Study on the Functioning and Quality Assessment of Hospital Pharmacy and Identification of Reasons of Increased Pharmacy Bills (In-Patient Department)

By

Hiteshi Gandhi

Dissertation submitted in partial fulfillment of the requirements of the degree

MBA Hospital and Health Management

Academic year, 2017-2019

The IIHMR University, Jaipur

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IIHMR UNIVERSITY

TO WHOMSOEVER MAY CONCERN

This is to certify that **Dr. Hiteshi Gandhi**, student of MBA Hospital and Health Management from The IIHMR University, Jaipur has undergone internship training at **Cocoon Hospital, Jaipur** from **1st February 2019** to **3rd May 2019.**

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

The Internship is in fulfillment of the course requirements.

I wish her all success in all her future endeavors.

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

15 May 2019

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Lineage Healthcare Limited

Ref: LINEAGE/HR/PRO/05/19

4th May, 2019

CERTIFICATE OF COMPLETION

This is to certify that **Dr. Hiteshi Gandhi**, MBA student of IIHMR, Jaipur has satisfactorily completed a project on "**A Study on the Pharmacy as a department and to find out the reasons of increased pharmacy bills (IPD)**" in our organization under the guidance of **Dr. Priyanka Maan (General Manager)** from **1st February, 2019** to **3rd May, 2019.**

During the period her conduct and performance towards provided responsibilities were excellent.

For **Lineage Healthcare Limited**

Authorized Signatory

THE IIHMR UNIVERSITY, JAIPUR

CERTIFICATE BY SCHOLAR

This is to certify that the dissertation titled **A Study on the Functioning and Quality Assessment of Hospital Pharmacy and Identification of Reasons of Increased Pharmacy Bills (In-Patient Department)** and submitted by **Dr. Hiteshi Gandhi** Enrollment No. **IIHMR-U/01/2017-19/0575** under the supervision of **Dr. Neetu Purohit** for award of **MBA in Hospital and Health Management** carried out during the period from **1st February 2019** to **3rd May 2019** embodies my original work and has not formed the basis for the award of any degree, diploma associate ship, fellowship, titles in this or any other institute or other similar institution of higher learning.

Hiteshi

Signature

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A STUDY ON THE FUNCTIONING AND QUALITY ASSESSMENT OF HOSPITAL PHARMACY AND IDENTIFICATION OF REASONS OF INCREASED PHARMACY BILLS (IN-PATIENT DEPARTMENT)

1. INTRODUCTION:

According to European Association of Hospital Pharmacists, Hospital pharmacy is the health care service, which comprises the art, practice, and profession of choosing, preparing, storing, compounding, and dispensing medicines and medical devices, advising healthcare professionals and patients on their safe, effective and efficient use.
FSWD\patient health care in a health facility."
"Hospital pharmacy is the profession that strives to continuously maintain and improve the medication management and pharmaceutical care of patients to the highest standards in a hospital setting.
The primary mission of hospital pharmacy is to manage the use of medications in hospitals and other medical centres. Goals include the selection, prescription, procuration, delivery, administration and review of medications to optimize patient outcomes. It is important to ensure that the right patient, dose, route of administration, time, drug, information and documentation are respected when any medication is used.
"The role of the hospital pharmacy is varied and may include various tasks including:"

- Devising specific medication plans that are individualized for patients
- Assisting physicians and other health professionals to make drug-based decisions
- Compounding medications for use in the hospital
- Helping patients to understand their medications and how to take them
- Conducting clinical trials to uncover new or modified treatments for rare diseases
- Providing medicines in emergency situations
- Assisting in specialized medical care, such as for cancer patients

Although many of the tasks of a hospital pharmacist are similar to a community pharmacist who works in a community setting, there are some distinctive differences. These include:

- Increased interaction with prescribers and other health professionals
- Greater input in prescribing decisions about drugs and administration
- Larger team of pharmacists working together in the same institution
- Better access to medical records of patients

1.1 INTRODUCTION TO PHARMACY SERVICES AT COCOON

Pharmacy at cocoon is an authorized Apollo Pharmacy and it is out sourced. The pharmacy at cocoon usually provides 2 types of services:

I. Inpatient Pharmacy:

The hospital pharmacy provides 24*7 services to the patients, doctors and the staff present in the hospital.
The type of delivery system used is Unit dose system in which medications are packed in single unit packages that are distributed to the patients in the as ready to administer form as possible with maximum supply for 24 hrs. in most of the cases.

II. Outpatient Pharmacy:

The outpatient pharmacy of the hospital is located on the first floor near the outpatient department.
The services provided at this pharmacy includes the following

- Prescription services
- Over the counter drugs and consumables
- Other health care products

Also, the pharmacy follows a formulary according to which a particular list of drugs are prescribed by the doctors and the same medications are present in the pharmacy at all times/ or becomes the responsibility of the pharmacy to make available.
Depending on the mode of payment different types of patients availing the pharmacy services include:

i. Cash patients:
These types of patients account for the majority of the patients that are admitted to the hospital and they pay their bills and hospital fess in the form of cash at the time of discharge of the patient in the billing department.

ii. TPA Patients:
Third party administrator patients belong to the category of patients who pay their bills through cashless mode of payment and have insurance policies. The billing department settles the bill with his/her insurance company at the time of discharge"

2. PROBLEM STATEMENT:

The pharmacy at Cocoon is outsourced and the profits earned by the hospital is very less especially in the cases of all-inclusive packages so the hospital management requires to review the pharmacy working as no study has been done on pharmacy ever before
Also, High costs of Pharmacy Bills cause discontent amongst the patients as the overall pharmacy bills are increasing over a period of past few years

3. RATIONALE:

According to an article published in Economic Times in 2016 most of the Indians budget for large medical expenses like surgery and hospitalization, smaller expenses are often overlooked. What is not taken into consideration is the significant amount of money spent on medication, especially for chronic ailments. According to a recent study by National Sample Survey Office, the average Indian spends around 70% of his out-of-pocket healthcare expenses on medicines alone due to poor quality of services or high cost of medication.
Therefore, it is necessary to improve the functioning, control quality and optimize cost of medications supplied by the pharmacies to prevent the excessive expenditure on the medication and decrease the overall out-of-pocket expenditure on medicine.

4. REVIEW OF LITERATURE:

STUDY TO ASSESS EFFECTIVENESS OF PLAN TEACHING PROGRAMME ON NATIONAL ACCREDITATION BOARD FOR HOSPITALS AND HEALTH CARE

PROVIDERS (NABH) GUIDELINES AMONG NEWLY RECRUITED STAFF NURSES AT KRISHNA HOSPITAL, KARAD

Kavita Sanjay Kapurkar[1], Sandhya Anil Jagadale[2], Rohini Vimalakar Babar[3]

[1]ANS/Nurse Educator, Krishna Institute of Nursing Sciences, Karad, Satara, Maharashtra. [2]ANS/Nurse Educator, Krishna Institute of Nursing Sciences, Karad, Satara, Maharashtra. [3]Nursing Superintendent, Krishna Institute of Nursing Sciences, Karad, Satara, Maharashtra.

The continual improvement of service quality in healthcare units has become a prime consideration to ensure patient satisfaction across the world in the modern economic scenario. In India, health sector is one of the largest and fastest growing sector in which both the private and government care providers and hospitals put much emphasis on quality improvement and patient satisfaction. National Accreditation Board of Hospitals and Healthcare Providers (NABH) along with Quality Council of India provided the criteria based on which quality standard of hospitals is determined.

The study was conducted on pharmacy at Krishna Hospital, Karad. An evaluator survey approach was considered. Study design was used one group pre-test, post-test design. Purposive sampling technique was used. Objective of the study was assess newly recruited staff's knowledge and practice towards NABH guidelines. Study showed that majority of newly recruited nursing staff having 19.38% average knowledge and 17.85% having average practice towards NABH guidelines. Knowledge and practice score of newly recruited nursing staff between the pre-test and post-test was highly significant.

ASHP Guidelines on Medication Cost Management Strategies for Hospitals and Health Systems

Medication costs continue to rise and will continue to be a target for cost management. Drug costs make up a majority of health-system pharmacy budgets, and budgeting for these expenses is an important function, but longer-term programmatic and policy planning is also essential for successful cost management. An effective plan for medication utilization management must provide the health system with a road map for continuous improvement in pharmaceutical expense containment with specific goals and outcome measures of success. Gathering the data to understand drug expenditures and drug-use patterns is a prerequisite for cost-savings efforts, and constant vigilance and monitoring of these data are required.

Cost management efforts should be coordinated. The programs should contain a clearly defined and manageable list of cost containment targets with a goal and specific targets for each initiative. Results should be measured and evaluated, and this information should be shared with the interdisciplinary team involved in the effort as well as with health-system administration.

When selecting and implementing drug-cost-management strategies, pharmacists must keep patient safety and the quality of patient care in mind. Cost-management initiatives must never compromise the pharmacy department's ability to provide the best possible care. Fortunately, there are many drug-cost-management opportunities that have little or no potential for detrimental effects on patient care, and efforts to improve appropriate use of a drug or drug class often also offer opportunities for cost containment.

A Study on Factors affecting Productivity of Outpatient Pharmacy of a Corporate Hospital

Study in brief, the factors affecting the productivity of outpatient pharmacy of a corporate hospital, with special emphasis on prescription generation, dispensing and patient feedback.
One month data on daily number of prescriptions reaching the pharmacy, number of prescriptions bouncing, the reasons for non-availability of medicines was collected from the pharmacy records, MIS and interviews with pharmacy and administrative staff
On an average, outpatient visits per day were 135, out of which, 76 % (102cases) were prescribed with medicines. 71 (69.6%) of those prescriptions were reaching the OP pharmacy and 31 (30.4%) were not reaching the pharmacy.
It was found that out of 71 prescriptions reaching the pharmacy, 12 (16.90%) were bouncing due to the following reasons
Prescribed Brand of the drug not available in the pharmacy (3 occasions)
Prescribed drug not available in the hospital formulary (New drug to formulary) (5 occasions)
Prescribed drug not in stock in the pharmacy though listed in the hospital formulary (4 occasions). Overall, 42 % of prescriptions are either not reaching the pharmacy or bouncing.

5. OBJECTIVES:

1. To assess the revenue sheet and find revenue share and conversion ratios for the months of January, February and March 2019
2. To assess the quality of hospital pharmacy according to NABH Standards for Pre-Accreditation Progressive level
3. To find out the reasons for increased pharmacy costs/bills by analyzing the consumption and pricing of in-patient medications and consumables.
4. To suggest methods to bring down the cost of pharmacy bills.

6. METHODOLOGY:

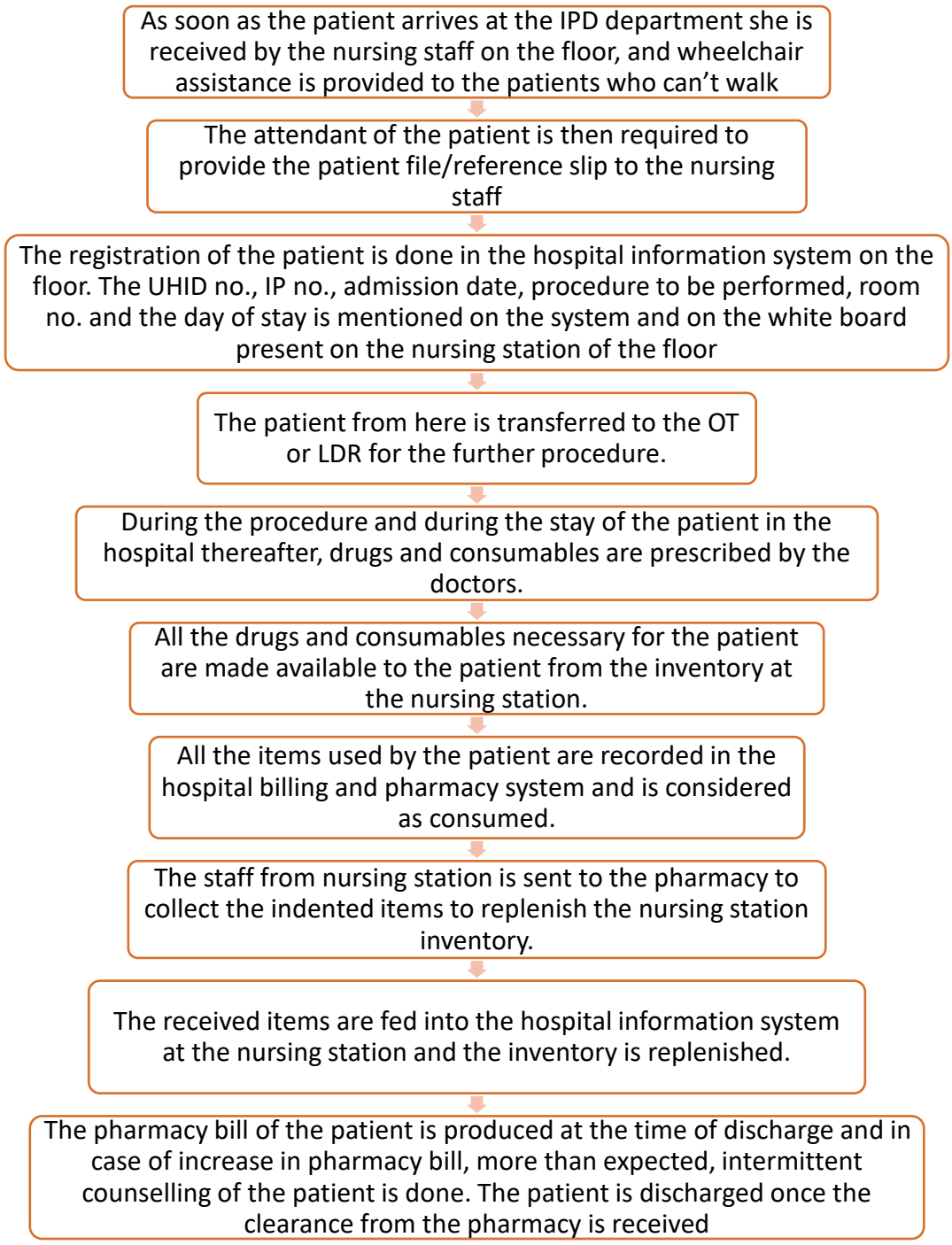
Study design: Observational study
Study setting: Apollo pharmacy located on the first floor of Cocoon Hospital
Study Approach:

- Observations for studying the process flow of the pharmacy.
- Assessment of revenue sheet for calculating the revenue share of the hospital.
- Primary and Secondary data for study on quality assessment.
- Informal discussions and study of bills for identification of reasons of high cost of In-patient Pharmacy Bills

Sample Size: 50 (only 50 detailed bills made available by the Medical Records Department)
Sampling technique: Convenience Sampling
Inclusion Criteria: Bills of admitted patients who have undergone Lower Segment Caesarean Section (25) and Full-Term Normal Delivery (25)
Exclusion criteria: OPD bills and bills of patients with remaining procedures (Total Laparotomic Hysteroscopy procedures, dilatation and curettage, sterilization procedures, Medical Termination of Pregnancies, emergency procedures)
Type of data: Primary Data – for study on quality assessment of hospital pharmacy
Secondary data- for finding reasons for increased costs of pharmacy bills.
Analysis of Data: MS Excel was used to analyse the data

6. FINDINGS:

6.1 (A) Process Flow of Apollo Pharmacy at Cocoon Hospital:



6.1 (B) Return process of medication and consumables:

All the medicines that were indented and were not used by the patient is taken back from the nursing station by the staff.

These items are returned to the pharmacy to prevent accumulation and hoarding of medication at the nursing station.

The amount is deducted from the pharmacy bill of the patient and the final bill of the patient is generated.

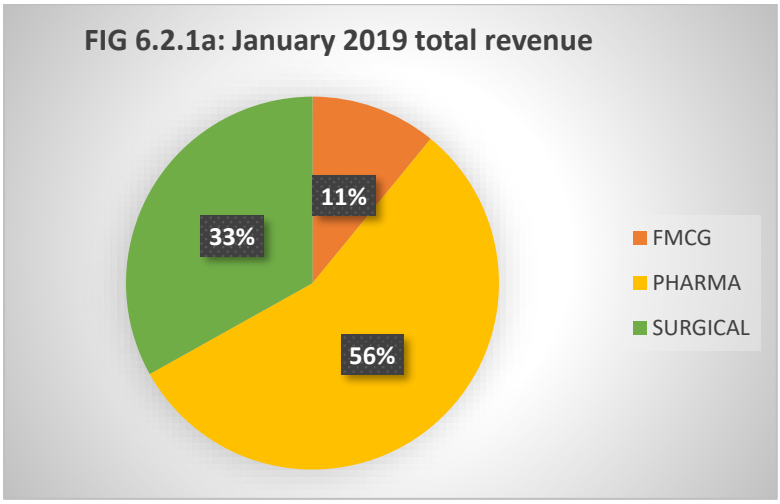
6.2 (A) REVENUE SHARE:

There are 3 types of items sold by the pharmacy at the Cocoon

1. **Pharma items:** these items include all the medicines and supplements
2. **Surgical items:** these include the items used in any surgical process like blades, sutures, vein-o-lines, catheters etc.
3. **FMCG items:** these include all the consumable items like gloves, syringes, caps, face masks etc.

The revenue of the pharmacy depends on all the 3 categories and discrepancy in sales of any one category would lead to discrepancy in the profit generated.

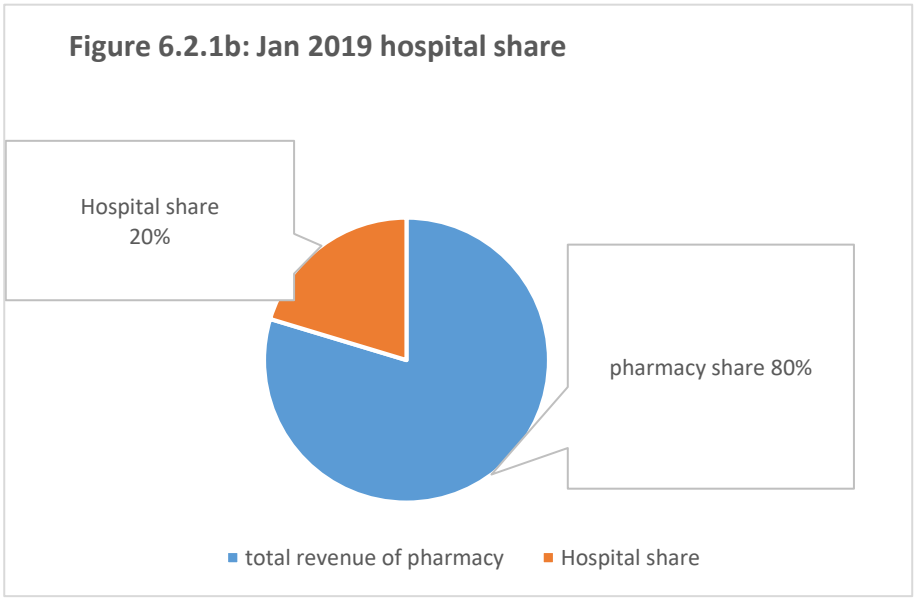
6.2.1: JANUARY 2019



Interpretation fig. 6.2.1a: On studying the revenue sheet for the month of January 2019, it was found that FMCG items accounted for 11% of the total revenue, Pharma items accounted for the 56% of the total revenue and surgical items accounted for the 33% of the total revenue

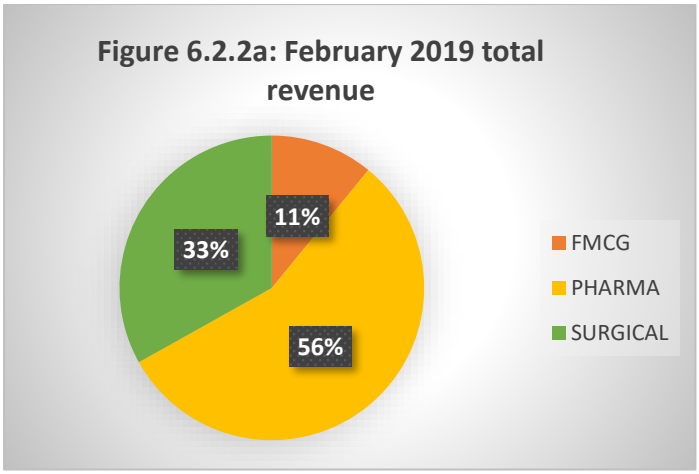
Table 6.2.1	**Category wise distribution of revenue of the pharmacy (Jan-2019)**			
Sno.	**Pharmacy heads**	**Total revenue**	**%age of hospital share**	**Hospital revenue**
1	FMCG	194391	5%	9719.55
2	Pharma	996053	18%	179289.54
3	Surgical	589175	45%	265128.75
	TOTAL	1779619		454137.84

Interpretation table 6.2.1: The above table shows the amount of revenue (Jan 2019) received by the hospital depending upon the percentage pre decided by the Apollo Pharmacy and the Hospital Management.



Interpretation fig. 6.2.1b: The above figure suggests the distribution pattern of the revenue share between the pharmacy and the hospital and shows that the major part of the total revenue i.e. 80% goes to the pharmacy whereas the hospital share accounts for only 20% of the total revenue share.

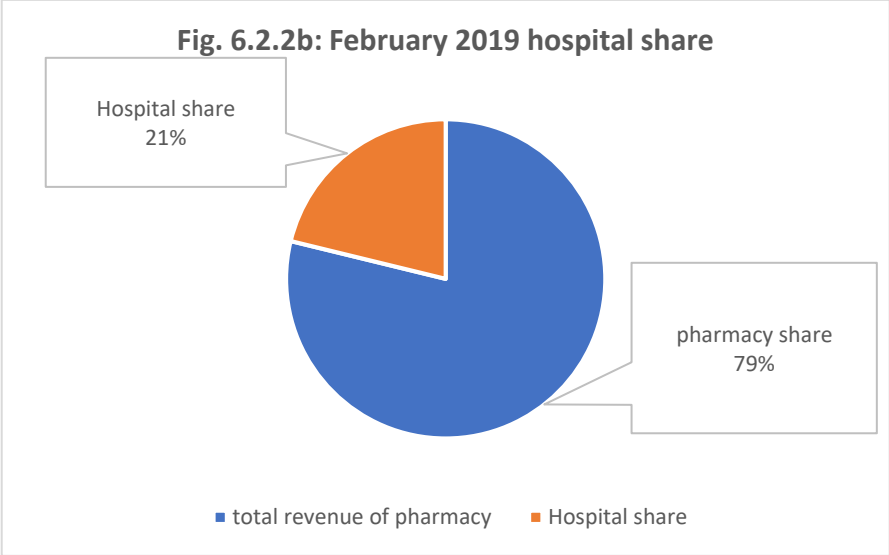
6.2.2: FEBRUARY 2019:



Interpretation fig. 6.2.2a: On studying the revenue sheet for the month of February 2019, it was found that FMCG items accounted for 11% of the total revenue, Pharma items accounted for the 56% of the total revenue and surgical items accounted for the 33% of the total revenue

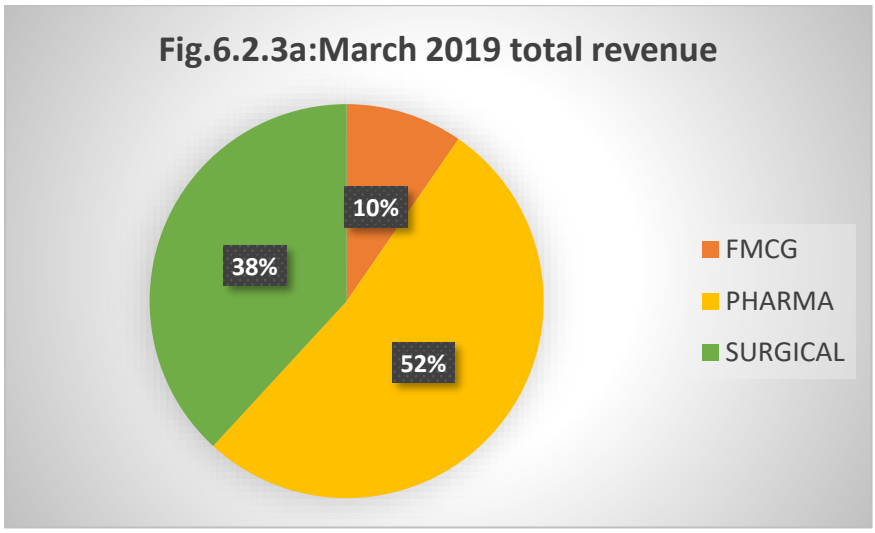
Table 6.2.2	**Category wise distribution of revenue of the pharmacy (Feb - 2019)**			
S.No.	**Pharmacy heads**	**Total revenue**	**%age of hospital share**	**Hospital revenue**
1	FMCG	220602	5%	11030.1
2	Pharma	1147939	18%	206629.02
3	Surgical	829667	45%	373350.15
		2198208		591009.27

Interpretation table 6.2.2: The above table shows the amount of revenue (Feb 2019) received by the hospital depending upon the percentage pre decided by the Apollo Pharmacy and the Hospital Management.



Interpretation fig. 6.2.2b: The above figure suggests the distribution pattern of the revenue share between the pharmacy and the hospital and shows that the major part of the total revenue i.e. 79% goes to the pharmacy whereas the hospital share accounts for only 21% of the total revenue share.

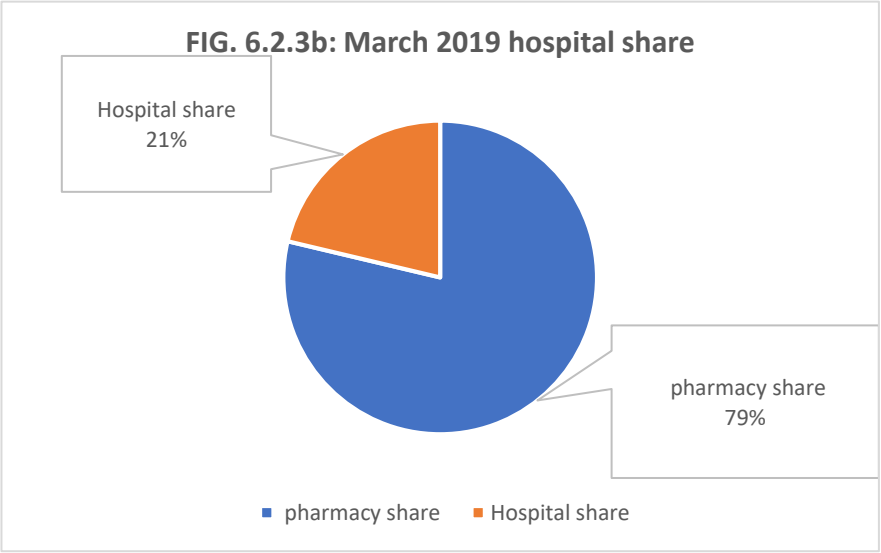
6.2.3: MARCH 2019:



Interpretation fig. 6.2.3a: On studying the revenue sheet for the month of March 2019, it was found that FMCG items accounted for 10% of the total revenue, Pharma items accounted for the 52% of the total revenue and surgical items accounted for the 38% of the total revenue

Table 6.2.3	Category wise distribution of revenue of the pharmacy (March - 2019)			
Sno.	Pharmacy heads	Total revenue	%age of hospital share	Hospital revenue
1	FMCG	248999.15	5%	12449.9575
2	Pharma	1352953.47	18%	243531.625
3	Surgical	988166	45%	444674.7
		2590118.62		700656.282

Interpretation table 6.2.3: The above table shows the amount of revenue (March 2019) received by the hospital depending upon the percentage pre decided by the Apollo Pharmacy and the Hospital Management



Interpretation fig. 6.2.2b: The above figure suggests the distribution pattern of the revenue share between the pharmacy and the hospital and shows that the major part of the total revenue i.e. 79% goes to the pharmacy whereas the hospital share accounts for only 21% of the total revenue share.

OVERALL FINDINGS: There is no discrepancy in the data on the revenue of the 3 months and the values for all the findings are approximately the same and suggesting that the major part of the revenue is acquired by the pharmacy and only about 20% of the total revenue goes to the hospital.

6.3. CONVERSION RATIO:

Conversion ratio of the patients converting from the Out-Patient Department to the Hospital Pharmacy was calculated for the 3 months (January, February and March 2019) to check for the scope of increase in profits to the hospital.

Conversion Ratio= Pharmacy footfall/total OPD Footfall (includes both old and new patients)

JANUARY 2019 = 719/728= 98.7%
FEBRUARY 2019= 954/1060= 90%
MARCH 2019= 1018/1091=93.3%

Interpretation: It was found that the conversion ratio for the month of February was relatively low and on doing the Root Cause Analysis (including Pharmacy and Hospital Management) it was found that the decrease was due to the change in the doctors in the hospital and different medications or different brands of medications prescribed by the new doctors.

6.4. QUALITY ASSESSMENT OF THE PHARMACY ACCORDING TO NABH: (FOR PRE-ACCREDITATION PROGRESSIVE LEVEL)

Below is the list of NABH standards and the objective elements that were studied to check the preparedness of the hospital pharmacy for the NABH (Pre- Accreditation Progressive Level)

SCORING PATTERN:

Non-compliance – 0
Partial compliance – 5
Full compliance – 10

TABLE 6.4	MANAGEMENT OF MEDICATION STANDARD WITH OBJECTIVE ELEMENTS	SCORE
MOM1	Documented policies and procedures guide the organisation of pharmacy services and usage of medication.	
1	There is a documented policy and procedure for pharmacy services and medication usage	10
2	Policies and procedures comply with the applicable law and regulation	10
3	Multidisciplinary committee guide the formulation and implementation of these policies and procedures	5
4	There is a procedure to obtain medication when the pharmacy is closed	10
	AVERAGE	**8.75**
MOM2	There is a hospital formulary	
1	A list of medications appropriate for the patients and as per the scope of the organization's clinical services is developed collaboratively by the multidisciplinary committee.	5
2	The list is reviewed and updated collaboratively by the multidisciplinary committee at least annually	0
3	the formulary is available for clinicians to refer and adhere to	5
4	There is a defined process for acquisition of these medications	5
5	there is a process to obtain medications not listed in the formulary	5
	AVERAGE	**4**
MOM3	Documented policies and procedures guide the prescription of medications	
1	Documented policies and procedures exist for storage of medication	5
2	Medications are stored in a clean; safe and secure environment; and incorporating manufacturer's recommendation	10
3	Sound *inventory control* practices guide storage of the medications	10

4	*Sound alike and look alike* medications are identified and stored physically a part from each other	10
5	The list of emergency medications is defined and is stored in a uniform manner	10
6	Emergency medications are available all the time	10
7	Emergency medications are replenished in a timely manner when used	5
	AVERAGE	**8.57142857**
MOM4	Documented policies and procedures guide the safe and rational prescription of medications	
	Documented policies and procedures exist for prescription of medications*.	10
1	These incorporate inclusion of good practices/guidelines for rational prescription of medications.	10
2	The organization determines the minimum requirements of a prescription	5
3	Known drug allergies are ascertained before prescribing.	5
4	The organization determines who can write orders*.	0
5	Orders are written in a uniform location in the medical records.	10
6	Medication orders are clear, legible, dated, timed, named and signed.	10
7	Medication orders contain the name of the medicine, route of administration, dose to be administered and frequency/time of administration.	10
8	Documented policy and procedure on verbal orders is implemented*.	5
9	The organization defines a list of high risk medication	10
10	Audit of medication orders/prescription is carried out to check for safe and rational prescription of medications.	5
11	Reconciliation of medication occur at transition point of patient care	5
12	Corrective and/or preventive action (s) is taken based on the analysis where appropriate	10
	AVERAGE	**7.30769231**
MOM5	Documented policies and procedures guide the safe dispensing of medications	
1	Documented policies and procedures guide the safe dispensing of medications*.	10
2	The procedure addresses medication recall*.	10
3	Expiry dates are checked prior to dispensing.	10
4	There is a procedure for near expiry medications*. (3 months)	10
5	Labelling requirements are documented and implemented by the organization	10
6	High risk medication orders are verified prior to dispensing	10
	AVERAGE	**10**
MOM6	There are documented policies and procedures for medication administration	

1	Medications are administered by those who are permitted by law to do so.	5
2	Prepared medication is labelled prior to preparation of a second drug.	10
3	Patient is identified prior to administration.	10
4	Medication is verified from the order prior and physically inspected prior to administration.	10
5	Dosage is verified from the order prior to administration.	10
6	Route is verified from the order prior to administration.	10
7	Timing is verified from the order prior to administration.	10
8	Medication administration is documented.	10
9	Documented policies and procedures govern patient's self-administration of medications*.	0
10	Documented policies and procedures govern patient's medications brought from outside the organization	0
	AVERAGE	**7.5**
MOM7	Patients are monitored after medication administration	
1	Documented policies and procedures guide the monitoring of patients after medication administration*.	10
2	The organization defines those situations where close monitoring is required*.	10
3	Monitoring is done in a collaborative manner.	5
4	Medications are changed where appropriate based on the monitoring.	10
	AVERAGE	**8.75**
MOM8	Near misses, medication errors and adverse drug events are reported and analysed	
1	Documented procedure exists to capture near miss, medication error and adverse drug event.	10
2	Near miss, medication error and adverse drug event are defined.	10
3	These are reported within a specified time frame	5
4	They are collected and analysed.	5
5	Corrective and/or preventive action (s) is taken based on the analysis where appropriate.	10
	AVERAGE	**8**
MOM9	Documented procedures guide the use of narcotic drugs and psychotropic substances	
1	Documented procedures guide the use of narcotic drugs and psychotropic substances which are in consonance with local and national regulations*	10
2	These drugs are stored in a secure manner	10
3	A proper record is kept of the usage, administration and disposal of these drugs.	10
4	These drugs are handled by appropriate personnel in accordance with the documented procedure	10

	AVERAGE	**10**
MOM10	Documented policies and procedures guide the usage of chemotherapeutic agents	
1	Documented policies and procedures guide the usage of chemotherapeutic agents*.	NA
2	Chemotherapy is prescribed by those who have the knowledge to monitor and treat the adverse effect of chemotherapy.	NA
3	Chemotherapy is prepared in a proper and safe manner and administered by qualified personnel	NA
4	Chemotherapy drugs are disposed off in accordance with legal requirements.	NA
5	Patients and families are educated regarding benefits / risks of chemotherapy, precautions to be taken and possible adverse reaction	NA
MOM11	Documented policies and procedures govern usage of radioactive drugs	
	Documented policies and procedures govern usage of radioactive drugs*.	NA
1	These policies and procedures are in consonance with laws and regulations	NA
2	The policies and procedures include the safe storage, preparation, handling, distribution and disposal of radioactive drugs	NA
3	Staff, patients and visitors are educated on safety precautions.	NA
MOM12	Documented policies and procedures guide the use of implantable prosthesis and medical	
1	Usage of implantable prosthesis and medical devices is guided by scientific criteria for each individual item and national / international recognized guidelines / approvals for such specific item(s).	NA
2	documented policies and procedures govern procurement, storage / stocking, issuance and usage of implantable prosthesis and medical devices incorporating manufacturer's recommendation	NA
3	Patient and his / her family are counselled for the usage of implantable prosthesis and medical device including precautions, if any.	NA
4	The batch and serial number of the implantable prosthesis and medical devices are recorded in the patient's medical record, the master logbook and the discharge summary	NA
MOM 13	Documented policies and procedures guide the use of medical supplies and consumables	
1	There is a defined process for acquisition of medical supplies and consumables*.	10
2	Medical supplies and consumables are used in a safe manner where appropriate.	10

3	Medical supplies and consumables are stored in a clean; safe and secure environment; and incorporating manufacturer's recommendation (s).	10
4	Sound inventory control practices guide storage of medical supplies and consumables.	10
5	There is a mechanism in place to verify the condition of medical supplies and consumables	10
	AVERAGE	**10**

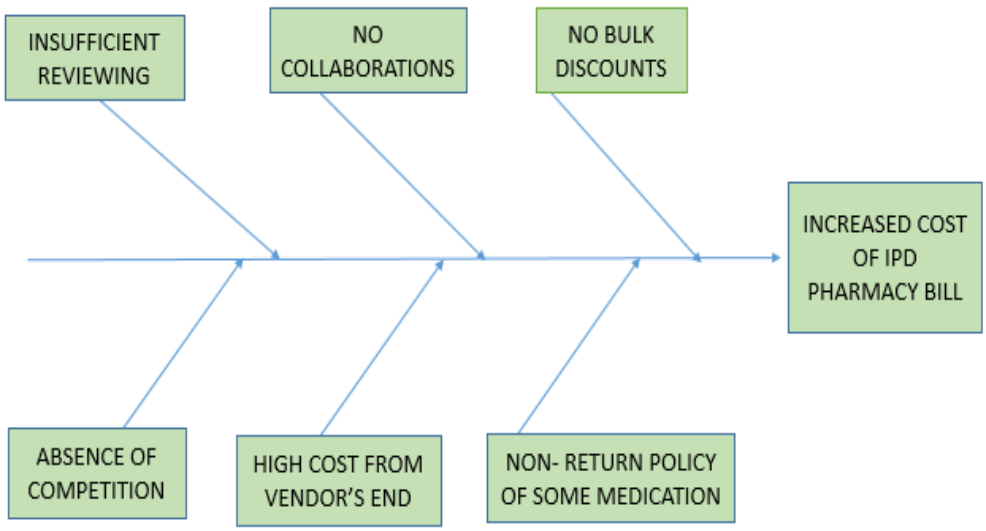
Interpretation/results table 6.4:

1. All the regulatory legal requirements fully met.
2. No individual standard had more than 2 zeroes.
3. The average score for 1 standard is less than 5 (hospital formulary) against the requirement that the average score of no standard should be less than 5.
4. The overall average score for all standards exceeds 6 (8.3)

6.5. REASONS FOR INCREASED COST OF PHARMACY BILLS OF THE IN-PATIENT DEPARTMENT

During the study various reasons were observed that led to the increase in the cost of the pharmacy bills.

6.5.1 Based on the Observations and informal discussion with the management and staff at hospital, following is the fishbone analysis of the increased pharmacy bill



6.5.2: PARAMETERS STUDIED TO IDENTIFY REASONS OF INCREASED PHARMACY BILLS

50 bills were studied to check for the following (**parameters given by the hospital management to study)**

- Items included in the excessive amount, more than the expected/standard amounts.
- Identification of items in the bill other than those mentioned in the hospital formulary.
- Un-returned items in the list of return items (which were earlier prescribed) but later discontinued
- Any discounts on Maximum Retail Price of drugs and other items.
- Any error in indenting of medicines by nursing staff.
- Any excessive use of consumables.

Based on the above-mentioned parameters, Reasons of increased Pharmacy Bills (In-Patient Department) were identified as following

1. **Non- adherence to Hospital formulary**: The doctors do not adhere to the drug formulary of the hospital and prescribe medications other than those mentioned in the drug formulary thereby leading to increased pharmacy bills as these are not purchased in bulk amounts. (16 out of 20 bills)

List of items that were found in the bills (prescribed by the doctors) but not in the hospital formulary in 34 out of 50 bills

	ITEM	**QUANTITY**
1	555 microshiled	1
2	Dc enema	1
3	Lori injection	1
4	Zocef	2
5	Nipcare	2
6	MEM 1 ml	1
7	NACHPIN	1
8	Gamjee roll in normal case	2
9	Tegaderm 486 in normal case	1
10	Trapic inj in normal case	2
11	Lox 2% injection	1
12	Sutures for normal case	2

2. **Absence of discounts**: unlike other hospitals the Apollo Pharmacy at cocoon does not offer any discounts on MRP whereas other competitor hospitals (For eg: Rukmani Birla Hospital and Fortis) are offering a discount of 6-8% on the MRP.
3. **High quantity of consumables and FMCG products used**: The total cost was rising due to few items like excessive use of Sutures, Examination Gloves, sanitizers etc.

S.NO	ITEM	ESTIMATED QUANTITY	QUANTITY BEING USED	CASES IN WHICH DEVIATION OBSERVED
1.	Sutures	1-2	3-4	12 out of 50 Bills
2.	Examination Gloves	30 pairs	40 pairs	43 out of 50 Bills
3.	Sterillium	1 bottle	2 bottles	17 out of 50 Bills

4. **Non-Return Policy** of some medications (13 out of 50 bills)
5. **Over prescribing of medicines**, usually antibiotics like Amikacin and Zocef in 21 out of 50 bills
6. **No indenting error** by the nursing staff was found.

Other Findings:

1. **Overall increase in the price of drugs** from the past few years after the implementation of GST.
2. **Positive cases of HIV, HBsAg** (2 out of 50 Bills) and other medical emergencies led to increased costs as medications were required to treat the mentioned diseases also.
3. **Bulk profits** gained by the Apollo pharmacy at the time of purchase of items not transferred to the patients.
4. **Doctor specific bills:** Some bills were higher and doctor specific as the medicines prescribed were different and few required more doses (9 out of 50 bills specific to 2 doctors).

SUGGESTIONS:

1. Starting of pre formed pharmacy kits (having specific number of items above which the patient will be charged separately) for all-inclusive packages beyond which the patient would be charged by the hospital as this would result in discounts on bulk purchases,
2. Purchasing and dispensing of FMCG products by the hospital store itself where maximum cost cutting is possible as the margin of profit on these products is very high.
3. Collaborate with physicians and pharmacists and follow hospital formulary
4. Conduct education sessions with physicians about prescribing habits and training the staff to prescribe medicinal substitutes of lower price.
5. Conduct education sessions and training session for pharmacy staff to increase the compliance to NABH standards.
6. Following antibiotic policy to check for excessive prescribing of antibiotics.
7. Start an inhouse hospital pharmacy and decrease the dependence on Apollo pharmacy.
8. Introduce best practices to obtain credits from returned excess/return products of pharmacy in case of the non-return policy of some medications adopted by the Apollo Pharmacy

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