

**Summer Training at
Artemis Health Institute, Gurgaon, Haryana
(April - June, 2013)**

- **A Study on Failure Mode Effects and Analysis on Medication Management.**
- **A Study to Evaluate Food Wastage in Food and Beverages Department.**
- **Close File Medical Records Auditing**

**By
Sudha Pathak**

Under the guidance of

Dr. Seema Mehta

**Post Graduate Diploma in Hospital and Health Management
2012-2014**



**Institute of Health Management Research,
Jaipur
2013**

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CERTIFICATE

This is to certify that Dr. Sudha Pathak, student of Post Graduate Diploma in Hospital and Health Management (PGDHM) from Institute of Health Management and Research, Jaipur Batch 17th has undergone summer training in Artemis Health Institute, Gurgaon, Haryana, and has done following projects:

1. A study on Failure Mode Effects and Analysis on medication management
2. A study to evaluate food wastage in Food and Beverages Department
3. Close file medical records auditing

The candidate has successfully carried out the mentioned studies assigned to her during summer training from 8th April 2013 to 4th June 2013 and her approach to study has been sincere, scientific and analytical.

I wish her success in all her future endeavors.



Dr. Seema Mehta
Assistant Professor and Mentor
IHMR, Jaipur



Dr. Ashok Kaushik
Dean, Academics and Student Affair
IHMR, Jaipur

Dated: 4th June 2013

TO WHOM IT MAY CONCERN

This is to certify that Dr. Sudha Pathak from Institute of Health Management Research, Jaipur has successfully completed her Internship in Quality and Food & Beverage Department at Artemis Health Institute, Gurgaon from 8th April 2013 till 4th June 2013.

During her training, she was found to be sincere and hardworking.

We wish her success in future.

For Artemis Health Institute,


Ramanjit Kaur Virk
Group Team Leader - Training & HR

ACKNOWLEDGEMENT:

This project report is the result of two months of training whereby I have been accompanied and supported by many people. It is a pleasant aspect that I now have the opportunity to express our gratitude to all of them.

My institute, **Institute of Health Management Research (IHMR), Jaipur** deserves the foremost appreciation for providing me the opportunity to understand my capability. I acknowledge the contribution of **Dr. Ashok Kaushik, Dean, IHMR** and my college mentor **Dr. Seema Mehta** in completion of this project.

I am extremely indebted to all the professionals at Artemis Health Institute (AHI), Gurgaon for sharing generously their knowledge and precious time which inspired me to do my best during summer training.

I sincerely thank **Col.Rajnish Handa**, Head -HR and Operations for allowing me to do internship project.

I am highly indebted to **Ms. Ramanjit Kaur** for giving me the permission to do my project at this esteemed hospital.

I would like to express my gratitude to **Ms. Rajani Rao** –Head Quality Department, for giving me permission to do necessary project and providing unconditional support.

Furthermore I want to thank **Dr. Ekta Sharma** for support, guidance and help throughout the project without which this work would not have been materialized.

I sincerely thank **Mr.Gitesh Mongia**, Controller – Support Services for providing me the opportunity to work on “Wastage in Food and Beverages department” project and I am also grateful to **Mr. Tara Khatri** who has contributed his precious time and valuable inputs during my study. I also owe a great debt of gratitude to the staff of **Medical Records department**, for giving me permission to do necessary research work and to use the departmental data.

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CLINICAL SERVICES

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- Accidents and emergency

Projects:

- A study on Failure Mode Effects and analysis on Medication Management
- A study to evaluate the Food Wastage in Food and Beverages Department
- Clinical Records Audit

Acronyms/Abbreviations

F & B: Food and Beverages

MRD: medical Records Department

FMEA: Failure Mode Effects and Analysis

IDTR: Interdisciplinary Team Rounds

PAC: Pre- anaesthetic check-up

UGIE: Upper Gastro Intestinal Endoscopy

PFE: Patient and Family Education

AHI: Artemis Health Institute

ICU: Intensive Care Unit

HIS: Hospital Information System

IT : Information Technology

Artemis Health Institute

INTRODUCTION-

Artemis Health Institute (AHI), at Gurgaon is a NABH & JCI Accredited, 300-bed tertiary care super-specialty flagship hospital established by Artemis Health Sciences (AHS) - a healthcare venture launched by the promoters of the Apollo Tyres Group. Artemis aims at creating an integrated world-class healthcare system by leveraging the best medical practices backed by cutting-edge technology. The super-specialties chosen by Artemis as its area of focus include Cardiovascular (Heart), Oncology (Cancer), Orthopaedics & Joint Replacements, Neurosciences and Bariatric & Minimally Invasive Surgery in addition to host of other specialties.

The services offered by Artemis encompass comprehensive medical solutions including consulting, diagnostics and therapy. For the benefit of its patients, the Institute also runs specialised programmes like Artemis Restore, Well Woman Programmes, and specialised clinics like Breast Clinic, Pain Clinic, Artemis Heart Club, Asthma Care Clinic, Skin Clinic, Knee & Shoulder Clinic, Ayurveda Clinic and Epilepsy Clinic amongst others.

The facility at Gurgaon is designed and constructed in strict accordance with International guidelines. Spread across a total area of 525,000 square feet (when completely built), the facility focuses on offering patients technology-backed world-class healthcare delivered by leading medical professionals and certified by international medical bodies. Eventually, this state-of-the-art, multi-specialty, tertiary care hospital will accommodate 550 beds to fulfil the ever growing need for high quality patient care. Additionally, Artemis follows patient-centric processes conforming to International Patient Protocols, thereby establishing new standards of service and care.

The institution is equipped with the latest technology in preventive, diagnostic and therapeutic imaging, along with the highest levels of in-patient monitoring, and a paperless and film-less Hospital Information System.

Artemis already has many firsts to its credit, being the first installation in India to offer:

Intelligent critical patient monitoring system with clinical decision support application backed by portal imaging technology

- Film-less and paperless environment (seamless integration with the Hospital Information System)
- An endovascular suite inside an operating room, which will allow endovascular surgery and catheter-based procedures along with hybrid surgery in the composite unit
- Functional MRI Scanning using Non-Contrast Imaging for Cancers (DWIBS)
- MRI-PET fusion technology
- First Hospital in the country to install state of the art Image Guided Radiation Therapy for Cancer Treatment.
- 3D dynamic road mapping for reconstructive imaging
- First & the only centre in Haryana, which is licensed and government approved for conducting Renal Transplant Surgeries
- Fertility Preservation Services for Cancer Patients.
- First In Vitro Fertilization & Assisted Reproductive Technique centre in India to start.

KEY DIFFERENTIATOR:

- A technology tie-up with Philips Medical Systems allows Artemis early and exclusive access to the latest global imaging and monitoring equipment
- The real time Image Guided Radiation Therapy (IGRT) is one of its kinds in North India. Allows for radiation to be delivered exactly where required, with minimal impact on healthy cells
- An Endovascular Suite equipped with the latest in 3D rotational imaging to perform neuro-interventional, cardiac catheterization or peripheral endovascular procedures with precision
- An in-house bio-repository and a 24-hour blood bank with the facility to conduct individual Donor NAT (Nucleic Acid Amplification) test.
- Operational Paediatric ICU and Neonatal ICU in North India.

ACCREDITATIONS & AWARDS

- Most Promising Start-Up of the Year 2007 award by Express Healthcare magazine
- Best IT Implementation for the Year 2008 from PC Quest magazine for Hospital Information System.

VISION

To create an integrated world class healthcare system, fostering ,protecting,sustaining and restoring health through best in class medical practices and cutting edge technology developed through in depth research carried out by the world's leading scientific minds.

MISSION

Deliver world class patient care services.

Excel in the delivery of specialised medical care supported by comprehensive research and education.

Be the preferred choice for the world's leading medical professionals and scientific minds.

Developed ,apply evaluate ,and share new technology.

Be an active partner in local community initiatives and contribute to its well-being and development.

CORE VALUES

Care for customer

Respect for Associates

Excellence through Teamwork

Always Learning

Trust Mutuality

Ethical Practice

QUALITY POLICY AT ARTEMIS

- Deliver world class patient care through medical excellence.
- Create a patient-centric environment
- Ensure high standards and safety of treatment during the patient's stay.
- Continuous Quality Improvement through implementation of robust clinical and non-clinical process and protocols.
- Having world-class infrastructure and cutting edge technology utilized by highly skilled employees.
- Complying with statutory regulations.

Artemis Services Standards:-

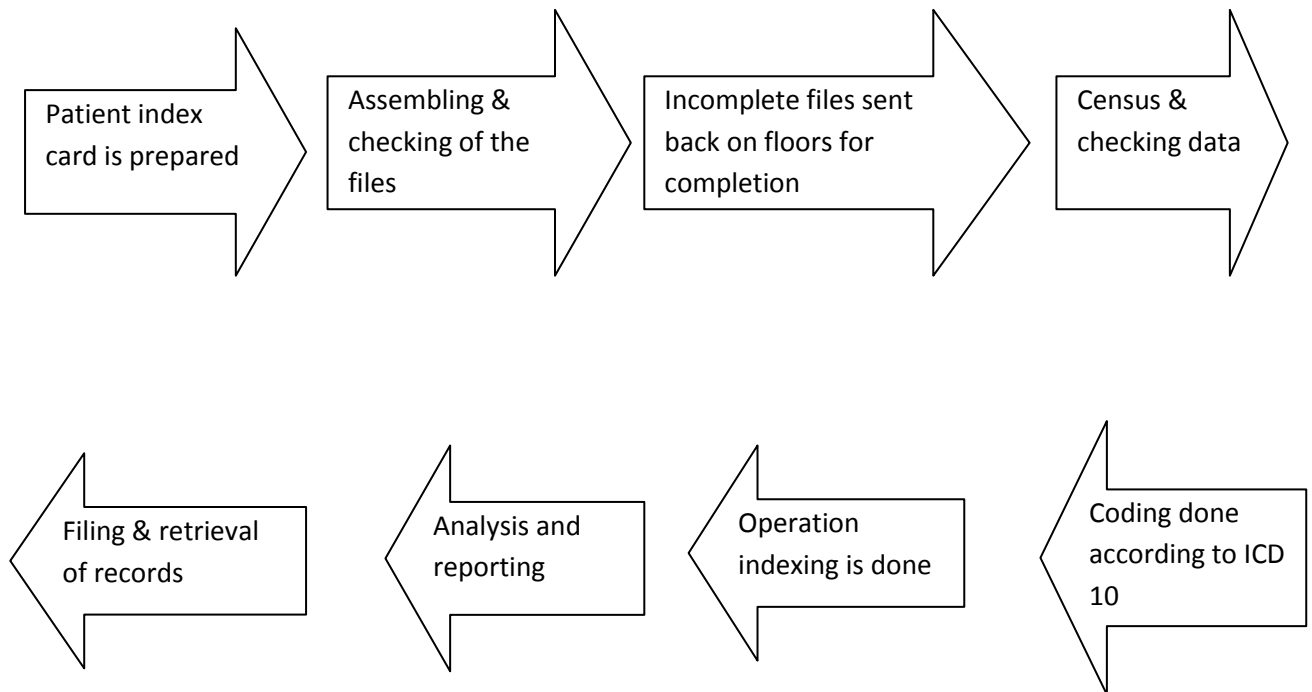


ARTEMIS SUPER SPECIALITIES

- Dental
- ENT
- Urology
- Neurology
- Radiology
- Paediatrics
- Cardiology
- Nephrology
- Orthopaedics
- Critical Care
- Lab Services
- Physiotherapy
- Spine Surgery
- Anaesthesiology
- Endocrinology
- Ophthalmology
- Neuro Surgery
- General Surgery
- Plastic & Reconstructive Surgery
- Artemis Artificial Limb Centre
- Holistic Medicine
- Cardio Thoracic
- Internal Medicine
- Nuclear Medicine
- Bariatric Surgery
- Gastroenterology
- Surgical Oncology
- Medical Oncology
- Pulmonary Medicine
- Alternative Medicine
- Laparoscopic Surgery
- Reproductive Medicine
- Gynae Oncology
- Vascular Surgery
- Clinical Psychology
- Radiation Oncology
- Emergency Medicine
- Human Organ Transplant
- Blood Transfusion Services
- Obstetrics & Gynaecology

ORGANISATION LEARNING:

A. Medical Record Department:



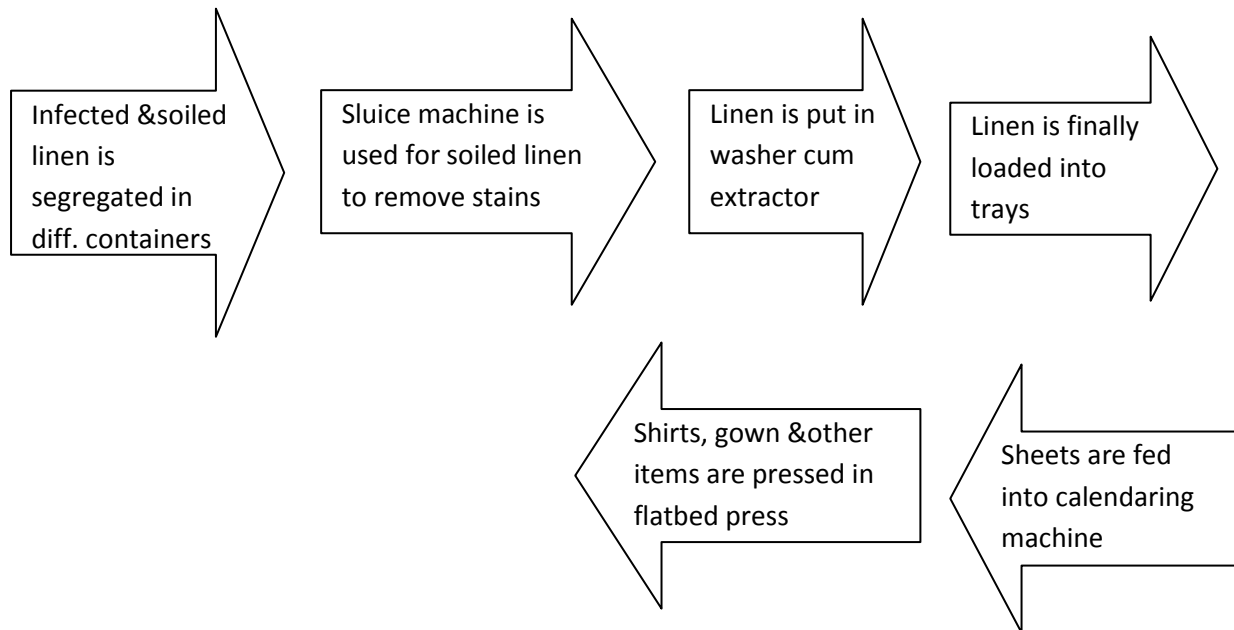
LEARNING:

- ❖ Daily census is made and detailed preparation of data that helps in easy identification of the case to be referred.
- ❖ Monthly MIS preparation for the complete overview and sent to the hospital management.

SUGGESTIONS

- Although HIS is in use but the hospital management should encourage the staff to use the paperless technology as much as possible to accommodate more records which would also help in managing in the present space.
- In order to reduce time wastage in sending the files too & fro on floors for completion by the MRD staff, doctors & Nursing staff should be encouraged to complete the file as soon as patient leaves the hospital and then only the complete medical record (in all aspects) should be sent to the MRD department.

B. LINEN AND LAUNDRY



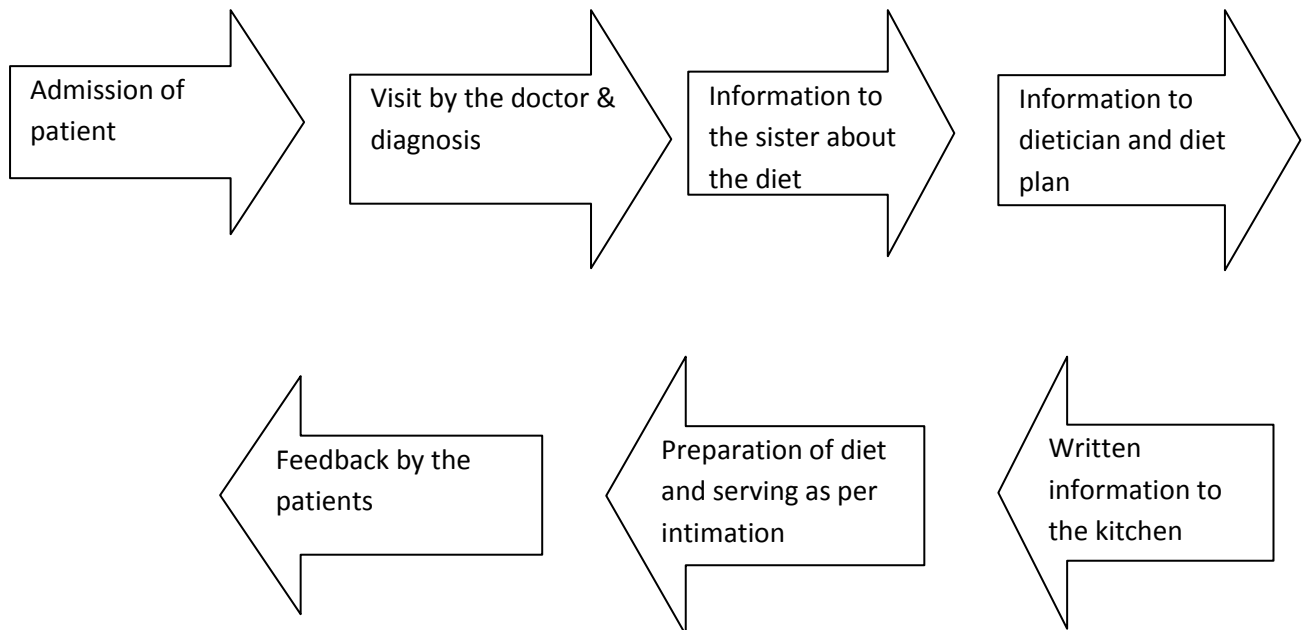
LIMITATIONS:

- Being outsourced is its biggest weakness as it becomes impossible to regulate the quality.
- Linen to be put in washers is not weighed properly

Ways to improve

Quality check should be regulated to maintain the standard procedure

KITCHEN:



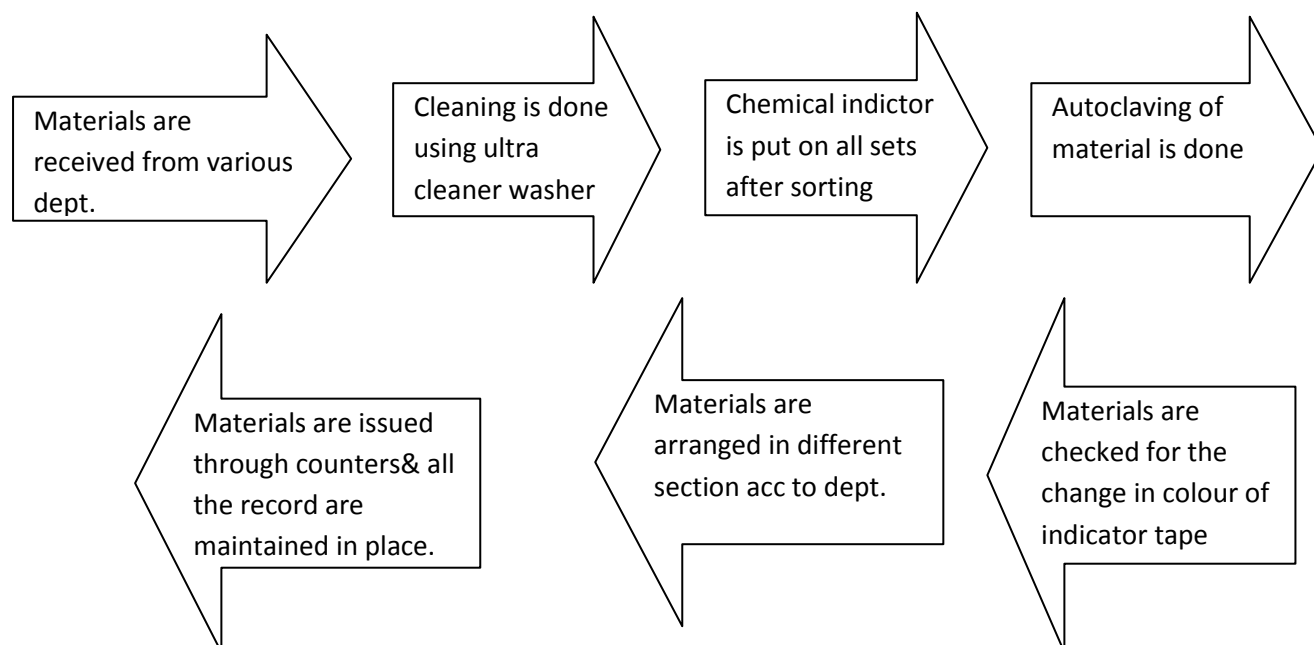
Limitations:

- Kitchen area is small as per the patient capacity & staff load, which inhibits the staff to work efficiently.
- Preparation of diet ticket is very cumbersome job, most of the work is done manually by the dietician as there is no integration of HIS's dietetic module with the software being used by the F & B department.

SUGGESTIONS :

There should be an integration of dietetic module in the HIS with the F&B's software for efficient working.

C. CENTRAL STERILE SUPPLY DEPARTMENT:



Learning:

- Working of the department is very smooth with set time lines for the collection & dispatch of the equipments.
- Efficient record keeping.
- Latest techniques in use to trace the effectiveness of sterilization.

Suggestions:

- More staff members to be incorporated because it is the busiest department.

D. DAY CARE:

Day care service is basically the services where patients get admission on appointment basis for their procedures and are discharge within 24 hours of their admission .The patient or his relative has to report at the department along with the consultants note and then the OT slot is scheduled and appointment is given.

The following procedures are done: dialysis,chemotherapy,endoscopy,ophthalmology.

CASUALTY:

The department is open all the time and deals with emergency cases. it follows standard triage codes based on patient's clinical condition.

- RED –within 5 minutes of referral
- YELLOW –within 15 minutes
- GREEN –within half an hour of referral

The patient is attended and all the vital signs are checked and accordingly treatment is started. the golden hour is the most critical and rapid intervention can save a patient's life. It is well equipped with Defibrillator's, Ventilators, Suction apparatus and other life support system manned round the clock by efficient doctors and sisters. There is an attached minor OT where all the emergency minor surgeries can be performed. It also provides ambulance for the patients.

FAILURE MODE EFFECTS AND ANALYSIS OF MEDICATION MANAGEMENT

INTRODUCTION:

Medication prescription is an integral part of our healthcare system, which leads to a set of interrelated workflow and processes for the patient to have the medicine in an accurate & timely manner. However, within hospitals and across the healthcare system, these processes vary in ways that may have consequences. Variations impact initiation and timing of medication therapy for patients. They also create pressure, stress and inefficiency for pharmacists and nurses, and workflow disruptions. No other interdepartmental relationship within a hospital demands this many daily synchronization points. No other interdepartmental relationship or synchronization is as critical if not done or done incorrectly.

A breakdown at any point in these processes may lead to delayed, omitted or incorrect medication therapy. The systems employed in distributing and administering medications within hospitals are developed primarily to promote medication safety. Yet these systems are also built to accommodate either nursing or pharmacy workflow. Furthermore, it is conjectured that systems employed to favor one of these professions are counterproductive to the other. The question to be answered is: what is the safest, most effective medication management system for the hospital and ultimately the patient?

The problem of medical systems, like all human systems, is that humans err. A human error becomes an accident and has the possibility of causing harm when the preventive, error-proofing processes within a system are inadequate. These faults have a delayed impact on the system and are propagated by persons whose activities are removed in space and time from accidents that occur. So the errors throughout the medication management process have been one of the most crucial problems in hospital pharmacies.

Meanwhile, department-specific systems may prevent medication errors within an individual area of a hospital, but the handover of tasks between departments is where information is often lost. Issues involving communication, continuity of care, and care planning are cited as a root cause in more than 80 percent of reported seriously adverse unanticipated events in healthcare.

Several factors can complicate this workflow and impact the timely delivery of medications. The sheer volume of new medication orders exacerbates the challenge. Today, within a 300-bed hospital, nurses may administer 2,400 to 4,000 doses of medications daily across all patient care areas. Therefore, pharmacy, nursing and technological processes must all be synchronized to provide the correct medication, supplies and information for each one of these transactions.

Patient transfers between patient care areas complicate this synchronization effort.

Further, hospital pharmacies use various medication dispensing and delivery pathways, which depend on the type of medication prescribed and the extent and type of dispensing automation employed. For nursing, the type of medication and the dispensing automation employed impact the timeliness of availability.

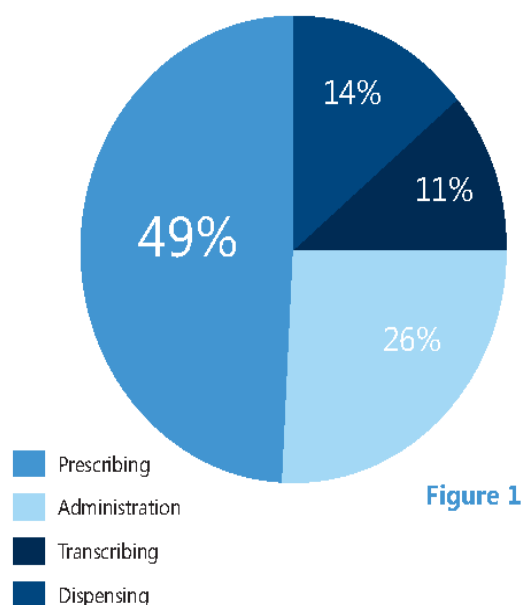


Figure 1

Statistics show dangerous medical errors most often in:

Prescribing: Medications contraindicated because of allergies, age, health conditions or drug interactions can be inadvertently prescribed.

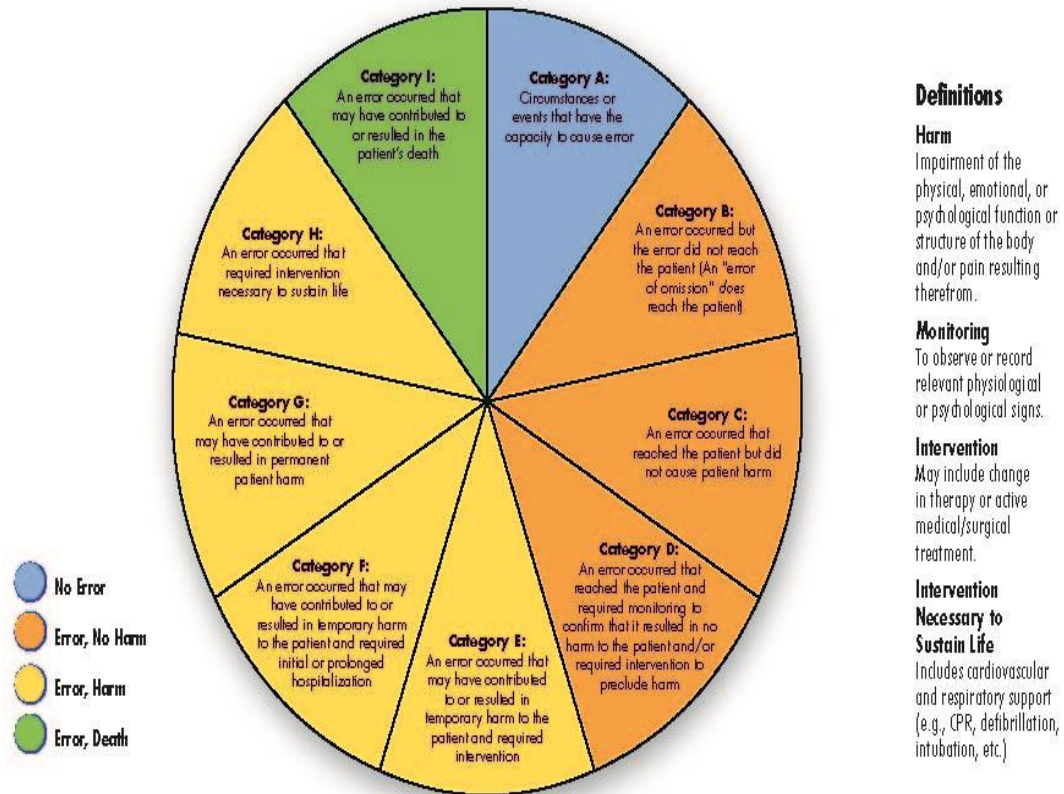
Administration: Mistakes at bedside can result from miscommunication, inaccurate information, or medications delivered to the wrong patients.

Transcribing: Illegible handwriting can result in misunderstood instructions, inaccurate doses and wrong medications.

Dispensing: Overburdened pharmacy staff and manual stock selection and counting processes often lead to dispensing mistakes.

Source: D W Bates, D J Cullen, N Laird, et al., "Incidence of Adverse Drug Events and Potential Adverse Drug Events: Implications for Prevention", JAMA, 247 (1995), pp. 29-34

NCC MERP Index for Categorizing Medication Errors



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As medications are one of the primary modes of treatment and errors may cause patient harm, there have been a plethora of technological advances focused on improving the safety and efficiency of these processes. Technology is now available to assist with all the major medication processes: prescribing, dispensing, administering, documenting and monitoring medication therapy. However, as such recent technologies as computerized prescriber order entry (CPOE), barcode medication administration (BCMA) and electronic health records (EHR) are implemented, hospital leaders are concerned as to how these technologies are impacting or are impacted by those workflow processes developed to support previously implemented dispensing technologies. This requires a

thorough understanding of the complex interactions between people, materials and information.

Quality hospitals look to a closed-loop medication management solution to help them significantly improve quality and prevent errors. By choosing systems that work together and flow information smoothly between clinicians and departments, hospitals can progress toward the most informed care.

So For hospitals to reduce patient morbidity and mortality, it is imperative that appropriate medication therapy be initiated rapidly and continued therapy be administered as scheduled. Pharmacy, nursing and technological processes must all be synchronized to provide the correct medication, supplies and information for each one of these transactions

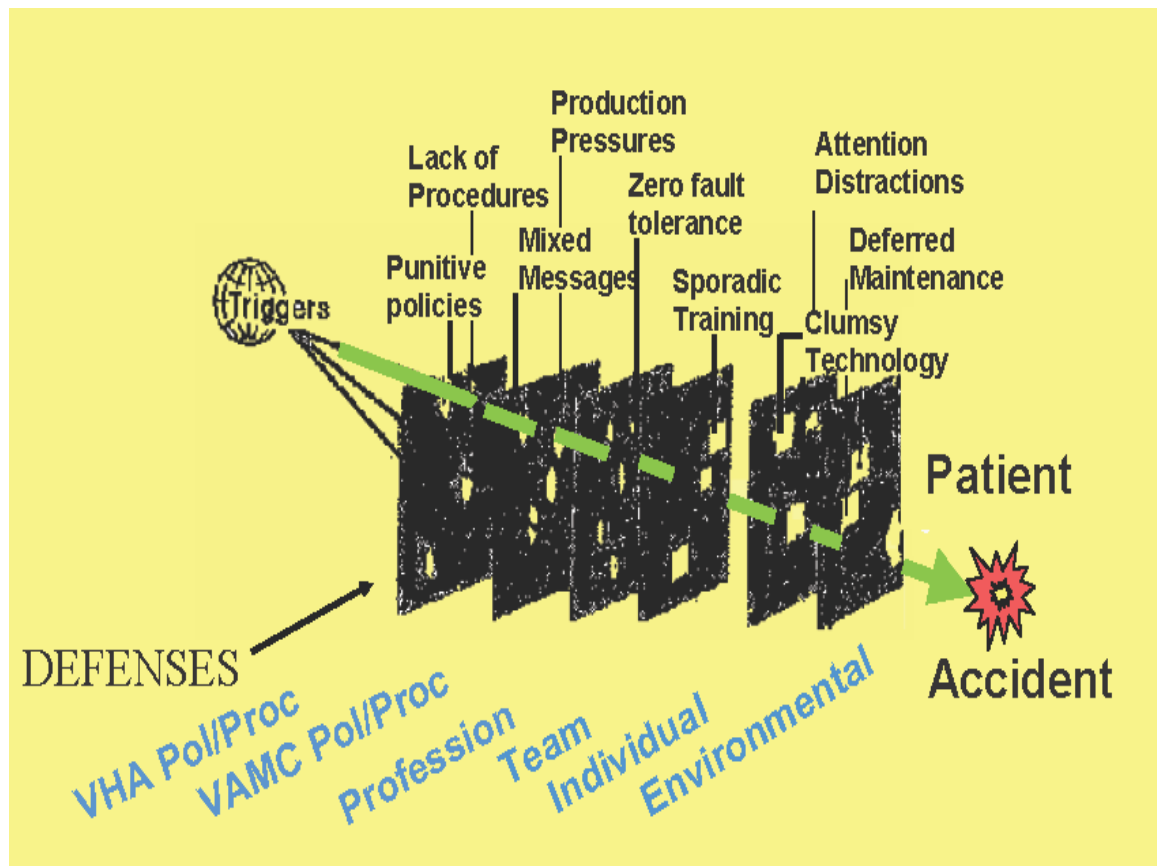
FMEA:

FMEA defines a contemporary approach to improve complicated processes by examining all potential causes or modes of failure of critical processes and of methods designed to prevent failure of those processes. Each mode is studied for potential effects.

Three measures are made of each mode and effect: **severity, ease of detection, and rate of occurrence**. The criticality scores derived from these measures can be used to identify those modes most in need of further error proofing and, when tracked, serve as proxies of effectiveness of medication error prevention.

FMEA in Healthcare:

- Points out the process vulnerabilities
- In healthcare there are various processes which are prone to failure like:



- Helps in standardizing the process
- Forcing functions
- Reduce reliance on memory & Vigilance
- Drives out fear
- Reflects organization's commitment

RATIONALE:

- The aim of our study was to determine factors that causes or has the chances of causing medication errors in the hospital by doing the FMEA analysis.
- This information would be helpful for creating awareness among the hospital staff(including clinicans, Nurses & Pharmacists) to reduce medication administration/errors.
- Promote accurate & Timely delivery of medication to the patient.

DATA COLLECTION PROCESS:

The Failure Mode and Effects Analysis (FMEA) process is a “systematic method of identifying and preventing product and process problems before they occur.” FMEAs focus on identifying and removing defects, enhancing safety, and increasing customer satisfaction.

HealthCare Process FMEA involves the following steps:

1. Select a high-risk process:

In this case, Medication management was chosen as the high risk process for which the FMEA was conducted.

2. Deputing the manpower/resources for the Study:

I was assigned the task of conducting the FMEA in the Artemis Hospital.

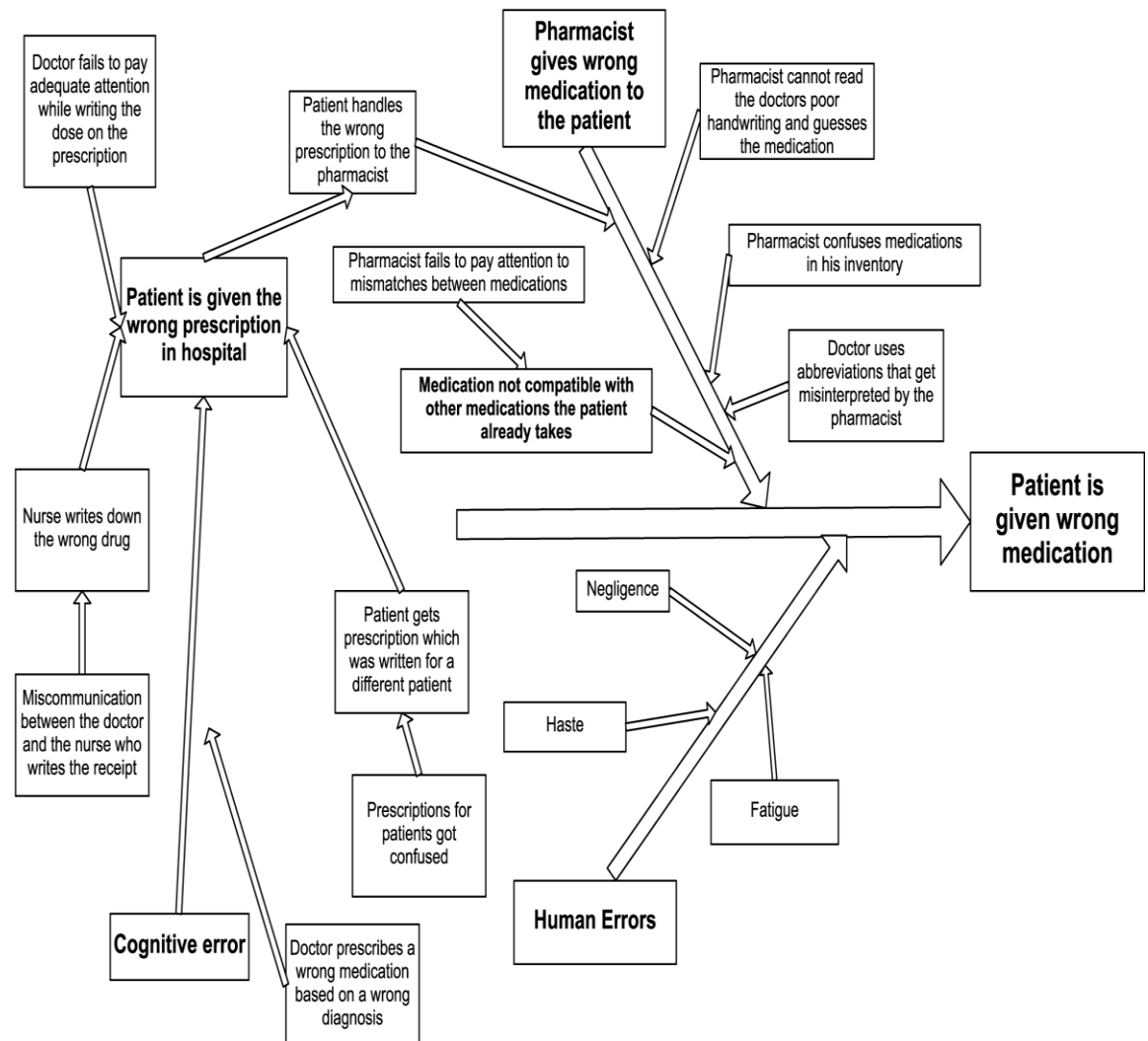
3. Diagram the process:

Process map was laid out with the points to be studied(area specific) during the FMEA process:			
Sr. No	Process to audit	Areas to be audited	Audit points
1	Storage	IP Pharmacy	Temp monitoring of room & fridge (24* 7 , 365 days)
2		OP Pharmacy	Mixing of drugs of diff. strength in a Box
3		Main Pharmacy	Storing and labeling of high alert medications
4		Wards(Inventory, Bed side)	LASA drugs -storage and labeling
6	Orders	10 files/ward	All orders in Capital letters only
7			Time of order
8			SOS drug orders

9			Weight based prescription
10			Time gap between ordering and indenting
11			Prescription Error
12			No. of Indents per day (Date Specific, Area specific, Time Specific)
13	Indent	All areas	Process mapping
14			Time to reach the order on floor- Area specific, Time distribution
15	Dispense	IP pharmacy	Dispensing error
16	Preparation	ICU	Audit tool attached
17	Administration	ICU	Standard time
18	Documentation	All areas	Any gap during documentation
19	Monitoring	Only wards	Side effects like rash ,gastritis and any febrile reaction

4. Brainstorm potential failure modes :

During the process mapping of medication management, all the potential failure modes were marked. Few example being:



5. Estimate the severity of the failure (S), Probability of Occurrence (O) & Probability of detection (D):

Severity of failure for all the potential modes along with the occurrence & detection probability was also calculated with the help of the clinicians & the nursing staff of the hospital on a rank of 1 to 10, with 1 corresponding to low risk and 10 corresponding to high risk.

6. Calculate the risk priority number:

After calculating the S,O & D , Risk priority number (RPN) was calculated by the following equation:

$$\text{Severity Rank (S)} \times \text{Occurrence Rank (O)} \times \text{Detection Rank (D)} = \text{RPN}.$$

7. Prioritize failure modes:

Top 5 failure modes with the highest RPN were identified during the failure mode effect analysis process.

8. Identify contributing factors of failure modes:

All the contributing factors to the failure modes were enumerated and analyzed.

9. Redesign process:

The medication management process was redesigned so as to eliminate the potential failure modes whether by decreasing the chances of occurrence or by increasing the chances of detection at various steps.

10. Analyze and test the new process:

Newly redesigned process was analyzed by the team of Doctors, nursing staff, pharmacists & the hospital management representative and was tested for a week's period so as to check its effectiveness.

11.Implement and monitor the redesigned process:

Once it was observed that the newly designed system is going to work in a far more effective manner in reducing the chances of medication error it was implemented in a thorough manner and is under continuous monitoring by the quality Department of the hospital.

DATA COMPILATION,ANALYSIS & INTERPRETATION:

These are the top 5 areas where discrepancies are found to be most :

1.Pharmacy Review orders :-

The failure mode – orders need reconciliation

Potential effects of the failure –delay for reconciliation

Eventually,the condition of the patient worsen.

2.Patient Response monitored:-

Potential failure mode –response not observed

Potential effects of the failure –wrong decisions made about care condition of the patient worsen.

3.Prescriber conceives order:-

Failure mode – no old records are there.

Effects- allergy to prescribed drugs.

The allergic reaction found to be occur.

4.Prescriber Conceives:-

Potential effects of the failure –contraindication exists which leads to toxic effects of the drugs.

5.Patient response monitored :-

Failure mode: response of the patient not charted.

Effects : wrong decisions were made about care and because of it condition of the patient worsens.

RECOMMENDATIONS:

- Staff education, floor pharmacist deployed for prescription audit.
- Pharmacist to do prescription audit for contraindication.
- Prescription audit.
- Pharmacy rounds.
- Home medicines documentation in drug chart at the time of admission. Daily review of drug chart by floor doctors.
- Staff training and pharmacist round.

References

All published and unpublished documents studied for developing the report

FOR FMEA:

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Annexure

1. Time Schedule

S#	Name of the Department	Date(s) of visit	% of time spent	People met (with designation)
1.	3 rd floor wards	13.04.13	2 hrs.	Mr. Joby – Nursing TL
2.	OP pharmacy	13.04.13	2 hrs.	Mr. Neeraj- Executive
3.	4 th Floor wards	15.04.13	2 hrs.	Mr. Narender- Nursing TL
4	5th floor wards	15.04.13	1.5 hrs.	Ms. Amanpreet- Associate Nursing
5.	6 th floor wards	15.04.13	1 hr.	Mr. sejo-Executive Nursing
6.	1 st floor ICU	16.04.13	3 hrs.	Mr Manoj- Nursing TL
7.	OPD	20.04.13	1 hr	Chairperson- P & T committee

2. Data Collection format & Analysis

S.no		Function	Potential Failure Mode(s)	Potential effects of the failure (consequences on other systems, people)	Severity	mechanism of failure (how the failure is caused)	probability of failure	Current failure controls (how detected)	Probability of Detection	RPN	Recommended Actions	responsibility	target completion date	Actions taken	New occurrence probability	New severity	New detection	New RPN
1	1	Consider Patient History	no med hx	wrong/no drug prescribed	9	condition worsens	4	care giver obs	2	72					9	4	2	72
	2		no working dx	wrong/no drug prescribed	9	condition worsens	4	care giver obs	2	72					9	4	2	72
	3		no history	wrong/no drug prescribed	9	condition worsens	4	care giver obs	2	72					9	4	2	72

				contraindications exist	10	toxic effect of the contraindications	4	nursing assessment	7	280	Pharmacist to do Prescription audit for contraindications.	Ms. Josephine & Ms. Shweta	July'12	Training of the staff has been done for the same. Pharmacist deployed 24*7 in all patient care areas.	10	2	2	40
3	6	Prescriber writes order	not legible	delays for clarification	6	delay in tx	3	no controls	1	18					6	3	1	18
	7			wrong drug entered thru system	10	toxic effect	2	prescriber sees error or next visit	3	60					10	2	3	60
	8																	

[illegible]

10			wrong dose given	10	toxic effect	2	Nurse notices	740	Pharmacy rounds		Ms.Shweta August'12	Daily rounds are being done by pharmacists to check the MAR for appropriateness of drug, right dose, right route, right frequency etc.	10	2	2	40
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	11		written on wrong chart	wrong patient gets drug	10	toxic effect	1	another caregiver notices and corrects	70							10	1	1	10
4	12	Nurse reviews order	until melody review	delay in getting appropriate rx	8	condition worsens	5	another caregiver notices and corrects	140							8	1	1	8
	13		review activity "lost"	drug does not get ordered	10	condition worsens	1	another caregiver notices and corrects	110							10	1	1	10

	14		distraction error	drug does not get ordered	8	condition worsens	1	another caregiver notices and corrects	18					8	1	1	8
	15		order not "ok"	delays for clarification	8	condition worsens	1	another caregiver notices and corrects	18					8	1	1	8
5	16	Order transmitted to pharmacy	HIS system fails	drug does not get ordered	6	condition worsens	8	Manual order when discovered	148					6	8	1	48

6	17	Pharmacy review order	compare with wrong patient profile	inappropriate drug may get sent	8	condition worsens	3	professional diligence	2	48								0
	18			appropriate drug may Not get sent	8	condition worsens	3	professional diligence	2	48								0
	19		order missed in pharmacy	drug does not get dispensed	8	condition worsens	3	fax order when discovered	3	72						8	33	72

20	Order needs reconciliation	delays for reconciliation	10	condition worsens	5	Pharmacist does not have access to home medicines and current medicines list.	10	500	Home medicines documentation in drug chart at the time of admission. Daily review of drug chart by floor doctors.	Ms. Josephine July '12	Home medicines documentation in drug chart is done at the time of admission. Daily review of drug chart by floor doctors are done as a part of IDT Rounds.	10	5	2	100
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7	21	Pharmacy enters order	inaccurate order	wrong tx or no tx	10	condition worsens	1	professional diligence	20							10	1	2	20
	22			distraction		condition worsens		professional diligence	0										0
8	23	Medication Selected	med not in inventory	delayed therapy	3	condition worsens	3	substitution	19							3	3	1	9
	24			drug does not get dispensed	3	condition worsens	3	substitution	19							3	3	1	9
9	25	Med prepared	wrong drug prepared	wrong drug/ dose	10	toxic effects	2	professional diligence	240							10	2	2	40
	26		pre process done in erro	inadequate therapy	10	condition worsens	1	professional diligence	440							10	1	3	30

	31		med lost on way	correct patient does not get drug	5	condition worsens	1	return to correct unit	15						5	1	1	5
	32		time delay	delay in therapeutic effect	5	condition worsens	5	borrow from another patient	125						5	5	1	25
12	33	Unit processes medication	placed for wrong Nurse	delay in therapeutic effect	3	condition worsens	3	nurse corrects	19						3	3	1	9
	34		drug lost	correct patient does not get drug	3	condition worsens	3	re-sent order	19						3	3	1	9
	35		drug not noticed	delay in therapeutic effect	3	condition worsens	3	none	218						3	3	2	18

13	36	Nurse prepares dose	order not to MAR yet	delays for clarification	3	condition worsens	1	none	1	3					3	1	1	3
	37		drug and order do not match	delays for clarification	3	condition worsens	1	none	1	3					3	1	1	3
	38		inaccurate MAR	patient gets wrong drug	6	condition worsens	2	professional diligence	5	60					6	2	5	60
	39		mislabelled med	inadequate therapy	9	condition worsens	1	nurse knows med	7	63					9	1	2	18
	40		wrong patient	inadequate therapy	9	condition worsens	2	none	1	18					9	2	1	18

1	4	Nurse admi nisters dose	wrong patient	inadequate therapy & unec intervention	9	condition worsens	1	patient ID process	5	45					9	1	2	18
	41			toxic effect	9	condition worsens	1	patient ID process	2	18					9	1	2	18
	42		omission error	inadequate therapy	5	condition worsens	3	patient ID process	4	60					5	3	2	30
	43		patient refuses	inadequate therapy	2	condition worsens	2	patient education & consent	1	4					2	2	1	4
	44		wrong route	inadequate therapy & toxicity	9	condition worsens	2	MAR to bed side	2	36					9	2	2	36
	45																	

15	46	Med charted	wrong patient	inadequate therapy	5	condition worsens	1	MAR to bedside	3	15						5	1	2	10
	47			unnecessary intervention	5	toxic effect	1	MAR to bedside	3	15						5	1	2	10
	48		not charted	med given again	6	toxic effect	2	MAR to bedside	8	96						6	2	2	24
	49		wrong med	unnecessary intervention	3	toxic effect	2	MAR to bedside	2	12						3	2	2	12
	50			inadequate therapy	3	condition worsens	2	MAR to bedside	2	12						3	2	2	12

16	51	Patient response monitored	response not observed	wrong decisions made about care	9	condition worsens	6	professional diligence	6	324	Staff training and pharmacists rounded	Ms. Josephine July '12	Training of the staff has been done for the same and 24* 7 pharmacists have been deployed .	9	3	2	54
52			response not charted	wrong decisions made about care	4	condition worsens	6	professional diligence	6	144	Staff training and pharmacists rounded	Ms. Josephine July '12	Training of the staff has been done for the same and 24* 7 pharmacists have been	4	3	3	36

Patient response monitored	5		response not charted	wrong decisions made about care	4	conditio n worsens	6	professi onal diligenc e	6	14 4
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Project no: 2

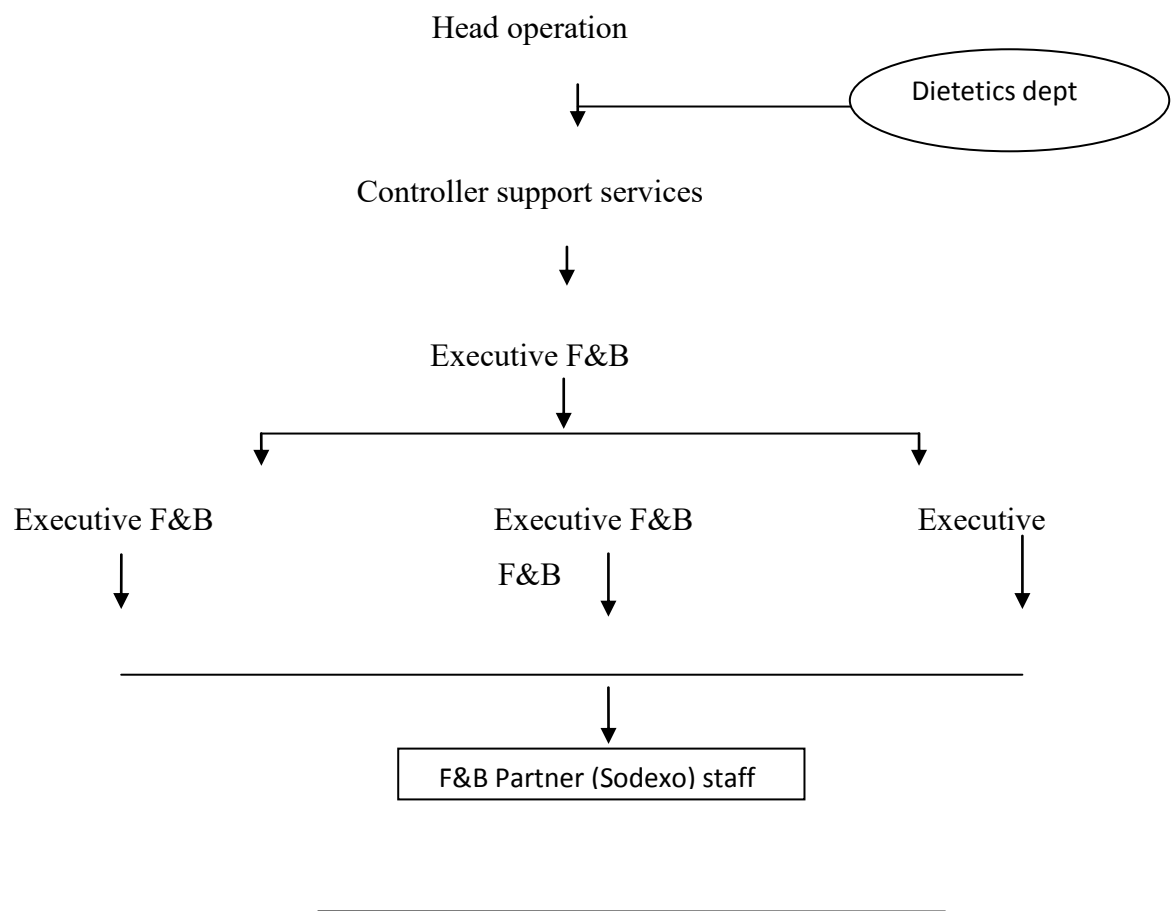
An Evaluation of Food Wastage in Food and Beverages Department

OPERATIONS DEPARTMENT

It includes three departments-

1. Food and Beverage Department
2. Security Department
3. House Keeping Department

HIERARCHY OF F&B DEPARTMENT



PROCESS OF FOOD AND BEVERAGE DEPARTMENT-

- Admission of the patient
- Visit by the doctor
- Diagnosis
- Information to the sister
- Information to dietician
- Diet plan by the dietician
- Intimates kitchen
- Cooking of food and serving
- Feedback by the patients

1) Admission of patient-

- There are two ways by which patient comes in IPD-
Walk- in (those with admission request)
Planned Cases (those with booking)
- The walk-in patients then choose room according to their choices.
- The availability of room is then checked at the counter.
- Payment is done either at the cashier or at the billing counter.
- Mode of payment can be – Cash, Credit Cards, Pay order and Demand Drafts.
- Categories of patients- General or Semi- private (ECHS category), International and Insured.

2) Visit by the doctor-

- The doctor visits the patient two times a day-morning and evening. The doctor visits the patient two times a day-morning and evening.
- On Sunday and on holidays, only one visit is done.
- Entry of the visit is done by the doctors.

3) Diagnosis-

- Doctors diagnose the patient and then accordingly inform the sister about the diet.

4) Information to sister-

- The sister performs mainly two functions- Admission and discharge.

a) Nursing Admission Process-

- Received nursing information.
- Team leader- nursing assigns staff to receive the patient.
- Assigned staff checks the room for readiness.
- Patient is greeted and received in room and then shifted to bed.
- Checking the patient's documents.
- Nursing assessment.
- Informs doctor on duty about the admission within half an-hour.
- Inform dietician or fill diet form and sent.
- Inform house-keeping.

b) Nursing Discharge Process-

- Return of medical consumables.
- Prepares report.
- Collection of no dues slips from pharmacy.
- No dues slip is then sent to billing department.
- Bills updated and nurses are informed.
- Nurse directs patient's attendants to billing counter.

Introduction

- The F&B and Dietetics department are located on lower ground floor.
- Area: 3000 sq feet

- F&B department is mainly outsourced (Sodexo) with 85 -90 employee
- 4-5 senior employee are from ARTEMIS who look after the F&B department

In Artemis health care institute, the F&B and dietetics department work together to deliver the food to the patients. The Dieticians takes round to the different wards, meet patients individually, and does the nutritional assessment and make the diet ticket as per cyclic menu. This ticket is then submitted to the F&B department to prepare food and to ensure timely delivery to the patients.

- **First diet should be planned by concerned physician.**
- **The dietician is not available after 8:00 pm, so if any new admission is there, nurse will prepare the diet ticket and gives it to the F&B department.**
- **If dietician is not available, tea and sandwich is given to the patient.**

The diet ticket for every service is separated floor wise and handed over to the F & B supervisor. Timings for handing over of diet ticket are as follows:-

- Mid morning soup – 10.00 am
- Lunch 10.00 am with checklist
- Evening tea 3:00 pm
- Dinner 4:00 pm
- Next days early morning tea (EMT) and breakfast 7:30 pm one day prior, with checklists

Work flow

1. In patient meal management

Details of patient meal services

- ✓ Man days will start from mid day soup to breakfast.
- ✓ Vegetarian meal is being served to patient as per menu, non vegetarian option is also available.
- ✓ Apart from the contract prescribed (dietician) additional meal is also served to patient.
- ✓ Patient meal service would only be at the bad side.
- ✓ Attendant/visitor can also have their meals in the patient room and can also avail services at visitor cafeteria on ground floor.

OPD meal services

- Dialysis services
 - ◆ One heavy snack is served to the patient as per pre planned menu of the day.
 - ◆ Meal request is generated through the respective department and sent to kitchen for service.
- Chemotherapy services
 - One minor and one major meal service is served to the patient as per pre planned IPD menu of the day.
 - Meal request is generated from the respective department and sent through the dietician to the kitchen for service.
- Nuclear medicine
 - One minor or one major meal service is served to the patient as per pre planned IPD menu of the day depending upon the procedure and preference of the patient.
 - Meal request is generated from the respective department and sent to the kitchen for service.

Artemis health and wellness programme

- ◆ Meal request is generated as per booking/admission of the customer availing package.
- ◆ Request is sent to kitchen for service.
- ◆ A pre plated portioned meal is served as per planned menu of the day.

Staff meal/Dr. Services

<u>Timings</u>	<u>Services</u>		
	1. Breakfast		07:30 am to
	08:30 am		
	2. Snacks		11:00 am to
	11:30 am		
	3. Lunch		01:00 pm
	to 03:00 pm		
	4. Evening snack		04:30 pm
	to 05:30 pm		
	5. Dinner		07:30 pm
	to 09:30 pm		
	6. Vending (tea, coffee against coupons)	morn	07:30 am
	to 09:30 am		
		Even	04:30 pm
to 05:30 pm			
	7. Water –self service from dispenser		

Processes of staff cafeteria

- The staff need to pay to cashier and will have to proceed for collecting food from dispenser
- The staff runs on self service basis
- Soiled dishes need to placed at designated place after consuming meal
- All disposable needs to trash at designated garbage bins
- Food needs to be consumed at the cafeteria only
- Staff can have their own meal in cafeteria
- Staff meals are served in the staff cafeteria at stipulated timings only
- No table service

Processes of nursing hostel meal service

- All meals will be served at stipulated time only at nurses hostel cafeteria
- The nurses cafeteria runs on self service basis
- Soiled dishes need to placed at designated place after consuming meal
- All disposable needs to trash at designated garbage bins
- Food needs to be consumed at the cafeteria only

Visitor's cafeteria

- Runs round the clock
- Attendants and visitor's can have meal at visitor cafeteria from various choices ,from different brands
- Mode of operation is purely cash and pay basis

If any authorised staff want to entertain official guest ,the request has to given to F&B department with required approval

Function prospects

All official function /meeting prospect need to inform to F&B dept in designated format.

All the information should be passed three day in advance.

EXECUTIVE SUMMARY:

Introduction: The study was carried out at Artemis Health Institute in Food & Beverage (F&B) department to evaluate the food wastage in F& B department.

INTRODUCTION:

Food waste or **food loss** is food material that is discarded or unable to be used.

Plate waste in hospitals refers to the served food that remains uneaten by patients/staff. High levels of plate waste Contribute to malnutrition-related complications in hospital, and there are also financial and environmental costs. Plate waste is typically measured by weighing food or by visual estimation of the amount of food remaining on the plate, with results presented as the percentage by weight of the served food, or by calculating the protein, energy or monetary value of the waste.

Results from 32 studies in hospitals show a median plate Waste of 30% by weight (range: 6-65%), much higher than in other foodservice settings. Levels are lower in hospitals using a bulk food delivery system compared to plated meal delivery. Reasons for these high levels can relate to the clinical condition of patients, food and menu issues (such as poor food quality, inappropriate portion sizes, and limited menu choice), service issues (including difficulty accessing food and complex ordering systems), and environmental factors (such as inappropriate meal times, interruptions, and unpleasant ward surroundings). Strategies to minimize waste include reduced portion sizes with food fortification, bulk meal delivery system, feeding assistance, provision of dining rooms, and protected meal.



Definition of avoidable food waste

Food waste can be defined as organic waste which has its origin in food or inputs in food production. We can divide between avoidable and unavoidable food waste. Avoidable food waste was edible at some point prior to disposal (e.g. slice of bread, plate residues etc.) The avoidable food waste from hospitality sector could be divided in waste from the kitchen (e.g. preparation of meals) and waste from the guests (plate residue). Unavoidable food waste is not-edible food waste from preparation and consumption (e.g. bones, egg shelf, coffee grounds etc.) In this project we use the terms of avoidable food waste and edible food waste as synonyms.

REVIEW OF LITERATURE:

So far literature and reports have been focusing on avoidable food waste within households and the retailers. Less focus has been given to the hospitality sector representing about one third of food consumption.

Available literature gives different results on food waste and avoidable food waste. There is thus a need for both better methodology and definitions in order to improve statistics on food waste and avoidable food waste.

Based on different methods the amounts of food waste and avoidable food waste are calculated in order to illustrate the situation of avoidable food waste within the hospitality sector in general and for different segments.

Every day about 3 million meals are served within the public hospitality sector, of which 1.4 million portions at schools.

The public hospitality sector comprises:

Municipal responsibility:

- a) Pre-school/kindergarten, 1–6 years
- b) Schools; 1–9 class
- c) Houses for elderly

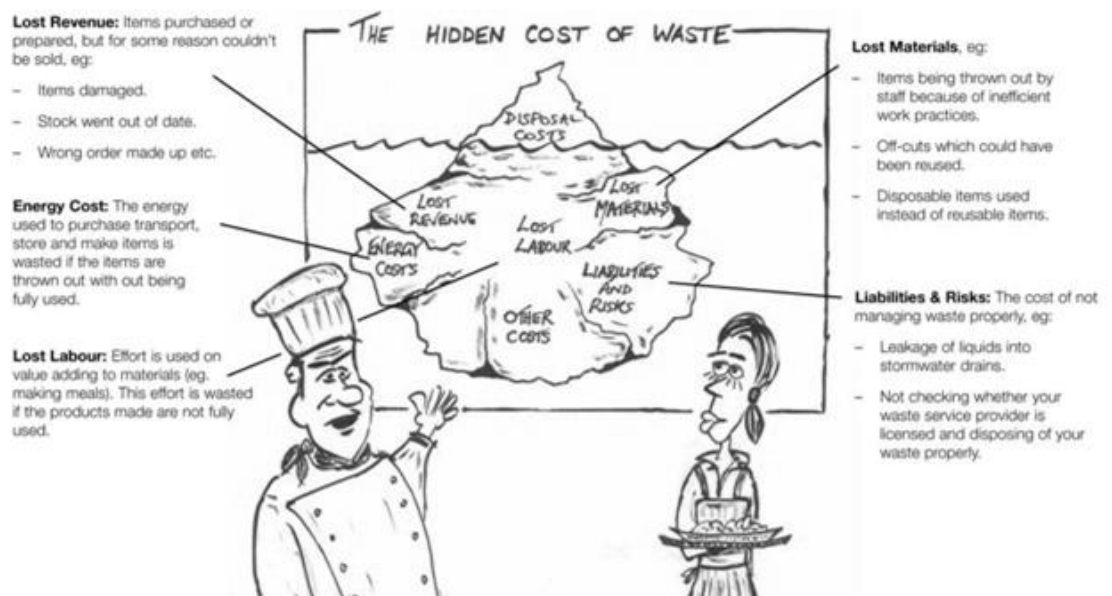
Regional responsibility:

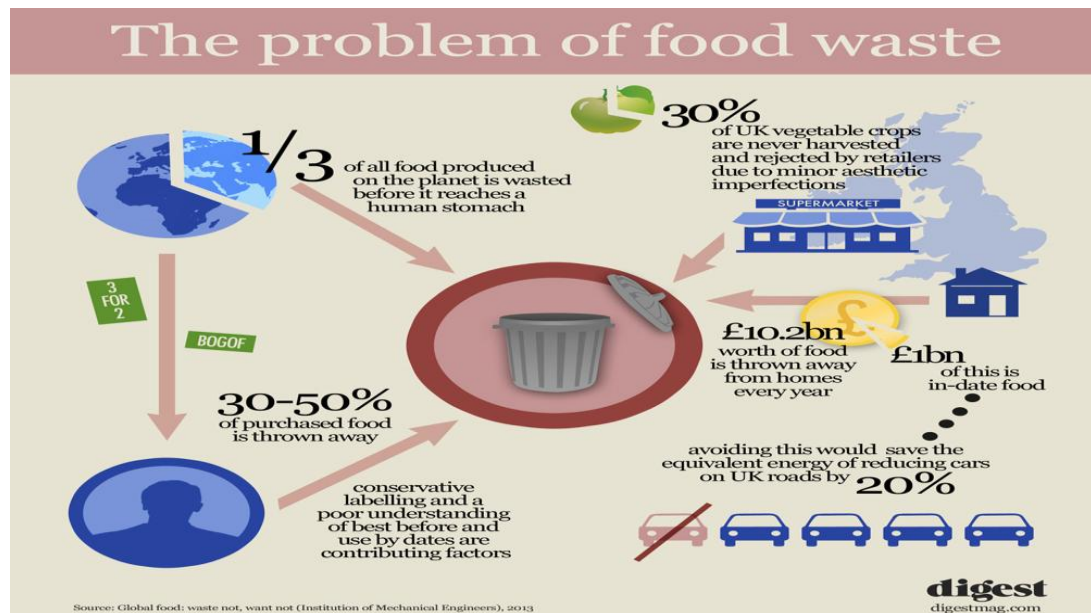
- a) Hospitals
- b) Health centres

• National:

- a) Prisons
- b) Military

The food service might be undertaken by the public itself or outsourced based on a public tender. Based on legislation inhabitants might choose themselves between public and private suppliers of services.





The increased generation of food waste is a global and national problem. It has several facets, all of which can benefit from a clear understanding of the size and nature of food waste generated across all phases of the food production and consumption cycle. Of most concern to many stakeholders is the impact food waste has on the generation of greenhouse gas emissions such as methane and carbon dioxide. However, there are also growing concerns about the economic and environmental viability of existing food waste disposal systems, as well as interest in food waste as a resource input to agriculture.

Many studies have been undertaken to assess food waste in Australia. This data assessment project has collated and reviewed the quality and nature of 1262 such studies, ranging from regional waste management authority reporting and research papers to national studies, and presented the results in the form of an extensive spreadsheet database and this report. While many of these studies may be of sufficient quality and relevance for their intended purpose (e.g. a physical waste audit of a specific company undertaken to inform a waste management strategy for that company), it is not possible to aggregate the data from all such studies to make sufficiently accurate conclusions about food waste data at the national (or even state) level. This view has been formed on the basis that the available data is extremely variable in terms of what is being studied (packaging, food waste, 'green waste', non-specified or 'other' waste), geographical coverage, methodology and sampling approaches.

When considered together, existing studies related to food waste data (e.g. proportion of putrescible waste in residential solid waste streams) indicate that Australian data on food waste generation and fate (e.g. landfill, recovered, collected for charitable redistribution) is on the whole scarce, fragmented and disaggregated. This research has confirmed that for most phases of the food production cycle this characterisation is accurate.

Although the absence of rigorously measured and verifiable data presents an uncomfortable degree of uncertainty for policy development processes, the implications of different approaches can be explored on a theoretical basis using existing estimates. For example, preliminary evaluations of several studies by federal and state government indicate that existing food waste management practices are contributing to Australia's greenhouse gas burden and creating opportunity costs from lost productivity.

Policy developed to respond to these and other challenges will require a much larger and more consistent base of data if confident progress in these areas is to be achieved.

Objective:

- The overall objective of this study is to evaluate food wastage in the staff cafeteria of AHI
- To point out possible initiatives to reduce food waste.
- The objective of the project is to deliver a brief report on possibilities of new initiatives in order to reduce the generation of food waste from hospital /cafeteria.

STUDY TOOL: Daily waste collection sheet & staff feedback form for cafeteria

STUDY AREA: Sodexo cafeteria

STUDY SPAN: Nineteen Days

DATA COLLECTION: The data is collected in staff cafeteria by weighing & quantifying the leftover food. The wet and dry food wastage can weigh separately and then the comparison is made between produced food and the remaining leftover food.

Methodology:

A descriptive study was carried out and data was collected for a period 19 days. An analysis of various parameters was done, on the basis of which recommendations were given.

ANALYSIS:

On the basis of the above study, it was concluded that in AHI the food wastage is an area of concern. Reasons behind the food wastage in AHI are enumerated below:

- Currently Buffet system is being practised in the staff cafeteria, due to which the portion size is not defined and staff takes larger portion size than actually required.
- Another reason for the use of large portion size by the staff is that there is insufficient space in the cafeteria which leads to a chaos during the peak timings like lunch & dinner hours. So to avoid standing in the long queues for refill, staff prefers to take large portions of food.
- On the basis of staff feedback, it was concluded that:
 - Cafeteria menu is very monotonous and is around the corner from quiet some time. So they want to see a refreshing change on the menu card.
 - Sometimes the quality of the food being served is not good.

RECOMMENDATIONS:

In order to reduce avoidable food waste:

- Good practice & Minimum waste guidelines to be followed.
- Setting the right portion size by the cafeteria management.
- Internal education/training on costs (costs of food/total costs)
- General awareness campaigns on prevention of food waste.
- Menu planning –based on a daily feedback from the guests.
- Better communication between staff's requirements, hospital and central kitchen department
- Staff education about the implications of food wastage.
- Setting up multiple counters of food (as per the current space restrictions) so that the crowding can be avoided at a single counter.

- Bonus for chefs –on several elements; food costs, customer satisfaction, labour costs, satisfaction of labour. Indirectly the amount of food waste is thus a part of the incentive system.

Reference:

National food waste Assessment: final report

Food-Waste-Info graphic

<http://www.matomsorg.no/attachment/17826/binary/38984>

Date	BREAKFAST					LUNCH					DINNER				
		Production	Consumption	Waste	CTC		Production	Consumption	Waste	CTC		Production	Consumption	Waste	CTC
02-May-13	Masala dosa	68	68	0	0	chana chat	35 kg	35 kg	0	0	stick salad	8 kg	8 kg	0	0
						raita	35 kg	35 kg	0	0	cucumber raita	7 kg	7 kg	0	0
						lobhiya	60 kg	60 kg	0	0	mix daal	20 kg	18 kg	2 kg	128
						aloo palak	35 kg	35 kg	0	0	aloo capsicum	13 kg	13 kg	0	0
						rice	60 kg	60 kg	0	0	masala rice	20kg	18 kg	2 kg	54
						chapati	1000 pcs	1000 pcs	0	0	chapati	500 pcs	500 pcs	0	0
						rice kheer	28kg	28 kg	0	0	gulab jamun	85	85	0	0

03-May-13	Pav bhaji	87 pieces	87 pieces	0	0	green salad	25 kg	20 kg	5 kg	60	k.sala d	8 kg	7 kg	1 kg	12
						boondi raita	30 kg	25 kg	5 kg	200	k.raita	6 kg	6 kg	0	0
						veg biryani	55 kg	50 kg	5 kg	200	dal palak	20 kg	18 kg	2 kg	107
						matter kulcha	55 kg	45 kg	10 kg	650	rice	20 kg	18 kg	2 kg	54
						gulab jamun	250 pcs	220 pcs	30 pcs	282	arbi	14 kg	12 kg	2 kg	60
											chapati	500 pcs	500 pcs	0	0
											coco nut laddu	80 pcs	80 pcs	0	0

04-Ma y-13	Mix para tha	101	101	0	0	green salad	28 kg	28 kg	0	0	stick salad	8 kg	7 kg	1 kg	1 2
						boon di raita	28 kg	28 kg	0	0	mint raita	7 kg	7 kg	0	0
						dal tadka	55 kg	50 kg	5 kg	3 3 5	mix dal	20 kg	18 kg	2 kg	1 2 8
						aloo bean s	35 kg	35 kg	0	0	aloo capsi cum	14 kg	14 kg	0	0
						rice	55 kg	50 kg	5 kg	1 3 5	rice	20 kg	18 kg	2 kg	5 4
						chap ati	100 0 pcs	100 0 pcs	0	0	chap ati	500 pcs	500 pcs	0	0
						moon g dal halw a	28 kg	22	3 kg	2 2 2	coco nut laddu	80 kg	80 kg	0	0

05-Ma y-13	Mix para tha	130	111	19	3 5	sirka onion	28k g	26 kg	2k g	2 8	green salad	26 kg	26 kg	0	0
						papa d	200 pcs	200 pcs	0	0	jeera raita	32 kg	32 kg	0	0
						kadi pakor a	66 kg	66 kg	0	0	dal makh ni	50 kg	46 kg	4 kg	2 4 8
						ajwa ni arbi	46 kg	42 kg	4 kg	1 2 0	aloo capsi cum	36 kg	35 kg	1 kg	1 6
						plain rice	76 kg	72 kg	4 kg	1 3 5	plain rice	56 kg	53 kg	3 kg	8 1
						chap ati	100 0 pcs	100 0 pcs	0	0	rice kheer	20 kg	20 kg	0	0
						gulab jamu n									

06-Ma y-13	Poor i	100	100	0	0	stick salad	32 kg	32 kg	0	0	cucu mber	16 kg	16 kg	0	0
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	Kala chha na	2 kg	2 kg	0	0	mint raita	32 kg	32 kg	0	0	coria nder raita	15 kg	14 kg	1 kg	4 0
						pesh awari chole	70 kg	70 kg	0	0	yello w dal tadka	38 kg	34 kg	4 kg	1 0 4
						cabb age mutt er	48 kg	45 kg	3 kg	2 6 7	aloo palak	28 kg	22 kg	6 kg	5 0
						veg rice	80 kg	76 kg	4 kg	1 0 8	masal a rice	30 kg	26 kg	4 kg	1 0 8
						plain chap ati	100 0 pcs	100 0 pcs	0	0	plain chap ati	500 pcs	500 pcs	0	0
						gajar halw a	26 kg	26 kg	0	0	gulab jamu n	80 pcs	80 pcs	0	0

08- Ma y- 13	Mix para tha	89 pcs	89 pcs	0	0	stick salad	23 kg	24 kg	1 kg	1 2	sirka onoin	8 kg	7 kg	1 kg	1 4
						mint raita	30 kg	25 kg	5 kg	2 0 0	raita	8 kg	8 kg	0	
						chhol e	60 kg	55 kg	5 kg	3 3 5	dal tadka	20 kg	18 kg	2 kg	1 3 4
						ghiya badi masal a	40 kg	40 kg	0	0	kadai aloo methi	16 kg	15 kg	1 kg	1 2
						veg rice	60 kg	55 kg	5 kg	1 3 5	rice	20 kg	18 kg	2 kg	5 4
						chap ati	100 0 pcs	100 0 pcs	0	0	chap ati	500 pcs	500 pcs	0	0
						besa n laddu	280 pcs	280 pcs	0	0	gulab jamu n	80 pcs	80 pcs	0	0

09- Ma y- 13	Mas ala dosa	100 pcs	100 pcs	0	0	aloo chan a chat	30 kg	28 kg	2 kg	3 2 0	salad	8 kg	8 kg	0	0
	Sam bhar	15 kg	15 kg	0	0	boon di	30 kg	30 kg	0	0	boon di	8 kg	4 kg	4 kg	1 6

						raita					raita				0
						dal lobhiya	65 kg	62 kg	0	0	rajma	20 kg	18 kg	2 kg	120
						aloo palak	42 kg	40 kg	2 kg	40	aloo beans	16 kg	15 kg	1 kg	21
						rice	65 kg	60 kg	5 kg	135	rice	20 kg	18 kg	2 kg	54
						chapati	1000 pcs	1000 pcs	0	0	chapati	500 pcs	500 pcs	0	0
						rice kheer	35 kg	32 kg	3 kg	105	jalebi	5 kg	5 kg	0	0

10-May-13	Pav bhaji	90 pcs	90 pcs	0	0	k. salad	25 kg	22 kg	3 kg	36	k. salad	8 kg	8 kg	0	0
						soup	30 kg	30 kg	0	0	raita	9 kg	9 kg	0	0
						veg manchurian	60 kg	56 kg	4 kg	48	dal palak	20 kg	20 kg	0	0
						chilli potato	45 kg	42 kg	3 kg	39	ajwani arbi	14 kg	14 kg	0	0
						fried rice	60 kg	60 kg	0	0	pulao	20 kg	20 kg	0	0
						roti	1000 pcs	1000 pcs	0	0	chapati	500 pcs	500 pcs	0	0
						custard	30 kg	30 kg	0	0	coco nut laddu	99 pcs	99 pcs	0	0

11-May-13	Mix paratha	105	103	2	5	green salad	30 kg	28 kg	2 kg	24	stick salad	8 kg	7 kg	1 kg	12
						jeera raita	25 kg	25 kg	0 kg	0	boondi raita	8 kg	8 kg	0	0
						dal tadka	60 kg	58 kg	2 kg	134	dal lobhiya	20 kg	18 kg	2 kg	125
						aloo	40	35	5	9	aloo	14	14	0	0

						bean s	kg	kg	kg	3	capsi cum	kg	kg		
						rice	60 kg	55 kg	5 kg	1 3 5	rice	20 kg	20 kg	0	0
						chap ati	100 0 pcs	100 0 pcs	0	0	chap ati	350 pcs	350 pcs	0	0
						moon g dal halw a	25 kg	25 kg	0	0	suji halw a	8 kg	8 kg	0	0

12- Ma y- 13	Tiko na para tha	60 pcs	56 pcs	4 pc s	1 0	tosse d salad	12 kg	10 kg	2 kg	2 4	green salad	8 kg	6 kg	2 kg	2 4
						cucu mber raita	12 kg	10 kg	2 kg	7 0	mint raita	8 kg	6 kg	2 kg	8 0
						dal makh ni	25 kg	22 kg	3 kg	1 8 6	chhol e	20 kg	16 kg	4 kg	2 4 8
						aloo parva l	15 kg	15 kg	0 kg	0	tinda masal a	14 kg	12 kg	2 kg	6 0
						jeera rice	25 kg	24 kg	1 kg	2 7	rice	20 kg	16 kg	4 kg	1 0 8
						chap ati	800 pcs	800 pcs	0	0	chap ati	500 pcs	500 pcs	0	0
						vermi cilli kheer	10 kg	10 kg	0	0	fruit custa rd	8 kg	7 kg	1 kg	1 8

13- Ma y- 13	Brea d omel ete	65 pcs	65 pcs	0	0	kachu mber salad	25 kg	25 kg	0	0	black chan a chat	18 kg	18 kg	0 kg	0
	Tom ato sauc e					boon di raita	28 kg	28 kg	0	0	aloo jeera raita	17 kg	17 kg	0 kg	0
						rajma	68 kg	65 kg	3 kg	1 8 0	dhab a dal	40 kg	36 kg	4 kg	2 6 8
						aloo capsi cum	46 kg	44 kg	2 kg	3 5	ghiya badi masal a	32 kg	26 kg	6 kg	1 2 0
						masal	70	66	4	1	jeera	40	36	4	1

					a rice	kg	kg	kg	0	8	rice	kg	kg	kg	0	8
					chap ati	100 0 pcs	100 0 pcs	0	0		chap ati	500 pcs	500 pcs	0	0	
					jalebi	15 kg	15 kg	0	0		shahi tukda	99 pcs	99 pcs	0	0	

14- Ma y- 13	Ajwa in wari	101 pcs	101 pcs	0	0	sirka onion	27 kg	27 kg	0	0	green salad	18 kg	17 kg	1 kg	1 2	
	Kale chan a	28 kg	27 kg	1 kg	6 2	papa d	200 pcs	200 pcs	0	0	jeera raita	21 kg	21 kg	0	0	
						kadi pakor a	70 kg	67 kg	3 kg	1 3 5	dal makh ni	46 kg	45 kg	0	0	
						bhind i do pyaza	58 kg	58 kg	0	0	aloo palak	28 kg	28 kg	1 kg	1 5	
						plain rice	76 kg	72 kg	4 kg	1 0 8	plain rice	43 kg	40 kg	0	0	
						chap ati	100 0 pcs	100 0 pcs	0	0	rice kheer	19 kg	17 kg	3 kg	1 0 7	
						gulab jamu n	280 pcs	280 pcs	0	0	chap ati	500 pcs	500 pcs	0	0	

15- Ma y- 13	Mix para tha	115 pcs	115 pcs	0	0	stick salad	30 kg	30 kg	0	0	sirka onoin	13 kg	13 kg	0	0	
						mint raita	30 kg	30 kg	0	0	raita	15 kg	14 kg	1 kg	4 0	
						pesh awari chole	65 kg	56 kg	9 kg	5 5 8	dal tadka	32 kg	30 kg	2 kg	1 3 4	
						ghiya badi	35 kg	35 kg	0	0	kadai aloo methi	24 kg	21 kg	3 kg	3 6	
						rice	60 kg	60 kg	0	0	rice	28 kg	27 kg	1 kg	2 7	
						plain chap ati	100 0 pcs	980 pcs	20 pc s	1 1	chap ati	500 pcs	500 pcs	0	0	
						besa n laddu	280 pcs	280 pcs	0	0	gulab jamu n	99 pcs	99 pcs	0	0	

16-Ma y-13	Mas ala dosa	135 pcs	135 pcs	0	0	chan a chat	35 kg	35 kg	0	0	salad	13 kg	13 kg	0 kg	
	Sam bhar	20 kg	20 kg	0	0	raita	30 kg	30 kg	0	0	boon di raita	15 kg	14 kg	1 kg	4 0
						lobhi ya	60 kg	57 kg	3 kg	1 7 4	rajma	32 kg	31 kg	1 kg	6 0
						aloo palak	40 kg	40 kg	0	0	aloo bean s	22 kg	21 kg	1 kg	1 5
						rice	60 kg	58 kg	2 kg	5 4	rice	31 kg	28 kg	3 kg	8 1
						chap ati	100 0 pcs	100 0 pcs	0	0	chap ati	500 pcs	500 pcs	0	0
						rice kheer	30 kg	30 kg	0	0	jalebi	5 kg	5 kg	0	0

17-Ma y-13	Mix para tha	75 pcs	75 pcs	0	0	stick salad	26 kg	25 kg	1 kg	2 0	aloo chat	8 kg	8 kg	0	0
						cucu mber raita	24 kg	24 kg	0 kg		mint raita	15 kg	12 kg	2 kg	8 0
						dal makh ni	72 kg	70 kg	2 kg	1 2 0	chhol e masal a	32 kg	30 kg	3 kg	1 8 0
						aloo mutt er	46 kg	45 kg	1 kg	1 3	jeera rice	30 kg	26 kg	4 kg	1 0 8
						jeera rice	78 kg	76 kg	2 kg	5 4	plain chap ati	500 pcs	500 pcs	0	0
						chap ati	100 0 pcs	100 0 pcs	0	0	fruit custa rd	8 kg	8 kg	0	0
						vermi cilli kheer	20 kg	18 kg	2 kg	7 0					

18-Ma y-13	Brea d cutle t	80p cs	76 pcs	4	1 0	mix salad	26 kg	25 kg	1 kg	2 0	chan a chat	13 kg	13 kg	0 kg	
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					boon di raita	25 kg	25 kg	0	0	aloo jeera raita	17 kg	16 kg	1 kg	1 3
					rajma	73 kg	71 kg	2 kg	1 2 0	dhab a dal	32 kg	31 kg	1 kg	6 0
					aloo gobhi	38 kg	37 kg	1 kg	1 5	katha l masal a	18 kg	16 kg	2 kg	1 2 0
					jeera rice	56 kg	54 kg	2 kg	5 4	jeera rice	36 kg	35 kg	1 kg	2 7
					chap ati	100 0 pcs	100 0 pcs	0	0	chap ati	500 pcs	500 pcs	0	0
					jalebi	15 kg	15 kg	0	0	shahi tukda	90 pcs	90 pcs	0	0

19-Ma y-13	Mix para tha	110 pcs	110 pcs	0	0	sirka onion	22 kg	21 kg	1 kg	1 4	kachu mber	15 kg	14 kg	1 kg	1 5
						papa d	200 pcs	200 pcs	0	0	coria nder raita	15 kg	15 kg	0	0
						kadi pako da	78 kg	76	2 kg	8 0	yello w dal tadka	36 kg	34 kg	2 kg	1 2 8
						ajwa ni arbi	36 kg	34 kg	2 kg	6 0	aloo palak	28 kg	27 kg	1 kg	1 5
						plain rice	62 kg	61 kg	1 kg	2 7	masal a rice	28 kg	28 kg	0	0
						chap ati	100 0 pcs	100 0 pcs	0	0	chap ati	500 pcs	500 pcs	0	0
						gulab jamu n	280 pcs	280 pcs	0	0	rice kheer	10 kg	10 kg	0	0

20- Ma y- 13	Poor i	100 pcs	100 pcs	0	0	stick salad	25 kg	24 kg	1 kg	2 0	kachu mber	14 kg	14 kg	0	0
	Kale chan na	2kg	2kg	0	0	mint raita	26 kg	26 kg	0 kg		coria nder raita	15 kg	14 kg	1 kg	4 0
						cabb age	42 kg	36 kg	6 kg	7 2	dal tadka	32 kg	30 kg	2 kg	1 2 8

					mutt er									
					veg rice	59 kg	57 kg	2 kg	5 4	aloo palak	18 kg	17 kg	1 kg	1 5
					chap ati	100 0 pcs	100 0 pcs	0 0	0 0	masal a rice	26 kg	25kg	1 kg	2 7
					pesh weari chhol e	72 kg	68 kg	4 kg	2 4 8	chap ati	500 pcs	500 pcs	0 0	0 0
					gulab jamu n	280 pcs	280 pcs	0 0	0 0	gulab jamu n	90 pcs	9 pcs	0 0	0 0

21- Ma y- 13	Pyaz para tha	101 pcs	101 pcs	0 0	chan a chat	32 kg	31 kg	1 kg		green salad	18 kg	17 kg	1 kg	2 0
					mint raita	31 kg	30 kg	1 kg	4 0	boon di raita	17 kg	17 kg	0 0	0 0
					mix dal	68 kg	66 kg	2 kg	1 2 8	rajma	45 kg	43 kg	2 kg	1 2 0
					katha l masal a	52 kg	50 kg	2 kg	8 0	jeera rice	40 kg	38 kg	2 kg	5 4
					masal a rice	66 kg	65 kg	1 kg	2 7	chap ati	800 pcs	800 pcs	0 0	0 0
					chap ati	100 0 pcs	100 0 pcs	0 0	0 0	jalebi	5 kg	5 kg	0 0	0 0
					rice kheer	20 kg	20 kg	0 0	0 0					
Total				1 2 2	Total				7 5 3 9	Total				4 7 1 3

Calculations	
20 days	12374
1 days	618.7
1 month	18561
1 year	225825.5

PROJECT NO: 3

Closed Files Medical Records Auditing

Table of Contents

- 1. Introduction**
- 2. Review of literature**
- 3. Research objectives**
- 4. Criteria and standards**
- 5. Sample**
- 6. Data collection and analysis**
- 7. Audit results**
- 8. Recommendations**

INTRODUCTION

Medical records are the records through which hospital statistics are generated and medical records are important to the hospital for evaluation of its services for better patient care.

Definition

Medical record are clinical, scientific, administrative and legal document relating to patient care in which sufficient data is written and stored in a sequence of events by justifying diagnosis and warrant treatment end results.

AUDIT

Audit is an evaluation of a person, organization, system, process, enterprise, project or product.

MEDICAL AUDIT

Medical audit is a process that has been defined as "a quality improvement process that seeks to improve patient care and outcomes through systematic review of care against explicit criteria and the implementation of change

Review of Literature:

- ✓ A medical record audit promotes medical records that can support quality medical services.
- ✓ Health care planning and research also depends on past records of known medical issues as contained in quality medical records.
- ✓ The legal interests of the patients and the physicians are protected by keeping important records that can be audited.
- ✓ Also, records go beyond their current purposes since they contain valuable information that describes not only the condition of a certain patient but also the health risks of the family where he or she belongs.

Retention of Medical Records:

- The policy is to keep indoor patient records for 10 years.
- The OPD registers for 5 years.
- The record which is register for legal purposes is maintained for 10 years or till final decision at the highest court of law.

Functions of medical record department:

- 1 Daily receipt of case sheets pertaining to discharge, an expired patients from various wards there checking and assembly.
- 2 Daily compilation of hospital census report
- 3 Maintains and retrieval of records for patient care and research study.
- 4 Completion and procession of hospital (census) statistics and preparation on different periodical reports on morbidity and mortality
- 5 Online registration of vital events of birth and death
- 6 Issuing birth and death certificate up to 1 year
- 7 Dealing with medico legal records and attending the courts on summary
- 8 Arrangements and supervision of enquiry and admission office
- 9 Arrangements and supervision of OPD registration
- 10 Management of disability boards, management of medical examination, mortality review committee meetings (twice month)
- 11 Assistance to hospital administration in various matters.

Need to Audit Medical Records:

Medical records are also known as health records or health charts. These forms of information represent the condition of certain patient which requires medical services. Physicians are required to keep a reliable documentation about a certain patient and all the medical services and solutions provided to him or her. Keeping important records of the activities that can affect the lives and health of other people is important not only to protect them but also to secure the medical institution providing the services. Therefore, medical records are expected to be accurate, clear, complete, and valid enough to comply with the rules and regulations set in the medical field. It is very important for each member of medical institution to maintain the quality of medical records that is why specialised tasks such as **medical record audit** are conducted.

Medical record audit, helps to identify the areas in clinical documentation that require corrections and improvements

Medical Records must be kept in their good qualities at all times but the most important ones are those related to the safety of the patients and the stability of a hospital.

Medical record audit promotes medical records hat can support quality medical services.

OBJECTIVES:

- Assess the medical records to see if they meet best practice
- Identify discrepancies in medical records
- Analyse discrepancies in medical records
- Analyse discrepancies and reason behind those discrepancies
- Recommend solutions to reduce medical record discrepancies

METHODOLOGY:

Sampling Technique

Purposive Sampling technique was used to select the closed files to be audited

Inclusion criteria: Files of the month of **January to April**.

Exclusion criteria: Files before the month of **January** and after the month of **April**.

Sample Size

A total of 5 speciality's files were audited.

In total 85 files were audited of which 17 were from each department.

Audit Tool

A standardised tool was used to audit the closed files. It included history and present illness details, plan of care, doctors' progress notes and other details needed to conduct a medical audit.

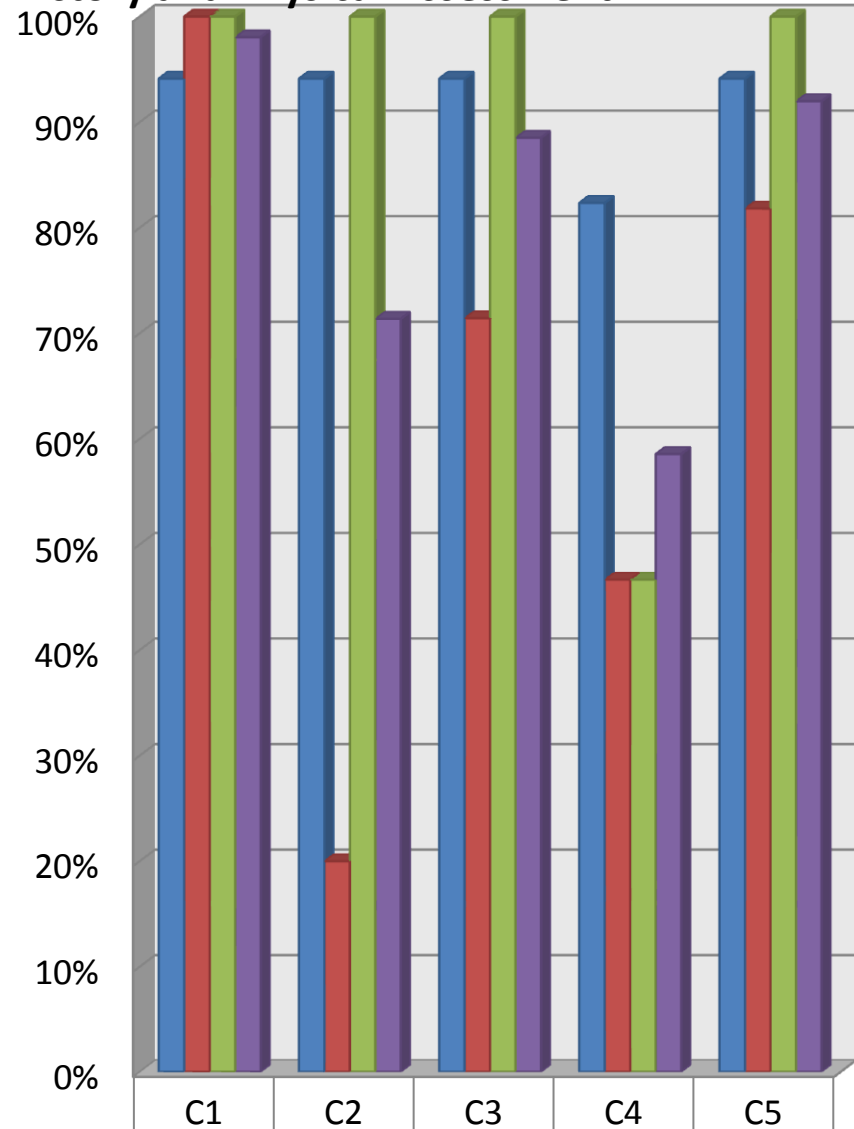
Data Collection Procedure

The time of data collection was scheduled by the GTL – Quality & Systems.

List of 5 specialties had been provided by Artemis Health Institute in which closed medical record audit was carried out:

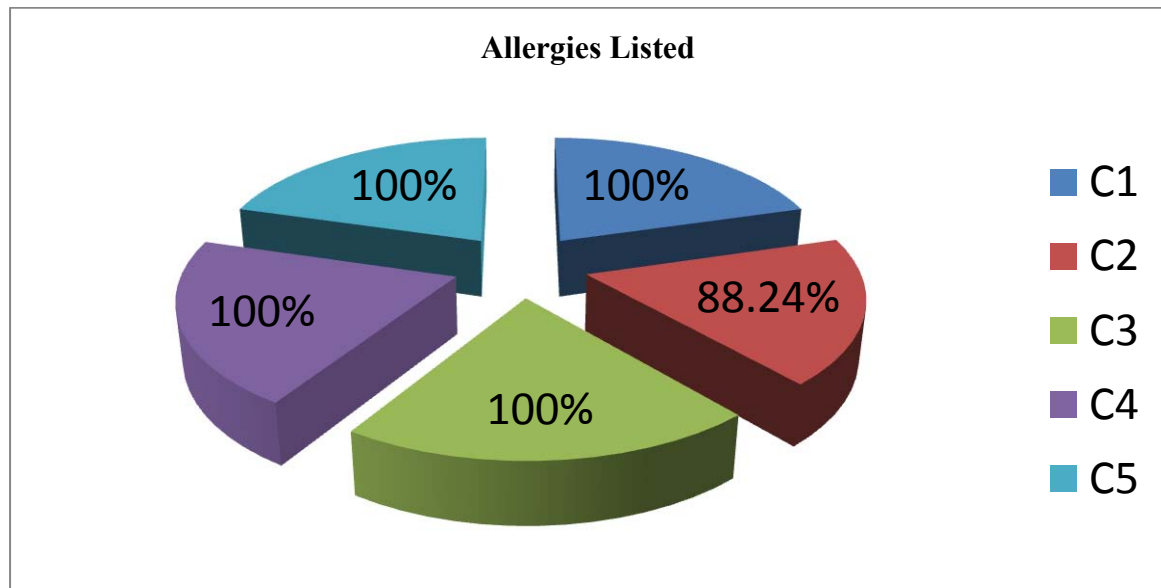
- C1- Nephrology
- C2- Gynecology
- C3- Gastroenterology
- C4- ENT
- C5- Internal Medicine

History and Physical Assessment



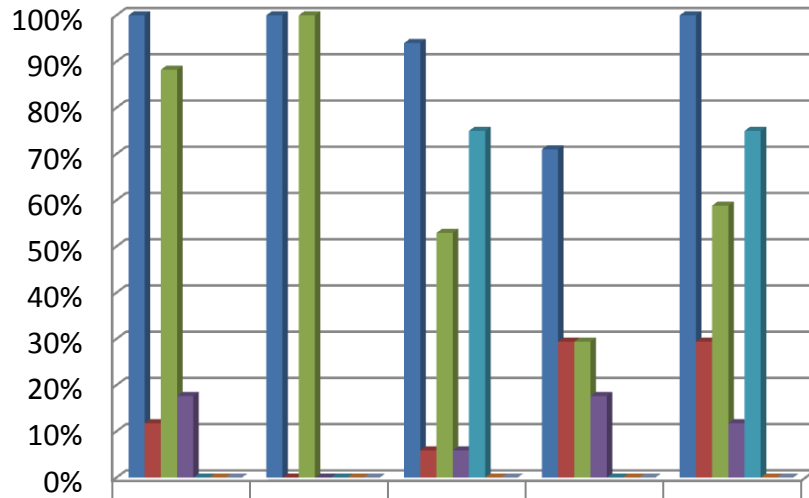
	C1	C2	C3	C4	C5
Initial assessment Within 24 hrs of admission	94%	94.12%	94%	82%	94%
If H/o Pain, Site, Referral/Radiation, Increasing Factors, Decreasing Factors mentioned	100%	20%	71%	47%	82%
Review of system & physical examination complete	100%	100%	100%	47%	100%
Plan of care	98%	71%	89%	59%	92%

With an Average of 84%, 84% & 82% C1, C3 & C5 speciality respectively were more complaint to the History & Physical Assessment recording of the patients & documenting them thoroughly on the parameters like initial assessment within 24 hrs. Of admission, review of system & physical examination complete, documenting plan of care (which is inclusive of medications & diet advised, activity advice, discharge planning & care plan goals at the time of admission.



This parameter which is also an important aspect to be recorded during the patient care delivery is faring well with 100% compliance by C1, C3, C4 & C5 specialities. Although the trend for recording the allergies by C2 speciality is quite low with 88.24%, which can be a predisposing factor for adverse drug events in the hospital.

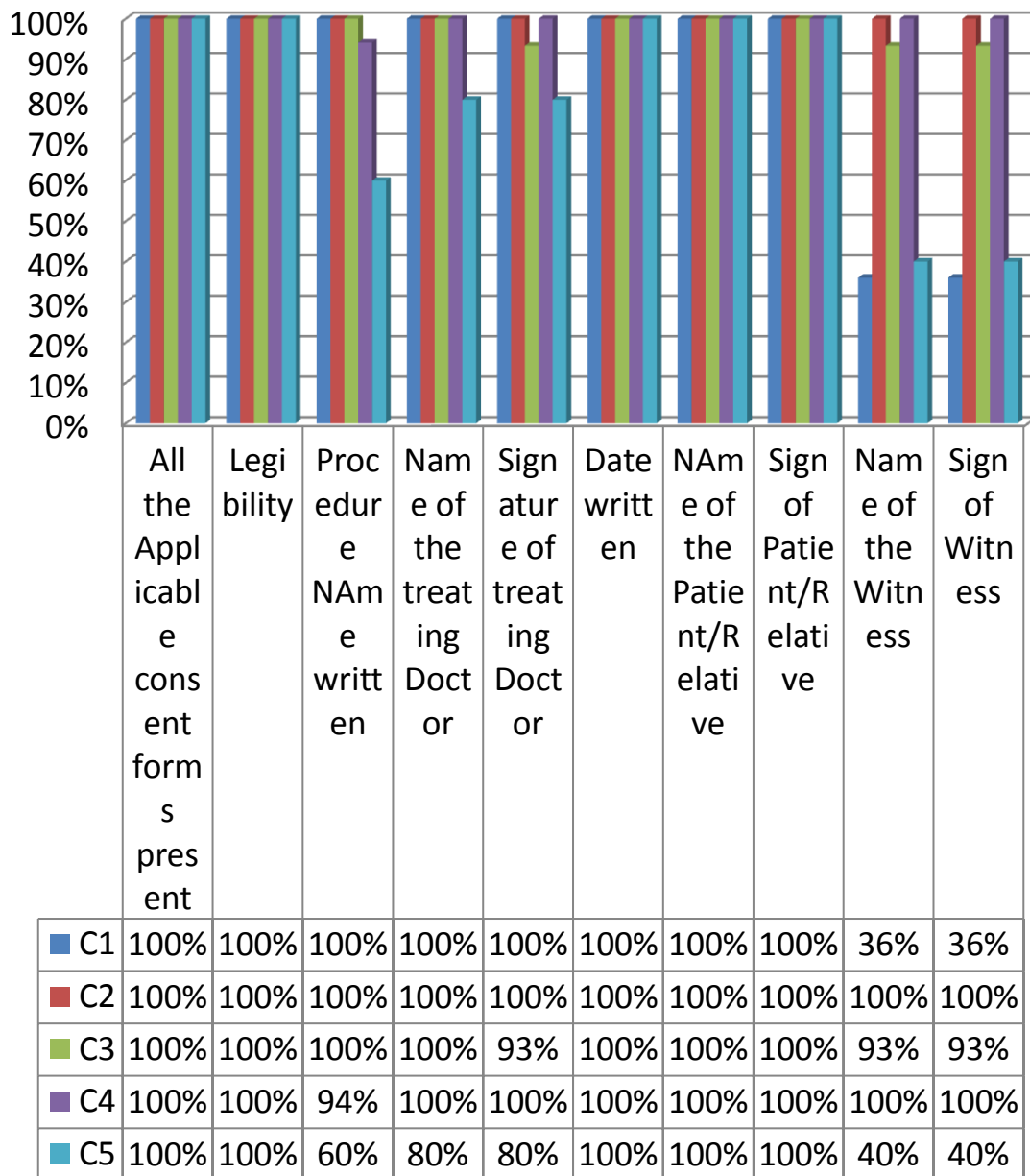
Doctors' Progress Notes



	C1	C2	C3	C4	C5
Complete on the day of admission	100%	100%	94%	71%	100%
Daily noted (Put 0 even if not noted for a day)	12%	0%	6%	29%	29%
Pain Assessment	88%	100%	53%	29%	59%
Care Plan goals written daily	18%	0%	6%	18%	12%
Transfer in notes- Intra-transfer fro ICU to floors and vice versa	0%	0	75%	0	75%
Referral request - with reason mentioned	0%	0	0%	0	0%
Prep for procedures like UGIE, Colonscopy, MRIs etc.	0%	0	0%	0	0%

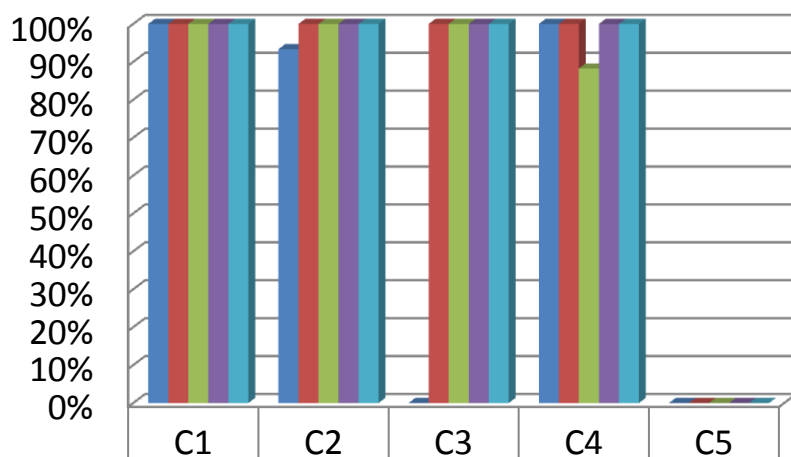
Although the Dr's progress notes are to be written daily but the compliance of all the 5 specialities was far below with 12%, 0%, 6%, 29%, & 29% for C1, C2, C3, and C4 & C5 respectively. Care plan goals were also not updated regularly on daily basis although pain assessment was done on regular basis but compliance does not reach up to 100%.

Consent Forms



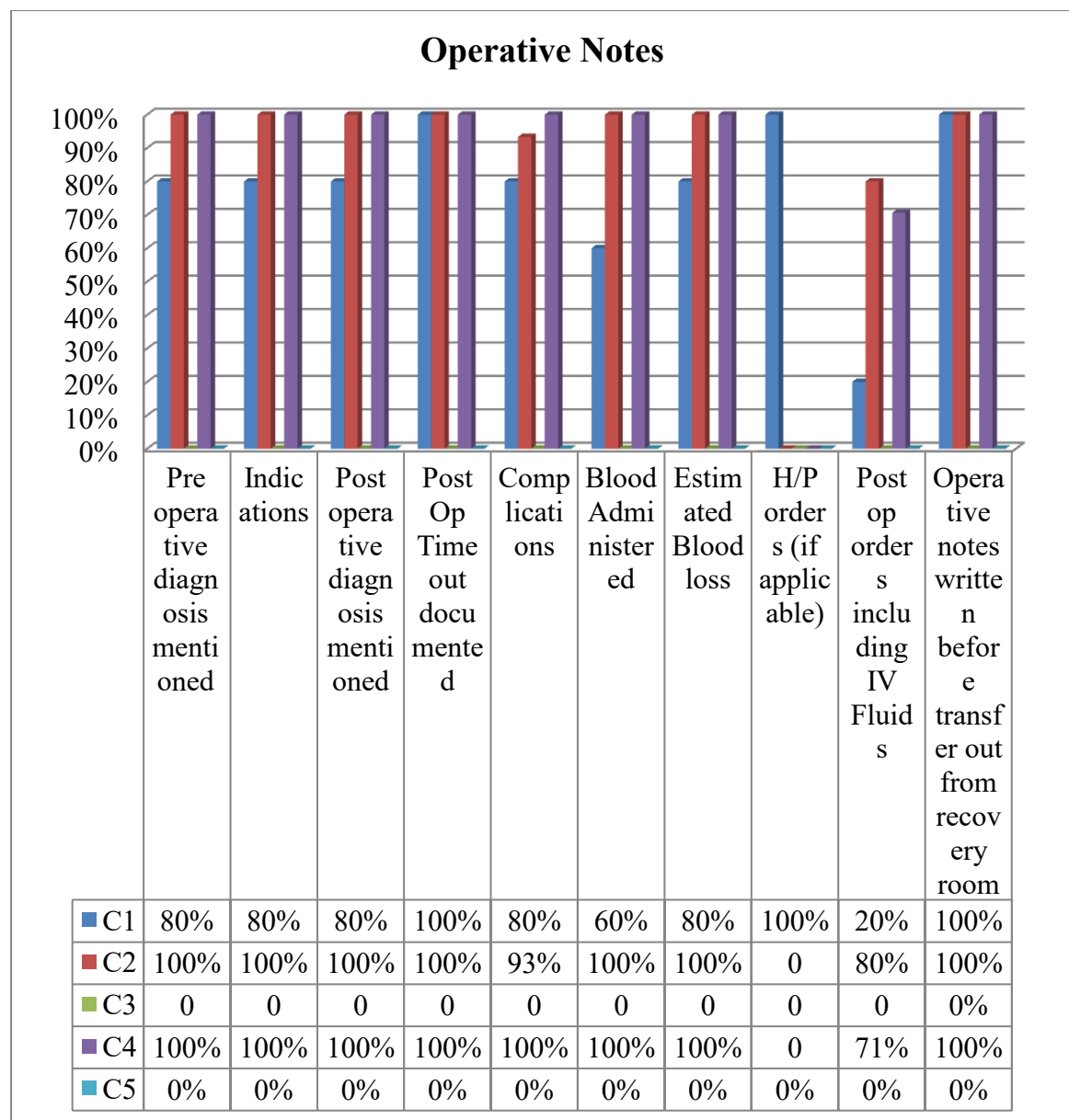
Compliance to consent form in few areas is 100% like legibility, date written, name of the patient written & sign of patient/ relatives for all the five specialities. And when we compare the Specialities C5 needs to improve on the compliance part related to parameters of consent form like signature of the treating doctor & writing the name of the procedure on consent form.

ANAESTHESIA ASSESSMENT

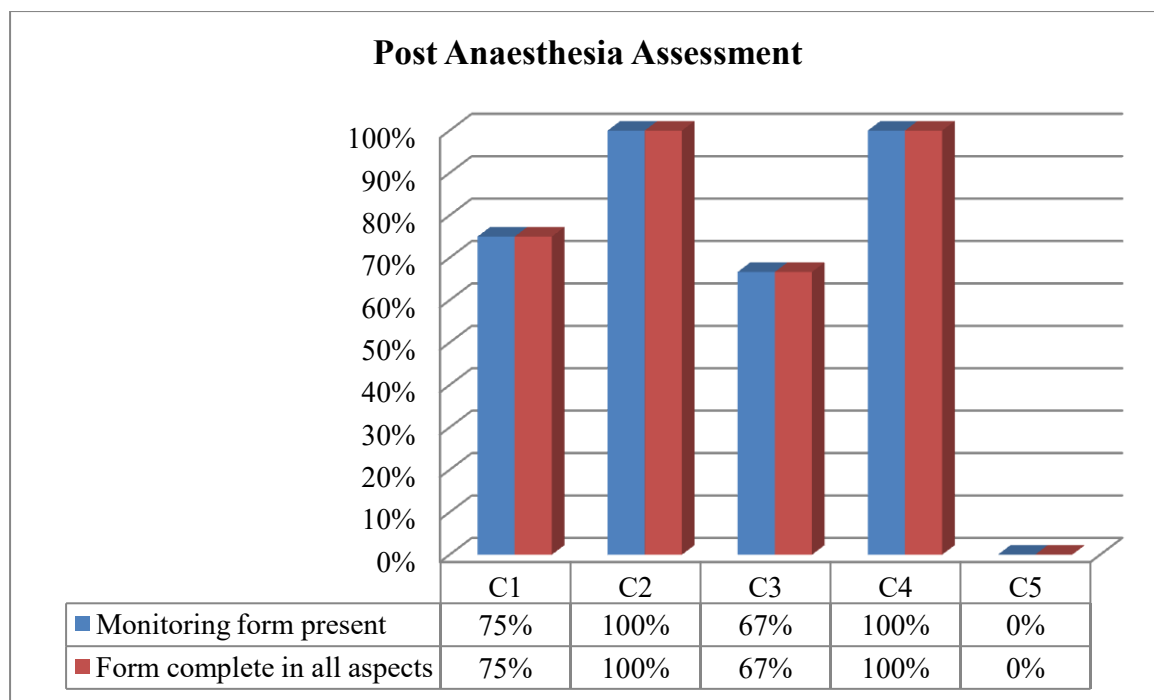


	C1	C2	C3	C4	C5
■ Type of Anaesthesia to be used is mentioned in the consent form	100%	93%	0%	100%	0%
■ PAC assessment complete	100%	100%	100%	100%	0%
■ Time out documented	100%	100%	100%	88%	0%
■ Immediate Pre-Op Check Documented	100%	100%	100%	100%	0%
■ Baseline Vitals Documented	100%	100%	100%	100%	0%

For all the cases undergoing any operative procedure needs to undergo anaesthesia assessment and separate anaesthesia consent has to be filled and PAC & immediate pre op check before surgery to be performed for the patient. So under this anaesthesia assessment compliance to the following parameters were assessed. Almost all the components are being followed regularly with 100% compliance except one or two parameters like documentation of time out by C4 speciality & Type of anaesthesia used to be mentioned by C2 speciality.

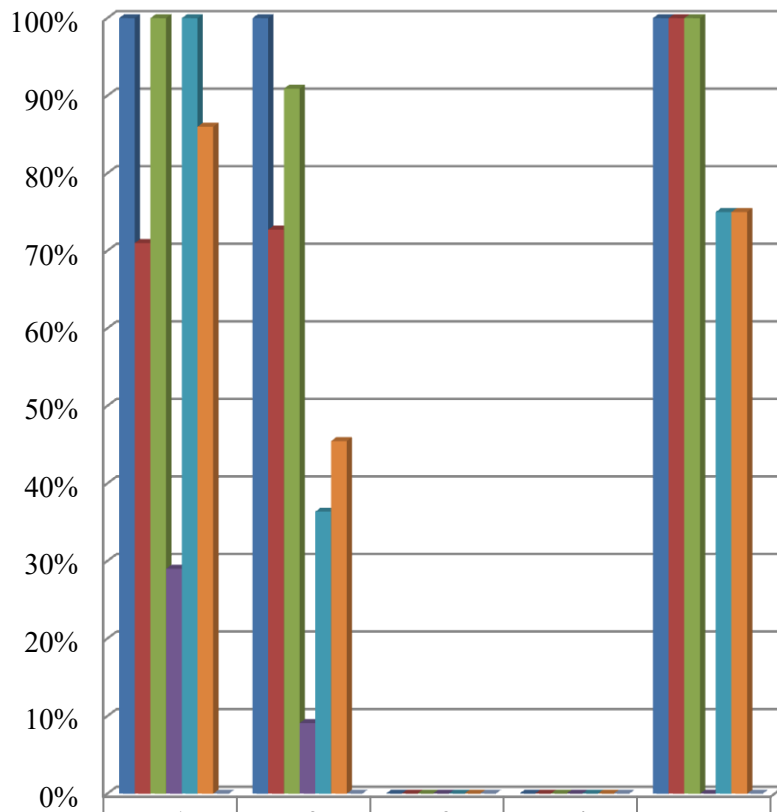


For all the cases undergoing any operative procedures needs to mention pre operative diagnosis, post operative diagnosis, post- op time documented, complications, estimated blood loss, etc.so .under this operation notes following parameters are assessed. Almost all the components are fulfilled by C2 &C4 with 100% compliance but pre operative diagnosis, indications, post operative diagnosis, post –op time out documentation, complications with 80% compliance by C1.



After any procedures requiring anaesthesia, post anaesthesia assessment is required which includes monitoring form and the form should be completely filled in all aspects. Almost 100% compliance by C2 and C4, whereas it is not completely fulfilled by C1 and C3 with compliance 75% and 67% respectively.

Blood transfusion



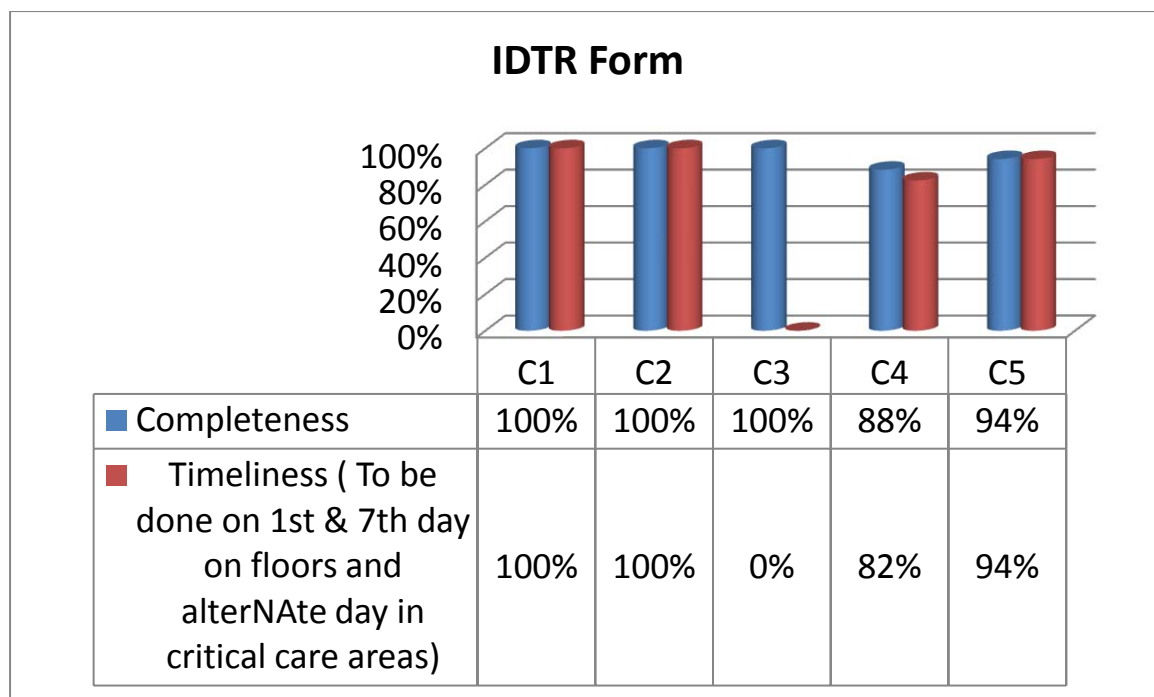
Consent complete	100%	100%	0	0	100%
Indication for transfusion mentioned	71%	73%	0	0	100%
Blood Units mentioned instead of pint symbol	100%	91%	0	0	100%
HIV testing consent present	29%	9%	0	0	0%
Assessment during tranfusion done	100%	36%	0	0	75%
Duration of transfusion	86%	45%	0	0	75%
In case of transfusion reaction, TR form filled & blood bank is informed	0%	0	0	0	0

The cases where transfusion of blood is needed, have to consider following parameters like consent, indication for transfusion, blood units mentioned, assessment during transfusion and HIV consent etc. Almost all the parameters are fulfilled including consent, blood units mentioned except HIV testing consent, indication for transfusion, duration of transfusion by C1, C2, C5

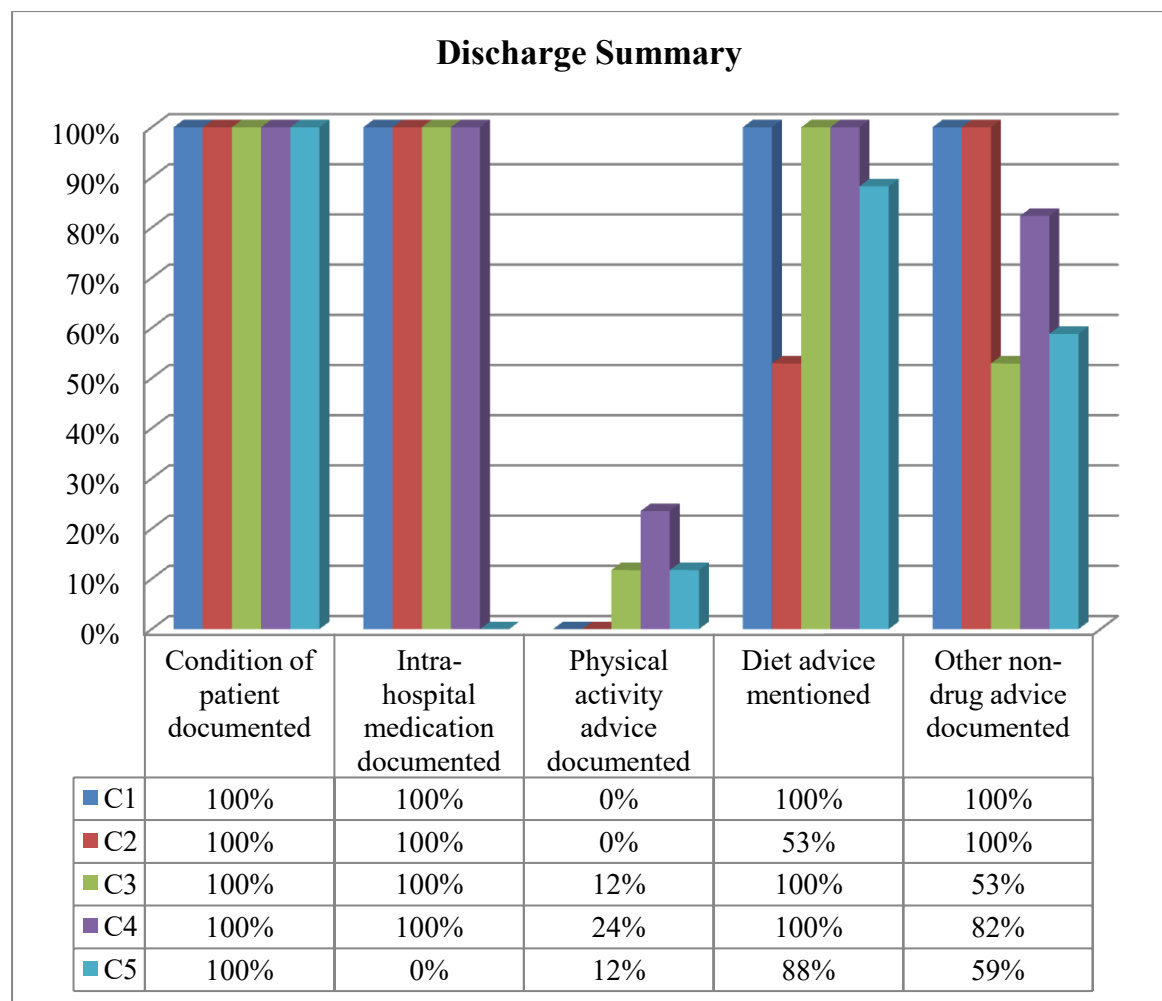
Medication Adminsitration Record



Medication Administration Record should be completed in all aspects including all the drug orders written, all drugs written in capital letters, orders dated, timed, signed and time of administration of first drug. Almost all the components are fulfilled in all the specialities except orders timed by C1,C2,C4,C5 which shows the compliance of 0%,0%,0%,and 29% respectively.



Compliance in IDTR form is 100% in completeness and timeliness by C1, C2, and in C3 only timeliness is maintained. Whereas in other speciality like C4, C5 showing compliance of 82% and 94% respectively.



In discharge summary,like condition of the patient ,intrahospital medication ,other non-drug advice should be mentioned properly but physical activity advice was not documented properly with 0%,0%,12%,24%,12% by C1,C2,C3,C4,C5 speciality respectively.

Recommendations:

- Proper instructions should be given to the Doctors to fill the progress notes on daily basis. Doctor Wise supervision.
- Surgery related all documents or sheets should be filled up in all surgical cases and in any kind of surgery
- Surgery name/procedure to be perform should be written in capital letters & in full form on consent forms.
- In discharge summary, physical activity should be properly mentioned by the physicians.
- In consent forms name & sign of the witness /relative should be there. Training for all nursing staff.
- Medical audit committee can be formed and regular audit after every 3-6 months

Annexure:

Medical Records Audit Tool - Clinicians						
Audit Date :						
GNID No.						
Speciality						
Bed no.						
Date of Admission						
Time of Admission						
Time of Arrival to bed						
Yes : 1 ; No : 0 ; Not Applicable : NA						
Allergies Listed						
H&P sheet						
Date of Initial Assessment						
Time of Initial Assessment						
Within 24 hrs of admission						

If H/o Pain, Site, Referral/Radiation, Increasing Factors, Decreasing Factors mentioned						
Review of system & physical examination complete						
Plan of care						
a. Medications						
b. Diet						
c. Activity						
d. Discharge Plan on admission						
e. Estimate of Blood/Component						

f. Care Plan Goals at the time of admission						
Dr's Progress Notes						
Complete on the day of admission						
Daily noted (Put 0 even if not noted for a day)						
Pain Assessment						
Care Plan goals written daily						
Transfer in notes- Intra- transfer fro ICU to floors and vice versa						
Referral request - with reason mentioned						

Prep for procedures like UGIE, Colonscopy, MRIs etc.						
Consent						
All the Applicable consent forms present						
Legibility						
Procedure Name written						
Name of the treating Doctor						
Signature of treating Doctor						
Date written						
Name of the Patient/Relative						
Sign of Patient/Relative						
Name of the Witness						
Sign of Witness						

Anaesthesia Assessment						
Type of anaesthesia to be used is mentioned in the consent form						
PAC assessment complete						
Time out documented						
Immediate Pre-Op Check Documented						
Baseline Vitals Documented						
Operation Notes						
Pre operative diagnosis mentioned						
Indications						
Post operative diagnosis mentioned						
Post Op Time out documented						

Complications						
Blood Administered						
Estimated Blood loss						
H/P orders (if applicable)						
Post op orders including IV Fluids						
Operative notes written before transfer out from recovery room						
Post anaesthesia recovery						
Monitoring form present						
Form complete in all aspects						
Did patient receive blood? qYes qNo						
Consent complete						
Indication for transfusion mentioned						

Blood Units mentioned instead of pint symbol						
HIV testing consent present						
Assessment during transfusion done						
Duration of transfusion						
In case of transfusion reaction, TR form filled & blood bank is informed						
Physiotherapy Assessment						
Initial Physiotherapy assessment complete						
Progress notes written daily						
Medication administration record (MAR) sheet						

All drug orders written on MAR Sheet						
Legibility (All drugs written in capital letters)						
Orders Dated						
Orders Timed						
Orders Signed						
Time of administration of 1st medication						
IDTR						
Completeness						
Timeliness (To be done on 1st & 7th day on floors and alternate day in critical care areas)						
PFE						
Completeness						
Doctors Signature						

Patient Restraint						
Is restraint order present						
Discharge Summary						
Condition of patient documented						
Intra-hospital medication documented						
Physical activity advice documented						
Diet advice mentioned						
Other non-drug advice documented						
Other Findings (if any)						
Name of the Auditor						

!!Thank you!!