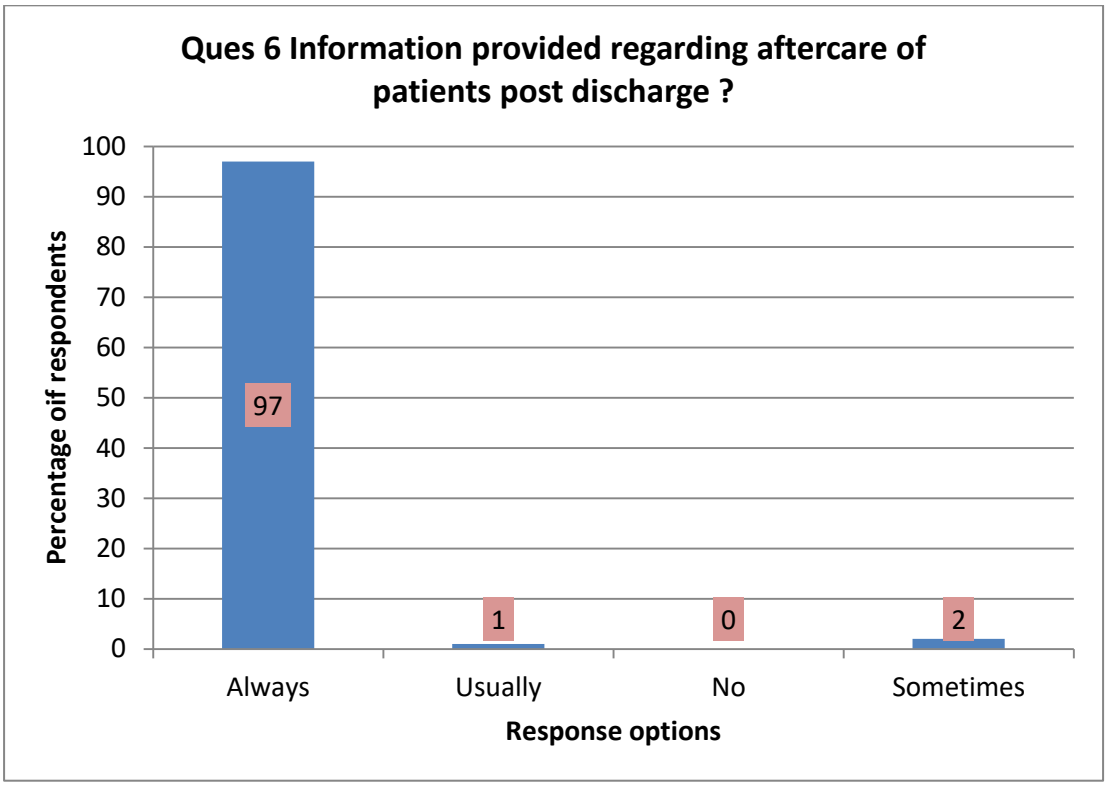
It was found that 99 percent knew about it and said yes there is a measurement criteria for average length of stay , which is ALOS = Number of in-patient days in a given month / Number of discharges and deaths in that month .

5. was that any explicit information given to patients or their relatives regarding expected date of discharge ?



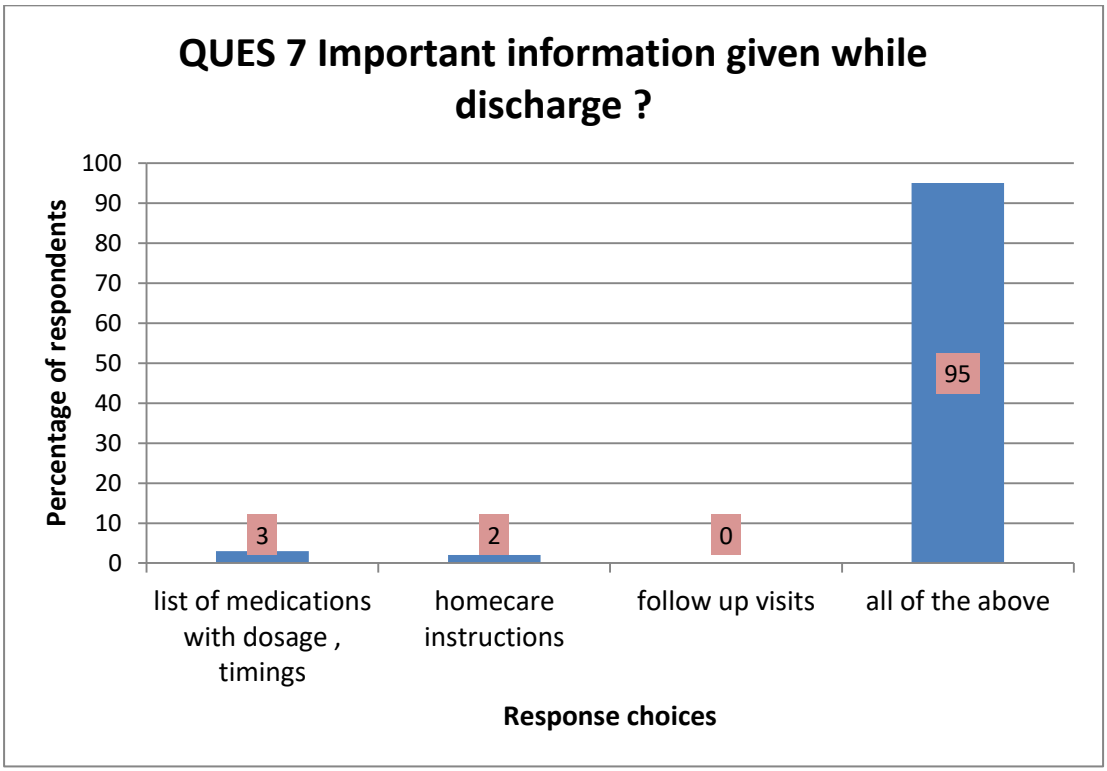
for which 98 percent answered option (a) that is always . This question is important as per patient focused , that he is been informed regarding how long would treatment or care procedure would take , this eases the anxiety of patients regarding how many days stay could cost them (patient and their relatives brainstorming) . As per this information of expected discharge ,cost and proceeding of healthcare provided if not given timely may cause violence against medical profession , new problem in medical profession nowadays .

6. asked that is there information provided regarding aftercare of patients post discharge or available care arrangements through hospital ?



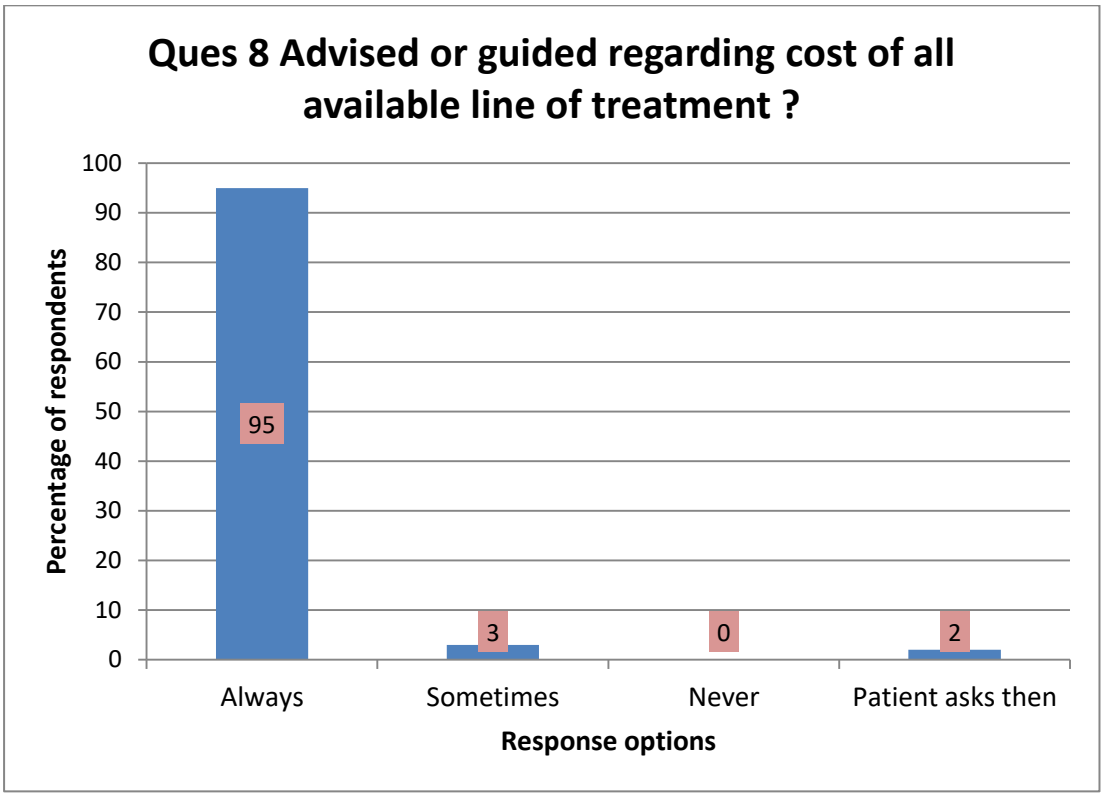
97 percent said that it is always given . This answer reflects the accountability of staff before discharge to provide continued care plan for patient , so that patient does'nt gets anxious or conditions remain stable even at home , reducing the chances of readmissions in ICU .

7. Asked that while discharge what is important information to be known for patient and their relatives ?



For this question 95 percent said option (d) all of the above options which are Current list of medications to follow with dosages, timings , Homecare instructions for ex. Any physical exercise or physiotherapy sessions , nursing care requirements etc. and Follow up schedule visits . Prior thing to be kept in mind always helps in making carer cautious to seriously following these points will lead to improvement in the condition of patient .

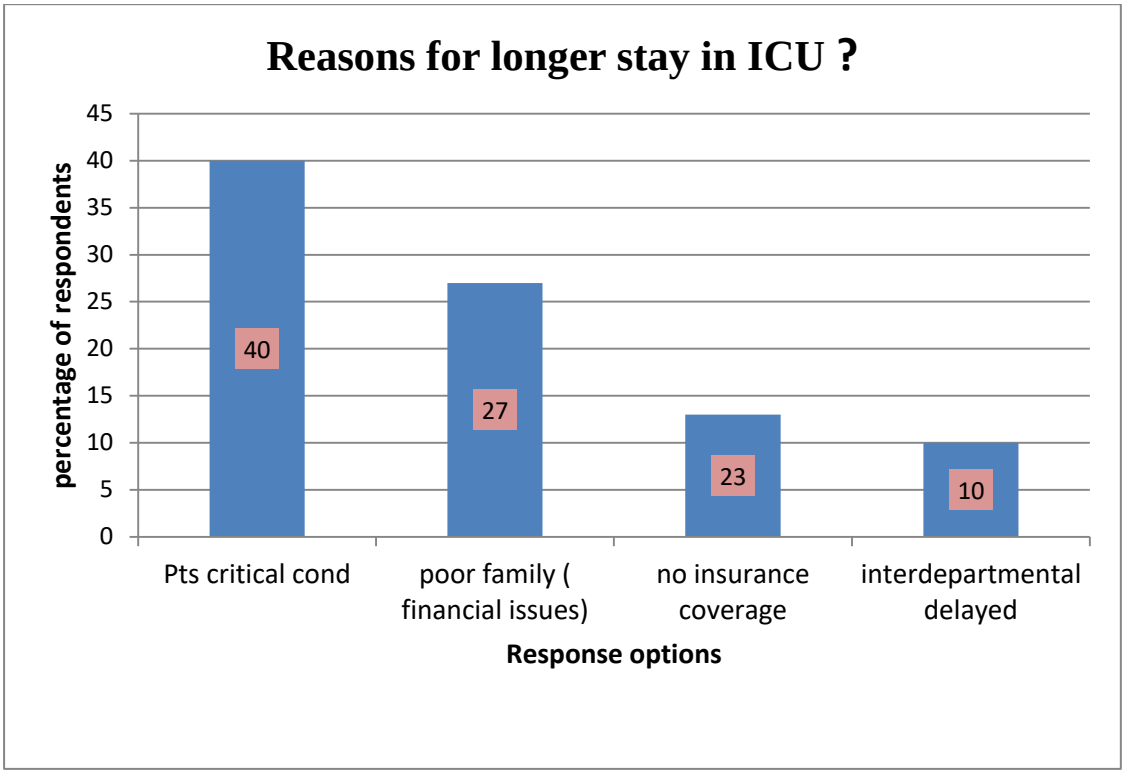
8. asked that patient or their relatives advised or guided regarding cost of all available line of treatment ?



for this 95 percent answered option (a) Always . This is the most important piece of information concerned to patient as this is not only their right to know but also to prevent situations like LAMA .Many times critical situations or longer stays in ICU due to unstable conditions of patient resulting in heavier expenses unaffordable by some families , for some higher out of pocket expenditures due to not all procedures covered in insurance plans .

9. Major reason for longer stays in icu was ?

   Patient critical condition , Financial crunches faced by poor family , No Insurance coverage (higher out of pocket expenditure) , Hospital operations delayed due to weker inter departmental communications



40 percent respondents thought that the primary reason for longer stay in ICU is the condition of patient , 27 percent views the financial problem on family side to clear bills , 18 percent because of no insurance coverage and 10 percent due to inter departmental delays in communicating the information timely .

DISCUSSION

Discharge from an ICU is usually done to a general ward when doctors consider that the patient no longer requires such an intensive treatment or constant observations of vitals or longer nursing care .Patient discharged from the ward when doctor observes that patient is fit enough to look after themselves without nursing care .

To effectively and efficiently achieve this requires lot of efforts :-

a) Coordination among Intensivist ,treating doctors (physicians , surgeons , cardiologists etc.) , nursing staff , infection control team ,ground duty assistants . cleaners etc

b) Most important at every level is – Communication . Communication while transferring to ward , communicating to pharmacy stores for medications , communicating to accounts department for billing and discharge and also others connected with providing utmost patient care .

c) Keeping all the staff up to date regarding better and newer practices through training and development at regular intervals .

d) All equipments , instruments , monitors , stores supply and other necissities related to patient care .

Discharge process observed from the time patient admitted in the icu and entered the details in observation data sheet prepared to track well the movement of patient from icu to ward to home alongwith dates and time . all patients in icu were included (convenience sampling method). 50 patients observed for three months time frame fro 1 feb 19 to 30 apr 19 , out of 50 , 20 were discharged directly from the icu and these included deaths as well as

LAMA patients , 30 were transferred to wards and later discharged to home fulfilling all criteria laid down in policy (as shown in table 1) .

Average length of stay for icu was found to be 2.8 days and alos for hospital was 4 days.

These calculations came through the formula ALOS = No. of in-patient days in icu / No. of discharges . Total inpatient days came to be 128 days for icu and number of discharges were 45 , and total no. of inpatient days for hospital were 180 days .

Table 2 AVERAGE LENGTH OF STAY OF ICU

No. of inpatient days in icu	128
No. of discharges	45
ALOS	2.8

Table 3 ALOS OF ICU PTS . IN HOSPITAL (ICU + WARD)

No. of inpatient days	180
No. of discharges	45
ALOS	4

CONCLUSION

- . Gaps found in the discharge process of icu patients were of two types :

  Controllable and uncontrollable reasons

- Controllable Reasons :
  - ✓ Prior intimation about patient's discharge (proper communication)
  - ✓ Wards bed availabilty (process flow)
  - ✓ TPA claim clearance (cashless process)
  - ✓ Financial problem of family – bills not cleared timely
- Uncontrollable reasons :
  - ✓ Critical conditions of patient

But with 5 deaths in three months and 6 LAMA cases still there is a pavement requiring continuous quality improvement plans and there implementation towards better results.

ICU patients are a heterogeneous group of patients with severe illness, multiple system dysfunctions and multiple coexisting medical problems , so requires more professional and skilled staff (various superspecialty doctors , nurses , paramedical staff etc).

Also , hiring of more trained staff who can provide best services as well as train other junior staff to produce better work outputs . this all together will result in best utilization of highly expensive facilities of ICU with reduction in mortality and morbidity .

A systematic evaluation of discharge process and average length of stay in ICU and in Hospital provides practical and operational information to be utilized for changes or corrective actions towards achievement of fair ICU utilization .

RECOMMENDATIONS

As observed during this study 6 LAMA cases , reasons for that were few patient had financial issues to avail out of pocket expenditures , fewer had not enough insurance coverage to settle bills for longer stays , so , CORPORATE SOCIAL RESPONSIBILTY could be thought of and hospital could try to engage themselves with surrounding business firms or industry for supporting the cause of healthy nation (helping poor people , or helping in prevention of families becoming poor just settling hospital bills .

INSTRUMENTATION

1. OBSERVATION DATA SHEET

S.no.	Ipd no.	Date of admission in ICU / time	Name of patient / Age /Sex	Diagnosis	Consultant	Date of discharge from ICU / time	Date of discharge from ward or hospital / time	Length of stay in hospital
1. 2. 3 4 5 6 7								

2. QUESTIONNAIRRE

1. What majorly decides for patient discharge from ICU ?

a) Hospital policy's discharge criteria

b) Consultant's knowledge and experience regarding patient condition

c) Both

d) None

2. How patient is handed over to wards or discharged from hospital ?

a) Written discharge form sent with patient

b) Verbal handover between ICU Nurse and ward nurse

c) Consultant decides and ICU nurse take charge

d) All of above

3. Are the patients monitored in wards post discharge from ICU ?

a) Yes , by Intensivist

b) Yes , by Consultant doctor

c) Yes , by ICU nurse

d) Other or none

4. Is there any procedure to measure average length of stay ?

a) Yes

b) No

c) Not aware

d) There but not follows

5. Patient and their relatives given explicit information regarding expected discharge date ?

    a) Always

    b) Usually

    c) Sometimes

    d) Never

6. Is there information provided regarding aftercare of patients post discharge or available care arrangements through hospital ?

    a) Always

    b) Usually

    c) No

    d) Sometimes

7. While discharge what is important information to be known for patient and their relatives ?

    a) Current list of medications to follow with dosages, timings

    b) Homecare instructions for ex. Any physical exercise or physiotherapy sessions , nursing care requirements etc.

    c) Follow up schedule visits

    d) All of above

8. Advised or guided regarding cost of all available line of treatment ?

    a) Always

    b) Sometimes

c) Never

d) Patient asks then

9. Major reasons for longer stay in icu was ?

a) Patient critical condition

b) Financial crunches faced by poor family

c) No Insurance coverage (higher out of pocket expenditure)

d) Hospital operations delayed due to weker inter departmental communications

ANNEXURE

1. CHECKLIST

NAME OF THE PATIENT

CONSULTANT NAME

ICU BED NO.

UHID NO.

DATE OF ADMISSION TO ICU

DATE OF DISCHARGE FROM ICU

REASON FOR ADMISSION

S.NO	Discharge CHECKLIST	YES	NO	REMARKS
1.	Admission form			
2.	Discharge summary			
3.	General Consent form			
4.	Initial assessment			
5.	Progress notes			
6.	Surgical safety checklist			
7.	Informed consent form			
8.	Blood sugar charting			
9.	Vital signs record			
10.	Nursing assessment sheet			
11.	Pain assessment and mang			

12.	Venous access documentation			
13.	Medication administration record			
14.	Input and output chart			
15.	Nutrition assessment form			
16.	Blood transfusion flowsheet			
17.	Investigation report			
18.	Copy of bill			
19.	Bill paymnentreciept			
20.	Misc. form (TPA, LAMA, MLC, DEATH certificate)			

NAME AND SIGN OF DISCHARGE NURSE

DATE AND TIME

BIBLIOGRAPHY

1. www.aci.health.nsw.gov.au
2. www.ncbi.nlm.nih.gov
3. www.https://bmjopen.bmj.com
4. https://journals.lww.com
5. Study material of IIHMR , Delhi
6. Duke GJ , Green JV , Briedis JH: Night shift discharge from intensive care unit increases the mortality –risk of ICU survivors . Anaesth Intensive Care 2004; 32:697-701
7. Hananet , Keegan MT , Seferian EG et al ; The association between night time transfer from intensice care unit and patient outcomes . Crit Care Med 2008;36:2232-2237
8. LauplandKB ,MissetB , SouweineB et al : Mortality associated with timing of admission to and discharged from ICU: A retrospective cohort study . BMC Health Serv Res 2011;11:321
9. LauplandKB ,Shahpori R , Kirkpatrick AW, et al: Hospital mortality among adults admitted to and discharged from intensive care on weekends and evenings, J Crit Care 2008; 23:317-324
10. Pilcher DV , Duke GJ , George C , et al: After hours discharge from intensive care increases the risk of readmission and death. Anaesth Intensive Care 2007;35:477-485

11. Singh MY, NayyarV , Clark PT , et al : Does after hours discharges of ICU patients influence outcome? Crit Care Resusc2010 ; 122:156-161

12. Tobin AE, SantamariaJD; After hours discharges from intensive care are associated with increased mortality . Med J Aust2006;184:334-337

13. da Silva MC, de Sousa RM ,Padilha KG : Patient destination after discharge from intensive care umits : Wards or intermediate care units? Rev Lat Am Enfermagem 2010 :18 ;224-232

14. Adkins EJ ,Huet JD , Rahmanian S, et al : Clinical factors associated with step down unit request at ICU discharge .American Journal of Respiratoryand Critical CareMedicine , 2010

15. Su J ,Lin CY, Chen PJ . et al: Experience with a step down respiratory care centre at a tertiary referral medical centre in Taiwan. J Crit Care 2006;21:156-161

16. Jung RS ,SilaC , FurlanAJ , et al : Impact of a new neuroscience intermediate care unit on acute stroke care : Quality , cost and nursing productivity. In : 2011International Stroke Conference. Vol. 42, Los Angeles, CA, Stroke , 2011, e342

17. Brown SE ,Ratcliffe SJ , Kahn JM , et al : The Epidemiology of intensive care unit readmissions in the United States. Am J RespirCrit Care Med2012 ; 185:955-964

18. TimmersTK ,Verhofstad MH , Moons KG , et al :Patients characteristics associated with readmission to a surgical intensive care unit. Am J Crit Care 2012 ; 21; e 120-128

19. Elliott M ,Worrall – Carter L, Page K : Factors contributing to adverse events after ICU discharge : A survey of liason nurses. AustCrit Care 2013;26:76-80

20. Levin PD ,Worner TM , Sviri S , et al: Intensive careoutflow limitation – frequency, etiology and impact . J Crit Care 2003; 18:206-211