

**Summer Training at
Fortis Escorts Hospital,
Jaipur**

- **Process Mapping and Turn Around Time for Discharge Process.**
- **Process Mapping of Operation Theatre and Gap Analysis of Operation Theatre According to Green OT Requirements**
- **Gap Analysis of Imaging Services According to NABH Standards.**
- **SOP Formulation & Implementation for Stroke Assessment**

**By
Priyanka Kundrai**

**Under the guidance of
Dr. Barun Kanjilal**

**MBA Hospital and Health Management
2015-2017**



**The IIHMR University, Jaipur
2016**

CERTIFICATE

TO WHOMSOEVER MAY CONCERN

This is to certify that Dr Priyanka Kundrai student of MBA Hospital and Health Management from The IIHMR University, Jaipur has undergone internship training at Fortis Escorts Hospital, Jaipur from 1st April to 1st June 2016

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.



Dr. Ashok Kaushik
Dean, Academics and Student Affairs
The IIHMR University, Jaipur



Dr. Barun Kanjilal
Professor
The IIHMR University, Jaipur

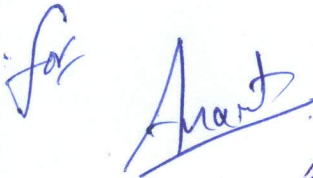
20th June, 2016**TO WHOMSOEVER IT MAY CONCERN**

This is to certify that **Dr. Priyanka Kundrai** worked as a **Trainee** with us in the **Dept. of Quality Assurance** from 1st April, 2016 to 1st June, 2016.

Her performance during the period in the department was good, we would like to acknowledge her for contribution towards SOP formulation for stroke patient.

She comes across as a willing, sincere and intelligent person who has a strong drive and zeal for learning.

We wish her the best for all her future endeavors.

**Authorized Signatory**

ACKNOWLEDGEMENTS

We have taken efforts in this project. However, it would not have been possible without the kind support and help of many individuals and organization. We would like to extend our sincere thanks to all of them.

We are thankful to **Mr Prateem Tamboli, Facility Director of Fortis Escorts Hospital, Jaipur** for letting us do our summer training from this reputed organization.

My institute – **Indian Institute of Health Management Research (IIHMR), Jaipur** & its Education deserves the foremost appreciation for providing me the opportunity to understand my individual capabilities. I would like to thank **col. (Dr.) Ashok Kaushik (Dean Academics and student Affairs, IIHMR, Jaipur)** to provide such a great learning opportunity. Of course, entire faculty at IIHMR had facilitated the endeavor; I also acknowledge the contribution of my college mentor **,Dr. Barun Kanjilal sir** without whom I would have never reached this stage & also her prominent role in completion of the project, I would also like to thank **Mr.Hem K Bhargava (DY. General Manager, Corporate Academics)** without whose facilitation en route Fortis would not have been possible.

I take this opportunity to express my gratitude and deep regards to my Organizational Mentor for her exemplary guidance, monitoring and constant encouragement throughout the course of this internship **Ms. Nihar Bhatia (Head Quality Assurance & FOS Department)**. I would like to extend my thanks for her support & guidance. My heartfelt gratitude goes to **Ms. Arpita Roy, Ms. Nidhi Jain, Ms. Reema Saini (Quality Assurance & FOS Department)**.

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ABBREVIATIONS

- F & B – Food and Beverage
- USG-Ultrasound
- FEHJ-Fortis Escorts Healthcare Limited
- GE-Gastroenterology
- FD-Facility Director
- MS-Medical Superintendent
- FOS-Fortis Operating System
- QA-Quality Assurance
- CTVS-Cardio Thoracic Vascular Surgery
- HOD- Head of Department
- ENT-Ear Nose Throat
- CSSD-Central Sterile Supply Department
- SICU-Surgical Intensive Care Unit
- NICU-Neonatal Intensive Care Unit
- LDR-Labor and Deliver
- OT-Operation Theater
- HDU-High Dependency Unit
- MICU-Medical Intensive Care Unit
- CCU-Cardiac Care Unit
- HR-Human Resource
- MRD-Medical Records Department
- IT-Information Technology
- PWD-Patient Welfare Department
- GI-Gastrointestinal
- NGW-Neuro General Ward
- OPD-Out Patient Department
- IPD-In Patient Department
- PICU- Pediatric ICU

HOSPITAL PROFILE

Fortis Healthcare is India's fastest growing healthcare chain, with state-of-the-art facilities and an unparalleled commitment to patient care. Fortis Escort Healthcare Limited (FHL) is founded on the vision of becoming an integrated Healthcare Delivery Organization driven by quality, excellence, technology and compassionate care. FHL, one of the largest private healthcare companies in India, has one of its hospitals in Jaipur as Fortis Escorts Hospital, Jaipur. (FEHJ) which specializes in cardiac sciences, neurosciences, renal sciences and gastrointestinal diseases. The hospital also provides superior services in mother and childcare, orthopaedics and also a complete range of multi-specialty services in all disciplines.

JaM JaA JeE → Good day = ‘Good **M**orning / Good **A**fternoon / Good **E**vening’ – Greeting for Fortisians

FEHJ has dedicated facilities for comprehensive care of trauma patients and others in need of emergency care. FEHJ is the first amongst the proposed multi super specialty hospitals to be set up in Rajasthan. FEHJ is the first hospital in the country to attain NABH Accreditation in minimum stipulated time after commencement of operations and was re-accredited on 27th April 2011.

Specialties- Cardiology & Cardiac Surgery, Renal Sciences, Neuro Sciences, Gastro-Intestinal sciences, Orthopedics & Joint Replacement , Diabetes & Endocrinology, Dermatology, Internal Medicine, Pulmonary, Medicine, Ophthalmology, Dietetics, Physiotherapy and Preventive Health Check, General Surgery, Dental Surgery, Cosmetic & Plastic Surgery, ENT, Gynecology & Obstetrics, Pediatrics & Neonatology.

BRIEF HISTORY:-

Dr. Parvinder Singh was a visionary, a strategist, a thinker, an entrepreneur and leader par excellence. A rare personality, who always thought beyond his time and realized many of his dreams in a short span of life. FHL was formed with the sole objective of providing integrated healthcare by establishing a state-of-the-art health delivery system. The vision of the company is to become the most revered healthcare service provider in India. “Team Fortis” is committed to meet all healthcare needs of its clientele, starting from maintenance of good health to providing global standards in diagnostics, Therapeutic and Surgical requirements at the time of need. It aims to exceed customer expectations in terms of quality, service, safety and value for money through constant innovation and better product delivery. Jaipur, Aug 2, 2007 - Fortis Healthcare Ltd, one of the largest private healthcare companies in India, Thursday announced a multi-specialty hospital at Jaipur as part of its initiative to expand its operations in Rajasthan . The then Chief Minister, Mrs. Vasundhara Raje inaugurated the Fortis Escorts Hospital Jaipur (FEHJ) in the presence of Mr..Malvinder Mohan Singh, Chairman, Fortis Healthcare, Mr. Shivinder Mohan Singh, CEO and MD, Fortis Healthcare, besides other dignitaries and company officials.

FORTIS LOGO:-



The two hands that fuse seamlessly with a human form, express their re-assuring approach to health care. A constant reminder to all that patients centric care is fundamental to our ethos.

GREEN is the color of healing and is symbolic of Fortis’s steadfast focus to ensure the health and well being of those they minister to.

RED is expressive of the dynamic zeal with which Fortis strive to make it a reality

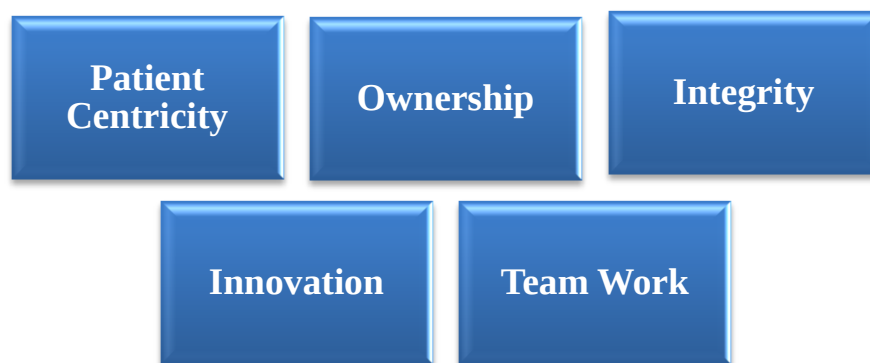
The Fortis logo is the indelible assurance that there expertise will always be tempered with humanity.

Fortis Escorts hospital ,Jaipur has its own vision, values. These are:

VISION OF THE HOSPITAL:

"To create a world-class integrated healthcare delivery & learning system in India, entailing the finest medical skills combined with compassionate patient care".

FORTIS VALUES:-



FORTIS GROUP:

Founder Chairman: Late Dr. Parvinder Singh

Executive Chairman: Mr. Malvinder Mohan Singh

India CEO: Mr. Bhavdeep Singh

Fortis Jaipur inaugurated on 2nd August 2007

No. of beds – Currently: 245

NABH accreditation received in June 2008 (within 10 months of operations, NABL & Blood Bank).

LOCATION:

The access to the hospital is very easy. The hospital is located on JLN Marg road, Jaipur. The address of the hospital is:

Fortis Escorts Hospital, Jaipur

Jawahar Lal Nehru Marg,

Malviya Nagar,

Jaipur- 302107

Rajasthan, India

Tel: 91-141-2547000

AREA:

Spread over 6.68 acres with an investment of Rs. 1.10 billion, it has an operational bed facility of 245 beds with an installed bed capacity of 300 beds

NUMBER OF DEPARTMENTS:

There are Clinical and Non clinical departments. The detailed information about each department visited is given as under.

Clinical Department:

1. Cardiac Surgery
2. CTVS
3. Cardiology
4. Renal Science
5. Nephrology

10

6. Urology

7. Neurology

8. Neuro Surgery

9. Gastro Intestinal Diseases

10. Internal Medicine

11. Pulmonology

12. Endocrinology

13. Dermatology

14. Psychiatry

15. General Surgery

16. Plastic Surgery

17. Pediatric Surgery

18. Obstetrics

19. Gynecology

20. Pediatric

21. Neonatology

Non clinical departments:

1. Engineering

2. Biomedical Engineering

3. Finance

4. Marketing

5. Human Resource

11

6. House keeping

7. Laundry

8. Pharmacy

9. Medical Records

10. Food & beverages

11. Security

12. Central stores

13. Quality Assurance

14. Research

15. Patient Welfare Department

16. Information Technology

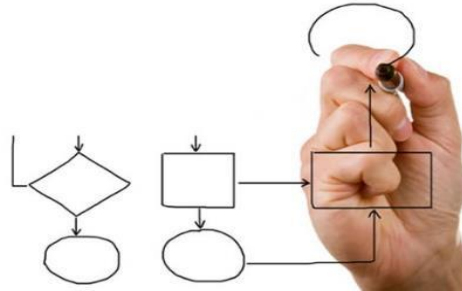
PROJECT I

❖ Process Mapping and turn around time for discharge process.

PROCESS MAPPING

What Is A Process Map?

A Process Map is a graphical representation of the steps involved in a process or portion of process.



Mapping patient journeys is an essential tool to reduce delays and highlight improvements for patients and staff. Each step reveals a different perspective.

Steps in process mapping will reveal:

- Unnecessary delays
- Unnecessary steps / unnecessary handovers
- Duplication of effort / waste
- Things that don't make sense / not logical
- Likely hotspots, bottlenecks or constraints

By the use of process mapping , one will be able to:

- Identify bottlenecks and constraints
- Identify and understand variations in clinical practice
- Develop a shared understanding of the problem
- Build teams
- Identify issues to do with quality of care
- Gain an in-depth understanding of a patient's perspective
- Identify steps that don't directly contribute to patient care (those that contribute are sometimes called value added steps)

- Carry out capacity and demand analysis from core information

Mapping things out can also produce brilliant ideas; especially from staff who don't normally have the opportunity to contribute to service improvement, but really know how things work.

Benefits of Process Mapping

- Ability to visually understand and document a process
- Ability to take a holistic view of process objectives
- Develop true “buy-in” from employees
- Develop a sense of pride among employees
- Create customer-focused processes

Review of Literature

According to Timothy M Trebble, consultant gastroenterologist (15 July 2010), process mapping enables the reconfiguring of the patient journey from the patient’s perspective in order to improve quality of care and release resources. This paper provides a practical framework for using this versatile and simple technique in hospital.

Healthcare process mapping is a new and important form of clinical audit that examines how we manage the patient journey, using the patient’s perspective to identify problems and suggest improvements. We outline the steps involved in mapping the patient’s journey, as we believe that a basic understanding of this versatile and simple technique, and when and how to use it, is valuable to clinicians who are developing clinical services. Process mapping allows us to “see” and understand the patient’s experience by separating the management of a specific condition or treatment into a series of consecutive events or steps (activities, interventions, or staff interactions, for example). The sequence of these steps between two points (from admission to the accident and emergency department to discharge from the ward) can be viewed as a patient pathway or process of care. Improving the patient pathway involves the coordination of multidisciplinary practice, aiming to maximize clinical efficacy and efficiency by eliminating ineffective and unnecessary care. The data provided by process mapping can be used to redesign the patient pathway to improve the quality or efficiency of clinical management and to alter the focus of care towards activities most valued by the

patient. Process mapping has shown clinical benefit across a variety of specialties, multidisciplinary teams, and healthcare systems.

According to Phillips J, Simmonds L, both at University Hospitals Birmingham Foundation Trust, analyses how process mapping can be used to show how processes are currently carried out and identify any changes that may improve the patient experience. A process is a series of connected steps or actions that achieve an outcome (III, 2008). Process mapping can be used to document the steps of any process or pathway, whether at a high or more detailed level.

Taylor and Randall (2007) describe process mapping as a simple but powerful tool to unpick the many layers to both service processes and patient pathways, which involve a number of staff in different roles and departments. It is a valuable method of identifying issues, developing solutions and enabling interdisciplinary teamwork (Taylor and Randall, 2007).

Many clinical pathways are complex in nature, which makes it difficult to clearly identify the issues or problems that affect their efficiency and the patient experience. As Kerridge (2012) noted, it is often difficult to pinpoint exactly what is wrong and use this information to develop a solution to put it right.

Using a process map makes the pathway more transparent as each step is described, making it easier to highlight the problems and propose solutions. Having a map also prevents assumptions being made about the problems, which can result in solutions that do not address the actual issues.

Process mapping is a valuable and useful way for teams to reflect on the way they work, diagnose and understand problems and identify areas where they can improve. Creating a visual representation of the steps involved in a clinical pathway enables everyone involved to see the overall picture.

A key to successful process mapping is seeking clarification for the reasons behind a step or decision made during the clinical pathway. A useful technique for obtaining more detailed responses when talking to those involved is using the “5Ws and 1H”, which refers to open questions starting with why, what, when, who, where or how. It can also be beneficial to map a process that is unfamiliar as it averts the temptation to make assumptions about the pathway

or process. By working out how things are done currently, the team can reflect and decide what the ideal clinical pathway should be.

A successful process mapping exercise should reveal:

- Unnecessary steps, handovers, delays;
- Any waste - duplication of effort;
- Things that do not add value to the patient journey;
- Bottlenecks and constraints;
- Unhelpful variation;
- Potential to create safer care;
- Understanding of the patient experience;
- Where further analysis is required (NHS III, 2008).

It is important to communicate with a service, department or staff group before starting any process-mapping exercise, particularly if a service improvement team, or someone who is not part of the team running the service in question, leads the exercise. It is essential for teams to feel involved with the improvement process because it will be up to them to deliver any changes the process shows are necessary.

Involving staff can be done in the form of a briefing session, task and finish group or informal discussion with staff, all of which are good opportunities to seek the team's views on current practice and any issues they are already aware of. The aim is to inform staff, seek engagement in the process and mutual acknowledgement that the patient is the focus of any service or clinical pathway review. This is vital because process mapping and outcome feedback can cause anxiety and defensiveness and can be interpreted as judgment and criticism if not handled sensitively.

- Observational process mapping

Observational process mapping involves observing the clinical pathway first hand so the observer can note patients' experiences while mapping the pathway; "go and see for yourself" is a useful message.

When using observational process mapping it is important to capture the patient's perspective without preconceived ideas (NHS III, 2008). The observer should try, where possible, not to

intervene in the steps of the clinical pathway. For example, if a patient arrives in a department and is not greeted immediately by a receptionist or nurse, the role of the observer is not to initiate communication, but to wait with the patient to see what happens “in reality”. This, however, should be balanced with a duty of care to ensure the patient is not adversely affected by this passive approach.

- Conventional process mapping

Conventional process mapping involves bringing together a range of people who represent different roles and functions associated with the clinical pathway.

The group is involved in mapping the pathway using a table-top exercise where everyone has opportunity to discuss the steps taken through the pathway from their perspective. The overall outcome is the same as observational process mapping; a visual representation of the steps is produced but this is without the patient’s perspective unless a patient is involved in the mapping exercise.

- Spaghetti diagram

A spaghetti diagram is a helpful tool to establish the optimum layout of a department or ward based on the distances travelled by patients or staff.

These diagrams often expose inefficient layouts and can identify large, unnecessary distances that patients need to travel between stages in the pathway (NHS III, 2008). The simplest way to create a spaghetti diagram is to draw a simple map of a layout, then lines indicating flows. The diagram can be used to redesign a process by showing how the flow can be improved or reduced.

- Basic flowchart symbols

Numerous software programmes can be used for mapping processes, some of which are free. Although these are useful they are not essential; most process maps can be written up using Microsoft Word or Excel. There are some standard basic flowchart symbols used to identify specific activities in the map

- Analysing the pathway/process

On completing the observational or conventional process-mapping exercise and write-up, the problems and possible solutions often become self-evident. However, the following questions may be useful to assist with analysis (NHS Institute, 2008):

- How many steps does the patient have to complete and are they all necessary?
- How many times is the patient passed from one person to another?
- How long does each step take and what is the time between steps?
- How long does the whole pathway take?
- What are the delays - do they occur regularly?
- Where are there problems for patients and staff?

Process mapping is a vital tool used in service improvement to clearly understand each step of a clinical pathway or process.

Patient pathways often result from the evolution of complex pathways that may not always be as efficient as they could be and do not offer the best care in terms of patient experience.

Mapping a process is useful as it offers, often for the first time, an objective, visual representation of the patient journey highlighting the problems; this activity often generates solutions. There are two methods of process mapping: observational, involving first-hand experience of the patient's journey by following the patient; and conventional process mapping, that is, a table-top exercise involving all stakeholders who map out each step.

Process mapping can be used not only to map existing practice, but also to evaluate the impact of the change project. A spaghetti diagram can be used to demonstrate distances travelled in a department and establish the most efficient layout

DISCHARGE PROCESS

Definition

Discharge from the hospital is the point at which the patient leaves the hospital and either returns home or is transferred to another facility such as one for rehabilitation or to a nursing home. Discharge involves the medical instructions that the patient will need to fully recover. Discharge planning is a service that considers the patient's needs after the hospital stay, and may involve several different services such as visiting nursing care, physical therapy, and home blood drawing.

Hospitalization is often a short-term event, so planning for discharge may begin shortly after admission. The physicians, nurses, and case managers involved in a patient's care are part of an assessment team that keeps in mind the patient's pre-admission level of functioning, and whether the patient will be able to return home following the current hospital admission. Information that could affect the discharge plan should be noted in the patient's medical record so that it will be taken into account when discharge is being scheduled. The primary questions include:

- Can this patient return to his or her preadmission situation?
- Has there been a change in the patient's ability to care for him- or herself?
- Is the patient in need of services to be able to care for him- or herself?
- Which services will the patient need?
- Are there mental health needs that must be met?
- Does the patient agree with the discharge plan?

While a person has been in the hospital, physicians other than the primary care physician have been in charge of the patient's care. Good discharge planning involves clear communication. The information to be conveyed includes:

- a summary of the hospital stay
- a list of test and surgeries performed, with results
- a list of test results still pending

- a list of tests needed after discharge, such as a repeat chest x ray
- a list of medications the patient is being discharged with, including the dosage and frequency
- a copy of the patient's discharge instructions
- when the patient should see the primary care physician for a follow-up appointment
- the plan for outpatient treatment, such as home intravenous antibiotics or parenteral nutrition to ensure that responsibility for this treatment has been clearly transferred and that the primary care physician accepts the treatment responsibility
- discharge instructions to the patient on activity level, diet, and wound care

Appropriateness for discharge

The medical necessity of continued hospitalization is primarily determined by the presence of an acute health condition of sufficient severity that on-going diagnostic or therapeutic intervention, or careful monitoring, is required.

However, patients often appropriately remain in the hospital when these criteria are not met, due to the lack of a suitable alternative setting to provide necessary care or other social factors.

Premature discharge or discharge to an environment that is not capable of meeting the patient's medical needs may result in hospital readmission. In addition, early hospital discharge may not lead to overall cost-savings if it results in need for more intense subsequent healthcare utilization, including emergency department or nursing facility visits, as indicated by one observational study comparing patients who received hospital care from a primary care physician with care by a hospitalist.

Determining the post-discharge site of care

When it has been determined that a patient is medically ready for discharge, the health care team must determine the most appropriate setting for on-going care. Determinants of the appropriate site of care involve medical, functional, and social aspects of the patient's illness. The patient's acute and chronic medical conditions, potential for rehabilitation and decision-making capacity must be taken into account .

Input is needed from multiple sources to determine the most suitable discharge plan. Involved parties often will include the patient, family, case manager, nurse, physician, physical and occupational therapist, social worker, and insurer.

In order for the patient to be deemed safe and ready for discharge to home or to a non-acute environment (rehabilitative, transitional, or chronic care), a provider must take into account a number of factors beyond the medical determinants. These factors include:

- Patient cognitive status
- Patient activity level and functional status
- The nature of the patient's current home and suitability for the patient's conditions (e.g., presence of stairways, cleanliness)
- Availability of family or companion support
- Ability to obtain medications and services
- Availability of transportation from hospital to home and for follow-up visits
- Availability of services in the community to assist the patient with on-going care

Discharge home

Approximately three-quarters of hospitalized patients are able to return to their home environment following discharge. For discharge home, patients, with help from family or other caregivers if available, should be able to:

- Obtain and self-administer medications
- Perform self-care activities
- Eat an appropriate diet or otherwise manage nutritional needs
- Follow-up with designated providers

Specific insurance benefits and availability of services in the community may also influence whether or not the patient may be safely discharged home. Home services, such as visiting nurses or infusion providers to administer intravenous infusions, may allow selected patients, who would otherwise need nonacute residential care, to manage their care needs at home.

Discharge to another care facility

If discharge to the outpatient setting is not appropriate, the team must then arrange transfer to another inpatient facility for on-going care. Determining the most appropriate inpatient

setting of care for on-going treatment involves determining the patient's needs and matching needs with the capabilities of potential sites of care.

One model to help accomplish this involves assessing a set of parameters that describe generic clinical characteristics (medical and surgical issues, mental and emotional status, physical functioning, and environment) that are largely independent of the patient's specific diagnosis.

Once it is decided that discharge to an alternate facility is necessary, referrals are made to facilities that are felt to be potentially appropriate, and the patient is screened for acceptance. The patient must consent to transfer to an accepting facility; if the patient or family declines, then negotiation ensue to find an acceptable discharge placement.

ELEMENTS OF THE DISCHARGE PROCESS

✓ *Discharge planning*

Discharge planning is the development of an individualized discharge plan for the patient prior to leaving the hospital, to ensure that patients are discharged at an appropriate time and with provision of adequate post-discharge services . Such planning is a mandatory part of hospital accreditation .

Discharge planning is a complex process that seeks to determine the appropriate level of services required by the patient and then match the patient to an appropriate site of care .This process ideally begins at the start of the hospitalization. The hospital case manager should be involved as soon as it is clear that the patient will require services at home, or will require transfer to an alternative level of care.

The impact of discharge planning on outcomes appears to be limited. A 2010 systematic review identified greater patient satisfaction and small decreases in length of stay and readmission rates with discharge planning, while mortality rates were unchanged.

✓ *Medication reconciliation*

Medication reconciliation, or medication review, is the process of verifying patient medication lists at a point-of-care transition, such as hospital discharge, to identify which medications have been added, discontinued, or changed relative to preadmission medication

lists. Performing an accurate medication reconciliation is a critical element of a successful discharge transition. It also provides an opportunity for clinicians to ensure that patients understand what medications they are taking, how to take them, and why they are taking them. Most studies included in a 2012 systematic review showed that medication reconciliation was associated with a decrease in actual and potential adverse drug events. Whether or not medication review reduces post-discharge emergency department visits and readmissions is inconclusive; however, we typically conduct medication reconciliation for each patient that is discharged from the hospital and review the medication list with the patient and/or caregiver.

The first step is having an accurate medication list at hospital discharge, which depends on the following:

- Having an accurate preadmission medication list.
- Having an accurate list of medications being taken by the patient at the time of discharge.
- Having knowledge of what medication changes were made during hospitalization and the reasons for the changes.

Once an accurate discharge medication list is generated, the clinician needs to communicate this information effectively to the patient or and/or caregivers. An observational study of patients aged 64 or older who were discharged home after hospitalization showed that the majority of patients did not understand the new dosing of medications they were taking or the reasons for medication changes . At discharge, nurses had reviewed all medications with the patients, but there was no formal process. This puts patients at increased risk for medication adverse events. In a systematic review of 26 studies, the medication reconciliation process consistently reduced medication discrepancies, as well as actual and potential adverse drug events. The most effective interventions targeted high-risk patients and had intensive pharmacy staff involvement.

Evidence was less robust that medication reconciliation reduces post-discharge emergency department visits and readmissions. A 2013 meta-analysis of five randomized trials of 1186 hospitalized adults, followed for 30 days to one year, demonstrated that medication review did not reduce the risk of hospital readmissions, but did show a 36 per cent relative reduction

in emergency department visits. Medication reconciliation may have a more important impact on the reduction of readmissions due to adverse drug events.

✓ *Discharge summary*

The primary mode of communication between the hospital care team and aftercare providers is often the discharge summary, raising the importance of successful transmission of this document in a timely fashion. Important elements in the discharge summary are:

- The outcome of the hospitalization
- The disposition of the patient
- Provisions for follow-up care including appointments, statements of how care needs will be met, and plans for additional services (e.g., hospice, home health assistance, skilled nursing)

This minimal content should be augmented by information critical to the aftercare providers. Utilizing a template for discharge summaries is helpful to ensure inclusion of relevant information.

Several initiatives involving computer-based innovations to improve the discharge summary process or notification of pending tests at discharge have been explored but issues involving cost and end-user adoption need further consideration. An initiative involving audit and feedback of discharge summaries was successful in improving discharge summary completeness. The Office of the National Coordinator for Health Information Technology (ONC) supported a pilot project to develop standardized data sets for transitions of care between acute and post-acute care sites and to measure the impact of those exchanges on healthcare service utilization.

✓ *Patient instructions*

At the time of discharge, the patient should be provided with a document that includes language and literacy-appropriate instructions and patient education materials to help in successful transition from the hospital.

These documents should be brief, focused on critical information to the patient, and primarily directed at what the patient needs to understand to manage his or her condition after discharge.

One model for patient materials, developed by the National Patient Safety Foundation, is called '*Ask Me 3*':

1. What is my main problem? (i.e., why was I in the hospital?)
2. What do I need to do? (i.e., how do I manage at home, and what should I do if I run into problems?)
3. Why is it important for me to do this?

Discharge information, both written and verbal, should be reviewed with the patient/family caregivers with an emphasis on assessing and ensuring comprehension. In one interview study of patient perception and understanding of discharge instructions, among discharged patients aged >65 years who felt that they had good understanding of their discharge instructions, 40 per cent were unable to accurately describe the reason for their hospitalization and 54 per cent did not accurately recall instructions about their follow-up appointment .

Teach back is a technique by which the provider asks the patient or caregiver to explain the recently taught concept in the patient's own words. This technique permits the provider to identify and correct any misunderstandings in real time, with the intent of preventing adverse events related to inadequate comprehension of discharge information. While the teach back method has been validated in teaching a patient a new skill (e.g., administering insulin or changing a dressing), teach back has not been studied specifically as a mechanism for reducing readmissions.

✓ *Discharge checklist*

Checklists provide an effective mechanism for ensuring that discharge communications (the discharge summary and direct communication with both aftercare providers and patients/families) reliably incorporate all key elements.

Types of Discharges:

- Planned Discharges
- Unplanned Discharges
- Discharge On Request
- Discharge against Medical Advice

Benefits of Effective Discharge:

✓ *For Patients:*

- Needs are met
- Improves patient satisfaction and trust on hospital
- Maximizes patient independence
- Feels part of the care process, an active partner and not disempowered
- Do not experience unnecessary gaps or duplication of effort
- Understand and sign up to the care plan
- Experience care as a coherent pathway, not a series of unrelated activities
- Believe they have been supported and have made the right decisions about their future Care

✓ *For The Carer(s)*

- Feel valued as partners in the discharge process
- Consider their knowledge has been used appropriately
- Are aware of their right to have their needs identified and met
- Feel confident of continued support in their caring role and get support before it Becomes a problem
- Have the right information and advice to help them in their caring role
- Are given a choice about undertaking a caring role
- Understand what has happened and who to contact

✓ *For Staff:*

- Feel their expertise is recognised and used appropriately
- Receive key information in a timely manner
- Understand their part in the system
- Can develop new skills and roles
- Have opportunities to work in different settings and in different ways
- Work within a system which enables them to do so effectively

✓ *For Organisation*

- Resources are used to best effect
- Service is valued by the local community
- Staff feel valued which, in turn, leads to improved recruitment and retention
- Meet targets and can therefore concentrate on service delivery
- Fewer complaints
- Positive relationships with other local providers of health and social care and housing Services
- Avoidance of blame and disputes over responsibility for delays.

Objectives

- Understanding the entire discharge process.
- To know average time consumed in whole process.
- To identify reasons for delay.
- To provide recommendations for improvement.

Study design

Study Design- Observational

Sample Size-100

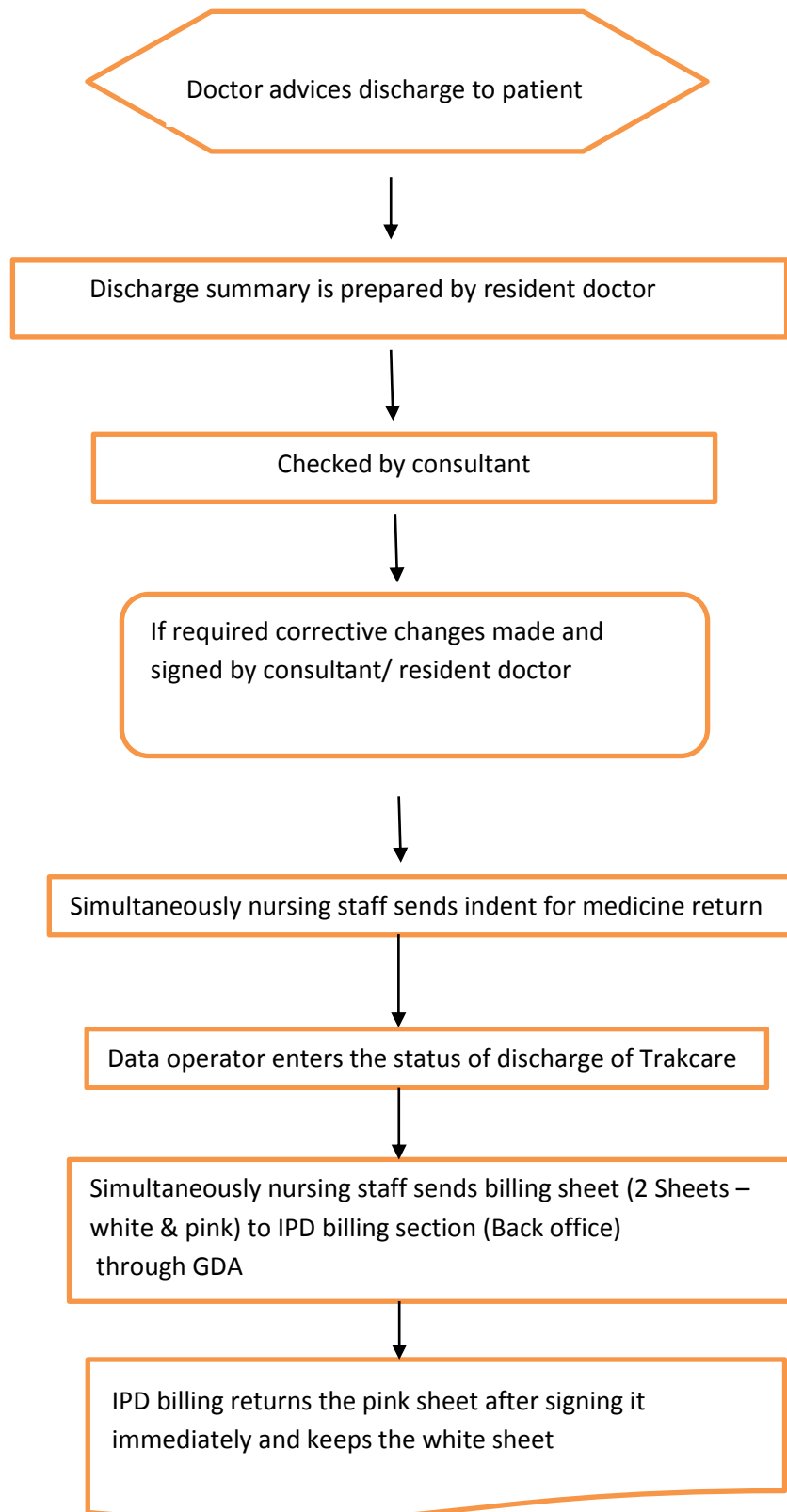
Study location- 3rd floor & 4th floor Fortis Escorts, Jaipur

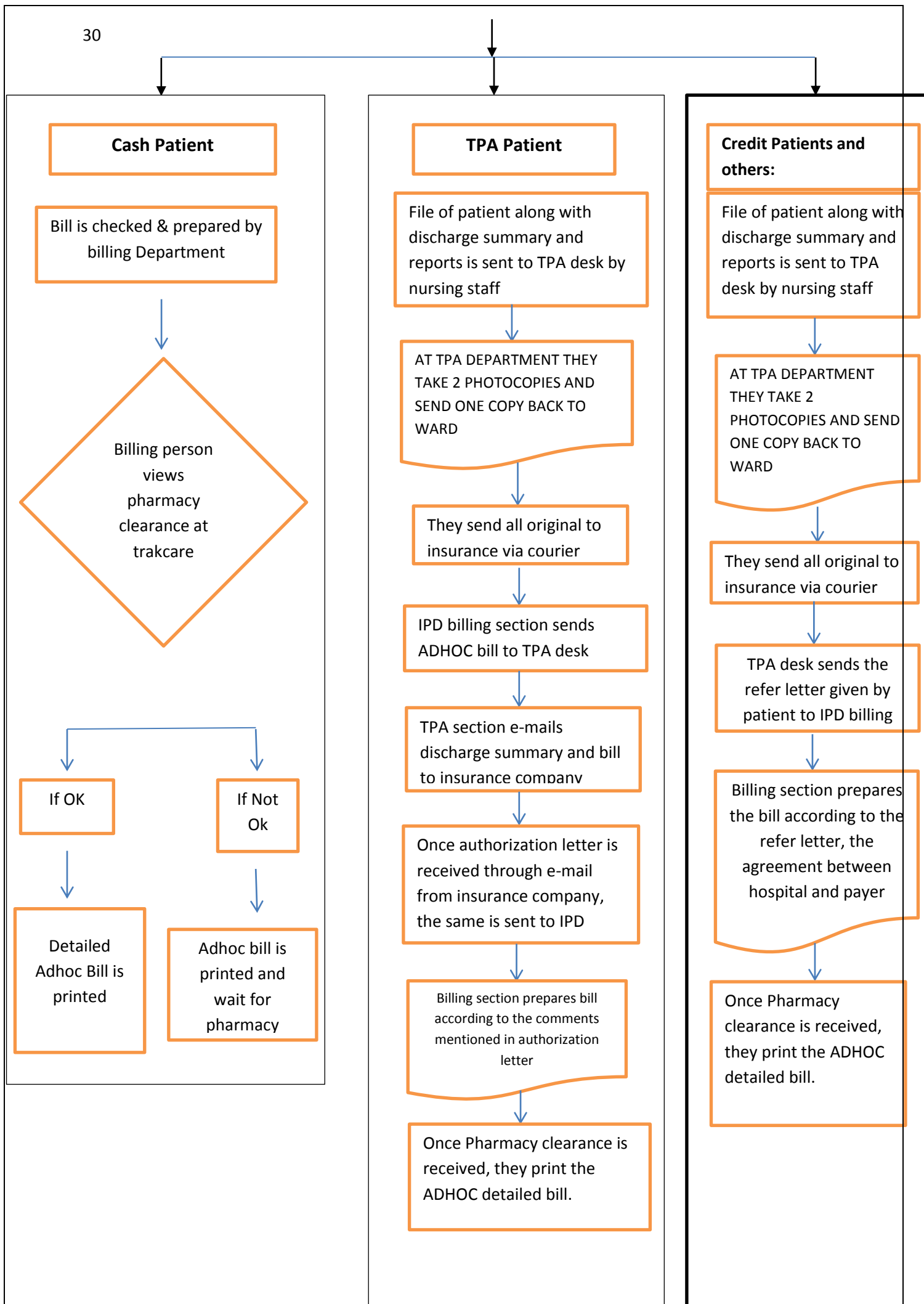
Target Population- Planned & Unplanned Discharges

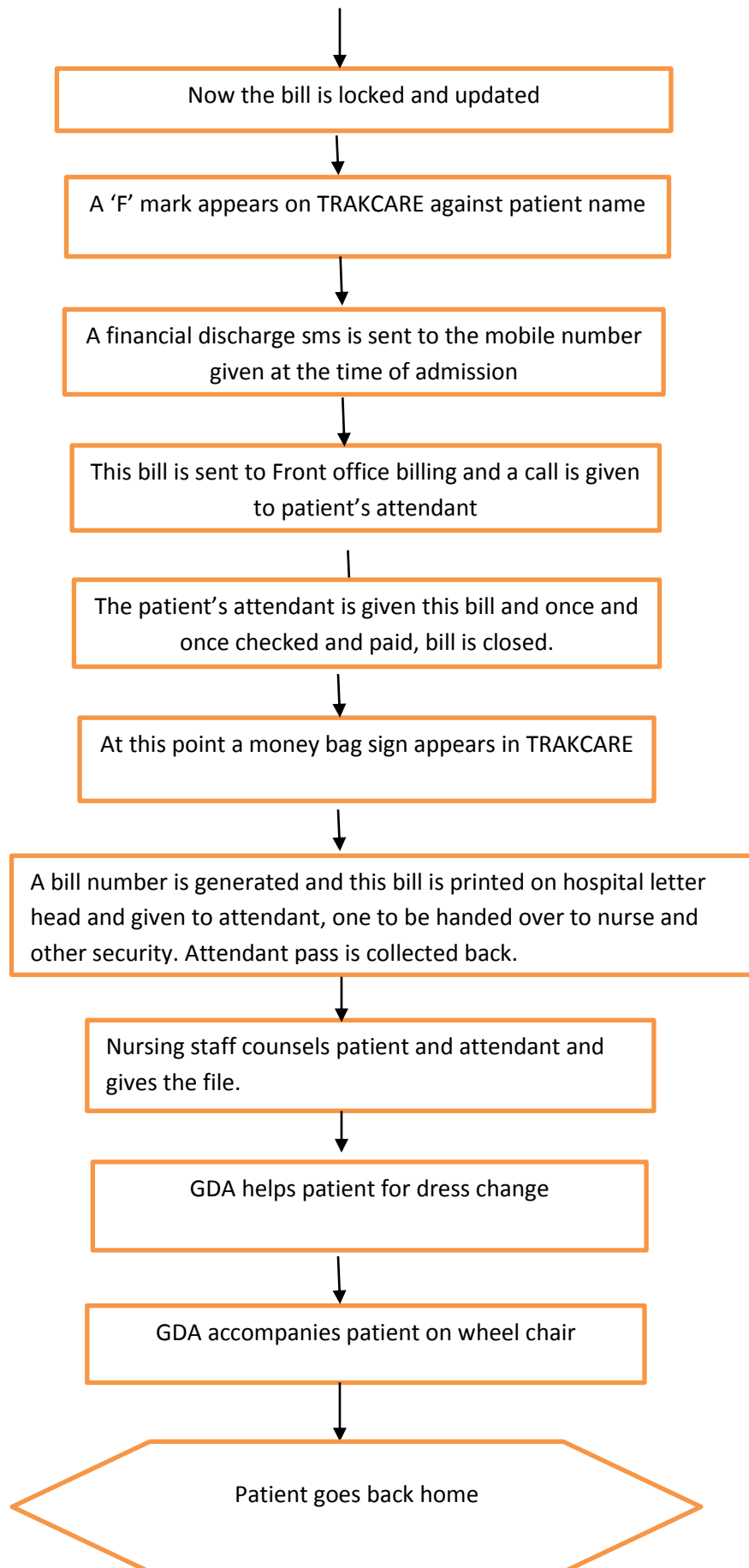
Sampling technique- convenient sampling

Study duration- 2/04/16- 19/04/16

Discharge Process Mapping





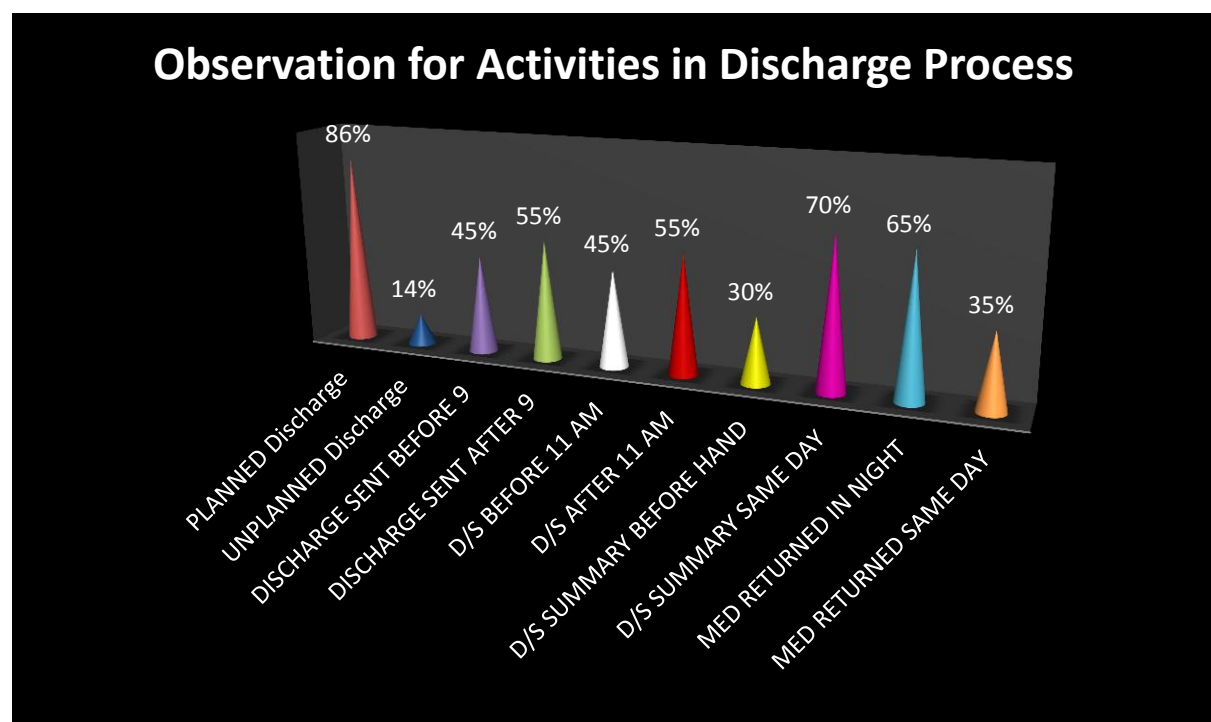


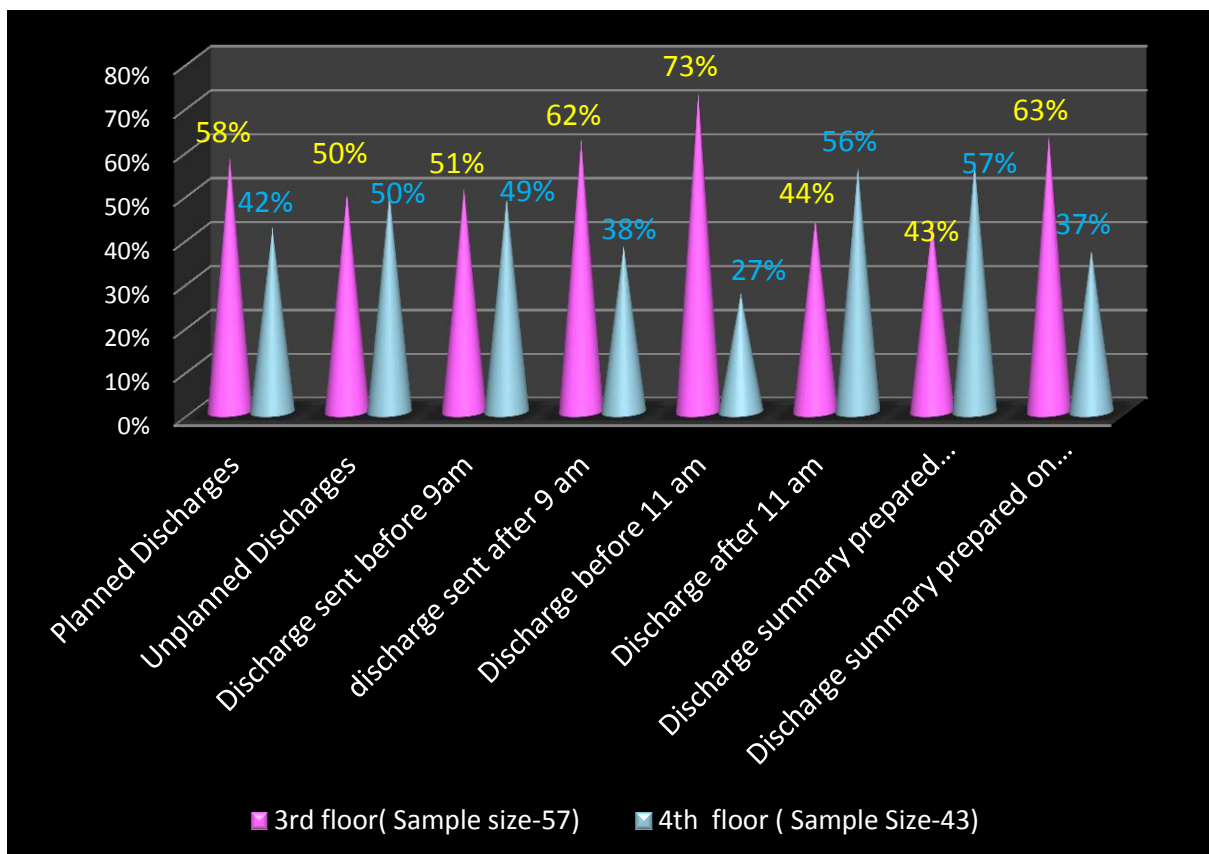
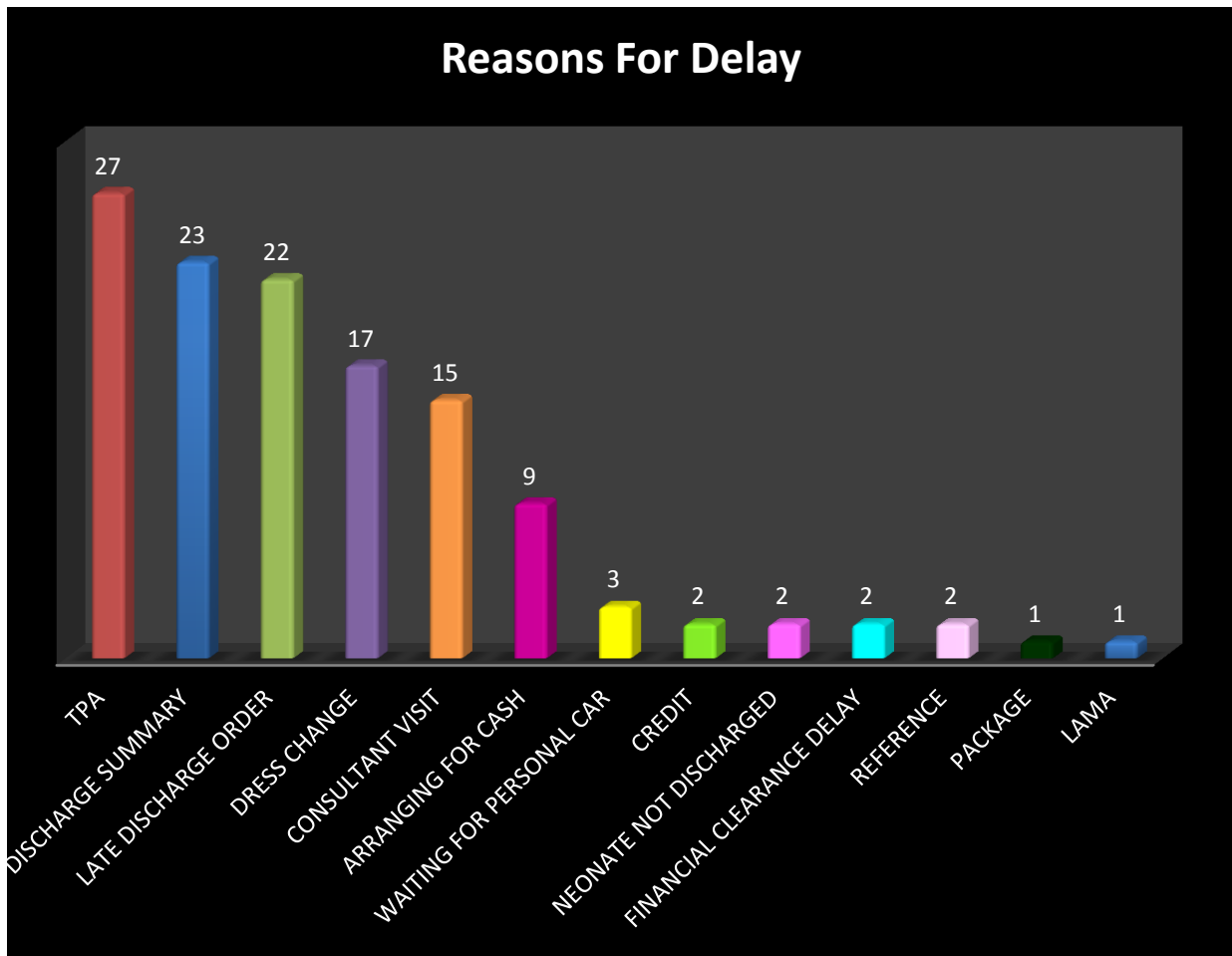
Methodology

The study was conducted to identify the reasons responsible for discharge delay. Target population were all the discharged patients at 3rd floor and 4th floor of Fortis Escorts Hospital. To conduct study a sample of 100 discharged patients were selected from target population through non- probability convenient sampling process. A checklist was prepared to note down the timings of all the activities involved in the process. The checklist included name of patient, UHID, IPID, date of admission, date of discharge, planned/unplanned discharge, room no, room type, payor type, billing sheet sending time, billing sheet receiving time, discharge order time, consultant name, time of Dr visit, medicine returning time, time discharge summary received, pharmacy clearance time, financial discharge time, bill paying time, half day paid, time of physical out. After collecting all data it was analysed.

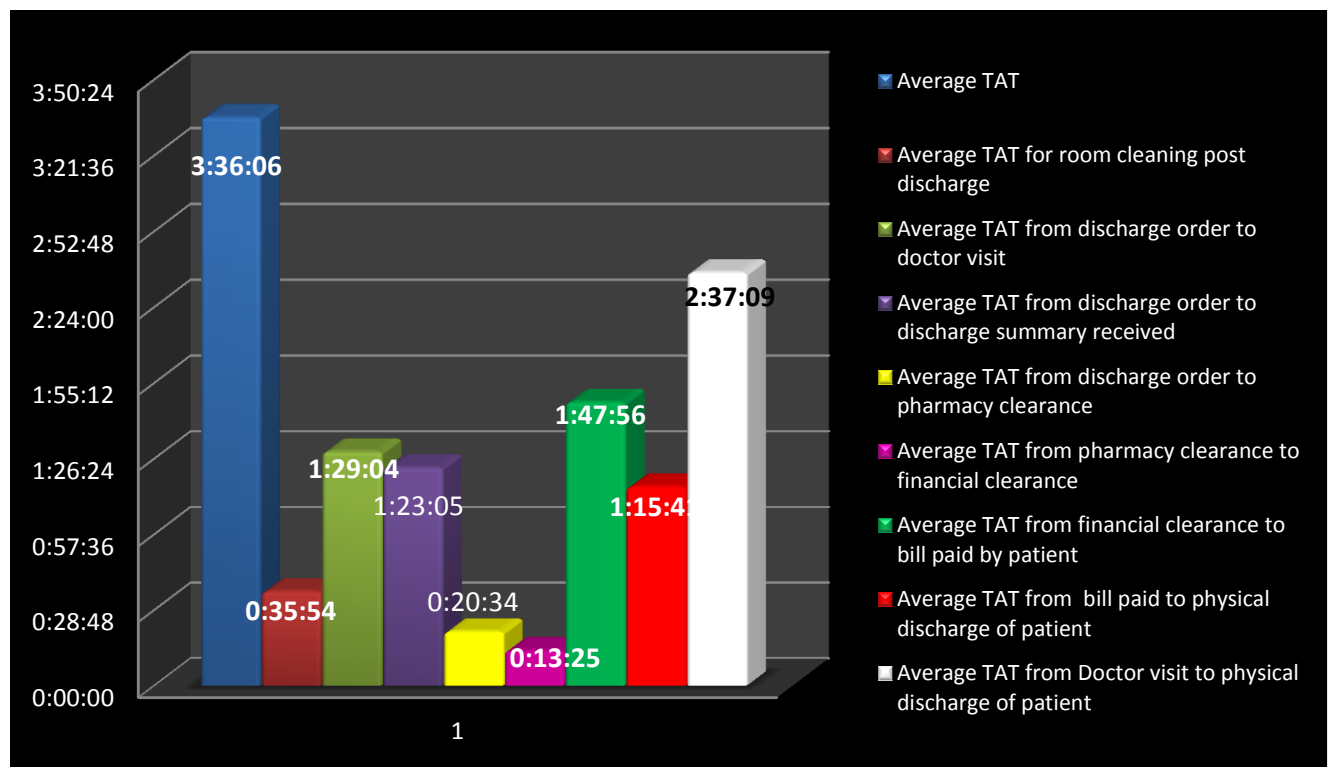
Observations

Planned discharge	86%
Unplanned discharge	14%
Discharge sent before 9	45%
Discharge sent after 9	55%
Discharge before 11 am	45%
Discharge after 11 am	55%
Discharge summary before hand	30%
Discharge summary same day	70%
Medicines returned in night	65%
Medicines returned same day	35%

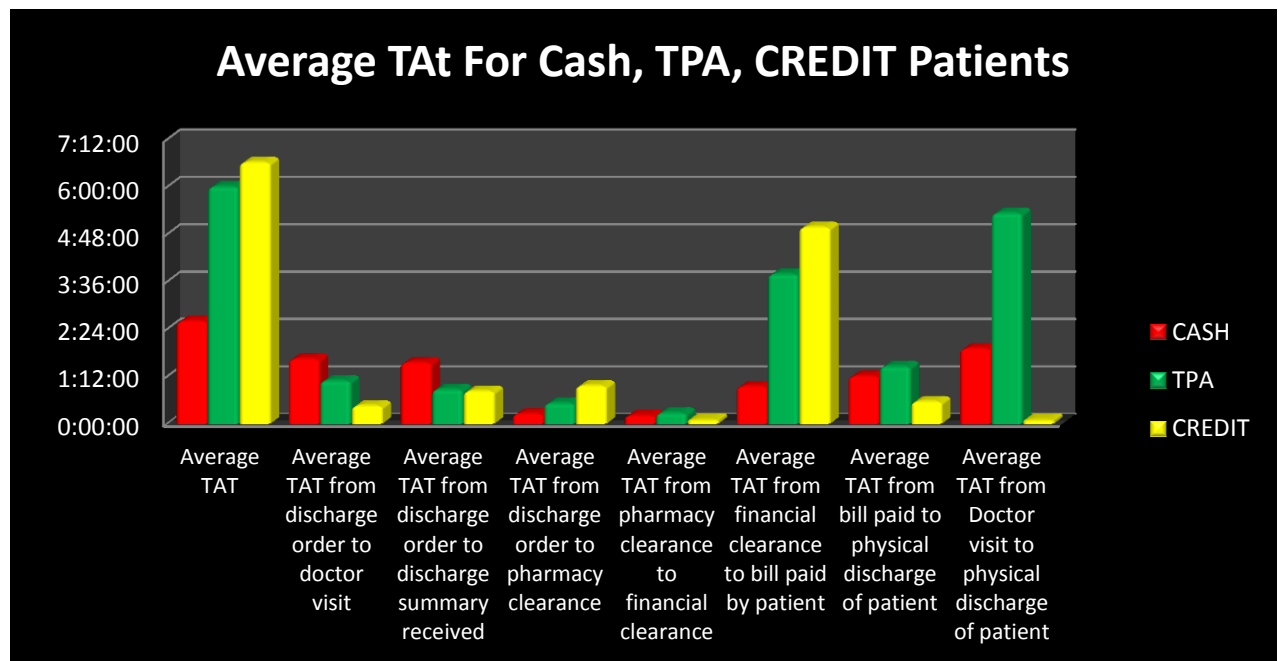




Average TAT	3:36:06
Average TAT for room cleaning post discharge	0:35:54
Average TAT from discharge order to doctor visit	1:29:04
Average TAT from discharge order to discharge summary received	1:23:05
Average TAT from discharge order to pharmacy clearance	0:20:34
Average TAT from pharmacy clearance to financial clearance	0:13:25
Average TAT from financial clearance to bill paid by patient	1:47:56
Average TAT from bill paid to physical discharge of patient	1:15:41
Average TAT from Doctor visit to physical discharge of patient	2:37:09

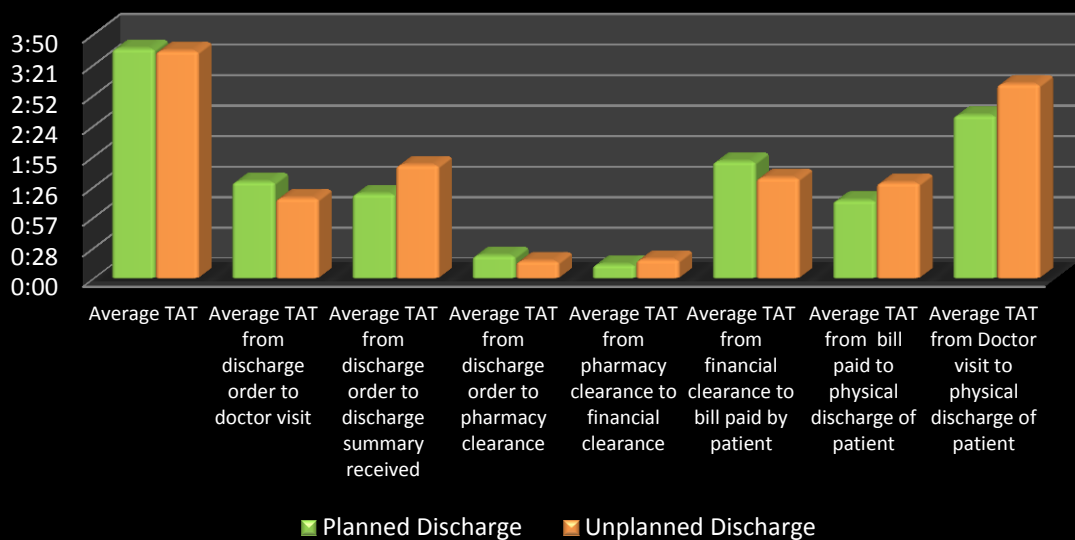


	CASH	TPA	CREDIT
Average TAT	2:36:01	6:00:40	6:37:30
Average TAT from discharge order to doctor visit	1:38:45	1:05:45	0:27:30
Average TAT from discharge order to discharge summary received	1:33:02	0:52:36	0:50:00
Average TAT from discharge order to pharmacy clearance	0:15:17	0:31:32	0:58:00
Average TAT from pharmacy clearance to financial clearance	0:12:23	0:16:48	0:06:30
Average TAT from financial clearance to bill paid by patient	0:57:03	3:47:36	4:59:00
Average TAT from bill paid to physical discharge of patient	1:12:24	1:27:27	0:34:00
Average TAT from Doctor visit to physical discharge of patient	1:54:27	5:20:22	0:06:10



	Planned Discharge	Unplanned Discharge
Average TAT	3:36	3:34:13
Average TAT from discharge order to doctor visit	1:30:55	1:15:24
Average TAT from discharge order to discharge summary received	1:19:28	1:46:40
Average TAT from discharge order to pharmacy clearance	0:21:17	0:16:05
Average TAT from pharmacy clearance to financial clearance	0:12:47	0:17:37
Average TAT from financial clearance to bill paid by patient	1:50:06	1:34:39
Average TAT from bill paid to physical discharge of patient	1:13:22	1:30:00
Average TAT from Doctor visit to physical discharge of patient	2:33:32	3:03:00

Average TAT for Planned And Unplanned Discharges



According Fortis operating system the parameters are defined and are as follows:

- % planned discharge= 85%
- Discharge Before 11am
 - For cash patients= 75%
 - For credit patients= 50%
 - For TPA patients= 50%
- Length Of discharge process
 - For cash patients= 90 mins
 - For credit patients= 120 mins
 - For TPA patients= 240 mins
- TAT for room cleaning post discharge= 30 mins

Findings:

- % planned discharge is 86 %
- Discharge before 11 am for cash patients is 31% .
- Average TAT for cash patients is 2:36:01 which high compared to the FOS standards
- Average TAT for credit patients is 6:37:30 which very high compared to the FOS standards.
- Average TAT for TPA patients is 6:00:40 which very high compared to the FOS standards
- Average TAT for room cleaning post discharge is 35 min 54 sec which is slightly more than the FOS standards

Recommendations:

- Consultant round should be done before 9:30 am at least for the patients getting discharge or senior resident doctors should have the authority of discharging patient after telephonic confirmation from consultant.
- A rough discharge summary can be prepared a day after the patient gets admitted and can be updated on daily basis, so that the consultant can check this a day before discharging patient and the resident doctor can prepare a final discharge summary a night before and place it in the patient file.
- A medical transcriptionist can be kept for discharge summaries.

- If there is a cross reference for any doctor, his visit can be put in billing sheet and billing can be sent.
- Counselling of patient & attendants can be done a night before, once the discharge summary is prepared.
- All medicines should be returned a night before.
- All investigation should be done one day prior or written orders can be given in evening a day before so that the concerned nurse sends sample at 6 am in morning on day of discharge.
- There should be an alternative for lunch of discharged patients.
- There is need of extra billing counter as patients wait there for a long time.
- Patient attendants should be counselled a day ago so that they keep cash ready for next day.
- If discharge summaries get ready a day before, TPA department timing can be changed to 8am to 5 pm for faster discharge process and effective utilization of manpower.
- Post discharge TPA documents should be with the receivable department and not TPA cell.
- Authorization letter should be mailed to the billing department rather than sending a printed copy.
- There should be more room cleaning trolleys at 3rd and 4th floor

Project II

Gap analysis Imaging Services according to NABH standards

Introduction: An Insight into NABH

Introduction

National Accreditation Board for Hospitals & Healthcare Providers (NABH) is a constituent board of Quality Council of India, set up to establish and operate accreditation programme for healthcare organizations. The board is structured to cater to much desired needs of the consumers and to set benchmarks for progress of health industry. The board while being supported by all stakeholders including industry, consumers, government, has fully functional autonomy in its operation.

NABH was established in 2006



Board Composition

1. Chairman - Dr. Nand Kumar Jairam, Chairman & Group Medical Director, Columbia Asia Hospitals India Pvt. Ltd.
2. Indian Medical Association
3. Consumer Co-ordination Council
4. Insurance Regulatory & Development Authority (IRDA)
5. Indian Nursing Council

6. Department of AYUSH

7. Director General, Armed Forces Medical Services

8. Directorate General of Health Services (DGHS), MoHFW

9. Dean, Maulana Azad Medical College

10. Ministry of Tourism

11. Drugs Controller General of India

12. Chair Health Committee – CII

13. Chair Health Committee - ASSOCHAM

14. Chair Health Committee - FICCI

15. Academy of Hospital Administration (AHA)

16. Indian Health Care Quality Forum – Academic partner

17. Chair – Accreditation Committee – NABH

18. Chair – Hospital Technical Committee – NABH

19. Chair – Appeals Committee – NABH

20. CEO NABH – Member Secretary



International Linkage

- NABH is an Institutional Member as well as a Board member of the International Society for Quality in Health Care (ISQua).
- NABH is a member of the Accreditation Council of International Society for Quality in Health Care (ISQua).
- NABH is on board of Asian Society for Quality in Healthcare (ASQua).



Vision

- To be apex national healthcare accreditation and quality improvement body, functioning at par with global benchmark

Mission

- To operate accreditation and allied programs in collaboration with stakeholders focusing on patient safety and quality of healthcare based upon national/international standards, through process of self and external evaluation.

Scope /Objectives

- Accreditation of healthcare facilities
- Quality promotion: initiatives like Safe-I, Nursing Excellence, Laboratory certification programs (not limited to these)
- IEC activities: public lecture, advertisement, workshops/ seminars
- Education and Training for Quality & Patient Safety
- Recognition: Endorsement of various healthcare quality courses/ workshops

NABH Standards

- 10 Chapters
- 100 Standards
- 513 Objective Elements

Standards and Objective Elements

- A standard is a statement that defines the structures and processes that must be substantially in place in an organization to enhance the quality of care
- Objective element is a measurable component of a standard
- Acceptable compliance with objective elements determines the overall compliance with a standard.

Benefits of Accreditation

✓ *Benefits HCO*

- Stimulates continuous improvement.
- Enables the HCO in demonstrating commitment to quality of care.
- Raises community confidence in the services provided.
- Provides opportunity to benchmark with the best.

✓ *Benefits Patients/Customers*

- Accreditation benefits all stake holders, patients/customers are the biggest beneficiary.
- Results in high quality of care and patients/customer safety.
- Patients/Customers get services by credentialed staff.

- Rights of patients/customers are respected and protected.
- Patients/Customer satisfaction is regularly evaluated.

✓ *Benefits Staff*

- Staff is satisfied lot as it provides for continuous learning, good working environment, leadership and above all ownership of service processes.
- Improves overall professional development of staff and provides leadership for quality improvement in various techniques.

✓ *Benefits to others*

- Objective system of evaluation and empanelment by Third Parties
- Provides access to reliable and certified information on facilities, infrastructure and level of care

Outline of NABH Standards:

✓ *Patient Centered Standards*

1. Access, Assessment and Continuity of Care (AAC).
2. Care of Patients (COP).
3. Management of Medication (MOM).
4. Patient Rights and Education (PRE).
5. Hospital Infection Control (HIC).

✓ *Organization Centered Standards*

6. Continuous Quality Improvement (CQI).
7. . Responsibility of Management (ROM)
8. Facility Management and Safety (FMS).
9. Human Resource Management (HRM).
10. . Information Management System (IMS)

:

INTRODUCTION TO IMAGING SERVICES:

Radiology is a medical specialty that uses imaging to diagnose and treat diseases seen within the body. A variety of imaging techniques such as X-ray radiography, ultrasound, computed tomography (CT), and magnetic resonance imaging (MRI) are used to diagnose and/ to treat diseases.

The acquisition of medical images is usually carried out by the radiographer, often known as a radiologic technologist. Depending on location, the diagnostic radiologist, or reporting radiographer, then interprets or "reads" the images and produces a report of their findings and impression or diagnosis. This report is then transmitted to the clinician who requested the imaging, either routinely or emergently. Imaging exams are stored digitally. Where they can be viewed by all members of the healthcare team within the same health system and compared later on with future imaging exams.

OPERATIONS OF RADIOLOGY DEPARTMENT

Purpose: The Department of Radiology of the hospital provides comprehensive services in the following imaging technologies:

- i. General Radiography: X-rays are a form of radiation, like light or radio waves that can be focused into a beam. Once it is carefully aimed at the part of the body being examined, an x-ray machine produces a small burst of radiation that passes through the body, recording an image on photographic film or a special image recording plate
- ii. Mobile Radiography: Mobile unit used to X-ray bed ridden patients and sometimes used to X-ray during operative procedures in Operating Room.
- iii. Ultrasound : Ultrasound or sonography, uses high frequency sound waves to see inside the body. As the sound waves pass through the body, echoes are produced, and bounce back to the transducer. These echoes can help doctors determine the location of a structure or abnormality, as well as information about its make up. Ultrasound is a painless way to examine internal organs.
- iv. Magnetic Resonance Imaging (MRI) : M R scans use magnetic resonance that images the body from different angles and then use computer processing to show

a cross section of the various tissues and organs pictured .MRI scans have proven to be very help in diagnosis of soft tissues especially brain , spinal cord , joints, abdomen ,chest and other muscles.

Why NABH for RADIOLOGY DEPARTMENT:

Medical Imaging Services cover investigations of patients that provide imaging information for diagnosis, prevention, and treatment of disease; or assessment of health. It includes conventional radiation based diagnostic radiology as well as a wide variety of specialized techniques including Ultrasound scans, Doppler studies, Bone densitometry, CT, MRI, etc.

These services are essential for patient care and therefore must meet the needs of all patient and the clinical personnel responsible for the care of those patients. These services include arrangement for requisition, choice of appropriate (most informative and cost effective) imaging techniques, patient information, patient consent, patient preparation, patient identification, performance of imaging procedures, interpretation, reporting and advice regarding the result, in addition to the consideration of safety and ethics in diagnostic imaging services.

Introduction to Accreditation Program for Medical Imaging Services

A Medical Imaging Department in the Hospital or an Imaging centre must maintain certain standard of services (statutory or otherwise); as well as, strive for continuous improvement in the quality of services they provide. Close Collaboration with clinical colleagues, verification of result as well as proper maintenance and calibration of the equipment are also a part of quality management in the department of medical imaging.

Standards for NABH Accreditation for Medical Imaging Services are divided into 6 chapters containing 23 standards and 95 objective elements. These standards provide general guidelines pertaining to all diagnostic and interventional imaging services.

The standards are grouped into six chapters as follows:

- CHAPTER 1 Control of Services
- CHAPTER 2 Control of Imaging Processes and Procedures
- CHAPTER 3 Control of Personnel
- CHAPTER 4 Control of Equipment

- CHAPTER 5 Control of Documents and Record
- CHAPTER 6 Risk Control and Safety

Agency: Gap Analysis, Corrective and Preventive Action, NABH Self Assessment Toolkit

Objective:

- To assess the existing service delivery standards of RADIOLOGY DEPARTMENT FORTIS ESCORTS HOSPITAL JAIPUR
- To identify the baseline level of service delivery in RADIOLOGY DEPARTMENT.
- To indicate the gaps in terms of structure , process and outcome
- To suggest alterations in structural designs, process of the facilities to meet the requirement.
- To give corrective and preventive action of the gaps identified

Background:

Hospital and healthcare services are vital components of any well-ordered and compassionate civilization, and will undeniably be the recipients of communal resources. The hospitals should serve as places of safety, not only for patients but also for the staff and for the general public. Thus the quality of services provided in various departments is of prime concern for any hospital .A study was conducted to understand the role of NABH standards and its impact on quality Of Radiology Department of a hospital. The study provided the data which shows the gap between the existing services and the standards of NABH in RADIOLOGY DEPARTMENT of the hospital.

Primary Data was collected through observation, discussion with staff and patients of the staff.

Secondary Data was collected from hospital records in the form manuals, policies and procedure guidelines. Apparently, a self assessment toolkit i.e. a checklist is used and corrective, preventive actions are recommended to reduce the gaps.

Aim:

To study and identify the gaps of a RADIOLOGY DEPARTMENT in FEHJ as per NABH standards

Methodology:

- Study design: Descriptive study was done to find out the gap between the current status of the hospital and NABH standards
- Study Area: RADIOLOGY DEPARTMENT of the hospital.
- Data collection tool: Checklist, NABH self assessment toolkit
- Data collection technique:

Primary data:

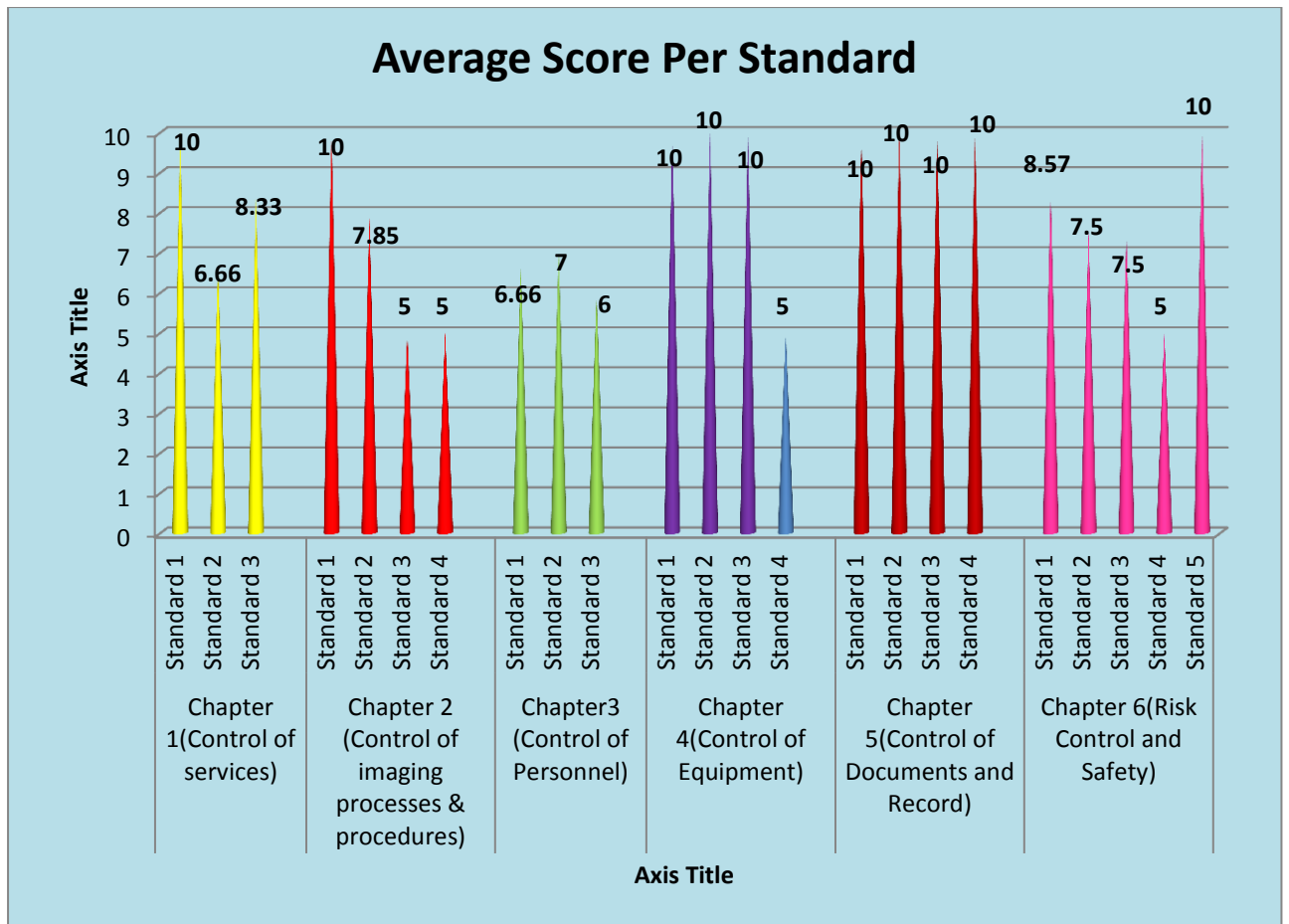
- 1 Direct observation
2. Conversation with the hospital staff
3. Discussion with the patients of the hospital

Secondary Data:

1. Hospital Manuals, Policies
2. Records (e.g. - Register of these departments), HMIS

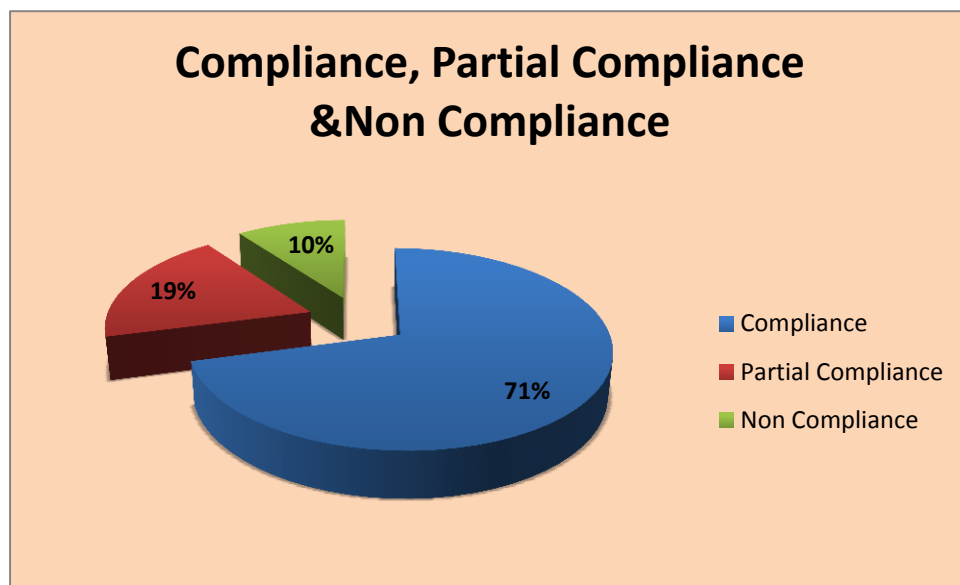
ANALYSIS

		Score	Score
Chapter 1(Control of services)	Standard 1	10	8
	Standard 2	6.66	
	Standard 3	8.33	
Chapter 2 (Control of imaging processes & procedures)	Standard 1	10	7
	Standard 2	7.85	
	Standard 3	5	
	Standard 4	5	
Chapter3 (Control of Personnel)	Standard 1	6.66	6.53
	Standard 2	7	
	Standard 3	6	
Chapter 4(Control of Equipment)	Standard 1	10	8.75
	Standard 2	10	
	Standard 3	10	
	Standard 4	5	
Chapter 5(Control of Documents and Record)	Standard 1	10	10
	Standard 2	10	
	Standard 3	10	
	Standard 4	10	
Chapter 6(Risk Control and Safety)	Standard 1	8.57	7.85
	Standard 2	7.5	
	Standard 3	7.5	
	Standard 4	5	
	Standard 5	10	
		Average Total Score	8.02



COMPLIANCE

Total Objectives		95
Compliance	71%	67
Partial Compliance	19.00%	18
Non Compliance	10%	10

*Findings:*

The study revealed that the average score as per NABH was 8.02 which makes the hospital eligible for appearing for final assessment, as minimum score required was 7. The area of concern lies with implementation of policies and procedures as documentation part was up to the mark. The RADIOLOGY DEPARTMENT had gaps 29 % where partial gaps are 19% and full gaps were 10% .The average score for individual standard was not less than 5 and average score for individual chapter was not less than 7.

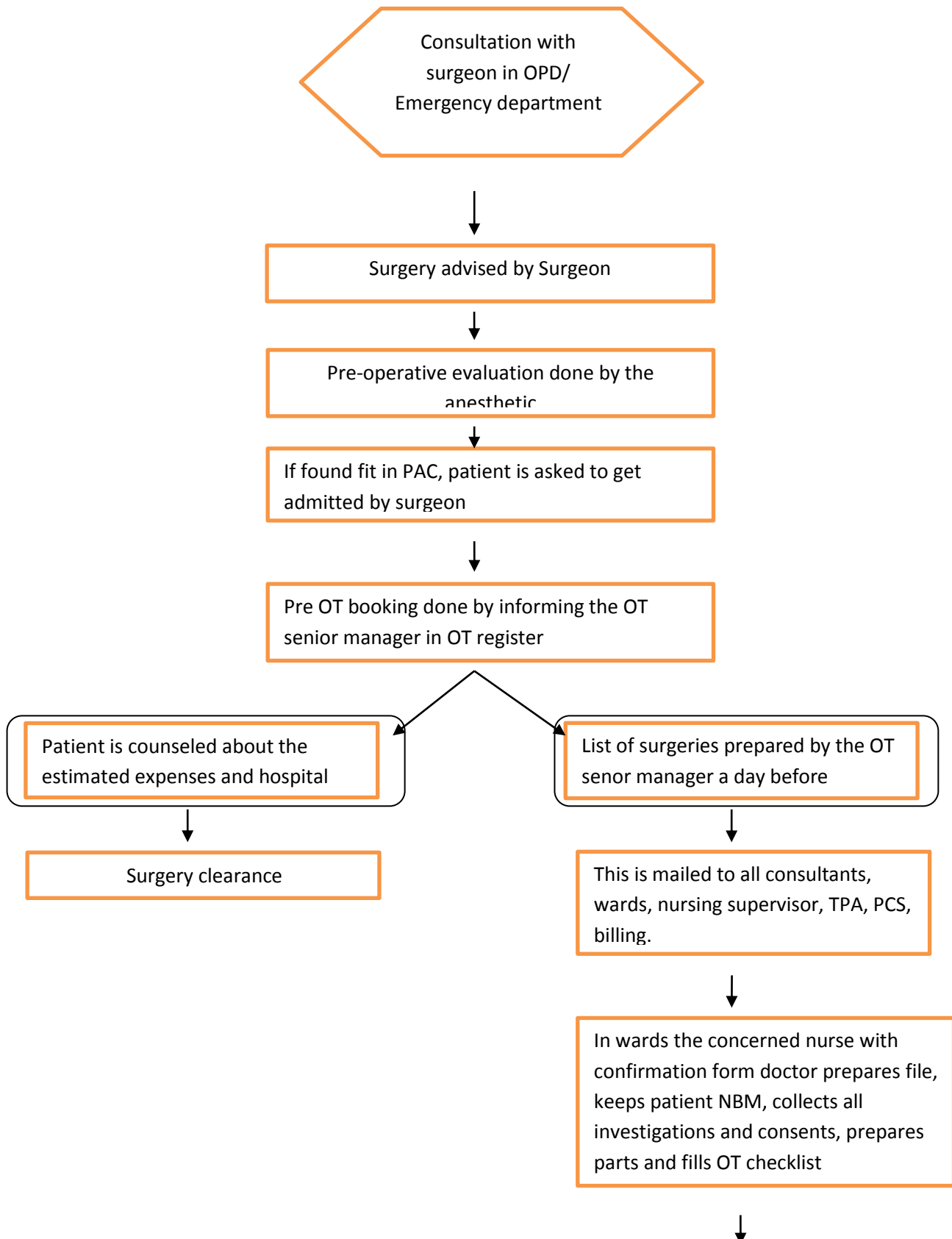
CONCLUSION:

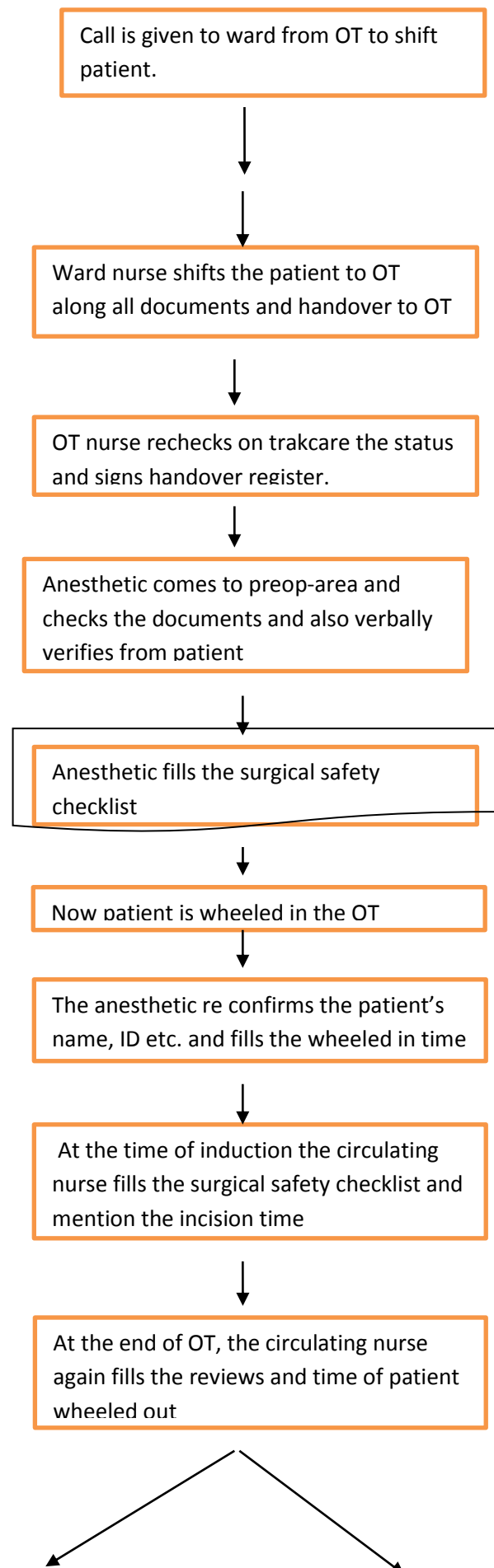
The RADIOLOGY DEPARTMENT has Score of 8.02 and in accreditation stage as per NABH standards and was fit for accreditation. Few gaps were identified, if fulfilled, will help in improving the efficiency of department and hospital to attract and accommodate more patients with better patient care.

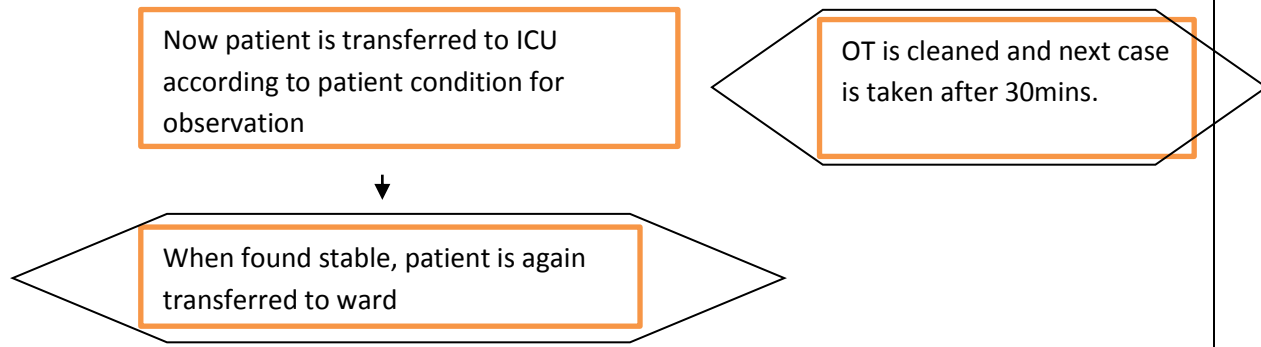
Project III

Process Mapping Of operation theatre and Gap analysis of operation theatre according to Green OT requirements

Process Mapping of Operation Theatre







INTRODUCTION to Green OT:

As hospitals across the country look for ways to reduce environmental impact, it makes sense to start with the departments that have the largest environmental footprints. The operating room (OR) is one of the largest users of supplies within the hospital as well as one of the largest producers of waste. Case studies have estimated that between 20-30 per cent of the total waste generated by the hospital comes from the OR. A number of leading healthcare institutions have begun to tackle this problem by identifying a set of best practices that can reduce costs while also reducing waste, energy, and worker and patient exposure to hazardous chemicals. The Greening the Operating Room Initiative is a collaborative effort to envision what the green operating room of the future might look like, and what kinds of products, programs and best management practices hospitals can focus on as a means of getting there. Practice Green health is committed to working with its partners and endorsing hospitals to provide the data, tools and resources necessary to substantiate these best practices as a critical step to widespread adoption across the sector.



In an initiative to promote sustainable healthcare delivery and create a benchmark for performance in operation theatres (OT) across India, Abbott India joins hands with Bureau VERITAS Certifications (India) to provide a first of its kind accreditation for using green and safe practices in operation theatres.

The Green OT certification project is a first in the world certification and also the first 'Make in India' certification protocol developed by Bureau VERITAS in conjunction with Abbott India and multi-hospital stakeholders like clinicians, bio-medical, hospital QA, Green House Gas surveyors, administrators etc.

Green from an OT perspective covers all parameters like air flows, OT set up, anaesthesia machines, types of volatile agents used, filling systems adopted and scavenging systems in place. Green connotes cleaner techniques using modern technology and processes with a sensitive approach to environment.

As a part of the process Bureau Veritas conducted independent assessments/ audits of the hospitals that focussed on prevention of surgical site infections, safe anaesthesia, safe surgical teams and equipment and a measurement and quality assurance mechanism. The process will conclude with a 'Green Score based on a five point scale that would be rewarded to the certified hospitals who meet the requisite quality and safety standards.

Shyamakant Giri, Country Manager, Abbott India said, "Abbott has always partnered with the international and local agencies, patient organizations and government departments to address urgent health issues and unmet patient needs, supporting them in leading healthy lives. The term safety is equally important for the healthcare systems and patients. Despite the brief amount of time patients generally spend in an operating theatre, this is an environment that plays a great role in the onset and spread of infections. Hence it is essential to create benchmarks in the safety and efficacy levels of operation theatres."

Naresh Gupta, Regional Chief Executive –South Asia, Bureau VERITAS said, "Worldwide, accreditations form the basis for assuring patients that safety and benchmark quality standards are being met. In India too, increasing patient education levels and awareness as well as the growing quantum of medical tourism are leading to the rapid adoption of accreditation. International patients and Indians alike, who seek medical treatments, are mostly concerned with the quality of treatments and also want that the service providers preferably be accredited by a recognized international organization that audits medical quality."

Talking about the need for this certification in India Dr. Bomi Bhote, Chief Executive Officer – Ruby Hall Clinic said, "cGreen OT certification shall help patients identify the hospitals who have achieved high safety standards inside OT area. Educated and informed Patient group is expected to choose the cGreen OT certified hospitals for their surgeries".

Talking about the aspects of cGreen OT program , Dr.Manju Butani , HOD – Anesthesia , PD

Hinduja Hospital, Mumbai Said, "The established framework for safe intra-operative care in hospitals involves a routine sequence of events—preoperative evaluation of patients, surgical intervention and preparation for appropriate postoperative care—each with specific risks that can be mitigated. cGreen OT program covers these activities in OR".

Talking about the importance of cGreen OT program, Dr. Vijay Shetty, Head – Department of Anesthesia, Fortis Hospital, Mumbai said "cGreen OT standard shall play an important role in standardizing the OR practices and should be adopted by all hospitals and OR staff".

Abbott plans to take this initiative to hospitals across India, pledging its constant support to promote sustainable healthcare delivery in the country.

Johns Hopkins researchers say they have identified practical strategies to implement environmentally friendly practices in operating rooms and other hospital facilities that could result in vastly reduced health care costs and pose no risk to patient safety.

Two hospitals in the city — PD Hinduja Hospital in Mahim and Fortis Hospital in Mulund — are in line for the ratings and are likely to get the certification for developing India's first ever 'Green OT' by February 2015.

"There have been several cases in the past, where patients have suffered due to lack of safety measures in the OT. We, therefore, plan to focus on the protocols of an OT. The certification will be based on the safety measures, standard of staff training and whether the OT is patient and environment friendly or not", said Dr Jitendra Bapat, consultant anaesthesiologist, Hinduja Hospital

Going green to conserve nature is the mantra these days! Taking a cue from the going green movement around the world, super-speciality hospitals here have started devising ways to protect the environment.

A few speciality hospitals in the country, including one in Hyderabad, have reworked and remodelled their operation theatres to conserve natural resources, be efficient and more useful to patients by reducing infections. The idea is to conserve energy by improving systems in operation theatre right from air flow, pre-operative area, water supply, anaesthesia

equipment, controlling the release of medical gases, reagents being used and further fine-tuning the existing bio-medical waste management systems.

Recently, city-based Krishna Institute of Medical Sciences (KIMS) received certification from Bureau Veritas, a Mumbai-based agency that certifies Green Operation Theatres. Quite creditably, the hospital has built close to 15 top-of-the-line operation theatres that carry the tag of being 'Green'.

REVIEW OF LITERATURE

Experts say health care facilities are second only to the food industry in contributing to waste products in the United States, producing more than 6,600 tons per day and more than 4 billion pounds annually. Operating rooms and labour-and-delivery suites together, the researchers say, account for nearly 70 per cent of hospital waste.

Reporting in the February issue of the *Archives of Surgery*, the Johns Hopkins team said hospital operating rooms notoriously open sterilized equipment that is never used, install energy-sucking overhead lights and fill red bags that are labelled as medical waste with harmless trash that could be more cheaply disposed.

"There are many strategies that don't add risk to patients but allow hospitals to cut waste and reduce their carbon footprints," says study leader Martin A. Makary, M.D., M.P.H., an associate professor of surgery at the Johns Hopkins University School of Medicine. "If we're going to get serious as a country about being environmentally conscious, we need to look at our biggest institutions. When an individual decides to recycle or dispose of waste differently, it has an impact. But when a hospital decides as an organization to go green, the impact is massive."

For their report, Makary and his team first reviewed previously published research about hospitals' environmental practices, looking in depth at 43 studies. Then, they convened a panel of experts to generate a list of practical strategies that could be implemented by surgical units to cut the waste they identified. The panel's top five strategies were reducing and segregating operating room waste, reprocessing single-use medical devices, making environmentally conscious purchasing choices, managing energy consumption and managing pharmacy waste.

In surgical suites, for example, two kinds of disposal bags are used to separate waste: red bags for infectious and pathologic waste and clear bags for non-infectious waste. Makary says that as much as 90 per cent of what ends up in red bags does not meet the criteria for red-bag waste, which costs far more to process. "Although hazardous and regulated medical waste (equivalent to infectious waste) makes up only 24 per cent of medical waste, it accounts for 86 per cent of costs," the study team concluded.

Makary says the volume of medical waste could be decreased by more than 30 per cent solely by proper waste separation.

Makary says many discussions of green initiatives -- such as recycling single-use medical equipment -- have been framed as a choice between what is best for the environment and what is best for patients, with patients the obvious priority. But the team's research, he says, shows there are ways to be green without compromising patient safety.

One medical centre, , instituted a system of making clear plastic bags more readily available during surgical preparation and then replacing them with red bags just before the patient was wheeled into the operating room, when most red-bag waste is generated. The centre also began washing and reusing all of its surgical scrubs and jackets. These two changes made up the lion's share of a 50 per cent reduction in medical waste volume over seven years, and Makary says patient safety was not compromised.

The Johns Hopkins team says wider adoption of the practice of recycling medical equipment is a potentially big saver of health care dollars and landfill space. Such equipment includes laparoscopic ports and durable cutting tools typically tossed out after a single use, Makary says. With proper sterilization, recalibration and testing, previous experience has shown that reprocessing equipment is safe, he adds. Often in surgery, items are taken out of their sterile packaging - sometimes in duplicate - in order to be quickly available should they be needed over the course of an operation. That practice needs to be reconsidered, he says.

"The overall carbon footprint of the hospital has not been a priority in the past," Makary says. "But we live in a much more cost-conscious medical climate now and there is a lot that hospitals can do to go green."

This research was supported by philanthropy from Mr. and Mrs. Chad and Nissa Richison.

Gabriel A. Brat, M.D., M.P.H., of Johns Hopkins also participated in this study.

Johns Hopkins researchers have identified strategies for more environmentally friendly practices in hospitals that could reduce health care costs according to a press release from the hospital.

Experts say health care facilities are second only to the food industry in contributing to waste products in the United States, producing more than 6,600 tons per day and more than 4 billion pounds annually. Operating rooms and labor-and-delivery suites make up 70 percent of total hospital waste.

Among the waste is sterilized equipment that is opened and never used, inefficient high-energy overhead lights and trash thrown in “medical waste” bins that could be disposed of in an inexpensive way.

"There are many strategies that don't add risk to patients but allow hospitals to cut waste and reduce their carbon footprints," study author Dr. Martin A. Makary, an associate professor of surgery at the Johns Hopkins University School of Medicine said in a press release. "If we're going to get serious as a country about being environmentally conscious, we need to look at our biggest institutions. When an individual decides to recycle or dispose of waste differently, it has an impact. But when a hospital decides as an organization to go green, the impact is massive."

Researchers identified the top five ways of making operating rooms “greener”: reducing and segregating operating room waste, recycling single-use medical devices, making environmentally conscious purchasing choices, managing energy consumption and managing pharmacy waste.

Makary said the amount of medical waste could be reduced by more than 30 percent solely by proper waste separation.

The team emphasized that none of the waste reduction techniques compromise patient safety. The findings were published in the February issue of the Archives of Surgery

February 24, 2010- Wider adoption of the practice of recycling medical equipment — including laparoscopic ports and durable cutting tools typically tossed out after a single use — could save hospitals hundreds of millions of dollars annually and curb trash at medical centers, the second-largest waste producers in the United States after the food industry.

The recommendation, made in an analysis by Johns Hopkins researchers in the March issue of the journal Academic Medicine, noted that with proper sterilization, recalibration and

testing, reuse of equipment is safe.

“No one really thinks of good hospitals as massive waste producers, but they are,” says lead author Martin Makary, M.D., M.P.H., a surgeon and associate professor of public health at the Johns Hopkins University School of Medicine. “There are many things hospitals can do to decrease waste and save money that they are not currently doing.”

Hospitals toss out everything from surgical gowns and towels to laparoscopic ports and expensive ultrasonic cutting tools after a single use. In operating rooms, some items that are never even used are thrown away — single-use devices that are taken out of their packaging must be tossed out because they could have been contaminated. Selecting such good devices for resterilization and retesting could decrease the amount of needless waste from hospitals.

And, the researchers say, hospitals could procure more items designed to be used safely more than once after being sterilized.

Hospitals, they add, are increasingly attracted to reprocessing because recycled devices can cost half as much as new equipment. Only about a quarter of hospitals in the United States used at least one type of reprocessed medical device in 2002, and while the number is growing, the practice is not yet widespread, they say. Banner Health in Phoenix, they write, saved nearly \$1.5 million in 12 months from reprocessing operating room supplies such as compression sleeves, open but unused devices, pulse oximeters and more.

Safety concerns with reprocessing include possible malfunction of devices, the risk of transmitting infections, and the ethical dilemma that reprocessing presents given the absence of patient consent to usage of such devices in their treatment. The government requires all reprocessed equipment to be labeled as such, along with the name of the reprocessing company. A recent study by the U.S. Government Accountability Office concluded reprocessed devices do not present an increased health risk over new devices.

“These devices are safe, but it’s a public relations challenge,” Makary says. “Some people don’t like the idea that they’re being treated with equipment that has been used before. But these reprocessed devices are as good as new since the testing standards for reuse are impeccable and there have been no patient safety problems in our analysis.”

The other authors of the commentary are Gifty Kwakye and Peter J. Pronovost, M.D., Ph.D., both of Johns Hopkins.

OBJECTIVE

- To assess the existing service delivery standards of OT.
- To identify the baseline level of health care delivery of OT
- To indicate the gaps in terms of structure , process and outcome.
- To suggest alterations in structural designs, process of the facilities to meet the requirement.
- To give corrective and preventive action of the gaps identified

STUDY DESIGN

- Study Type: Observational, Cross Sectional, Gap Analysis.
- Study area: Operation Theatre at 2nd floor, Fortis escorts hospital, Jaipur
- Data collection tool: Green OT Requirement Checklist
- Data collection technique:

Primary data:

1. Direct observation
2. Discussion with the hospital staff

Secondary data :

1. Hospital Manuals, Policies
2. Records (e.g. - Register of OT), HMIS

GAP ANALYSIS:

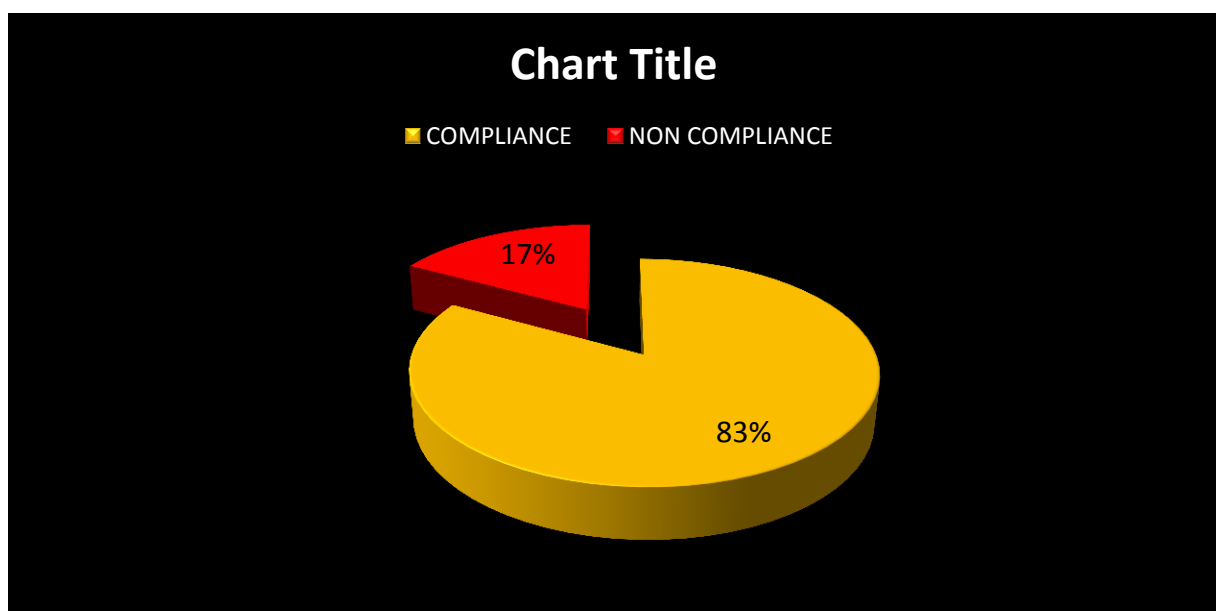
S NO	REQUIREMENTS	CORRECTIVE ACTION
1	Policy on low flow anesthesia	Policy was formulated and training was conducted for the OT users
2	Volatile anesthesia usage	Policy was formulated and training was conducted for the OT users
3	N2O usage	Policy was formulated and training was conducted for the OT users
4	Display of Information/slides in OT complex for awareness about GHG, HSE, Surgical safety	Slides displayed in the OT complex
5	Avg FGF practise of the hospital based on the survey report of FGF practise of all anesthesiologist	A survey was conducted over a week and average was calculated for FGF practise
6	Annual training calender for all OT users incorporating green of requirements	Training calender was prepared as per the requirements of Green OT and trainings were conducted for all OT users as per schedule
7	Breathing circuit policy	Policy was formulated and training was conducted for the OT users

8	Questionnaire survey to analyse mind set of practitioner on lo flow anaesthesia	A questionnaire was prepared and a survey was conducted among the OT doctors
9	Warm air blanket policy	No written policy but it is practised in the OT

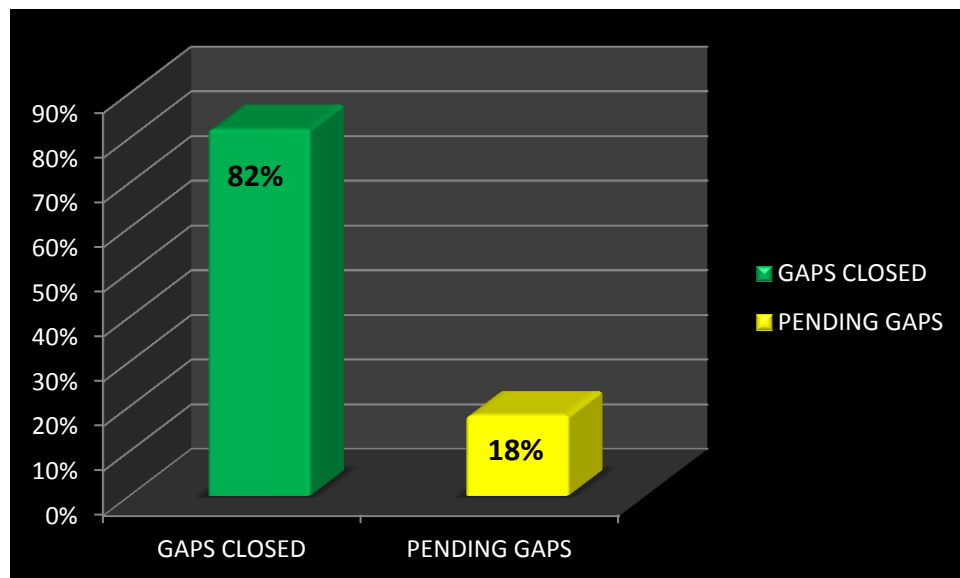
PENDING GAPS

S NO	REQUIREMENTS	CORRECTIVE ACTION
1	Workstation SOP	SOP needs to be prepared
2	Biomedical policy on scavenging system	Policy needs to be formulated

Total Requirements Of Green OT		64
COMPLIANCE	83%	53
NON COMPLIANCE	17%	11



NON COMPLIANCE		11
GAPS CLOSED	82%	9
PENDING GAPS	18%	2



Findings

The study revealed that the OT fulfils almost 83% of the requirement for Green OT. There were 17 % non-compliance. Corrective action was taken for 82% of the gaps. The hospital fulfils all the criteria for accreditation of Green OT.

Recommendations : /Conclusion

The OT almost fulfils the criteria for Green OT and is fit for accreditation. Few gaps were identified and fulfilled. This will help in improving the efficiency and quality of OT and safety of patients.

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