

**Summer Training at
Care Hospital,
Hyderabad**

Antimicrobial Resistance: Risk Associated with Antibiotic Overuse

**By
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**Under the guidance of
Dr. Gautam Sadhu**

**MBA Hospital and Health Management
2015-2017**



**The IIHMR University, Jaipur
2016**

CERTIFICATE

TO WHOM SO EVER IT MAY CONCERN

This is to certify that **Dr. Sowjanya.V.D** student of **MBA Hospital and Health Management** from the IIHMR University; Jaipur has undergone summer training at **Care Hospitals, Hyderabad** from 1st April to 31st May, 2016.

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

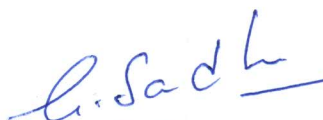
The internship is in fulfilment of the course requirements.

I wish her all success in all her future endeavours.



Col. (Dr.) Ashok Kaushik

Dean (Academics & Student Affairs)
IIHMR University, Jaipur



Gautam Sadhu

HOD & Associate Professor
IIHMR University, Jaipur



TO WHOM SO EVER IT MAY CONCERN

Date: - 31-05-2016

This is to certify that **Dr. Sowjanya V D** a student of IIHMR, Jaipur has done project on "Measures to decrease consumption of high end antibiotics" in the department of Hospital Administration from 01-04-2016 to 31-05-2016.

During the above period her performance and conduct were found to be satisfactory.

We wish her all the best in her future endeavors.

For **QUALITY CARE INDIA LIMITED,**

SHANTAM SHARMA
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ACKNOWLEDGEMENT

I feel deeply privileged in expressing our deep sense of gratitude to **Dr. Naveen Jain(FacilityCOO)** and**Dr. Gopi Krishna (Medical Superintendent)** Care Hospitals, Banjara Hills, Hyderabad for their expert guidance and encouragement which immensely helped in the process of making this report. Without their support, exploring such a vast organization could not have been possible.

I would like to express my deep sense of gratitude to **Dr.VenkatRaman, Dr.Jhansi Vani** and **Dr. Harish Jawalkar** Who guided and gave this project. I would not have been able to get so much knowledge and experience about the work, analyzing the data preparing the report without their kind support and guidance.

I would also like to express my heartiest gratitude to **Mr.Shantham Sharma, Mr.Manoj Roy, Sis.Romila** and **Sis.Manga** for their guidance and help throughout my work.

I would also like to express my gratitude to the doctors, nurses, housekeeping and patients of the CARE Hospitals, BanjaraHills, Hyderabad.

I would also like to thanks to my parents for their blessings and my friends who motivated me and helped for my accommodation.

I again express my heartiest gratitude to all the persons who helped me throughout my work.

Dr.Sowjanya.V.D.

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1. Acronyms/Abbreviations

CHA- Chief Hospital Administrator

CHR- Chief of Human Resource

COPC- Care Out Patient Centre

CSSD- Central Sterile Services Department

DDD- Daily Defined Dose

DOT- Days Of Therapy

ERP- Enterprise Resource Planning

GRN- Goods Receipt Note

HA- Hospital Administrator

HICC- Hospital Infection Control Committee

HID- Hospital Information Department

HOD- Head Of the Department

HR- Human Resources

HRA- House Rent Allowance

ICCU- Intensive Cardiac Care Unit

ICU- Intensive Care Unit

IP- In Patient

LICU- Liver Intensive Care Unit

MICU- Medical Intensive Care Unit

MLC- Medico Legal Cases

MRD- Medical Records Department

NICU- Neuro Intensive Care Unit

OP- Out Patient

PO- Purchase Order

UPS- Uninterrupted Power Supply

WHO- World Health Organization

2. ORGANIZATION PROFILE:

The CARE Hospitals Group is a multispecialty healthcare provider, with 16 hospitals serving 8 cities across 6 states of India. The regional leader in tertiary care in South/Central India and among the top 4 pan-Indian hospital chains, CARE Hospitals delivers comprehensive care in more than 30 specialties in tertiary care settings.

Adopting a service-oriented delivery model, CARE Hospitals provides cost-effective medical care, with an uncompromising commitment to its core purpose, “To provide care that people trust.” Founded in 1997 by Dr B Soma Raju and a team of India’s leading cardiologists, the CARE Hospitals’ founders developed Asia’s first indigenous coronary stent — the ‘Kalam-Raju stent,’ named after Dr APJ Abdul Kalam, former President of India, and Dr B Soma Raju, Chairman and Managing Director, CARE Hospitals Group. This is just one of the many innovations developed at CARE Hospitals, which strives to make healthcare affordable for all, while ensuring clinical outcomes at par with international standards.

The CARE team has many firsts to its credit:

- 1st Prospective randomised trial of balloon valvotomy vs. mitral valve replacement in the world
- 1st Coronary Angioplasty in India
- 2nd Balloon Valvuloplasty in India
- 1st Cardiac MRI in India
- 1st Atrial Fibrillation Clinic in India
- 1st Beating Heart Surgery in Andhra Pradesh
- 1st Heart Transplant Performed in a tier-2 town (Visakhapatnam)

Today the CARE Hospitals Group comprises 16 multi superspecialty hospitals offering comprehensive patient-focused care, with 24*7 state-of-the-art infrastructure, medical equipment and facilities, complemented by globally trained and experienced doctors and professional support staff. It is recognized as the most advanced, complete cardiac care centre in the country, powered by cross-functional teams with deeper skill sets and round-the-clock availability of cardiologists, cardiac surgeons, and critical care and emergency medicine specialists. The hospitals are models for high doctor-patient and nurse-patient ratios to ensure patient satisfaction.

CARE Hospitals is a complete healthcare ecosystem, with related components of education/training and research, pursuing innovations that make healthcare more affordable. A network of telemedicine hubs in rural Andhra Pradesh and Maharashtra deliver care at the doorstep to lakhs of people. These activities are managed by its partner CARE Foundation.

CARE Hospitals continually updates medical knowledge and puts it into practice — taking innovations from the bench to the bedside. The Group has a rigorous Clinical Research programme (certified by the Drugs Controller General of India), with advanced infrastructure and trained resources to conduct clinical trials in the areas of drug and medical device development. Both pioneering original research and sponsored clinical trials are conducted at several hospitals and over 40 studies are under way, at any given time.

CARE Hospitals is owned and managed by Quality CARE India Ltd.

PURPOSE: To provide care that people trust.

VISION: To be a trusted, people-centric, integrated health care system as a model for global health.

VALUES:

Honesty & Integrity

The practice of honesty fortifies character. Integrity mean doing right at all times and willingness to live by the standards and beliefs of the organization.

Team Work

A collaborative work ecosystem, where the collective efficiencies are harnessed for delivering the best possible care.

Empathy & Compassion

The ability to understand the feelings of patients as well as employees, so that the services delivered are humane and in a supportive work environment.

Education

Continuous learning for the creation of a sustainable healthcare system, where employees and the organization can grow together.

Citizenship

Good governance and appropriate working relationship with all stakeholders, based on compliance to laws and ethical practices.

Equity

Mutual trust based on fair and impartial consideration of all professional matters so that it fosters positive contribution towards the institutional purpose.

Dignity & Respect

Treat all with utmost regard and esteem so that it enhances respect and , in turn, a sense of belonging.



LOGO:

The base of the logo represents a level field provide to everybody. The column consisting of beams represents the multi-disciplinary teams of care hospitals. The person on the pedestal is a professional like a physician, nurse, or health care professional supported by excellence. The person trying to climb the apex of the pedestal is a patient suffering from illness or a student seeking knowledge and skills. The rectangular box refers to a well-defined framework within which the hospital functions.

CARE HOSPITALS, BANJARA HILLS, HYDERABAD

The CARE Group's flagship CARE Hospitals, located in Banjara Hills - a prime location in Hyderabad, was set up in the year 2000. Today, the multispecialty hospital has 435 beds, including 120 critical care beds, with an annual inflow of 1, 80,000 outpatients and 16,000 in-patients.

The hospital provides specialty medical services in Cardiology, Cardiothoracic Surgery, Paediatric Cardiology, Paediatric Cardiothoracic Surgery, Neurology, Neurosurgery, Nephrology, Urology, etc. The in-patient services include intensive care, cardiac care, neurological care, paediatric care, medical care, as well as surgical, diagnostic and emergency services.

The hospital has 10 Operating Theatres with state-of-the-art equipment. Every year more than 1700 cardiothoracic surgeries and 5000 non-cardiac surgeries are performed. Over 4000 cardiac interventions are carried out in the advanced cath labs every year. The hospital also has the first dual source, 128 slice CT scanner (for high precision cardiac imaging) - the first of its kind in south India.

The hospital offers a wide range of accommodation facilities for the convenience of its varied patient base, ranging from general wards to super deluxe rooms.

SPECIALITIES

- Anaesthesiology
- CardiacSciences
- Critical Care
- Dentistry
- Dermatology
- Dietetics & Nutrition
- Emergency Medicine

- Endocrinology
- ENT
- Gastroenterology
- General Medicine
- General Surgery & Surgical Gastroenterology
- Haematology
- Hepato Biliary Surgery & Liver Transplantation
- Laboratory Medicine
- Laparoscopic & Bariatric Surgery
- Nephrology
- Neuro Sciences
- Nuclear Medicine
- Obstetrics & Gynaecology
- Oncology
- Ophthalmology
- Orthopaedics
- Paediatrics
- Physiotherapy & Rehabilitation
- Plastic Surgery
- Pulmonology
- Radiology
- Rheumatology
- Urology
- Vascular Surgery
- Yoga Therapy

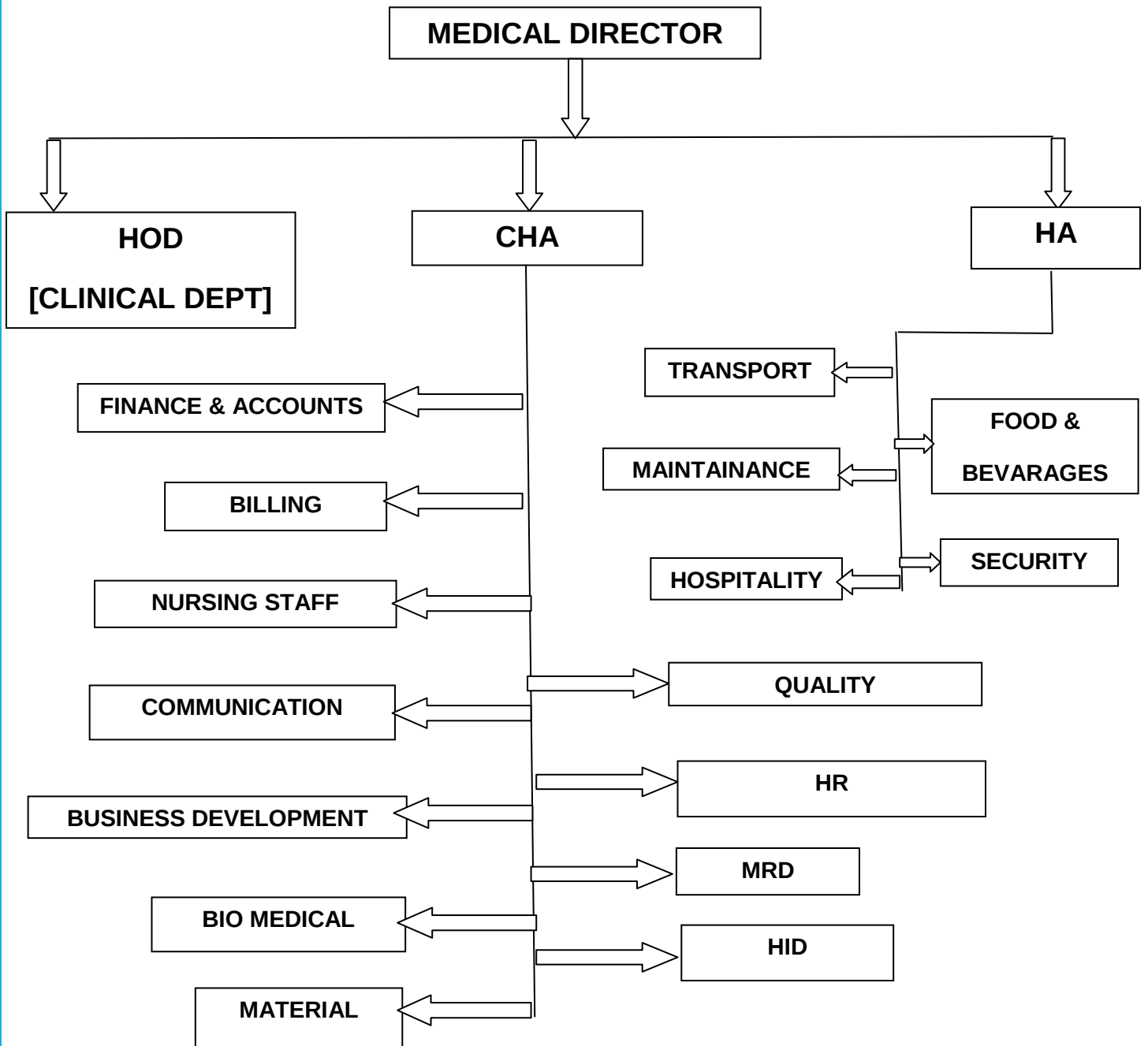
INFRASTRUCTURE

- Operation Theatres
- ICUs
- Endoscopy Suite
- Non-Invasive Laboratory
- Radiology
- Nuclear Medicine
- Catheterization Laboratory
- Dialysis & Department of Nephrology

FACILITIES

- Emergency Unit
- Blood Bank
- Ambulance
- Pharmacy
- Laboratory services
- Pathology
- Haematology
- Microbiology
- Biochemistry

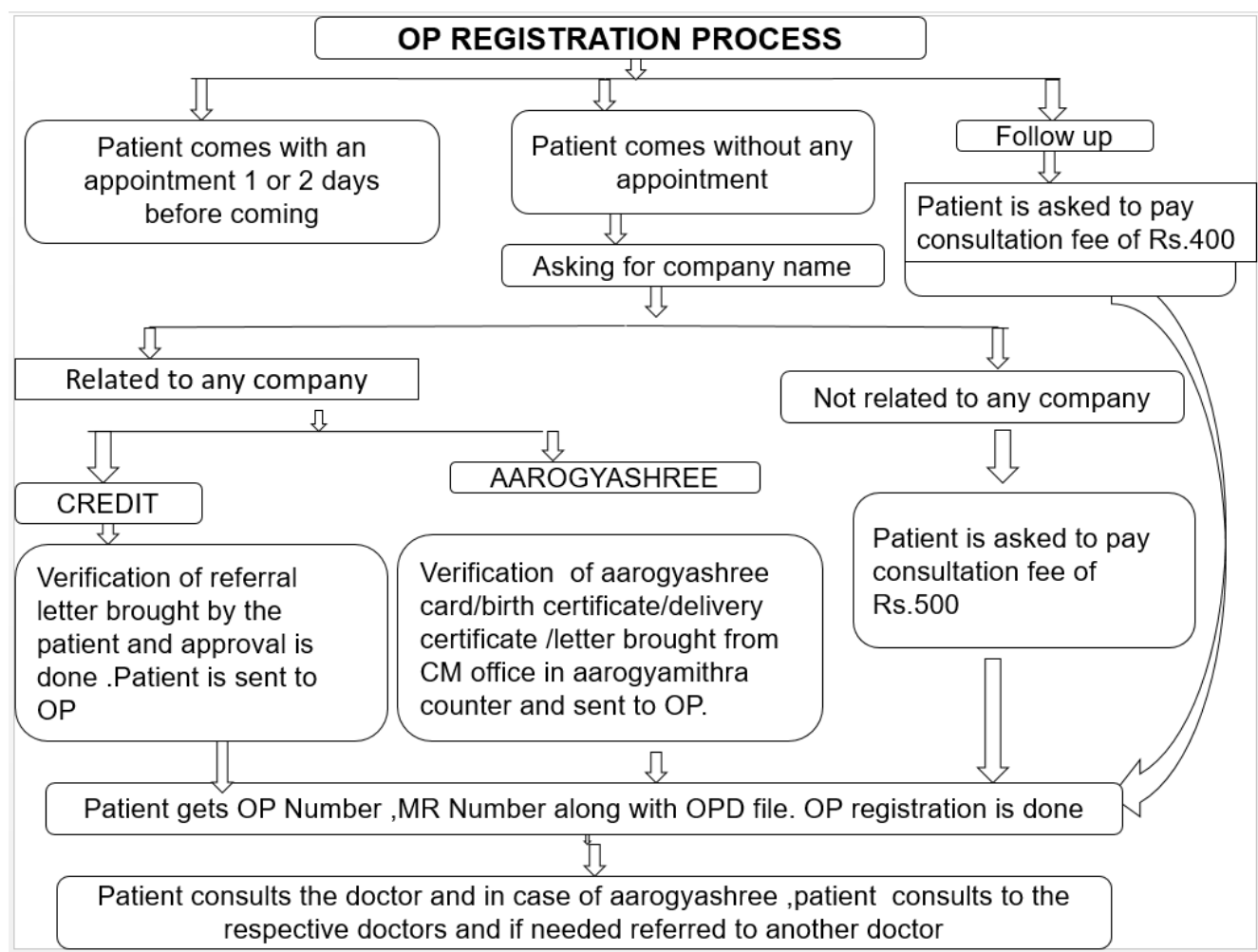
ORGANIZATIONAL STRUCTURE

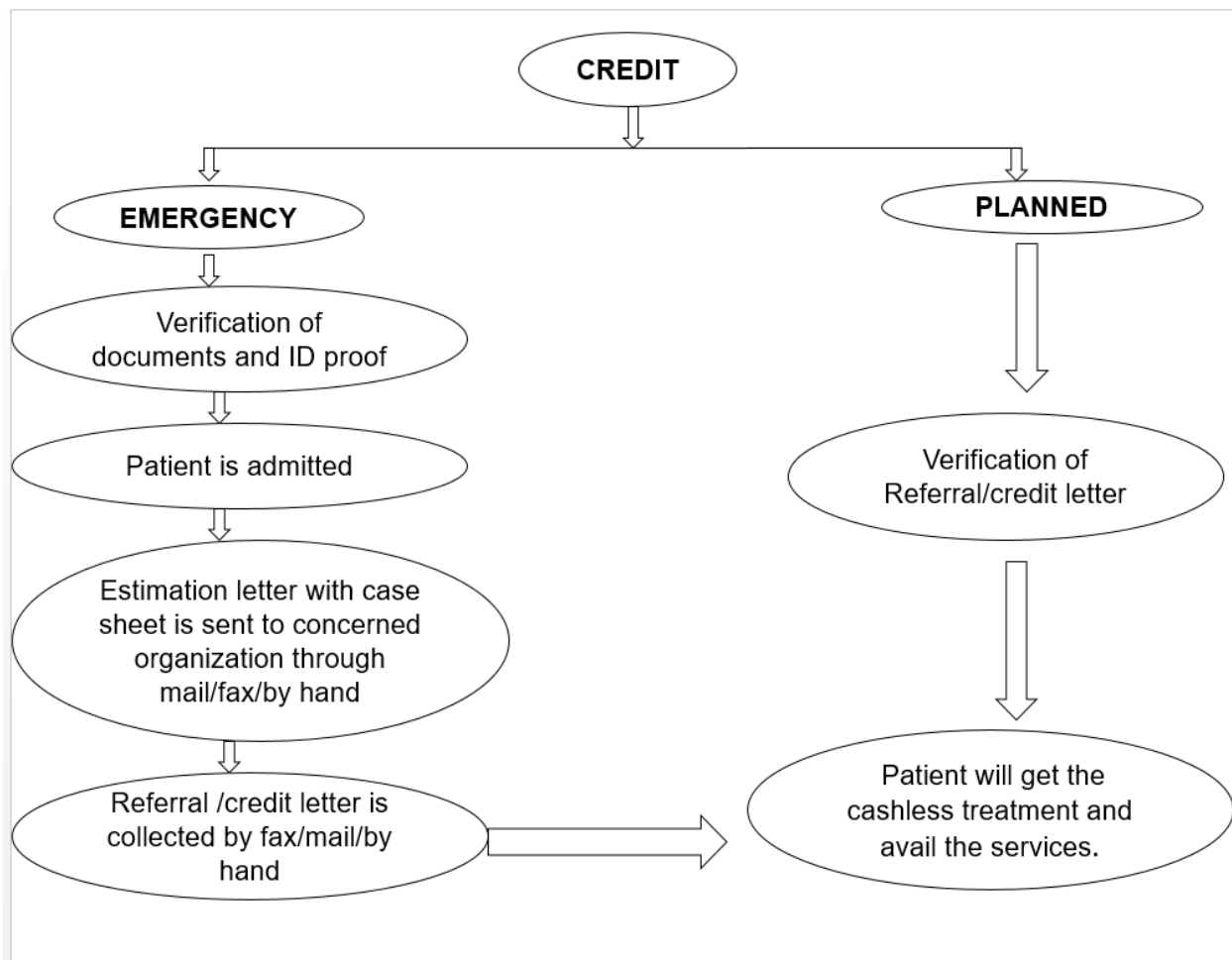
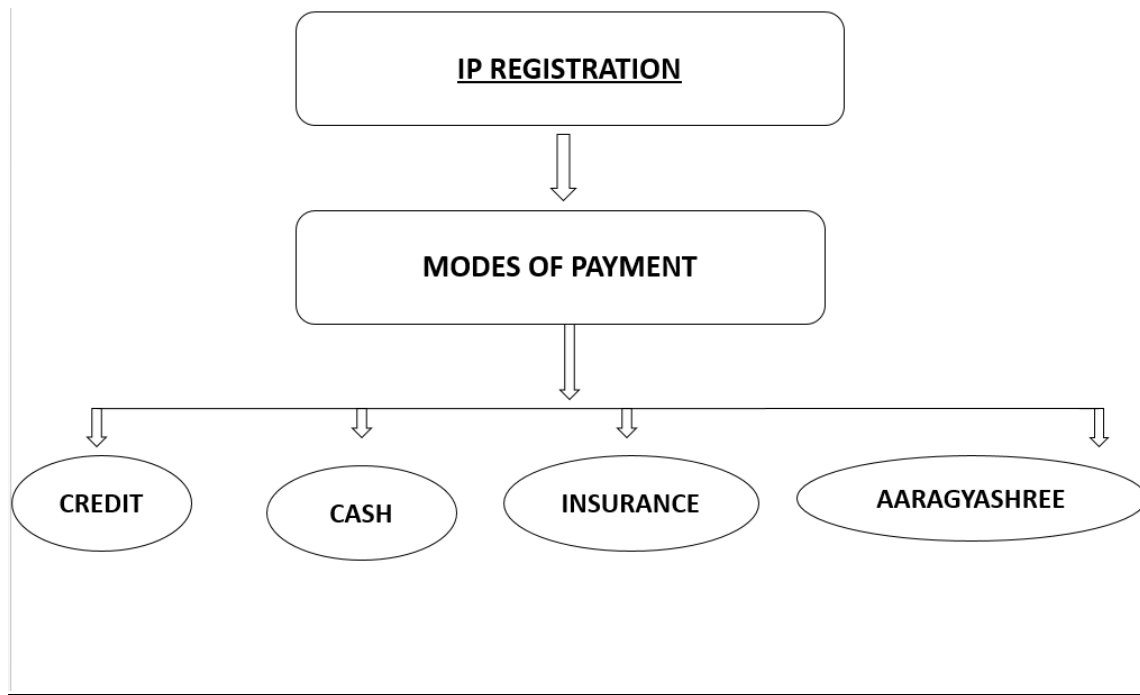


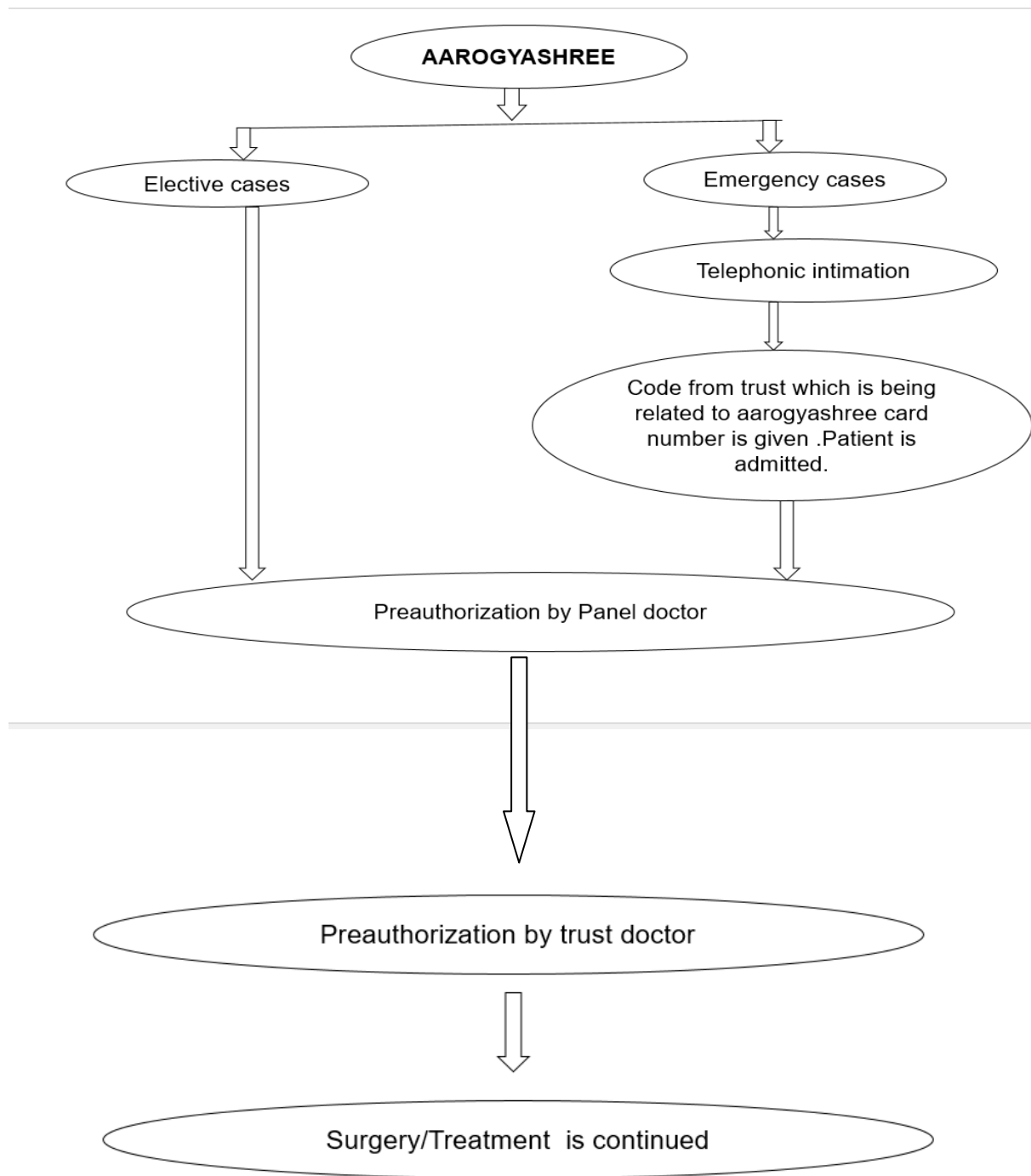
3. OBSERVATIONAL LEARNING

OP&IP Reception: OP reception is situated on right side once we enter the hospital and it is the place where the appointments are given and regular consultations occur.

- IP reception is situated on left side and it is the place where admission and billing department functions round-the-clock.
- Allotment of a bed/room is based upon diagnosis, preference, eligibility and availability on the day of the admission.
- The inpatient receptionist or Patient Relations Executive (PRE) will assist you in the admission process.







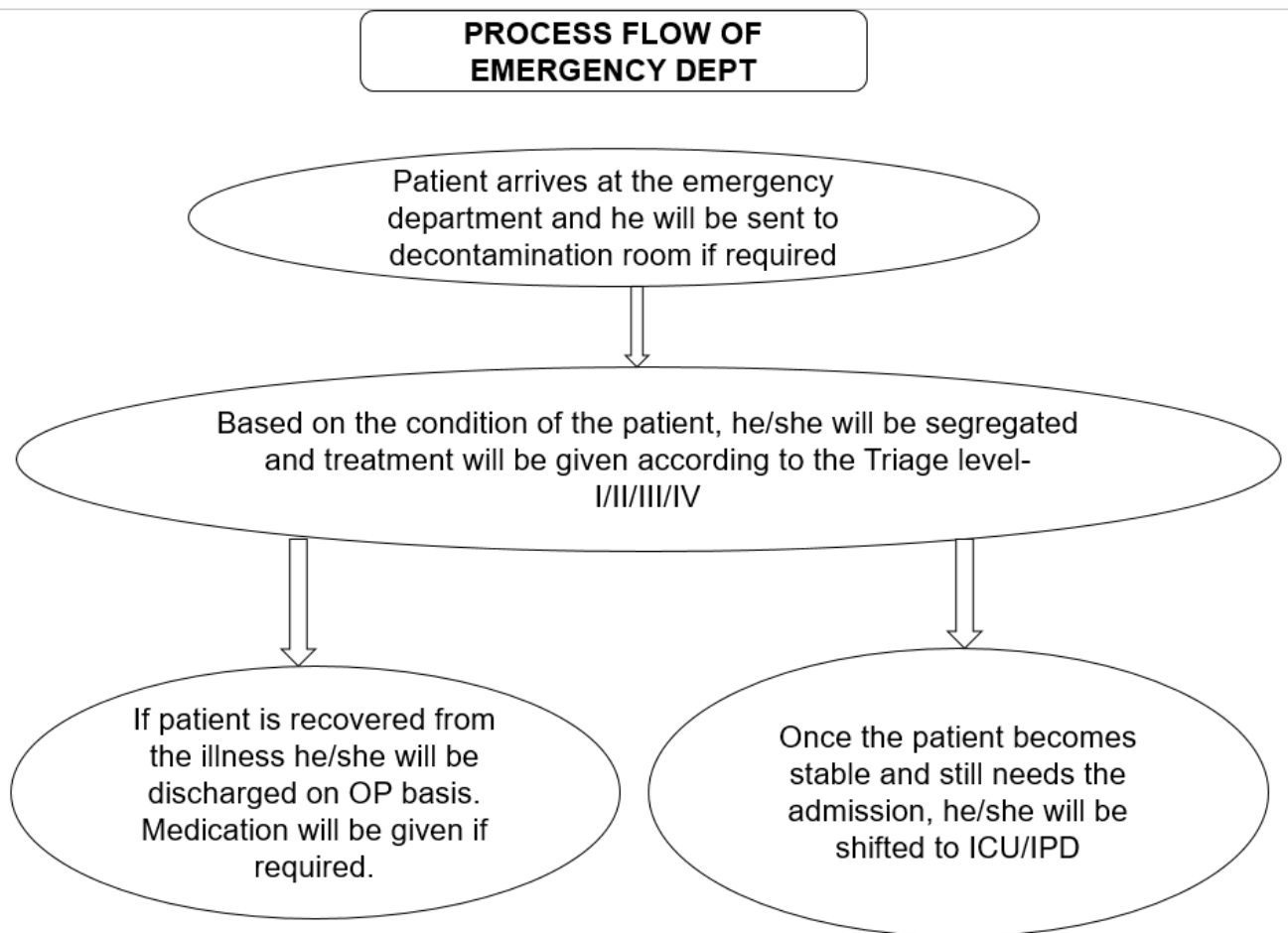
EMERGENCY DEPARTMENT: The Emergency unit at CARE Hospitals, Banjara Hills, Hyderabad, is a 24-hour, state-of-the-art medical centre, which caters to all types of accident victims and emergency cases.

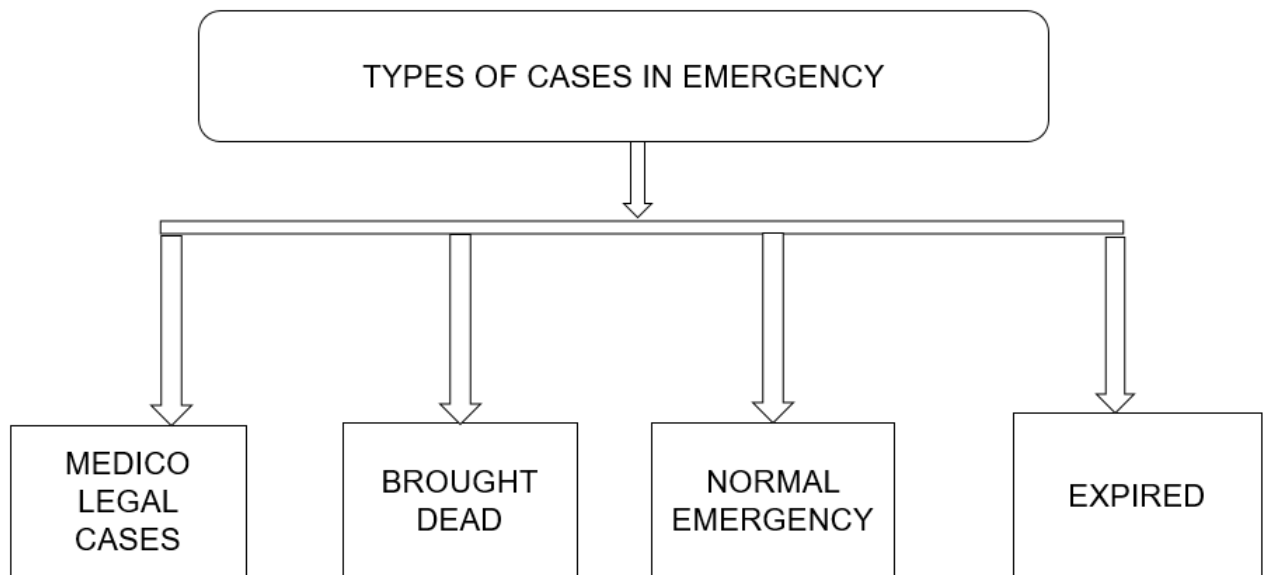
- It is equipped with the latest infrastructure.
- Medical supplies are available at all times from the 24-hour in-house pharmacy, as is blood from the NABH accredited Blood Bank.
- The doctors and other medical staff are highly experienced in emergency care — be it providing urgent medical or surgical care, comforting the patients and their care-givers or providing basic and advanced life support.

RADIOLOGY DEPARTMENT: The Department of Radiology and Imaging offers the complete range of diagnostic and image-guided therapeutic services. A skilled team of specialists using state-of-the-art equipment provide safe and efficient imaging services, with a human touch. The hospital provides 24*7 emergency and routine diagnostic services.

- Advanced imaging services of CT scan for high precision cardiac imaging (CT Coronary Angiogram, etc.)
- MRI (with an add-on facility of cardiac imaging)
- Ultrasonography/Doppler study
- Digital radiography and special radiological procedures
- Teleradiology

The process flow of the emergency and the radiology departments are mentioned below





MEDICO-LEGAL CASES PROCESS FLOW

Patient arrives at ER department

MLC number will be generated by filling the MLC form and the concerned MLC number will be informed to Security Supervisor and the MR dept.

Eventually Security Supervisor will inform about the MLC case to the nearest police station

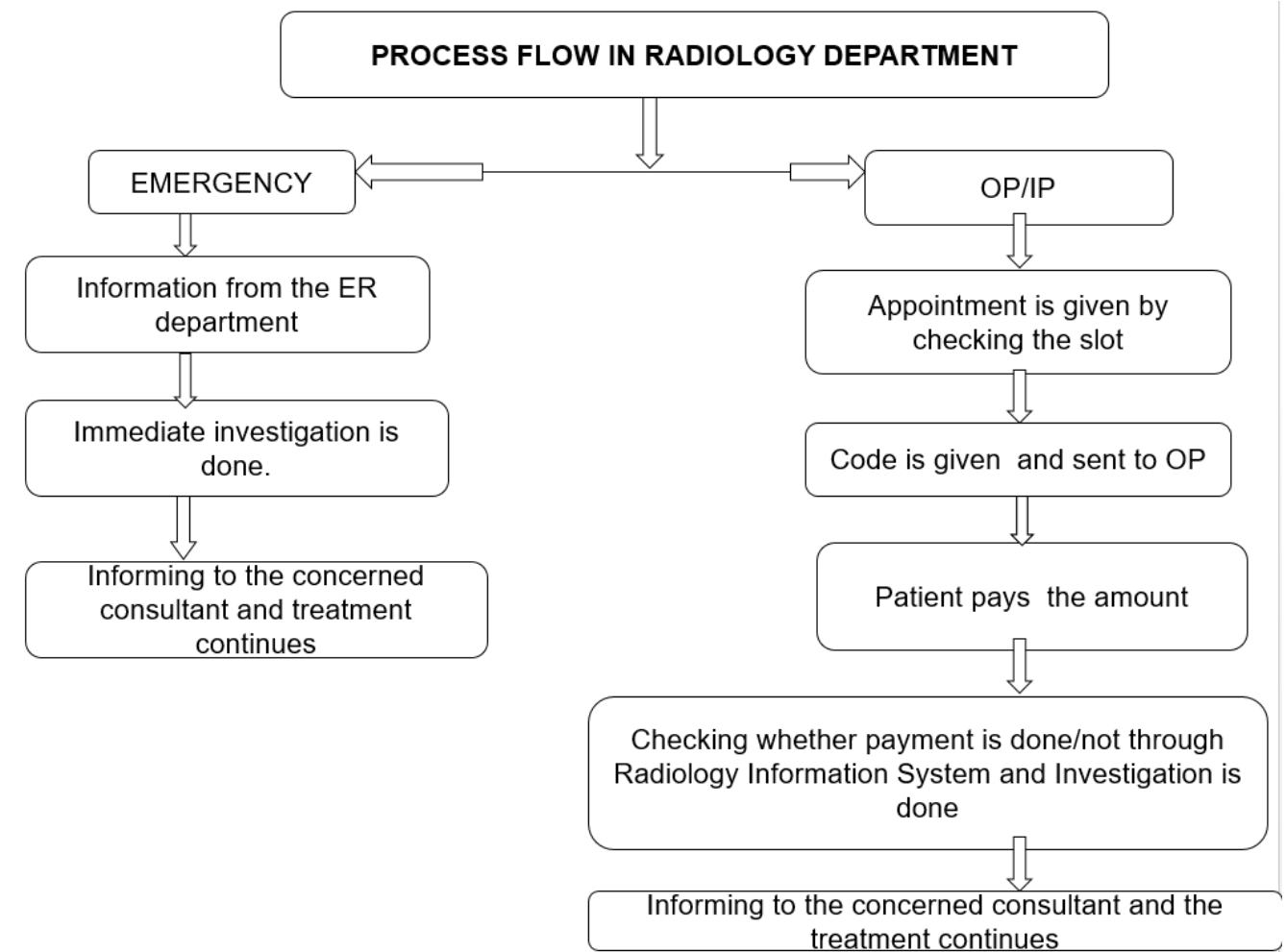
If patient declines to take as MLC, then he/she will be discharged with LAMA(Left against medical advice)

BROUGHT IN DEAD/EXPIRED

Resuscitation done for 20-40 min

If there is no response in patient vitals ,he will be declared as DEAD by the doctor.

A death report will be given by the hospital which can be submitted in the municipal corporation to get death certificate.



QUALITY DEPARTMENT:

- **PURPOSE:** Getting accreditation and improvement in the system.
- Presently following the NABH standards for Hospitals 4th edition which includes 10 chapters, 70 quality indicators, 105 standards and 683 objectives.
- It mainly works on structure, process and outcome.
- Its main objective is to do analysis and take appropriate and preventive action in a prospective / retrospective manner.
- Conducts 4 quality meetings every month.

It has 8 committees

1. PQAC-Patient Quality Assurance Committee
2. DQAC-Diagnosis Quality Assurance Committee
3. AQAC-Admin Quality Assurance Committee
4. HICC-Hospital Infection Control Committee
5. CPRC-Cardio Pulmonary Resuscitation Committee
6. BTC-Blood Transfusion Committee
7. Document Committee
8. PTC-Pharmaco Therapeutic Committee

FIRST AND SECOND FLOOR ICU'S

- There are totally six ICU's situated in first and second floor, three in first floor and three in second floor.
- First floor ICU's : NICU, LIVER TRANSPLANT ICU & ICU
- Second floor ICU's : MICU-1, MICU-2 & ICCU
- There are two type of beds in every ICU namely alpha and nimbus beds which were used according to the duration of stay in ICU.
- Each ICU has crash cart, defibrillators, ventilators, dialysis ports, incubators, bed side x-ray machines, vital monitoring, suction apparatus, infusion pumps etc.
- EEG machine, TCD machine and video EEG room are the additional equipment present in NICU.

STATUS OF BEDS IN ICU'S

NUMBER & TYPE OF BEDS	NICU	ICU	MICU-1	MICU-2	ICCU
TOTAL BEDS	12	12	14	12	14
ISOLATION BEDS	4	0	4	2	4
OPEN BEDS	8	12	4	6	10
CUBICLES	0	0	6	4	0

PROCESS FLOW IN ICU's

Patient will admitted into ICU from ER/OPD/IPD/Post surgery for medical management/Post surgical treatment

Once patient was admitted daily resident doctors and consultants will go for medical rounds periodically and update the patient condition in the progress notes, nurses will look after the medications, investigations, lab reports; dieticians will look after the patient diet

Financial counselling will be done everyday to the patient attender and also informs him about the patient health status. If the patient health condition is improving he/she can be shifted to following areas

Discharge

General wards

LAMA

Deluxe/semi-deluxe/suite rooms for VIP's

If patient discharge is confirmed information will be passed to PRE and he will look after all the pharmacy clearance, discharge summary and billing according to the mode of payment of the patient (Cash, Credit, Insurance, Aarogyasree)

Nurses will segregate all the service records and update it to the billing department

Once the billing is done and pharmacy clearance is given check out slip and discharge summary is issued to the patient and patient feedback form will be filled by the attender/patient.

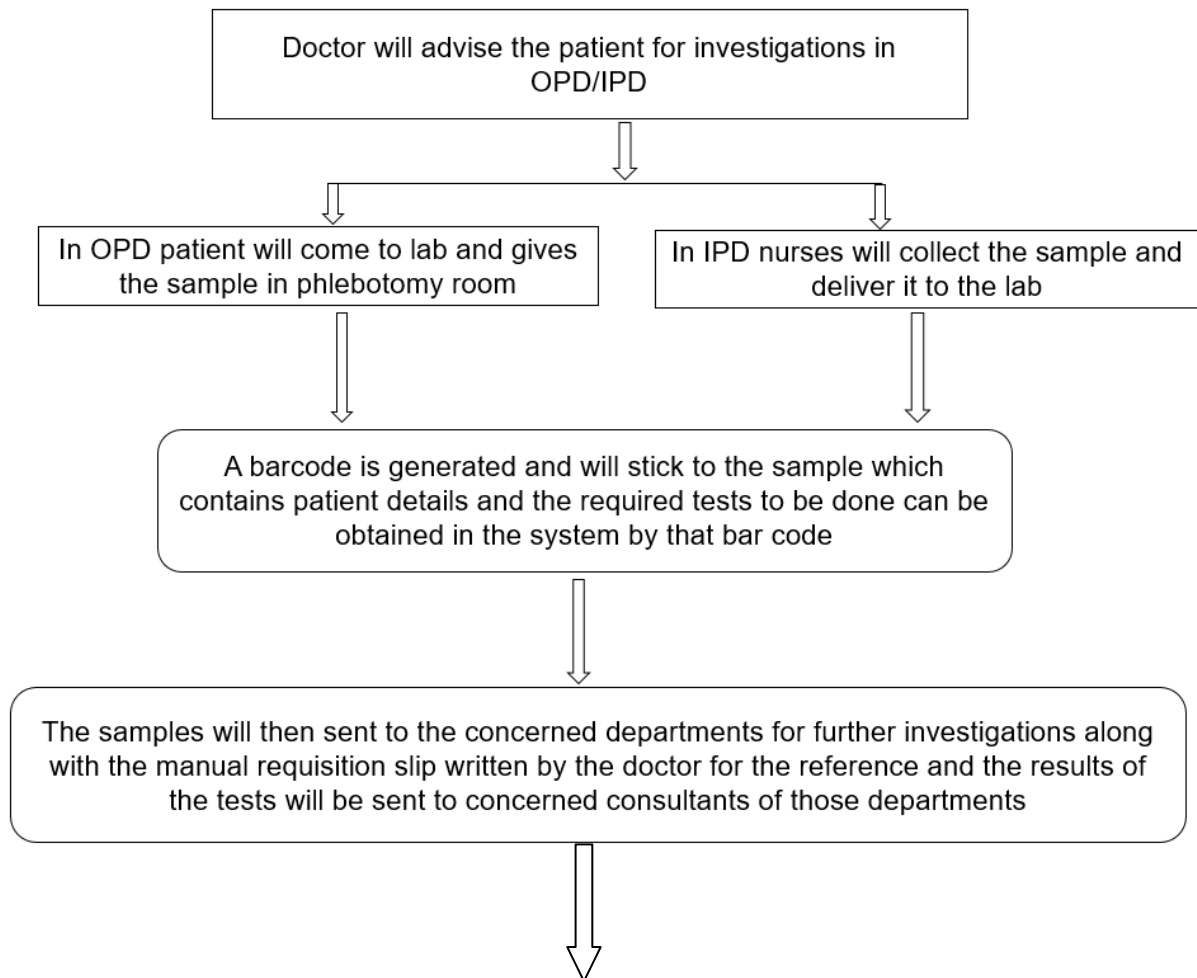
LABORATORY MEDICINE:

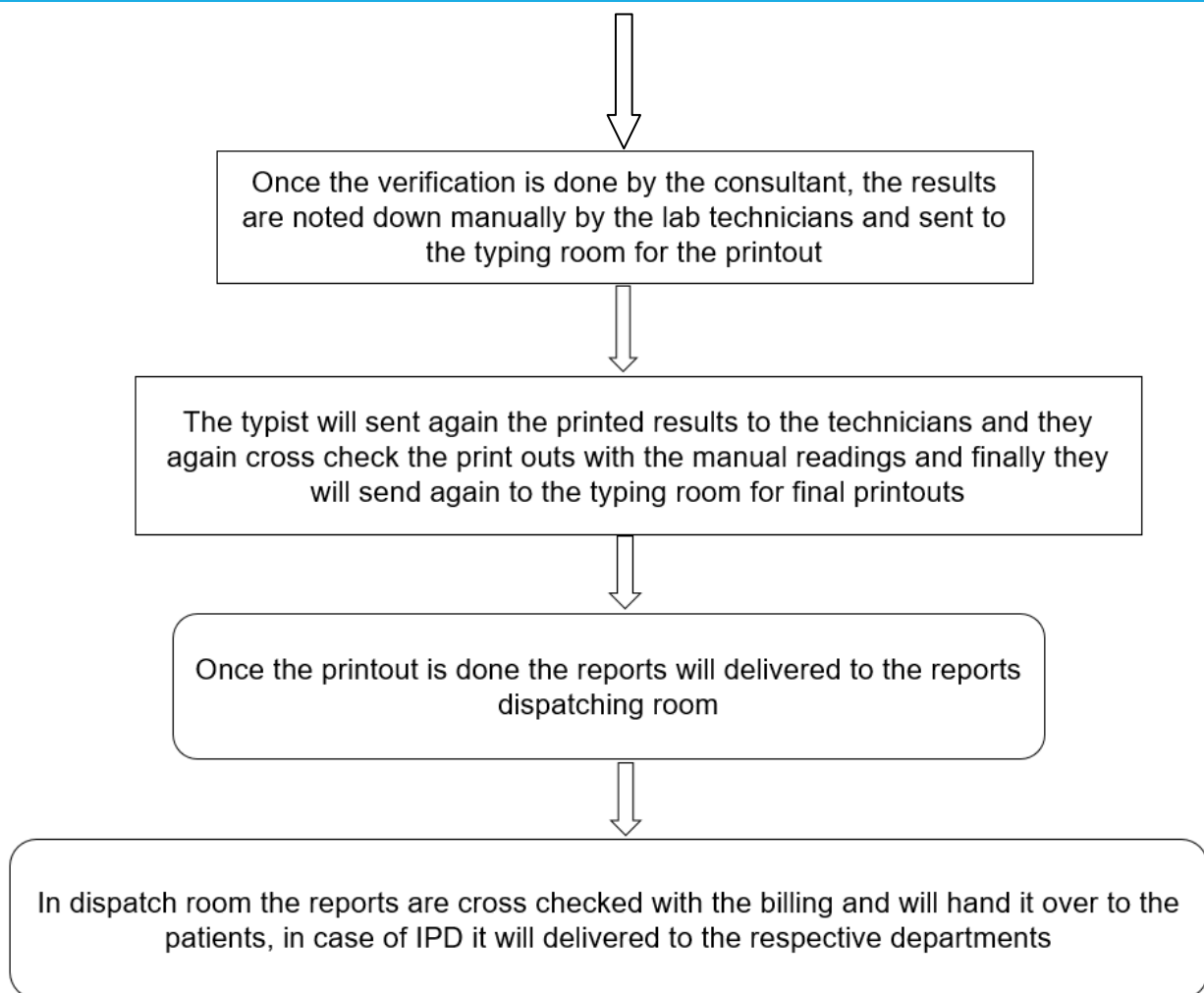
- It consists of

- 1) Haematology department
- 2) Biochemistry department
- 3) Microbiology department
- 4) Histopathology department (out sourced)

- Each department has a consultant who is the head of that particular department and verifies the test results and gives approvals for those tests.

PROCESS FLOW IN LABORATORY MEDICINE





CENTRAL STERILE SERVICES DEPARTMENT:

It has 3 zones

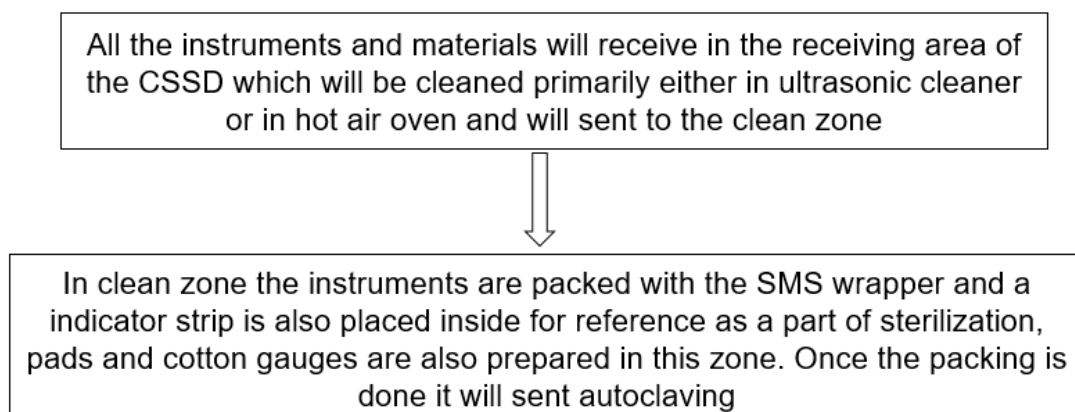
1) Receiving zone

2) Clean zone

3) Sterile zone

- It has 6 indicators to verify the sterility level.
- This department consists of 2 autoclaves, 1 plasma sterilizer, 1 ultrasonic cleaner and 1 hot air oven
- An indicator strip will be placed both inside and outside the pack as a level of indicator of proper sterilization.

PROCESS FLOW IN CENTRAL STERILE SERVICES DEPARTMENT [CSSD]





Once the autoclaving is done at 121*c at a working pressure of 1.2 kg/sq.cm for 20 min the instruments are stored in sterile zone. Whenever the instruments are needed it will delivered through dispatch room from the sterile zone



Some delicate instruments will be sterilised in plasma steriliser and will deliver the instruments into sterile zone and will be delivered to the respective departments whenever it is needed

GENERAL STORES:

It deals with the following items with the respective codes:

- A – Visiting cards and letter heads
- B - Engineering and electrical items
- C – Printing stationary
- D – General items
- E – Housekeeping
- F – Bulk items
- G – Computer items

- They issue items for different floors in different days
- Audit will be conducted for every 3 months.

HUMAN RESOURCE DEPARTMENT:

RECRUITMENT PROCESS:

- There will be a requisition from concerned department for new manager or for replacement.
- First screening and initial interview is done.
- Salary is being fixed and selected person will be getting a medical checkup and a joining date is fixed.
- First day all documents are verified and an enterprise resource planning (ERP) number is given.
- Chief of human resource (CHR) will give approval.

- Induction program is given at corporate level and continues at unit level.
- Number of days= salary

PAY ROLL:

- Based on qualification, requirement, experience salary is divided.
- Salary is divided into 3 parts –basic (60%), HRA (house rent allowance (25%)), conveyance (15%).
- Deduction is by statutory charges and non-statutory charges

HEAD COUNT:

- There are 26 to 27 departments where 1400 number of employees are working. Among them mostly are nursing others are clinical side technicians, administrative staff, resident doctors, consultant doctors.
- Every HOD is responsible for head count.
- Leave approval is through ERP.

GRIEVANCE HANDLING:

Committees which handle grievance handling are sexual harassment committee, personal issue committee, salary review committee, finance committee.

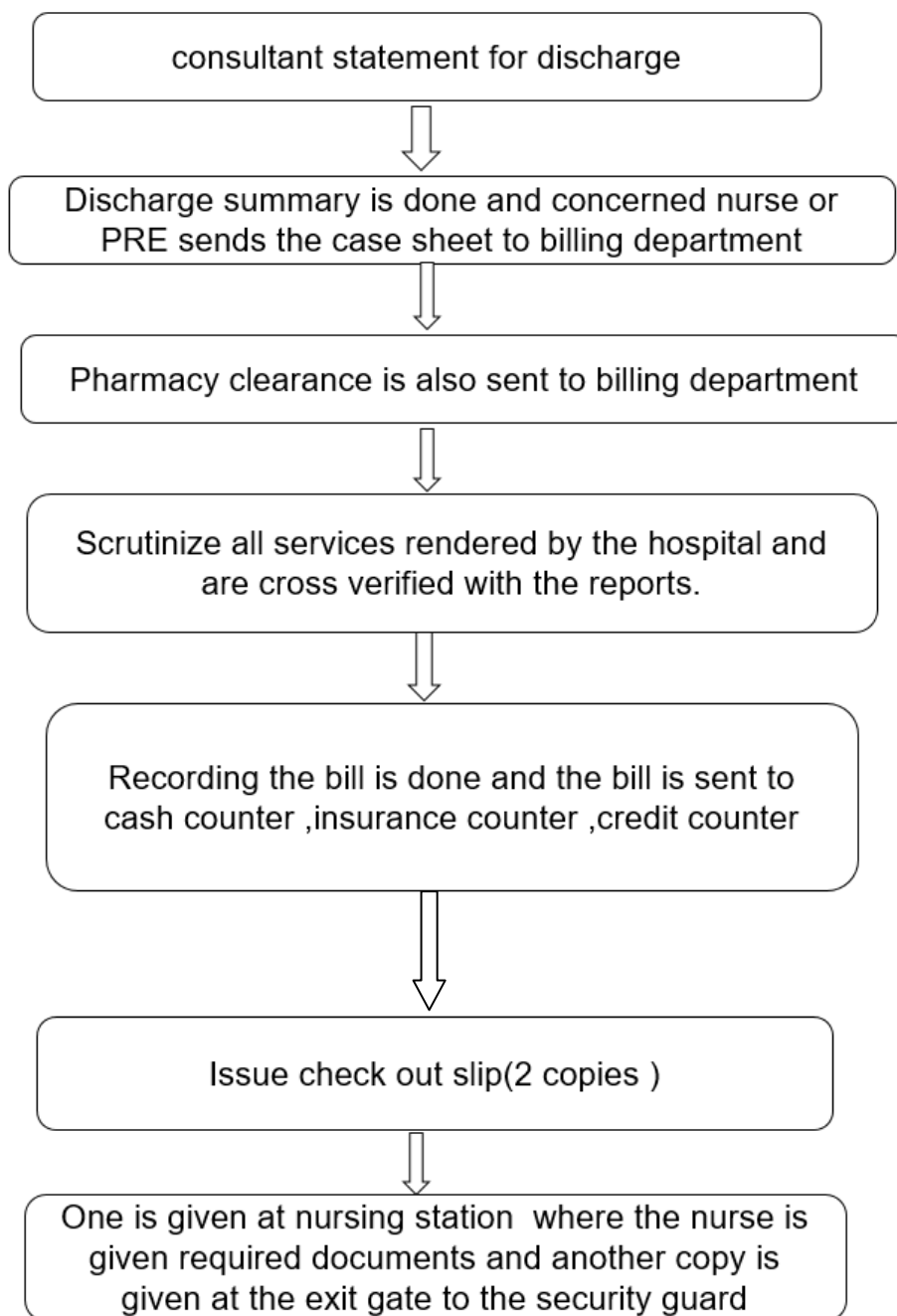
EMPLOYEE REWARDS SYSTEM:

- Spot award
 - Best associate award (monthly)
 - Appreciation certificate
 - Best employee of the week or in a floor
- ❖ Types of leaves are sick leaves, earn leaves and casual leaves.
- ❖ Training is by external /internal by following a training calendar
- ❖ Job description is about target to be achieved, duties to be performed, station standing orders, key result areas, (KRA)key performance indicators (KPI)
- ❖ Performance appraisal is done yearly.

❖ All employees are segregated to

- G1,G2,G3 – entry level
- G4,G5,G6 – middle level
- G4,G5,G6 – middle level
- G4,G5,G6 – middle level

BILLING PROCESS FLOW



LOGISTICS/PHARMACY:

It has 3 sub departments

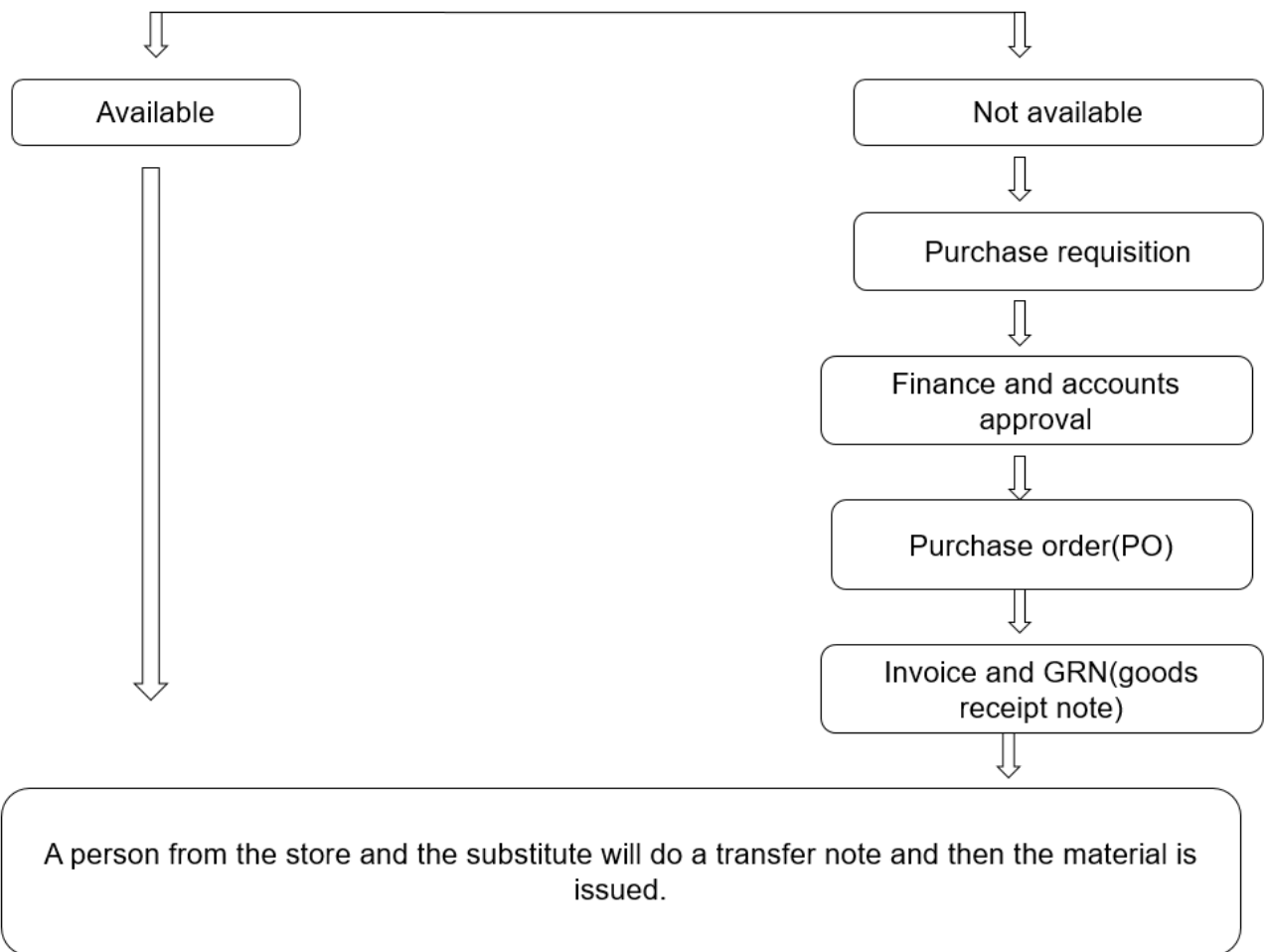
1. Central drug store
2. Central surgical store
3. Pharmacy
 - ❖ ER pharmacy
 - ❖ IP pharmacy
 - ❖ OP pharmacy

PROCESS FLOW

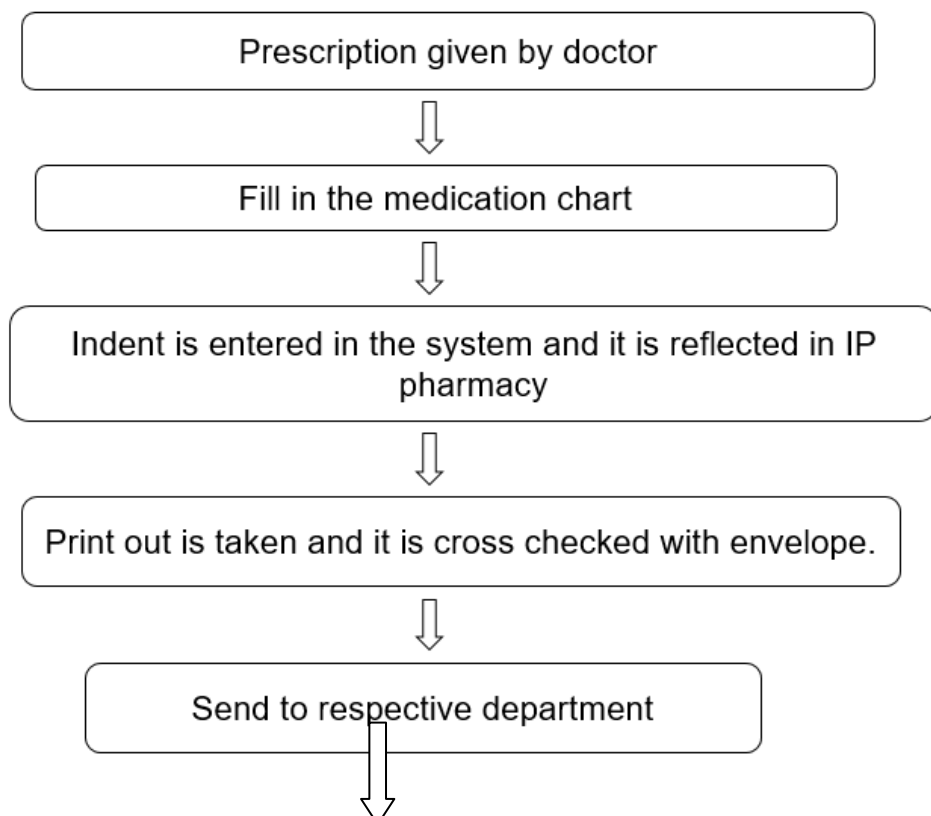
Quotations will be collected according to the requirement from the vendors and centralized purchase team will decide the appropriate vendor and two substitute vendors for the entire financial year.

Monthly indent will be received from all the departments by general stores/logistics/pharmacy

In charge will consolidate how much material is present in the stores and in the substitutes



IP PHARMACY PROCESS FLOW:



MEDICAL RECORDS:

TYPES:

1. Discharge
2. Death
3. MLC (medico legal cases)

RETENTION PERIOD:

- ❖ Discharge – 3years
- ❖ Death – 10 years
- ❖ MLC – forever
- ❖ According to IP number, medical records are arranged with ICD code generated by them.

RETRIEVAL POLICY:

- ❖ Death/ discharge - 1-2min
- ❖ MLC- 3-4 min

NURSING DEPARTMENT:

This department mainly focuses on 3 aspects. They are

1. Education
2. Quality
3. HICC

EDUCATION

1. Clinical rounds
2. In-service education
3. Briefing & induction sessions
4. In charge nurses- Training
5. BLS training
6. Bed side teaching
7. Monthly sessions
8. Coordination with CON & SON
9. Manage nursing library
10. Maintain educational data

QUALITY

1. Clinical rounds
2. Tissue viability-nurses
3. BAER programme
4. Transportation –pool
5. Event & code blue/ CPR forms
6. Root cause analysis
7. PQAC presentation
8. Blood transfusion-feedback forms
9. Champions audit
10. Home care

HICC

1. Clinical rounds
2. Data capturing
3. Surveillance
4. Employee vaccination
5. HICC presentation
6. Protocol timing
7. Monthly audit

4. SPECIFIC PROJECT LEARNING

INTRODUCTION

Antibiotics and similar drugs, together called antimicrobial agents, have been used for the last 70 years to treat patients who have infectious diseases. Since the 1940s, these drugs have greatly reduced illness and death from infectious diseases.

Penicillin, the first commercialized antibiotic, was discovered in 1928 by Alexander Fleming. While it wasn't distributed among the general public until 1945, it was widely used in World War II for surgical and wound infections among the Allied Forces. It was hailed as a "miracle drug" and a future free of infectious diseases was considered. When Fleming won the Nobel Prize for his discovery, he warned of bacteria becoming resistant to penicillin in his acceptance speech

Why is antimicrobial resistance a global concern?

Antibiotic / Antimicrobial resistance is the ability of microbes to resist the effects of drugs – that is, the germs are not killed, and their growth is not stopped. New resistance mechanisms emerge and spread globally threatening our ability to treat common infectious diseases, resulting in death and disability of individuals who until recently could continue a normal course of life.

Without effective anti-infective treatment, many standard medical treatments will fail or turn into very high risk procedures.

Antimicrobial resistance kills

Infections caused by resistant microorganisms often fail to respond to the standard treatment, resulting in prolonged illness, higher health care expenditures, and a greater risk of death.

Antimicrobial resistance hampers the control of infectious diseases

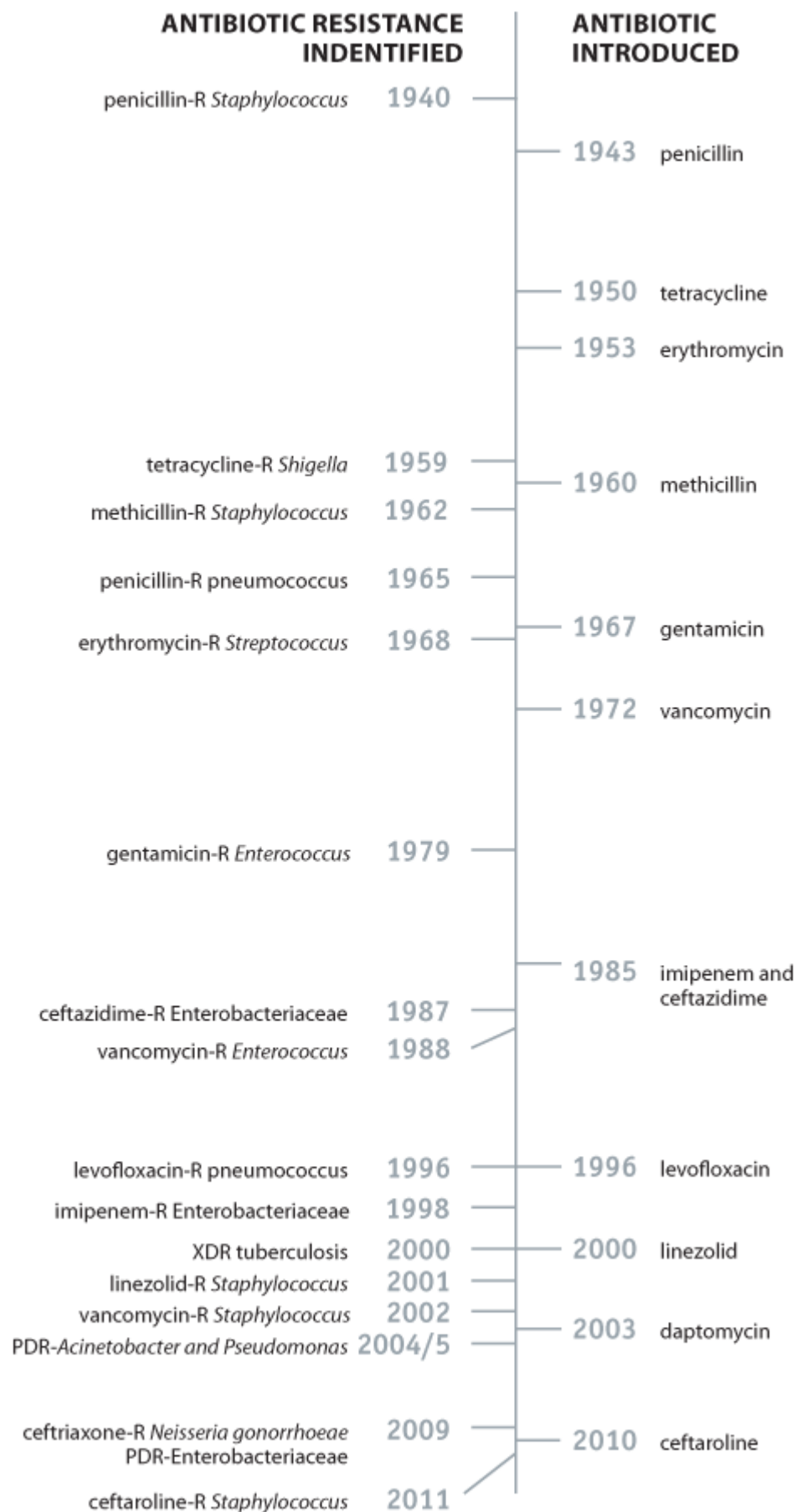
Antimicrobial resistance reduces the effectiveness of treatment; thus patients remain infectious for a longer time, increasing the risk of spreading resistant microorganisms to others.

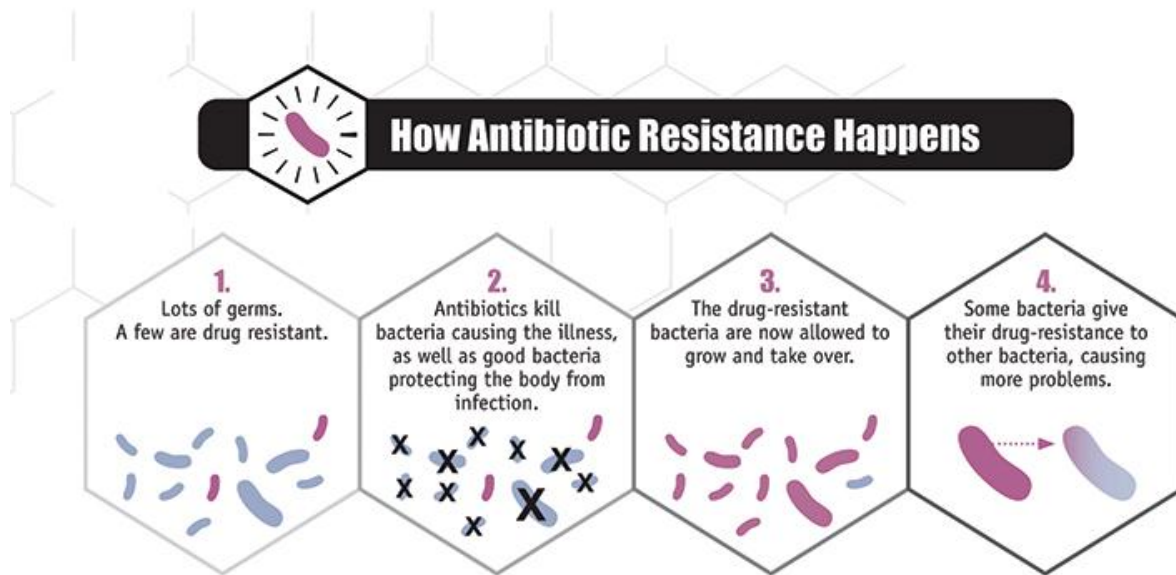
Antimicrobial resistance increases the costs of health care

When infections become resistant to first-line drugs, more expensive therapies must be used. A longer duration of illness and treatment, often in hospitals, increases health care costs as well as the economic burden on families and societies.

Antimicrobial resistance jeopardizes health care gains to society

The achievements of modern medicine are put at risk by antimicrobial resistance. Without effective antimicrobials for prevention and treatment of infections, the success of organ transplantation, cancer chemotherapy and major surgery would be compromised





LITERATURE REVIEW:

WHO's latest *Antimicrobial Resistance: Global Report on Surveillance*, released in February, highlighted that the information on resistance surveillance received from some 129 member countries showed very high rates of resistance in bacteria that cause common infections, including urinary tract infection and pneumonia, among others.

Centres for Disease Control and Prevention (CDC) and Division of Healthcare Quality Promotion (DHQP) states that the use of antibiotics is the single most important factor leading to antibiotic resistance around the world.

A Journal, **The perils of irrational antibiotic use by CH.Unnikrishnam** states that

The country's first official circular which was issued by the Central Drugs Standard Control Organization (**CDSCO**), the drug regulator, in 2012, cautioned about development and spread of antimicrobial resistance due to overuse and misuse of antibiotics, and had estimated that 70-80% of prescriptions for antimicrobial drugs were probably advised unnecessarily by healthcare providers

OBJECTIVES:

- To study how antimicrobial resistance can be minimized.
- To study how the toxicity & adverse effects of unnecessary antibiotics can be minimized.
- To study how excessive costs can be minimized on following activities:
 - Inappropriate /unnecessary therapy
 - Suboptimal outcomes
 - Toxicity & other adverse events
 - Antimicrobial resistance

METHODOLOGY:

DURATION OF STUDY: One month from May 1st to May 31st

SAMPLE:

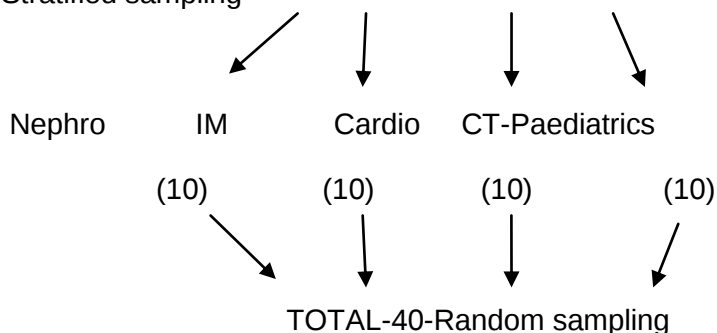
INCLUSION CRITERIA: Case files of patients who are on high end antibiotics and belong to the departments of

1. Nephrology
2. Internal medicine
3. Cardiology
4. CT-Paediatrics

SAMPLING METHOD: Stratified Random sampling

SAMPLE SIZE: Total no. of patient case files – 40 (10 from each department)

Stratified sampling



AREA OF STUDY: All wards including critical care area

TYPE OF DATA: Primary and Secondary data

TECHNIQUE OF DATA COLLECTION:

- I have followed up the case files from the day of admission to the day of discharge.
- In each case file, I have noted down the patient's chief complaints, diagnosis, whether the culture has been sent before starting the high end antibiotics, TLC count and other parameters of infection on the day of admission as well as on the day of culture been sent, dose, duration, route of antibiotics administration, escalation and de-escalation of antibiotics based on antibiotic sensitivity report, patient clinical signs and symptoms written down in progress notes, patient condition and antibiotics prescribed while discharging the patient.

DATA ANALYSIS: By using MS Excel

5. DATA TABULATION AND ANALYSIS:

High end antibiotics started empirically and culture report came as positive:

NAME OF ANTIBIOTIC	NUMBER OF DAYS GIVEN
Case 1:inj.piptaz 3.375gm,IV, QID	2 DAYS
Case 2: inj.meropenem 500mg,IV, BD	3 DAYS
Case 3: inj.meropenem 500mg, IV,BD	10 DAYS
Case 4: inj.meropenem 160mg, IV, TID inj.colistin 2lac IV, TID	3 DAYS 1 DAY
Case 5: inj.piptaz 2.25gm IV, TID	3 DAYS

High end antibiotics started empirically and culture report came as positive

NAME OF ANTIBIOTIC	NO OF DAYS GIVEN
Case 1: Inj. Meropenam, 1gm, IV, BID	1 DAY
Case 2: Inj. Piptaz 4.5gm, IV, TID	5 DAYS
Case 3: Inj. Piptaz, IV, QID	4 DAYS
Case 4: Inj. Meropenam, 1gm, IV, BD Inj. Ticoplanin, 400mg, IV, BD	2 DAYS 3 DOSES
Case 5: Inj. Linezolid, 600mg, IV, BD	1 DAY
Case 6: Inj. Meropenam, 1.2mg, IV, TID	3 DAYS
Case 7: Inj. Meropenam, 1gm, IV, TID	1 DAY
Case 8: Inj. Meropenam, 160mg, IV, TID	3 DAYS
Case 9: Inj. Meropenam, 160mg, IV, TID	2 DAYS

High end antibiotics prescribed even the patient is sensitive to broad spectrum antibiotics

Case 1:

ANTIBIOTICS GIVEN	inj,meropenem 1 gm,IV,BD
OTHER ANTIBIOTICS COULD HAVE BEEN GIVEN	piperacillin+tazo,ceftriaxone,cefaperazone+sulbactum,cefepime,ertapenem,imipenem,meropenem,amikacin,gentamycin,ciprofloxacin,trimethoprim+sulfamethaxazole

Case 2:

ANTIBIOTICS GIVEN	inj,invaz 1gm,IV,OD
OTHER ANTIBIOTICS COULD HAVE BEEN GIVEN	imipenem , meropenem ,cefeperazone+sulbactum,ertapenem,amikacin,trimethoprim+sulfamethaxazol

Case 3:

ANTIBIOTICS GIVEN	inj.meropenem 500mg,IV,BD
OTHER ANTIBIOTICS COULD HAVE BEEN GIVEN	imipenem,ciprofloxacin,nitrofurantoin,norfloxacin,gentamycin,amikacin,ceftazidine,amox-clav,cotrimaxazole

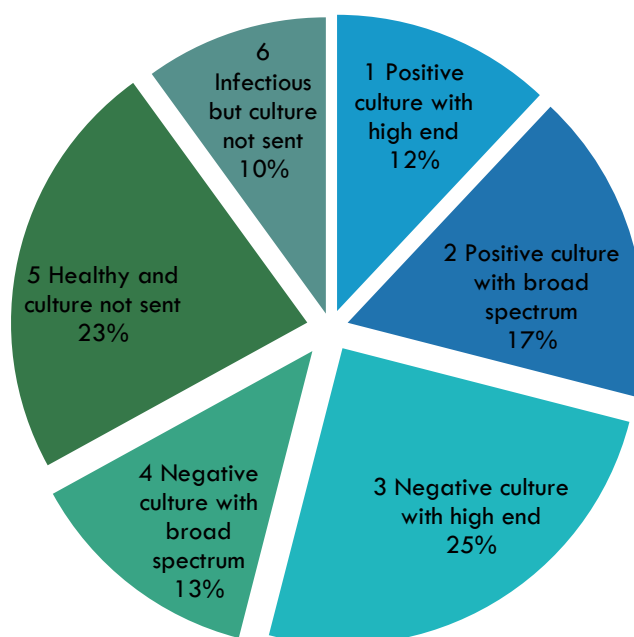
Case 4:

ANTIBIOTICS GIVEN	inj.meropenem 500mg,IV,BD Inj.tigecycline 50 gm,IV,BD
OTHER ANTIBIOTICS COULD HAVE BEEN GIVEN	Sensitive to imipenem,meropenem,cotrimaxazole,amikacin,tigecycline

High end antibiotics prescribed without culture being not sent:

NAME OF ANTIBIOTIC	NUMBER OF DAYS GIVEN
Case 1 : tab.linezolid 600 mg,PO,BD	7 DAYS
Case 2 : inj.piptaz 4.5gm,IV,TID	4 DAYS
Case 3 : inj.cefepime+taz 1.125gm,IV,BD	5 DAYS
Case 4 : inj.piptaz 4.5 gm,IV,TID	3 DAYS

STATUS OF COMPLIANCE AND NON- COMPLIANCE



The above figure depict clearly that about two – fifths (37%) of the cases are given with high end antibiotics and nearly one-third (30%) of the cases have been given with broad spectrum antibiotics. This indicates that there is a lot need to decrease the consumption of high end antibiotics. It was surprisingly to note that culture has not been sent for 33% of cases. Among them 10% of cases are actually infectious and antibiotics have been given without any antibiotic sensitivity report. Among these cases 17 % of total cases are with unnecessary antibiotics, either it may be high end or broad spectrum

6. SUGGESTIONS:

- Order recommended cultures before antibiotics are given and start drugs promptly.
- Review should be done after 3 days of culture and for every seven days.
- Team of doctors and microbiologists should be there for reviewing. Online reviewing would help more than manual reviewing.
- Reassess within 48 hours and adjust Rx if necessary or stop Rx if indicated
- Except for 1st dose, when indent is went for 2nd dose, only after assessing the patient file and condition, the process of issuing should continue.
- Manpower like clinical pharmacologists should be increased for doing audits.

SUGGESTIONS FOR DOCTORS BEFORE PRESCRIBING:

1. Optimize IV to oral switch
2. Higher dose shorter duration
3. Quantify antibiotic use by DDD (Defined daily dose) & DOT (Days of therapy).

7. CONCLUSION:

The study concludes that the antibiotic resistance is no longer a prediction for the future; it is happening right now, and is putting at risk the ability to treat common infections in the community and hospitals. It is clear that we are heading towards a post-antibiotic era, in which common infections and minor injuries, which have been treatable for decades, can once again kill. Perhaps the single most important action needed to greatly slow down the development and spread of antibiotic resistance infection is to change the way antibiotics are used. Stopping even some of the inappropriate and unnecessary use of antibiotics would help greatly in slowing down the spread of resistant bacteria.

8. REFERENCES:

- Active Bacterial Core surveillance (ABCs) <http://www.cdc.gov/abcs/index.html>
- Get Smart: Know When Antibiotics Work Program <http://www.cdc.gov/getsmart/>
- <http://www.cdc.gov/drugresistance/threat-report-2013/pdf/ar-threats-2013-508.pdf>
- Centers for Disease Control and Prevention (CDC). Vital Signs: Carbapenem-resistant Enterobacteriaceae. MMWR Morb Mortal Wkly Rep. 2013 Mar 8;62(9):165–70.
- CDC. National Antimicrobial Resistance Monitoring System for Enteric Bacteria (NARMS): Human Isolates Final Report, 2011. Atlanta, Georgia: U.S. Department of Health and Human Services, CDC, 2013.
- Antimicrobial resistance: global report on surveillance 2014
- Worldwide country situation analysis: response to antimicrobial resistance
- WHO's policy package to combat antimicrobial resistance
- WHO's work on antimicrobial resistance
- <http://www.who.int/mediacentre/factsheets/fs194/en/>
- The perils of irrational antibiotic use by CH.Unnikrishnan(Oct 15,2014)

9. ANNEXURE

S.NO	NAME OF THE DEPARTMENT	DATE OF VISIT	TIME SPENT	NAME OF THE CO-ORDINATOR
1.	IP & OP Reception	01-04-16 to 05-04-16	9 AM TO 6 PM	Ms. Sujatha
2.	Emergency	06-04-16	9 AM TO 6 PM	Mr. Harikrishna
3.	Radiology	07-04-16	9 AM TO 6 PM	Mr. Mansoor
4.	Ni Lab	09-04-16	9 AM TO 1 PM	Mr. Mansoor
5.	Dialysis	09-04-16	2 PM TO 6 PM	Dr. Harish
6.	2 nd Floor ICU's	11-04-16	9 AM TO 6 PM	Dr. Shameem
7.	1 st Floor ICU's	12-04-16	9 AM TO 6 PM	Dr. Shameem
8.	Quality	13-04-16	9 AM TO 6 PM	Ms. Preeti Patel
9.	6 th Floor	14-04-16	9 AM TO 6 PM	Ms. Sridevi
10.	Pharmacy	16-04-16	9 AM TO 11 AM	Mr. Taher
11.	Stores	16-04-16	11 AM TO 1 PM	Mr. Sudhir
12.	Logistics	16-04-16	2 PM TO 6 PM	Mr. Taher
13.	Medical Records	18-04-16	9 AM TO 1 PM	Dr. Gopikrishna
14.	Food & Beverages	18-04-16	2 PM TO 6 PM	Mr. Thomas
15.	Maintenance	19-04-16	9 AM TO 6 PM	Mr. Ramana Reddy
16.	Discharge Pool	20-04-16	9 AM TO 6 PM	Dr. Jyothi
17.	House Keeping	21-04-16	9 AM TO 1 PM	Mr. Saleem
18.	CSSD	21-04-16	2 PM TO 6 PM	Mr. Mansoor
19.	Blood Bank	22-04-16	9 AM TO 1 PM	Dr. Harish
20.	Biomedical	22-04-16	2 PM TO 6 PM	Mr. Balaji
21.	Laboratory Medicine	23-04-16 to 25-04-16	9 AM TO 6 PM	Dr. Harish
22.	HR	26-04-16	9 AM TO 6 PM	Mr. Shantham Sharma
23.	COPC	28-04-16	9 AM TO 6 PM	Mr. Deepak Chaitanya

24.	Nursing	29-04-16	9 AM TO 6 PM	Sis. Romila
25.	Billing	30-04-16	9 AM TO 6 PM	Mr. Jameel

