

**Summer Training at
Max Super Specialty Hospital, New Delhi
(April - June, 2013)**

**WAITING TIME FOR CONSULTATION IN THE
OUTPATIENT DEPARTMENT STATUS**

**By
Navdeep Kaur**

**Under the guidance of
Mr. Laxam Swaroop Sharma**

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



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

**INSTITUTE OF HEALTH
MANAGEMENT RESEARCH**

1, Prabhu Dayal Marg
Sanganer Airport, JAIPUR - 302 011, INDIA
Tel. : 3924700, 2791431-32
Fax : 91-141-3924738
E-mail : iihmr@iihmr.org
URL : <http://www.iihmr.org>
Gram : HEALTHINST

CERTIFICATE

This is to certify that, Dr. Navdeep Kaur, a student of Post Graduate Diploma in Health and Hospital Management (PGDHM), from the Institute of Health Management and Research (IHMR), Jaipur has undergone summer training in Max Super Speciality Hospital, Shalimar Bagh, New Delhi from April 8th to June 6th, 2013.

During this period, the projects undertaken by her were:

1. Waiting time for consultation in the Outpatient Department-Status
2. Implementation of 5 'S' in the Report Dispatch Area
3. Assessment of medication administration in the Inpatient Department (BCMA- Bar Coded Medication Administration)
4. Assessment of safety, health and environment across various departments of MSSH

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

I wish her success in all her future endeavors.



Mr. Laxman Swaroop Sharma
Faculty and Mentor
IIHMR, Jaipur



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



Super Speciality Hospital

Max Super Speciality Hospital
FC-50, C & D Block Shalimar Bagh,
New Delhi-110088.
Phone: +91 11 49782222, 66422222
Fax: +91 11 49782233, 66422233

June 6, 2013

TO WHOM IT MAY CONCERN

This is to certify that **Dr. Navdeep Kaur** D/o **Mr. Ram Krishan** a student of PGDHM from IIHMR, Jaipur has successfully completed summer training from **April 8, 2013 to June 6, 2013** at Max Super Speciality Hospital, Shalimar Bagh, New Delhi.

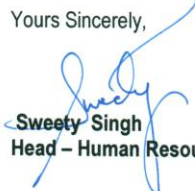
Following projects were undertaken by her:

1. Waiting time for consultation in outpatient department – status.
2. Assessment of Safety, Health and Environmental issues across various departments of MSSH.
3. Implementation of 5'S in report dispatch area.
4. Assessment of patient medication in Inpatient department (BCMA- Bar Coded Medication Administration)

During the period of her training with us, she was found punctual, hardworking and inquisitive.

We wish her every success in life.

Yours Sincerely,


Sweety Singh
Head – Human Resources

Max Healthcare Institute Limited

Regd. Office: Max House, Okhla - III, New Delhi - 110020, Phone: +91 11 41612123, Fax: +91 11 41612155
www.maxhealthcare.in

ACKNOWLEDGMENT

I take this opportunity to express my gratitude to the people who have been instrumental in the successful completion of this project

I show my greatest regard to my mentor Mr. **Laxman Swaroop Sharma**(Assistant Professor, IIHMR, Jaipur) for helping me out and guiding me during my summer training.

I would like to express my deepest gratitude to Sr. Manager Quality, **Mr. Bharat Laroyia** at Max Healthcare, Shalimarbagh, New Delhi for his excellent guidance, patience and providing great opportunity to work. I would like to extend my sincere thanks to **Dr. Ajjju Agnothri** (HOD, Blood Bank) who always guided me in difficult times of my work.

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ABBREVIATIONS

IP	Inpatient
OPD	Outpatient department
CPRS	Computerized patient record system
GDA	General Duty assistant
HIS	Hospital information system
TPA	Third party administrator
PCC	Patient care coordinator
PCE	Patient care executive
TCEQ	Total Customer Experience Questionnaire
EWS	Economically weaker section

HOSPITAL PROFILE

Max Super Speciality Hospital, Shalimar Bagh (MSSH) is a multi-speciality hospital, owned and operated by Max Healthcare Institute Limited (MHIL).

Designed by internationally renowned architect Mr. Richard Wood and constructed in conformity with globally accepted standards for hospitals, MSSH covers approximately 2 lakh 98 sq. ft. spread over 12 floors. Max Healthcare now extends its personalised service to the people of Shalimar Bagh. This Super Speciality Hospital caters to the healthcare requirements of North, North-West Delhi & Eastern parts of Haryana and is backed by state-of-the-art medical equipments along with emergency & intensive care infrastructure.

Max Super Speciality Hospital, Shalimar Bagh is a centrally air-conditioned hospital with a total bed capacity of 300 beds. The hospital is designed to provide highest level of professional expertise and world class care in Comprehensive Cardiac Sciences, Minimal Access, Metabolic & Bariatric Surgery, Neurosciences, Orthopaedics & Joint Replacement, Trauma & Critical Care, Urological Services and all Support Specialties.

➤ **Scope and Facilities**

- OPD
- Emergency
- Trauma & Critical Care
- Inpatient Services
- Preventive Health, Pre-employment health & Pre-insurance health check-ups
- Laboratory and Diagnostics
- Pharmacy
- Support Services

Max Hospital, Shalimar Bagh is built on the strong foundation providing services in aforesaid departments.

All of these departments have separate scope of services & policies related to patient care. These form the basic working guidelines for the hospital which is under the aegis of vision & mission of Max Healthcare.

Out Patient Services

MSSH, Shalimar Bagh is equipped to render complete services for treatment of emergency, acute, routine and follow up care for patients of all age groups. The outpatient services are provided in the following specialities:

1. Aesthetic & Reconstructive Plastic Surgery
2. Minimally Access Metabolic & Bariatric Surgery
3. Cardiology
4. CTVS
5. Dermatology
6. Dentistry
7. Dietetics
8. Endocrinology
9. ENT
10. Gastroenterology
11. General surgery
12. Gastro-Intestinal Surgery
13. Gynae MAS
14. Paediatric Surgery
15. Internal Medicine
16. Mental Health & Behavioural Sciences
17. Neurosciences
18. Nephrology
19. Obstetrics & Gynaecology
20. Ophthalmology
21. Orthopaedics
22. Paediatrics & Neonatology
23. Paediatric Surgery
24. Podiatry
25. Respiratory Medicine
26. Physiotherapy & Rehabilitation

27. Urology

28. Vascular Surgery

29. Preventive Health Programme

➤ **Emergency**

The Emergency Department specializes in focusing on triaging, diagnosing, providing primary care and treatment of acute illnesses and injuries that require immediate medical attention.

The emergency department also provides the ambulance services for transporting critically ill patients or stable patients who require transportation. We have internationally trained Physicians in the field of Emergency medicine.

In patient services department

The IPD provides

- The detailed pre-procedure needs and their completion and coordination with the diagnostics to arrive at diagnosis and completion of treatment regimens
- The comprehensive care in the preoperative, postoperative and follow up care.
- The rehabilitative and nutritional regimen and their scientific amalgamation as per the progressive patient care need.

➤ **Pharmacy**

The pharmacy department provides expertise in proper storage, stocking, dispensing and facilitating the administration of medication. The pharmacy ensures round the clock availability of medication for the out patients as well as the inpatients of the hospital.

Preventive Health& Pre- employment medical check- up

Preventive Health Programme is committed to the old adage “prevention is better than cure”.

The preventive health programme comprises of a comprehensive set of tests, which have been specially designed keeping the health needs of people in mind.

The Diagnostic services have state of the art technology, equipment, highest level of environmental controls and fully trained and experienced staff who are dedicated to the care of patients.

➤ **Diagnostics**

▪ **Laboratory**

- Biochemistry
- Haematology
- Immunology
- Microbiology
- Cytology
- Frozen Section
- Clinical Pathology

▪ **Radiology & Imaging Services**

- X-Ray
- CT Scan
- Ultrasound
- Mammography
- MRI
- Fluoroscopy

▪ **Cardiology**

- ECG
- TMT

- Echocardiography
- Stress Echocardiography
- Holter

- **Nuclear Medicine**

- Bone Scan
- Thyroid Scan
- Renal (DTPA/DMSA) Scan
- Stress Thallium
- RBC scan
- Meckal Scan
- HYDA Scan

- **Neurology**

- EEG
- EMG
- NCV

- **Gastroenterology**

- ERCP
- Endoscopy

- **Pulmonology**

- Bronchoscopy
- Sleep Study
- PFT

- **Urology**

- Urodynamics

➤ **Support Services:**

- Front office
- IP Billing

- Food and Beverages
- Housekeeping
- Medical Records Department
- Engineering
- Biomedical Engineering
- Security
- HR & Training
- Administration
- IT
- LSS
- Commercial
- Accounts
- Marketing

Facility Layout

- The Floor wise Distribution of MSSH, Shalimar Bagh:

Floor	Patient Care Services
Lower Basement	Engineering Installations (LT Panel, Chillers), Engineering Office, Local Sub Store
Upper Basement	IP Pharmacy, Housekeeping Store ,CSSD, Call Centre, Bio Medical Engineering Office, Security Control Room, Uniform & Linen Room, Staff Change Rooms, Mortuary, Bio Medical Waste Room, IT Server Room, MRD
Ground Floor	OPD/Preventive Health Program, OP Registration, IP Admission & Discharge, MRI, CT, Fluoroscopy,X-ray,Ultrasound,Mammography, Emergency Resuscitation & Observation, Emergency O.T, Nuclear Medicine, CCU, ECG, TMT,ECHO, Holter, EEG, EMG,Phlebotomy, Plaster & Treatment Room, Visitor Cafeteria, OP Pharmacy
First Floor	O.T Complex (6 O.T's), Pre-post O.T, TSSU, O.T Store, Labour Room, Caesarian O.T, Nursery & Pre-post Labour, Ambulatory Care (Day Care Room , Day Care O.T, Endoscopy Suite, Lithotripsy), Cath Lab, Pre-post Cath, CTVS ICU
Second Floor	MICU, SICU, Neuro ICU, PICU, NICU, HDU, Blood Bank, Dialysis Unit, ICU Patient Attendant Waiting Area
Third Floor	Physiotherapy, Lab, Doctors Lounge, Kitchen, Staff Cafeteria
Fourth Floor	Administrative Offices, HDU, IP Rooms
Fifth – Ninth Floor	IP Rooms

Bed Strength and Distribution Area wise

MSSH, Shalimar Bagh has 150 operational beds as under:

Ground Floor	4
Second Floor	26
Fifth Floor	41
Sixth Floor	41
Seventh Floor	38
Total	150

Bed Distribution Category wise

Category	Ground	Second	Fifth	Sixth	Seventh
Economy Beds	0	0	8	8	8
Single Room	0	0	13	13	10
Double Room	0	0	20	20	20
ACCU	4	0	0	0	0
CTVS ICU	0	4	0	0	0
MICU	0	10	0	0	0
SICU	0	4	0	0	0
PICU	0	4	0	0	0
NICU	0	4	0	0	0
Total	4	26	41	41	38

Hospital will be fully operational with 288 beds as under –

Ground Floor	8
First Floor	20
Second Floor	55
Fourth Floor	29
Fifth Floor	41
Sixth Floor	41
Seventh Floor	41
Eighth Floor	41
Ninth Floor	12
Total	288

Bed Distribution Category wise

Category	Floor								
	Gnd	1 st	2 nd	4 th	5 th	6 th	7 th	8 th	9 th
Economy Beds	0	0	0	10	8	8	8	8	0
Double Room	0	0	0	8	20	20	20	20	0
Single Room	0	0	0	2	13	13	13	13	0
Classic Deluxe	0	0	0	0	0	0	0	0	8
VIP Suite	0	0	0	0	0	0	0	0	4
HDU	0	0	8	9	0	0	0	0	0
PICU	0	0	8	0	0	0	0	0	0
NICU	0	0	13	0	0	0	0	0	0
SICU	0	0	8	0	0	0	0	0	0
MICU	0	0	10	0	0	0	0	0	0
Neuro ICU	0	0	8	0	0	0	0	0	0
CTVS	0	8	0	0	0	0	0	0	0
CCU	8	0	0	0	0	0	0	0	0
Daycare	0	12	0	0	0	0	0	0	0
Total	8	20	55	29	41	41	41	41	12

- The defined services are prominently displayed at various places so that they are easily visible to the patients entering the organization.

- Services not included in the scope of MSSH, Shalimar Bagh are:
 - Radiation Oncology
 - Bone Densitometry.
 - Treatment of major burns patients
 - Major Transplants (Liver, Kidney)
 - Treatment of Infectious Diseases

Vision – Mission Model

Passion – build trust

Vision- deliver international class health care with a total service focus, by creating an institution committed to the highest standards of medical and service excellence ,patient care, scientific knowledge ,research and medical education.

Mission –

- Create exceptional standards of medical and service excellence
- Care provider of first choice
- Principal choice for physicians
- Ethical practices
- Create international centre of excellence for select super specialities.
- Safety- patient, customer, staff.

Out Patient Department

Front office and outpatient department is the mirror of the hospital, which reflects the functioning of the hospital being the first point of contact between the patient and the hospital staff.

Patients visit the OPD for various purposes, like consultation, day care treatment; investigation, referral, admission and post discharge follow up. Not only for treatment but also for preventing and promotive services like, health check up, Immunisation, Physiotherapy and so on.

Front office at MSSH is composed of PHP, CALL CENTRE, IP Admission and Billing, Report collection along with OPD

The importance of front office and OPD lies in the following:

- Front office is the first point of contact with the hospital and the entry point into the healthcare delivery system.
- It is an inseparable link in the hierarchical chain of healthcare facilities
- It contributes to the reduction in Morbidity and Mortality
- It's a stepping stone for health promotion and disease prevention
- It facilitates the admission process to inpatient wards.
- It acts as a filter for inpatient admissions, ensuring that only those patients are admitted who are most likely to benefit from such care.
- It's the "shop window" of the hospital."

Functions of OPD and front office:

- Early diagnosis, curative, preventive and rehabilitative care.
- Effective treatment on ambulatory service.
- Screening for admission to hospital.
- Follow up care and care after discharge.
- Rendering of preventive health care.
- Admission and discharge of in-patients.

OPD and front office influences the patient's sensitivity to the hospital and patients also look for hassle free and quick services, therefore it is essential to ensure that front office services provide an excellent experience for customers and this is only possible with optimum utility of the resources.

RATIONALE OF THE STUDY

Outpatient service is the most important service provided by all the hospitals as it is the point of contact between a hospital and the community. Many patients gain their first impression of the hospital from the outpatient department.

Successful and efficient management of OPD can lighten the burden on patient ward. Increasing competition in health care sector has made it necessary to improve satisfaction of patient and staff, and front office becomes a key area which can make or mars the reputation of the hospital.

In today's fast growing world, customer is looking for hassle free and quick services. Meeting the customer requirement by the medical institutes with its limited resources is the

challenge. Therefore, periodical study of process and services of front office is required for continuous improvement to achieve service excellence.

The study was conducted at the front office of Max Super Specialty hospital, Shalimar Bagh.

Therefore it was felt that there is a need to study the processes, functioning of all departments, identify the customer related issues at various contact points and analyze the finding. The finding of the study would serve as guideline for information for future improvement, modification in the knowledge, processes, use of facility and optimum utilization of human and material resources.

OPD services in hospital are having queuing and waiting time problems.

Various factors affecting the services of OPD are:-

- Arrival pattern or input rate of patient at the central waiting area
- Service time of various clinics of OPD

Since the number of consumers is large and the treatment should be given within a day the bottlenecks w.r.t. the same must be identified and dealt with.

OBJECTIVES

The study was undertaken with the following objectives:

1. To determine waiting time for consultation in OPD
2. To determine flow of patient in the OPD
3. To determine delays from arrival till the time patient reaches front office desk
4. To understand the bottlenecks in the patient flow w.r.t. shortage of OPD chambers, non availability of consultant and inadequate training of PCC's(patient care coordinator)
5. To analyze the collected information and suggest recommendations for the same

REVIEW OF LITERATURE

A study on out patient satisfaction at a super speciality hospital in India

Dr. S. K.Jawahar MHA (AIIMS). DNB (Health Administrator)

The study was conducted among 200 patients attending OPD of Sree Chitra Tirunal institute for medical sciences and technology, Thiruvananthapuram, Kerala. The study was done to know the satisfaction level of patients and also get a feedback about the services provided in the outpatient department. The patients were randomly selected from various specialities. In order to get the details from patients, a questionnaire was designed to

include question eliciting awareness of patients about the outpatient department services, logistic arrangements, waiting time, facilities, behaviour of staff and support services.

It was found that majority of the patients are satisfied with the clinical services provided. It was noted that there is a scope for improvement of the outpatient department services. It was concluded that OPD services form an important component of hospital services and feedback of patients are vital in quality improvement.

Inter-Relationship between Clinical Departments in Treating Outpatients

Dr. S.r. Shambulingaiah

The study was taken up in the set up of SDM hospital, dharwad of northern Karnataka. The study was undertaken with the objective to study the functioning and problems of OPD service areas in the SDM hospital setup and to seek the feedback from the patients regarding the existing facilities, functioning style and needs.

Random purposive sampling technique was adopted for the selection of sample. Doctors of various clinical departments and patients attending OPD's were considered as respondents of the study. A sample of minimum 51 doctors and 57 patients were chosen. It was concluded from the study that the Outpatients of SDM Hospital were satisfied with the existing facilities, fee structure and outpatient services and Para clinical facilities and according to doctors of OPD's in SDM Hospital, facilities provided to outpatients were good, co-operation of supporting staff needs to be improved.

Measuring Patient Satisfaction: A Case Study to Improve Quality of Care at Public Health Facilities

Prahlad Raj Sodani, Rajeev K Kumar, Jayati Srivastava and Laxman Sharma

The study was conducted in outpatient department of district hospital, civil hospital, community health centre, and primary health centre of the eight selected districts of Madhya Pradesh. The main objective of the study is to measure the satisfaction of OPD (Outpatient Department) patients in public health facilities of Madhya Pradesh in India

Data were collected from OPD patients through pre-structured questionnaires at public health facilities in the sampled eight districts of Madhya Pradesh. The data were analyzed using SPSS. It was found that most of the respondents were youth and having low level of education. The major reason of choosing the public health facility was inexpensiveness, infrastructure, and proximity of health facility. Measuring patient satisfaction, patients were more satisfied with the basic amenities at higher health facilities compared to lower level facilities.

Study on Process time of patients visiting OPD.

Akilan Arunkumar (TATA INSTITUTE OF SOCIAL SCIENCES)

The objective of the study was to determine the flow of patients and the time spent in the hospital through arrival and service characteristics and to study the bottleneck in the patient flow.

1413 samples were studied through this study. The response time was calculated from finding the difference between the entry and exit time. Bottleneck analysis was also done.

They recommended that since reception centre being the primary bottleneck of the system, by increasing another service here, the system may be made to work in steady state. It was evidently proved through the simulations that having a single refraction chamber with few technicians, the hospital could reduce waiting time up to 25 percent, as well as better utilization of resources.

METHODOLOGY

The methodology adopted to achieve the study objective was:

Study design: An observational type of study was conducted to understand the process flow of activities and identify the problems.

Study area- Max Super Speciality Hospital in Shalimarbagh, New Delhi.

Data collection technique

Primary data regarding the waiting time involved in the process of OPD was collected with the help of waiting time tracking sheet. The tracking sheet consisted information about the arrival time of the patient and then detailed waiting time for each activity. This was followed by calculation of average waiting time for each step.

Secondary data was collected from the front office to understand the flow of activities.

During the study period front office was studied in depth to understand the processes and patient flow. Secondary data was collected from the front office duty manager and substantiated by personal observation.

To address few important issues primary data was collected during the OPD and Front office timings.

Regular interaction was done with patient, PCC and Front Office manager to understand the patient's perspective and identify the core issues.

Contributing factors

PCC

Clinician availability

Nursing

Low motivation

Lack of change

Inadequate training

No information
about the doctors

Staffing pattern

Clinician not
available

Clinician available
but not in OPD:

- OT
- Rounds
- Emergency
- No information

Busy

- With doctor
- Treatment room

Inadequate training/Experience

- Delay in vitals
- Delay in treatment rooms

Not available

Prolonged CPD
waiting time

Back flow of
patients

Credit card
machine issues

Insufficient OPD
chambers

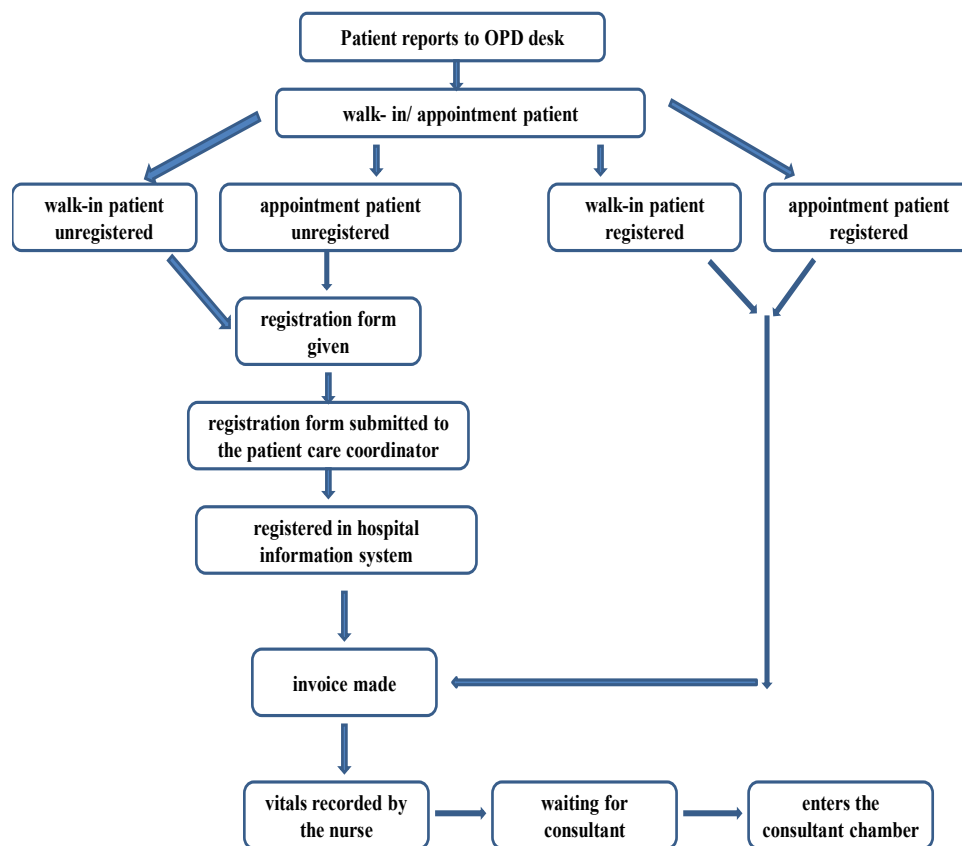
Server down

Hardware issues

Infrastructure

I.T. related issues

STUDY FINDINGS



To understand the processes in depth, patient flow in the front office and OPD was laid down.

OUT PATIENT DEPARTMENT

Outpatient department was divided into 2 wings- wing A and B.

The outpatient services were provided in the following specialities:

1. Aesthetic & Reconstructive Plastic Surgery
2. Minimally Access Metabolic & Bariatric Surgery
3. Cardiology
4. CTVS
5. Dermatology
6. Dentistry
7. Dietetics

8. Endocrinology
9. ENT
10. Gastroenterology
11. General surgery
12. Gastro-Intestinal Surgery
13. Gynae MAS
14. Paediatric Surgery
15. internal Medicine
16. Mental Health & Behavioural Sciences
17. Neurosciences
18. Nephrology
19. Obstetrics & Gynaecology
20. Ophthalmology
21. Orthopaedics
22. Paediatrics & Neonatology
23. Podiatry
24. Respiratory Medicine
25. Physiotherapy & Rehabilitation
26. Urology
27. Vascular Surgery
28. Preventive Health Programme

Process

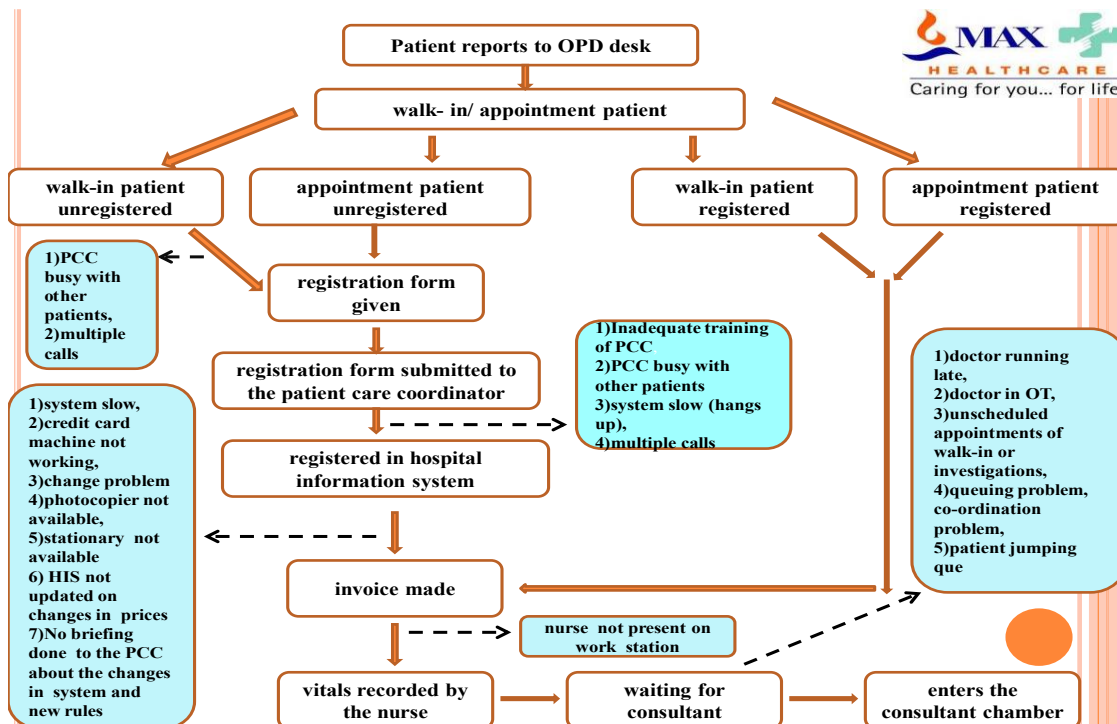
- Patient fixes up an appointment for OPD Consultation or Diagnostics over phone / walks in.
- Patient visits the facility and is guided to the OPD counter for Registration process

Registration/invoice generation

- Patient meets the PCE/PCC & fills the registration form or gives details if already registered.
- Patient Details entered in HIS and Registration number is generated for new patient.

- Services are billed as per approved Pricing and billing policy or as per the IOM with a particular company.
- Discount (wherever applicable) is given as per policy or as instructed by Management.
- Patient pays in Cash / by Card or Credit bill raised in case of corporate patient.
- Patient invoice generated with the Registration & service details.
- If for any reason service billed has not been availed or any wrong entry has been made then refund voucher to be generated
- Manual invoice generated as per approved Pricing and billing policy in case HIS not working.
- Manual invoices are updated in HIS when HIS starts working again.
- If any service/tariff not incorporated in HIS then Billing is done through miscellaneous billing in HIS.
- IT is intimated for incorporation of the same in HIS
- If tariff is not defined (New Services) then approval to charge a definite amount is taken from concerned authorities and subsequent inclusion in Tariff list and HIS is done.
- At the End of shift, PCC/ PCE takes out cash scroll from HIS and submits the same to Finance & Accounts department.

Issues in process flow



Gaps at individual steps

Gap at Step 1

- 1) PCC busy with other patients
- 2) Multiple calls

Gap at Step 2

- 1)Inadequate training of PCC,
- 2)PCC busy with other patients
- 3)system slow (hangs up)
- 4)multiple calls

Gap at Step 3

- 1)system slow
- 2)credit card machine not working,
- 3)change problem
- 4)photocopier not available,

5)stationary not available

6) HIS not updated on changes in prices

7)No briefing done to the PCC about the changes in system and new rules

Gap at Step 4

1) Nurse not present on work station

Gap at Step 5

1)doctor running late

2)doctor in OT

3)unscheduled appointments of walk-in or investigations

4)queuing problem

co-ordination problem

5)patients jumping que

Waiting area

After preparation, patients are asked to wait for doctors in the respective waiting areas.

Patients concern:

- Appointments were usually not seen on time.
- Long waiting time for both appointment and walking patient.

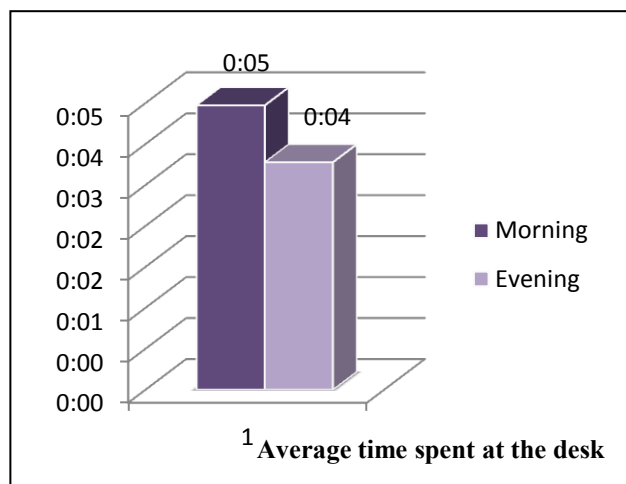
Therefore average waiting time was calculated for both appointment and walk in patients.

Waiting time was calculated with the help of waiting time tracking sheet in which time taken for each activity was noted and the average time was calculated.

Average waiting time was found to be **40 minutes**.

- No patient calling system was present.
- Complaints regarding doctors and invoice were not answered correctly.

Row Labels	Count of Time spent at the OPD desk
0:01	10
0:02	25
0:03	20
0:04	15
0:05	11
0:06	7
0:07	6
0:08	6
0:09	6
0:11	1
0:12	1
0:13	2
0:14	3
0:15	3
0:16	1
0:18	1
0:23	1
0:33	1
Grand Total	120

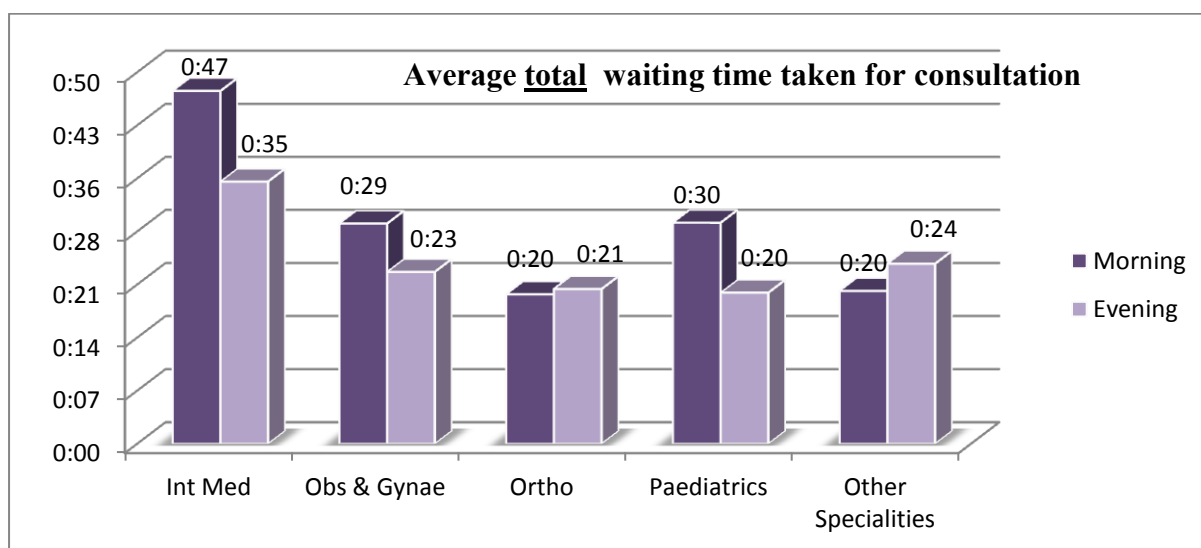


Graph 1

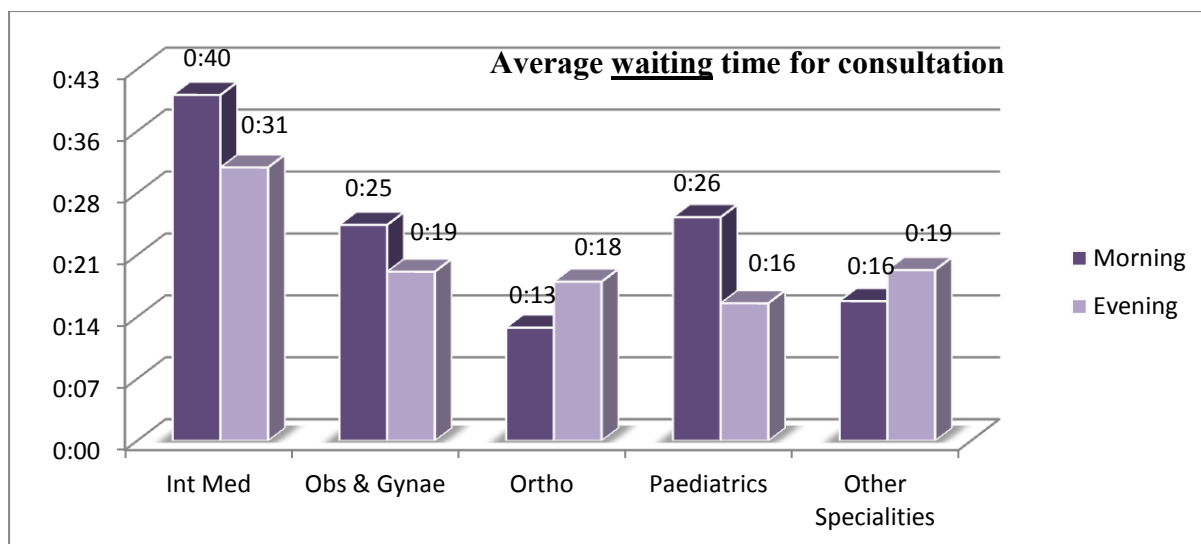
Consultation with the doctor

Patients were satisfied with the clinical services provided by the doctors.

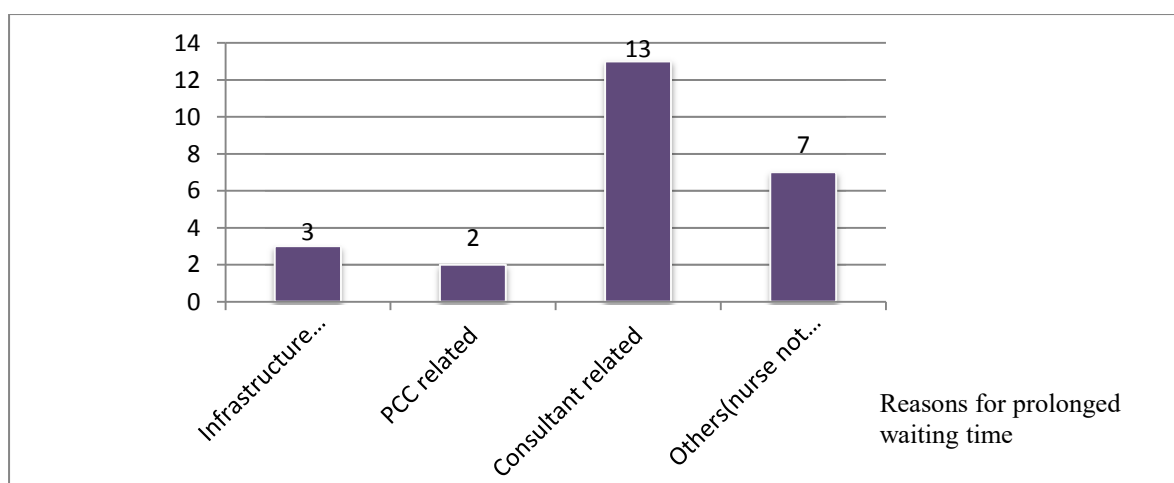
But during observation it was found that usually the doctors were late for OPD which further prolonged the waiting time for consultation.



Graph 2



Graph 3



Graph 4

FEEDBACK

At the end of OPD visit, patients are required to give their valuable feedback for all the services. Patients were asked to fill the TCEQ forms which were handed over to them at the time of invoice generation.

Actionable

On the basis of the study following actionable were suggested:

1. For OPD

CONTROLLABLE FACTORS

- Inadequate training of the P.C.C
- P.C.C busy with other patients
- Multiple calls
- System not responding
- Credit card machine not working properly
- Photocopier not available in OPD B
- Stationary not available
- HIS not updated on change in prices of consultants, investigations
- No briefing done to PCC about corporate tie-ups or any new rule regarding change in policy
- Queuing problem: patients jumping que, co-ordination problem
- Short slot for appointment

UNCONTROLLABLE FACTORS

- Doctor's running late
- Doctors busy in operation theatres
- Unscheduled appointments of walk patients or investigation patients

Suggestions

1. Providing process centric training and some knowledge about various common procedures to the PCC's: Formal Training should be given to the new recruits- will lead to fewer billing errors.
2. Scheduling morning/evening maintenance checks to assess the proper functioning of machines(credit card, computer, telephone, photocopier, weighing machine)
3. Briefing the PCC's on the new updates in the system.
4. Advance preparation :- option to fill registration forms online
5. Introduction of patient calling system

There was no patient calling system in the OPD which used to cause a lot of discomfort among patients. There was a common waiting area for all departments in the OPD therefore a patient calling system was urgently required. Every time the doctor used to come out to call a patient due to the absence of patient calling system.

6. It was observed that there was no money change present at the counter to give back to the patients. Therefore, the GDA or occasionally the PCC had to go to other counters or cafe to get change which further increased the billing and registration time.
7. For routine visits take co-pays in advance or have bill ready in advance for patients
8. Increasing the time slots for the doctors based on their consultation time
9. Introduction of doctors checklist to ensure that doctors come on time
It was observed during the study that most of times patients were told that doctors are on round during the OPD timings and they used to come late to OPDs. Therefore a checklist should be introduced which would contain information about doctors time in and out in the OPD.
10. Keeping 30%-40% slots empty for walk-in patients or follow- up patients
11. Updating the patient in the morning about the doctors schedule.
12. Electronic display system for the patients to update them on doctor's schedule, room number, timings, and the present status to prevent further enquiry
13. Provision of books/novels/magazines, wi-fi, educational material, health talk, tea/coffee vending machine or a spiritual corner
14. Introduction of que managers to streamline the flow of patients at the OPD counter
15. PCC at the registration and billing counter should be informed about the changes in consultants timing or absence of any consultant for day before starting with the billing procedure to avoid the number of refunds.

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Implementation of 5 ‘S’ in the Report Dispatch Area- A Report

Introduction

5S is a basic, fundamental, systematic approach for productivity, quality and safety improvement in all types of business.

What is 5S?

A 5S (Five S) program is usually a part of, and the key component of establishing a Visual Workplace and both are a part of Kaizen - a system of continual improvement - which is a component of lean manufacturing.

- In order to achieve high levels of quality, safety and productivity , workers must have a conducive working environment.
- Developed by the Japanese.
- Helps create a better working environment and consistently high quality process
- Care costs are increasing more rapidly than costs for other products and services. Health care providers, particularly hospitals, are under significant pressure to reduce costs while at the same time improving service and patient safety, reducing patient waiting times, and minimizing errors and associated litigation.5 ‘S’ thus helps in the same.

Components of 5 ‘S’

1. Sorting Out [Seiri - Sort]
2. Systematic Arrangement [Seiton – Set in Order]
3. Shine everything [Seiso – Shine]
4. Standardization [Seiketsu - standardize]
5. Self Discipline [Shitsuke - sustain]

5S Benefits

5S drives a cleaner work environment and organizes the workplace. It is a Lean tool that should be implemented along with process improvements identified when value-stream mapping your business processes. When implementing 5S, you rapidly affect your work or production environment with a minimal expenditure. Most organizations report 5-10% efficiency improvement in several months, which is sustainable over time. 5S provides some of the following benefits:

- A cleaner workplace for enhanced safety and reduced clutter
- An organized, efficient workplace for increased productivity
- An always-ready environment that fosters and promotes compliance with regulatory standards
- The reduction of inventory and supply costs
- The recapture of valuable space and minimizing overhead costs
- The impact of “how we feel” about our workplace, organization, and ourselves

5S is thus a method that reduces waste in your work environment through better workplace organization, visual communication, and general cleanliness. This is one of the primary tools necessary to improve your processes by eliminating wastes such as motion, searching, inventory (queuing) and improve quality and functionality within all departments.

1 ‘S’ – Sorting

Sorting means that you remove all items from the workplace that are not needed for the current production (or clerical operations). Remove those items (unnecessary supplies, equipment, and junk) that you do not need to do the job. This will remove clutter, free up floor space, and aid in improving workspace efficiency.

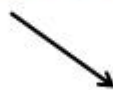
It corresponds to “Only WHAT is needed, Only HOW MUCH is needed , Only WHEN it is needed”

Benefits – 1 ‘S’:

Creation of Space & Money

Fact: 50% of our work place is occupied by only unwanted .Things which were either not used for a long time or not considered for review / decision by Top Management.

1 'S' : SORTING



Space gained
after removing
the old records
(more than
3 months old)

BEFORE



AFTER



2 'S' – Systematic Arrangement

“Place for Everything & Everything on its Place”

Place items in proximity (point of use) to make the caregiver’s job easier. Label and identify the exact location for equipment and supplies to make this easy to maintain.

- It means putting things in order after analyzing why getting things out and putting them back takes so long.
- It is done with the objective of minimizing search time and errors.

- Label and identify the exact location for equipment and supplies to make this easy to maintain.

Benefits - 2S:

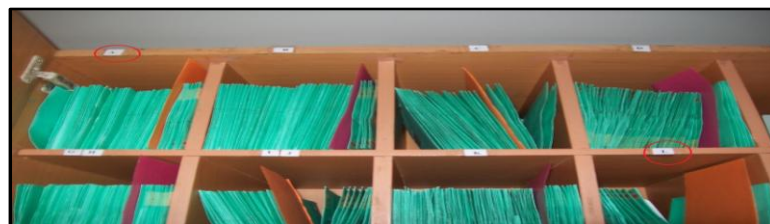
- Search Time Elimination
- Place for everything and everything on its place with the proper identification, quantity, component ,area and everything

2 'S' - Set In Order

BEFORE



AFTER



RADIOLOGY REPORTS

BEFORE



AFTER

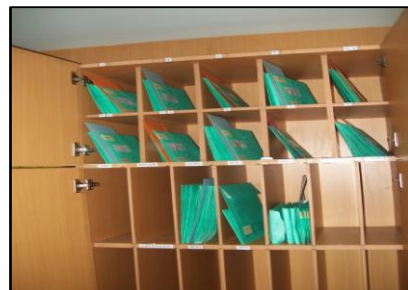


3 'S': Shine / Clean

Sorted and straightened areas are easier to keep clean. Shine, another word for “scrubbing and cleaning,” is important to everyone, not to mention making patients and their families feel they are entrusting their lives to an organization that values cleanliness.

- Create a spotless workplace
- Identify and eliminate causes of dirt and grime-remove the need to clean
- Sweep , dust , polish and paint

3 'S' : SHINE



4 'S': Standardize

You must standardize regular maintenance and upkeep of the 5S process. It is essential to be deliberate in your ongoing efforts and to create guidelines for sort, set in order, and shine.

Benefit to Company:

- There is a Place for Everything & Everything on its Place
- Generate a maintenance system for the first three S's
- It means that racking, labeling, operational layouts are designed in a standard fashion
- Continue to assess the use and disposal of items

4 'S' - STANDARDISING

CONTENTS	BOX NUMBER
Mammography	1.1
Chest X-ray	1.2
CT	1.3
MRI	1.4
X-ray	1.5

CONTENTS	BOX NUMBER
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5 'S': Sustain / Discipline

The true value of the 5S process is to sustain your customer/patient and Joint Commission ready approach at all times. Use simple but effective audit processes to accomplish this. Sustaining is the most important "S," and it requires the most discipline.

- Means inoculate courtesy and good habits
- Driving force behind all S's
- Involve the whole workforce
- We SUSTAIN when we have developed habits of always using the first 4 S's together on a daily basis.

5 S Checklist

Evaluated by:	
Month:	

Color	Marks	Result
Green	81-100	Good
Yellow	50-80	Fair
Red	0-49	Not Good

5 S	Definition	S. No.	Checkpoint	Marks	IPD			OPD		
					Pathology	Radiology	Diagnostic	Pathology	Radiology	Diagnostic
Seiri (Sort)	Divide the things into necessary type and unnecessary things should be kept away from working area	1	Only necessary things should be available near counter.	10						
		2	Racks and almirahs should contain only necessary items	10						
Seiton (Set in order)	Keep things in right place in right order.. Layout to be made accordingly	1	All items should be separated according to the placards in place	10						
		2	Missing items/ reports from the racks	10						
Seiso (Shine)	I will keep my area always clean	1	Check whether reports are in order or not?	10						
Seiketsu (Standardize)	I will standardize and follow good work place	1	Check 5 'S' checklist available or not?	10						
		2	Check responsibility given or not?	10						
		3	Action plan for 5 'S' there or not?	10						
Shitsuke (Sustain)	I will follow rules, regulations & discipline strictly	1	People are aware of 5 'S' or not?	10						
		2	Action on 5 'S' is visible or not?	10						

There will be naysayers that may argue that their messiness is beneficial to them; some point to the fact that time spent keeping their environment organized distracts from the important things in their jobs like time analyzing or thinking and defining new approaches to care. However, they miss the point; truly organized people are not organized just for the sake of order. Instead, their organization is a result of having a process to manage all of the things in their lives. These folks avoid the repeated distraction paper or e-mails in their inbox by having a clear approach for handling all of the responsibilities in their lives. By managing things effectively, they avoid clutter and chaos.

So 5S should be practiced on Everyday basis till it converts into Habit / Culture of the Organization as the results you can expect from a 5S program are: improved profitability, efficiency, service and safety.

Assessment of medication administration in the Inpatient Department (BCMA- Bar Coded Medication Administration)

Introduction

Bar Code Medication Administration (BCMA) is a barcode system designed to prevent medication errors in healthcare settings and improve the quality and safety of medication administration.

It was conceived by a nurse who was inspired by a car rental service using barcode. From 1999 to 2001, Department of Veterans Affairs promoted the system to 161 facilities. Cummings and others recommend the BCMA system for its reduction of errors. They suggest healthcare settings to consider the system first while they are waiting for RFID. They also pointed out that adopting the system takes a careful plan and a deep change in work patterns.

BCMA was first implemented in 1995 at the Colmery-O'Neil Veteran Medical Center in Topeka, Kansas, USA.

The overall goals of BCMA are to improve accuracy, prevent errors, and generate online records of medication administration.

This IT initiative involves World Vista EHR implementation with BCMA (Bar Code Medication Administration) with closely integrated Pharmacy workflows.

Benefits of Bar Coded Medication Administration

- BCMA uses barcodes to prevent human errors in the distribution of prescription medications at hospitals.
- It makes sure that patients receive the correct medications at the correct time by electronically validating and documenting medications.
- The information encoded in bar codes allows for the comparison of the medication being administered by the nurse on the patient with what was ordered for him.
- The software also has information on what drugs the patient is allergic to. So whenever a doctor prescribes the drug, the software alerts the pharmacy, making the doctor change the medicine.

So how does the bar code work?

BCMA consists of a barcode printer, a barcode reader and a mobile computer called computer on wheels (COW). Each time, a nurse needs to administer a medicine; she takes the COW to the patient area and scans the wrist band and the drug's barcode. A signal, then, alerts the nurse if the medicine matches the patient. Once the nurse administers the medicine, it also gets recorded online, thereby informing doctors if the pills were given on time.

The project won the NASSCOM award for exemplary information technology work in healthcare.

Max has also implemented a "Private Cloud" for patient data across hospitals. This allows patient data to be available across location based on the need for second or super specialist's opinion.

The Electronic Health Record (EHR), which has been implemented in the hospitals, contains the patient's history, medication, diagnosis, progress notes, allergies, treatment plan, diagnostic reports and surgery notes.

Emergency patients admitted in Shalimar Bagh, Mohali, Bhatinda and hospitals can get a second opinion from a larger specialist team available at the emergency of the super-specialty hospital at Saket or other locations at any time.

Resident doctors, Consultants, Senior Consultants and Visiting doctors use the system to review all records of the patient and place orders on the system in real time. The orders include Radiology, Laboratory, Pharmacy, Procedures and consults.

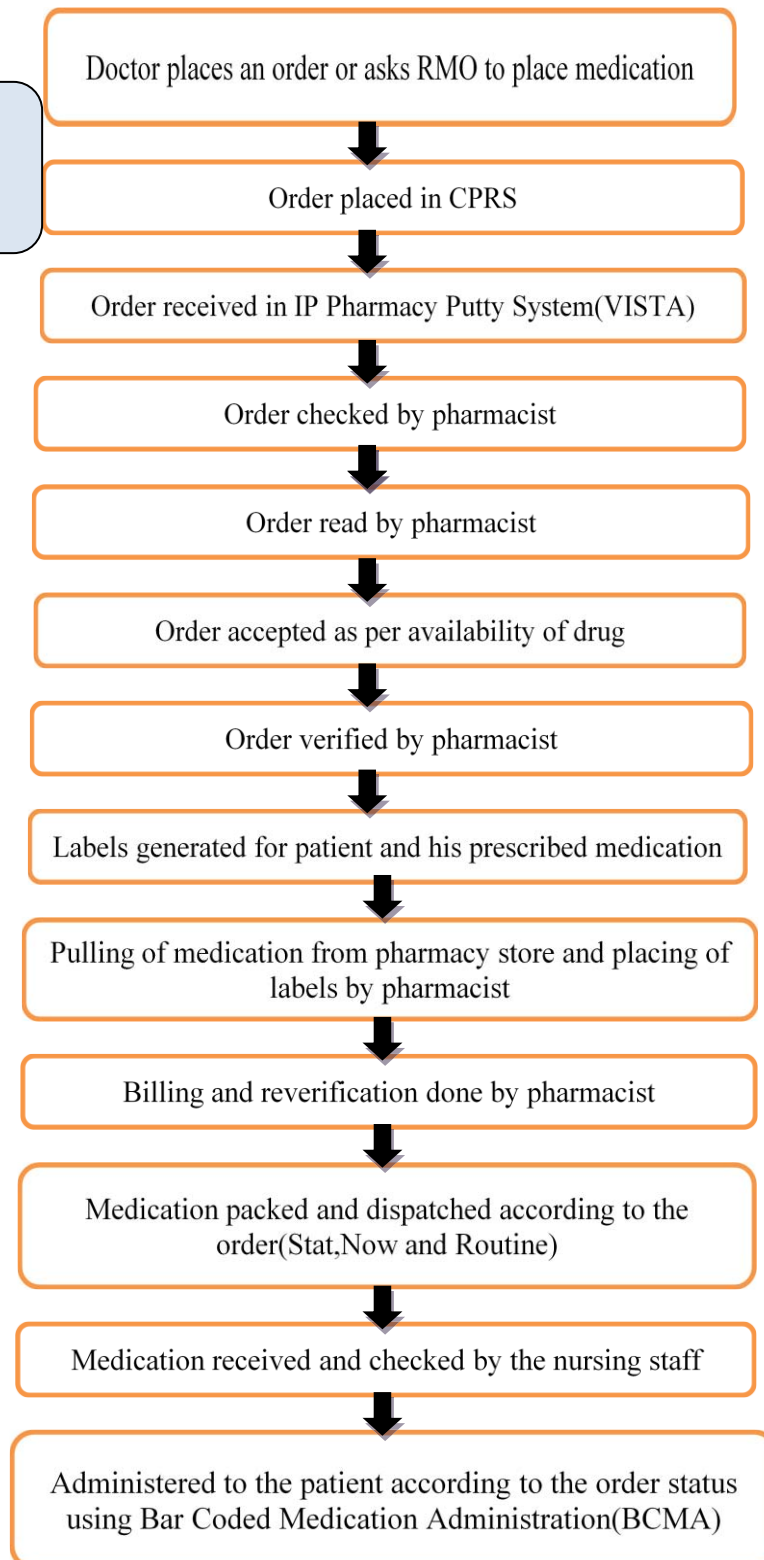
Work flow in Max Hospital, Shalimar Bagh

The workflow links the drug dispensing from pharmacy to the doctors' orders with the unique barcode on drugs (**at the level of generic drug**). Use of the barcode on giving the drug to patient is linked to "Right Patient, Right time, Right drug, Right dose" with audit trail record of "who gave the drug". The application interface for each role (doctor, pharmacy, nurse) caters to this work flow actively checking for time of dose and active orders for each drug. Technology leveraged to achieve this is the application riding on a hospital-wide Wi-Fi over a COW (computer on wheels) with a barcode scanner. The patient ID-wrist band and drugs are bar coded to uniquely identify each, respectively. Incidentally, the drugs are bar coded not just for the above process but also for pharmacy billing and inventory using a separate barcode used at the time of dispensing/billing at inpatient pharmacy.

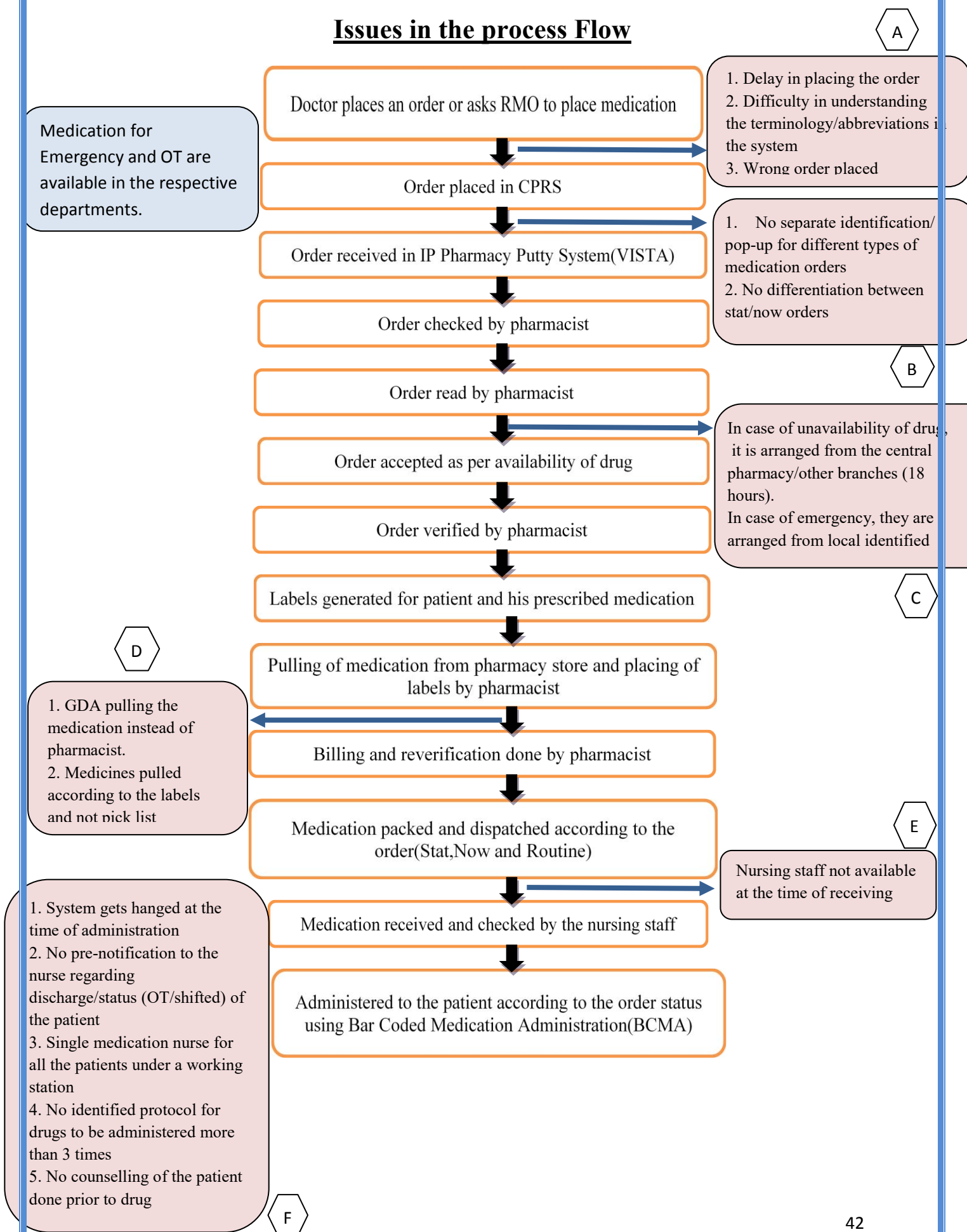
Order checks- Duplicate drug class check, Drug-Drug interaction check, Drug-Allergy interaction check are incorporated within the computer system. In case, a wrong drug has been ordered for a patient by mistake or a drug has some interaction with another drug being administered to the patient at the same time or the patient is allergic to the prescribed drug, a notification appears immediately on the computer. The doctor is then informed about the same and the medication thus has to be changed.

Process Flow

Medication for Emergency and OT are available in the respective departments.



Issues in the process Flow



Gaps at individual steps

Gap at Step A:

1. Delay in placing the order
2. Difficulty in understanding the terminology/abbreviations in the system
3. Wrong order placed

Gap at Step B:

1. No separate identification/pop-up for different types of medication orders
2. No differentiation between stat/now orders

Gap at Step C:

In case of unavailability of drug, it is arranged from the central pharmacy/other branches (18 hours).

In case of emergency, they are arranged from local identified vendors.

Gap at Step D:

1. GDA pulling the medication instead of pharmacist.
2. Medicines pulled according to the labels and not pick list

Gap at Step E:

Nursing staff not available at the time of receiving

Gap at Step F:

1. System gets hanged at the time of administration
2. No pre-notification to the nurse regarding discharge/status (OT/shifted) of the patient
3. Single medication nurse for all the patients under a working station
4. No identified protocol for drugs to be administered more than 3 times
5. No counseling of the patient done prior to drug administration

Impact

The significant drop in medication errors rate achieved with the use of BCMA in various facilities presents a positive impact on patient safety. Further BCMAs use showed an increased rate of error detection because of the system ability to capture and record intercepted administration errors.

Assessment of safety, health and environment across various departments of MSSH

Introduction

The hospital environment is one of the most complex environments in the world. It is very people dependent, equipment and technology dependent and there are several processes that come together or follow one after another, during the patients stay in the hospital. This inherent complexity, also poses problems of safety.

Therefore it is important to:

- Be concerned about the health of the patients and workers.
- Be responsible for all cases happened and take all the necessary action.
- To evaluate the result of work safety at work place inspection in order to identify and to analyze the hazards that may arise.
- To evaluate work accident and injuries (Including all the calls) in order to identify and analyze the hazards caused.
- To perform inspection of work safety regularly.
- To perform the assessment of health and safety program regularly.

Departments	Occupational Hazards	Safety measures in place	Suggestions
1.Local Sub Store	1.Ergonomics Sitting job	- Pictorial depiction of correct sitting and working positions - Implementation of 5 s	
	Eye strain	TMT monitors for low radiation	
	2.Hazardous Chemicals present		
	Inhalation	- MSDS sheets present - Hazmat Kit available - Chemicals kept at lower shelves - Proper signage	
	Skin and eye contact	- MSDS sheets present - Proper signage	
	3.Suffocation in case of power failure etc	Adequate power backup	
2.Engineering	1.Fall during maintenance/cleaning	- Full body harness - Vacuum pads	
	2.Injury from glass	PPE available	
	3.Ergonomics	Explanation of correct sitting and working positions	
	4.Electric shock	- Covered Electrical panels - Insulation mats - PPE - Safety shoes - Electric shock guidelines	
	5.Short circuiting during electrical work	- Insulation mats - Safety boots - First aid kit for burns - Sand buckets	

Departments	Occupational Hazards	Safety measures in place	Suggestions
	6.Noise	• Ear puffs • Noise level monitoring	
	7.By-products of diesel	• Proper filtration of the smoke generated	
	8.Stagnant water	Drainage system-but partially covered	Properly covered drainage
	9.Chiller plant burst	Periodic maintenance	
	10.Fire in electrical room	Fire tracer carbon dioxide extinguisher(automatic cutoff)	
	11: Heat stroke/Dehydration	Helmets	Education and training of the staff
3.Biomedical Engineering			
	1.Physical injury	PPE	
	2.Electrical Shock during repairing	• Antistatic pads not available • Antistatic belts not available	Antistatic pads Antistatic belts
	3.Gas explosion / Gas leakage	• Periodic maintenance of gas manifold room • Periodic check of the machinery • Biomedical gas alarms to detect any drop in the pressure of the gases	Use of masks
	5.Noise pollution	Ear puffs available but not being used	Proper use of ear puffs
	6.Ergonomics	Explanation of correct sitting and working positions	Pictorial representation of the correct working position
4.Housekeeping			
	1.Manual handling of chemicals	• PPE :Heavy duty gloves • MSDS	
	2.Presence of odor, taste and irritation	PPE	
	3.Spillage	Hazmat Kit	
	4.Needle stick injury	• Heavy duty gloves • Staff education and training	
	5.Stagnant water	Drainage but not covered	Covered drainage
	6.Electrical shock	Gumboots	
	7.Latex allergy		Vinyl gloves
	8.Allergy to soaps/detergents	Gloves	
	9.Inadequate lighting		Proper lighting; natural lighting

Departments	Occupational Hazards	Safety measures in place	Suggestions
5. Medical Records			
	1. Infection from soiled documents		- Adequate care to be taken when handling documents - Keep photocopy of soiled document
	2. Ergonomics- stretching	- Explanation of correct sitting and working positions - Ergonomics manual	Pictorial representation of the correct working position
	3. Danger of fall	Steps available	
	4. Violence		Security to be made available
6. Central Sterile Supply Department			
	1. Physical injury Needle stick injury	Education and training of the staff	Proper segregation of the instruments/linen etc.
	2. Burns while loading/removing equipments from the autoclave	Heavy duty gloves	
	3. Medical Hazards from ETO gas: Oncogenic	- Isolated room - Timely check ups of the concerned staff	
	4. No natural lighting leading to increased stress levels in the employees		
	5. Chemical irritation	- PPE - MSDS	
7. Radiology	1. Exposure to radiation	- Lead aprons - Lead doors 9-inch thick walls - Angulation of the beam away from the door or public areas	
	2. Overworked staff (typist)		
	3. Back sprain during lifting of patient	Proper lifting guidelines told	
	4. Infection from an infectious patient	- Masks available but not used for every patient - Cultures done at timely intervals	Use masks
	5. Patient fall during lifting	- Proper lifting technique - Railings on the side of the bed	
47			

Departments	Occupational Hazards	Safety measures in place	Suggestions
	6.Patient at risk in MRI due to unidentified metal	Consent taken	Do's and dont's to be explained/displayed to the patient prior to exposure
	7.Short circuiting during machine handling	- Insulated wires - Proper training to the technician	
	8.Mixing of reports	Double identity checks for each patient: Patient name and Max IDs	
8. OPD			
	1.Ergonomics	- Rotating chairs - Keyboard at elbow level - TMT monitor screens for low radiation - Implementation of 5'S not done	Implementation of 5s
	2.Violence	- Security - Code Violet declaration - Work place violation policy in place	
	3.Effect on hearing due to multiple phone calls		Job rotation policy for employees
	4.Risk of infection from an infectious patient and cross infection		
	5.Slip and trip injury	Cleaning of the area where water is spilled	Timely routine maintenance of the furniture
	6.Electric shock	Periodic maintenance	
	7.Strain on eyes due to inadequate lighting and continuous work o the computer screen		
	8.Stress while lifting and shifting of the patient		
	9.Fire	- No fire extinguisher - Fire hydrant point present	Provide fire extinguisher
9.Laboratory			
	1.Infection from infectious samples	- PPE but not used - Cleaning with sodium hypochlorite twice daily - Cultures done at timely intervals	Proper use of PPE
	2.Reagent allergy-skin/eye	- First aid kits - MSDS - No goggles/eye protection	- Eye protective gear to be made available - Install eye wash
	3.Reagent splash/Spillage(irritati on,burns)	Cleaning done	- Use aprons - Eye protective gear
48			

Departments	Occupational Hazards	Safety measures in place	Suggestions
	4.Expllosion from chemicals Toxic fumes (inhalation)	No safety measures	
	5.Short circuiting of machines	• Proper insulation • Coverage of machinery • Periodic maintenance	
	6.Injury from broken glasses,equipments etc.	No safety measures	BMW segregation
	7.Eye strain for the typist		Rotation policy for employees
	8.Fire/Burns from flame of bunsen burner		• Fire extinguisher present • First aid
	9.Cold burns(Cryogenic)	Cryo gloves	
	10.Repititive work and ergonomics	• Explanation of correct sitting and working positions	• Pictorial representation of correct sitting and working position • Implementation of 5s
	11.Aerosols in microbiology	Biosafety cabinet available	
10.Blood bank			
	1.Needle stick injury	• Vaccination • Proper education and training of the employees	
	2.Cryogenic burns while handling fresh frozen plasma	Cryo gloves	
	3.Short circuiting/Electric shock	• Insulation • Periodic maintenance of machinery	
	4.Donor fall after blood donation	Patient made to wait for 15 min after blood donation	
	5.Ergonomics:due to frequent bending during phlebotomy		• Pictorial representation of correct sitting and working position • Proper education and training to the staff
	6.Spillage of blood	Cleaning with sodium hypochlorite	
11.Food and beverage	1.Fire due to oil / burns	• Sand buckets • Fire blankets available • First aid	

Departments	Occupational Hazards	Safety measures in place	Suggestions
	2.Physical injury due to cuts from sharps / Hot oil/food splash on the individual	- First aid available - Different types of gloves available for handling food - Protective shoes, Aprons, Goggles	
	3.Intermixing of patient food	Separate section for segregation of food	
	4.Food poisoning due to contamination/long storage	- Proper disposal at regular intervals - Suma tablets for decontamination - Dry storage - Bane Mary	
	5.Ergonomics(continuous standing job,neck strain,repitive work)	Shelves at waist level	
	6.Slip and trip injury	Cleaning at regular intervals	
	7.Electric shock from the refrigerator/ other electric equipments	- Insulation - Proper coverage of equipment - Periodic maintenance of equipments	
	8.Gas leakage/explosion	- Adequate ventilation - Exhaust	
	9.Contamination of food from the infected employees(amoebiasis , respiratory tract infections, gastro-intestinal infections)	- Head cap - Gloves - Timely health checkups-done twice an year	
12.Dialysis			
	1.Needle stick injury	- Vaccination - First aid kit - Proper education and training of the staff concerned	
	2.Patient fall	Bed railings	
	3.Blood spillage	Cleaning with 2% sodium hypochlorite	
	4.Fire	- Fire extinguisher - First aid for burns	
	5.Improper dialysis because of defect in machinery	Periodic maintenance of machinery	
13.ICU			
	1. Hospital acquired infection	- PPE - Bacillol spray - Clean and sept tablets - Cleaning with 2% sodium hypochlorite - Natural lighting - Shoes removed outside	
	2.Patient fall	Bed railings	

Departments	Occupational Hazards	Safety measures in place	Suggestions
	3.Needle stick injury	PPE	
	4.Electric short circuiting	Insulation	
	5.Wrong medication administration	Bar codes of the medication and patient matched	
	6.Bed sores	Continuous change of the patient position	
	7.Fast administration of i.v. fluids		
	8.Spillage(chemical/blood)	• Cleaning with 2% sodium hypochlorite solution • Clean and Sept tablets	
	9.Baby missing	Code Pink	
	10.Increased stress levels	Stress burst sessions	
14.Operation Theatre/Cath Labs			
	1.Hospital acquired infection	• PPE • Bacillol spray • Clean and sept tablets • Cleaning with 2% sodium hypochlorite • Natural lighting • Shoes removed outside	
	2.Physical injury due to broken instruments or sharps / Needle stick injury	• First aid • Vaccination	
	3.Patient fall	• Bed railings • Proper technique for shifting of the patient in place	
	4.Spillage (chemical/blood)	• Cleaning with 2% sodium hypochlorite solution • Clean and Sept tablets	
	5.Exposure to Radiation	Lead shields/aprons	
	6.Electric short circuiting	Insulation Periodic maintenance of machinery	
	7.Overdose of anesthesia	Intensive monitoring of anesthesia by the anesthesiologist	
	8.Gas leakage		
	9.Improper temperature/pressure /humidity	Timely checks for maintenance of the same	
	10.Increased stress levels	Stress burst sessions	

Environmental Hazards	Safety measures in place
1. Pollution due to vehicle parking	
2. Electrical energy consumption	• Sunroofs in place • Glass windows for natural lighting • Optimizing use of electric lights as per requirement
3. Water consumption	• Rain water harvesting • ETP plant for recycling water • STP plant for recycling water
4. Paper consumption	• Electronic medical records • Reuse of paper by using both sides