

Study on Key Operational Parameters of N.M. Virani
Wockhardt Hospital, Rajkot U

By

Deepak Patial

*Dissertation submitted for the partial fulfillment of the
MBA Hospital and Health Management*

Academic year, 2015-2017



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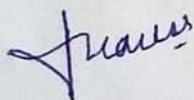
TO WHOMSOEVER MAY CONCERN

This is to certify that **Dr Deepak Patial** student of MBA Hospital and Health Management from The IIHMR University, Jaipur has undergone dissertation training at **N.M. Virani Wockhardt Hospital Rajkot** from 6 February 2017 to 5 May 2017.

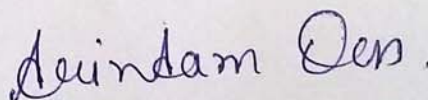
The Candidate has successfully carried out the study designated to him during dissertation training and his approach to the study has been sincere, scientific and analytical.

The Dissertation is in fulfillment of the course requirements.

I wish him all success in all his future endeavors.



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



Dr Arindam Das
Associate Professor & Associate Dean Research
The IIHMR University, Jaipur

The certificate is awarded to

Dr Deepak Patial

In recognition of having successfully completed his
Internship in the following departments

Medical Admin, Diagnostics, OPD, Billing, Marketing, Housekeeping, Security,
CSSD, OT, Cathlab, Laundry and material departments

and has successfully completed his Project on

**A Study on Key Operational parameters of different departments of the N. M.
Virani Wockhardt Hospital, Rajkot**

Date 04th MAY 2017

Wockhardt Hospital, Rajkot

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

We wish him all the best for future endeavors

R.A. Mehta
Training & Development
RURU MEHTA

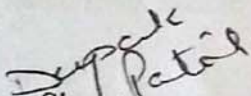


Somaiya G.P.
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CERTIFICATE BY SCHOLAR

This is to certify that the dissertation titled A study on key operational parameters of the different departments in Wockhardt Hospitals, Rajkot unit and submitted by Dr Deepak Patial Enrollment No: 0271 under the supervision of Mr. Arindam Das for award of MBA in Hospital and Health of the University carried out during the period from 1st February to 30th April embodies my original work and has not formed the basis for the award of any degree, diploma associate ship, fellowship, titles in this or any other institute or other similar institution of higher learning.

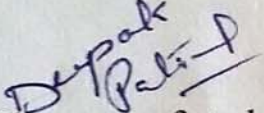

Signature



IIHMR UNIVERSITY, JAIPUR

CERTIFICATE BY SCHOLAR

This is to certify that all ethical issues have been considered while collecting data for my dissertation titled: **Study of Key Operational Parameters of Different Departments.**


Signature of student

CERTIFICATE BY SCHOLAR

This is to certify that the dissertation titled A study on key operational parameters of the different departments in Wockhardt Hospitals, Rajkot unit and submitted by Dr Deepak Patial Enrollment No: 0271 under the supervision of Mr. Arindam Das for award of MBA in Hospital and Health of the University carried out during the period from 1st February to 30th April embodies my original work and has not formed the basis for the award of any degree, diploma associate ship, fellowship, titles in this or any other institute or other similar institution of higher learning.

Signature

Abstract:**Introduction:**

Key operational parameters not only include elements of hospital performance improvement areas, but it goes beyond them because of the emphasis it places on improving care delivery and patient satisfaction. A variety of process improvement and change management concepts and approaches are used to increase operational efficiency and reduce clinical variability; the ultimate objective is to drive down the total cost of care while maintaining or improving care quality. However, hospitals are still lagging behind to use key operational parameters as a strategic tool to optimize its performance within the limited resources. Wockhardt hospital, Rajkot is one of the leading sources of healthcare delivery in the catchment area.

Objectives:

- To study the key operational parameters of different departments of hospital
- To analyse gaps in the hospital operational processes
- To suggest recommendations to fill the gaps in operations of the hospital

Study Location:

The study was carried out in Medical Admin, Diagnostics, OPD, Billing, Marketing, Housekeeping, Security, CSSD, OT, Cathlab, Laundry and material departments of the hospital. Referring to the standard operating procedures of different departments, processes were observed for fifteen days and the gaps in them were analyzed.

Study limitations:

This study is only been carried out in Medical Admin, Diagnostics, OPD, Billing, Marketing, Housekeeping, Security, CSSD, OT, Cathlab, Laundry and material departments of the hospital as suggested by Corporate office of Wockhardt Hospital, Mumbai. No data is collected in any of the department as limited time was provided in each department. Standard operating procedure is used to find out the gaps.

Salient findings of the study:

- Lack of coordination in-between Altius Nagpur & Customer care Rajkot for appointment system

- Work overload on ward secretary which leads to inefficiency in completing billing audit on daily basis
- Inventory of consumables at nursing stations are kept open, there is no use of lock and key to avoid pilferages.
- Medication errors are common like Transcription Errors, Error prone Abbreviations, Indent Errors, Dispense Errors, Reconciliation Errors, Prescription Errors, Documentation Errors & Audit for all discharge summaries are not done on regular basis
- Rush of follow-up patients(surgical & postoperative) in emergency department due to absence of procedure room in OPD
- In patient dissatisfaction due to exposure of external environment towards CT & MRI& Increased waiting time of Ultrasonography Reports
- Use of PPEs & practice of Hand Hygiene are not meeting to the standards in critical areas

Recommendations:

- Yellow card should be updated on real time basis.
- Nursing supervisor can enter the rendered services in HIS
- Storage area must be secured for consumables in wards to avoid pilferages
- TPA team should have at least one medical graduate to address the queries.
- All major areas should be covered under CCTV surveillance.
- Security officer should monitor the CCTV cameras daily(to ensure they are up and working properly)
- Staff frisking and guest baggage checking should be must to avoid pilferage

Acknowledgement:

My institute – Indian Institute of Health Management Research (IIHMR), Jaipur deserves the foremost appreciation for providing me the opportunities to undertake my dissertation in N.M. Virani Wockhardt Hospital, Rajkot. My sincere thanks to Dr Ashok Kaushik, Dean, IIHMR University and my internal guide Mr. Arindam Das in completion of the dissertation and providing me valuable suggestions.

My heartfelt gratitude to Dr. Jagdish Khoyani (Center Head) N.M. Virani Wockhardt Hospital, Rajkot for accepting my request and providing me the opportunity to undertake my dissertation in this esteemed organization.

My special thanks to Dr Chintan Shanishwara (Manager, Hospital Administration) & Dr Ravi Maggo (Deputy Manager, Hospital Administration) who encouraged me to undertake this project and provided the extended support.

I am extremely thankful to Mr. Gaurang Somaiya (HR Head) for his kind support and guidance.

The support and prayers of my friends and family members deserves special thanks, which always supported me throughout my life.

Dr Deepak Patial

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List of Symbols and Abbreviations

CT scan: Computerized Axial Tomography

EMG: Emergency

HIS: Hospital Information System

RIS: Radiology Information System

HRD: Human Resource department

HOD: Head of the Department

ICU: Intensive Care Unit

IPD: In patient Department

LAN: Local Area Network

PHC: Preventive Health Check up

MRI: Magnetic Resonance Imaging

MAMMO: Mammography

NA: Not Applicable

OPD: Outpatient department

USG: Ultrasonography

PACS: Picture Archiving and Communications System

TQM: Total quality management

Hospital's Profile:

Wockhardt Hospitals was incorporated on 28 August 1991 under the Companies Act, 1956 as a public limited company. The Company was originally named First Hospitals and Heart Institute Limited. On 11 September 2000 the name was changed to Wockhardt Health Sciences Limited and subsequently on 19 October 2000 the name was changed to Wockhardt Hospitals Limited.

Wockhardt Hospitals are one of the leading tertiary care, super specialty healthcare networks in India offering high quality healthcare services. The chain of hospitals is owned by the parent company Wockhardt Ltd., India's 5th largest Pharmaceutical and Healthcare company with a presence in 20 countries across the globe. Wockhardt hospitals, originally called First hospitals and Heart Institute, were one of the early movers among corporate health-care chains in India. The company was established in 1989 and it started its first operations with a medical center in Kolkata, 1989 and a heart hospital in Bangalore two years later. Today the company has its presence across India with 8 multi specialty hospital networks.

Hospital's Network**South Mumbai**

The New Age Wockhardt Hospital in South Mumbai was created with the vision of treating and healing thousands and millions of lives. Situated at Mumbai Central, in the heart of the city's business district, it is a 21-storeyed state-of-the-art tertiary care hospital. The best in Multi-Specialty Care, it focuses on Critical Care and also has a premier Heart Care Institute in its facility .

The New Age Wockhardt Hospital has set new standards not only in India but also in all of Asia. It is the first fully wireless hospital in Asia, first wireless ECG management system in India, first paperless ICU in Mumbai, first GPS enabled ambulance service that sends relevant statistics to the doctors & first Intelligent ICCA system enabling anytime-anywhere patient data retrieval system by doctors in Mumbai. In addition to this, it has the highest number of beds in ICU (100) assisted by female and male nurses suiting the patient's comfort & the largest state of the art eight bedded Accident and Emergency unit in South Mumbai with round-the-clock vigilance .

North Mumbai

Wockhardt Super Specialty Hospital, North Mumbai offers hi-end clinical care in Cardiology, Neurology, Neurosurgery, Orthopedics and Joint Replacement Surgery. It is a 14 storied & 330 bedded multi-specialty located in the northern region of Mumbai, Mira Road .

Wockhardt Super Specialty Hospital is equipped with 9 ultramodern operation theatres with Laminar Air Flow System to achieve Zero Bacterial Count, fully equipped 'ICU on Wheels' on call 24x7 & state-of-the-art Critical Care Department.

Vashi (Navi Mumbai)

Sterling Wockhardt Hospital, Vashi, is a 50 bedded, Multispeciality hospital offering care in Neurology, Neurosurgery, Orthopedics and Joint Replacements, and Minimal Access Surgery. Other specialties like Urology, Nephrology, and Medical and surgical Oncology, Endocrinology, Gynecology, Pediatrics, Critical Care, and Emergency & Preventive healthcare also find prominence for the benefit of the citizens of Vashi and its peripheries .

The hospital is equipped with one operation theatre with a dedicated Endoscopic suite, 10 bedded state of the art and patient centered ICU, 3 bedded Emergency Department, State of the art diagnostic facility and 24 hours Emergency Ambulance Services .

Rajkot

N M Virani Wockhardt Hospital, Rajkot is a dedicated super specialty hospital to offers end-to-end care in Cardiology, Cardiac surgery, Neurology, Neurosurgery, Orthopedics, Joint replacement & Minimal Access Surgery along with other specialties like Urology Nephrology, Medical and surgical Oncology, Endocrinology, Gynecology, Pediatrics, Critical care, Emergency Care and Preventive Healthcare. It is the only NABH Accredited hospital in the region .

“The hospital is equipped with: 170 beds (24 MICU and 6 SICU beds), 6 Operation Theatres with one dedicated for Endoscopies, and having a full-time expert surgical team, dedicated Cardiothoracic and Orthopedic/ replacement Operation Theatres, true flat panel Cardiac Catheterization Lab, dedicated cardiac ambulance and a 24 hours emergency heart line .

Nagpur (Super-Specialty Hospital)

Wockhardt Super specialty hospital in Nagpur is the first NABH accredited hospital in Central India. Wockhardt Super Specialty Hospital is conferred as Best Super Specialty Hospital in Nagpur by "The Week" Magazine, (Hansa research) consecutively for two years. The 118 bedded hospital with a Modern Cathlab, 4 Operation theaters, 50 Beds of ICCU & SICU & with In-house diagnostic facilities like CT scan, MRI, EEG & EMG

The citizens of Central India can now avail of Super Specialty Medical care in the areas of Cardiac & Cardiac surgery, Interventional Radiology, Neurology Neurosurgery, Orthopedics& Joint Replacement surgeries, Minimal Access Surgery and Critical care besides other specialties like Urology, Nephrology, Endocrinology, Gynecology, Pediatrics, Emergency Care and Preventive Healthcare & various high end surgeries like Kidney Transplant surgery, Bariatric Surgery, Minimally Invasive surgeries .

Nagpur (Heart Hospital)

Wockhardt Heart hospital is one of the pioneers of Angiography by the radial method in Nagpur. An accomplished full-time expert team of cardiologists and cardio surgeons drives our cardiac services at Wockhardt Heart Hospital, Nagpur. The ICU is managed and monitored round-the-clock by our cardiologists to ensure timely care in cardiac emergencies. This team is supported by skilled and qualified nurses known to be expert in quality patient care. The hospital is geared with 50 beds (12 ICU and 5 SICU), 2 Cardiothoracic Operation Theatres, Cardiac Catheterization Lab, Dedicated cardiac Ambulance & 24 Hour Emergency Hotline .

Nasik

Wockhardt Hospitals, Nasik is the first corporate hospital in north Maharashtra which offers comprehensive, end-to-end care in Cardiology, Cardiac Surgery, Neurology,

Neuro Surgery, Orthopedics and Joint Replacement Surgery. Other key Specialties include Minimal Access Surgery, Nephrology, Urology, Critical Care, Medical & Surgical Oncology and Emergency Services & Trauma Line. Apart from providing Preventive Healthcare Services, the hospital also acts as a Regional Referral Centre for Pathological investigations .

The hospital is accredited by NABH and equipped with 200 beds (of which 44 are critical care beds), 4 Operation Theatres meeting International Standards, digital Flat Panel Cardiac Catheterization Lab, dedicated Cardiac Ambulance and a 24 hrs. Wockhardt Emergency Heart Line & Accident & Trauma Line .

Surat

Adventist Wockhardt heart hospital, Surat offers comprehensive services in the areas of Cardiology and Cardiothoracic Surgery backed with 24 hours Emergency & critical Care Services under one roof. This Super Specialty Heart Care hospital is equipped with 110 beds (40 bedded Critical Care Unit), 2 Cardiothoracic Operation Theaters meeting International Standards with Full-time Cardiac Surgery Team, digital Flat panel Cardiac Catheterization Lab, dedicated Cardiac Ambulance and 24 hours Wockhardt Emergency Heart Line

Accreditations and Associations

Wockhardt hospitals are accredited by the National Accreditation Board for Hospital and Healthcare providers, NABH. Wockhardt Hospitals has strategic alliances with Partners Harvard Medical International.

Wockhardt-HMI HIV/AIDS Education and Research Foundation (WHARF) is a non-government organization established to provide training to healthcare professionals and counselors in India .

The Hospital has joined hands with Needy Heart Foundation making pediatric cardiac surgeries for needy children available at a highly subsidized rate. It has collaboration with Rotary Pacemaker Foundation .

Preface

Every era presents unique challenges to healthcare organizations, and the start of the twenty-first century has been no different. Today there is unprecedented attention on the quality of health services. Never have healthcare practices been subject to so much public scrutiny, have providers been financially rewarded for complying with best practice standards, or have health insurers refused to pay for the care of patients who experience potentially avoidable complications. These developments are just a few of an ever-increasing number of reasons why quality management is strategically vital to the work of all healthcare professionals. The old ways of measuring and improving performance simply won't suffice; the issues are too complex, and the stakes are too high .

“Measurement is only the first step in quality management.”Measuring Key Operational parameters drives the Performance .

The operational parameters translates an organization's mission and strategy into a comprehensive set of performance measures that provides the framework for a strategic measurement and management system

Introduction to the study:

Although there is a wealth of research on operations management and strategic planning in hospitals, there is little research on the integration of these two issues. Hospital administrators are made accountable to improve the quality of services and to curb costs - two primary themes within the field of operations management. This leads us to think to what extent operations are considered within the strategic planning process and what impact it may have .

From bottlenecks to backlog, hospital industry faces the same business challenges. These problems exhaust resources; hinder improvement, and compromise customer satisfaction. But unlike other industries such as banking, transportation and food services, many health care leaders have failed to capitalize on one powerful, fundamental notion: smarter management is not costly management .

Operations management refers to a emphasis on the practices designed to monitor and manage all of the processes within the production and the distribution of products and services. The largest activity that operations management focuses on is service development and its efficiency. Managing purchases, monitoring inventory and preserving quality are the primary goals. Operations management often includes analyzing a company's internal processes, finding out the gaps and solutions to address the gaps in processes. Ultimately, the way that an organization carries out operations management depends upon the nature of products or services that it offers .

Over the past decades, there is a growing acknowledgement of quality and safety concerns in health care and the need to close the 'quality gap'. Many stakeholders, including health care providers (individual professionals and organizations such as hospitals or nursing homes), consumers, insurers/payers, health services researchers, quality improvement organizations and government entities, have become engaged in the movement towards improvement of health care quality and safety. Understanding progress in quality improvement is however hampered as there is insufficient ability to consistently assess the quality of health care and to compare performances among individual health care providers or organizations. The need for a level of standardization has led to the external endorsement of sets of operational indicators and their reporting for accountability. These operational indicators may pertain to a specific medical

condition or profession or an area of health care (e.g. mental health care, rehabilitation, nursing home or hospital care). Concerning hospital care, sets of operational indicators may be used by various institutions, including national regulatory boards, health care insurers etc. Besides quality improvement alone, the usage of operational indicators may facilitate consumers' choices for specific providers .

Health care delivery in many cases is far more complex than the execution of one or more activities by a single professional. More commonly, there are multiple health care providers, supporting staff and extensive technical equipment, sometimes at various locations, are involved. Therefore for this reason, health care delivery is more and more seen as a collection of operations, along with quality systems being developed for health care delivery processes .

Quality of health care is however no longer left exclusively on the responsibility of individual health care providers and organizations themselves. In addition to internal quality and safety management systems, external monitoring and regulation of health care performance and public reporting on the health care system level are implemented on a large scale .

This development is prompted for various reasons, which includes:

- The slow pace of improvement of quality of health care.
- The demand for accountability for the way in which collective resources are spent in the health care system, with on the other hand the need to ensure that quality is not adversely affected when health care utilization and costs are increasingly constrained.
- The increasing technical and logistic complexity of health care delivery.
- Health care insurers' needs on information for purchasing health services and for the provision of rewards or penalties for health care providers concerning quality, efficiency and innovation (financial or non-financial incentives). With respect to the latter, in many countries provider reimbursement has been (re)organized, in such a way that the provision of incentives is now permitted.
- The growing societal anxieties about the variation in quality of health care (including equity in access to high quality care)—anxieties that may further heighten as the results of more measurements reveal even more problems.

- Consumers' growing assertiveness and independence, with increasing needs to have access to standardized information to allow direct comparisons among health care providers with the aim to facilitate health care decision making

Rationale of the study:

An operational indicator is not a synonym for quality, but rather a proxy. As the term indicator suggests, operational indicators give a signal, and suggest a direction for research and actions by health care providers and policy makers. For consumers, it is useful direction for making choices on health care providers. However, in many cases considerable analysis, interpretation, and further investigation are required in order to understand properly what is happening, why, and what can be done to improve or sustain performance. Therefore operational indicators are meant to be a tool, screen or flag, to assist in decision-making, not a driver for decisions. In that sense, an indicator is distinguished from a criterion or variable, where there is a clear "one-to-one" causal relationship between the phenomenon being measured and the actual quality. In accordance with the dimensions of health care quality, operational indicators may pertain to the structure, processes or outcomes of health care. These indicators or parameters helps to measure the differences in comparisons among organizations or individual health care providers which can be attributed to quality and safety matters and do not result from measurement error, case mix differences or chance, these indicators need to be reliable, valid, relevant, and feasible in daily clinical practice. Health care performance indicators may pertain to the management of a specific condition (e.g. breast cancer), a specific professional (e.g. physical therapist), a specific branch of organizations (e.g. general hospitals, rehabilitation centres, mental health care), or a combination of those. According to their goals, these indicators may be used as single and isolated measures, in a set of diverse and independent measures, in a set of integrated and interdependent measures, or as a comprehensive program. Currently, operational indicators may reflect fixed, minimum or "threshold" standards (e.g. appropriate sterilization procedures for surgical instruments). These indicators aim to maximize quality within the constraints of the available resources, and being amenable to change.

Literature Review:

In current literatures operational parameters are defined in various ways. They are the set of activities aimed to empower employees, delight the customers at lowest costs and gain higher revenues. Continuous monitoring of the operational parameters helps to manage an effective and integrated system of quality development, improvement, maintenance at various functions and processes of organization and enable all the departments to perform at most economical level to satisfy the customers. It is an integrated approach to improve the overall effectiveness, competitiveness and structure of the organization .

The operational parameters includes : People management, Customer management, Supplier partnerships, Communication of improvement information, Customer satisfaction orientation and External interface management, Teamwork structures for improvement, Operational quality planning, Quality improvement measurement systems, Corporate quality culture, Management commitment, Role of the quality department, Training and education, Employee involvement, Quality data and reporting, Communication to improve quality, Customer satisfaction orientation.

Organizational performance can be measured in two major dimensions: operational performance and overall organizational performance. According to operational performance of an organization can be described in terms of internal operations of the organization such as: improved flexibility, improved delivery performance, cost and waste reduction and productivity improvement .

It is evident from the literature that TQM practices helps to boost organizational performance through cost reduction, prevention techniques and increased employees performance

Aims and Objective of the study:

- To study the key operational parameters of different departments of hospital
- To analyse gaps in the hospital operational processes
- To suggest recommendations to fill the gaps in operations of the hospital

Key research questions:

- What are the key operational parameters?
- What is the importance of analysing operational parameters?
- What impact does operational parameter have on patient satisfaction?

Methodology:

The study on Key operational parameters has been carried out in a 170 bedded tertiary care hospital. For the purpose of studying all the departments of hospital , each department was observed for 15 days. The data for present study was collected by observing the people, materials, processes and events in different departments. During the study standard operating procedures were referred to find out the gap in the processes. Every gap or issues observed in these departments were consolidated in the report and recommendations were given accordingly.

Type Of Study: Descriptive cross sectional and prospective study.

Location of Study: N.M. Virani Wockhardt Hospital, Rajkot

- 1) Medical Admin, Diagnosis & OPD: 6th Feb – 19th Feb
- 2) Marketing Department: 20th Feb – 5th March
- 3) Billing & Altius Department: 6th March – 19th March
- 4) Housekeeping & Security Department: 20th March – 2nd April
- 5) CSSD, OT , Cathlab & Laundry Department: 3rd April – 16th April

6) Materials Department: 17th April – 30th April

Duration of Study: 3 months (1st February 2017 to 30th April 2017)

Data Collection Technique: Observation method (recording the behavioral pattern of people, object and events)

Study Material: Standard operating procedure of different departments

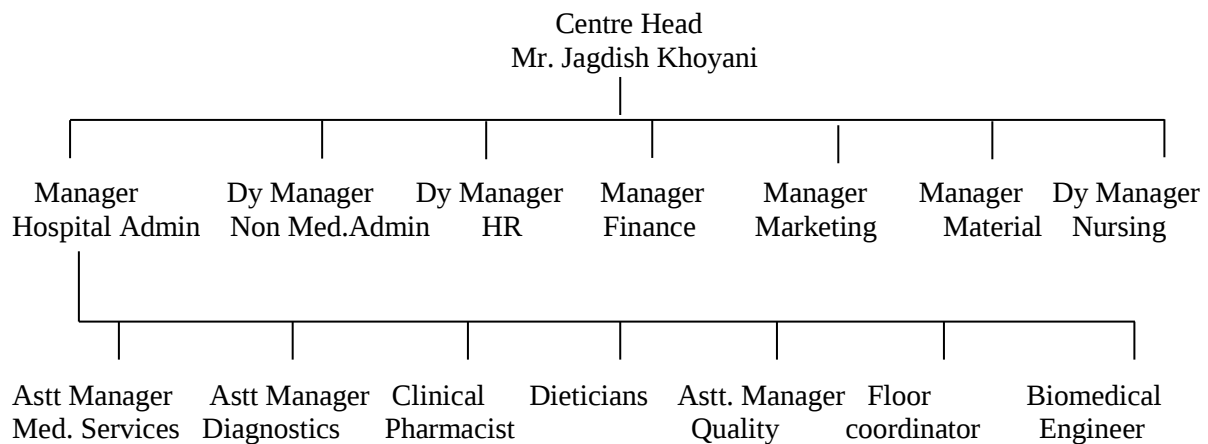
Limitations

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Findings of the Study:

1. Study of key operational parameters of Medical Admin, Diagnostics & OPD

Organization Structure:



Medical Admin:

Areas Observed/studied:

- Emergency Dept.
 - a) Provision/process of care
 - b) Equipments
 - c) Workload
 - d) Manpower
- IPD
 - a) Admission process
 - b) Provision/process for care
 - c) Discharge process
 - d) Equipments
 - e) Manpower
- ICUs, HDU
 - a) Provision/process for care
 - b) Quality assurance
 - c) Equipments
 - d) Manpower

Activities done for quality assurance & Patient Satisfaction:

- a) Patient File Audits
- b) Medication Error Reporting
- c) Biomedical waste Handling
- d) Hospital infection control measures

- e) Morning Facility Rounds

OPD: Observations:

- a) Scope of services
- b) Work load
- c) Day care services: Dialysis
- d) Health check-up services
- e) Provision/process of care
- f) Manpower

Diagnostic Services: Observations:

- a) Scope of services
- b) Work load
- c) Equipments
- d) Manpower

Bed Break up:

Total beds: 172

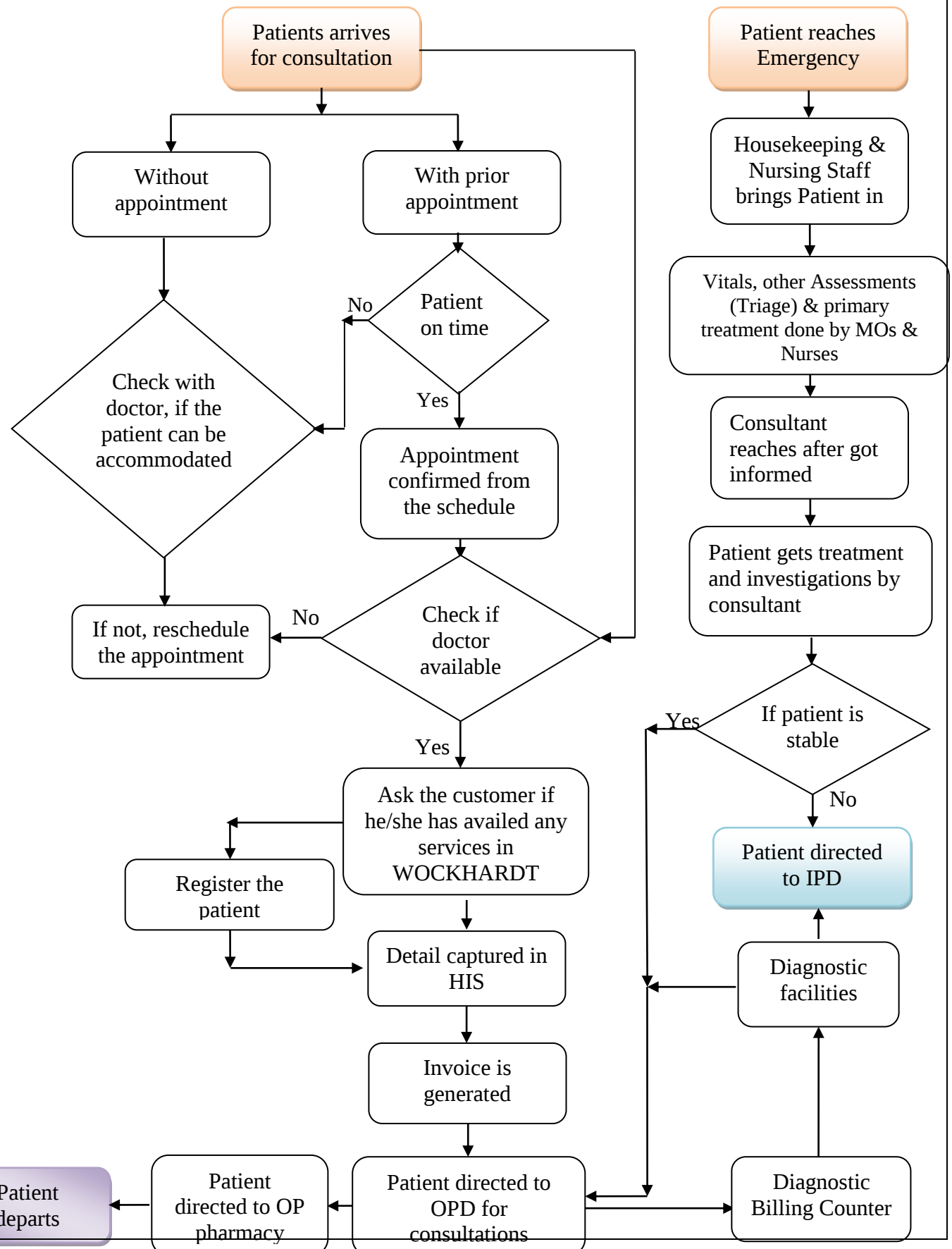
NS1	23
NS2	16
NS3 Chemo	7
CAG WARD	15
Multi Bed Level 1	29
HDU	6
Isolation	2
NICU/PICU	11
NS2 Cardio	10
CCU	9
SICU	10
Pediatrics Ward	10
MICU	24

Bed to Nurse Ratio:

a) ICUs: 1:2

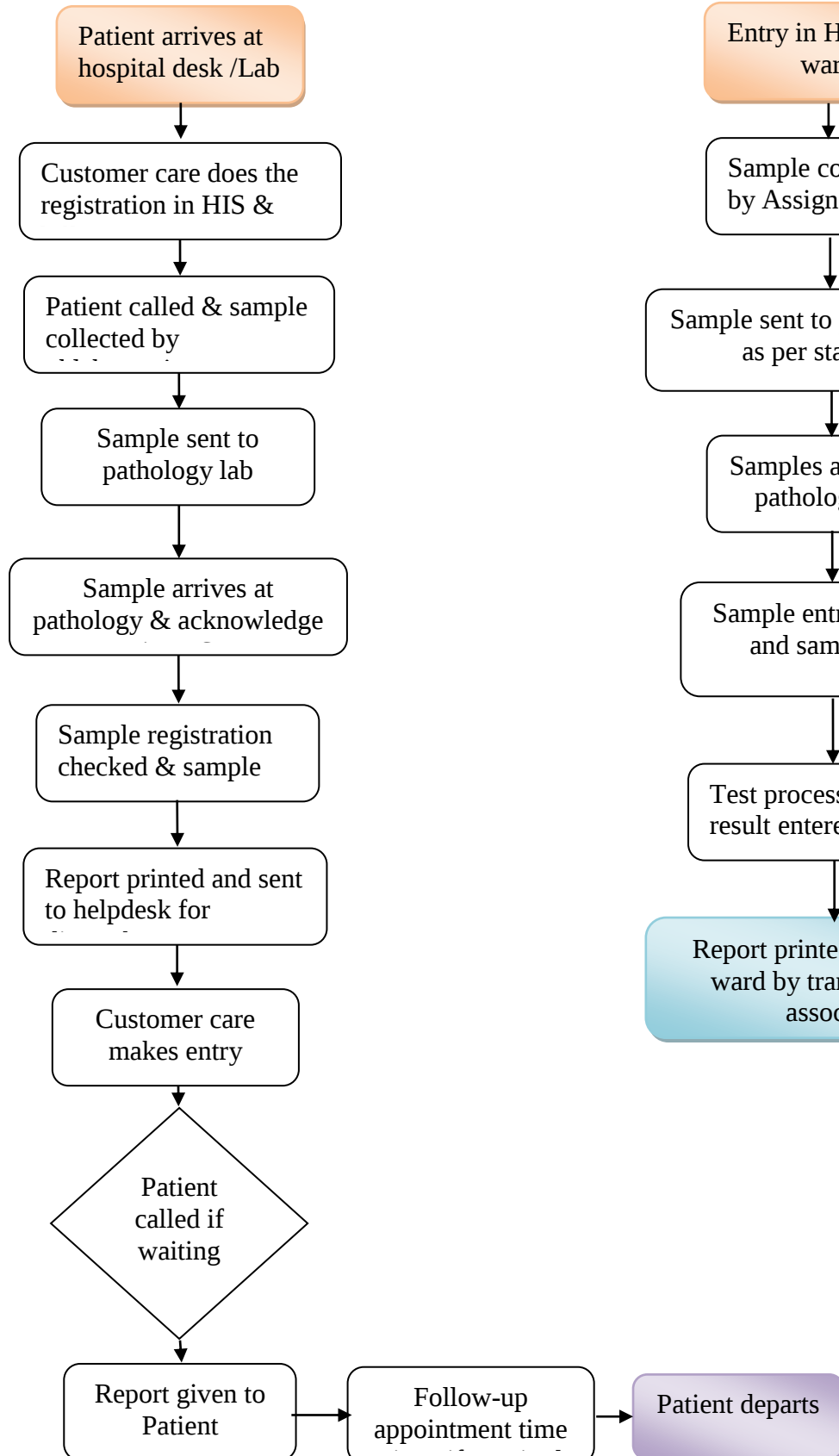
b) IPD: 6:1

Process Flow for OPD:

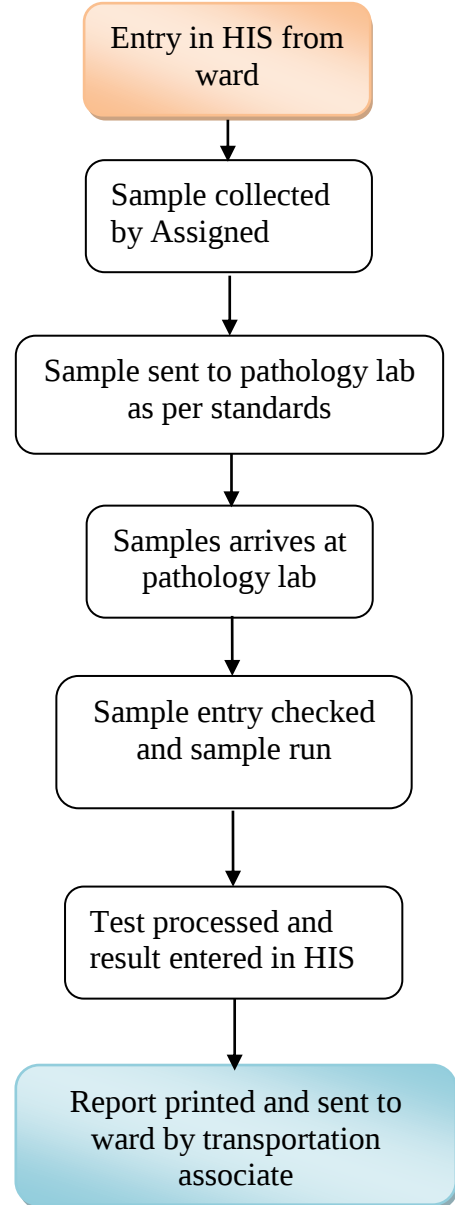


Process Flow for Diagnostics:

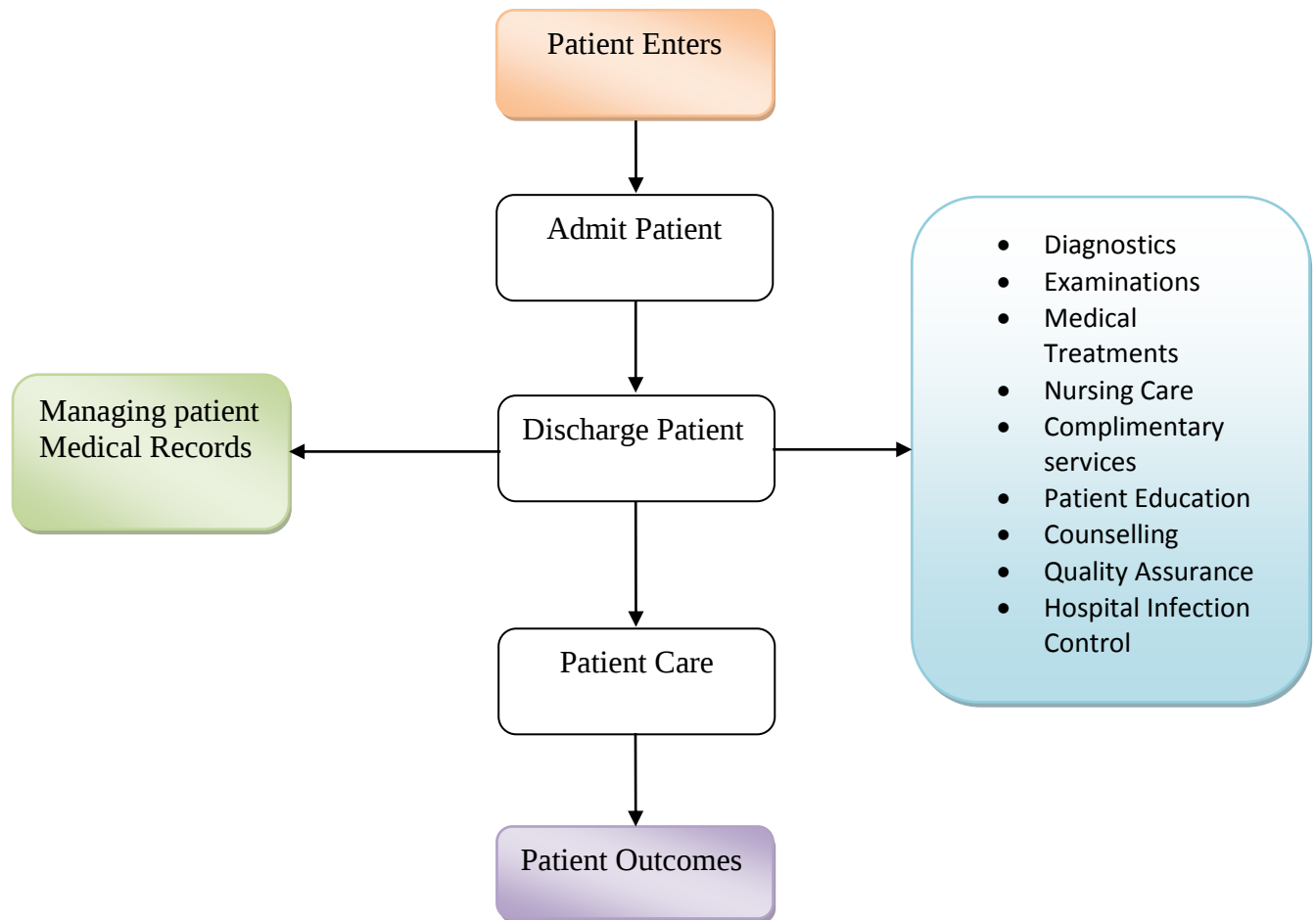
Outpatient Flow:



Inpatient Flow:



Patient Admittance Flowchart:



Issues:

- Medication errors are common like Transcription Errors, Error prone Abbreviations, Indent Errors, Dispense Errors, Reconciliation Errors, Prescription Errors, Documentation Errors & Audit for all discharge summaries are not done on regular basis
- Rush of follow-up patients(surgical & postoperative) in emergency department due to absence of procedure room in OPD
- In patient dissatisfaction due to exposure of external environment towards CT & MRI & Increased waiting time of Ultrasonography Reports
- Use of PPEs & practice of Hand Hygiene are not meeting to the standards in critical areas

Remedial Measures for Medication Errors:

- Consultants should be requested again and again to write the prescription in capital letters to avoid the Error Prone Abbreviations until they follow the system.
- Preferably consultant should themselves prescribe medicine, dosage and frequency in drug chart with legible hand writing.
If not, consultant should ensure that the Medical officer accompanying in rounds should note down the medicines properly and read back to consultant.
- The nurse attending doctors round should give proper handover and next duty nurse should take over. This transaction should be documented to avoid administration errors.
- Floor coordinator or any of administration staff should randomly audit the file, discharge summaries and medicine chart on routine basis, so that there are multiple levels of error identification.
- CNE (continuous Nursing Education programs) should be conducted on regular basis to avoid Reconciliation Errors, Documentation Errors, Wrong Root Administration Errors and Indent Errors
- Crucible practice can be used for drug administration by nurse. This practice would capture the attention of nurse who is preparing the unit dose.

Steps involved can be:

- Take a crucible
- Prepare unit dose in crucible
- Administer to the patient
- Come back and document in medical records.
- Repeat the process for next patient.

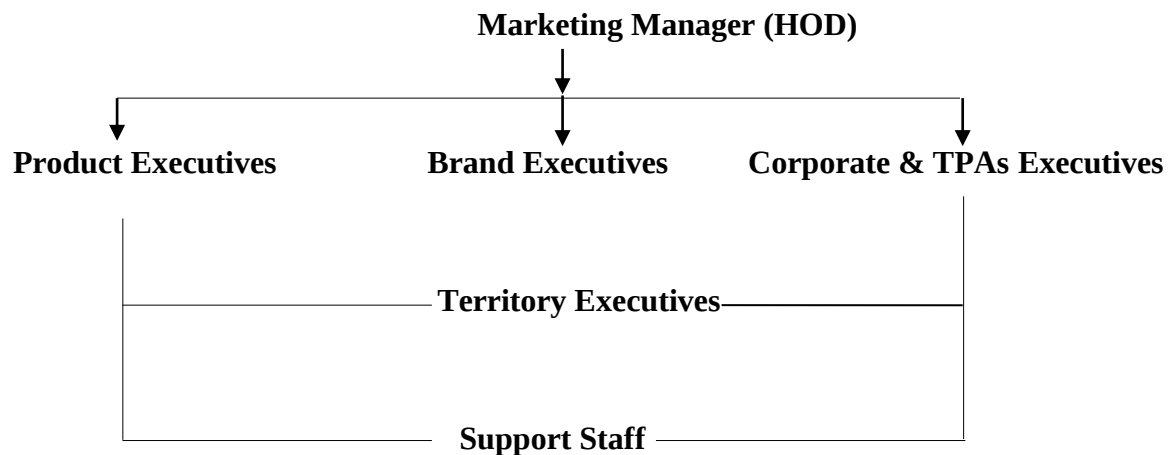
Every nursing station can have one or two crucibles.

Feasibility:

The cost of crucibles at every nursing station would be very less compared to a single medication error.

2. Study of key operational parameters of Marketing Department

Structure of Marketing Department:



Marketing Manager: Mr. Kamlesh Kataria

Team:

- Rajkot District: Mr. Mitul Vachhani (Asth. Manager)
- Junagadh & Amreli: Mr. Shoaib Munshi
- Jamnagar, Porbandar & Botad: Mr. Saurabh Vora
- Kutchh: Mr. Kamlesh Joshi
- Rajkot Periphery: Mr. Hiten Dave
- Rajkot City (All Products): Mr. Ravi Patel
- MMU: Mr. Vipul Dhebar (Asth. Manager) & Mr. Tushar Vyas – MMU & Rajkot City (MCH, Gynec, ENT)
- Corporate & TPA: Ms Meera Shukla
- Branding: Ms Vidhi Shah
- Health Checkups, OPD & Pharmacy: Mr. Kushal Sharma
- Collections: Mr. Divyesh Chandrani

Support Staff: Hetal Chawda, Kinjal Kalawadiya, Kartik Upadhyay

Areas Observed/studied:

1. Trade
2. Direct to Customer
3. Branding
4. Corporate & Insurance
5. Collections
6. Conversions

e) Trade :- B to B:

- Regular visits to all Doctors who are referring the patients
- Direct visits to doctors
- Conduction of CMEs with various group of doctors
- KYD (Know your doctor)
- Get To Gather (Round table meetings)

f) Direct to Customer:

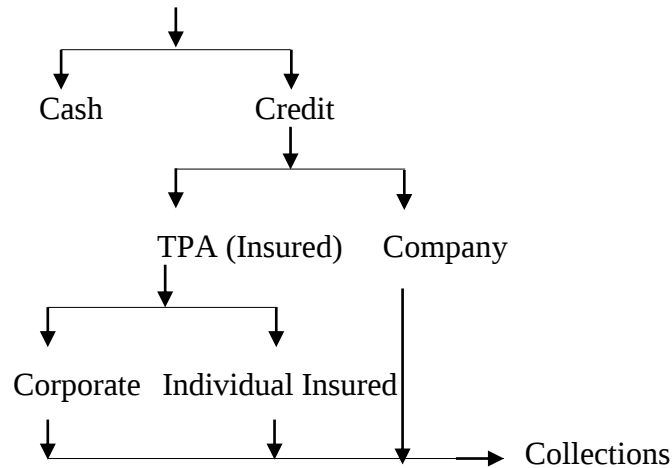
- f) Periphery OPDs
- g) In House Clinics
- h) Periphery Camps(Specialty Camps)
- i) PHCUs (Primary Health Checkups)
- j) Public Lectures in schools, colleges & other institutions.
- k) MMU Visits

g) Branding:

- Internal Branding
- External Branding
- Direct to customer
- Print media
- Press conferences
- Electronic Media
- Special Day celebrations
- Digital Marketing

h) Corporate & Insurance:

- Tie-ups with corporate houses in catchment area
- MOUs with Private & Govt. Companies as per their need & Business Terms



i) Collections/ Accounts receivable TAT

- Private sector: 30days
- Government sector: 60 days

Referral Tracking:

- Admission of Pt. → HIS → IP Module → Referred by
- Emergency register is maintained for referrals
- Identification of referrals during rounds by Floor Coordinator & Pt. Counsellor
- Dedicated Whatsapp group to identify the referrals during daily admissions

Finally obtained data from above said processes is documented by marketing executive for further assessments.

Conversions:

- UHIDs are created for the periphery OPD patients
- Data of periphery OPD Patients is given to assigned person (Patient counsellor) in front office
- The assigned person has to call the needy patients for further treatment in Wockhardt hospital.
- The converted patients are facilitated accordingly.

Activities done:

- Four days **Direct visits to the Doctors** in Rajkot city
- One day **Visit to Wankaner** with MMU
- One day **Visit to Jamnagar** for Periphery Specialty Camp
- **Prospective study** has been done to assess referrals with the sample size of 112 Inpatients

Areas to Focus:

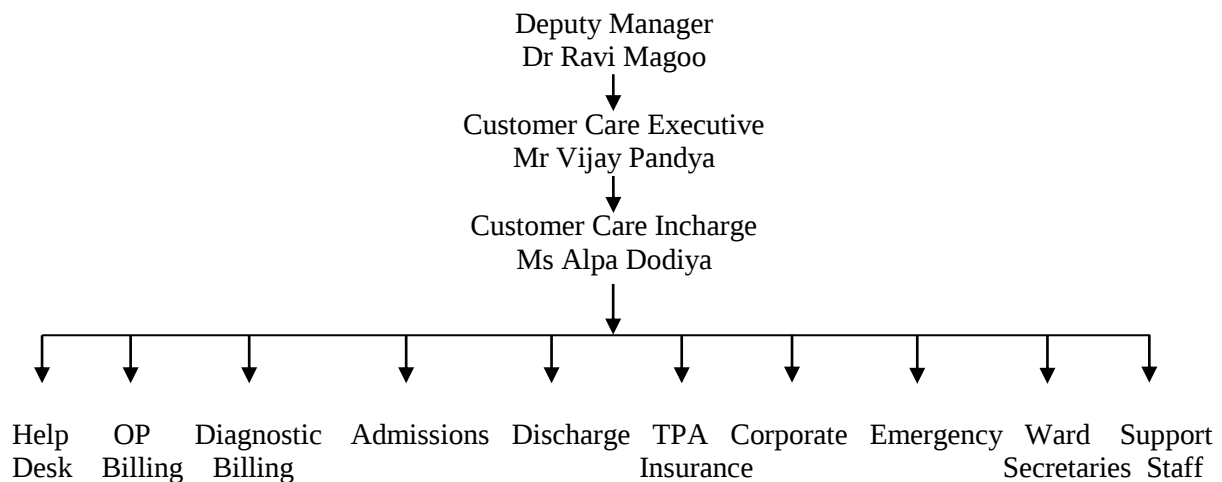
- Tracking of **conversions & Returns on investments** for camps, MMU visits & other activities are not up to the mark
- Unavailability of **Physician** at MMU during visits to potential areas
- Hospital assets are not utilised on **Sundays**
- Special days (women's day) celebrations are not external customer centric

Recommendations:

- For Tracking of conversions
 - Create UHID for all patients in camps, MMU visits & other activities.
 - Maintain a database of those patients with their UHID number.
 - Extract list of OPD, IPD & Emergency patients from HIMS.
 - Apply excel function such as VLOOKUP & HLOOKUP then connect both sheets
 - Calculate the total number of conversions
- Sunday PHCUs can be conducted for different corporate employees or other targeted population.

Study of key operational parameters of Billing & Altius Department

Structure of Customer Care (Billing) Department:



Support Staff:

- Endoscopy
- CT, MRI
- Cath Lab
- Lab
- Operator Room
- Govt. Scheme (MAA) Desk
- Health Check-up Desk

Man Power:	35
Total Desks:	12
Working shifts	03
TPA Empanelled:	29
Corporate Empanelled:	23

1. Help Desk

Functions:

- Advise user on appropriate action
- Inform management of recurring problems
- IPD Feedback data entry
- Yellow card preparation for admissions
- Dispensing of lab reports
- Maintaining the doctors attendance (previous day)
- Fixing the appointments on phone

2. OPD Billing Desk

Functions:

- Registration & Billing of New & Follow-up Out Patients
- Generation of Intermediate Bills to inform patients & Relatives
- Registration & Billing of CGHS, ESI and other insured & TPA patients
- OPD Analysis (OPD waiting time)

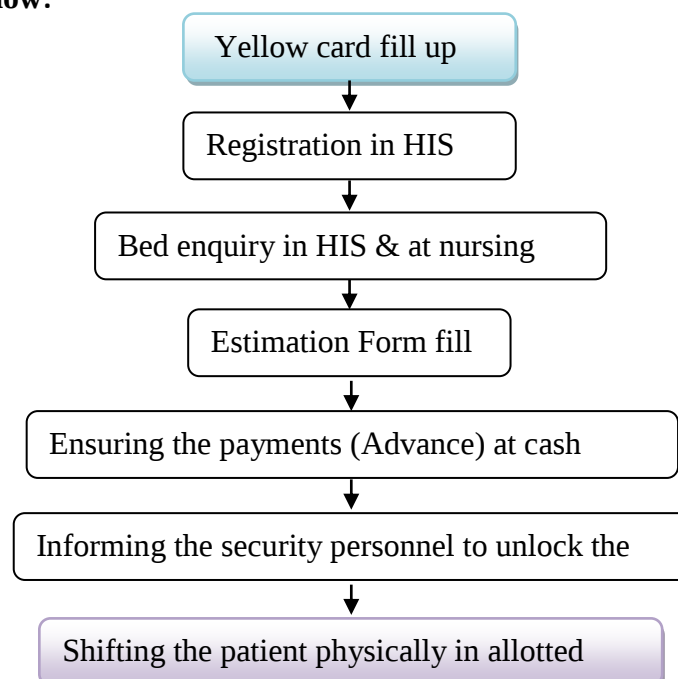
3. Diagnostic Billing Desk

Functions:

- Billing of all diagnostic procedures
- Billing of Physiotherapy
- Billing of Day Care procedures(Dialysis)
- OPD Billing in case of heavy traffic
- Registration of MMU Out-Patients (in Evening shift)

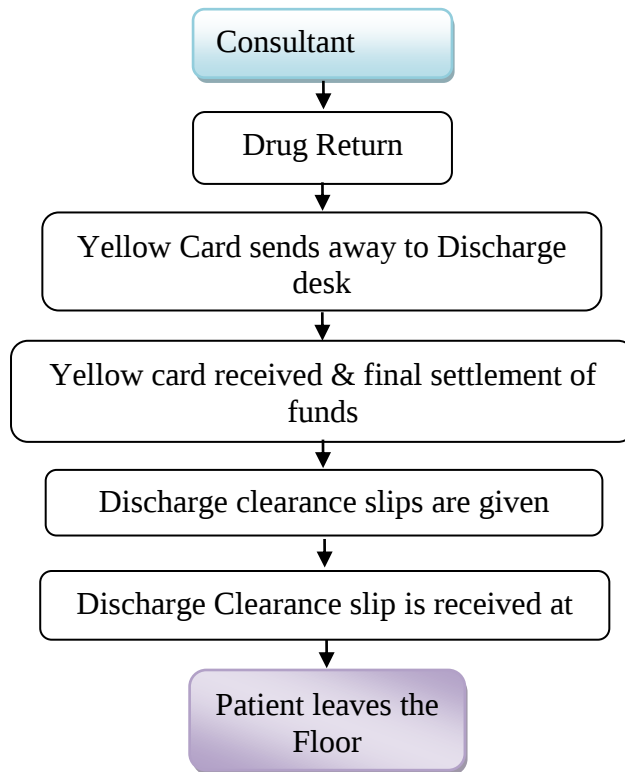
4. Admissions Desk

Process Flow:



1. Discharge Desk

Process Flow:



Responsibilities of staff at Discharge Desk:

- Billing staff should check the type of discharge (LAMA, Absconded Death or Normal) and follow the instructions accordingly.
- Billing staff should check Room Tariff, Bedside procedures, Doctors visit charges, Physiotherapy, Basic Hospital Charges and CSSD Charges before discharge.
- Billing staff has to cross match all the entries of charges in Patient record with the entries in HIS before discharge the patient.

5. TPA & Insurance

Responsibilities/ Functions:

- Billing staff has to cross check the approval amount with current hospital bill, if approved amount is less, then he has to take another approval from insurer or recover the balance amount from the patient.
- Billing staff has to keep all original reports of patient with them and provide duplicate copies to the patient. Original reports are to be submitted to the insurer later.

6. Corporate Desk

Responsibilities/ Functions:

- Ensure the eligibility of patient with corporate authorization letter(credit letter of the company)
- If hospital bill (Credit Bill) is more, then billing staff has to recover balance amount
- Billing staff has to keep authority letter & hospital bill (Discharge summary & diagnostic reports) signed by patient or his relatives for further recovery of debts from the concerned corporate house.

7. Ward Secretaries

Responsibilities/ Functions:

- Ward secretary has to enter Consultant visits, RMO visits, Diet charges, Bedside procedures, Physiotherapy procedures in HIS for each patient in IPD
- Intermediate bill generation and bedside distribution to every patient in IPD
- Physiotherapy audit has to be done by ward secretary

Areas to Focus:

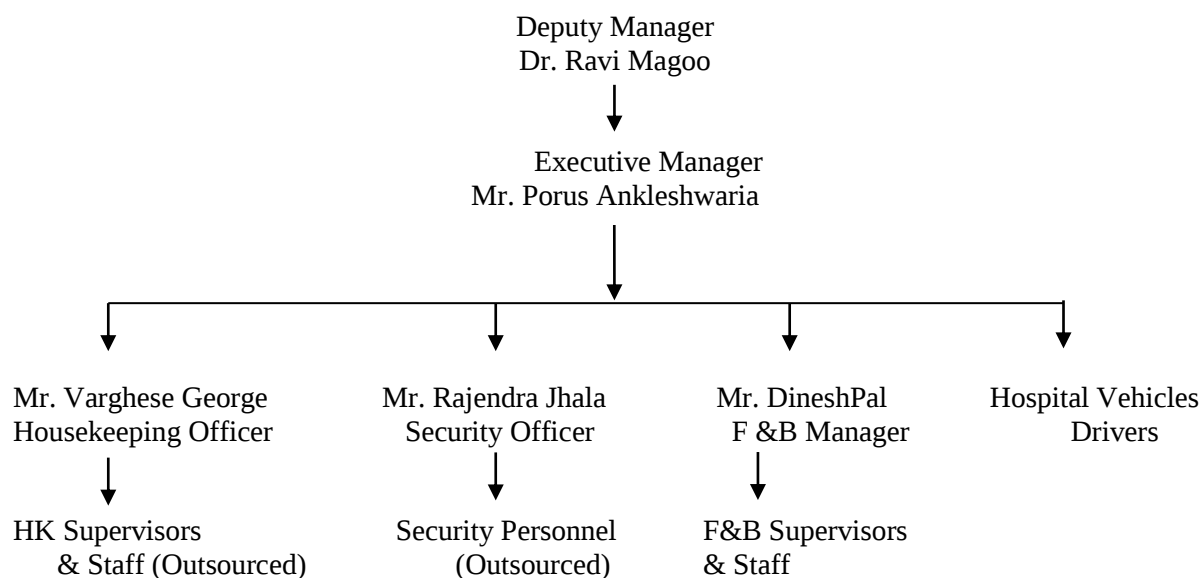
- Bedside procedures like RBS, catheterization etc are sometimes missed out to enter in yellow card as soon as the service is rendered
- Lack of coordination in-between Altius Nagpur & Customer care Rajkot for appointment system
- Work overload on ward secretary which leads to inefficiency in completing billing audit on daily basis
- Inventory of consumables at nursing stations are kept open, there is no use of lock and key to avoid pilferages.
- Huge amount of revenue is struck in outstanding accounts. Major outstanding account is ESIC (Western Railways is heavyweight). The staffs handling the Corporate & TPA queries are not skilled enough in medical terminologies.

Recommendations:

- Yellow card should be updated on real time basis.
- Nursing supervisor can enter the rendered services in HIS
- Storage area must be secured for consumables in wards to avoid pilferages
- TPA team should have at least one medical graduate to address the queries.

Study of key operational parameters of Housekeeping & Security Department

The Structure of Housekeeping & Security Department:



Total Manpower (HK): 135 (DTSS- 83 & Sanika-52) Working Shifts: - 3

Total Manpower Security: 23 (Secured Services) Working shifts: - 2

Housekeeping:-

Functions & Responsibilities:

- All cleaning & disinfection activities have to be carried out in patient, public and office areas within the hospital in regular intervals.
- Collection, segregation and transportation of dirty and infected linen as well as the distribution of clean linen to respective user departments
- Collection, segregation and transportation of biomedical waste
- Cleaning and disinfection of beds (after discharge), bed pans, urine pots, sputum mugs on regular intervals
- Assistance to nursing staff in transportation of patients and dead bodies
- Prompt response to ambulance call with supporting equipments like stretcher, wheel chair, oxygen cylinder etc.
- Exterminating bugs, pests through pest control

- Interior decoration and gardening to make the ambience pleasant
- Arranging rooms for conferencing, meetings and for guests in guest house

Deployment of manpower:

The deployment of manpower is according to Managerial judgment (Participative approach) and Work Study technique.

Checklists used:

- Checklist for discharge room/bed cleaning/terminal cleaning: Daily
- Checklist for Ambulance cleaning: Daily
- Checklist for Terrace cleaning: Monthly
- Checklist for RO plant/foul wash/cooler
- Checklist for room maintenance: Daily
- Checklist for cleaning task at night shift: Daily
- Checklist for discharge deluxe room : Daily
- Checklist for supervisors: Daily

Detergents/Chemicals:

Detergents and chemicals for cleaning purpose are used of Johnson & Johnson (Taski) and dilution ratio is followed according to manufacturer's norms

Security

Function & Responsibilities:

- Maintaining an orderly facility.
- Patrolling or surveillance of each area of hospital to ensure that conditions are normal and to serve as a deterrent to negative conduct
- Incident reporting and investigation (lost and found items, thefts etc)
- Parking and Traffic Control
- Reaction to internal and external emergencies like fire, riots, etc.
- Enforcement of Rules and Regulations
- Access control (Controlling the Movement of people, vehicles, lock n keys)
- Control on lock areas, employee locker
- Liaison with law enforcement and other government safety agencies (Reporting of MLCs, thefts etc)
- Checking and documenting of logged in materials with its invoice.
- Checking and documenting (returnable and non returnable gate pass) for outward movement of material from the hospital.

Deployment of manpower:

The deployment of manpower is according to Managerial judgement (Participative approach)

CCTV Surveillance:

Total no. Of CCTVs: 32

DVR: 02

Data Backup: 21 days

CCTV Locations					
Sr. no	Area/Floor	Department/Location	Yes	No	Recommendations
1	Ground Floor	Main Gate	√		
2		Emergency counter	√		
3		Emergency gate	√		
4		In Gate	√		
5		Emergency counter	√		
6		X-ray pt. waiting	√		
7		Cash Counter	√		
8		Diagnostic counter	√		
9		Near lift in lobby	√		
10		Front office Desk	√		
11		Out Gate	√		
12		Pharmacy	√		
13		OPD No 9	√		
14	1st Floor	CAG Counter	√		
15		Pediatric lobby	√		
16		OT Lobby	√		
17		Cath lab entrance	√		
18		Cath lab counter	√		
19		OT store	√		
20		CCU	√		
21		OT Entrance	√		
22	2nd Floor	NS-1 counter	√		
23		NS-2 counter	√		
24		ICU Doctor Room	√		
25		MICU Front Counter	√		
26		MICU Back counter	√		
27		ICU Counseling Room	√		Cover should be removed
	Hospital Surroundings				
28		Pass Gate	√		
29		Ambulance area	√		
30		Canteen	√		
31		Bike Parking	√		
32		Car Parking	√		
33	Doshi Bhawan Surroundings	Lady Hostel Entrance		☐	CCTVs should be installed
34		Outside Main Store		☐	CCTVs should be installed
35		CT/MRI		☐	CCTVs should be installed
36		Lab		☐	CCTVs should be installed
37		UPS Room & DG Area		☐	CCTVs should be installed
38		HK Desk & Biomedical		☐	CCTVs should be installed
39		Accounts Department		☐	CCTVs should be installed

Security Deployment					
Sr. No.	Floor	Department	Deployment		Remarks
1	Ground Floor	Emergency	1day		
2		Diagnostic counter	1day		Key Man
3		Security Office	1day	1night	For Couriers
4		Lift	1day	1night	Lift operator
5		Front office	1day		
6		Pass Gate	2day		
7		In gate	1day	1night	
8		Out gate	1day		
9		Parking	1day	1night	
10	1st Floor	Pediatric Ward	1day	1night	
11	2 nd Floor	MICU	1day	1night	
12		SICU	1day	1night	
13		CCU	1day	1night	
14	Circulating	all	1day	1night	

Improvement Areas:

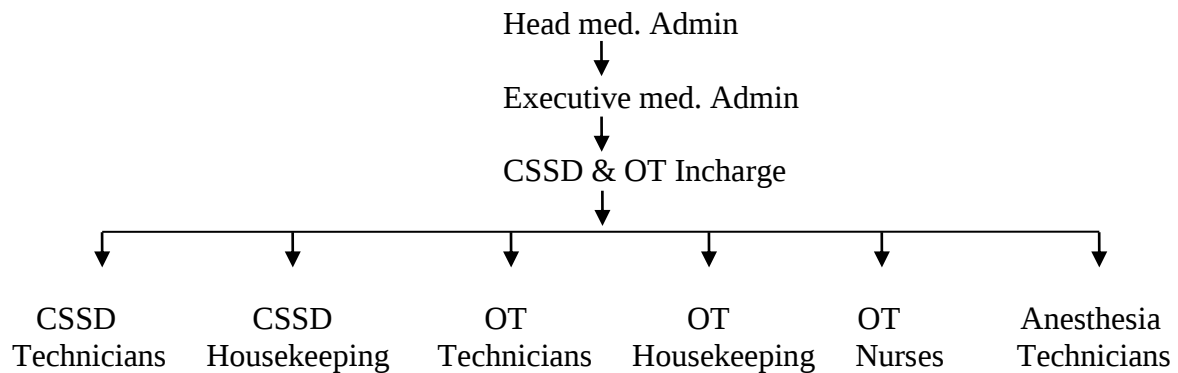
- Staff frisking is not practised
- There is no Security guard available to open the main entrance & the car door of the guests
- CCTV surveillance is lacking in major areas like surroundings and inside of Doshi Bhawan, DG area, CT/MRI, Lab, UPS Room, corridor at 2nd floor towards room no.264 &263 (Admin area), corridor towards Chemotherapy ward
- The picture quality & effectiveness of most of the CCTV cameras is very poor, cameras are unable to detect the face
- Regular monitoring of CCTV footages is not done by security personnel
- There is no specific or separate area for security office
- Diesel storage tank remains unlocked always.

Recommendations:

- All major areas should be covered under CCTV surveillance.
- Security officer should monitor the CCTV cameras daily(to ensure they are up and working properly)
- Staff frisking and guest baggage checking should be must to avoid pilferage
- Assign a guard to open the main entrance & the car door of patients and guests

Study of key operational parameters of CSSD, OT, Cathlab, Laundry Department

Structure of CSSD & OT Department:



CSSD:-

Man Power CSSD: 8 Technicians: 04 Working Shifts: 2
Housekeeping: 04

Zoning:

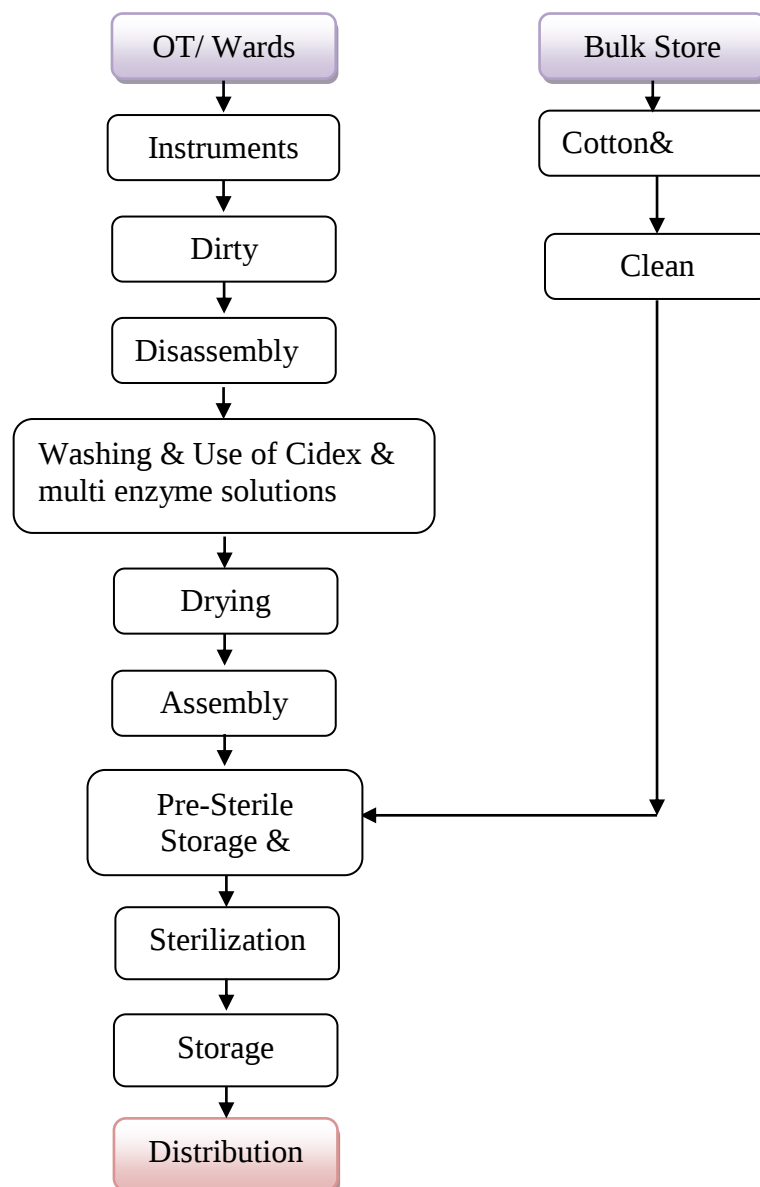
- Soiled Zone (collection & Washing area)
- Clean Zone (Packing area)
- Sterile Zone (Sterile Storage & distribution)

Sterilization Methods:

- Physical (Moist heat- Vacuum assisted autoclaving)
- Chemical (1.Liquid- Activated Glutaraldehyde, 2.Gaseous- Ethylene Oxide)

Items catered:

Procedure Set, rubber & plastic goods (rubber gloves, ventilator tubes, ambu bag, electric items, etc), Treatment & diagnostic sets & trays, Dressing items, OT linen & instruments, Implants & others

Process Flow CSSD:

Validating sterilization processes:

1. Validation of moist heat sterilization

- Temperature recording chart
- Color change indicator
- Biological Indicator- *G.stearothermophilus (1262)* is used

2. Validation of chemical sterilization

- Color change indicator
Which show whether these gases have penetrated in sufficient quantity at the prescribed temperature or not
- Biological Indicator
For Ethylene oxide- *Bacillus atrophaeus (1264)* is used.

3. Validation of functions of vacuum assisted sterilizer

- Bowie-Dick Test: To evaluate the efficacy of autoclave daily before it is put into service

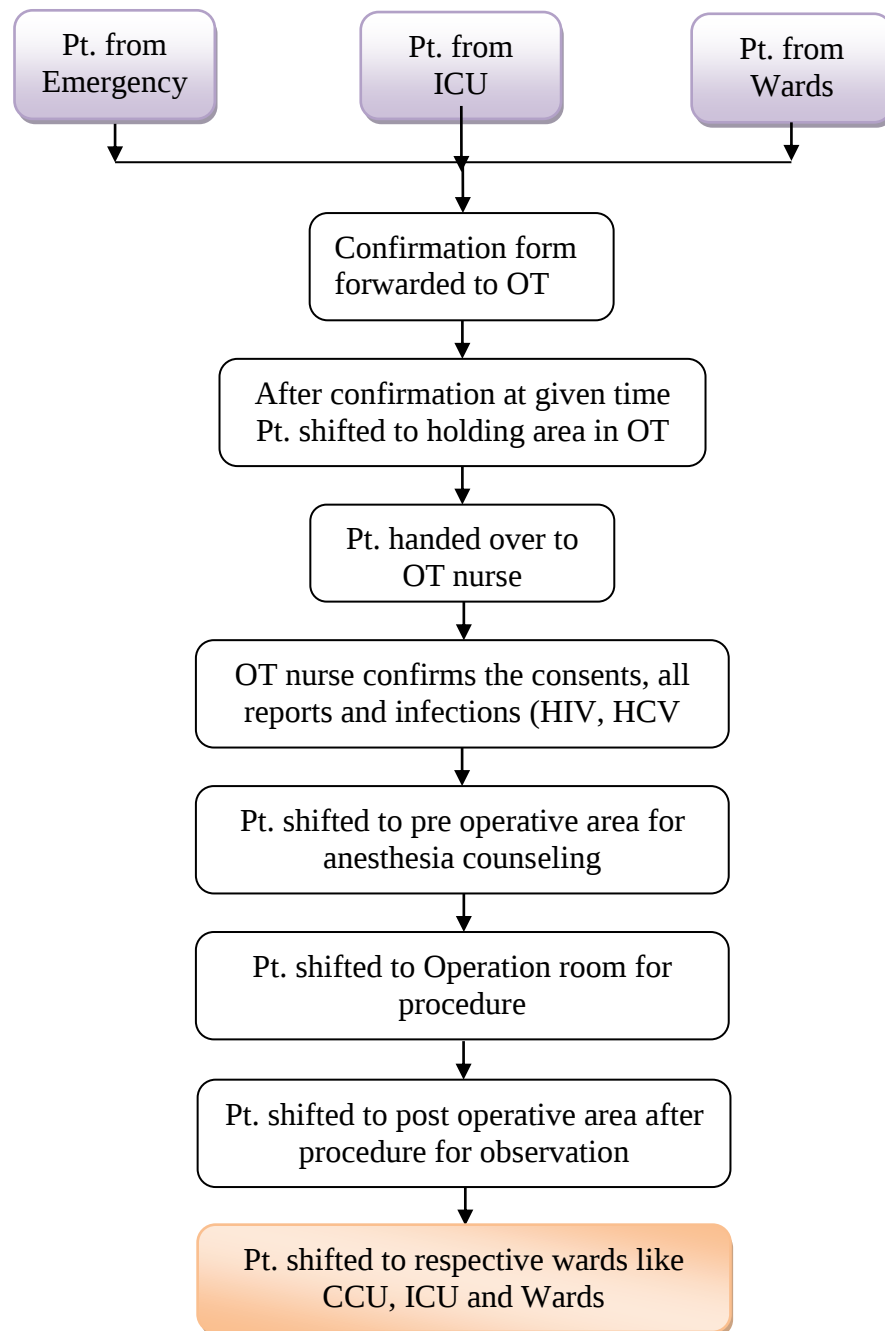
OPERATION ROOM:-

Man Power OT:	33	OT Technicians:	05	Working Shifts:	3
		Anesthesia technicians:	06		
		Housekeeping:	03		
		Nursing staff:	16		
		Sub Store staff:	03		

Number of OTs:	05	1. General Surgery
		2. Ortho General
		3. Joint Replacement
		4. Brain & Spine
		5. Cardiac Surgery

Workload Monthly: 260-300 surgeries per month

Process Flow of OT:



Zoning:

- **Protective Zone:** Patient holding area, male and female changing rooms, doctors lounge
- **Clean Zone:** Pre & Post op area, OT sub store, instrument area, scrub stations
- **Sterile Zone:** Operation Rooms
- **Dirty Zone:** Washing area of CSSD department is used as dirty utility area for OT

Cleaning Protocol:

- Cleaning between procedures – Disinfecting the OT table and other equipments
- Terminal cleaning – weekly once, where scrubbing of complete OT is done

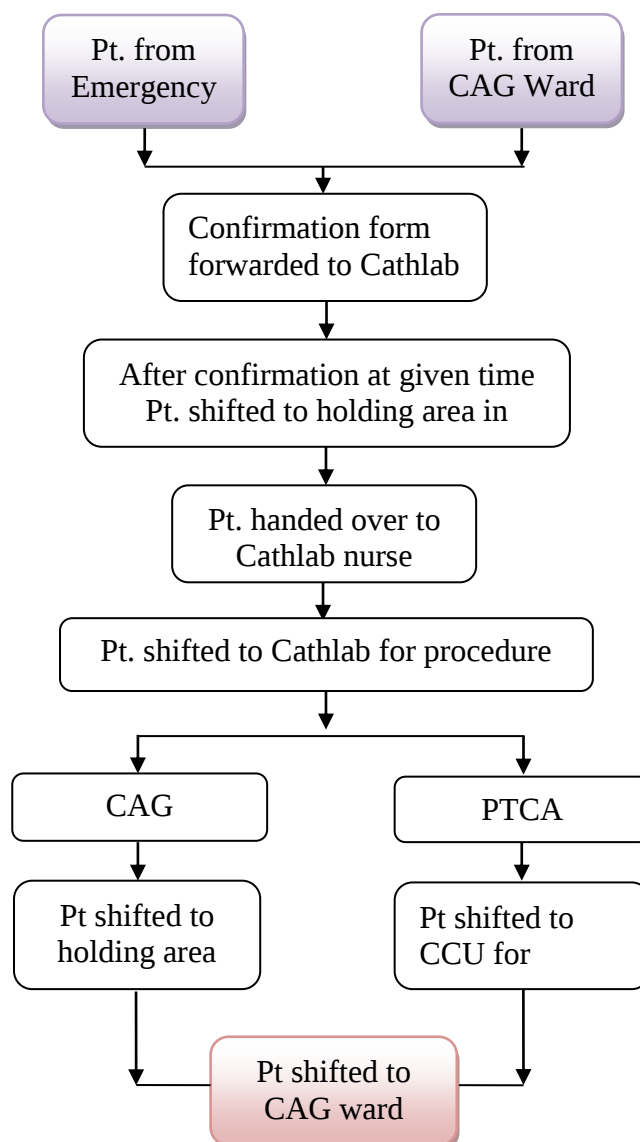
CATHETERISATION LAB:-**Manpower:**

1. Cathlabs technicians: 4
2. Nursing: 8

Working Shifts: 3

No of Cathlabs: 2

Average Procedures: 12-14 per day

Process flow:

LAUNDRY SERVICES:-

Manpower: 5

Working shifts: 2

Workload: 250 to 300 kg per day

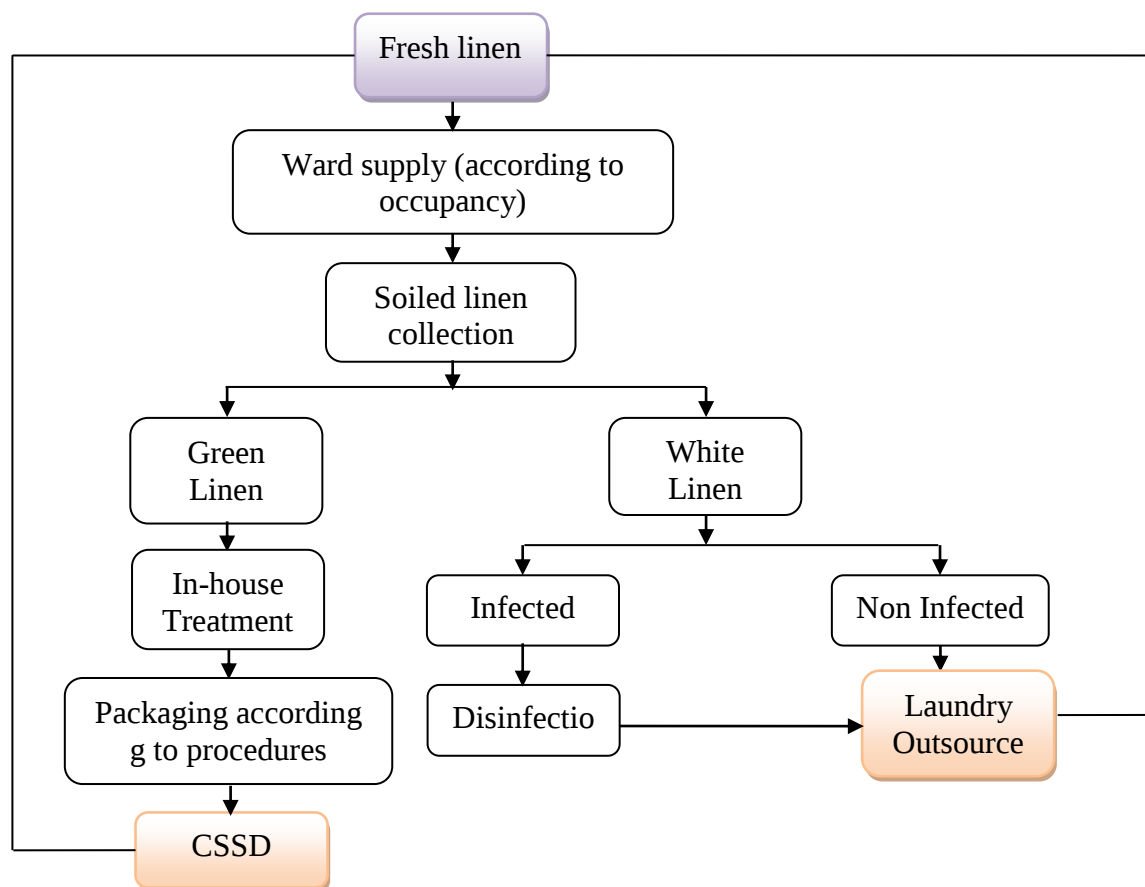
Equipments: One washer & dryer with capacity of 25kg

Washing cycle: 10 cycles per day

Linen Treatment:

- Green linen: Treated by in house laundry
- White linen: Treated by outsourced laundry

Process flow:



Areas to focus:

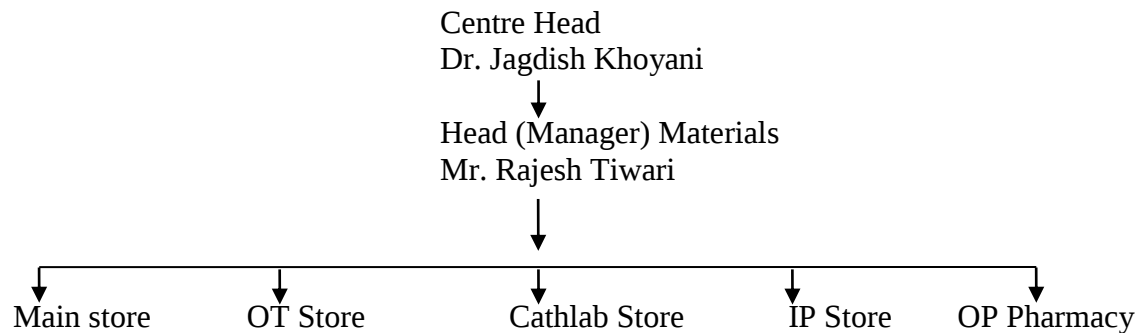
- It is frequently observed that Operating rooms are used to take rest by OT staff when they are not in use
- Time out drill is not practiced before procedures
- Operation consents are not signed by surgeons.
- Sterile zone of CSSD is used as common entrance from OT
- PPEs compliance is not up to the mark in washing area of CSSD
- OT & Cathlab procedures scheduling is not practiced
- Radiation protective measures (usage of lead aprons etc) are ignored in OT during procedures.
- Frequent breakdown of washer in laundry

Recommendations:

- Door of sterile zone in CSSD can be converted into window so that the entry of OT staff is restricted and it can be used only to receive sterile materials from CSSD to OT
- Conduct awareness program to increase use of PPEs and other safety compliance
- Most of the issues in OT and CSSD departments are due to ignorant behavior and casual attitude of staff. Hence behavior change communication initiatives can be taken to realize the importance of compliance related to quality, safety etc.
- OT & Cathlab procedure scheduling should be practiced.
- OT manager should ensure that operation and anesthesia consents should be completely filled before the patient is sent back to ward with the file.

Study of key operational parameters of Materials Department

Structure of Materials Department:



Total Manpower: 28

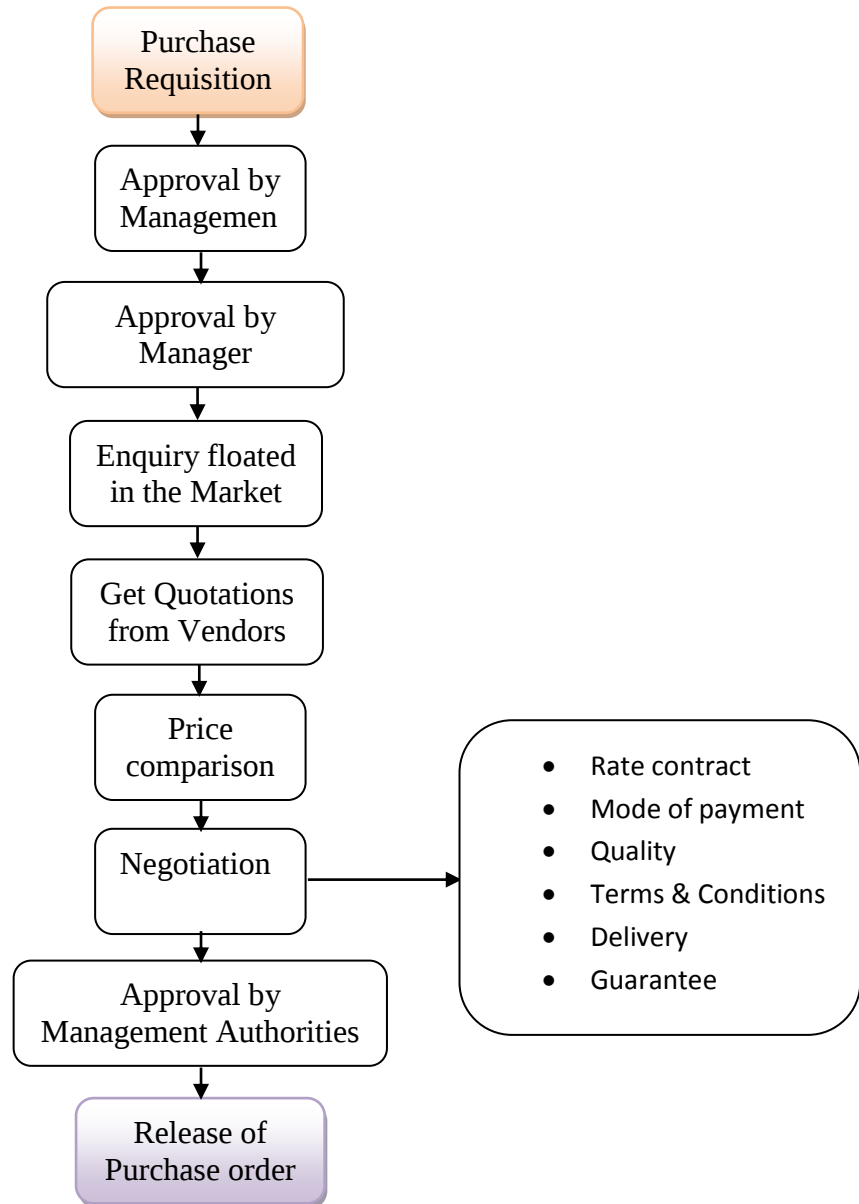
Working Shift: 3(OP & IP store)

- Main store: 7
- OT & Cathlab Store: 3
- IP store: 9
- OP Pharmacy: 9

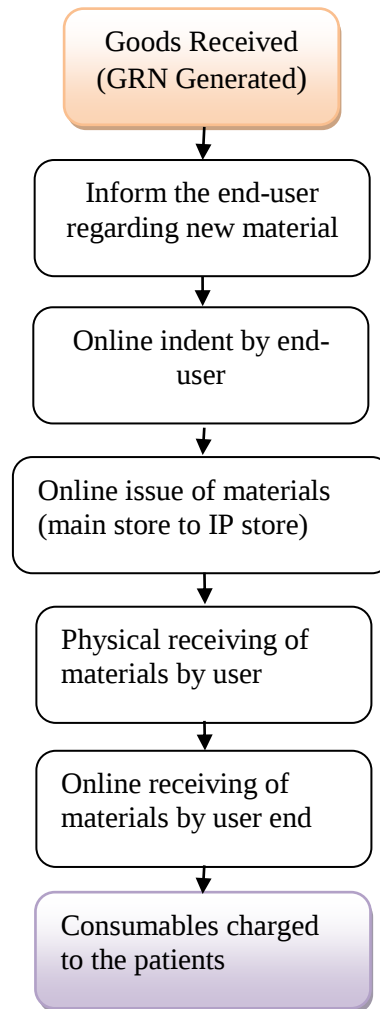
Scope of Services:

- Estimation of demand and purchasing
- Receiving and inspection
- Storage
- Inventory control
- Distribution
- Disposal

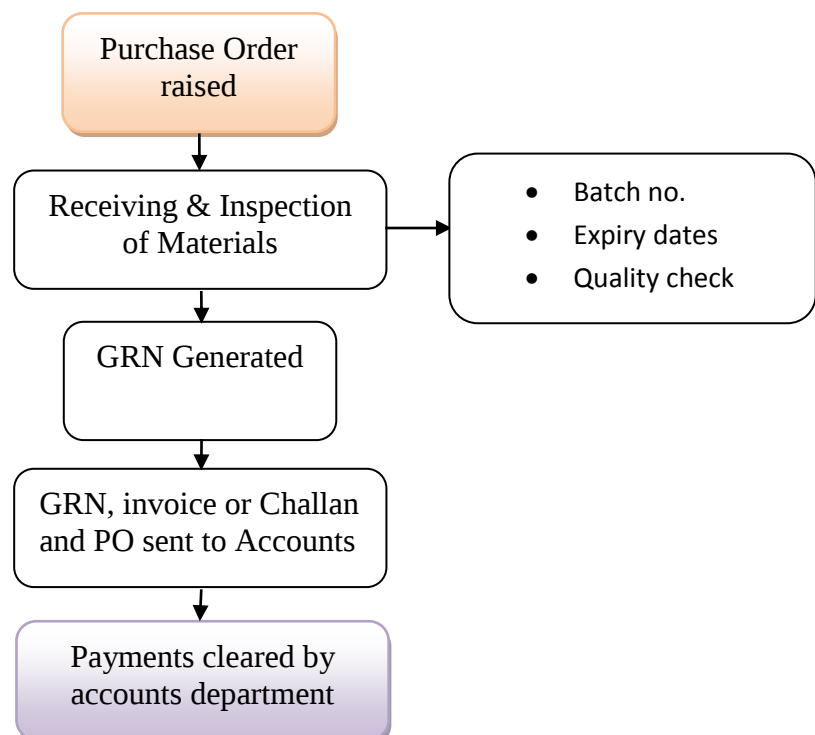
Process Flow Purchase:



Distribution Flow:



Payment Process:



Areas to focus:

- Stock audit is not done on regular basis in sub stores of different wards. It could be the major scope of pilferage. Once items are received by main store to sub store, there is no check over them
- Security personnel are not involved during receiving and inspection of materials.
- Frisking of staff is not practiced in main store.
- Often staff in material department work till late evening (9 to 9.30pm), which is the major reason of dissatisfaction at workplace.
- Indent issuing TAT is about 30 minutes.

Recommendations:

- Stock audit could be done on regular basis and stock should be matched with item list.
- Frisking should be practiced.
- Digitisation of inventory control, stock out tracking etc can be helpful
- IP store can be used as the centre for issuing of materials to the user departments.

Discussion:

Main aim of this study is to analyze the gaps in hospital processes and suggest a few recommendations to overcome them. Results of this study provide insights that processes play a significant role in accelerating operational performance of the hospital. On the basis of perceptions and experience of employees involved in the hospital operations it had been observed that effective implementation of TQM practices will enable the hospitals to become more productive and efficient. The hospital should leverage the findings of this research and take steps and initiatives to encourage the top management to relook at these four areas which needs improvement i.e., effective utilization of human resource, management structure, use of quality tools and techniques and considering the needs and wants of the customers. The present study has found that effective utilization of assets will enable the hospital to increase the efficiency of its system, reduce lead time to observe patients, standardized procedure, results and reports will help in effective diagnostics, waste and cost reduction, are helpful to handle more patients within the current resources. Therefore, it would be beneficial for the hospital to improve their existing processes & practices so as to greater results. Although the present research was conducted based standard operating procedures of different departments, due to time constraints only six departments were observed. It will also be interesting to involve employees to conduct more comprehensive results.

Conclusion:

The results of the pilot study will enable the program management office/team to refine the improvement effort and then roll it out in waves across the organization. As the rollout occurs, it is crucial that there should be consistency in the measurements used—and the messages communicated—to ensure that results across facilities can be compared fairly. Once the hospital is transformed, the system can find that it has developed a network of peers who can then codify their experiences and share ongoing discoveries about best practices. When such a carefully designed, purposeful approach is used then it is sure that the performance of the hospital will scale up.

Taking a few steps in operations excellence improvement program can be daunting. However, several immediate, tangible steps can help minimize future risks:

- Begin by rigorously assessing the baseline performance of the hospital and benchmarking the potential for improvement. Whenever possible, both internal and external benchmarks can be used .
- Set bold but reasonable aspirations (related to both performance and organizational health) for the improvement program and establish time frames to achieve them. A group can be assigned to oversee the project.
- Define the problem area and observe it for a certain period.
- They then roll the program out across other facilities. The key is to take these steps, expecting that some mistakes will be made along the way. But by learning from the mistakes and moving forward with the improvement program, it becomes possible to make steady progress toward a more financially sustainable, patient oriented, and physician-friendly hospital or health system.

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