

**Root Cause Analysis on the Errors in the Patient Identification
Process in a Super Specialty Hospital**

**Internship Training
at
Wockhardt Superspeciality Hospitals,
Nagpur Maharashtra
(29th January, 2014 – 6th May, 2014)**

**By
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**Under the guidance of
Dr. Susmit Jain**

**Post Graduate Diploma in Hospital & Health Management
2012–14**

 **IIHMR UNIVERSITY**
**Institute of Health Management Research
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2014**

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TO WHOMSOEVER MAY CONCERN

This is to certify that Dr.Garima Pandey, student of Post Graduate Diploma in Hospital and Health Management (PGDHM) from Institute of Health Management Research, Jaipur has undergone internship training at WOCKHARDT HOSPITALS, Nagpur from 1st February 2014 to 6th May 2014.

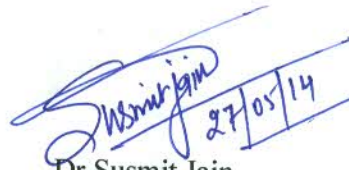
The Candidate has successfully carried out the study designated to her during internship training and her approach to the study has been sincere, scientific and analytical.

The Internship is in fulfillment of the course requirements.

I wish her all success in all her future endeavors.



Dr.Ashok Kaushik
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The certificate is awarded to
Dr GARIMA PANDEY

In recognition of having successfully completed her
internship in the department of
ADMINISTRATION

And has successfully completed her Project on

1. Root Cause Analysis on patient identification errors.
2. Streamlining of the discharge process in the TPA department

Feb 1, 2014 to May 6, 2014

WOCKHARDT HOSPITAL, NAGPUR

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

We wish her all the best for future endeavors

Training and Development

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CERTIFICATE BY SCHOLAR

This is to certify that the dissertation titled "Root Cause Analysis on Patient Identification Errors" and submitted by Dr. Garima Pandey Enrolment No. IIHMR/PGDHM/2012-14/17-1312 under the supervision of Dr. Susmit Jain for award of Postgraduate Diploma in Hospital and Health Management of the Institute carried out during the period from 3rd February, 2014 to 6th May, 2014 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.

Signature: *Garima Pandey*

Date: *28/5/14*

ACKNOWLEDGEMENT

I extend my sincere gratitude to **Dr Aboli Arekar**, who has been my mentor for the summer internship program & has been instrumental in helping me shape this study in a desirable way and for giving me the opportunity to do this study and undergo the process of learning at APOLLO BSR BHILAI. I thank her for all the trust and faith she posed in me and I only hope that I have been able to live up to her expectations. Her guidance and support was helpful in enhancing my work.

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I would like to express my sincere thanks to **Dr. S.D. Gupta (Director IIHMR)**, Col. **Dr. Ashok Kaushik (Dean)**, **Dr. Susmit Jain (Guide)** and all the faculty members of IIHMR for the proper guidance and cooperation extended by them. I am also grateful to my parents, my family and my friends for giving me moral support..

However, I accept the sole responsibility for any possible error of omission and would be extremely grateful to the readers of this project report if they bring such mistakes to my notice.

Date – 6 May 2014

**Dr Garima Pandey
PGDHM 17**

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PREFACE

Dissertation is an integral part of PGDHM curriculum. For the partial fulfillment of the requirements of the curriculum each student has to join an organization for the period of dissertation and complete their assigned project for submission of their final Thesis.

The major objectives of the Dissertation programme are as follows:

- 1) To understand and learn day to day operational management of a Hospital / Health Care Organization and its service centers.
- 2) To study identified issues/ problems associated with some specific operational area /programme.
- 3) To acquire more knowledge on roles and responsibilities of key players and stakeholders in the hospital. To understand various functions in hospital by interactions with key stakeholders, policy makers, academicians and researchers.
- 4) To work on the project/task assigned by the organization.

During the dissertation period, I had an **Overview of various departments of the hospital**. I also carried out a study titled “**Root cause analysis on errors in patient identification process in a super speciality Hospital**”

The aim of the study was to understand the discharge process of an organization and to identify the possible points of delay in discharge process and then suggesting steps to improve the discharge process as well as decreasing the overall discharge time of the hospital.

DISSERTATION

SPECIFIC PROJECT 1:

A ROOT CAUSE ANALYSIS ON THE ERRORS IN THE

PATIENT IDENTIFICATION PROCESS IN A SUPER

SPECIALITY HOSPITAL.

OBJECTIVES:

- To review the patient identification process in a hospital
- To identify step/point of errors in the patient identification process of hospital.
- To analyze the patient identification process of the hospital and find out the challenges at each step of the process.
- To suggest strategies to reduce the errors taking place in the process of patient identification, if required.

AREAS COVERED IN STUDY:

- General wards
- Twin sharing ward
- Deluxe wards and Executive Suites
- Day Care Wards
- Customer care department.
- Radiology department.

INTRODUCTION:

Root cause analysis (RCA) is a method of problem solving that tries to identify the root causes of faults or problems. A root cause is a cause that once removed from the problem fault sequence, prevents the final undesirable event from recurring. A causal factor is a factor that affects and event's outcome, but is not a root cause. Though removing a causal factor can benefit an outcome, it does not prevent its recurrence for certain.

RCA practice solve problems by attempting to identify and correct the root causes of events, as opposed to simply addressing their symptoms. Focusing correction on root causes has the goal of preventing problem recurrence. RCFA (Root Cause Failure Analysis) recognizes that complete prevention of recurrence by one corrective action is not always possible.

Conversely, there may be several effective measures (methods) that address the root causes of a problem. Thus, RCA is an iterative process and a tool of continuous improvement.

RCA is typically used as a reactive method of identifying event(s) causes, revealing problems and solving them. Analysis is done *after* an event has occurred. Insights in RCA may make it useful as a preemptive method. In that event, RCA can be used to *forecast* or predict probable events even *before* they occur. While one follows the other, RCA is a completely separate process to Incident Management.

Root cause analysis is not a single, sharply defined methodology; there are many different tools, processes, and philosophies for performing RCA. However, several very-broadly defined approaches or "schools" can be identified by their basic approach or field of origin: safety-based, production-based, process-based, failure-based, and systems-based.

- Safety-based RCA descends from the fields of accident analysis and occupational safety and health.
- Production-based RCA has its origins in the field of quality control for industrial manufacturing.
- Process-based RCA is basically a follow-on to production-based RCA, but with a scope that has been expanded to include business processes.
- Failure-based RCA is rooted in the practice of failure analysis as employed in engineering and maintenance.
- Systems-based RCA has emerged as an amalgamation of the preceding schools, along with ideas taken from fields such as change management, risk management, and systems analysis.

Despite the different approaches among the various schools of root cause analysis, there are some common principles. It is also possible to define several general processes for performing RCA.

General Process for performing and documenting an RCA:

RCA (in steps 3, 4 and 5) forms the most critical part of successful corrective action, because it directs the corrective action at the true root cause of the problem. Knowing the root cause is secondary to the goal of prevention, but without knowing the root cause, it is not possible to determine what an effective corrective action for the defined problem would be.

1. Define the problem or describe the event factually. Include the qualitative and quantitative attributes (properties) of the harmful outcomes. This usually includes specifying the natures, the magnitudes, the locations, and the timing of events.
2. Gather data and evidence, classifying it along a timeline of events to the final failure or crisis. For every behaviour, condition, action, and inaction specify in the "timeline" what should have been done when it differs from what was done.

3. Ask "why" and identify the causes associated with each step in the sequence towards the defined problem or event. "Why" is taken to mean "What were the factors that directly resulted in the effect?"
4. Classify causes into causal factors that relate to an event in the sequence and root causes that if eliminated, can be agreed to have interrupted that step of the sequence chain.
5. Identify all other harmful factors that have equal or better claim to be called "root causes." If there are multiple root causes, which is often the case, reveal those clearly for later optimum selection.
6. Identify corrective action(s) that will with certainty prevent recurrence of each harmful effect, including outcomes and factors. Check that each corrective action would, if pre-implemented before the event, have reduced or prevented specific harmful effects.
7. Identify solutions that, when effective, and with consensus agreement of the group, prevent recurrence with reasonable certainty, are within the institution's control, meet its goals and objectives and do not cause or introduce other new, unforeseen problems.
8. Implement the recommended root cause correction(s).
9. Ensure effectiveness by observing the implemented recommendation solutions.
10. Identify other methodologies for problem solving and problem avoidance that may be useful.
11. Identify and address the other instances of each harmful outcome and harmful factor.

The investigation of adverse events can be decomposed into a number of different Activities; For example, data must be collected about the events that led to a mishap. Interviews and the analysis of data logs and charts provide the information that is necessary to understand what happened. Elicitation techniques may also extend more widely into the organisational and managerial context in which an incident occurred. Together these different sources of

information can contribute to our understanding of why there was an accident or near-miss.

Any causal analysis, in turn, helps to guide the

identification of recommendations that are ultimately intended to minimise the likelihood of any future recurrence. It is important to stress that these different activities often overlap so that, for instance, it is often necessary to gather additional evidence to support particular causal hypotheses. Similarly, the identification of potential recommendations often forces analysts to reconsider their interpretation of why an adverse event occurred.

The “US Joint Commission on Accreditation of Healthcare Organizations (2004)” identifies similar stages when it argues that a “meaningful improvement in patient safety” is dependent upon:

1. Identification of the errors that occurs.
2. Analysis of each error to determine the underlying factors -- the "root causes" --that, if eliminated, could reduce the risk of similar errors in the future.
3. Compilation of data about error frequency and type and the root causes of these errors.
4. Dissemination of information about these errors and their root causes to permit health care organizations, where appropriate, to redesign their systems and processes to reduce the risk of future errors.
5. Periodic assessment of the effectiveness of the efforts taken to reduce the risk of errors.”

Previous Studies of Causation in Healthcare Incidents:

Chassin and Becher’s (2002) study of an individual incident has been supported by more sustained studies into the causes of adverse healthcare events. For example, Van Vuuren’s (19XX) study of Intensive Care, Accident and Emergency and Anaesthesia related incidents in UK hospitals found that poor communication was a major factor amongst the many organisation issues that contributed

to adverse events. A recent investigation into the causes of near miss incidents in an Edinburgh Intensive Care Unit also focussed on organisational factors, including poor communication between healthcare professionals (Busse and Johnson, 1999). This study was based on over ten years of incident data that was collected by a consultant, Dr David Wright. Over the lifetime of the reporting system, a study of the human factors literature together with operational experience were used to inform a classification scheme for adverse events. Each report was analyzed to identify 'causes', 'contributory factors', and 'detection factors'. 'Causes' included human error and equipment failure. Incidents involving human error were further associated with particular tasks, such as "vascular lines related", "drugs-administration-related" or "ventilator-related". Contributory factors included: inexperience with equipment; shortage of trained staff; night time; fatigue; poor equipment design; unit busy; agency nurse; lack of Suitable equipment; failure to check equipment; failure to perform hourly check; poor communication; thoughtlessness; presence of students/teaching; too many people present; poor visibility/position of equipment; grossly obese patient; turning the patient; patient inadequately sedated; lines not properly sutured into place; intracranial pressure monitor not properly secured; endotracheal tube not properly secured; chest drain tube not properly secured and nasogastric tube not properly secured. Finally, incidents were analyzed to identify detection factors. This illustrates an important issue. It can often be difficult to entirely remove the potential for adverse events; especially when healthcare professionals rely on information and services from other groups and individuals. In such circumstances, it is particularly important to strengthen those detection factors that have successfully identified potential adverse events in the past.

Literature Review:

Root Cause Analysis for beginners- James J. Rooney, Lee Vanden Heuvel:

In this Paper the authors define root cause analysis and how to perform it from a beginners perspective and also illustrate its importance in various sectors. According to them Root cause analysis is a process designed for use in investigating and categorizing the root causes of events with safety, health, environmental, quality, reliability and production impacts. Simply stated RCA is a tool designed to help not only what and how an event occurred but also how it occurred. The authors went on to explain about the root causes which are underlying causes which are reasonably identifiable and can be controlled by management. The authors also explained the process of performing Root cause Analysis as data collection, cause charting, root cause identification, recommendation generation and Implementation.

The development of an incident analysis tool for medical field- W. Van Vuuren, T.W.

Vanderschaff and C.E. Shea:

In this study of Intensive Care, Accident and Emergency and Anaesthesia related incidents in UK hospitals the authors found that poor communication was a major factor amongst the many organisation issues that contributed to adverse events. In this paper they first briefly describe PRISMA, an incident approach originally developed in the chemical process industry. Following this, the experiences of the first PRISMA applications in the medical field are outlined, leading to some important differences between the medical field and industry for the development of the medical version of PRISMA . Finally, the medical version of PRISMA is described in detail . Some first validation results are reported, and further developments are outlined .

Human Error in an Intensive Care Unit - A Cognitive Analysis of Critical Incidents- D. K.

Busse, C. W. Johnson:

In this recent investigation into the causes of near miss incidents in an Edinburgh Intensive Care Unit also focussed on organisational factors, including poor communication between healthcare professionals (Busse and Johnson, 1999). This study was based on over ten years of incident data that was collected by a consultant, Dr David Wright. Over the lifetime of the reporting system, a study of the human factors literature together with operational experience were used to inform a classification scheme for adverse events Each report was analyzed to identify 'causes', 'contributory factors', and 'detection factors'. 'Causes' included human error and equipment failure. Incidents involving human errors were further associated with particular tasks, such as "vascular lines related", "drugs-administration-related" or "ventilator-related".

The Wrong Patient- Mark R. Chassin, MD, MPP, MPH, and Elise C. Becher, MD, MA:

According to the authors among all types of medical errors, cases in which the wrong patient undergoes an invasive procedure are sufficiently distressing to warrant special attention. Nevertheless, institutions underreport such procedures, and the medical literature contains no discussions about them. This article examines the case of a patient who was mistakenly taken for another patient's invasive electrophysiology procedure. After reviewing the case and the results of the institution's "root-cause analysis," the discussants discovered at least 17 distinct errors, no single one of which could have caused this adverse event by itself. The discussants illustrate how these specific "active" errors interacted with a few underlying "latent conditions" (system weaknesses) to cause harm. The most remediable of these were absent or misused protocols for patient identification and informed consent, systematically faulty exchange of information among caregivers, and poorly functioning teams.

Root cause analysis is as useful and perhaps even more efficacious in the near-miss scenario. The technique is applicable not only to laboratory medicine but to all health care–associated disciplines. A root cause analysis should be performed as soon as possible after the error or variance occurs. Otherwise, important details may be missed. All of the personnel involved in the error must be involved in the analysis. Without all parties present, the discussion may lead to fictionalization or speculation that will dilute the facts. Asking for this level of involvement may cause staff to feel hostile, defensive, or apprehensive. Managers must explain that the purpose of the root cause analysis process is to focus on the setting of the error and the systems involved. Managers should also stress that the purpose of the analysis is not to assign blame. The comfort level with the technique increases with use, but the analysis will always be somewhat subjective.

Root cause analysis is a valuable management tool that can be readily learned by managers as well as frontline personnel. It can be conducted at several levels of depth and complexity. As shown in the safety case, this technique has moved us beyond comforting the employee after the event and reminding her to be careful—which is what we might have done in the past. The approach has helped us make meaningful changes. We have developed protocols related to cleaning and the handling of sharps. We have set the stage for reducing error.

Processes and sub processes of the various departments:

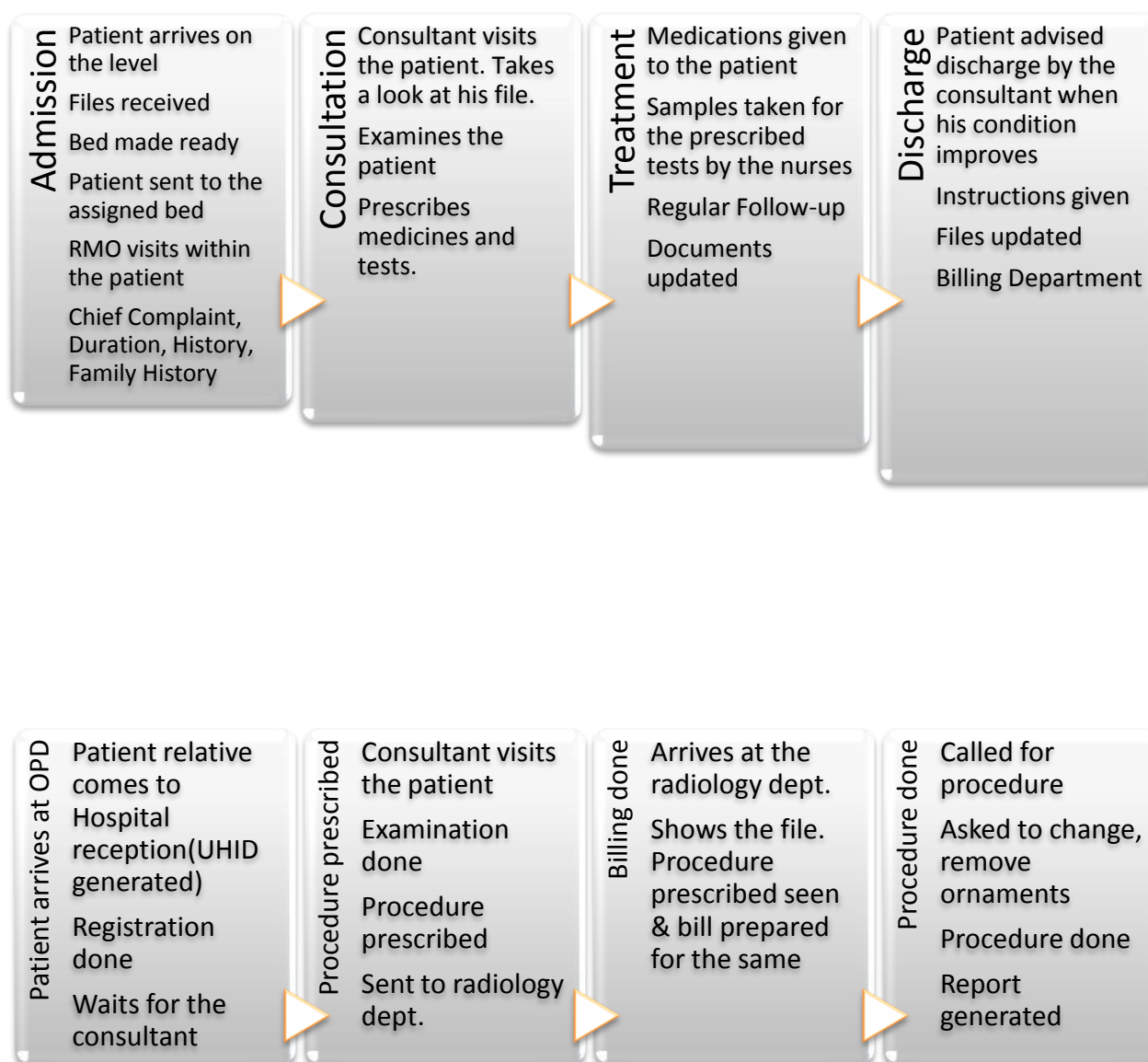


Fig.1.1

RESEARCH QUESTIONS:

1. What causes error in the patient identification ?
2. What improvements need to be done in the process to reduce the errors?

OBJECTIVES:

- To analyze the existing filters for patient identification process.
- Department wise process analysis to identify single point weakness or the loop holes.
- To identify errors in each of the process.
- To provide possible solutions to overcome patient identification errors.
- To analyze the patient identification process of the hospital and find out the challenges at each step of the process .
- To suggest strategies to reduce errors in the process, if required.

METHODOLOGY:

☉ Departmental process review for the following departments :

1. Radiology
2. Customer care
3. Wards

☉ Observation of the common identification errors.

- ☉ Potential errors analyzed after the departmental process review and physical observation.
- ☉ **Study area:** WOCKHARDT MULTISPECIALITY HOSPITAL, NAGPUR.
- ☉ **Study respondents:** Nurse, customer care staff, duty doctors and staff of the radiology department.

☉ Sampling :

1. This is a cross sectional study. (patient identification in the wards, customer care department and radiology department)
2. Process mapping was done and patients' records were followed and the existing process was reviewed.
3. Review of the current patient identification process was done.

Methods of Data collection:

- ☉ Process mapping
- ☉ Observation
- ☉ Informal Interviews (Nurses, customer care in-charge, Duty Doctors and radiology technician)

Tools of data collection:

- ⦿ Datasheet for RCA
- ⦿ FMEA data sheet

ETHICAL CONSIDERATIONS:

- The data collected from the records will be kept confidential and anonymous
- The anonymity, privacy and confidentiality of the respondents will be ensured
- Written Informed consent will be taken from the respondents wherever needed.
- The data collected will only be used for research purposes.

DATA ANALYSIS:

Table 1.1

<u>Failure Mode: First Evaluate failure mode before determining potential causes</u>	<u>Potential Causes</u>		<u>Scoring</u>			<u>Decision Tree Analysis</u>			
			Severity	occurrence	Detectability	RPN score	Existing Control	Single Point Weakness?	
<u>1. IP sticker with wrong details</u>	1a	customer care executive is unaware of the actual spelling	1	1	1	1	Y	Y	
	1b	customer care executive preoccupied	4	2	2	16	Y	Y	
	1c	error in the personal computer	1	2	2	4	Y	Y	
	1d	typing mistake	3	3	2	18	Y	Y	
<u>2. Wrong discharge slip issued</u>	2a	executive was preoccupied	5	2	1	10	Y	Y	
	2b	confusion regarding the patient details	4	1	1	4	Y	Y	
	2c	exchange of discharge slips	1	1	1	1	Y	Y	
<u>3. Wrong blood sample taken</u>	3a	sticker placed after the collection	5	2	2	20	Y	Y	
	3b	sample collected in the wrong bottle	5	2	2	20	Y	Y	
	3c	nursing staff preoccupied	5	3	3	45	Y	Y	
<u>4. IP stickers exchanged</u>	4a	patient's name not checked	4	3	2	24	Y	Y	
	4b	staff was busy	4	2	1	8	Y	Y	

	4c	recieved in the same condition from the ICUs	4	1	1	4	Y	Y	
<u>5.Wrong consent taken</u>	5a	RMO preoccupied	4	3	3	36	Y	Y	
	5b	Patient's file not cross checked before taking the consent	4	1	1	4	Y	Y	
<u>6.Wrong x-ray film</u>	6b	X-ray misplaced	4	4	3	48	Y	Y	
	6c	Wrong envelope taken	5	2	3	30	Y	Y	
	6e	Files exchanged	5	1	3	15	Y	Y	
	6f	Patient's details not checked on the x-ray by the consultant	5	3	3	45	Y	Y	
<u>7.Wrong sample collected</u>	7a	Nurse preoccupied.patient details not checked	4	3	3	36	Y	Y	
<u>8.Bed number used for the identification of the patient</u>	8a	UHID difficult to remember	4	5	4	80	Y	Y	
	8b	IPID too long and diffiicult to remember	4	4	4	64	N	Y	
	8c	Bed number easy to remember	5	5	4	100	Y	Y	
<u>9.Wrong medication</u>	9a	Patient's UHID/Name not cross checked from treatment sheet and not asked before administration of drugs	5	4	1	20	Y	Y	
	9b	Medication given keeping bed no. In mind	5	4	3	60	Y	Y	
	9c	Wrong treatment sheet referred for medication	5	2	2	20	Y	Y	
<u>10.Wrong stickers placed in patient's file</u>	10a	Carelessness(cust care)	5	2	2	20	Y	Y	

		10b	IP Sticker reordered and placed in other adjacent patient file	5	2	3	30	Y	Y	
<u>11.Prescription exchanged leading to wrong medication</u>		11a	Carelessness of the customer care	5	2	3	30	Y	Y	
		11b	RMO didnt cross check name while transcribing in to treatment sheet	5	3	2	30	Y	Y	
<u>12.X-ray exchanged</u>		12a	Housekeeping involed in dispatch and reciept of x ray film rather than radiology staff and nursing.	5	5	3	75	Y	Y	
		12b	Files exchanged due to carelessness	5	3	3	45	Y	Y	
<u>13.wrong patients x-ray shoot</u>		13a	Requisition not cross checked by the technician	5	2	3	30	Y	Y	
		13b	Requisition sent for the wrong patient	4	2	3	24	Y	Y	
		13c	Technician did not cross check with the nursing or patient	4	2	3	24	Y	Y	
<u>14.Wrong x ray dispatched</u>		14a	X-ray put in wrong envelope	5	3	3	45	Y	Y	
		14b	X-ray recieved without cross checking details on film.	4	3	3	36	Y	Y	
		14c	X-ray technician wrongly typed some other patients name.	3	2	3	18	Y	Y	
<u>15.Wrong report dispatched</u>		15	Wrong report dispatched to the patient	1	1	1	1	Y	Y	

ROOT CAUSE ANALYSIS :

Table 1.2

<u>ISSUE</u>			<u>LIKELY ROOT CAUSE</u>		
DESCRIPT ION	SOURC E	CRITICALITY	DESCRIPTIO N	LIKELIHOOD (high/med/low)	
		<u>LEVEL</u> <u>high/med/low</u>			
IP sticker with wrong details	Custom e r Care	Low	Customer care executive is unaware of the actual spelling	Low	
			Customer care executive preoccupied	Med	
			Error in the personal computer	Med	
			Typing mistake	Med	
Wrong discharge slip issued	Custom e r Care	Low	Executive was preoccupied	Med	
			Confusion regarding the patient details	Low	
			Exchange of discharge slips	Low	
	Custom e r Care	Med	Carelessness(cu st care)	Med	
			IP Sticker reordered and placed in other adjacent patient file	Med	
	Custom e r Care	Med	Carelessness of the customer care	Med	
IP stickers exchanged	Wards	Med	Patient's name not checked	Med	
			Staff was preoccupied	Med	
			Recieved in the same condition from the ICUs	Low	
Wrong consent taken	Wards	Med	RMO preoccupied	Med	

			Patient's file not cross checked before taking the consent	Low	
Bed number used for the identification of the patient	Wards	High	UHID difficult to remember	High	
			IPID too long and difficult to remember	High	
			Bed number easy to remember	High	
Wrong medication	Wards	High	Patient's UHID/Name not cross checked from treatment sheet and not asked before administration of drugs	High	
			Medication given keeping bed no. In mind	High	
			Wrong treatment sheet referred for medication	Med	
Wrong stickers placed in patient's file	Radiology	High	X-ray misplaced	High	
			Wrong envelope taken	Med	
			Files exchanged	Low	
			Patient's details not checked on the x-ray by the consultant	Med	
			RMO didn't cross check name while transcribing in to treatment sheet	Med	
X-ray exchanged	Radiology	High	Housekeeping involved in dispatch and	High	

			reciept of x ray film rather than radiology staff and nursing.		
			Files exchanged due to carelessness	Med	
Wrong patients x-ray shoot	Radiology	Med	Requisition not cross checked by the technician	Med	
			Requisition sent for the wrong patient	Med	
			Technician did not cross check with the nursing or patient	Med	
Wrong x ray dispatched	Radiology	Med	X-ray put in wrong envelope	Med	
			X-ray recieved without cross checking details on film.	Med	
			X-ray technician wrongly typed some other patients name.	Med	
	Lab	High	Nurse preoccupied. patient details not checked	Med	

Suggestions:

- Patient's name must be checked before the administration of drugs.
- ID band must be checked before the patient is admitted to the ward.
- IP sticker must be placed on the vile before the collection of the blood sample.
- The IP sticker should not be placed on the cassette of the X-ray film. This might lead to confusion among the films and wrong x-ray film could be given to other patient.
- Nursing staff must be regularly updated and educated about the importance of patient identification and the complications related to the misidentification of the patient.
- Surprise audits must be conducted inorder to check the method of patient identification.

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ACRONYMS AND ABBREVIATIONS:

MR No.	Medical record no.
NRHM ward	National Rural Health Mission Ward
TPA	Third Party Assurance
OT	Operation theatre
LAMA	Left Against Medical Advice
HMIS	Hospital Management Information System
RMO	Resident Medical officer

SPECIFIC PROJECT 2:

A STUDY ON DISCHARGE PROCESS IN A SUPER SPECIALTY

HOSPITAL:

OBJECTIVES:

- To review the discharge process in a hospital
- To identify step/point of delays in the discharge process of hospital against the standard time
- To analyze the discharge process of the hospital and find out the challenges at each step of the process
- To suggest strategies to reduce time taken for processing discharge, if required.

AREAS COVERED IN STUDY:

- Discharge pool
- General wards (Male, Female, Onco,)
- Private ward
- Semi Private ward
- Gynecology Ward
- Deluxe wards and Executive Suites
- Day Care Wards
- NRHM ward

INTRODUCTION:

For most people, the most significant moment of any hospital stay is when they are told they can leave and how carefully they prepare for this anticipated departure is in many ways as important as the treatment they receive while under a doctor's care. Referred to as discharge planning, hospitals understand the importance of developing a careful and appropriate agenda to address that which will inevitably occur outside the hospital walls. Whether the patient is headed to his or her own home, the home of a friend or loved one, or to a rehabilitation center or nursing home, knowing what to expect goes a long way toward reducing stress and ensuring the best outcome for everyone involved.

Discharge planners – who can be hospital administrators, social workers, doctors, or nurse case managers – often work closely with families to explain a patient's outlook, offer direction on continued care, and help identify the most appropriate facility to suit the patient's needs. Depending on the patient's condition, a good discharge plan may be as simple to execute as taking a few days off work to help at home or as complex as researching health care facilities and coordinating assistance among family members.

Generally, discharge is a five-stage process:

Stage One: The patient's mental and physical conditions are evaluated by the attending physician and nursing staff, with particular focus on whether or not the patient can safely return to his or her original living situation.

Stage Two: The discharge planner explains the doctor's evaluation to the patient and any available caregivers, focusing on future care, including whether to transfer the patient to his or her own home, that of a family member, a nursing home, or rehabilitation facility.

Stage Three: The discharge planner will now begin to personalize the patient's plan, discussing any necessary caregiver training, possible third party care, and whether any extra equipment (such as wheelchairs or breathing assistance devices) will be necessary.

Stage Four: The discharge planner may now recommend third-party facilities or home care services that are available to suit the patient's needs, taking into consideration geographic, religious, language, and/or cultural issues that might affect quality of care.

Stage Five: This final phase is designed to ensure that the appointed caregiver has all the information necessary to carry out the task at hand, including a summary of the hospital stay, a list of medications, and important contact information in case of questions or concerns. There may also be a discussion about potential warning signs in the event that a patient's condition should worsen.

A discharge focused bed strategy can increase inpatient volume without a subsequent increase in cost for the Hospital which can be a substantial improvement for the Hospital.

Literature review:

1. Prevention of delay in patient discharge process- an Emphasis on Nurse's role:

In this study by Peter R, Jessica E, Zaltmann G, planning for a patients post discharge care does not begin on the day when decision is made to release the patient from hospital. It is generally accepted that discharge planning should start before admission or at the time of admission. A combination of various factors like age, multiple pathology and organizational factors like lack of alternative forms of care facilities put patient at risk of delayed discharge. In this article the author provides strategies to improve nurse's participation in discharge planning.

2. The Discharge planning process / Process Improvement:

In the study by Shepperd S. et al, discharge planning is critical to ensuring rapid, safe and smooth transition from hospital to another care environment; it involves social work

functions of high risk screening, social work assessment, counseling, locating and arranging services, consultation/collaboration, patient and family education, patient advocacy and chart documentation. It is a complex activity requiring a wide range of clinical and organizational skills to address needs of patient, family, and health care systems and to promote optimum functioning of patients, families and support systems. Delay factors may be internal like waiting for discharge summaries, external like convalescence, palliative care and psychological like social isolation of patient, inadequate support at home, lack of medical aids etc.

3. Research review on tracking Delayed Discharge:

In the study by Zehner, R.B. Mofitt R, a combination of individual, medical and organizational factors interact to put people at risk of delayed discharge. The Literature review identifies that older people, those with multiple pathology and those with some specific conditions such as neurological deficit are most at risk. In other words it is not the clinical conditions that are causing delay but how the organization is managing services to care for these particular groups.

DISCHARGE PROCESS AT WOCKHARDT HOSPITALS:

The discharge of a patient is categorized into following:

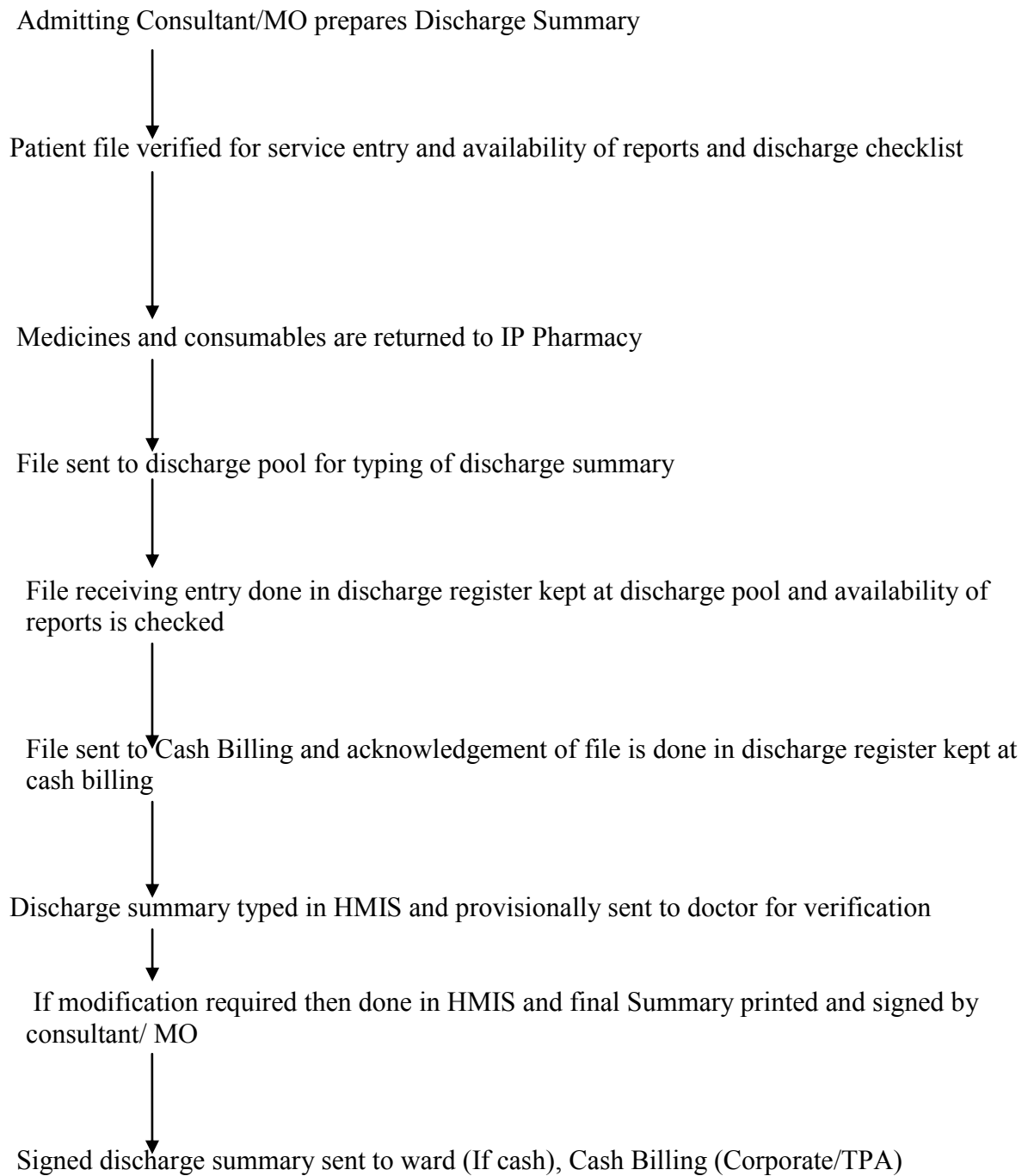
1. Normal Discharge.
2. Left against Medical advice (LAMA)

For our study purpose only the process of Normal discharge and LAMA is taken and the process of discharge is as follows:

1. NORMAL DISCHARGE PROCESS:

Doctor Advised Discharge





2. LAMA:

Consultant counsels the patient for pros and cons of LAMA and treatment along with further medication details are well explained



Consent form of LAMA is filled up by admitting consultant and duly signed by patient/relative and doctor



Admitting consultant/MO prepares LAMA Summary



Patient file verified for service entry and availability of reports and discharge checklist



Medicines and consumables returned



File sent to discharge pool for typing of LAMA summary



File receiving entry done in discharge register kept at discharge pool and availability of reports is checked



File sent to Cash Billing and acknowledgement done in discharge register kept at cash billing



LAMA summary typed in HMIS and provisionally sent to doctor for verification



If modification required then done in HMIS and final Summary printed and signed by consultant/ MO



Signed LAMA summary sent to ward (If cash), Cash Billing (Corporate/TPA).

On the basis of the above processes we can derive the basic steps involved in discharge process which are:

- a. the consultant advises discharge.
- b. the Consultant/ Mo prepares discharge summary
- c. File verified for entries and reports and discharge checklist prepared
- d. medicines returned
- e. file sent to discharge pool
- f. file receiving entry done in discharge register kept at discharge pool
- g. File sent to billing
- h. Summary typed in HMIS and provisionally sent to doctor for verification
- i. final discharge summary made after approval and signed
- j. Signed summary sent to ward or TPA/Corporate
- k. Patient discharged.

On the basis of the general steps discussed above the discharge process is analyzed as follows.

RESEARCH QUESTIONS:

3. Which step cause delays in the process of Discharge?
4. What improvements need to be done in the process of discharge to decrease its process time?

OBJECTIVES:

- To review the discharge process in a hospital
- To identify step/point of delays in the discharge process of hospital against the standard time
- To analyze the discharge process of the hospital and find out the challenges at each step of the process
- To suggest strategies to reduce time taken for processing discharge, if required.

METHODOLOGY:

Study area: WOCKHARD hospital, Nagpur.

Study respondents: Nurse, discharge pool staff, duty doctors and administrative staff.

Sampling and sample size:

This is a cross sectional study. (Discharge from the wards and ICUs)

A time motion study was done and patients' records were followed and the existing process was reviewed.

To review the current discharge process a sample of 300 patients were selected randomly during a period of 2 months i.e. 1 February 2014 to 8 April 2014. The goal was to follow minimum 50% of discharges occurring in the hospital every day.

Methods of Data collection:

- Time motion study
- Observation
- Informal Interviews (Nurses, Clerical, Duty Doctors and Admin staff)

Tools of data collection:

- Datasheet for recording data.
- Format for recording the time and movement of patient file.

Ethical Considerations:

- The data collected from the records will be kept confidential and anonymous
- The anonymity, privacy and confidentiality of the respondents will be ensured
- Written Informed consent will be taken from the respondents wherever needed.
- The data collected will only be used for research purposes.

DATA ANALYSIS:

The discharge time on average was found to be about 4 hours.

Sample Size: 300

Table 2.1

<u>Analysis of discharge Time</u>	<u>Time in hours</u>
Mean Discharge Time	4 Hours (16.3%)
Minimum Time	2.25 Hours (3.1%)
Maximum Time	8.5 Hours (0.3%)

For the sample of 300 the Average discharge time comes out to be about 4 hours with a minimum time of 2.25 hours and a maximum time of 8.5 hours. If we take 2 hours as benchmark discharge time for the hospital then the time exceeds this average by almost 2 hours.

For further Analysis the Discharge time of the patients can be divided into:

1. CASH PATIENT
2. CREDIT PATIENT

The discharges can also be classified as:

1. UNPLANNED DISCHARGE
2. PLANNED DISCHARGE

We can see the average discharge time for the categories as:

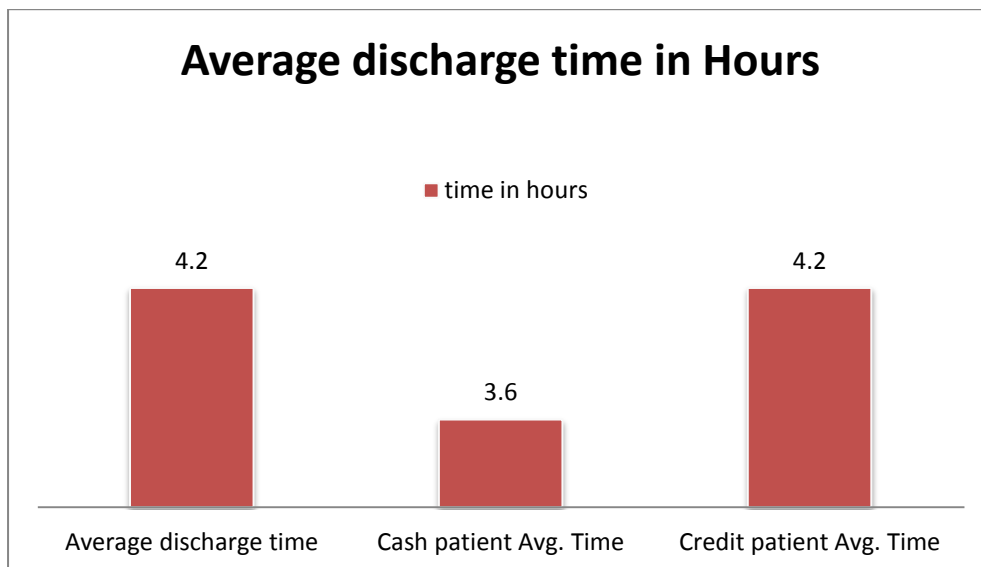


Fig. 2.1

The Discharge Time for Unplanned and planned discharges are:

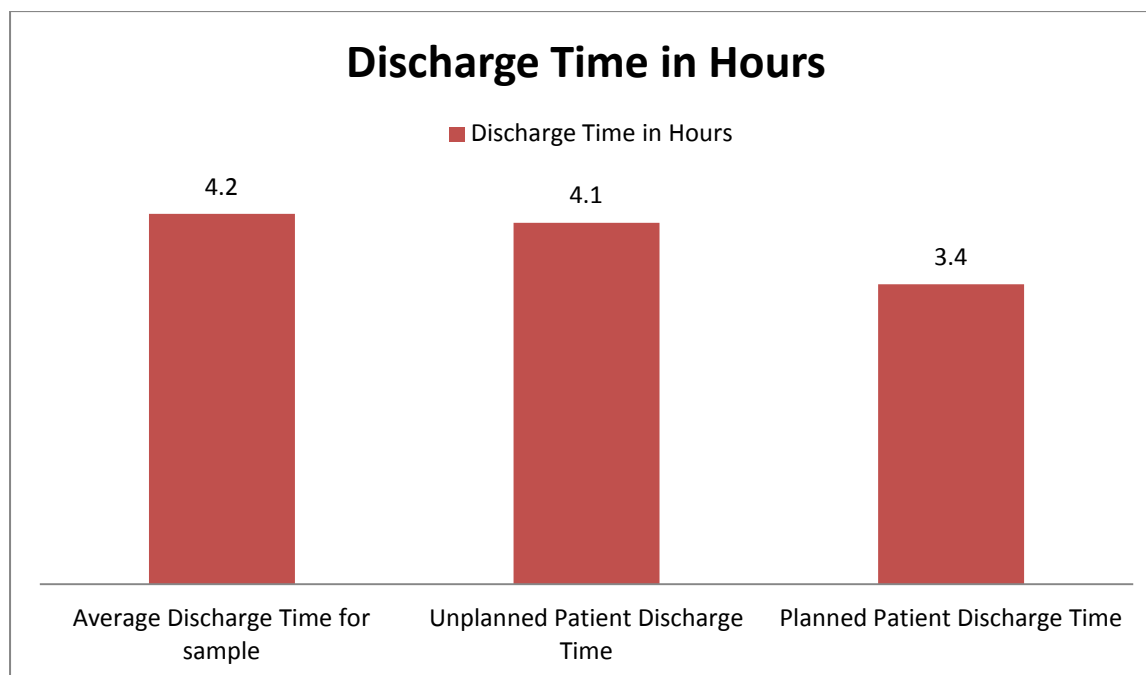


Fig. 2.2

- The Average discharge time for the sample is 4.2 hours
- The average discharge time for the patients with planned discharges is 3.4 hours.
- The Average Discharge Time for patients with unplanned discharge is 4.1 hours.

1. **CREDIT PATIENT:**

For Credit Patient the analysis is given below:

Sample size: 155

Table 2.2

<u>Analysis of data</u>	<u>Time in hours</u>
Mean Discharge time	4.2 hours (20%)
Minimum Time	2.5 hours (4.7%)
Maximum Time	8.5 hours (0.7%)

- For Credit patients the average time for the discharge comes out to be about 4.2 for 20% of discharges hours with a minimum time of 2.5 hours for 4.7% and a maximum time of 9 hours for 0.7% of discharges.

- The average discharge time of credit patient is closer to sample average discharge time of the sample which may mean that the higher discharge time of credit patient is causing the overall higher discharge time of the sample.
- The Credit patients has to obtain approval from various organizations like TPA or corporate like ESIC, BHEL, BSP etc. which takes around 2-2.25 hours on an average, this time is of significance as it is not in the control of the hospital and cannot be decreased by a hospital, any discharge planning for Credit patient must take into account 2-2.25 hours additional for the clearance from the TPA/Corporate.
- Delay in hospital side comes normally form lack of discharge planning and interdepartmental co-ordination where the TPA and the nursing staff about the discharge of a patient. If they are involved in planning discharge then the patient can be informed beforehand about his/her discharge and necessary documents needed so that there is no delay for the need of documents from the patient side, also all the activities before sending the file for clearance and after getting clearance can be made streamlined with increased co-ordination to decrease overall discharge time.

UNPLANNED DISCHARGE:

For Patients with unplanned discharge the analysis is given below:

We can see the average discharge time for the categories as

The Discharge Time for Unplanned and planned discharges are:

- The Average discharge time for the sample is 4.2 hours
- The average discharge time for the patients with planned discharges is 3.4 hours.
- The Average Discharge Time for patients with unplanned discharge is 4.1 hours.

2. CREDIT PATIENT:

For Credit Patient the analysis is given below:

- For Credit patients the average time for the discharge comes out to be about 4.2 for 20% of discharges hours with a minimum time of 2.5 hours for 4.7% and a maximum time of 9 hours for 0.7% of discharges.
- The average discharge time of credit patient is closer to sample average discharge time of the sample which may mean that the higher discharge time of credit patient is causing the overall higher discharge time of the sample.
- The Credit patients has to obtain approval from various organizations like TPA or corporate like ESIC, BHEL, BSP etc. which takes around 2-2.25 hours on an average, this time is of significance as it is not in the control of the hospital and cannot be decreased by a hospital, any discharge planning for Credit patient must take into account 2-2.25 hours additional for the clearance from the TPA/Corporate.
- Delay in hospital side comes normally form lack of discharge planning and interdepartmental co-ordination where the TPA and the nursing staff about the discharge of a patient. If they are involved in planning discharge then the patient can be informed beforehand about his/her discharge and necessary documents needed so that there is no delay for the need of documents from the patient side, also all the activities before sending the file for clearance and after getting clearance can be made streamlined with increased co-ordination to decrease overall discharge time.

Sample Size: 238

Table 2.3

<u>Analysis of data</u>	<u>Time in hours</u>
Mean Discharge time	4.1 hours (18.9%)
Minimum Time	2.25 hours (2.1%)
Maximum Time	8.5 hours (0.4%)

- For unplanned discharge the average discharge time comes out to be about 4.1 hours for 19% of discharges with a minimum time of 2.25 hours for 2.1% and a maximum time of 8.5 hours for 0.4% of discharges.
- Here we have taken those patients as unplanned discharges whose discharge summaries were not made before hand and/or the nursing staffs were not informed prior to the day of discharge about the discharge of the patient by the doctor.
- We can see here that out of a sample of 300 patients almost 80% of the sample i.e. about 238 patients had unplanned discharges which signifies that the discharge time can be reduced further if discharge is planned by the doctor and care staff.
- Also the average discharge time of unplanned discharges comes closer to average discharge time of 4.2 hour which signifies that unplanned discharges are contributing more to the overall discharges in the hospital and if discharge planning is implemented then it can help decrease discharge time.

PLANNED DISCHARGE:

For Planned Discharge the analysis is as given below:

Sample Size: 62 patients

Table 2.4

<u>Analysis of data</u>	<u>Time in hours</u>
Mean Discharge time	3.4 hours (17.9%)
Minimum Time	2.25 hours (8.9%)
Maximum Time	5 hours (7.1%)

- The discharge time for planned discharges comes out to be about 3.4 hours for 17.9% of discharges with a minimum of 2.25 hours for 8.9% and a maximum of 5 hours for 7.1% of discharges.
- The Average discharge time for the planned discharges is significantly lower than the average discharge time of 4.2 hours and it also has less variation as seen from the minimum and maximum discharge time values which signifies that the discharge time can be improved with planned discharges and process improvement.
- We have taken those discharges as planned which had their discharge summaries made beforehand and/or the nursing staff was informed about the discharge of the patient; although making discharge summaries beforehand doesn't necessarily signify that the discharge was planned beforehand since many a times even though the summary was made and approved previously, the doctor made another summary on the day of discharge or ordered modifications in the summary which leads to additional time for correction in the already made discharge summary or complete re-typing of the summary.

Discharge process step by step:

1. Discharge advised and file sent to discharge pool:

Table 2.5

<u>Mean time</u>	<u>Max time</u>	<u>Min. time</u>
1.13 hours	3 hours	0.50 hours

- When Doctor advises discharge the duty nurse then checks the file for all the reports and documents and attaches a discharge checklist with the file, she also returns the unused medicine through the HMIS to the pharmacy.
- After this the duty doctor prepares a rough Discharge summary based on the prescription of the patient and its reports. When all of this is completed the file is sent to discharge pool.
- Many a time the doctor advises discharge summary to be prepared before advising discharge, the biggest problem in this step was doctors not mentioning the discharge time which made it difficult to track the discharge of the patient and the time had to be estimated based on the Nurses and RMO.
- It was observed that nurses would call the RMOs after they finished their work to make rough summary, if the RMOs are present in the wards all the time then they can prepare Rough summary side by side when Nurses are returning medicine and attaching Discharge checklist which will reduce this time.
- Also during the study periods it was observed some times that the RMOs didn't prepare adequate discharge summary or left it blank which was then completed by discharge pool staff which are not qualified to do so, while informal interviews with the staff it was learnt that this had happened many times and the discharge pool staff would then correct the rough summary from the information from HMIS, this should be looked into.

2. File Sent to Billing from Discharge Pool:

Table 2.6

<u>Mean Time</u>	<u>Max. time</u>	<u>Min. time</u>
12.8 minutes	105 minutes	5 minutes

- In this step the file is sent to billing department for constructing bill from the discharge pool. Entry is made in the discharge pool register about the time when file is received from nursing station.
- This step can be removed altogether to save time in the Discharge Process. During informal Interviews with the discharge Pool staff also it was suggested that this step can be removed and the file can be sent directly to Billing department as sending the file to discharge pool is of no any immediate advantage and it only adds to the no. of records kept at Pool and it also requires extra work for the attendants which are already busy in getting the summary approved from the Consultants; the attendants have to make extra round especially for the file from the pool to billing department along with the Consultants chamber. These extra rounds add to delays in getting the summary approved by the Consultant which is the core function of the Discharge pool staff.
- The Max. time of 105 minutes was only in 1 case where 1 investigation report was missing from the file and it was searched before sending the file for billing.

3. File received from billing:

Table 2.7

Mean time	Max. time	Min. time
30.9 minutes	135 minutes	5 minutes

- In this step the file is received from billing department after the bill is prepared and returned to the discharge pool. Entry is done in the discharge pool register for the time of receiving of file from the billing department.
- This step also can be removed along with the previous step and file can be directly sent to billing from the wards and received directly from the billing and returned to wards. Removing this step along with the previous one will help decrease discharge time and reduce workload on attendants of discharge pool.

- Main problem in this step arises when the patient is admitted for a long time so when the patient is discharged finally the billing department has to calculate all the expenses from day 1 to day of discharge which can even be 1 month in some cases. This increases workload on billing department and increases probability of mistakes, which lead to time wastage in re-audit of bill and causes bad name for the hospital.
- Also if the billing amount is large and the patient has not been informed previously then the patient may not have whole of the amount prepared at the time of discharge which may lead to delay in depositing the amount and delay in vacating the bed which may lead to high discharge time for the Hospital.
- This can be corrected by daily or twice/thrice weekly audit of bill for the patient so that there is not much workload and no errors on the day of discharge. The patient can also be informed beforehand about large amounts and can be said to deposit large amount in small installments from the day of admission, this will lead to reduced weight of payment on patient and reduced discharge time and problems for the hospital on the day of discharge.
- The max. time of 135 minutes was found only in 1 case.

4. File sent to ward:

Table 2.8

<u>Mean time</u>	<u>Max. time</u>	<u>Min. time</u>
17.3 Minutes	175 Minutes	5 Minutes

- In this step the file is sent to ward from discharge pool after receiving from billing department and entry is done in the discharge pool register about the time of receiving of the file in the ward by the person who is receiving the file from the discharge pool attendant.

- Files can be received directly by ward attendant from the billing department instead of going through the discharge pool attendant which can lead to more streamlined process and decreased discharge time.
- Maximum time of 175 minutes was found only in 1 case where there was shortage of attendants on the day with much workload on only 1 attendant.

5. Receiving of approved discharge Summary at the ward:

Table 2.9

<u>Mean Time</u>	<u>Max. time</u>	<u>Min. time</u>
2.1 Hours	6.5 hours	.5 Hours

- In this step the approved final discharge summary is sent to the ward after being approved by the Consultant.
- When the consultant advises discharge, the duty doctor prepares a rough discharge summary which is then sent to the Discharge Pool along with the file where it is printed and sent for approval from the consultant. Once approved it is then printed finally and then signed by the admitting Consultant and then sent to ward. Entry is made in the discharge Pool register about the summary timings.
- In this process the main delay is in getting summary approved by the Consultant, if the discharge is preplanned then the discharge summary could be prepared and printed beforehand and then it can be approved on the day of discharge which may lead to decreased approval time
- A medical transcriptionist can be hired for typing discharge summary; this may help in reducing the errors in discharge summary and may also decrease the no. of rough discharge summaries made to get approval from the Consultant, since the consultant would then sign on the 1st copy itself due to reduced errors.

- In addition to this daily updating of discharge summary can be done while the patient is admitted. This helps in reducing workload on the day of discharge and reducing the no. of errors in discharge summary. The consultant could directly sign on the completed summary along with the discharge orders on the day of discharge.
- The duty doctors should be encouraged to make complete discharge summary so that the discharge pool staff is not involved in making discharge summaries.

Suggestions:

- File from the ward can be directly sent to billing, removing the extra distance travelled by file when it is sent to discharge pool from where it is re-sent to Billing. This will help in decreasing discharge time as non value added steps are reduced.
- Consultants should be included in the discharge process and efforts should be taken to increase planned discharges.
- Supervision of Duty Doctors, so that they finish rough discharge summary on time and write complete discharge summary so that the discharge pool staff doesn't have to re-check the entries in the system, this saves time for the discharge pool staff when they are typing discharge summary.
- A medical Transcriptionist can be hired who can prepare and print discharge summary. This will lead to decreased errors in typing of discharge summaries and will reduce the no. of rough discharge summaries needed to get final approval from the Consultant.
- The discharge summary can be updated either daily or in every 2 days so that time can be saved on the day of discharge and the discharge summary can be approved by the consultant straightaway.

- Daily updating of bill can be done along with daily audit of the bill of the patient and patients can be asked to deposit small amounts every 2-3 days which will help reduce burden of bill on patients and reduce the time patient occupies bed while arranging money
- Inter departmental co-ordination can be increased so that all the concerned departments (Duty Doctor, Consultant, TPA/Corporate Billing, Cash Billing, Nursing Staff and Discharge Pool) know about the discharge of the patient before hand and can be prepared with the formalities and documentation for the discharge.
- An assistant could be hired for Consultants who are very busy, this assistant would be from medical field and will co-ordinate with the consultants for the discharge process and could approve it on their behalf after getting their permission when Consultants are in OT or in lunch.

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ANNEXURE

Format for recording data on file movement:

S.no	Ward	Type	Discharge Advised	Sent to discharge pool	Sent to billing	Received from billing	Sent to ward	Rough discharge summary made	Approved discharge summary received in ward	Final discharge	Remarks	Name of Doctor
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- All the data was recorded in hh:mm format.

ACRONYMS AND ABBREVIATIONS:

MR No.	Medical record no.
NRHM ward	National Rural Health Mission Ward
TPA	Third Party Assurance
OT	Operation theatre
LAMA	Left Against Medical Advice
HMIS	Hospital Management Information System
RMO	Resident Medical officer