

**STUDY ON INTRA HOSPITAL PATIENTS TRANSFER IN THE MISSION
HOSPITAL, DURGAPUR**

Dissertation Submitted to



The IIHMR University, Jaipur

for the partial fulfillment for the award of the degree of

Master of Business Administration (MBA)

in

Hospital and Health Management

by

Ishita Mondal

Under the Supervision and Guidance of

Dr. Vidya Bhushan Tripathi

2025



Ref: TMH/HRD/Training/May-25/ 71

Dated: 31.05.2025

TO WHOM IT MAY CONCERN

This is to certify that **Ms. Ishita Mondal** a student of **MBA in Hospital & Healthcare Management** at **IIHMR University, Jaipur** has undergone **Dissertation Program** in the Department of Quality Assurance at The Mission Hospital, Durgapur from 12.03.2025 to 31.05.2025. Her topic for Dissertation was **"Intra-Hospital patient transfer: Analysis and Optimization at The Mission Hospital, Durgapur"**

We wish her all the very best for her future endeavors.

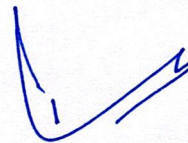
For The Mission Hospital, Durgapur


Ramesh Lall
President-HR & Admin

CERTIFICATE

This is to certify that **Miss Ishita Mondal** in partial fulfillment of the requirements for the award of the degree of MBA (Hospital and Health Management) from the IIHMR University, Jaipur, successfully completed her internship at **THE MISSION HOSPITAL, DURGAPUR**, Mar 12 - May 31, 2025.

Place: Durgapur
Date: May 31, 2025.



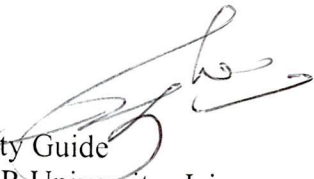
Dr. Partha Pal
Medical Director
The Mission Hospital, Durgapur

Dr. Partha Pal
Medical Director
The Mission Hospital
Durgapur - 12 (W.B)
Regd. No.- 70288 (WBMC)

CERTIFICATE

This is to certify that the dissertation titled "Study on Intra-Hospital Patient Transfer in the Mission Hospital, Durgapur," is a record of the research.

Work undertaken by **Ishita Mondal** in partial fulfillment of the requirements for the award of the degree of MBA (Hospital and Health Management) from the IIHMR University, Jaipur, under my guidance and supervision, and his/her approach to the research study has been sincere, scientific, and analytical.



Faculty Guide
IIHMR University, Jaipur

Date

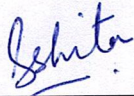


School Dean
IIHMR University, Jaipur

Date

DECLARATION BY STUDENT

I hereby declare that this dissertation, titled "Study on Intra-Hospital Patient Transfer in the Mission Hospital, Durgapur," is the bona fide record of my original research work. I declare that it has not been submitted to any other university or institution for the award of any degree or diploma. Information derived from the published or unpublished work of others has been duly acknowledged in the text.



Ishita Mondal

Date 31-05-2025

ACKNOWLEDGEMENT

All of the following people deserve my sincere gratitude for their contributions throughout my time working at MISSION HOSPITAL DURGAPUR

First and foremost, I would like to thank my mentor, Dr. PARTHA PAL (Medical Director), for her unwavering guidance and assistance during my time at MISSION Hospital in DURGAPUR. I'm glad I had the opportunity to study under him since his expertise, zeal, and experience have been a continual source of motivation and encouragement.

I also thank, I would want to thank Dr. TARAKNATH for all of His wonderful advice, help, and support during my visit. As I've grown professionally as a healthcare provider, his guidance and leadership have been beneficial.

IIHMR JAIPUR, for providing me with the opportunity to work and learn in such a prestigious medical institution. MISSION Hospital has become a premier center of excellence in healthcare, thanks in large part to its vision and leadership.

I would like to conclude by expressing my profound gratitude to Dr. P R SODANI, President of IIHMR University in Jaipur, for providing me with the chance to finish this internship. And no. For his excellent supervision, advice, and collaboration, I would like to thank VIDHYA BHUSHAN TRIPATHI, my academic professor at IIHMR University. This report shows how careful and considerate he is.

I would also like to sincerely thank my respected the Placement Cell at the university assisted me with the application procedure for the internship and occasionally sent guidelines for the internship.

Ishita Mondal

MBA Hospital and Health Management

IIHMR University, Jaipur

Table of Contents

Chapter 1: Introduction.....	12
Chapter 2: Review of Literature.....	23
Chapter 3: Methodology.....	25
Chapter 4: Results and Discussion.....	29
Chapter 5: Discussion (including HAD analysis).....	37
Chapter 6: Recommendations.....	44
Chapter 7: Conclusion.....	52
References.....	54

List of Figures

Fig 4.1: Compliance Rate – Patient Identification (Pre-Transport).....	29
Fig 4.2: Compliance Rate – During Transport.....	30
Fig 4.3: Compliance Rate – Post-Transport.....	31
Fig 4.4: Number of Patients Transferred from ED.....	32
Fig 4.5: Percentage of Critical and Non-Critical Patients Transferred.....	33
Fig 1.1: Workflow for Intra-Hospital Patient Transfer.....	16

List of Tables

Table 1.1: List of Potential Problems – Adverse Events during Transport.....	19
Table 1.2: Equipment-related Adverse Events.....	20
Table 1.3: Patient-related Adverse Events.....	20
Table 3.1: Sample Size Distribution and Inclusion Criteria Summary.....	26
Table 4.1: Compliance% % for Pre-Transport.....	29
Table 4.2: Compliance % for During Transport.....	30
Table 4.3: Compliance% % for Post-Transport.....	31
Table 4.4: Number of Patients Transferred Per Department.....	32
Table 4.5: Categories of Critical and Non-Critical Patients.....	33

ABBREVIATIONS

IHT	Intra-Hospital Transfer
ED	Emergency Department
OPD	Outpatient Department
ICU	Intensive Care Unit
OT	Operation Theatre
HAD	Hospital-Acquired Diagnosis
HAI	Hospital-Acquired Infection
LOS	Length of Stay
SOP	Standard Operating Procedure
HER	Electronic Health Record

Abstract

A key component of hospital operations, effective intra-hospital patient transport has a direct influence on patient safety, resource use, and clinical results. Interdepartmental workflow disruptions, longer lengths of stay (LOS), and compromised care can result from delays or poor management during transfers. With an emphasis on patient movements between the Emergency Department (ED), Inpatient Department (IPD), and Day Care, this study intends to investigate the procedures, difficulties, and safety precautions associated with intra-hospital transfers at Mission Hospital, Durgapur.

This study's main goal was to assess the current patient transfer procedures and pinpoint significant weaknesses in the planning, execution, and handover phases of the transport process. The function of clinical documentation, keeping an eye on equipment availability, staff readiness, and departmental communication during transfers were among the specific areas evaluated. The study also looked at how these elements affected departmental effectiveness and patient safety.

The study employed a quantitative, observational, and retrospective design. Between March 12 and May 30, 2025, between 9:00 AM and 5:00 PM, information was gathered from 300 patients who were transferred within the hospital. Patients from the ED, IPD, and Day Care were included in the study population; patients from the OPD, those who were discovered dead upon arrival or while receiving treatment, and those having minor procedures were not. Pre-transport (documentation, consent, and equipment readiness), during-transport (monitoring, lift availability, emergency preparedness), and post-transport (patient reassessment, ISBAR-based handover, and record updates) were the three transfer phases into which the data were divided.

Demographic information and the frequency of departmental transfers were compiled using descriptive statistics, and the common problems seen during each stage of patient movement were evaluated using trend analysis. The findings identified a number of operational issues, such as insufficient lift availability, a lack of skilled transport workers, inadequate documentation, and irregular patient identification and monitoring equipment use. Notably, it was found that many transfers lacked effective departmental communication, which caused delays in clinical response and patient reception.

The study found that although the hospital has a standard procedure for intra-hospital transfers, the safety and effectiveness of transfers are greatly impacted by deficiencies in real-time coordination, infrastructure availability (such as lifts and transport trolleys), and clinical readiness. Mandatory use of standardised checklists, frequent training of nurses and General Duty Assistants (GDAs) in patient handling and communication techniques, and the assignment of specialised transfer teams during peak operating hours are among the recommendations. Furthermore, improving real-time coordination and lift availability via centralised communication hubs could increase patient throughput.

In order to guarantee patient safety, lower clinical risks, and improve institutional workflow, this dissertation provides useful insights into enhancing intra-hospital transport mechanisms. The results are applicable not only to Mission Hospital in Durgapur but also to other tertiary care facilities dealing with comparable logistical issues involving patient transfers.

Keywords: emergency room, inpatient care, patient safety, intra-hospital transfer, and healthcare logistics

Chapter 1:

Introduction

Purpose of the Research

This study aims to analyse the Mission Hospital in Durgapur's intra-hospital patient transfer system critically in order to comprehend current procedures, spot inefficiencies and safety hazards, and make evidence-based suggestions for process improvement. The goal of the research is to guarantee the safe, prompt, and well-coordinated movement of patients within the hospital setting by examining real-time patient transfers between departments.

Problem Being Investigated

Despite being a routine aspect of hospital operations, intra-hospital patient transfers remain a high-risk process that is often poorly standardized and inadequately monitored. The existing system at Mission Hospital, Durgapur, shows several challenges that compromise patient safety, workflow efficiency, and quality of care.

The key problems being investigated in this study include:

- 1. No Standardised Protocols:** There is no standard protocol or checklist for how to transfer patients, which means that staff in different departments do things differently.
- 2. Lack of communication between departments:** Poor communication between the sending and receiving units can cause confusion, make the receiving unit unprepared, or make them do the same thing twice, all of which can delay the handover.
- 3. Delays Because of Lift Unavailability or Coordination Problems:** One major operational bottleneck is the delay caused by lifts not being coordinated or available, especially during emergency transfers. This delay could hurt important patient care timelines, especially in the ICU or in an emergency.
- 4. Missing or Incomplete Paperwork:** In some cases, important patient paperwork (like transfer notes, vitals charts, or consent forms) is either missing or not updated before transport, which could put the patient's safety and the safety of the medical staff at risk.

5. Poor Handover Practices: Handover after a transfer is often verbal, unstructured, or missing important patient information, which makes it more likely that there will be clinical miscommunication. A formal handover protocol is rarely followed, which could make it harder to keep up with care.

6. Not Enough Training and Awareness for Staff: The staff who move patients, like ward attendants, nursing aides, and junior clinical staff, don't always get formal training on safety procedures, how to handle medical equipment while it's being moved, or how to respond in an emergency while it's being moved.

7. Lack of readiness and monitoring of equipment: Transport equipment like wheelchairs, stretchers, oxygen tanks, or patient monitors is often not checked or maintained before the transfer, which puts patients at risk for avoidable problems during the process.

8. Patient Safety Vulnerabilities: Patients, especially those who are critically ill or recovering from surgery, are more likely to get worse or hurt themselves while being moved, especially if they are not being watched or if the monitoring is not consistent.

Context and Importance of the Problem

An important part of hospital workflow is the quick and efficient transfer of patients within the hospital. This has a direct effect on the quality, continuity, and timeliness of care. It means moving patients quickly and safely between places like ICUs, diagnostic areas, operating rooms, and inpatient wards. A bad transfer system can make patients worse, make it harder to talk to each other, and slow down clinical interventions. So, making the transfer systems within hospitals stronger is very important for improving hospital performance and keeping patients safe.

Context:

Mission Hospital in Durgapur has to move patients around a lot, but staff shortages, equipment problems, lift delays, and bad record keeping make it hard to do so. These problems show that we need to look at and improve the transfer system..

Importance of the Problem:

a. Risk to Patient Stability: Patients, especially those in critical condition, may get worse because of delays, lack of monitoring, or improper handling during transit.

b. Delays in Care Delivery: Waiting for lifts or not being fully prepared for a transfer can cause urgent diagnostics or treatments to be delayed, which can have an impact on overall clinical outcomes.

c. Gaps in documentation and handover: If transfer paperwork isn't complete or isn't done properly, or if handovers aren't done in a formal way, clinical teams may not communicate clearly, which can lead to mistakes in care or extra work.

d. More Work for Staff: Transfers that aren't done properly put stress on nurses, transport staff, and clinical staff, making it harder for them to do their other duties and leading to fatigue and mistakes at work.

e. Effect on Hospital Throughput: Delays in moving patients around make bed turnover rates lower and slow down service in important areas like emergency rooms, operating rooms, and ICUs.

f. Dissatisfied Patients and Families: If there are delays in transferring patients and their families can see that things are disorganised during transport, they may lose trust and satisfaction with hospital care.

So, it is important to solve the problems with transferring patients within Mission Hospital, Durgapur in order to improve healthcare delivery, lower clinical risks, and make the hospital run more smoothly.

Aims and Objectives of the Study

The goal of this study is to look at and improve the flow of patients in the ED and IPD at Mission Hospital in Durgapur. The study's main goals are to:

- i. To analyze the current patient transport system within the hospital.
- ii. To identify the most common challenges and delays in intra-hospital patient transport.
- iii. To suggest improvements for optimizing the patient transport system and enhancing patient care.

SAFETY FOR TRANSPORTATION OF CRITICALLY ILL PATIENTS

Patients in the hospital often need to be moved within the hospital (IHT) for a variety of reasons, including diagnostic, therapeutic, and even logistical ones. There may be problems during transportation, especially if the right steps aren't taken. Patients who are critically ill are especially at risk of having bad things happen (AEs) while they are being moved.¹ There are many possible causes for these AEs, ongoing invasive advanced monitoring or organ support, having multiple devices or catheters, and even healthcare workers (HCWs) not communicating well with each other. Some things about the patient, like how sick they are, how much they weigh, and how much invasive mechanical ventilation they need with high positive end-expiratory pressure (PEEP), can't be changed. But some other things, like those that have to do with human error and problems with equipment, can be easily avoided. So, it makes sense to learn more about the causes and risk factors that can lead to these kinds of problems so that the right steps can be taken to fix them. There isn't much written about the problems that come up when moving very sick patients from the Indian subcontinent, though.

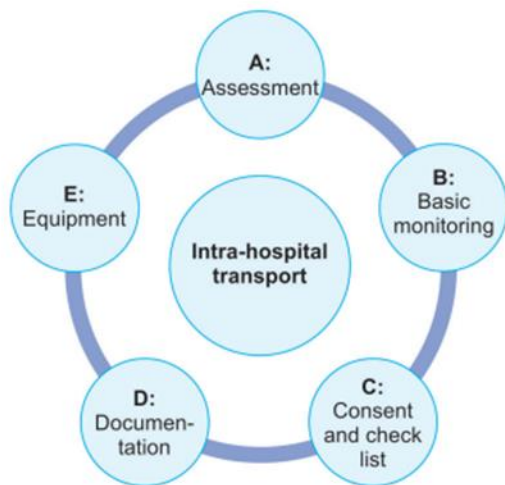


Fig 1: A structured ABCDE approach for intra-hospital transfer of critically ill patients

WORK FLOW OF INTRA-HOSPITAL PATIENT TRANSFER

This Workflow depicts movement among four key hospital units

1. The Emergency Department (ED)
2. Department of Radiology
3. The Intensive Care Unit (ICU)
4. General Ward

Found Transfer Pathways:

1. From the Emergency Department (ED):

- To the Radiology Department (No. 1): For tests like CT, MRI, X-ray, or ultrasound to find out what's wrong.
- To the Intensive Care Unit (ICU) (No. 2): For patients who are very sick and need close monitoring and advanced support.
- To General Ward (No. 3): For patients who are stable and need to be watched or treated.

2. From General Ward:

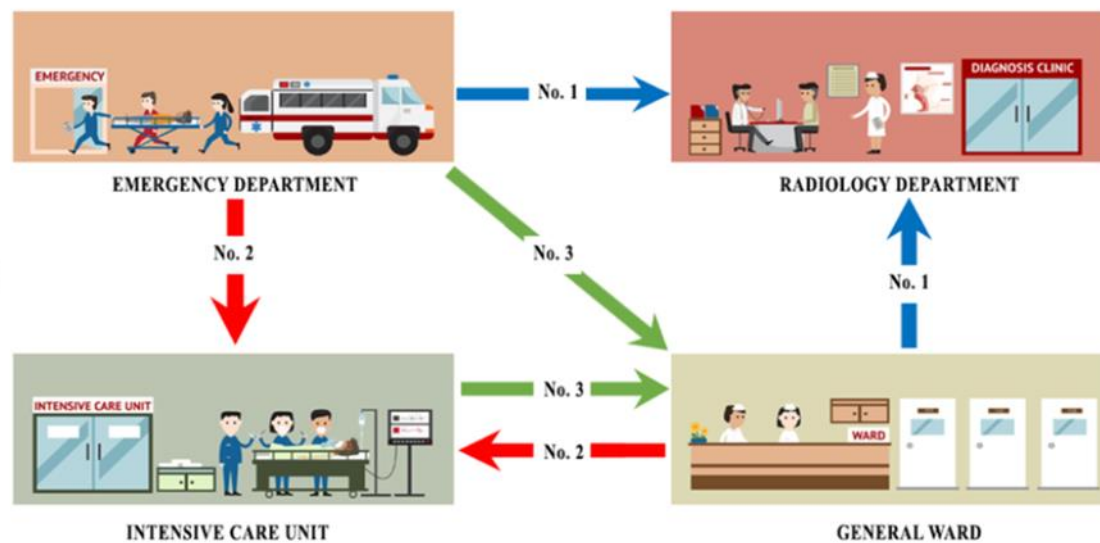
- To Radiology Department (No. 1): For imaging and diagnostics while the patient is in the hospital.
- To ICU (No. 2): If the patient's condition gets worse and they need more care.

3. From the Radiology Department:

Patients go back to the ICU or General Ward (No. 3) after tests are done, depending on how they are doing.

- If not stable, go to the ICU.
- If stable, go to the General Ward.

Fig1.1 WORK FLOW FOR INTRA-HOSPITAL PATIENT TRANSFER



Intra-hospital patient transfer workflow from departure facility to another facility

System-based risk factors	Human-based risk factors
Technical/Equipment related • Ventilated patient • Electrical or gas failure • Lack of oxygen	Patient-related • A score of more than 20 on the Acute Physiology and Chronic Health Evaluation (APACHE II) test • Low score on the Glasgow Coma Scale (PGCSS) • Low score on the Therapeutic Intervention Scoring System (PTISSS) • Ongoing catecholamine support • Positive End Expiratory Pressure (PEEP) greater than 5 cm H₂O • Arterial Blood Gas (ABGs) that are not normal before transport, but bicarbonate is not included • A lactate level that is higher than 2 mmol/L • Vital signs that are not normal, especially heart rate, respiratory rate,

	and saturation of inspired oxygen • A glucose level that is too low • Severely impaired pulmonary function • Patients who have head injuries
Workplace related • Not following a protocol • Staff that is new or inexperienced	Knowledge-based errors • Mistake in recognizing a problem • Mistake in judgment
Environment-related • Not enough room to work • Loud noises at work • Vibration at the place of work	Rule-based • Not getting the patient ready enough • Not giving enough sedation or pain relief • Using equipment incorrectly
Transport organization related • Emergency transportation • Length of transportation • Changes to treatment for transportation • Lack of coordination	Skill-based • Stress • Distraction or lack of attention • Urgency or haste

Table 1 lists the critical risk factors of adverse events

System-based risk factors	Human-based risk factors
Technical/Equipment-related: Equipment failure (including problems with power)	Based on the rules • Not enough preparation for the patient • Wrong assessment of the patient • Not checking the equipment
Workplace related • Communication problems • No rules • Not enough training	
Transport-related: Moving the same thing more than once patient • Change of fluids for transport	

Table 1.1 List of potential problems

Types of adverse events:

The types of adverse events occurring during transportation are broadly classified under two main headings;

- (1) patient-related adverse events,
- (2) equipment-related adverse events

Problems with ventilation that are bad • Not connecting - Bag leaking • An interruption in the supply of oxygen because the cylinder's reserve is low	Adverse incidents that happened because of the vehicle's equipment • Bad display of monitors • Not enough suction • Too many staff members • Not enough access to the patient
Problems with monitoring include • Interference with the track record • Equipment not working • Not being able to see the equipment display • Interruption in the arterial line	Adverse events that happen with an infusion pump Not enough medicine on hand Failure of battery • Higher dose of vasopressor
Negative events that happen with an intravenous line • Hard to get to • Catheter removal by mistake • Short IV lines	Adverse events with intravenous poles that can happen include not being able to push during transport.

Table 1.2 Equipment-related adverse events

Table 1.3 Patients related adverse events

Cardiovascular complications • High blood pressure • Fast heart rate • Low blood pressure • Bradycardia • Bleeding • Arrhythmias • Changes in ECG	Problems with breathing • Low oxygen levels • Higher pressures in the airway • Blockage of airways due to secretions • Loss of chest tube • Excessive coughing • Extubation	Problems with the endocrine system: • hyperglycemia • Low blood sugar CNS problems: • high intracranial pressure, • agitation, • vomiting,
--	---	---

• Stopping of the heart Metabolic/Acid-Base Problems: Metabolic acidosis, metabolic alkalosis, respiratory acidosis, and respiratory alkalosis	• Pneumothorax • Atelectasis • Pulmonary embolism • Bronchospasm	• pain or discomfort, • spinal cord traction, • cervical spine injury, • and worsening of the existing trauma. Infection: Ventilator-associated pneumonia (VAP) and being around
---	---	--

GUIDELINES TO CONDUCT PATIENT TRANSPORTATION

The success of moving patients is to make the whole thing run smoothly and efficiently. There are rules for how to do transportation without problems that have been made.

Coordination and communication before transportation:

It is important to keep the quality of patient care high at all times when the patient is moved from one place to another. The team that receives the patient should be told what they need to do to make sure the patient is safe during transport. It is thought that having the right resources is necessary for patient safety.

Accompanying staff:

two staff members must be present in case of transportation. Two different scenarios are thought about based on the patient's condition;

- 1) The patient is stable and not intubated or ventilated. One person who is with them is a nurse trained in critical care, and the other person can be a respiratory therapist, registered nurse, or critical care technician, depending on what the patient needs.
- 2) Patient who is unstable and has been intubated or ventilated; one person with them is a nurse trained in critical care.

At the same time, the second person must be a doctor who knows how to manage airways, provide advanced cardiac life support (ACLS), and provide critical care.

Accompanying equipment:

There is a list of recommended minimum transport equipment and medications that go along with the equipment. The different kinds of medicines and the least amount needed to change based on the distance to be travelled or the destination to be

reached.

Monitored during transport:

While they are being moved, patients must be watched the whole time they are leaving the ICU. It is important to monitor important parameters along with some other chosen ones. The monitoring list for transport includes continuous electrocardiogram (ECG) readings, continuous pulse oximetry, periodic blood pressure (BP) measuring, pulse rate observation, and a checkup of the respiratory rate. Capnography, measuring blood pressure in the arteries, measuring pulmonary artery pressure, and measuring intracranial pressure are all examples of extra monitoring that may be done.

Assessment of the patient:

ways of assessing patients while they are being moved. One is the "head to toe" checkup, and the other is the "Airway, Breathing, Circulation, Disability, Exposure (A-B-C-D-E)" assessment method. It is part of the training for critical care nurses and intensivists to do a head-to-toe check on a patient in the ICU. Every time the shift changes in the ICU, it is also a documented protocol to check on the patients. It has also been called an important part of ICU care in books about physical exams. Monitoring changes and figuring out what they are based on a full assessment of the patient is the best way to get an accurate picture of their health.

Transport tools:

The most important parts of the transport process are: preparation, assessment, monitoring, and writing down. The tool has a pre-transport checklist, a health assessment form, a checklist of the destination, a chart of observations, sections for recording problems and a reminder to check equipment and oxygen before leaving.

The authors have seen that the current tools are not being used as much as they should be, which is an important part of evaluating critical care. For example, the ICU staff nurses are not using resources as much as they should be, there is not enough teamwork between departments or communication between multidisciplinary teams, and the teams at the receiving department are not getting involved.

How protocols and transport tools affect patient care:

Procedural guidelines give a plan for making transport work. At the same time, transport tools, checklists, and other documents help keep track of things and follow the rules that must be followed to make sure that patients move from one place to another without any problems, keeping their physiological and clinical stability.

Following all of these rules will help you get the critical care you need, and they can also lower the risks to the lowest level

Chapter 2:

Review of Literature

Authors (Year)	Study Location	Sample Size	Sampling Techniques	Salient Features
Beckmann et al. (2004)	Australia	191 transfer	Observational	Identified major incidents during ICU transfers; stressed the need for transfer protocols.
Beckmann et al. (2011)	Australia	191 incidents	Incident analysis	Outlined critical safety incidents, recommending guidelines for intrahospital transfer.
Papson et al. (2007)	USA	165 patients	Retrospective review	Found that 34% experienced adverse events; many related to human error or disconnection.
Smith et al. (2008)	UK	120 patients	Observational study	Concluded that delays in transfer processes led to deterioration in patient outcomes.
Harish et al. (2019)	India (Delhi)	250 staff	Cross-sectional survey	Found that lack of coordination and poor lift access caused major delays in patient transport.
Parmentier-Decrunch et al. (2013)	France	289 transfers	Prospective study	Reported 40% of transfers had adverse events; recommended pre-transfer checklists.
Munjal et al. (2022)	India (Mumbai)	300 transfers	Mixed methods study	Focused on interdepartmental communication and emphasized digital handover tools.

Choi et al. (2012)	South Korea	240 transfers	Retrospective observational study	Found that nearly 25% of intra-hospital transfers led to physiological deterioration, highlighting the need for risk assessment tools and better staff preparation during transfers.
Lin et al. (2024)	Taiwan	Not specified	Observational study	Evaluated the impact of specialized transport teams and real-time monitoring systems on patient safety during intra-hospital transfers. Found that these interventions significantly reduced adverse events and improved communication among healthcare providers.

Chapter 3:

Methodology

This chapter explains how the study looked at how patients are moved around inside Mission Hospital in Durgapur. It looks for problems with patient transfers, like delays in lifts, missing paperwork, and bad communication during handovers. The chapter goes into detail about the research design, setting, sample, data collection, analysis methods, and ethical issues..

Key Research Questions

1. What are the main reasons why patient transfers are delayed (for example, not having a lift, not having all the paperwork, or not communicating)?
2. How do these delays affect the care of patients and the work of staff?
3. What is the current process for moving patients within the same hospital?

Research Design

This study uses a quantitative, observational research design. It is a retrospective analysis of patient transfers between different departments, such as the emergency department (ED), the intensive care unit (ICU), the wards, and the diagnostic units. The goal of the study is to look at patterns, find problems, and suggest ways to make improvements.

Study Setting

The study was conducted at Mission Hospital in Durgapur, a multi-specialty tertiary care centre in Eastern India, from March 12 to May 31. The focus is on departments that often have to move patients around within the hospital, like the ED, ICU, Radiology, and patient wards.

Participants of the Study:

- a. Patients
- b. Nurses
- c. Transport Personnel
- d. Clinical staff who are relevant to patient transfers

Study Population

Over the course of 8 weeks, the population includes patients who were moved within the hospital (non-ambulatory cases).

Sample Size: 300 patients

Data collection includes:**Pre-transport Phase**

- a. Patient identification (Name, DOB, UHID)
- b. Clinical status assessment (vital signs, oxygen required, IV lines, drains, and catheters)
- c. Transport equipment check (availability of oxygen, portable monitors, ventilators, emergency drugs, resuscitation equipment)
- d. Consent (if required)
- e. SNDT
- f. Transfer in-out form (filled or not)

During-transport Phase

- a. qualified medical team
- b. continuous monitoring
- c. safe handling and positioning
- d. Infection control measures
- e. emergency preparedness

- f. lift availability

Post-transport phase

- a. Patient reassessment of condition after transport
- b. Handover to receiving unit (ISBAR policy)
- c. Documentation

Inclusion and exclusion criteria:

Inclusion Criteria

- Patients moved from 9:00 a.m. to 5:00 p.m.
- Patients came from the Emergency Department (ED), Inpatient Department (IPD), and Day Care
- Patients moved to another place for treatment or clinical management

Exclusion Criteria:

- Patients who were moved before 9:00 a.m. or after 5:00 p.m.
- OPD patients
- Patients who died on arrival or during early treatment
- Patients coming in for small procedures, like getting an injection or taking out a catheter
- Patients in Day Care who are waiting for beds but aren't being admitted right now

Research Procedures/Approaches

This study uses a quantitative approach through retrospective review of transfer records and observing live transfers. Identify root causes of delays (like crowded lifts, missing paperwork, or miscommunication) and how these problems affect the flow of work and the health of patients.

Data Analysis

The collected data is analysed by appropriate statistical software. descriptive statistics are used to sum up patient demographics and key indicators before, during, and after transport. We figure out the frequencies and percentages for things like how complete the documentation is, how good the clinical assessment is, how ready the equipment is, how well the monitoring is done during transport, and how well the handover is done. The analysis helps figure out how well hospitals follow their own rules for transferring patients and spot trends in how they keep patients safe.

Ethical Considerations

- **Voluntary Participation:** Participation is voluntary, with no penalties for non-participation.
- **Data Security and Confidentiality:** Ensuring that patient data is anonymized and protected throughout the research process.

Chapter 4:

Results and Discussion

RESULTS:

Table 4.1: Compliance percentage for Pre-Transport of patients: N=300

PRE TRANSPORT	NO.OF COMPLIANCE	COMPLIANCE %
PATIENT IDENTIFICATION (NAME,DOB,UHID)	300	100%
CLINICAL STATUS ASSESSMENT (VITAL SIGNS, OXYGEN REQUIRED IV LINES, DRAINS AND CATHETERS)	300	100%
TRANSPORT EQUIPMENT CHECK (AVAILABILITY OF OXYGEN, PORTABLE MONITORS, VENTILATORS EMERGENCY DRUGS,RESUSCITATION EQUIPMENT)	177	61%
CONSENT (IF REQUIRED)	262	90%
SNDT	123	42%
TRANSFER IN-OUT FORM(FILLED OR NOT)	133	46%

Fig 4.1: Compliance rate for Pre-Transport of patient

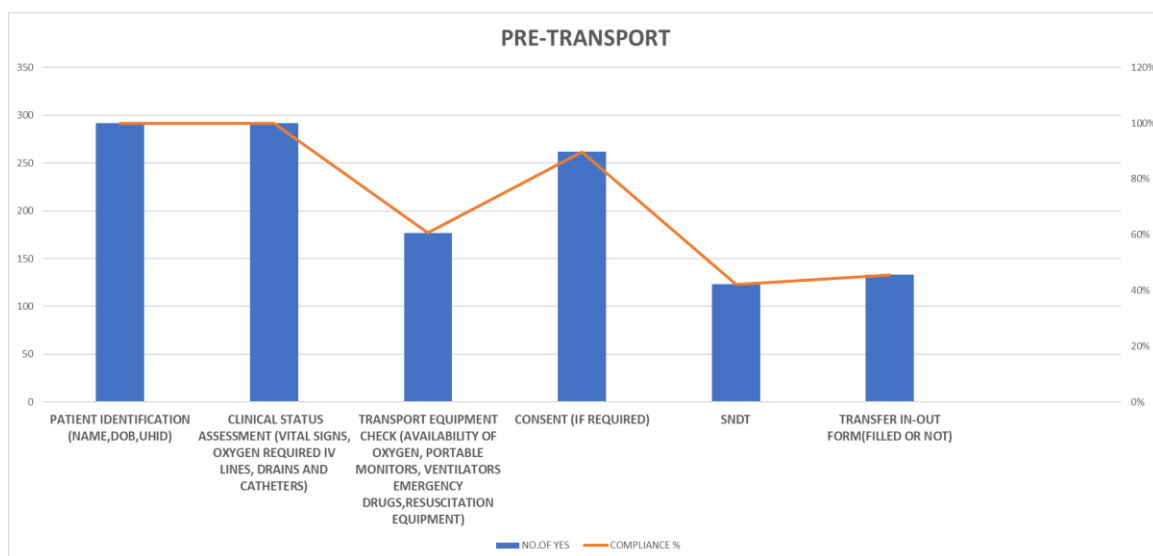


Table 4.2: Compliance percentage during the transport of patients: N=300

DURING TRANSPORT	NO OF COMPLIANCE	COMPLIANCE%
1.QUALIFIED MEDICAL TEAM	166	56.66%
2.CONTINOUS MONITORING	185	63.14%
3.SAFE HANDLING AND POSITIONING	238	81.23%
4.INFECTION CONTROL MEASURES	241	82.25%
5.EMERGENCY PREPAREDNESS	206	70.31%
6.LIFT AVAILABILITY	85	29.01%

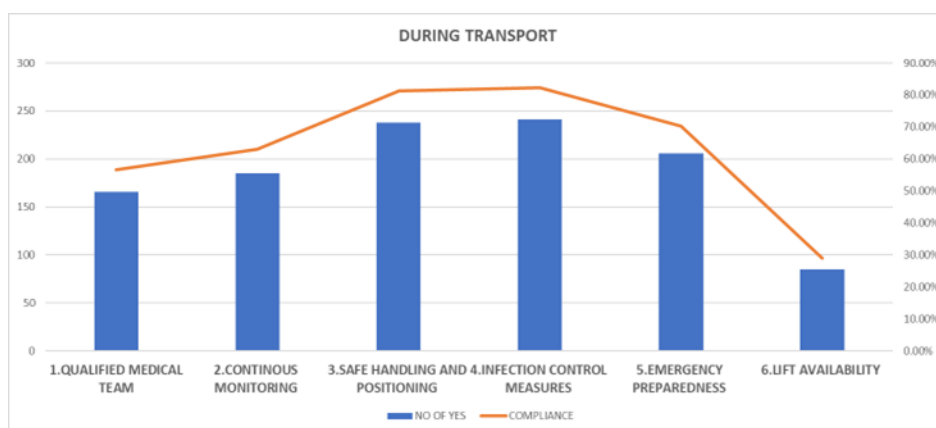


Fig 4.2: Compliance rate during the transport of patients

Table 4.3: Compliance percentage for Post-Transport of Patients: N=300

POST -TRANSPORT	NO OF COMPLIANCE	COMPLIANCE %
PATIENT REASSESSMENT CONDITION AFTER TRANSPORT	256	87.37%
HANDOVER TO RECEIVING UNIT (ISBAR POLICY)	59	20.14%
DOCUMENTATION	200	68.26%

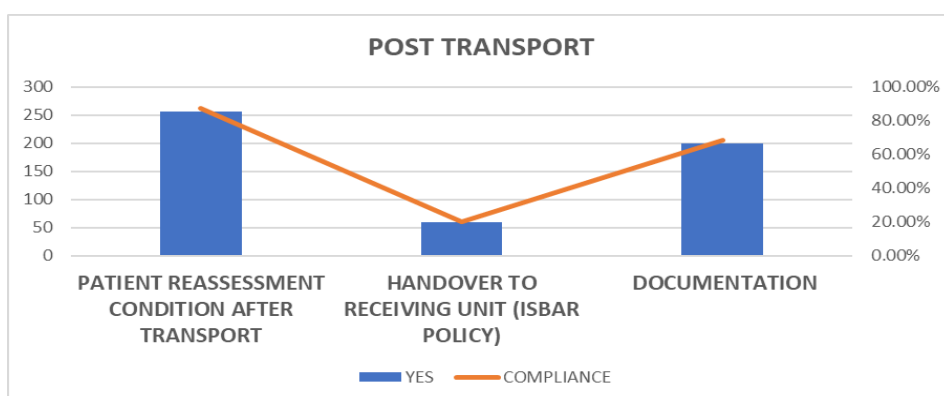


Fig 4.3: Compliance rate for Post-Transport of patients

DEPARTMENT			TRANSFERRED			NO OF PATIENTS	
ED			FEMALE GENERAL WARD			7	
ED			MALE GENERAL WARD			43	
ED			OT			12	
ED			MICU			67	
ED			CCU			58	
ED			ICU			44	
ED			NICU			3	
ED			CTVS			8	
ED			DYALYSIS			7	
ED			DAYCARE			3	
ED			SEMI			3	
ED			CATH LAB			37	
ED			CTVS			8	

Table 4.4 Number of patient transferred per department

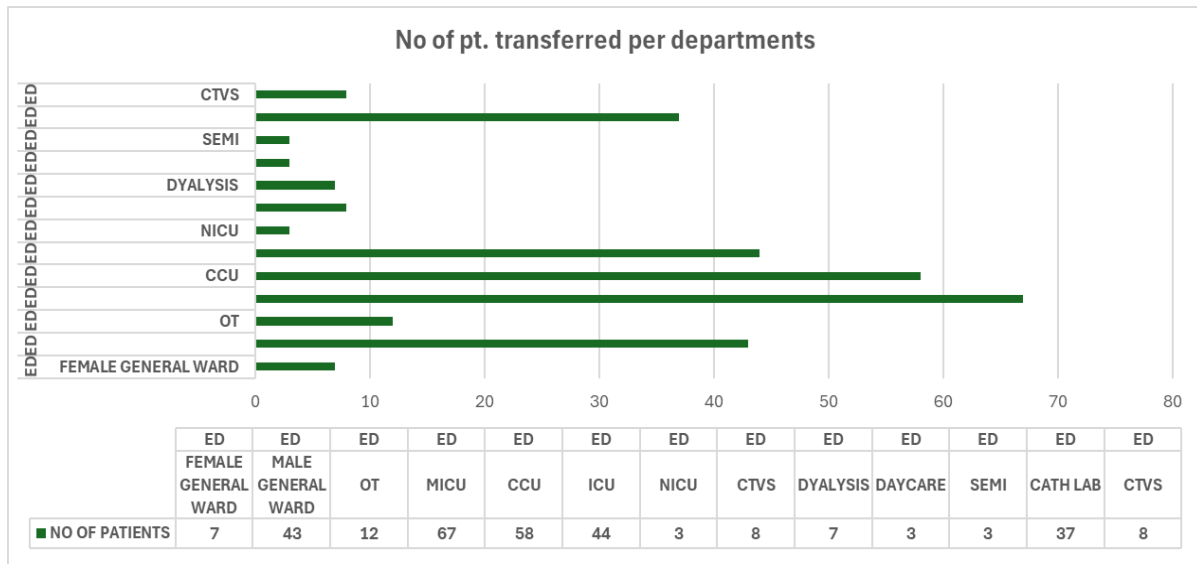


Fig 4.4 Number of patient transferred from ED

Column1	Column2
NO OF CRITICLE PATIENT	223
NO OF NON CRITICLE PATIENT	77

Table 4.5 Category of patients transferred

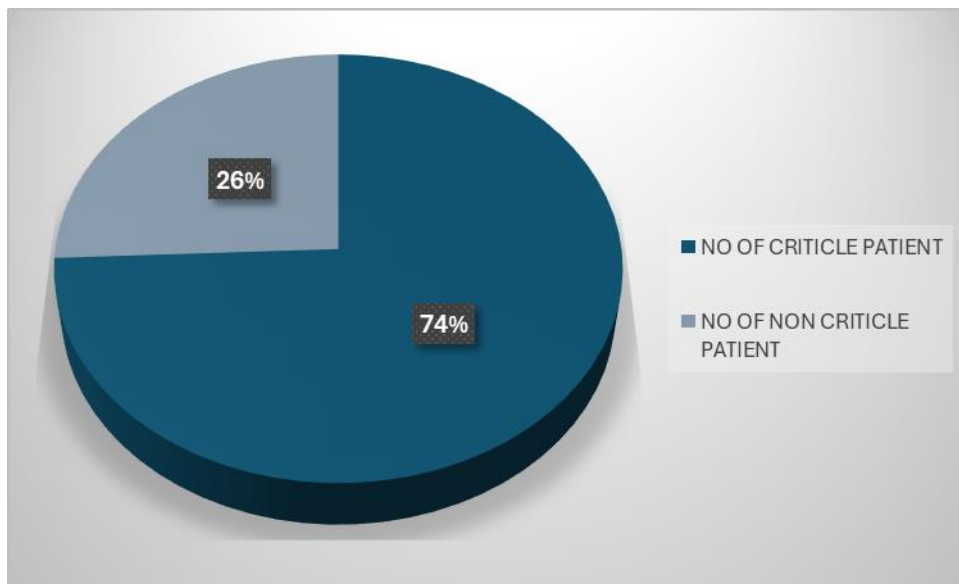


Fig4.5 Percentage of patient critical and non critical

4.4 OBSERVED REASONS FOR DELAY IN PATIENT TRANSFER:

Reasons for Pre-Transport Delays:

1. Inadequate clinical status evaluation: IV lines, oxygen needs, and vital signs are not always examined prior to transfer.
2. Consent forms are not readily available, particularly when legal or procedural permissions are needed.
3. Missing or incomplete transfer forms: Unfilled transfer-in/out forms or documentation errors were frequent

4. Poor transport equipment preparation: oxygen cylinders, emergency medications, and portable monitors are not available.
5. Absence of a trained escort team: Untrained personnel occasionally accompanied the patient.
6. Poor infection control preparedness: Failure to use personal protective equipment (PPE) and practise good hand hygiene.
7. Problems with lift availability: Hold-ups brought on by crowded lifts or broken lifts.
8. Communication gaps with the receiving department: Hold-ups resulted from a delay in coordinating with the receiving unit.

During Transport Delay Reasons:

1. Lack of continuous monitoring – Vitals were not consistently monitored.
2. Improper patient positioning – Absence of safe handling and comfort measures.
3. Emergency preparedness lapses – No immediate access to resuscitation tools during movement.
4. Unqualified escort personnel – Accompaniment by staff unfamiliar with clinical or emergency protocols.
5. Lift delays – Again, delay or waiting time at lifts impacted overall transfer time.

Post-Transport Delay Reasons:

1. Delayed handover to receiving unit – ISBAR protocol not consistently followed.
2. Inadequate documentation – Missing transfer notes or improper charting.
3. No patient reassessment – Vital signs and condition not reviewed post-transfer.
4. Lack of incident reporting – Adverse events, if any, went undocumented or uncommunicated.
5. Equipment return lag – Delay in returning or documenting transport equipment use.

STRATEGIES FOR OVERCOMING THESE BARRIERS:

➤ Strategy for pre-transport

1. Establish uniform clinical assessment checklists

- Establish a required pre-transfer checklist that addresses things like oxygen requirements, IV lines, and vital signs.

- Assign responsibility to transport coordinators or nurses.

2. Verify Correct Consent & Documentation

- Introduce digital forms with consent and transfer-in/out required fields.

- Educate employees on the importance of timely documentation and medico-legal issues.

3. Transport Equipment Readiness

- Keep an oxygen tank, monitors, emergency medications, and other supplies in a centrally located, well-stocked transport trolley.

- Assign a committed employee to replenish and inspect it every day.

4. Expert Escort Groups

- Assign qualified paramedics or nurses to the patient transport team.

- Perform emergency handling drills in advance of transfers.

5. Better Lift Coordination: When scheduling lifts, assign priority or "patient transfer slots."• Provide priority call buttons or access cards to the transport crew.

6. Effective Communication Protocol: For real-time coordination between units, use a centralised communication tool (such as walkie-talkies or an internal phone app).

- Set up a "Ready to Move" call between the receiving and sending departments.

➤ **During Transport Strategies**

1. Constant Monitoring: Require patients who are unstable or at high risk to wear portable monitors.

- Give employees rudimentary troubleshooting knowledge for portable electronics.

2. Positioning & Safe Handling

- Teach nurses and ward boys safe lifting practices, spinal precautions, and ergonomics.

- For mobility, make use of appropriate trolleys, transfer boards, and slide sheets.

3. On-the-Go Emergency Preparedness

- Ascertain that a basic crash kit and resuscitation bag are carried by every transport team.
 - Depending on the patient risk category, staff members should hold a BLS or ACLS certification.
4. Lift Management: If at all possible, block lift use during crucial transfers or install specialised "patient transport lifts."

Strategies for Post-Transportation

1. Structured Handover Using ISBAR Protocol: During each handover, apply and enforce ISBAR (Introduction, Situation, Background, Assessment, Recommendation).
- Provide structured communication training to all clinical staff.
2. Quick Patient Reassessment: Within five minutes of arrival, assign someone to take care of the patient's vitals and level of consciousness. Use a brief reassessment form that has been signed by the receiving staff.
 3. Real-Time Documentation: Log transfers instantly using mobile entry devices or electronic health records (EHR).
- Configure alerts or reminders for outstanding paperwork.
4. Audit and Feedback System: Monthly audits of transfer procedures that include departmental feedback loops.
- Honour the departments that have the highest transfer compliance rates.
5. Incident Reporting & Learning Culture: To encourage incident reporting during transfers, foster a culture of no blame.
- To promote learning, talk about incidents in departmental safety huddles.

CHAPTER 5:

DISCUSSION

This chapter contains the interpretation of the results obtained through the study on intra-hospital patient transport at Mission Hospital, Durgapur. The findings are analysed in the context of existing literature and similar research. The discussion also includes the strengths and limitations of the study.

Interpretation of Findings:

Pre-Transport Phase

- While patient identification and clinical status assessments were mostly complied with, non-compliance was high in areas such as transport equipment checks and consent documentation.
- The low adherence to equipment checks indicates possible gaps in accountability or the absence of structured transport protocols.
(A similar study by Fernandes et al. (2021) in a tertiary hospital in Brazil highlighted that portable oxygen and monitoring devices were often unavailable during transport, posing patient safety risks).
- The non-collection of required consents for ICU and critical patient transfers may be attributed to time constraints or the absence of dedicated staff to ensure medico-legal processes.
- Incomplete or missing transfer in/out forms,
(Findings by Khanduja et al. (2019), who observed that verbal handovers without documentation contributed to communication breakdown and potential adverse events).

During the Transport Phase

- The lack of qualified medical personnel accompanying patients reflects serious process lapses. In some cases, GDAs or untrained interns were responsible for patient transfer, increasing risk exposure.
(This finding is consistent with a study by Ligtenberg et al. (2015), which emphasized the need for trained transport teams to ensure continuity of care).

- Continuous monitoring during transport was only partially followed due to limited availability of portable monitors and unclear delegation of duties.
- While infection control measures and safe handling were better adhered to, the non-availability of lifts during peak hours led to significant delays in patient movement. (This operational bottleneck is also reported in studies conducted in urban hospitals by Sharma et al. (2020), emphasizing the infrastructural challenges in Indian healthcare systems).

Post-Transport Phase

- Most patients were reassessed upon reaching the destination unit. However, handover using the ISBAR protocol was poorly followed, often replaced by informal or verbal handovers.
- Documentation post-transport was inconsistent, likely due to manual data entry processes and a lack of time for staff. Digitized transport logs, as recommended in the WHO (2018) patient safety guidelines, could improve compliance and traceability.

Strengths of the Study

- The study provides a comprehensive phase-wise analysis (pre, during, and post) of intra-hospital patient transport, a relatively under-researched operational domain in Indian hospitals.
- A large sample size of 300 patients ensures the reliability and generalizability of the findings within the institution.
- The use of direct observation and checklist-based compliance tracking adds objectivity to the data collected.

Limitations of the Study

- The study excluded OPD patients, which may limit the scope of findings to emergency and inpatient transfers only.
- Observations were conducted during specific hours (9 AM to 5 PM), potentially overlooking night shift processes, which may vary.
- The study was confined to a single tertiary care hospital in eastern India, hence, the results may not be universally applicable across different healthcare settings.
- Limited digital infrastructure made it challenging to validate documentation compliance in real time.

HOSPITAL-ACQUIRED DIAGNOSIS (HAD) IN THE CONTEXT OF INTRA-HOSPITAL PATIENT TRANSFER

In modern healthcare systems, Hospital-Acquired Diagnoses (HADs) are a big problem. These diagnoses are for medical problems that happen to a patient while they are in the hospital, but were not there when they first arrived. Hospital-acquired infections (HAIs), pressure ulcers, falls that cause injuries, venous thromboembolism (VTE), and delirium are some of the most common. The number of HADs is closely related to how well healthcare facilities provide care and how efficiently they run.

HADs can happen when patients are moved between departments in a hospital, like from the Emergency Department (ED) to the Inpatient Department (IPD) or from the ICU to the general wards. This can happen for a number of reasons, such as miscommunication, delays in procedures, poor handover protocols, and not enough monitoring during or after the transfer. This paper looks at the effects of HADs on transfers between hospitals and suggests ways to reduce their frequency.

What are Hospital Acquired Diagnoses (HADs)?

Acquired in the hospital Diagnoses are bad medical problems that a patient gets while they are in the hospital. The Centres for Medicare and Medicaid Services (CMS) say that HADs should be avoidable with the right medical care and hospital rules. They are important signs of the quality of care, affecting patients' outcomes, length of stay, costs, and the hospital's reputation.

The most common HADs are:

- Catheter-associated urinary tract infections (CAUTIs)
- Central line-associated bloodstream infections (CLABSIs)
- Surgical site infections (SSIs)
- Bedsores (pressure injuries)
- Problems caused by medications
- Pneumonia that you get in the hospital
- Falls and injuries that go with them
- Deep vein thrombosis (DVT) or pulmonary embolism (PE)

- The Link Between Transfers Within Hospitals and HADs

Transfers between hospitals are important for diagnostic, therapeutic, and logistical reasons. But they have built-in risks that can lead to HADs because of:

1. **Disruption of Care Continuity:** Every time a patient is moved, they have to deal with multiple carers, which makes the treatment plan less clear and raises the risk of mistakes or missed steps.
2. **Poor Communication:** When people don't communicate clearly during handovers, they might miss important information about the patient's condition, medications, and safety measures.
3. **Delayed Monitoring and Intervention:** After being transferred, patients may not get the right care or assessment right away because staff don't know what their baseline conditions are.
4. **Physical Stress and Changes in the Environment:** Moving between departments and being in new places (like shared wards) can make people more likely to get infections or stress-related conditions like delirium.
5. **Not all units have the same equipment or staff training,** which could lead to poor care.

HADs Before Transport

Before moving a patient, full evaluations are needed. But this phase has a lot of problems that lead to HADs:

- **Delayed or Incomplete Assessments:** In emergencies or when there are a lot of patients, a full clinical assessment before transfer is often missed. This can lead to conditions that go unnoticed and later show up as HADs.
- **Not Ready for Infection Control:** There is a higher risk of HAIs if there are no proper infection prevention measures in place before moving patients, especially those with open wounds, indwelling catheters, or weakened immune systems.
- **Not enough preparation and documentation:** Not writing down allergies, ongoing treatments, or recent interventions can cause problems during the next stage of care.

HADs in the During-Transport Phase

During the transfer, staff members who may not be trained to care for the patient often go with them. This is especially true in hospitals where staff is stretched thin.

HADs After Transport

When the patient gets to the new unit, they should be reassessed and added to the new care plan. Sadly, this stage often has the biggest effect on HADs.

- **Delayed Reassessment:** Patients may have to wait for hours to see a doctor or nurse, especially during shift changes, because of a heavy workload or bad communication.
- **Medication Errors:** If the transfer summary isn't reviewed or properly documented, medications may be missed or given more than once.
- **Problems with adjusting to new environments:** Older patients or those with cognitive problems may become confused or delirious when their setting, lighting, or routine changes.
- **Not using the ISBAR protocol:** Not using structured handover protocols like ISBAR (Introduction, Situation, Background, Assessment, Recommendation) can lead to missing important patient information, which can cause mistakes in the clinic.
- **Interruptions in Monitoring:** Continuous monitoring of vital signs (like oxygen saturation, ECG, and IV lines) is often disrupted, which can cause problems like hypoxia or hypotension that go unnoticed.
- **Falls and injuries:** Moving people on broken stretchers, over uneven floors, or without enough help lifting them can cause falls or injuries to the muscles and bones.
- **Transmission of Infections:** Moving with dirty equipment or not enough personal protective equipment (PPE) can help infections spread, especially in patients with weak immune systems.

Systemic Factors That Lead to HADs During Patient Transfers

There are a number of systemic problems that make it more likely for HADs to happen during transfers:

- **Lack of Staff:** Not having enough staff can cause delays, multitasking, and burnout, all of which are bad for patient safety.
- **Not Enough Training:** Staff might not know how to do transfer procedures or how to respond to emergencies while transporting someone.
- **No Protocols:** Some hospitals don't have standard operating procedures (SOPs) for certain types of transfers, like going from the ICU to the ward. This leads to inconsistent practices.
- **Limitations of infrastructure:** HAD risk is higher because of delays caused by crowded lifts, a lack of dedicated transport trolleys and a lack of isolation rooms for infectious patients.

What HADs mean for how hospitals work

HADs have a direct impact on:

- **Patient Outcomes:** more illness, longer hospital stays, slower recoveries, and sometimes death.
- **Healthcare Costs:** Unplanned treatment costs for conditions that could have been avoided, extra tests, longer stays in the hospital, and strain on resources.
- **Legal and Reputational Risk:** More medical-legal claims and less public trust because of bad events.
- **Operational Efficiency:** Bed blocking from long stays, which makes the ED too full and slows down patient flow.

Ways to Lower HADs During Transfers Between Hospitals

To reduce HADs that happen when patients are moved from one hospital to another, the following multi-level strategies are suggested:

1. **Standardised Transfer Protocols:** Make and enforce checklists for tasks that need to be done before, during, and after transport.
2. **Structured Handover Tools:** Make ISBAR a requirement for every transfer and teach staff how to use it.
3. **Dedicated Transfer Teams:** Make sure that trained clinical staff are in charge of high-risk transfers, like those of ICU, cardiac, or paediatric patients.
4. **Integrating Electronic Medical Records (EMRs):** Make sure that patient conditions, treatment plans, and alerts are updated in real time across all units.
5. **Environmental Readiness:** Let the receiving units know ahead of time and get beds, equipment, and PPE ready for the patients who are coming.
6. **Protocol for Reassessing After Transfer:** The new care team must reassess the patient within 15 minutes of their arrival.
7. **Check the trolleys, stretchers, monitors and emergency kits on a regular basis.**
8. **Education and Simulation Training:** Make sure to train people on how to safely transport people, how to handle emergencies, and how to stop the spread of infections.
9. **Communication and Feedback Loops:** Set up a way to report and look into near misses and HAD incidents that happen during transfers.

10. Infection Control Compliance: Make someone in charge of making sure that PPE, hand hygiene, and surface disinfection are all done correctly during transfers.

CHAPTER 6:

RECOMMENDATIONS

1. Make a Standard Operating Procedure (SOP) for moving patients within the hospital.

It is important to create a hospital-wide Standard Operating Procedure (SOP) for moving patients within the hospital to make sure that the process is safe, consistent, and accountable. This SOP must apply to all departments and spell out who is in charge of each step of the transportation process: before, during, and after. It should have rules for checking on the stability of patients, communication between departments, mandatory paperwork, equipment checklists, and what to do in an emergency. A well-documented SOP is a legal, clinical, and administrative structure that makes things more consistent and safer for patients.

2. Make sure there is a qualified transport team available.

It is very important to have a qualified and devoted transportation staff to move patients safely, especially those who are very sick or have specific needs. General Duty Assistants (GDAs), trained nurses, or paramedical workers with experience in handling patients, giving first aid, and responding to emergencies should be on the team. Hospitals may make sure that patient transport is done more efficiently and that clinical departments have less work to do by hiring qualified professionals instead of just basic nursing staff.

3. Set up a structured handover protocol, like ISBAR.

Good communication between staff during patient transfers is very important to avoid mistakes and make sure that treatment continues. The ISBAR (Identify, Situation, Background, Assessment, Recommendation) framework is a tried-and-true way for healthcare professionals to talk to each other in an organised way. Using ISBAR during transfers within a hospital makes sure that important patient information is always transmitted clearly and consistently between the sending and receiving teams. This reduces the risk of miscommunication and makes the patient safer.

4. Keep a current transfer checklist

A uniform checklist should be used for every transfer to make sure that all important

information is correct before the patient is transported. The list should include checks for the patient's identity, transfer orders, clinical stability, the availability of medical records, medications, monitoring devices that are needed, and emergency equipment. This stage makes sure that nothing important is missed and that the patient is moved in the best and safest way possible.

5. Use tools for real-time communication

When patients are moved, there are typically delays and misunderstandings because there isn't enough real-time coordination. To fix this, hospitals can use communication tools like walkie-talkies, smartphone apps made just for hospitals, or internal messaging systems. These technologies let the transport team, clinical staff, and department heads stay up to speed on when the patient will be picked up, any delays, or any changes in their health. This makes transfers faster and safer.

6. Make sure that patients are always being watched when they are being moved.

It is very important to keep an eye on a patient when they are being moved, especially if they are unconscious, need oxygen, or are very sick. You should always have access to equipment like portable monitors, pulse oximeters, and oxygen tanks. Trained staff must go with these patients to check their vitals and respond to crises along the way. This advice helps stop bad things from happening and makes sure that clinical supervision is in place during movement.

7. Hold training sessions on a regular basis

Regular training sessions should be held for GDAs, nurses, and junior doctors to make sure they keep up high levels of care. These lessons should teach people how to handle patients, how to talk to them, how to deal with emergencies during transfers, how to prevent infections, and how to use equipment. Refresher training also helps fill in gaps in knowledge and keeps professionals up to date on new technology or processes that are used while transferring patients within the same hospital.

8. Give someone the job of Transport Coordinator at busy times.

During busy OPD hours, visiting hours, or emergency surges, hospitals often have problems. During these times, hiring a transport coordinator can assist make requests easier, put important cases first, and cut down on delays. This coordinator can be the only person that all departments talk to, which will help with better resource allocation and resolving conflicts about moving

patients.

9. Make sure that transport equipment is always available and in good shape.

To move patients quickly and safely, you need functional and easy-to-reach transportation equipment such as wheelchairs, stretchers, trolleys, oxygen tanks, and monitoring devices. There should be plenty of these accessible, and they should be checked for maintenance on a regular basis to avoid breaking down at the last minute. A centralised inventory management system can keep track of when equipment is being used, when it needs to be repaired, and when it is available.

10. Keep records and transfer forms up to date In the right way

Correct paperwork is essential for both clinical safety and following the law. You must fill out all the transfer paperwork completely and correctly. These forms must include information about the patient, their vital signs, the reasons for the transfer, the time stamps, and the names of the staff members who will be with them. These papers should be kept both in hard copy and online so that they are open and may be looked back on in case of problems.

11. Set Aside at Least One Lift Just for Moving Patients During Busy Times

Using the same lifts for patients, workers, and visitors might cause delays and put patients' safety at risk, especially in an emergency. During busy times, hospitals should set aside at least one lift just for moving patients. This regulation makes sure that transfers happen on schedule and that patients don't have to worry about becoming sick or being in a crowded place when they are moved through public areas.

12. Set up rules for being ready for emergencies

Patients who are at high risk, like those who are having heart problems or whose vital signs are unstable, may need emergency care while they are being transported. Every transport crew should have resuscitation kits, crash carts, and emergency drugs on hand to deal with situations like this. Clear guidelines should spell out what to do if someone gets worse while being transported, such as calling a code blue, sending them to the nearest critical care unit, or starting basic life support.

13. Do regular audits and surveys of transport and feedback

Regular assessments are the only way to make things better all the time. Hospitals should

regularly check on patient transport activities to see how quickly they respond, how accurate their paperwork is, how well their staff follows standard operating procedures (SOPs), and how well they report incidents. Anonymous surveys of clinical staff and patient families can also help you find out what works and what doesn't in the transport system. Quality assurance meetings should talk about the outcomes, and any modifications that need to be made should be made right away.

14. Improving communication and coordination between departments

Create a central command centre for patient transfers: A dedicated team can keep an eye on patient flow, approve transfer requests, and plan all transfers across departments in real time. This makes it easier for departments like ED, ICU, OT, Radiology, and wards to talk to one another.

15. Use of Electronic Health Records (EHR) integration:

Make sure that EHRs work together smoothly between departments so that both the sending and receiving teams can easily see all of a patient's information, such as their most recent vital signs, diagnosis, medications, and consent papers, before the transfer.

16. Colour-coded tagging system:

Create a colour-coded tagging system for patients (for example, red for critical, yellow for moderate, and green for stable) to enable the transport crew see which cases are most important and use their resources better.

Daily huddles between departments: Short talks with transport coordinators and clinical leaders at shift changes can assist in predicting how many transfers will be needed and find high-priority patients early.

17. Solutions Based on Technology

- Apps for requesting transport on mobile devices: Introducing hospital-specific smartphone apps that let doctors and nurses ask for transfers, keep track of patients' movements in real time, and get status updates can cut down on wait times and misunderstandings by a lot.
- RFID and GPS tracking systems: Use RFID tags or devices with GPS to keep an eye

on the real-time location of patients and equipment as they are being moved. This lowers the chance of delays or people becoming lost on their way to and from large hospitals.

- Use historical data and predictive analytics to find out when the busiest times are, when there are a lot of patients, and when there are delays in moving patients to make the most use of staff and resources.

18. Suggestions that focus on the patient

- Teaching patients before they are transported: For planned or elective transfers, such as moving from a ward to diagnostic imaging, letting patients and their carers know about the process, how long it will take, and what equipment will be used can help them relax and work together better throughout the move.
- Comfort and dignity measures: It's important to keep patients' dignity intact. For example, provide them blankets to keep them warm, make sure they have privacy when being moved through hallways, and stay away from loud or rushed places, especially for vulnerable groups like the elderly or those with dementia.
- Family notification protocol: Set up a clear way to let patients' family or carers know before and after the transfer between hospitals so that everyone knows what's going on and can offer emotional support.

19. Staffing and Improving Human Resources

- Add a Patient Transport Specialist position: Choose and train a group of staff whose only job is to handle transfers between hospitals. This makes nurses' jobs easier and makes sure that protocols are always followed.
- Training programs for transport that involve people from different fields: Create training sessions based on simulations that involve all key parties (nurses, doctors, GDAs, and security) and use real-life situations to practise working together to move patients.

- Monitoring performance based on incentives: Use performance metrics like average transfer time, adherence to checklists, or patient satisfaction scores to reward transport teams that do a good job and hold them accountable.

20. Safety and Reducing Risks

- Make risk stratification tools the same: Use clinical instruments like MEWS (Modified Early Warning Score) or NEWS (National Early Warning Score) to figure out the amount of risk before the transfer and choose the best way to get there and the right assistance.
- Transfer pause/check-in moments: Add "transfer timeouts," where the crew quickly checks the checklist, equipment, and patient ID shortly before the transfer starts, like surgical safety checklists.
- Backup resource mobilisation protocol: During festivals, strikes, or other times when there are a lot of people around, make sure there are standby teams, extra stretchers, and important supplies on hand so that transfer services don't stop.
- Transport in extreme conditions: Set rules for moving patients during natural disasters (such floods or earthquakes), fires, or pandemics to keep them safe and your business running.

21. Suggestions for infrastructure and facilities

-
- Dedicated paths for moving patients: To keep the number of people down and lower the danger of infection, assign certain lifts and hallways for patients to use that are distinct from those for visitors.
- Transport support units at important places: Set up mini-transport units or kiosks in busy areas like the Emergency Room, ICU, or Radiology to make it easier for people to get help quickly.

- Digital boards and visual signs: Use digital boards in all wards and departments to show transit timetables or pending requests. This will make things easier to see and coordinate.
- Hygiene and infection control: After each use, all transfer trolleys, beds, and wheelchairs must be cleaned. Make sure that the SOP includes rules for preventing infections, especially now that COVID-19 is over.

22. Rules and policies for the administration

- The patient transfer policy review committee: Make a team of people from different fields, such doctors, nurses, quality assurance officers, and administrators, to routinely evaluate and update travel protocols based on feedback, audits, and new technology. Use
- national and international standards to compare the hospital's intra-hospital transport system with NABH, JCI, or NHS recommendations to find ways to make it better and keep up with the best practices.
- Grievance redressal mechanism: Set up a clear way for staff and patients to report any problems that come up during patient transfer without worrying about getting in trouble. This makes it possible for the system to keep getting better.
- Legal and consent protocols: Change the formats of legal documents to make it clear that patients can be moved inside the hospital if they are unconscious or at high risk.

23. Planning for money and resource

- Budgeting for modernising transport: Push for yearly budgets for employing new staff, upgrading transport equipment, digital solutions, and training sessions.
- Cost-benefit analysis of delays: Do research to find out how much delayed transfers within a hospital cost in terms of money and health. This can help push for improved funding in policy.
- Public-private partnerships (PPP): For big hospitals, look into working with logistics companies or software startups to come up with new ways to move and track things.

24. Feedback from patients and ways to improve quality

- Forms for feedback that use QR codes: Put QR codes on stretchers or wheelchairs so that family members or workers may scan them and send in feedback after the transfer. This gives you insights in real time.
- Monthly quality dashboards: Show statistics about transfers between hospitals (delays, complaints, successful transfers) to encourage openness and improve performance.
- Root Cause Analysis (RCA) of bad events: Every case of a transport-related accident or clinical decline should be extensively examined using RCA methods, and all departments should get copies of the corrective action plans.

CHAPTER 7:

CONCLUSION

Intra-hospital patient transfer is an important part of how hospitals work, and it has a direct effect on patient safety, continuity of care, and the overall efficiency of the hospital. The results of this study, which took place at Mission Hospital in Durgapur, show that the process of transferring patients within a hospital is complicated and involves many different aspects, including logistics, clinical care, administration, and infrastructure. The study broke down the transfer process into three distinct but related phases: pre-transport, during transport, and post-transport. It did this to find problems and suggest realistic ways to make each phase better.

During the pre-transport phase, a number of systemic problems were found. Some of these are inconsistent clinical readiness, poor communication between departments, not enough ready-to-go transport equipment, not enough prioritized lift access, and not enough staff. The lack of standardized paperwork and late clinical risk assessments often led to transfers that weren't planned, and made medical teams that were already busy work even harder. The study suggests that structured risk assessments, standardized documentation, and real-time communication between departments should be put in place to deal with these problems. Also, creating a separate team to transport patients and giving priority to lift scheduling were found to be important for making things run more smoothly and reducing delays.

During the transport phase, safety and operational issues came up, such as not continuously monitoring patients, not being ready for emergencies, and not following safe handling protocols consistently. Delays during vertical transport, which were often caused by non-medical use of lifts, made transfers even less efficient. The study suggests that to improve performance in this phase, all transport staff should be required to monitor vital signs, receive formal emergency response training, and strictly follow lift usage rules. These actions can greatly lower the risks to patients and make it easier for them to move around the hospital.

After the transport phase, the main problems found were poor clinical handovers, not reassessing patients right away, incomplete paperwork, and no ways to get feedback for ongoing quality improvement. These mistakes put patients at serious risk and make their care less cohesive. Using the ISBAR communication protocol during handover, keeping records in real time in the hospital information system, and quickly reassessing when you get to the receiving department are all important steps towards making this phase stronger. Also, creating a system for reporting incidents

that doesn't punish people and involving patients and their carers through open communication will help create a culture of safety, trust, and responsibility.

In general, the study shows that moving patients from one hospital to another isn't enough; it also requires coordinated, protocol-driven work between clinical and administrative staff. Following these suggestions can greatly cut down on delays that don't have to happen, stop miscommunication, and raise the overall quality of patient care. Improvements to infrastructure, like better access to lifts for transfers, more staff, and digital documentation support, will also be very important for long-term sustainability.

This study gives hospitals a useful framework for improving patient flow by finding the main bottlenecks and suggesting realistic, evidence-based solutions that fit the way Mission Hospital works. These systemic changes will not only make transfers more efficient, but they will also make patients happier, safer, and more resilient in the long run.

REFERENCES

1. [Inter-hospital and intra-hospital patient transfer: Recent concepts - PMC](#)
2. [\(PDF\) Inter-hospital and intra-hospital patient transfer: Recent concepts](#)
3. [Inter-hospital and intra-hospital patient transfer: Recent concepts - PubMed](#)
4. <https://doi.org/10.1016/j.aucc.2013.12.001>
5. <https://www.jointcommission.org/>
6. Schreiber et al., "Intra-Hospital Transport of Patients on Non - Invasive Ventilation: Review, Analysis, and Key Practical Recommendations by the International NIV Committee," Eurasian Journal of Pulmonology, vol. 19, no. 3, pp. 124-129, 2017.
7. J. Warren, R. E. Fromm, R. A. Orr, L. C. Rotello, H. M. Horst, and M. American College of Critical Care. (2004) Guidelines for the inter- and intrahospital transport of critically ill patients. [Periodical]. 256.
Available:
<http://search.ebscohost.com/login.aspx?direct=true&db=edsbl&AN=RN143825310&site=eds-live&authtype=ip,uid>
8. D. K. Nakayama, S. S. Lester, D. R. Rich, B. C. Weidner, J. B. Glenn, and I. J. Shaker, "Quality improvement and patient care checklists in intrahospital transfers involving pediatric surgery patients," Journal of Pediatric Surgery, no. 1, p. 112, 2012.
9. C. J. C. C. Waydhas, "Equipment review: Intrahospital transport of critically ill patients," journal article vol. 3, no. 5, p. R83, September 24 1999.
- 10 U. Beckmann, D. M. Gillies, S. M. Berenholtz, A. W. Wu, and P.

Pronovost. (2004) Incidents relating to the intra-hospital transfer of critically ill patients. An analysis of the reports submitted to the Australian Incident Monitoring Study in Intensive Care. [Periodical].

1579. Available:

<http://search.ebscohost.com/login.aspx?direct=true&db=edsbl&AN=RN154267783&site=eds-live&authtype=ip,uid>

11 C. Waydhas, G. Schneck, and K. H. J. I. C. M. Duswald, "Deterioration of respiratory function after intra-hospital transport of critically ill surgical patients," vol. 21, 1995.

12. M. A. Lovell, M. Y. Mudaliar, and P. L. Klineberg. (2001) Intrahospital Transport of Critically Ill Patients: Complications and Difficulties. [Periodical].400. Available:

<http://search.ebscohost.com/login.aspx?direct=true&db=edsbl&AN=RN099475330&site=eds-live&authtype=ip,uid>

13. L. Gillman , G. Leslie, T. Williams, K. Fawcett, R. Bell, and V. McGibbon, "Adverse events experienced while transferring the critically ill patient from the emergency department to the intensive care unit," Emergency Medicine Journal, pp. 858-861, 2006.

14. P. J. D. Andrews, I. R. Piper, N. M. Dearden, and J. D. Miller, "Secondary insults during intrahospital transport of head-injured patients," The Lancet, no. 8685, p. 327, 1990.

15.F. M. P. Gimenez et al., "Analysis of Adverse Events during Intrahospital Transportation of Critically Ill Patients," Critical Care Research and Practice, Clinical report 2017.

16. R. Kue, P. Brown, C. Ness, and J. Scheulen, "Adverse clinical events during intrahospital transport by a specialized team: a preliminary report," American Journal of Critical Care, vol. 20, no. 2, pp. 153-164, 2011.

17. M. Thammasak Thawitsri, M. Kaweesak Chittawatanarat, and K. Kumwilaisak, "The impacts of surgical intensive care unit admission source on morbidity and mortality outcomes: The results from the THAI-SICU study," J Med Assoc Thai, vol. 99, no. 6, pp. S15-S22, 2016.2

18.S. Asef Zadeh, "Patient flow analysis in a children's clinic," International Journal for Quality in Health Care, vol. 9, no. 2, pp. 143-147, 1997.
[14] Patient flow: reducing delay in healthcare delivery (International series in operations research & management science. New York: Springer, 2006.

19. X. Hu, S. Barnes, and B. Golden, "Applying queueing theory to the study of emergency department operations: a survey and a discussion of comparable simulation studies," International Transactions in Operational Research, vol. 25, no. 1, pp. 7-49, 2018.

ANNEXURES 1 CHECKPOINTS AS PER JCI

INTRA HOSPITAL PATIENT TRANSPORT					
S.NO	DATE OF AUDITS				
	DEPARTMENT				
PRE-TRANSPORT					
1	PATIENT IDENTIFICATION (NAME,DOB,UHID)				
2	CLINICAL STATUS ASSESSMENT (VITAL SIGNS, OXYGEN REQUIRED IV LINES, DRAINS AND CATHETERS)				
3	TRANSPORT EQUIPMENT CHECK (AVAILABILITY OF OXYGEN, PORTABLE MONITORS, VENTILATORS EMERGENCY DRUGS,RESUSCITATION EQUIPMENT)				
4	CONSENT (IF REQUIRED)				
5	SNDT				
6	TRANSFER IN-OUT FORM(FILLED OR NOT)				
DURING TRANSPORT					
1	QUALIFIED MEDICAL TEAM				
2	CONTINUOUS MONITORING (OBSERVE VITAL SIGNS,OXYGEN SATURATION,CONCIOUSNESS LEVEL)				
3	SAFE HANDLING AND POSITIONING (PT. COMFORT,SECURE IV LINES,TUBES AND PREVENT FALL				
4	INFECTION CONTROL MEASURES (HAND HYGIENE,PPE USAGE)				
5	EMERGENCY PREPAREDNESS (ADVERSE EVENTS EG CARDIAC ARREST,DESATURATION)				
6	LIFT AVAILABILITY				
POST TRANSPORT					
1	PATIENT REASSESSMENT CONDITION AFTER TRANSPORT				
2	HANDOVER TO RECEIVING UNIT (ISBAR POLICY)				
3	EQUIPMENT AND DOCUMENTATION				

