A study on the Functioning and Quality Assessment of Hospital Pharmacy and Identification of Reasons of High Pharmacy Bills (In-Patient Department)

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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.
- It forms an integrated part of patient health care in a health facility.
- It 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.
- Functions include the selection, prescription, procuration, delivery and review of medications to optimize patient outcomes

INTRODUCTION TO PHARMACY SERVICES AT COCOON

- The pharmacy at Cocoon Hospital is Out-sourced to Apollo Pharmacy
- There are 2 types of Pharmacy Services provided at Cocoon Hospital

1. **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 Floor Stock system in which patients are being charged after the administration of drugs.

2. **Outpatient Pharmacy:**

The outpatient pharmacy of the hospital is located on the first floor near the outpatient department and follows First-In-First-Out type of inventory management system

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.. 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 medicines

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 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.

RESEARCH QUESTION:

1. What is the revenue share of the Hospital from the total revenue of the pharmacy?
2. What is the Quality Status of Hospital Pharmacy as per the NABH Guidelines?
3. What are the reasons of High Costs of In-Patient Pharmacy Bills?

OBJECTIVES:

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

METHODOLOGY:

Study design: Descriptive Study

Study setting: Apollo pharmacy located on the first floor of Cocoon Hospital was studied

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-For the objective of identification of high cost of pharmacy bills

Sampling technique: Convenience Sampling

Inclusion Criteria: Bills of admitted patients who have undergone Lower Segment Caesarean Section (25) and Full-Term Normal Delivery (25)

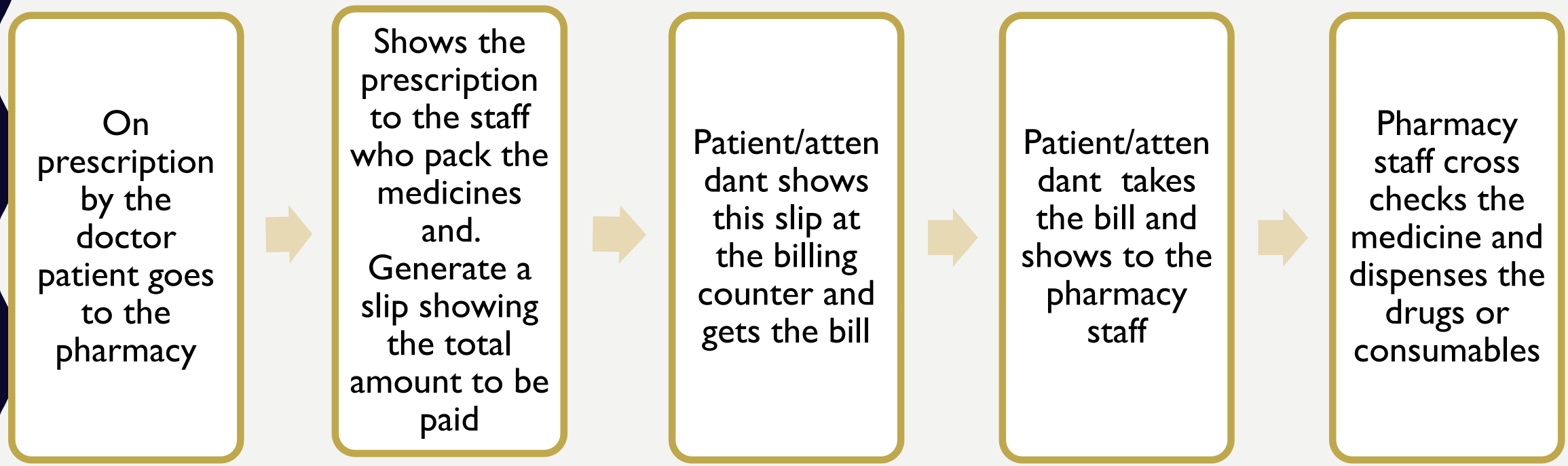
Exclusion criteria: OPD bills and bills of patients with remaining procedures (Total Laparotomic Hysteroscopy procedures, dilatation and curettage, sterilization procedures, Medical Termination of Pregnancies, emergency procedures)

Type of data: Primary Data – for study on quality assessment of hospital pharmacy
Secondary data- for finding reasons for increased costs of pharmacy bills.

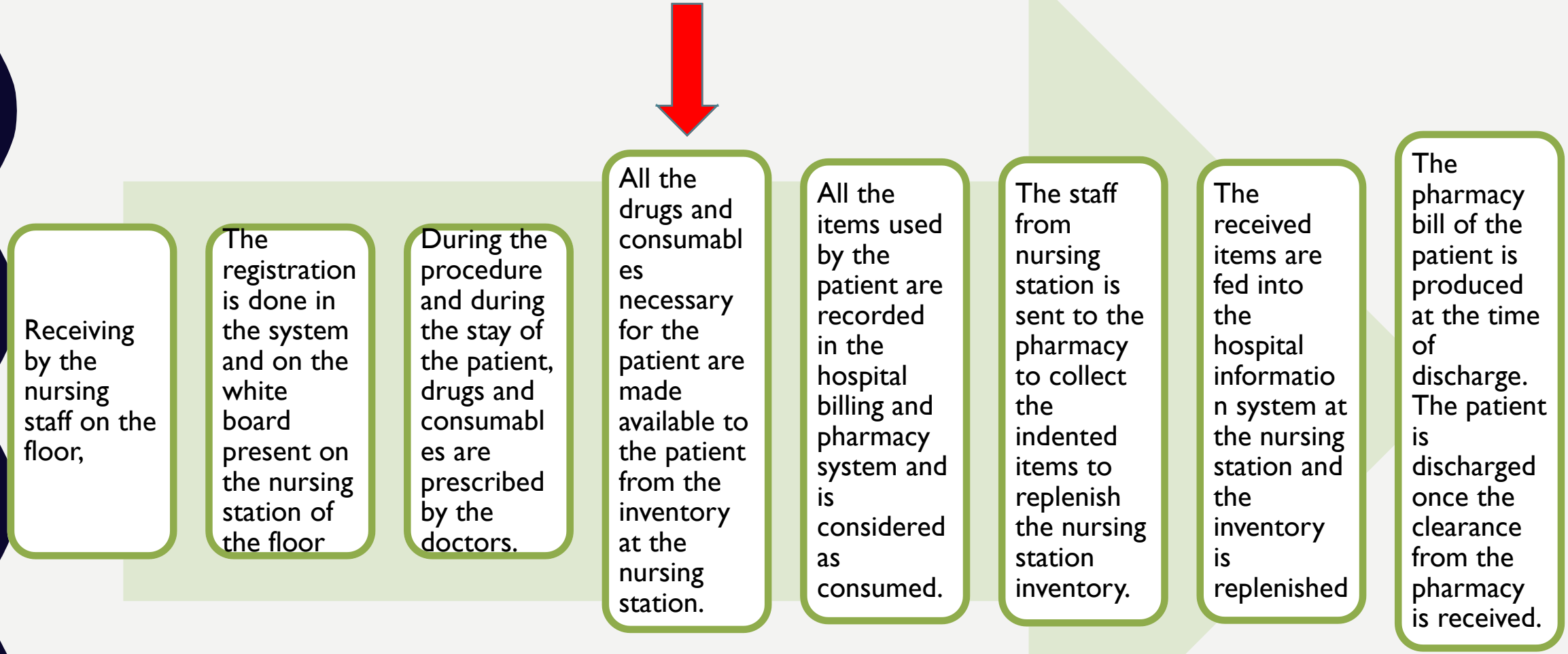
Analysis of Data: MS Excel was used to analyse the data.

FINDINGS:

Process Flow of Apollo Pharmacy (OPD)



Process Flow of Apollo Pharmacy (IPD)



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.

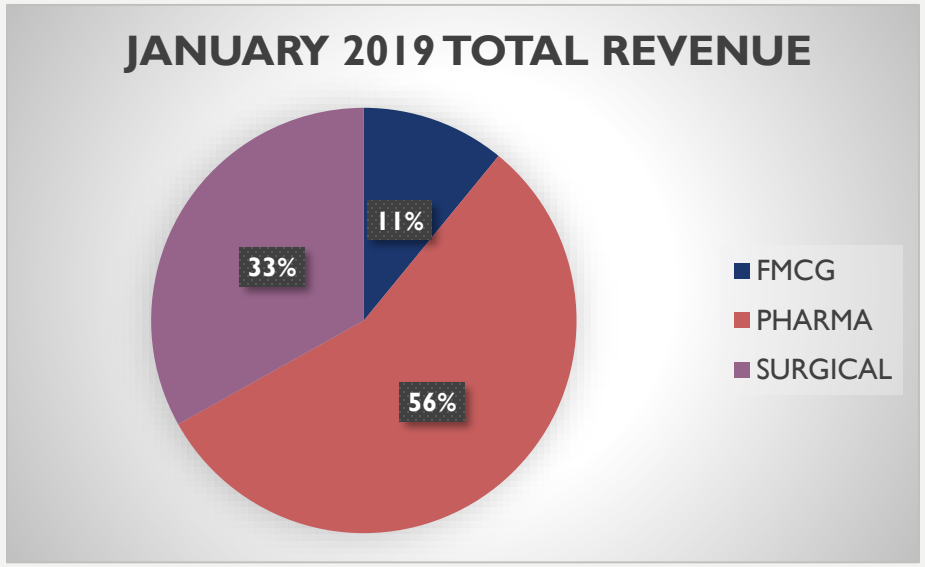
The amount is deducted from the pharmacy bill of the patient and the final bill of the patient is generated.

REVENUE SHARE:

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

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

JANUARY 2019:



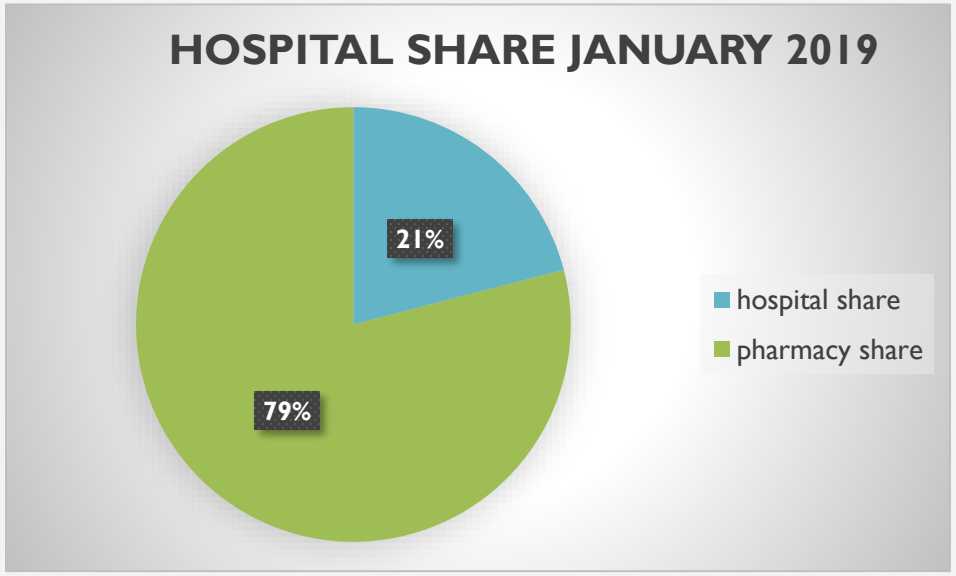
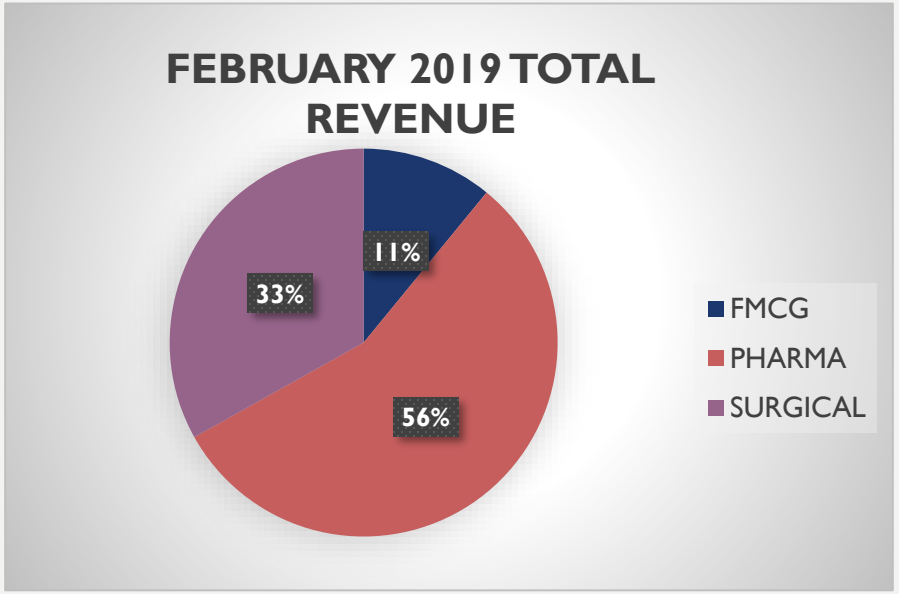


TABLE 6.2.1	CATEGORY WISE DISTRIBUTION OF REVENUE OF THE PHARMACY (JAN-2019)			
SNO.	PHARMACY HEADS	TOTAL REVENUE	%AGE OF HOSPITAL SHARE	HOSPITAL REVENUE
1	FMCG	194391	5%	9719.55
2	Pharma	996053	18%	179289.54
3	Surgical	589175	45%	265128.75
	TOTAL	1779619		454137.84

FEBRUARY 2019



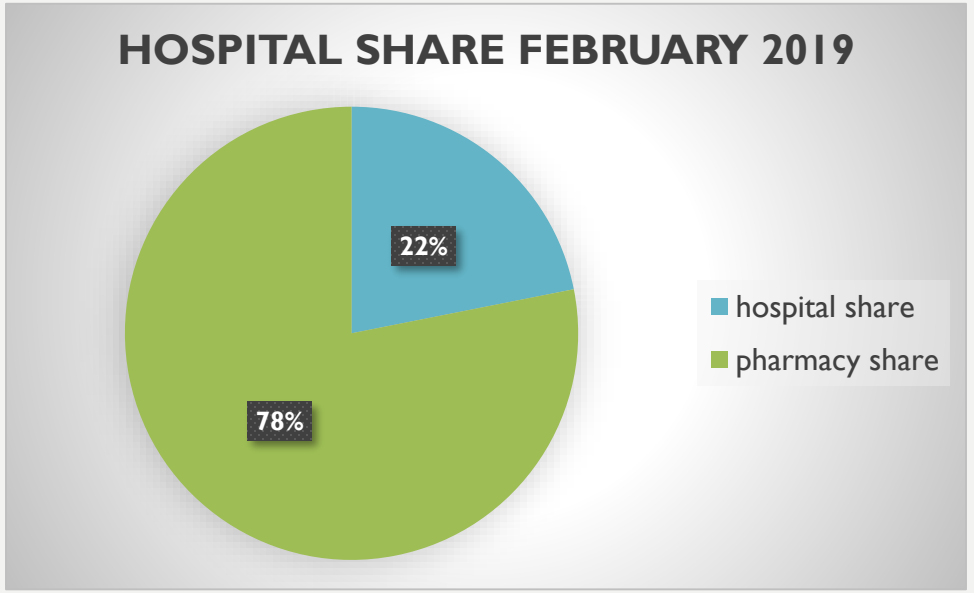
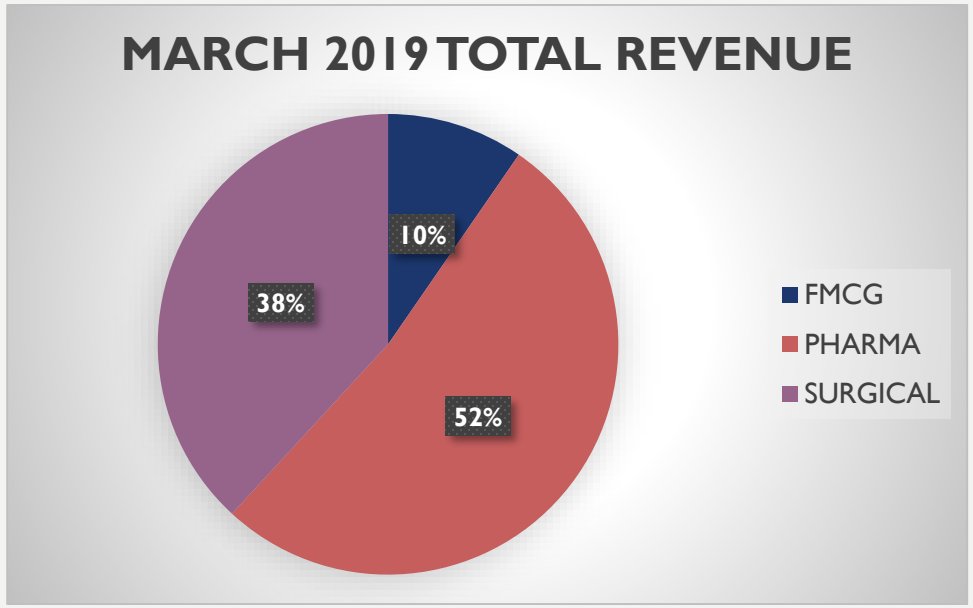


TABLE 6.2.2	CATEGORY WISE DISTRIBUTION OF REVENUE OF THE PHARMACY (FEB - 2019)			
SNO.	PHARMACY HEADS	TOTAL REVENUE	%AGE OF HOSPITAL SHARE	HOSPITAL REVENUE
1	FMCG	220602	5%	11030.1
2	Pharma	1147939	18%	206629.02
3	Surgical	829667	45%	373350.15
		2198208		591009.27

MARCH 2019



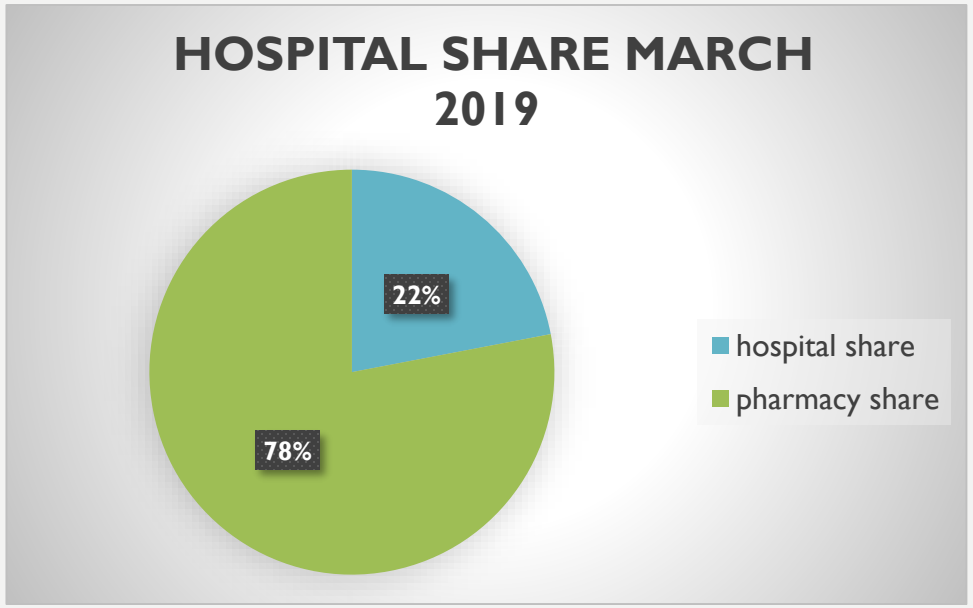


TABLE 6.2.3	CATEGORY WISE DISTRIBUTION OF REVENUE OF THE PHARMACY (MARCH - 2019)			
SNO.	PHARMACY HEADS	TOTAL REVENUE	%AGE OF HOSPITAL SHARE	HOSPITAL REVENUE
1	FMCG	248999.15	5%	12449.9575
2	Pharma	1352953.47	18%	243531.625
3	Surgical	988166	45%	444674.7
		2590118.62		700656.282

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.

CONVERSION RATIO:

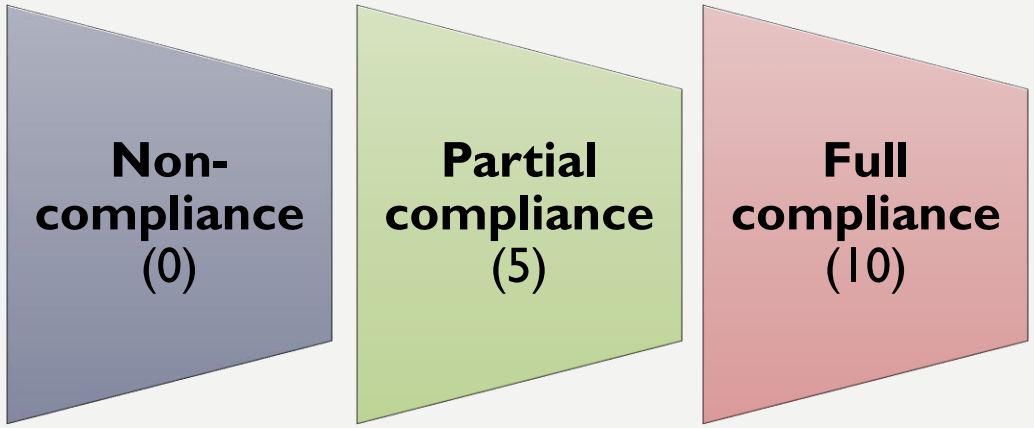
Conversion ratio of the patients converting from the Out-Patient Department to the Hospital Pharmacy was calculated for the 3 months (January, February and March 2019) to check for the scope of increase in profits to the hospital.

Conversion Ratio= Pharmacy footfall/ No. of Prescriptions generated (includes both old and new patients)

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

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

SCORING PATTERN:



13 STANDARDS AND 74 OBJECTIVE ELEMENTS

S.NO	STANDARDS	AVERAGE SCORE
1.	Documented policies and procedures guide the organisation of pharmacy services and usage of medication.	8.75
2.	There is a hospital formulary	4
3.	Documented policies and procedures guide the prescription of medications	8.57

S.NO	STANDARDS	AVERAGE SCORE
4.	Documented policies and procedures guide the safe and rational prescription of medications	7.30
5.	Documented policies and procedures guide the safe dispensing of medications	10
6.	There are documented policies and procedures for medication administration	7.5
7.	Patients are monitored after medication administration	8.75
8.	Near misses, medication errors and adverse drug events are reported and analysed	8
9.	Documented procedures guide the use of narcotic drugs and psychotropic substances	10
10.	Documented policies and procedures guide the usage of chemotherapeutic agents	NA
11.	Documented policies and procedures govern usage of radioactive drugs	NA
12.	Documented policies and procedures guide the use of implantable prosthesis and medical	NA
13.	Documented policies and procedures guide the use of medical supplies and consumables	10

FINDINGS:

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)

FOR EXAMPLE:

MOM 2	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

PARAMETERS STUDIED FOR IDENTIFICATION OF HIGH COST OF PHARMACY BILLS

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

- Items included in more quantity, more than the standard quantities set by the hospital.
- 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.

FINDINGS

- **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

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

- **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).
- **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

- **Non-Return Policy** of some medications
- **Over prescribing of medicines**, usually antibiotics like Amikacin and Zocef in 21 out of 50 bills
- **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.

OTHER FINDINGS:

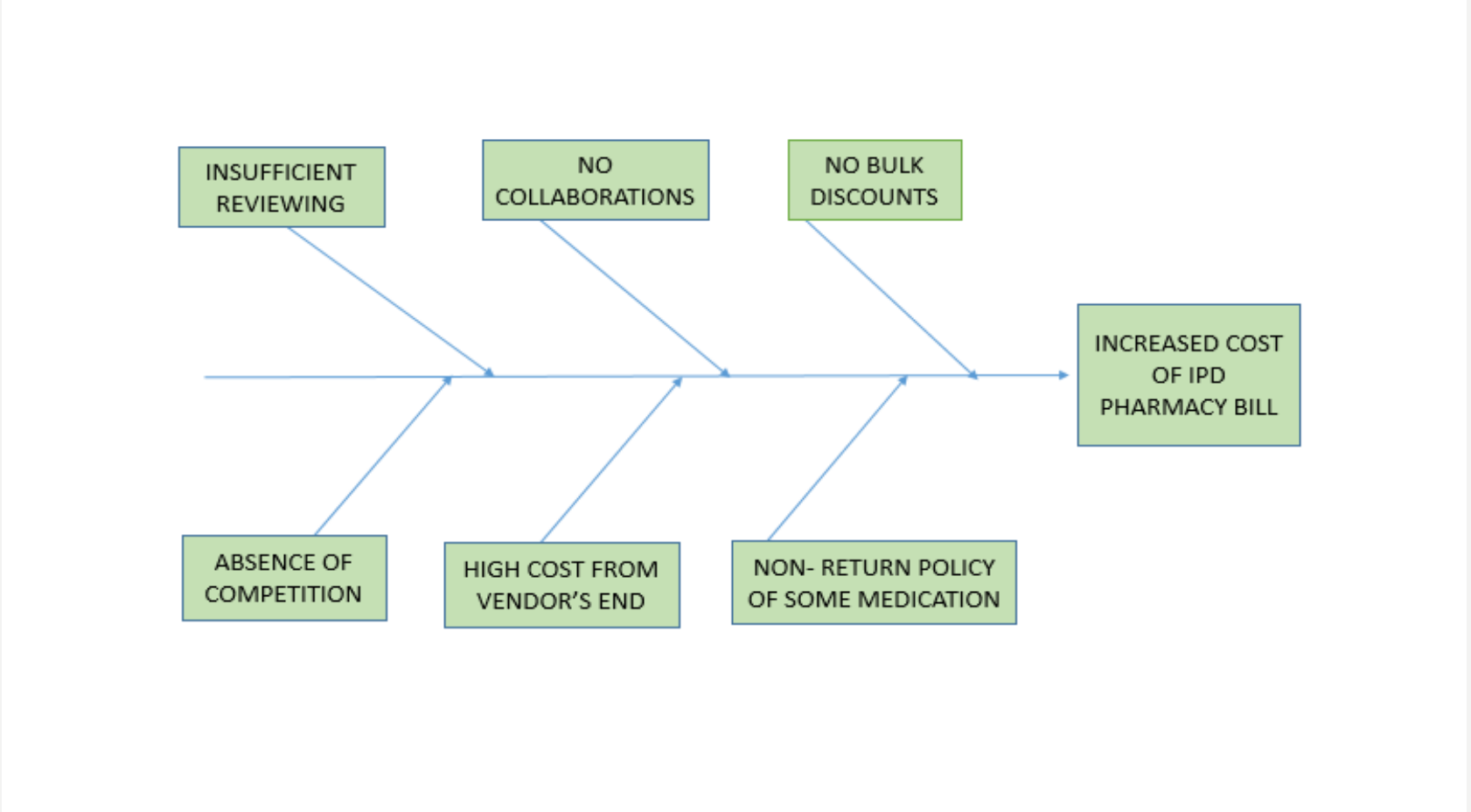
Bulk profits gained by the Apollo pharmacy at the time of purchase of items not transferred to the patients.

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.

Overall increase in the price of drugs from the past few years after the implementation of GST.

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

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



SUGGESTIONS:

- 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
- 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.
- Collaborate with physicians and pharmacists and follow hospital formulary
- Conduct education sessions with physicians about prescribing habits and training the staff to prescribe medicinal substitutes of lower price.
- Conduct education sessions and training session for pharmacy staff to increase the compliance to NABH standards.
- Following antibiotic policy to check for excessive prescribing of antibiotics.

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THANK YOU