Summer Training at
Max Super Speciality Hospital, Mohali, Punjab
(April 3 to June 2, 2017)

Study on Return to Surgical Intensive Care Unit (SICU) Antibiotics Stewardship in Medical Intensive Care Unit (MICU)

By
Jashanmeet Kaur

Under the guidance of
Dr. Arindam Das

MBA Hospital & Health Management
2016-2018

Institute of Health Management Research
The IIHMR University, Jaipur
2017

INSTITUTE OF HEALTH MANAGEMENT RESEARCH
(WHO Collaborating Centre for District Health System Based on Primary Health Care)

IIHMR UNIVERSITY

CERTIFICATE

This is to certify that **Dr. Jashanmeet Kaur** has undergone summer training in **Max Hospital, Mohali** from 3rd April to 2nd June 2017.

The candidate herself/~~himself~~ completed the project assign to ~~his~~/her during summer training. Her approach to the project was sincere and proactive. This summer training is in partial fulfillment of the course requirement recommended for the award of MBA in Hospital and Health Management.

I wish ~~him~~/her success in all her future endeavors.

Col. (Dr.) Ashok Kaushik

Dean (Academic & Student Affair)

The IIHMR University, Jaipur

Name of the Mentor- **Dr. Arindam Das**

Designation- Associate Professor and

Associate Dean Research

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Ref: MOH/TR/CP/J321

31-May-2017

TO WHOMSOEVER IT MAY CONCERN

This is to certify that Ms. Jashanmeet Kaur has completed her internship in the department of Hospital Operations at Max Super Speciality Hospital, Mohali on 31-May-2017.

During her training (3-April-2017 to 31-May-2017) her project title was Antibiotics Stewardship in Medical intensive care unit (MICU) and study on return to surgical intensive care unit (SICU) in super specialty hospital in Punjab.

She was part of the hospital set up and reporting to Dr. Pranav Shankar.

We wish her all the best in her future endeavors.

For Max Super Specialty Hospital

Authorized Signatory
Human Resource

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M-0574

ACKNOWLEDGMENT

The Summer Training at MAX HOSPITAL, MOHALI, helped me in providing with both, a learning experience as well as a glimpse into the daily managerial level issues of this renowned hospital. I was fortunate enough to interact with the esteemed authorities and staff of the hospital, who have encouraged and guided me with their support and patience.

First of all, I would like to thank Mr. Sandeep Dogra (senior vice President) for providing me an opportunity to carry out my internship at Max Hospital, Mohali.

I want to express my gratitude and sincere thanks to my mentor Dr. Pranav Shankar (MS) for his constant support and invaluable time-to-time guidance and kind help in completion of my projects. I also want to extend my thanks to Dr. S.D. Gupta, Director-IIHMR for incorporating right attitude towards learning and Col. (Dr.) Ashok Kaushik , Dean-Academic and Students Affairs, IIHMR, for helping and supporting me to reach my goals and endeavors.

Finally I acknowledge my indebtedness to the staff of the Hospital and my respected Guide of The IIHMR University Dr. ARINDAM DAS for providing his constant support by guiding me throughout my Training period. I would also like to thank all those who have directly or indirectly supported me towards the completion of this Internship.

Sincerely,

Dr. JASHANMEET KAUR

CONTENT: -

ABBREVIATIONS USED

MICU- Medical intensive care unit

RICU- Renal intensive care unit

NICU- neonatal intensive care unit

SICU- Surgical care unit

HDU- high dependency unit

ONDC- Oncology day care

MRD- Medical record room

PFT- pulmonary function test

PRBC- Packed red blood cells

FFP- Fresh frozen plasma

RDPC- Random donor platelet cell

SDPC- Single donor platelet

CABG- Coronary Artery bypass Angioplasty

MHC – Max Health Care

PART- 1

MAX SUPER SPECIALITY HOSPITAL

INTRODUCTION-

Max Super Specialty Hospital, Mohali is a unit of Hometrial Estate Pvt. Ltd., which offers services like medical disciplines of Neurosciences, Cardiac Sciences , Cardiac Care, Orthopedics , Obstetrics and Gynecology among several others. The 200+ bedded healthcare facilities are equipped with MICU, CCU, SICU and Cath Labs. Our Team of experts understands the problems related to health and offer personalized care to each and every patient.

LOCATION-

Located in Mohali near Civil Hospital, Phase 4, Sector 56A, Sahibzada Ajit Singh Nagar,
Punjab 160055.

MISSION –

- Create exceptional standards of Medical & 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.

VISION-

Deliver premium class healthcare with a overall service focus, by creating an institution committed to the highest standards of Medical & Services excellence, patient care, scientific Knowledge, research and medical education.

QUALITY POLICY-

To our patients we commit our best we aim to

- Ensure every interaction leads to customer delight.
- Take ownership and resolve complaints to the customer satisfaction.
- Escort customers whenever they approached for directions.
- Respect the privacy of patients.
- Responsible for uncompromising levels of cleanliness.
- Help my colleagues who are in involved in patient care.
- Treat every patient as my own family.

.

Pledge to set and practice high standards through an effectively quality management system and ensure that our services always meet the expected requirement of our clients and patients.

VALUES OF MAX HEALTH CARE

- Excellence
- Credibility
- Sevabhav

ACHIEVEMENTS

- MHC received Express Healthcare Awards for Excellence in Healthcare in 2008
- MHC received D L Shah National Award on Economics of Quality by Quality council of India in 2009

MEDICAL EXPERTIES

With over 30 hospital based consultants; which is a unique feature of the hospital, there is always an experienced specialist available to initiate treatment without delay. The various Key Specialties covered are Cardiac Sciences, Neurology, Neurosciences, Orthopaedics &

Joint Replacement, Oncology, ENT, Pediatrics, Urology, Nephrology & Kidney Transplant, Obstetrics & Gynaecology, Internal Medicine, General Surgery, and Minimal Access & Bariatric Surgery. The various Allied Medical Specialties covered are Anaesthesiology, Dental Surgery & Orthodontics, Dermatology, Diabetics/Endocrinology, Dietetics, Emergency and Trauma Care, Endoscopy, & Bronchoscopy Labs, Laboratory Medicine, Mental Health & Behavioral Sciences.

Basic Facts about MAX Super Specialty Hospital

- Bed strength = 224 beds
- Bed occupancy rate = 90%
- Number of Discharges/month = 1400
- Number of OPD patient/day = 30-350
- Number of Emergency case = 15-20 / day
- Total staff (on roll) = 787
- Building of Max Hospital = 1

ADVANCED TECHNOLOGIES

- **FFA**

  FFA machine is used in case of Angiography which helps in reading and recording of blood vessels in the retina. A flourscience dye is injected in the body which changes the wavelength of blood vessels once excited with the help of this machine.
- **CRRT**

  It delivers a gamut of continuous extracorporeal blood therapies with highly versatile platform that can be customised to specific patient needs particularly used in renal transplant therapy.
- **TRANSCRANIAL DOPPLER**

Departments of Max Hospital

The Department at Max Hospital can be differentiated into:

1. **Clinical Services** – Those services which are directly related to medical Practice. These Include:-
   a. Outpatient Department(OPD)
   b. Inpatient department (IPD)
   c. OT services
   d. Cath labs
   e. Ambulance Services
   f. Nursing Services
   g. Laundry Services
   h. Accident and Emergency Department
   i. Laboratory Services
   j. Mortuary services
   k. Blood bank

2. **Non Clinical Services**- Those services which are related to the administrative and non medical side of the hospital. These include:-

   a. Administrative service (Admission, Registration and Billing)
   b. Medical Record Department(MRD)
   c. Information technology.
   d. Engineering department
   e. Pharmacy department

CLINICAL SERVICES

OUTPATIENT DEPARTMENT –

Patients who in the considered view of a competent medical professional do not immediately require Hospital admission and who can be satisfactorily treated on a domiciliary basis are classified as Ambulatory Patients, and are commonly referred to as outpatients. Hence the department of ambulatory care is also known as Outpatient Department. Services provided are as below –

1. Appointment
2. Consultation
3. Diagnosis and Laboratory services
4. Minor procedures
5. Pharmacy services

The Max clinic aims to provide:

- High quality of ambulatory care services to the community in a secured environment.
- Ensuring safe, appropriate interventions, treatment and care which are delivered efficiently.

The OPD in MAX clinic is on Ground Floor and consists of:

- Front Office
- Outpatient Registration
- Pharmacy
- Nurse station
- Billing Cashier

- Radiology
- Nuclear Medicine
- Immigration
- Changing Rooms (2)
- Console Room
- Day Care/Cath beds
- OPD Room
- Seminar Room
- Report Collection/Delivery
- EMG/EEG/NCV
- Dentistry Dept.
- PHP
- Cardiology Dept.
- Gastroenterology Dept.
- Pulmonology Dept.
- Gynaecology Dept.
- Nephrology Dept.
- Dermatology Dept.
- Oncology Dept.
- Ophthalmology Dept.
- Elite orthopaedics Dept.
- Internal Medicine Dept.
- Paediatrics Dept.
- Urology Dept.
- Plastic Surgery and Diabetics foot Clinic

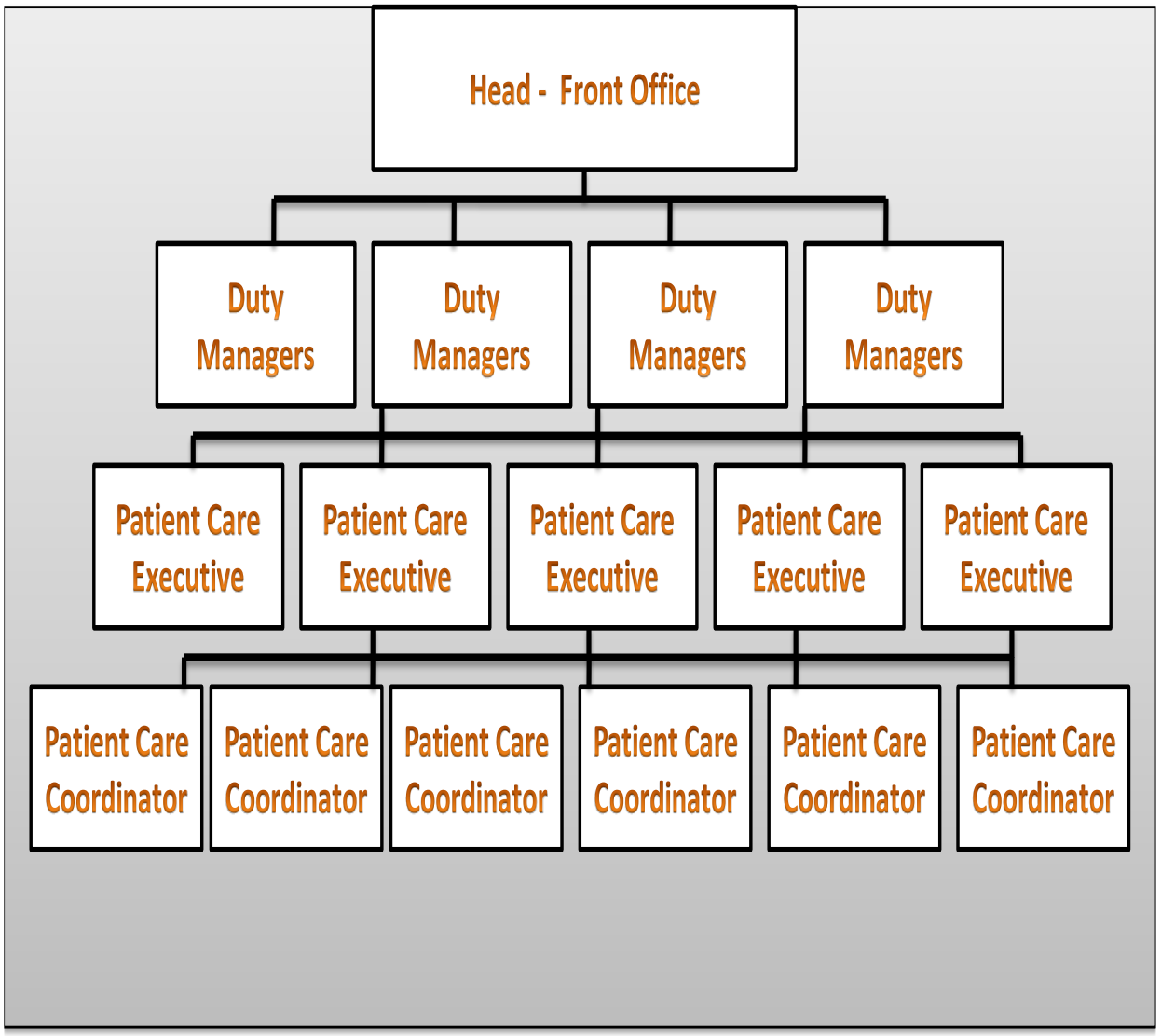
PREVENTIVE HEALTH PROGRAMME (PHP) –

- PHP provides comprehensive medical assessments and personalised preventive plans.
- Designed for the early detection of certain risk factors and conditions.
- Gives the lifestyle management guidance.
- Offers a range of customised packages.
- Specially designed corporate packages.

REPORT COLLECTION/DELIVERY –

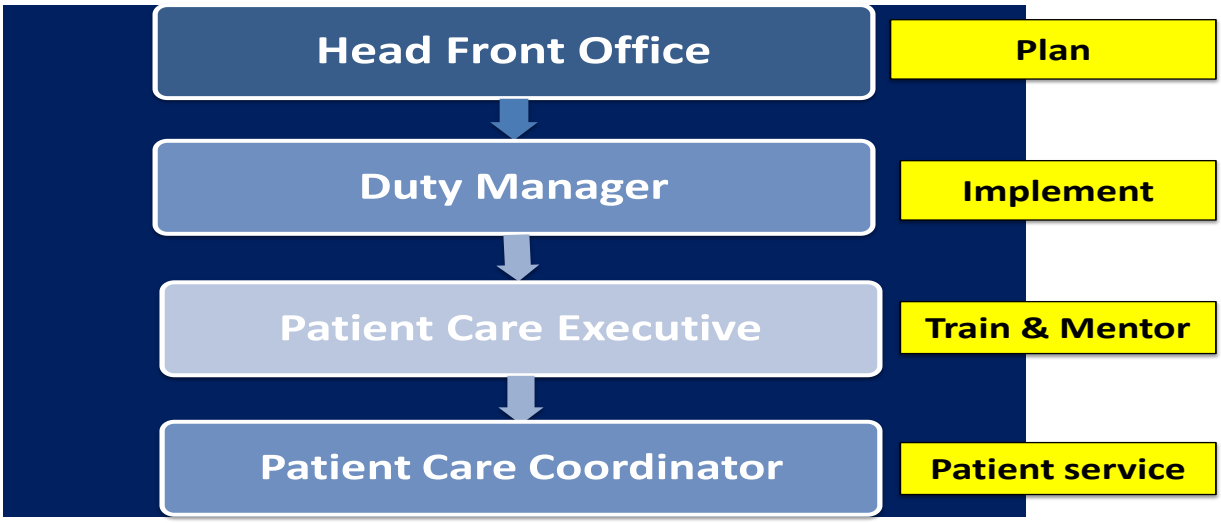
- Reports of diagnostic tests carried out for patients are delivered either by hand or sent via post.
- Patients are guided for report collection to the report delivery counter.
- Reports are handed over only on the basis of an invoice.

REPORTING RELATIONSHIP –



No. of positions are representative only

SERVICE DELIVERY –



IN-PATIENT DEPARTMENT –

- The admission of the patients to the hospital is required so that he or she can be closely observed and monitored during the procedure and afterwards and during recovery.
- An inpatient word symbolises that a person is admitted to the hospital and he or she stays overnight or for uncertain time period, usually it lasts for many days or sometimes even weeks.
- A variety of care or facilities available to patients depending on the needs of the persons involved.

The IPD Building consists of –

- Basement 2
- Basement 1
- First floor
- Second floor
- Third floor

FIRST FLOOR

OPERATION THEATRES (6)	ENDOSCOPY / BRONCHOSCOPY		
ICU'S →	ORTHO ICU (2)	SICU	HDU
	CTVS	CCU	NICU
PRE/POST DELIVERY CAESARIAN	LABOUR ROOM		
CATH LABS	Dr.DUTY ROOM		
NURSERY	CLEAN UTILITY ROOM		
DIRTY UTILITY ROOM	DOCTORS CHANGING ROOM (2)		
STORE ROOM	STAFF CHANGING ROOM (2)		

SECOND FLOOR

MEDICAL ICU (31 BEDS)	Dr.DUTY ROOMS (2)
PAC	DIRTY UTILITY ROOMS (2)
STORE ROOM	TEA ROOM
BABY FEED ROOM	HOUSEKEEPING
PANTRY	OPERATION THEATRES (2)
SLEEP LAB PATIENT	NURSE STATIONS (3)
NEGATIVE PRESSURE ROOM (2)	

THIRD FLOOR

MICROBIOLOGY LAB	BLOOD BANK
SAMPLE REPORT RECEIVING	ECO WARD
NURSE STATIONS (3)	DIRTY UTILITY ROOM
HOUSEKEEPING ROOMS (2)	ADMISSION / DISCHARGE COUNTER
PANTRY	SEMINAR ROOM
MS OFFICE	DOCTORS LOUNGE

BASEMENT 1

DIALYSIS	CSSD
AMBULATORY DAY CARE	SECURITY ROOM
MEDICAL RECORDS DEPARTMENT	ENGINEERING ROOM
AHU CT SCAN	GAS MANIFOLD ROOM
MORTUARY	IP PHARMACY
IT DEPARMENT	EPABX ROOM
HOUSEKEEPING	BIOMEDICAL
UNIFORM ISSUE	DIRTY LINEN

BASEMENT 2

ONCOLOGY DAY CARE (2)	LINAC RADIATION THERAPY
ADMIXING LAB	RECEPTION
MOULD ROOM	OBSERVATION AREA
BRACHYTHERAPY	TREATMENT PLANNING

OPERATION THEATRE

Introduction:

- MAX boasts of a ultra modernized O.T, which provides solutions to different surgeries.
- Annually around 8000 operative procedures are carried out at Max Mohali Hospital.

Location and layout:

1. 8 Operation Theatre (OT 1-6 are on first floor and 7 and 8 are on second floor)
2. 5 Hand scrubbing areas
3. 1 Clean utility room
4. 1 Dirty utility room
5. 1 Pre operative room
6. 2 Separate changing rooms for gents and ladies.
7. 1 Equipment room
8. 1 Doctors lounge

9. 1 OT manager cabin

Features:

- The 8 operation rooms ply to all major surgeries like Orthopaedics, Neurosurgery, Cardiac Surgery, Oncosurgery, ENT, Urosurgery, Abdominal, Laproscopic, Gynaecological, Kidney transplants.
- 3 of the OT's are dedicated to Ortho based services due to the high number of Ortho patients and 1 is dedicated for cardiac surgeries.
- The whole OT consists of a laminar airflow designed Air conditioning system and HEPA filter to eliminate OT acquired infection.
- It is divided into two zones:-
  1) Sterile zone
  2) Clean zone

CATH LAB.

Introduction

- Cath Lab is located on the first floor of IPD building. It is well equipped to perform various heart related procedures such as Angiography, Angioplasty, and Pacemaker etc.
- Two types of packages are provided -Radial Package and Femoral Package.

Scope of services

- -Diagnostic Services
- -Therapeutic Services

Billing Of Cath Lab:

Primary Responsibility: Technician, Receptionist, Billing Clerk

- After completion of the procedure, receptionist does the entries of the services rendered for billing

- O.T. Details
- Cardiologist/Anaesthesia Details-
- Consumable/equipment details
    - Categorized into : Consignment and Stock items
    - Consignment items charged after preparation of MH number and by intimating the Medical store and Material Department does entries at the billing counter.
    - Catalogue number of the items is put by the receptionist and the items are selected by the drop down menu.
    - Voucher number is generated.
    - Sending of procedure Requisition Slip & Cath Lab Charge Sheet.

Procedure for Admission

- Primary Responsibility: Clerk from Admission Counter, Receptionist
- Admission for IPD Patients:
    - Patient is admitted to the hospital on a written note either from Cardiologist Admission cum O.T. booking form, which state about the demographic details of the procedure.
    - Staff at the admission counter does the admission formalities.
    - Visitor pass is issued then and Admission deposit is taken through cash/credit card/pay order/Demand draft/cheque and service is generated.
    - Then the O.T. clearance slip is issued for the procedure.
    - Admission for day care procedures i.e. Angiography Packages-Radial and Femoral

Working

- Primary responsibility: Admission billing staff, Receptionist
- Working can be done in either of the following ways:
    - Direct call from the cardiologist/clinical associate
    - By patient's on the basis of consultants letter/admission cum O.T. booking form
    - By receptionist at Cath lab

- Reservation done by cardiologist/clinical associate-Depending on the type of procedure, cardiologist/clinical associate calls at the booking counter/accident & emergency counter at admission and billing department.
- Reservations done by patient- Depending on the type of procedure-Patient/Relative approaches booking counter /accident and emergency counter at admission and billing department.

AMBULANCE SERVICES

Introduction

Ambulance services under the purview of the Accident & Emergency department. Hospital offers 24 hours ambulance services, always ready to meet any emergency be it surgical or medical.

There are two types of Ambulance services.

- Advance cardiac life support
- Basic Life Support

  The ACLS serves all critical all critical patients coming in from

  - Nursing homes
  - Office
  - House
  - Accident site- RTA
  - All critical patients who requires medical intervention immediately

The Basic Life Support Ambulance depends on patient's condition & also used for-

- Discharged
- Planned admissions
- For appointments to Max clinic.

Air Ambulance

Air ambulance is a blessing when the critical patient is in a remote area and urgently needs to be transferred to a tertiary care centre like Max hospital for specialist treatment. Max hospital, in its continuous endeavour to provide quality health care for all now offers air ambulance services for seamless transfer of national and international patients. Air ambulance of Max Hospital has tie up with Whistler Aviation.

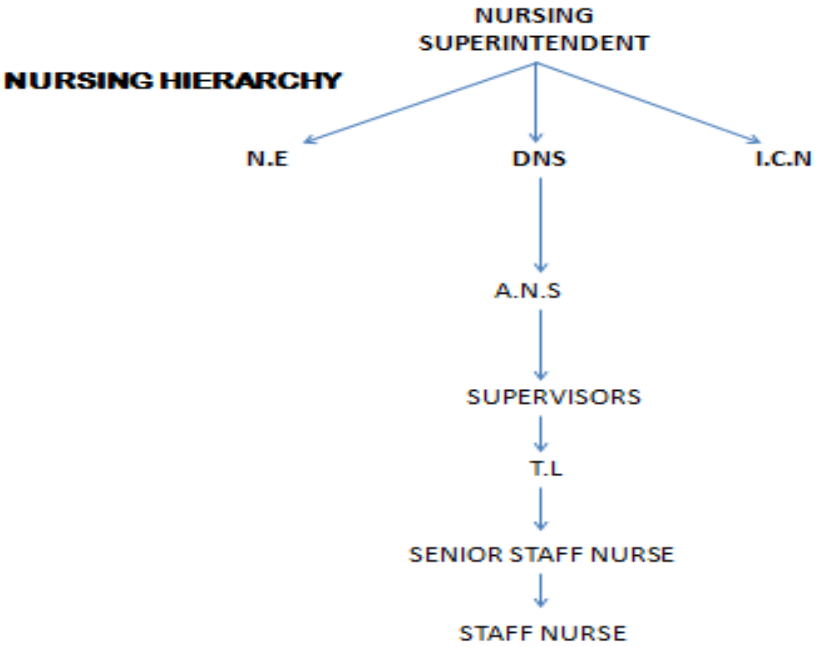
NURSING DEPARTMENT

Introduction

Max hospital has a very efficient nursing department. This department is divided into two categories, **Clinical** and **Administrative.** It also boasts of Special Nurses.

Clinical:

The division deals with administration of clinical services to the patients.



N.E- Nurse Educator

DNS- Deputy Nurse Superintendent
I.C.N- Infection Control Nurse
A.N.S- Assistant Nurse Superintendent
T.L- Team Leader

Administrative:

The Administrative Nursing Division comprises of staff development. It deals with providing continuous training with formal structural programs and informal training. Induction Training and On-job training are also a part of staff development. Once a week, mainly on Thursdays, in-house training is given to the nurses.

Special nurses

The special nurses are trained in a particular area, and are assigned to work in that area only. There are few special nurses-

- Diabetic Nurse Educator
- Infection Control Nurse
- Link Nurse
- Physician Assistant Nurse with consultants

LAUNDRY SERVICES

- The importance of a clean, hygienic, un-stained and defect free linen for patient care has been stressed upon since the very inception of hospitals. Clean linen delivery in a timely manner to healthcare areas is important.
- Laundry service is responsible for providing an adequate, clean and constant supply of linen to all users. The laundry facilities is designed and equipped in such a way that it reduces the spreading of microbes on to finished textiles. The basic tasks include: sorting, washing, extracting, drying, ironing, folding, mending and delivery.
- Cleaning of soiled linen collected from patient care areas.

- Storage and distribution of clean, unstained and defect free linen to various areas of hospitals like floors (for patients), CSSD (for sterile linen supply to operation theatres), housekeeping and food service department (for conference and other functions).
- Cleaning, storage and distribution of uniform to all employees and consultants.
- Specific procedure for handling, including labelling of materials contaminated with hazardous materials or body fluids.
- There are various policies and standard procedures (SOPs) for cleaning of contaminated materials.
- Storage and distribution of curtains across the hospital facilities.

ACCIDENT & EMERGENCY

Introduction

- The A & E Department is the face of any hospital, which works around the clock through the year.
- Department is manned by highly trained medical & paramedical staff & it serves all the immediate emergency medical Situations.
- 5 bedded Accident & Emergency department along with 2 casualty centre beds is an ultra-modern facility well-equipped with sophisticated & advanced equipment specialized & skilled doctors and nurses is highlight of the department.

Scope of Services

- The department is responsible for treatment of emergency cases.
- The department is responsible for informing the police in cases of traumas, poisoning, suicide, homicide, rape, assault etc.
- In case of code blue A&E department is first to respond.

- A & E is a very important constituent of the disaster management team-internal as well as external.
- Transfer of patients.
- First aid camps/teams
- Responsible to arrange for the ambulance services for transportation or transfer of patients. It also in arranging Hearse services.
- The Mortuary is also maintained by the Emergency department.

LABORATORY SERVICES

- The laboratory services at Max Mohali hospital are above par excellence.
- It has also earned the accreditation of the "National Accreditation Board of Testing and Calibration Laboratories" in 2012.
- Services included under Lab Medicine :-

  - Biochemistry
  -Hematology
  -Histopathology & Cytopathology
  -Immunoserology
  -Microbiology & Serology
  -Radioimmunoassay (RIA)
  -Molecular Biology

- The samples are taken from all the units of the hospital and taken to the main laboratory in the L.G building by transporters in a Black sealed briefcase, who work in three shifts throughout the day.

MORTUARY SERVICES

Mortuary at MAX Mohali is managed by security and maintained by housekeeping department. Only inpatient bodies are allowed to keep at mortuary.

Mortuary is at basement 1 of the building.

BLOOD BANK

Blood bank is situated on the third floor of the building.

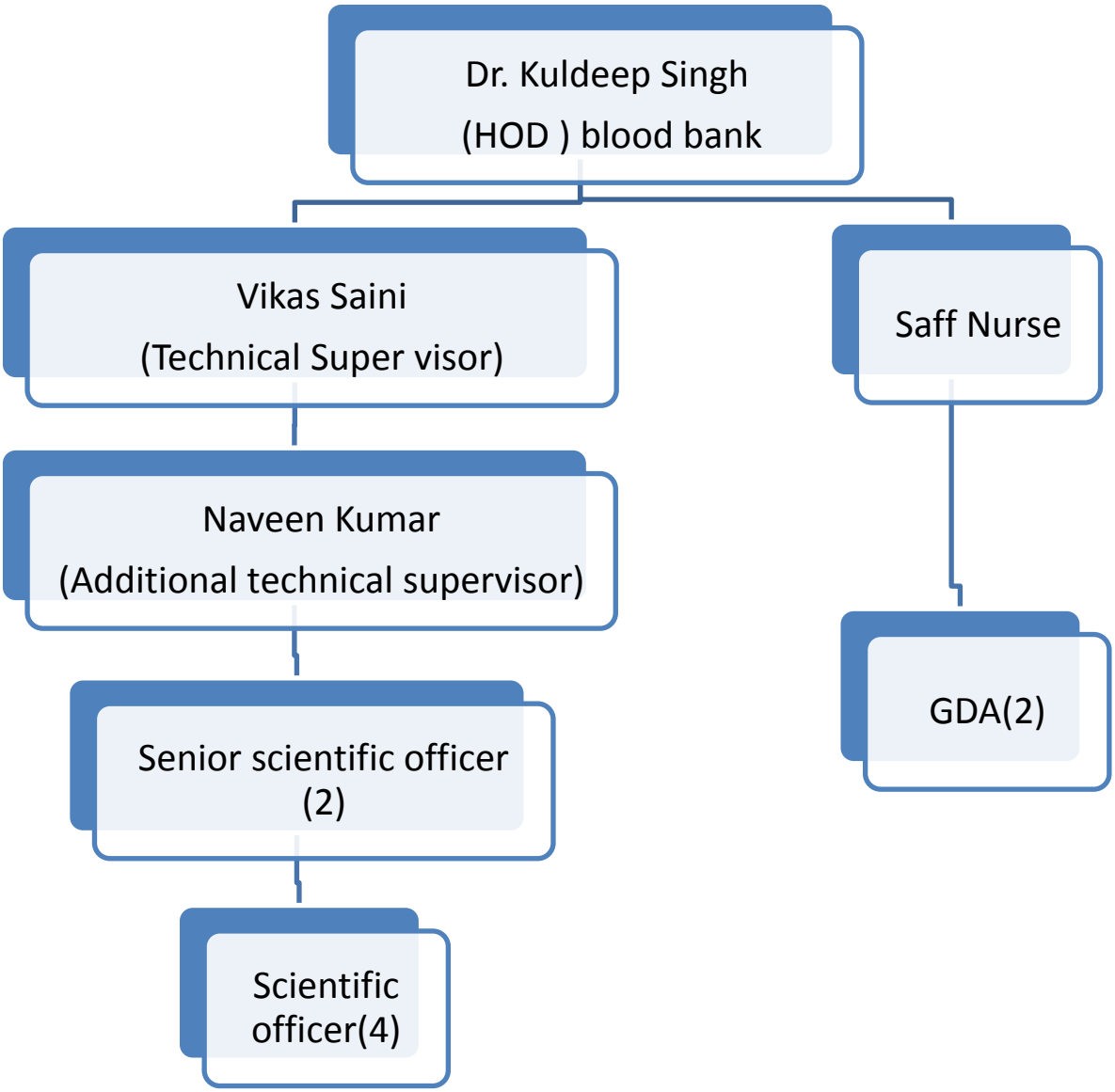
Blood bank requisition form consists of

- Patients identification.(First name, surname, gender, date of birth)
- Date of admission.
- Location (ward)
- Which blood components are required.
- Date/ time blood product required.
- Other tests are required.
- Signature of phlebotomist.
- Amount/ number of units and identification of blood product required.

IT IS ESSENTIAL TO HANDLE ALL SPECIMENS WITH AN EXTRA CARE.

Pre transfusion testing procedures:

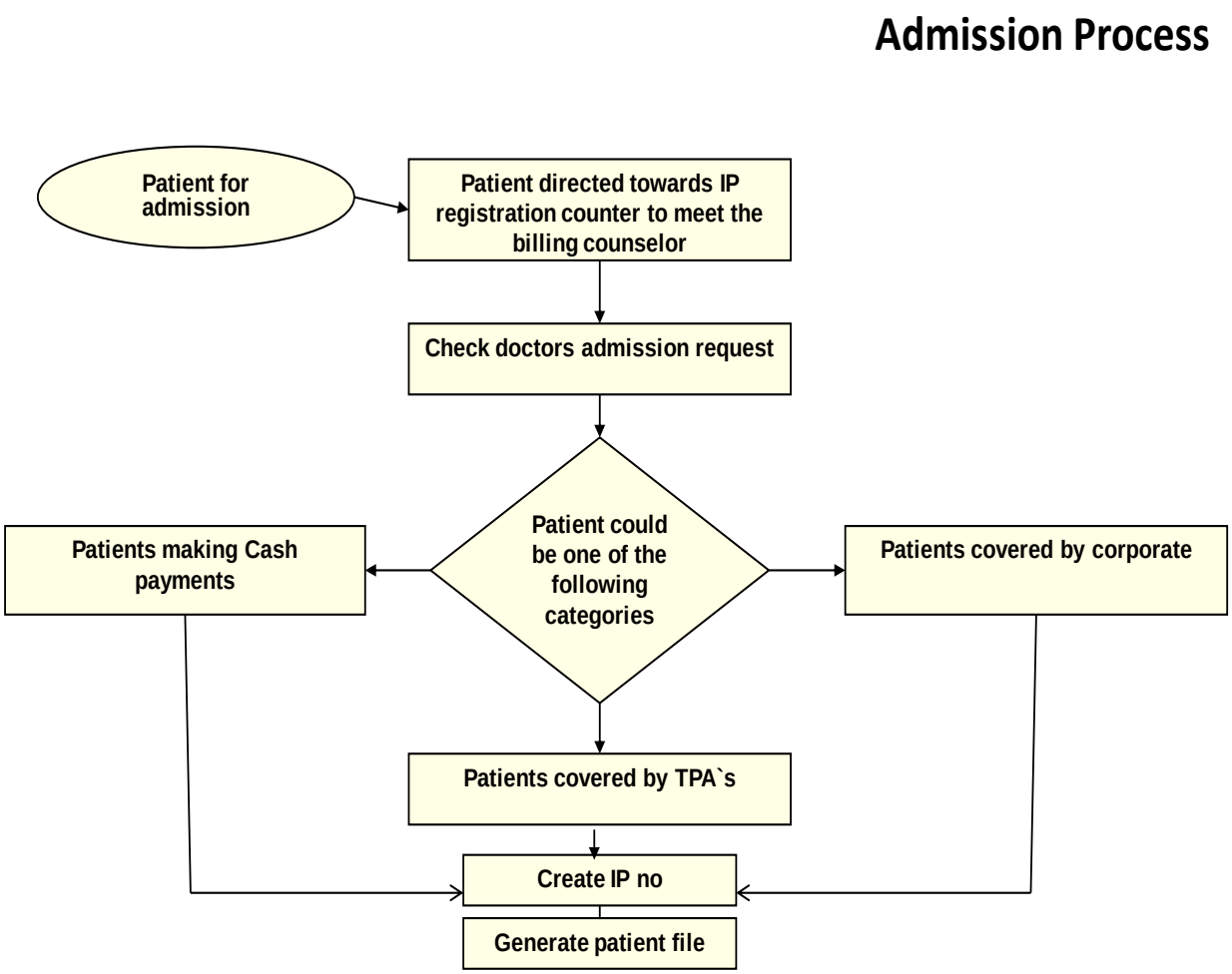
- ABO AND RH grouping.
- Major and minor cross match. (compatibility testing)
- Completion of pre transfusion testing requires minimum of one hour and 30 mins.


Dr. Kuldeep Singh
(HOD) blood bank
Vikas Saini
(Technical Super visor)
Saff Nurse
Naveen Kumar
(Additional technical supervisor)
GDA(2)
Senior scientific officer
(2)
Scientific
officer(4)

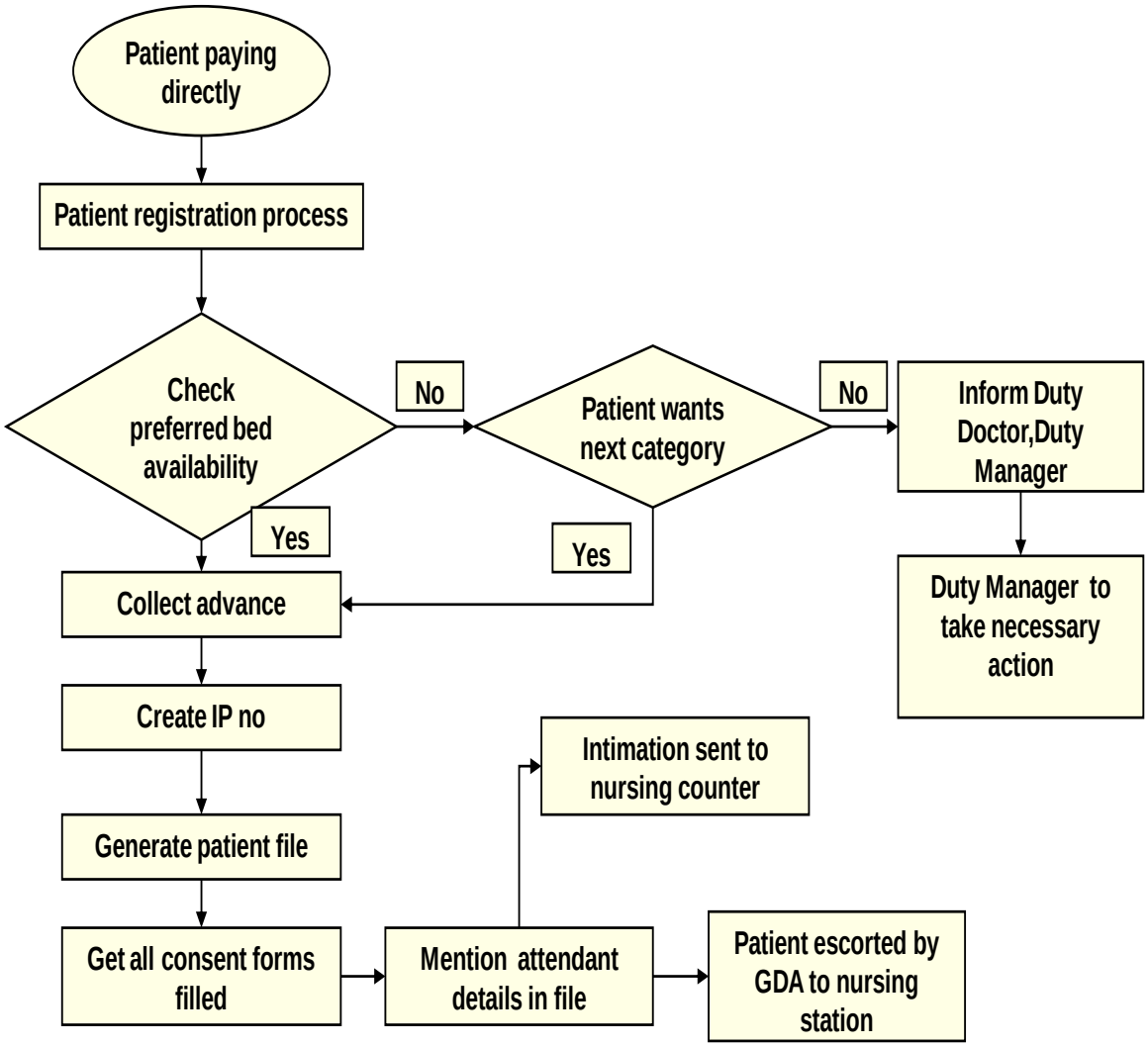
NON CLINICAL SERVICES

ADMINISTRATIVE SERVICES

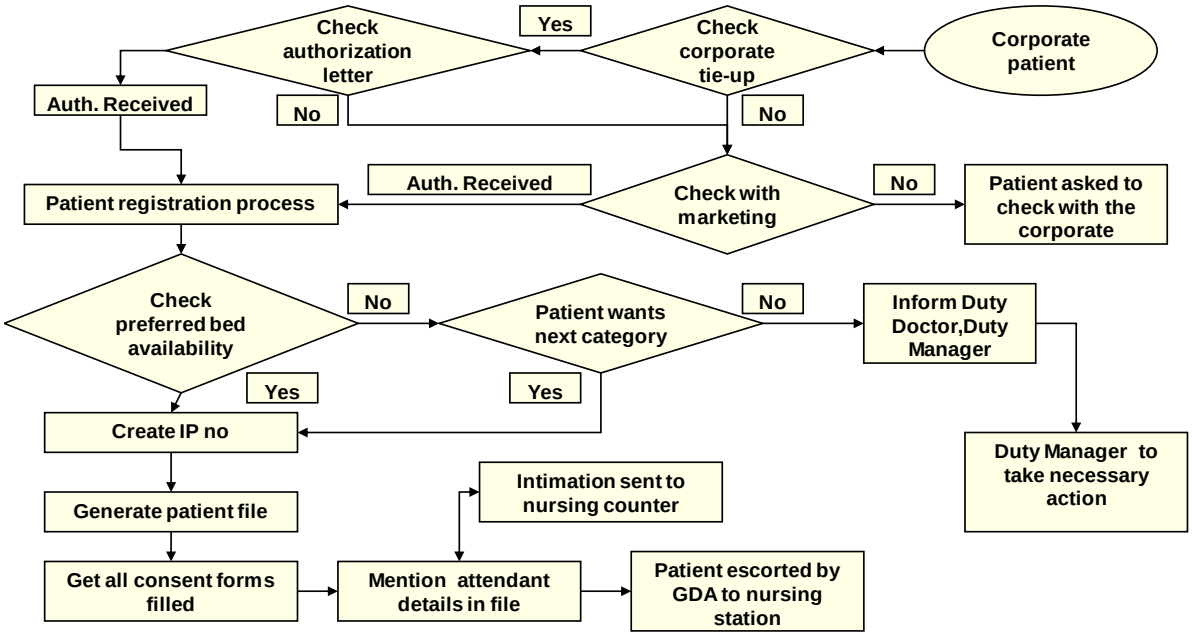
ADMISSION, REGISTRATION AND BILLING-



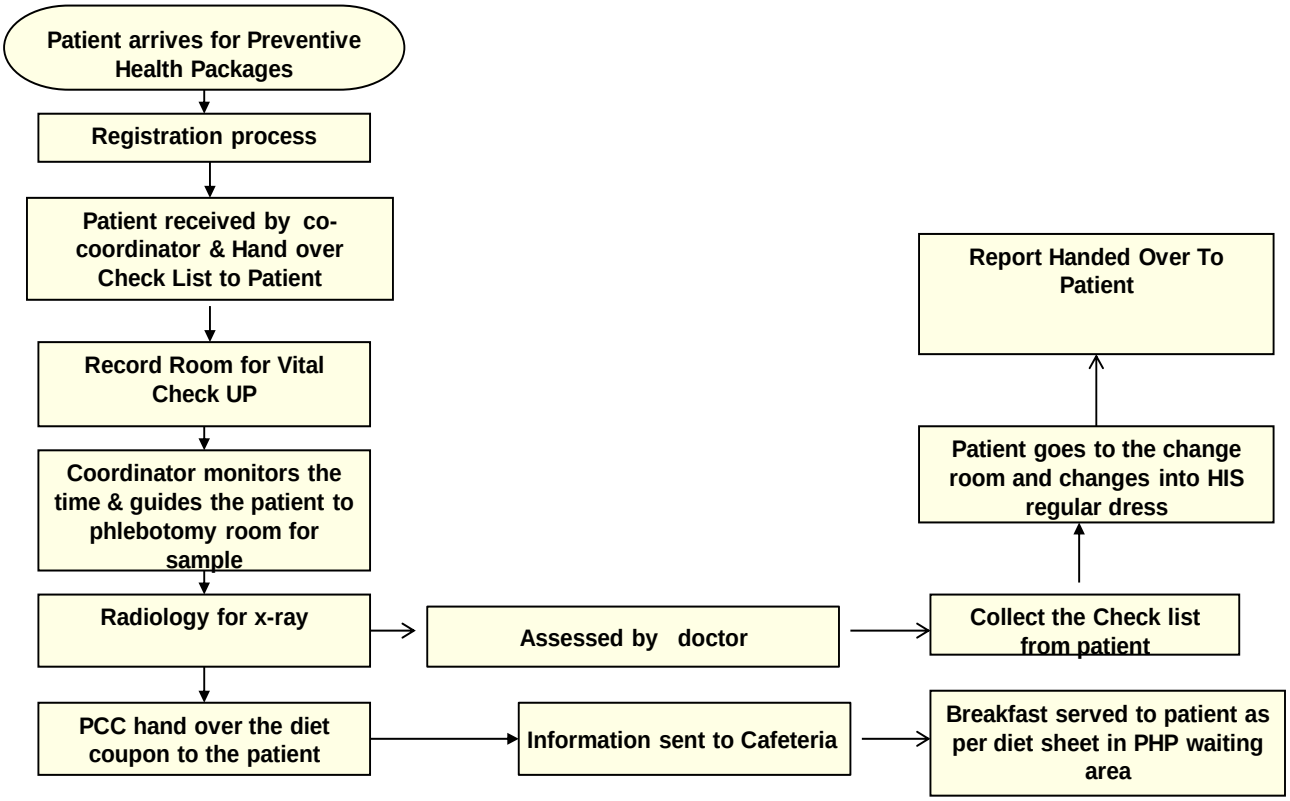
Cash payment



Corporate patient



Preventive Health Packages



MEDICAL RECORD DEPARTMENT-

INTRODUCTION OF THE DEPARTMENT

Medical Record department is situated at Upper Basement and it ensures the effective management of medical records at Max Hospital Mohali. Medical Records are an essential component in modern health care management. It is the only reliable proof of treatment given to patient and is the basic indicators in accessing health status of the community. The safer existence of the institution is depends on this. Health information of different nature at various levels could be generated from Medical Records. Accurate and reliable information is needed for comparison of health status of the community and basic data for planning health care activities and health budgeting could be obtained only from Medical Records. The

present scenario people need evidence based treatment. All these factors and the present day challenges imposed by Right to Information act 2005, Consumer protection act 1986, Medical Councils of India regulations, etc. emphasis the strengthening of Medical Records Maintenance System so as to beneficiate all walks of people in the community. Central Bureau of Health Intelligence- the nodal agency for health information in the country also insist the strengthening of Medical Records system and implementing ICD-10 of WHO in classifications and coding of morbidity & mortality cases.

MISSION- To organize, manage the activities of health record generation (manual & CPRS) providing quality and efficient services

VISION- Generate and maintain high quality Health information

GOALS-

1. To develop, implement and continually improve the safe, confidential, systematic & effective method of maintaining CPRS and receiving physical files, storing, retrieving & discarding the medical record of the patients admitted for the treatment in accordance to the legal requirements.
2. To protect the privilege of Patients, Doctors, Hospital staff and Administrators.
3. To Help Health care authorities / health care providers in formulating heath policies and planning preventive measures
4. To ensure systematic preservation and storage of health records for future use.
5. To ensure systematic maintenance and preservation of Medico-legal documents.
6. To help Judicial authorities, Insurance authorities, Investigating Officials, Enquiry officials etc by providing the required documents / information in time.

SCOPE OF SERVICES

- A medical record is the chronological documentation of health care and medical treatment given to a patient by professional members of the health care team. It is an

exact, correct and actuate recording of their observations including relevant information about the patient, his or her progress, and the results of the treatment.

- The department forms an integral part of the Max Hospital, forming the base station for all the medical records. Medical record keeping is not only a legal requirement but also helps in analyzing the medical care, research base, a source of back reference in case the patient seeks the care in the same hospital or the need for review of the disease suffered or medication given is there in case the patient is taking services in some other healthcare setup thus forming a continuity of care. It is also covered in the scope of the department to provide appropriate information to external data banks, which includes the notifiable diseases .The department works closely with all of the clinical departments admitting patients to the hospital.

- The Institute has modern technology, the, EHR (Electronic Health Record) system implemented in Aug 2011. To achieve the strategic objective of paperless hospital to create an integrated environment the help of the EHR system has been taken with a home grown HIS (Hospital information system) application and a radiology information system. The highest level of environmental controls and fully trained and experienced staff who are dedicated to the maintenance of the CPRS & Physical medical records with record to safety, security and protection from damage. The department works from 9:00 am to 6:00 pm.

ORGANIZATION STRUCTURE

LOCATION AND LAYOUT

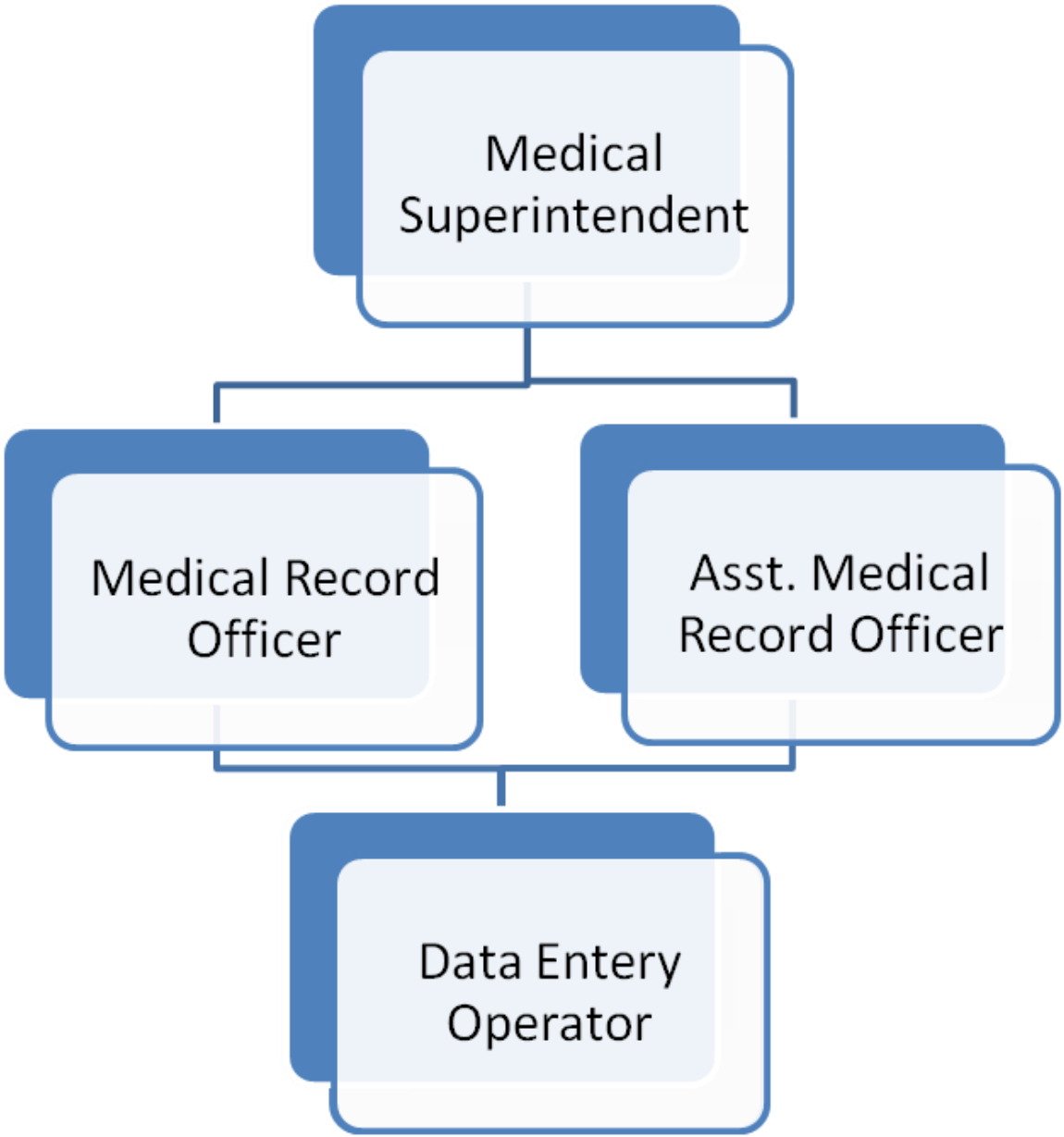
The MRD is located on the -1st floor. The department has over 70,000+ discharge IPD file records, while are being maintained in archived form for legal/research purposes.

PURPOSE:

Medical records are to be maintained in a manner that is current, detailed, organized, and easily accessible. All patient data should be filed in the medical record, (i.e., lab, consultation notes, etc.)

POLICY:

To provide appropriate documentation of inpatient medical care in such a way that it facilitates communication, coordination and continuity of care and promotes efficiency and



effectiveness of treatment.

PROCEDURES:

All entries shall be:

- Unique identifier of patient on every document page
- Written in black/blue indelible ink for handwritten documentation. No pencil entries
- Dated and signed (include day, month, and year)
- Timing of entries is required on Medication Administration, Pre-Operative, and Nursing documentation
- Legible and include clear, concise and pertinent patient information
- Authenticated. Signature and professional title
- Chronological
- No part of the medical record is ever to be removed after entry.
- The patient's name and medical record number must appear on every record page/document medical record.
- Rubber stamps are not allowed for physician signatures.
- Written Signatures validate written orders and written notes.
- Inpatient Care is documented in the Medical Record and includes:
- Reason for admission, diagnosis, and plan of care must be included in the documents.
- Evidence of the initial patient assessment and all subsequent re-assessments.
- Documentation of interventions based on physician orders and/or on unit standards of care or approved protocols.
- Any operation /Procedure performed in detail .Name, signature, and date, time on every entry made in the record.
- The records should be legible**.**
- The records should be in a chronological order demonstrating the continuity of care.
- Transfer notes should be in accordance to the policy of transfer and should include- Date, reason for discharge and name of the receiving hospital.
- Medication administration is recorded on the Medical Administration Record or area specific forms
- Specific care provided is evidenced on the patient care flow sheet.

- Aspects of patient care during operative or other invasive procedures, in the emergency department, the dialysis unit, obstetrics, the clinical research centre, and the sub acute unit is documented on forms specific to each specialized area.
- Patient discharge instructions
- Discharge summary should be prepared and signed by the consultant
- Death summery should include – cause of death, date, time and should bear the signature of the clinician in charge.
- The medical notes by the resident doctors have to be countersigned by the clinician in charge with in 24 hrs.

THE INFORMATION REQUIREMENTS OF THE ORGANIZATION:

Monthly, quarterly and annual reports are prepared for management, which are useful in planning, policymaking and utilization for hospital resources.

S. No	Report	Frequency
1	**Census Report**	**Daily**
2	**Daily Administrator Report**	**Daily**
3	**Occupancy Dashboard**	**Daily**
4	**Monthly Abstract**	**Monthly**
5	**Yearly Abstract**	**Yearly**
6	**Financial Year Abstract**	**Yearly**

INFORMATION TECHNOLOGY

Introduction

Primary purpose of Information Technology department is to:

- Cater to any needs of computerization within the organization
- Maintenance of existing hardware and software
- Develop a user friendly and automated software system

Today, I.T. department is the backbone of hospital operation which facilitate in achieving the quality service, performance and maximum results. The department is responsible for providing highly automated user friendly and zero defect computer based solutions as per the requirements of the Hospital. This department works under the direction and supervision of the Dy. Director (Information Technology)

Scope of services

I.T department has three sections.

- Software section
- Hardware section
- Telecom section

1. Software section is responsible for system operation & control, software maintenance, controlling database backups & their libraries and to provide ongoing assistance to the application users. It is also responsible for system recovery in case of failure and for recording and monitoring down time of the system.
2. Hardware section is responsible for hardware functions of the system with zero downtime and high availability. It also fulfils the hardware related requirements from users and supports there systems.
3. Telecom section is responsible for implementation of new technology and maintenance of telecommunication operations of the hospital. Telecom section also looks after the maintenance of wireless system and paging system.

ENGINEERING DEPARTMENT

Introduction

Engineering and Maintenance Department is manned for 24 hours for keeping round the clock vigil on the proper functioning of plant engineering equipment coming under the purview of the department. This covers maintenance of major supplies to the hospital such as power, water, medical gases, air- conditioning and related equipment supporting the same, which form the life line to the hospital's activities.

The responsibilities of the department are:

1. Operation and maintenance of plant equipment installed in the basement of main building and various other areas to support the normal functioning of the hospital.
2. Repair work of equipment related to the department's responsibility.

PHARMACY DEPARTMENT

Max Mohali Hospital runs an inpatient pharmacy which works 24/7 throughout the year and consists of Dispensing area and store. It is located on the basement 1 building. The Pharmacy also has a formulary with around 14000 items mentioned in it and also a DTC (Drug and therapeutic committee), with senior doctors, nurses and pharmacists as its members. In the pharmacy no cash transaction take place and no relative has to go there, the nurses enter the medications required into the system from the floors, and then a floor wise consolidated report is taken and all the items are sent together in 4 rounds to the nursing station at each floor by the pharmacy attendants. The patient is billed from the pharmacy on his SSN No. and the information is sent to billing department directly. The pharmacy keeps only 1 brand of the drugs, which is generally the research molecule. They also have a provision for narcotic drugs, which they store in a lock according to the narcotic drugs and psychotropic substances act. The narcotic prescriptions are kept in a record. The hospital formulary is updated periodically. A pharmacy news bulletin is also prepared and is given to the doctors.

The inventory control methods used are:

1. ABC- Always better control
2. VED- Vital essential Desirable
3. FSN- FAST, SLOW and Non- Moving

PART 2 – THE PROJECTS

- Project 1—STUDY ON RETURN TO SURGICAL INTENSIVE CARE UNIT (SICU)
- Project 2 – ANTIBIOTICS STEWARDSHIP IN MEDICAL INTENSIVE CARE UNIT (MICU)

PROJECT NO - 1

STUDY ON RETURN TO SURGICAL INTENSIVE CARE UNIT (SICU)

INTRODUCTION-

- The SICU is an ICU that manages and accepts patients who have undergone a variety of general and speciality surgical procedures like critically ill patients who are recovering from surgery or require surgery.
- The ICU team is comprised of an anaesthesiologist or surgical intensivist, a senior and junior anaesthesiologist resident and a multidisciplinary team of health care (allied).
- People treated at the SICU have a variety of conditions. For example, patients may be monitored in the SICU following :
- Complex surgery after serious injury.
- Organ transplantation.

- Acute surgical illness.
- Neurosurgery to relieve intracranial pressure.
- Giving birth in high risk situation.
- Experiencing shock, cardiac arrest or sepsis
- Any surgical patient who requires continuous monitoring, 1:1 nursing and/or continuous life support is a candidate for SICU admission.
- The main functions of any ICU is to:
- Provide optimum life support.
- Provide adequate monitoring of vital functions.
- Surgical critical care not only incorporates knowledge and skills of non-operative techniques for supportive care for critically ill patients but also a broad understanding of the relationship between critical surgical illness and surgical procedures.
- Specialists in surgical critical care possess advanced knowledge and skills that enable them to provide comprehensive care to critically ill patients from all surgical specialities and in all age groups.

AIM AND OBJECTIVES-

- To study the readmissions within one admission in the surgical intensive care unit.
- To describe the distribution of time between ICU discharges and readmissions.
- To determine the reasons for the readmissions.

SAMPLING –

Admitted atleast once earlier during 2014- 2017 (APRIL-MARCH) were considered for the study. A total of 44 patients found eligible for the study.

METHODOLOGY –

This is a retrospective study in which 44 patients in surgical ICU are used which were readmitted within one admission, from April 2014 – March 2017.

DATA SOURCE –

Hospital records

DATA MODULE –

Computerized Patient Record System (CPRS).

PARAMETERS USED –

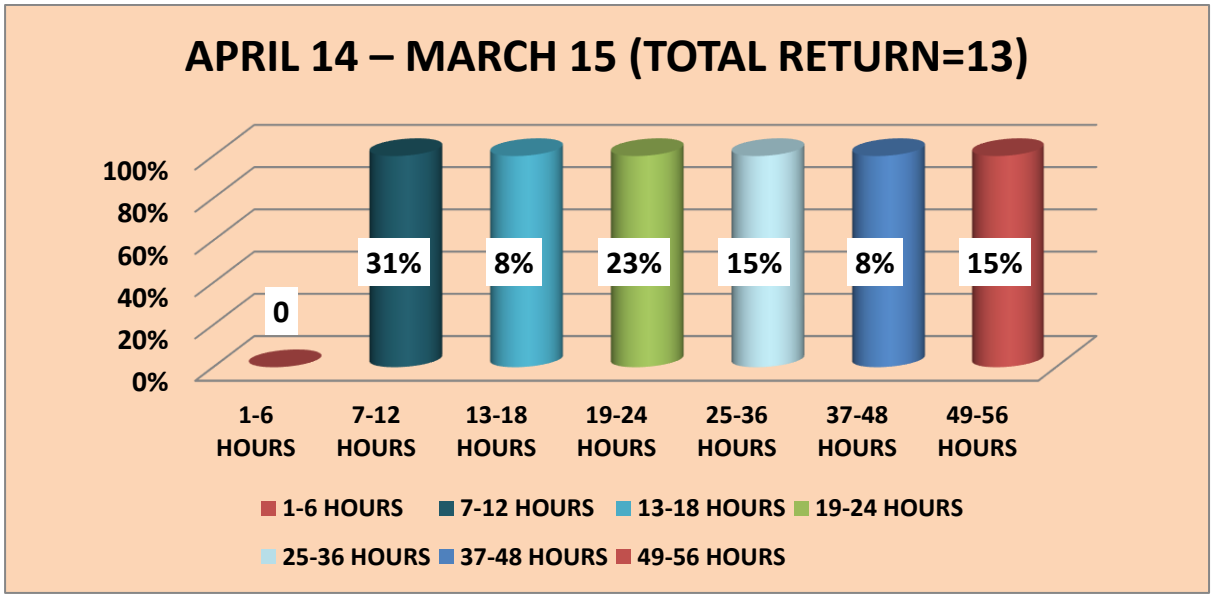
- Name
- UHID
- Age/Sex
- Consultant
- Speciality
- Surgery Name
- Date of admission
- Date of surgery
- Patient weight
- Comorbidities
- Diagnosis
- 1st ICU admission date and time
- 1st ICU discharge date and time
- 2nd ICU admission date and time
- 2nd ICU discharge date and time

- Patient shifted to___
- Return to ICU in ___Hours/___Days
- ICU return reason
- Final patient outcome (Discharged/Lama/Expired)
- Remarks

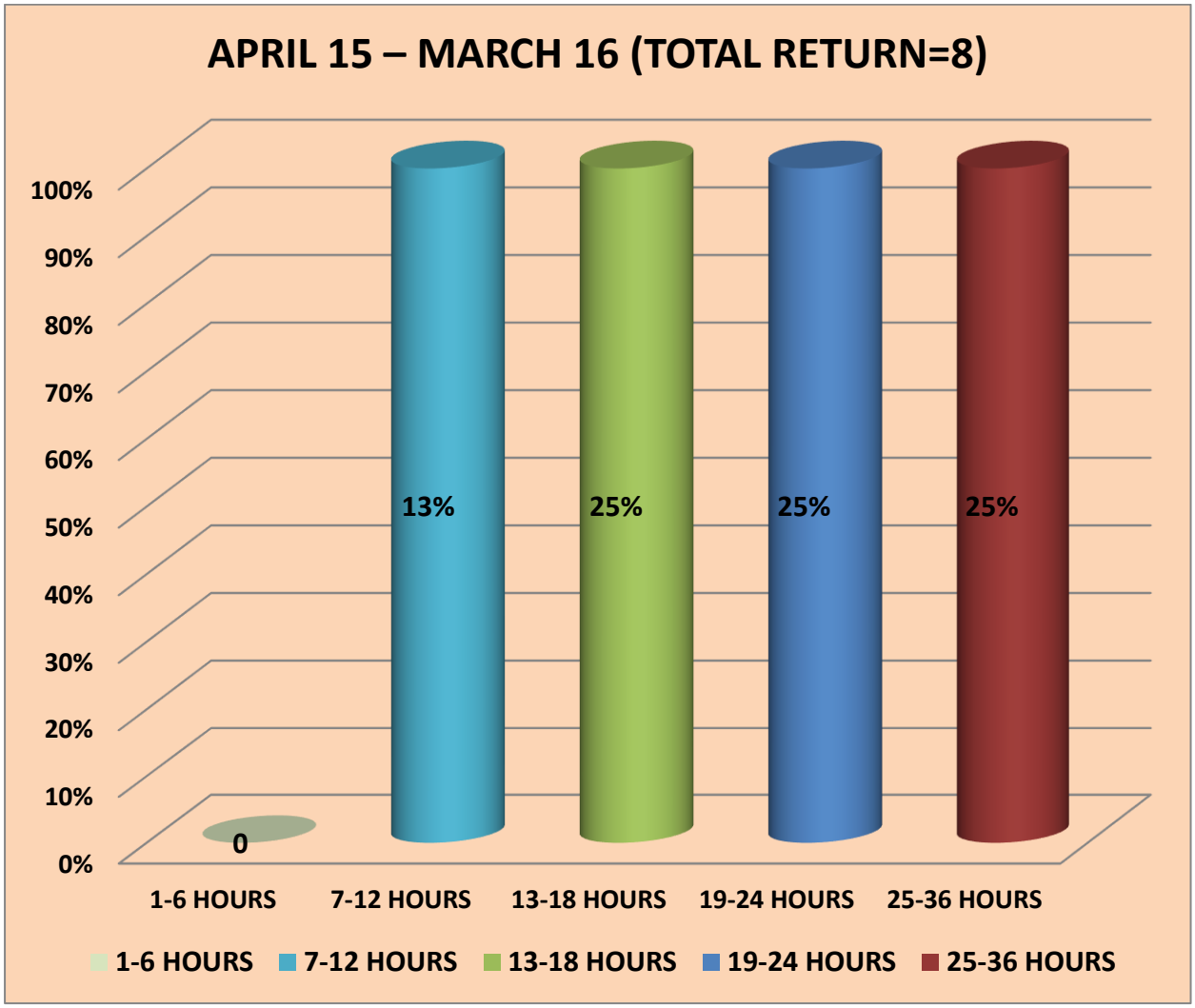
DATA INTERPRETATION AND OBSERVATION –

➢ **MEASUREMENT OF DISTRIBUTION OF TIME BETWEEN 1ST ICU DISCHARGE AND 2ND ICU READMISSION –**

- Measurements consisted of 1-6 hours, 7-12 hours, 13-18 hours, 19-24 hours, 25-36 hours, 37-48 hours and 49-60 hours readmission rates and time to readmission within one admission for the year April 14- March 15, April 15-March 16 and April 16 – March 17.
- In the year April 14 – March 15, a total of 4 patients (31%) were readmitted to the ICU within 7-12 hours, 1 patient (8%) within 13-18 hours, 3 patients (23%) within 18-24 hours, 2 patients (15%) within 24-36 hours, 1 patient (8%) within 37-48 hours and 2 patients (15%) in 48-56 hours.



- In the year April 2015 – March 16, a total of 1 patient (13%) was readmitted to the ICU within 7-12 hours, 2 patients (25%) within 13-18 hours, 2 patients (25%) within 19-24 hours and 2 patients (25%) within 25-36 hours.



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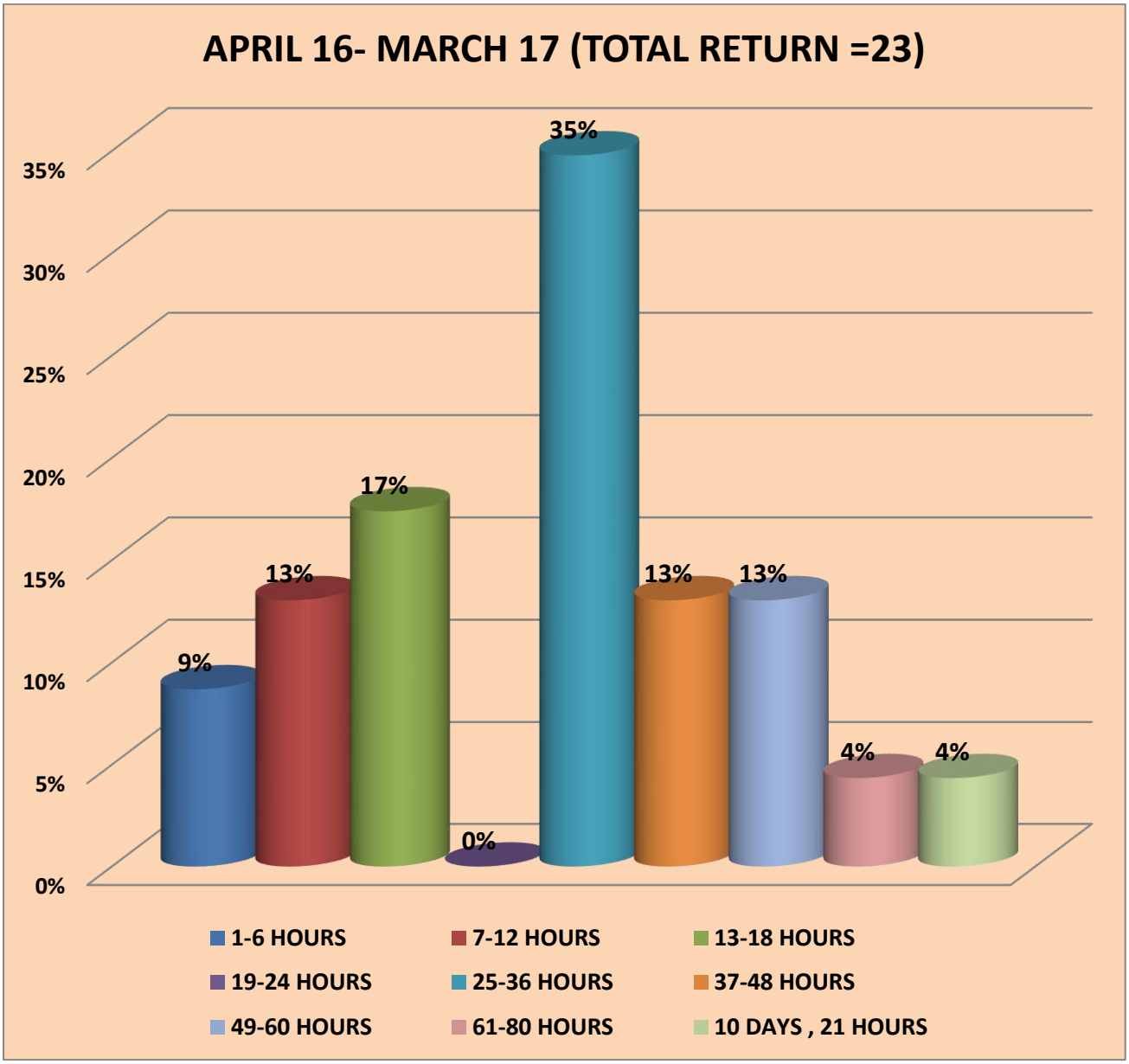
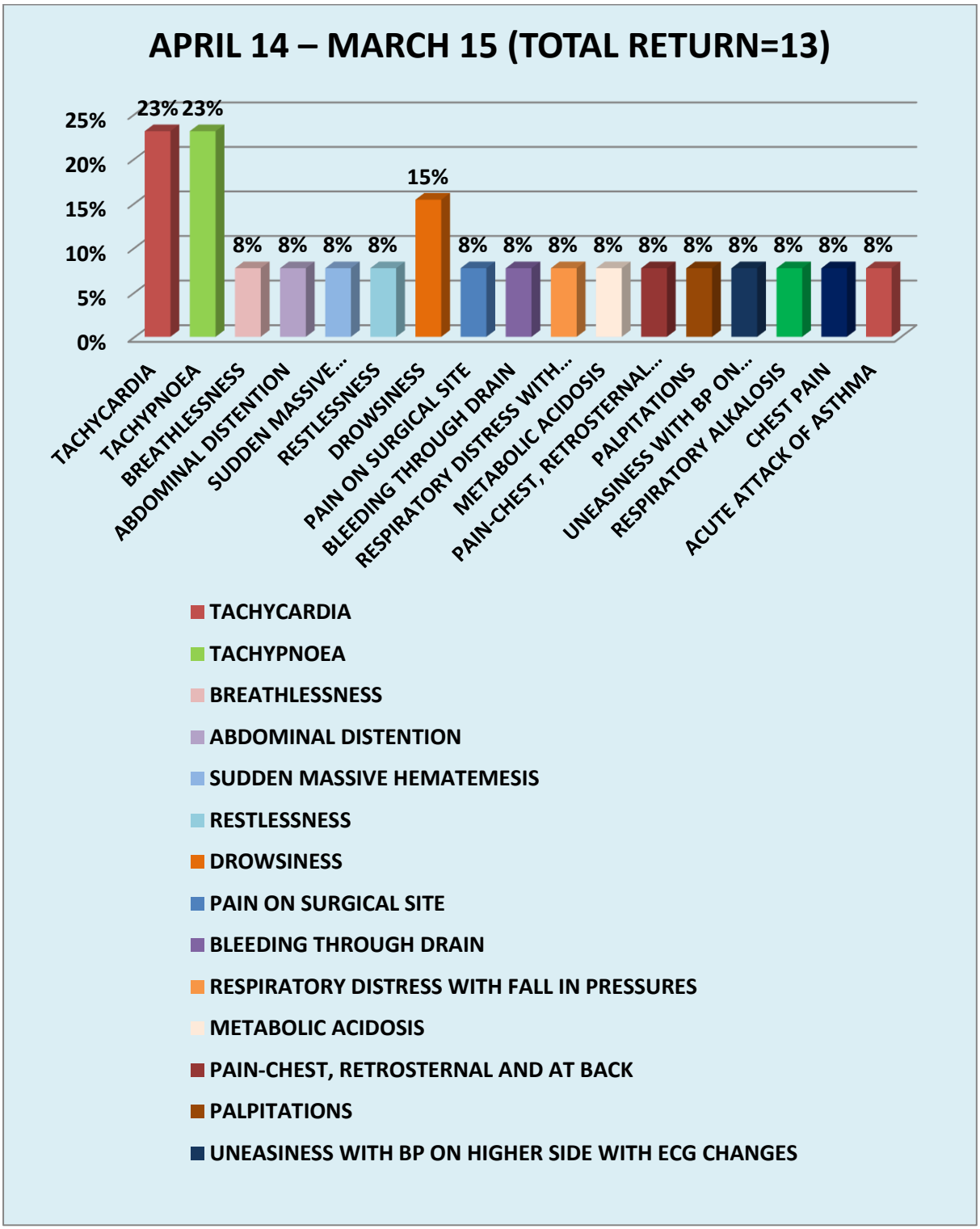
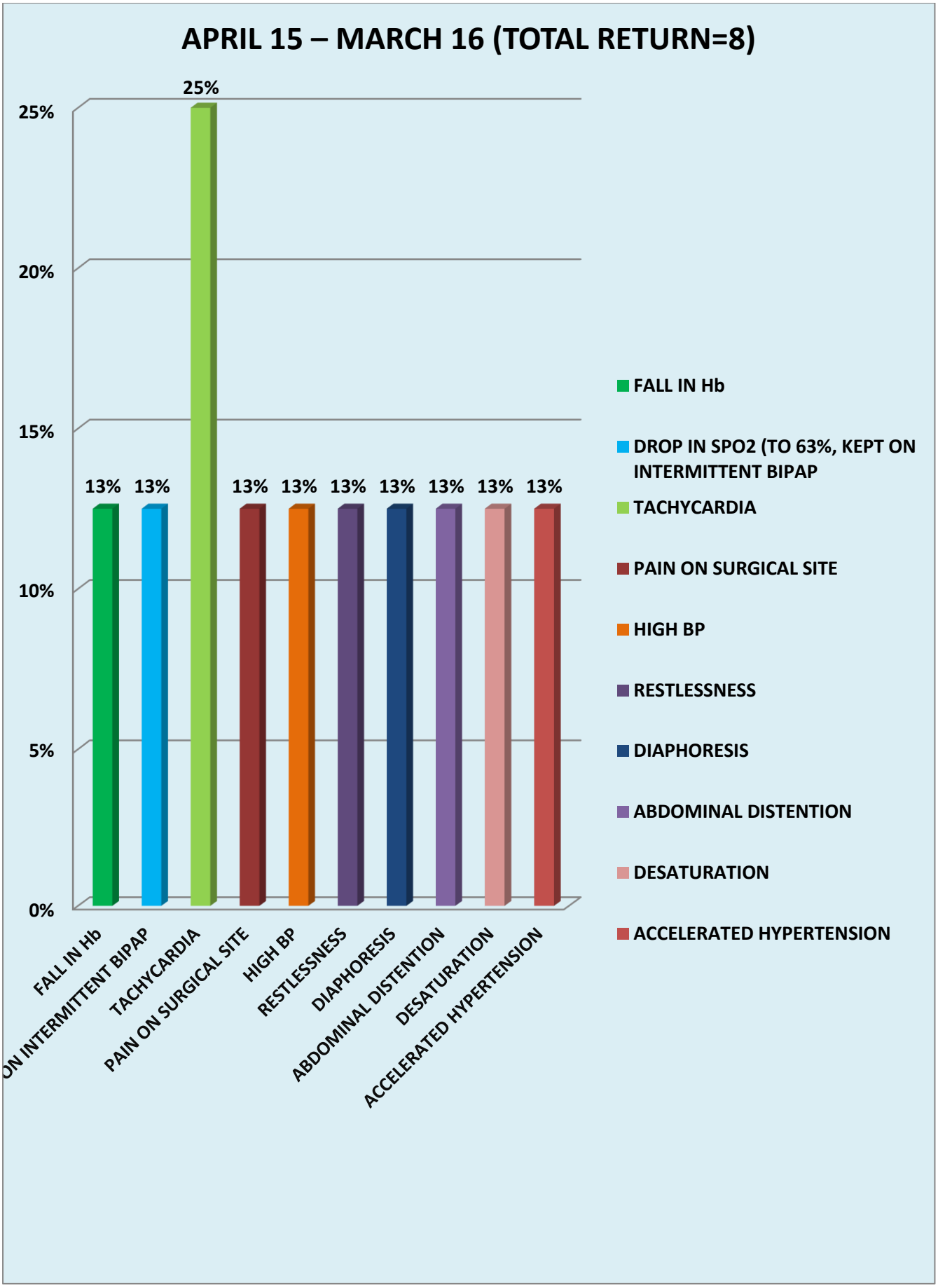
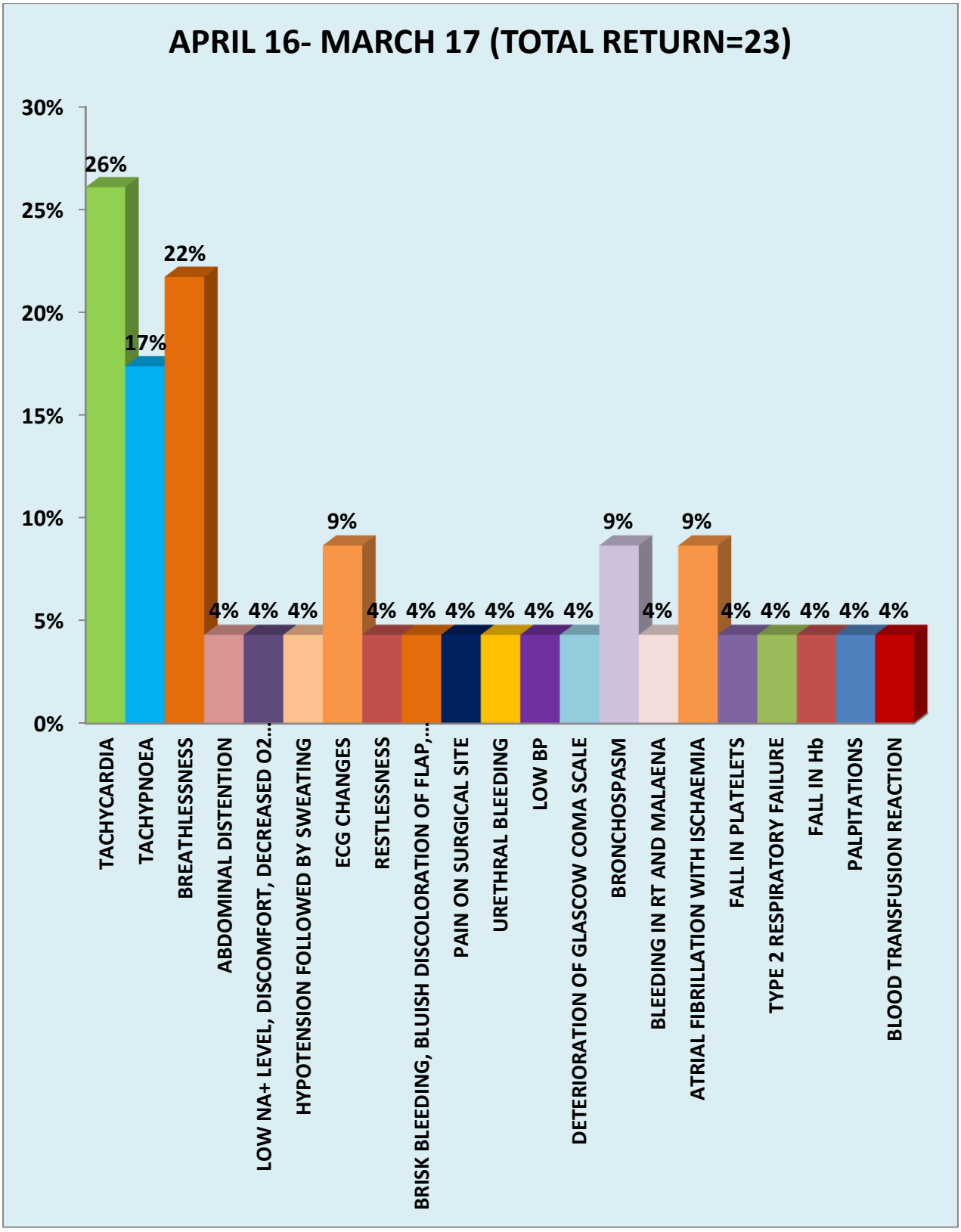
- In the year April 2016 – March 2017, a total of 2 patients (9%) were readmitted to the ICU within 1-6 hours, 3 patients (13%) within 7-12 hours, 4 patients (17%) within 13-18 hours, 8 patients (35%) within 25-36 hours, 3 patients (13%) within 37-48 hours, 3 patients (13%) within 49-60 hours, 1 patient (4%) within 61-80 hours and 1 patient (4%) within 10 days 21 hours.



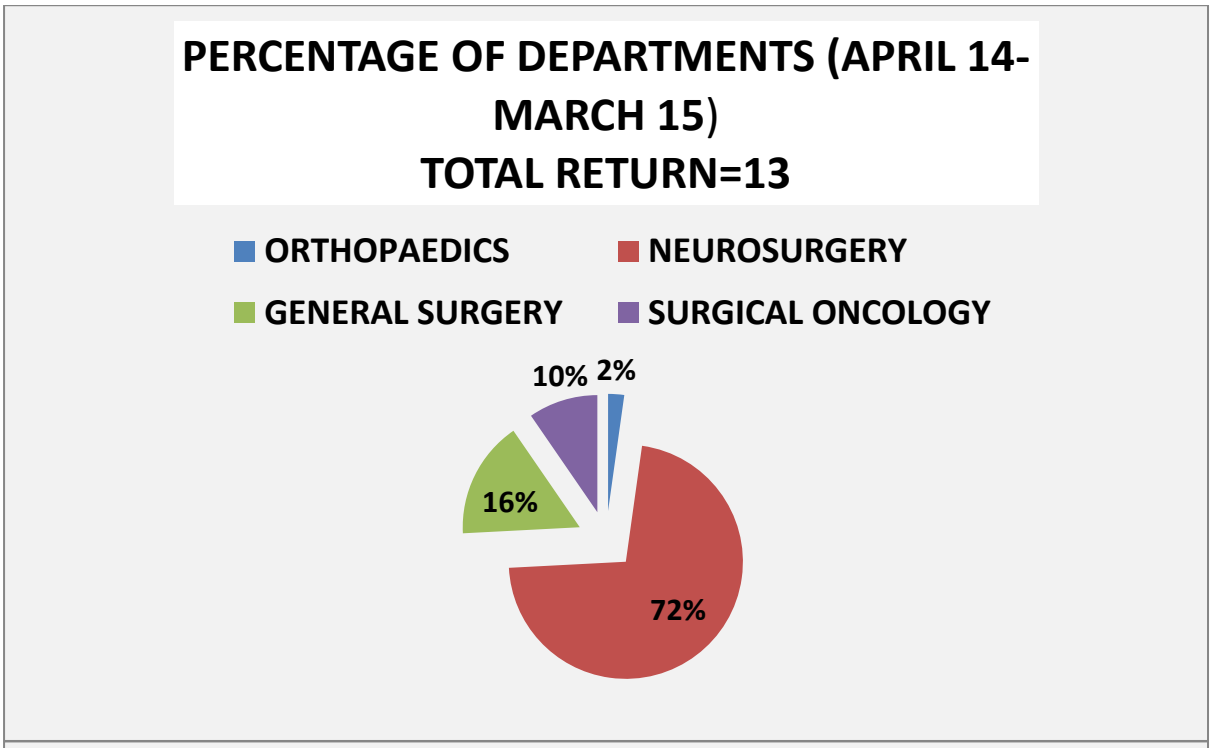
➢ **MEASUREMENT OF REASONS FOR RETURN –**

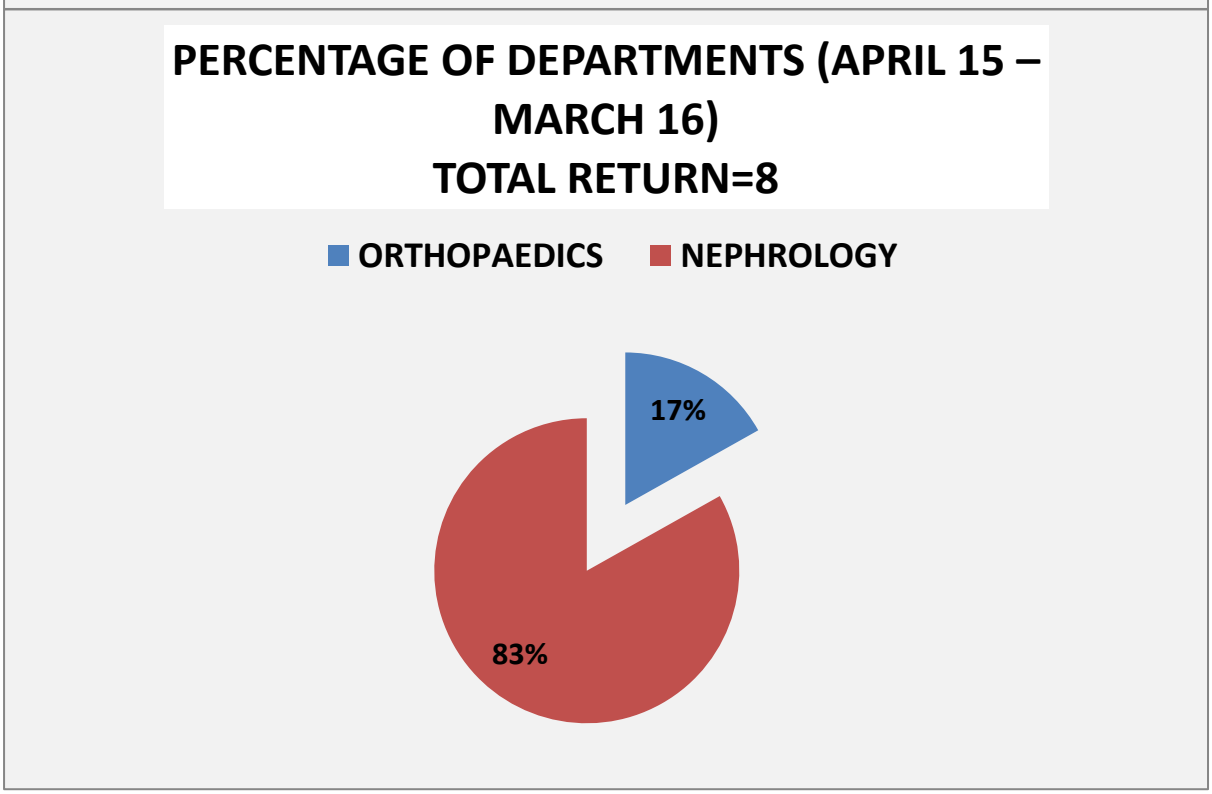


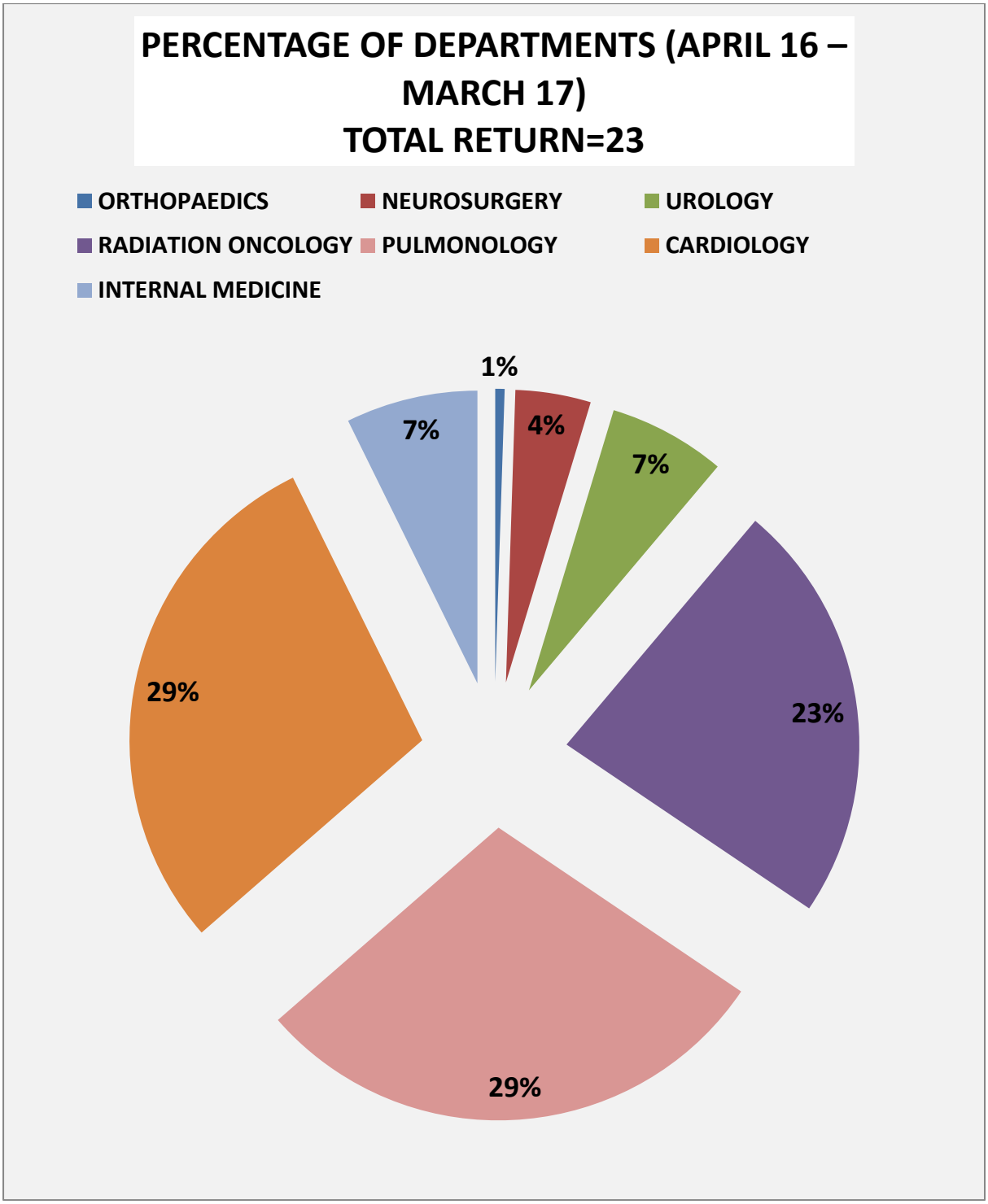

APRIL 15 – MARCH 16 (TOTAL RETURN=8)
25%
20%
15%
10%
5%
0%
25%
13%
13%
13%
13%
13%
13%
13%
13%
13%
FALL IN Hb
DROP IN SPO2 (TO 63%, KEPT ON INTERMITTENT BIPAP
TACHYCARDIA
PAIN ON SURGICAL SITE
HIGH BP
RESTLESSNESS
DIAPHORESIS
ABDOMINAL DISTENTION
DESATURATION
ACCELERATED HYPERTENSION
ON INTERMITTENT BIPAP
TACHYCARDIA
PAIN ON SURGICAL SITE
HIGH BP
RESTLESSNESS
DIAPHORESIS
ABDOMINAL DISTENTION
DESATURATION
ACCELERATED HYPERTENSION


APRIL 16- MARCH 17 (TOTAL RETURN=23)
30%
25%
20%
15%
10%
5%
0%
26%
17%
22%
4%
4%
4%
9%
4%
4%
4%
4%
4%
4%
9%
4%
9%
4%
4%
4%
4%
4%
TACHYCARDIA
TACHYPNOEA
BREATHLESSNESS
ABDOMINAL DISTENTION
LOW NA+ LEVEL, DISCOMFORT, DECREASED O2...
HYPOTENSION FOLLOWED BY SWEATING
ECG CHANGES
RESTLESSNESS
BRISK BLEEDING, BLUISH DISCOLORATION OF FLAP,...
PAIN ON SURGICAL SITE
URETHRAL BLEEDING
LOW BP
DETERIORATION OF GLASCOW COMA SCALE
BRONCHOSPASM
BLEEDING IN RT AND MALAENA
ATRIAL FIBRILLATION WITH ISCHAEMIA
FALL IN PLATELETS
TYPE 2 RESPIRATORY FAILURE
FALL IN Hb
PALPITATIONS
BLOOD TRANSFUSION REACTION

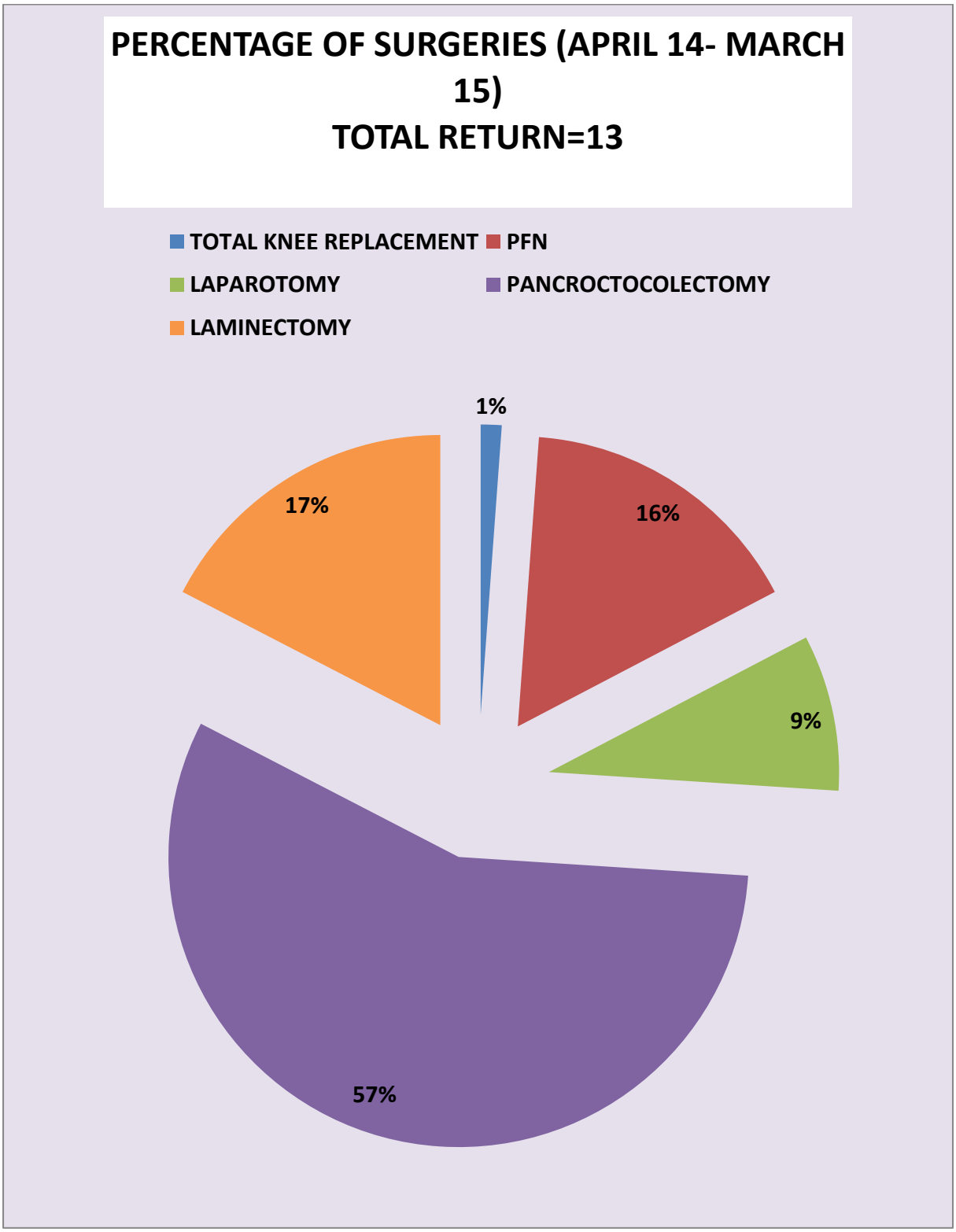
MEASUREMENT OF DISTRIBUTION OF DEPARTMENTS



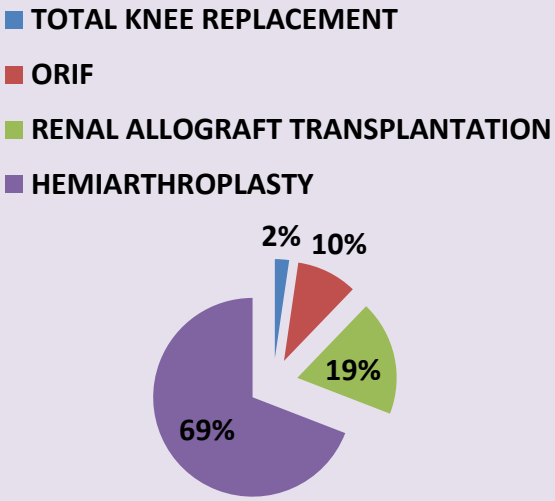



PERCENTAGE OF DEPARTMENTS (APRIL 16 – MARCH 17)
TOTAL RETURN=23
ORTHOPAEDICS
NEUROSURGERY
UROLOGY
RADIATION ONCOLOGY
PULMONOLOGY
CARDIOLOGY
INTERNAL MEDICINE
1%
4%
7%
23%
29%
29%
7%

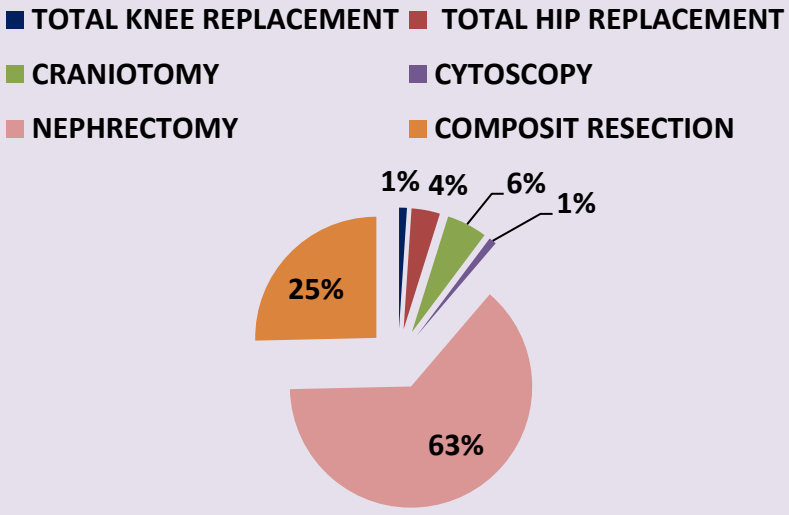
MEASUREMENT OF DISTRIBUTION OF SURGERIES –



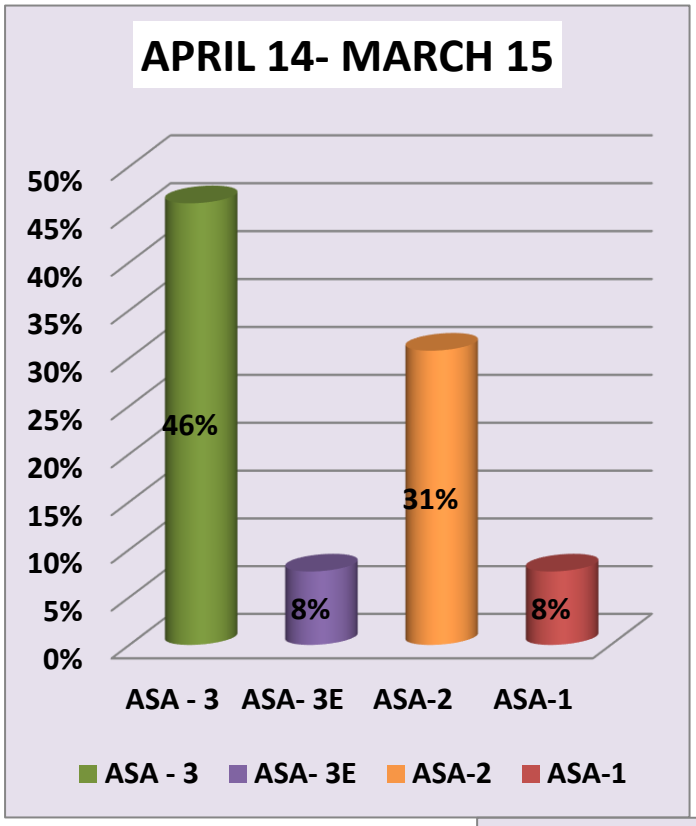
PERCENTAGE OF SURGERIES (APRIL 15- MARCH 16)
TOTAL RETURN=8

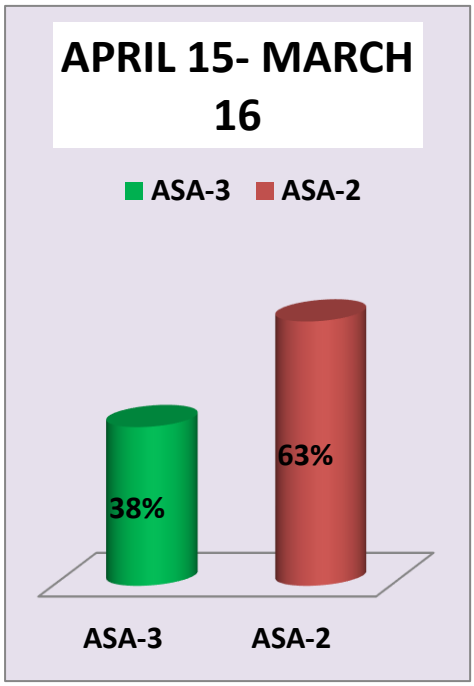


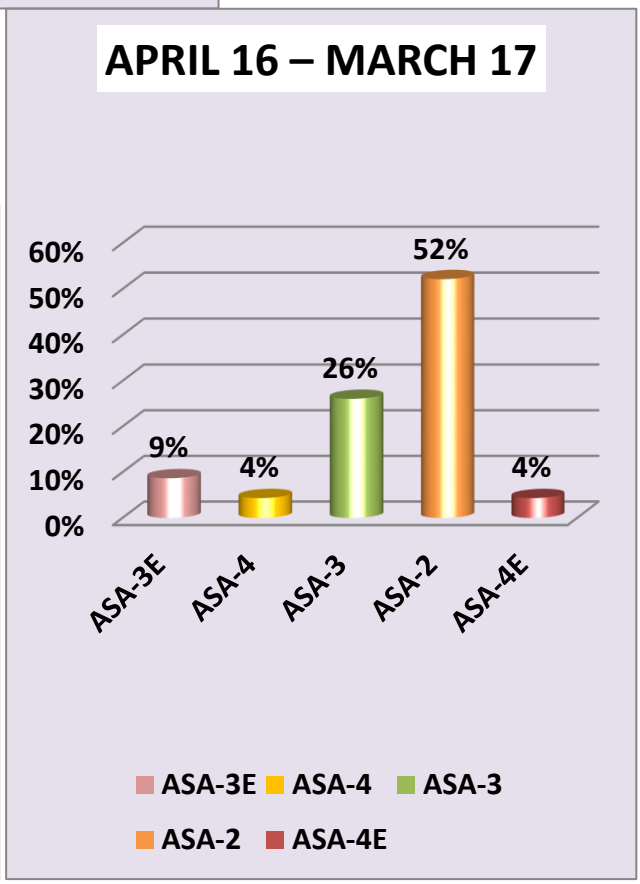
PERCENTAGE OF SURGERIES (APRIL 16 – MARCH 17)
TOTAL RETURN=23



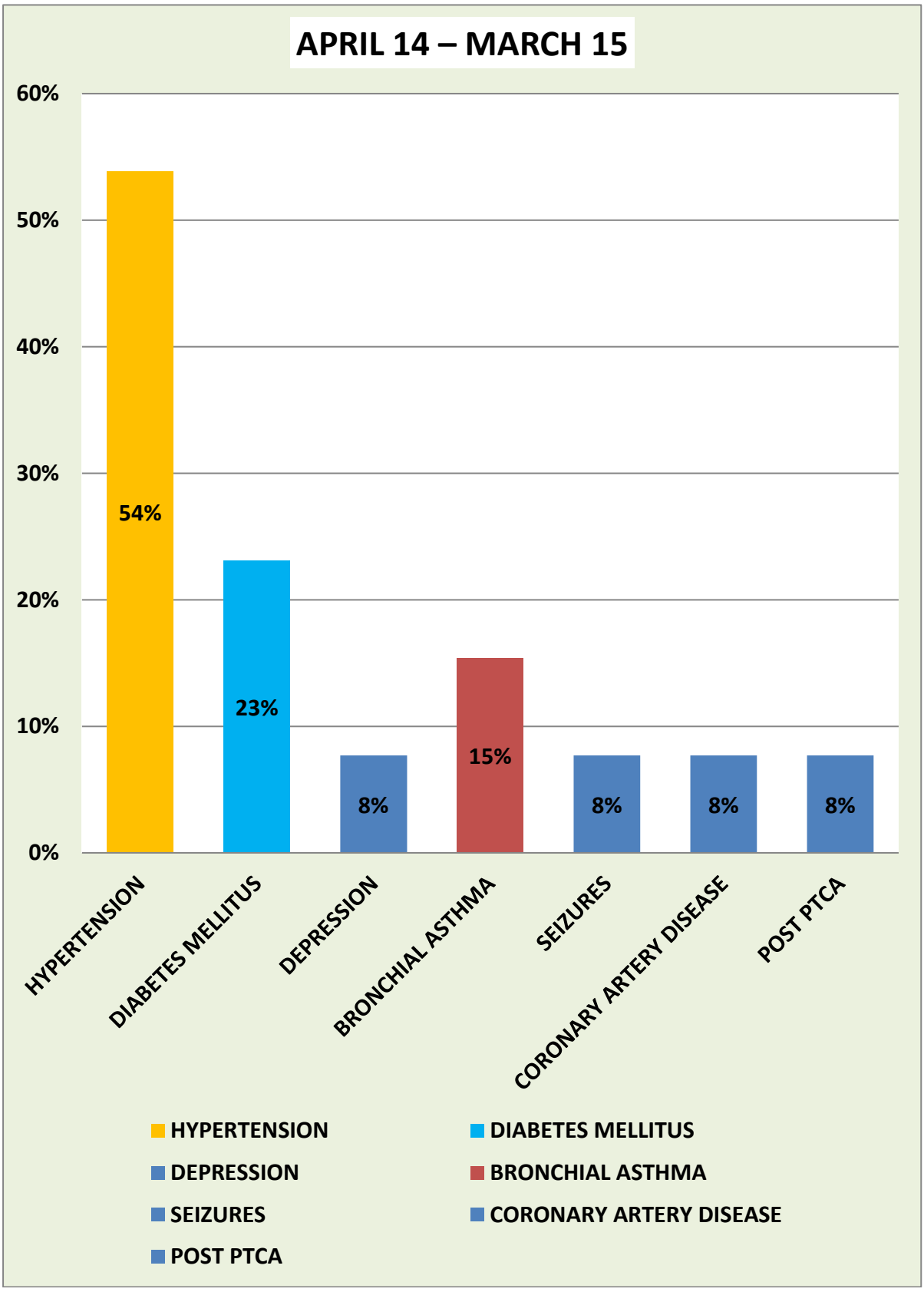
MEASUREMENT OF ASA GRA

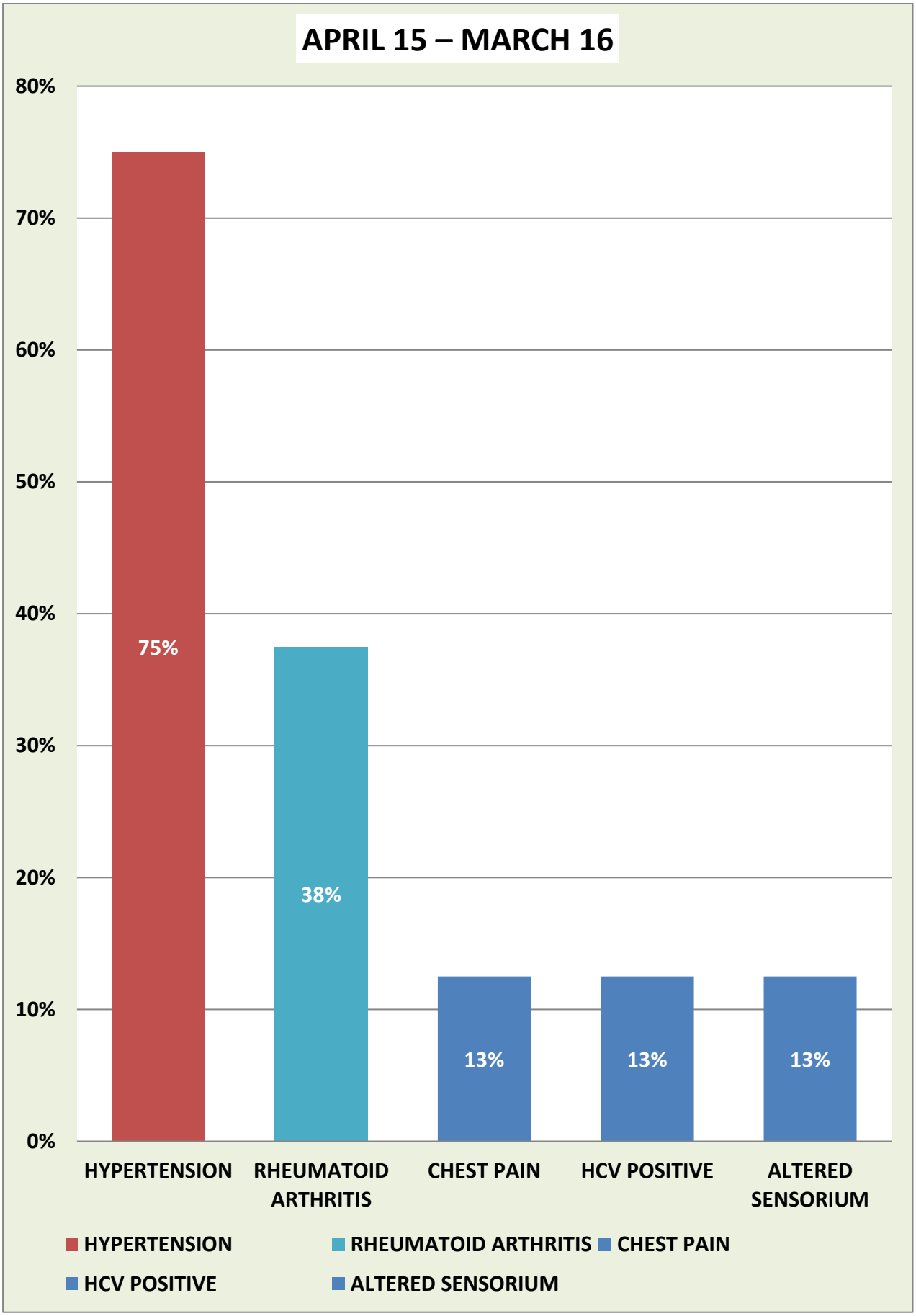


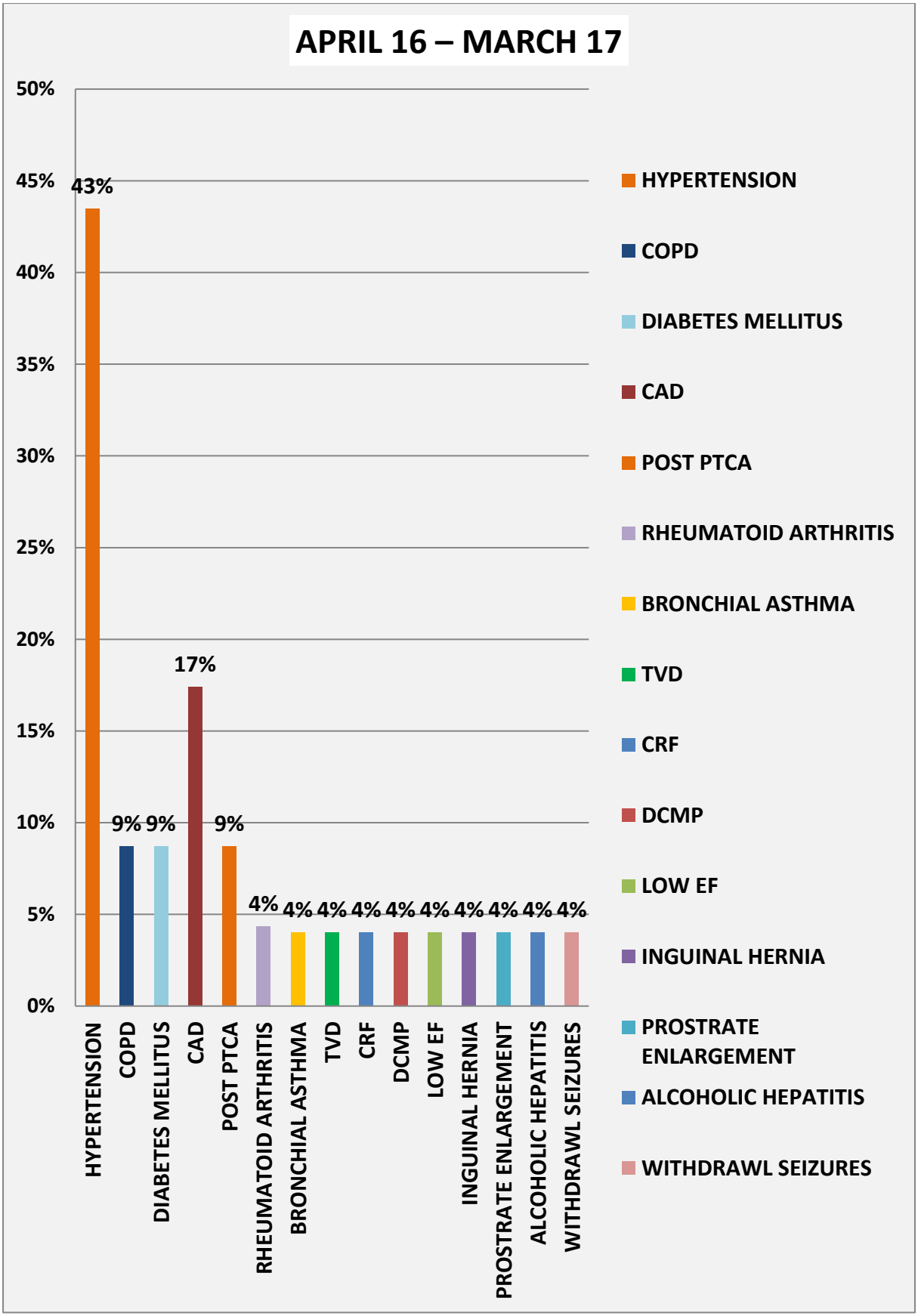




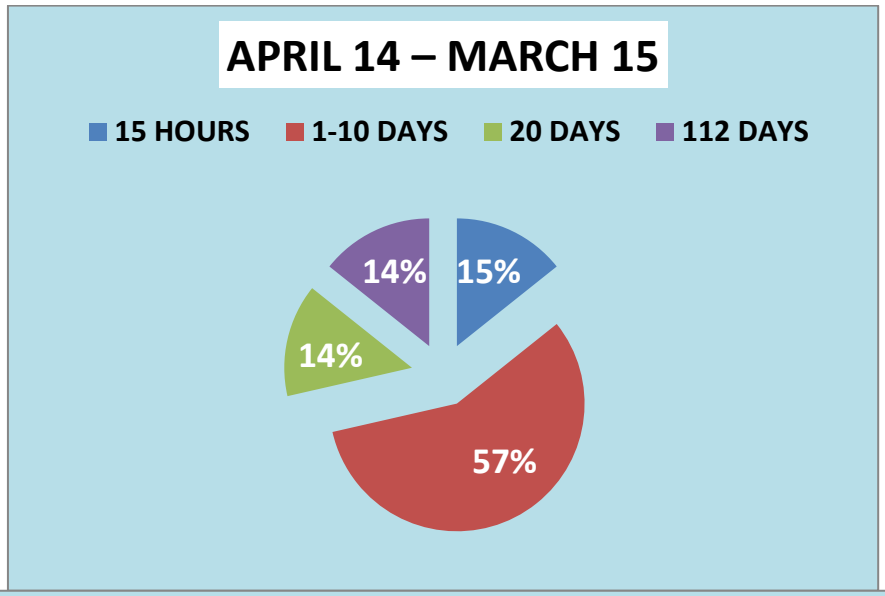
MEASUREMENT OF COMORBIDITIES –

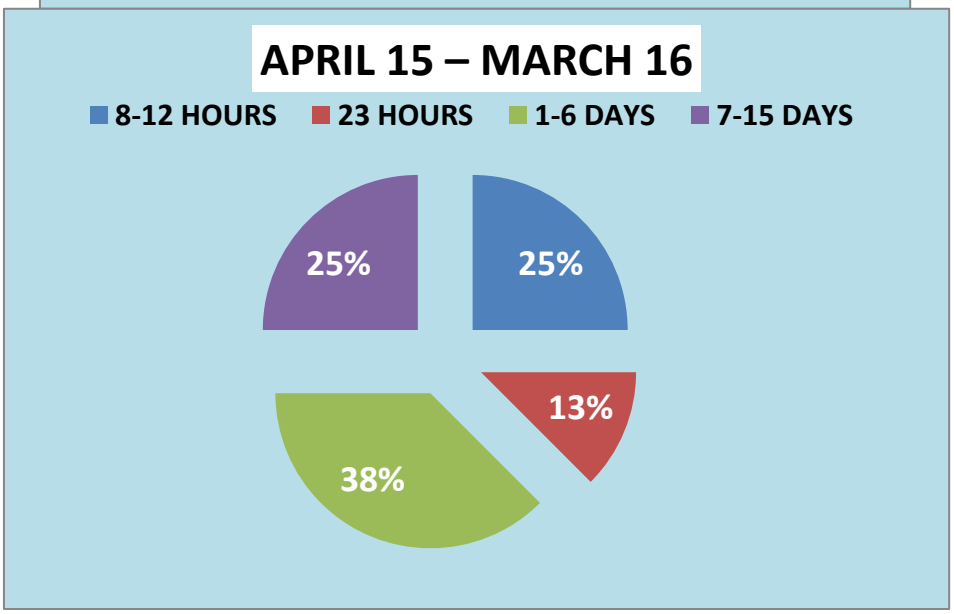


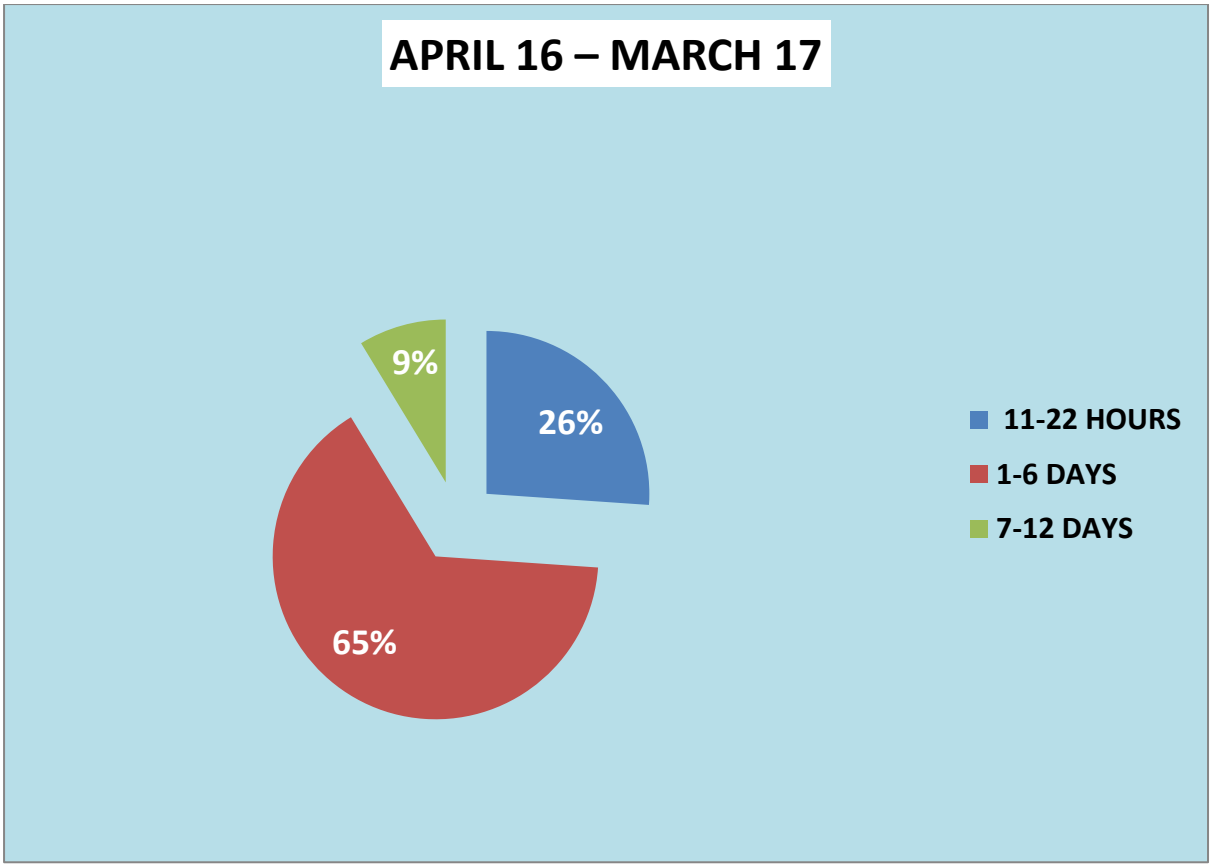

APRIL 15 – MARCH 16
80%
70%
60%
50%
40%
30%
20%
10%
0%
75%
38%
13%
13%
13%
HYPERTENSION
RHEUMATOID ARTHRITIS
CHEST PAIN
HCV POSITIVE
ALTERED SENSORIUM
HYPERTENSION
RHEUMATOID ARTHRITIS
CHEST PAIN
HCV POSITIVE
ALTERED SENSORIUM


APRIL 16 – MARCH 17
50%
45%
40%
35%
30%
25%
20%
15%
10%
5%
0%
43%
9%
9%
17%
9%
4%
4%
4%
4%
4%
4%
4%
4%
4%
4%
HYPERTENSION
COPD
DIABETES MELLITUS
CAD
POST PTCA
RHEUMATOID ARTHRITIS
BRONCHIAL ASTHMA
TVD
CRF
DCMP
LOW EF
INGUINAL HERNIA
PROSTRATE ENLARGEMENT
ALCOHOLIC HEPATITIS
WITHDRAWL SEIZURES

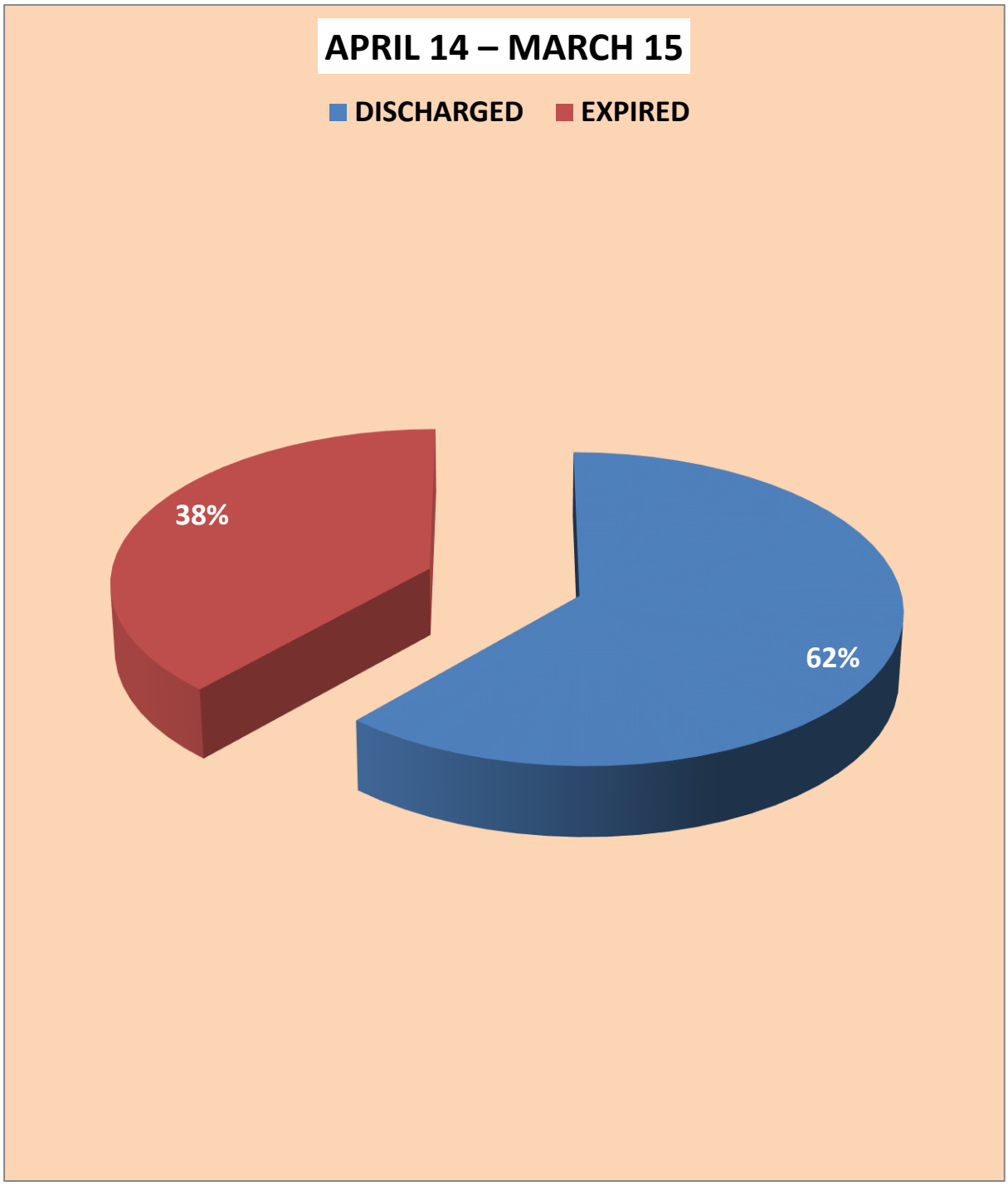
➢ **MEASUREMENT OF RETURN STAY –**

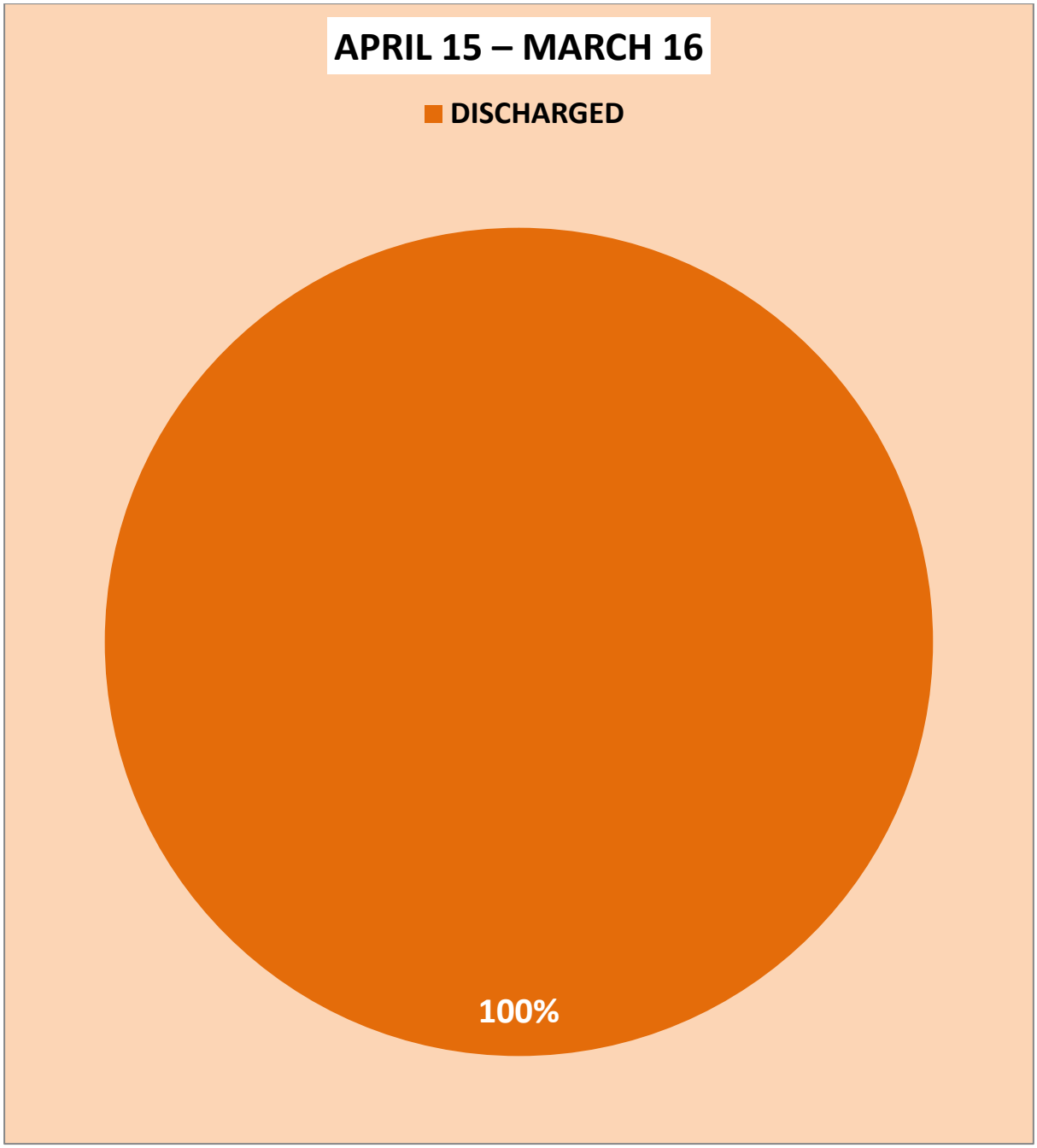


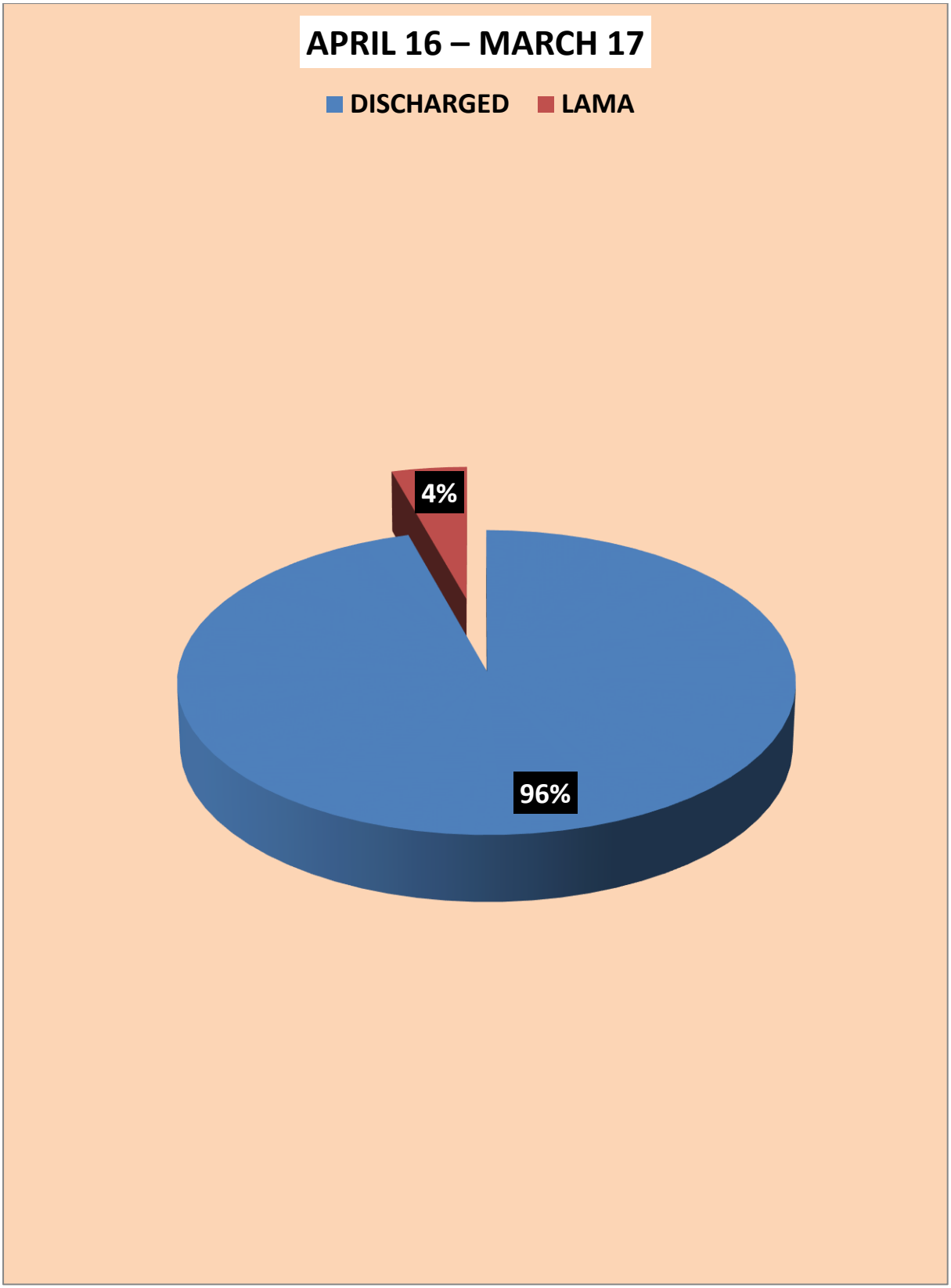



APRIL 16 – MARCH 17
9%
26%
65%
11-22 HOURS
1-6 DAYS
7-12 DAYS

MEASUREMENT OF FINAL PATIENT OUTCOME –




APRIL 15 – MARCH 16
DISCHARGED
100%


APRIL 16 – MARCH 17
DISCHARGED
LAMA
4%
96%

PROJECT NO – 2

ANTIBIOTICS STEWARDSHIP IN MEDICAL INTENSIVE CARE UNIT (MICU)

INTRODUCTION –

- Antibiotics have transformed the practice of medicine, making the lethal infections readily treatable and making other medical advances, like cancer chemotherapy and organ transplants possible.
- The prompt initiation of antibiotics to treat infections has been proven to reduce morbidity and save lives, with a recent example being the rapid administration of antibiotics in the management of sepsis.
- Antimicrobial Stewardship refers to coordinated interventions designed to improve and measure the appropriate use of antimicrobials by promoting the selection of the optimal antimicrobial drug regimen, dose, duration of therapy, and route of administration.
- Antimicrobial stewards seek to achieve optimal clinical outcomes related to antimicrobial use, minimize toxicity and other adverse events, reduce the cost of health care for infections, and limit the selection for antimicrobial resistant strains.
- Improving the use of antibiotics is an important patient safety and public health issue as well as a national priority.
- Antibiotic stewardship programs should provide regular updates on antibiotic prescribing, antibiotic resistance, and infectious disease management that address both national and local issues.

AIM AND OBJECTIVES –

- To study the ANTIBIOTICS USAGE in medical intensive care unit.
- The objective of the study was to understand and determine the Antibiotic Usage in medical intensive care unit in MAX SUPER SPECIALITY HOSPITAL, MOHALI (PUNJAB)
- To describe the distribution of males/females and different departments according to the specialities.
- To describe the distribution of cases in which cultures were sent within 24 hours, cases in which antibiotics were given but culture was not sent.
- To describe the cases in which Escalation/Descalation was done.
- To describe the most prevelant microbes and the antibiotics sensitivity.
- To describe the most prevelant microbes in Diabetes Mellitus patients and Non Diabetes Mellitus patients.
- To describe the Final patient outcome.

SAMPLING –

Total number of samples studied are 100 for the duration MARCH 17 – APRIL 17 which were picked from Medical Intensive Care Unit medical records.

METHODOLOGY –

This is a retrospective as well as prospective study in which 100 patients from MICU are used from MARCH 17 – APRIL 17.

DATA SOURCE –

Hospital records.

DATA MODULE –

Computerized Patient Record System (CPRS).

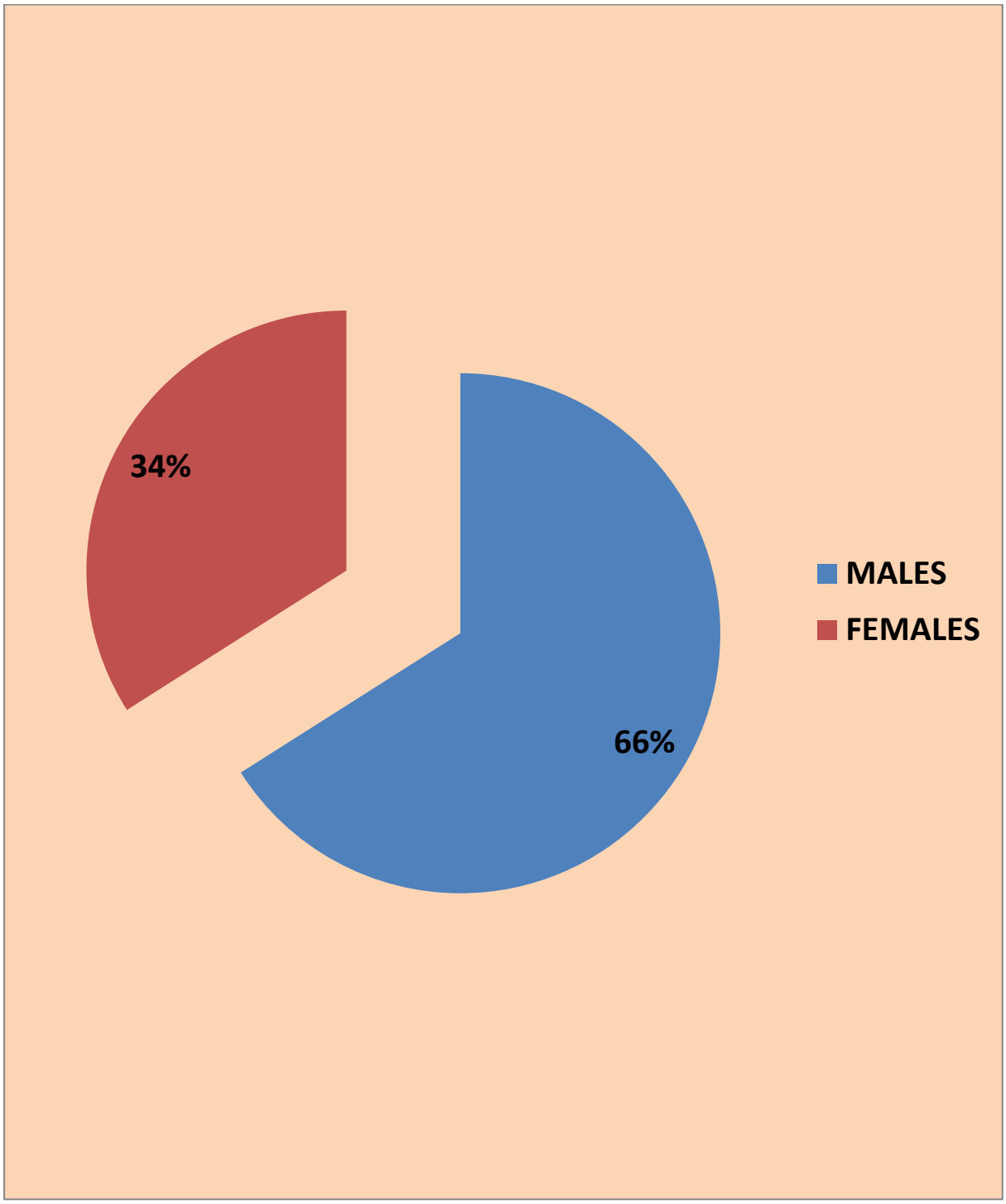
PARAMETERS USED –

- NAME
- AGE/SEX
- SSN
- DATE OF ADMISSION
- NAME OF CONSULTANT
- SPECIALITY
- PRIMARY DIAGNOSIS
- TLC
- PCT
- ANTIBIOTICS GIVEN ON DATE OF ADMISSION WITH ROUTE, DOSE, FREQUENCY, START DATE, STOP DATE.
- DATE ON WHICH CULTURE SENT
- SAMPLE TAKEN FOR CULTURE
- CULTURE REPORT
- ANTIBIOTICS SHOWING SENSITIVITY
- ANTIBIOTICS SHOWING RESISTANCE
- ANTIBIOTICS GIVEN AFTER CULTURE POSITIVE REPORT WITH ROUTE, DOSE, FREQUENCY, START DATE, STOP DATE.
- CULTURE SENT WITHIN 24 HOURS.
- NEED TO CHANGE ANTIBIOTIC AFTER CULTURE REPORTS
- ANTIBIOTIC STARTED ACCORDING TO ANTIBIOTIC POLICY
- ESCALATION / DESCALATION
- A/B THERAPY RATIONALIZED AS PER ANTIBIOTIC POLICY
- OVER USE/MISUSE OF ANY ANTIBIOTIC
- FINAL PATIENT OUTCOME (DISCHARGED, EXPIRED, LAMA, DICHARGE ON REQUEST)

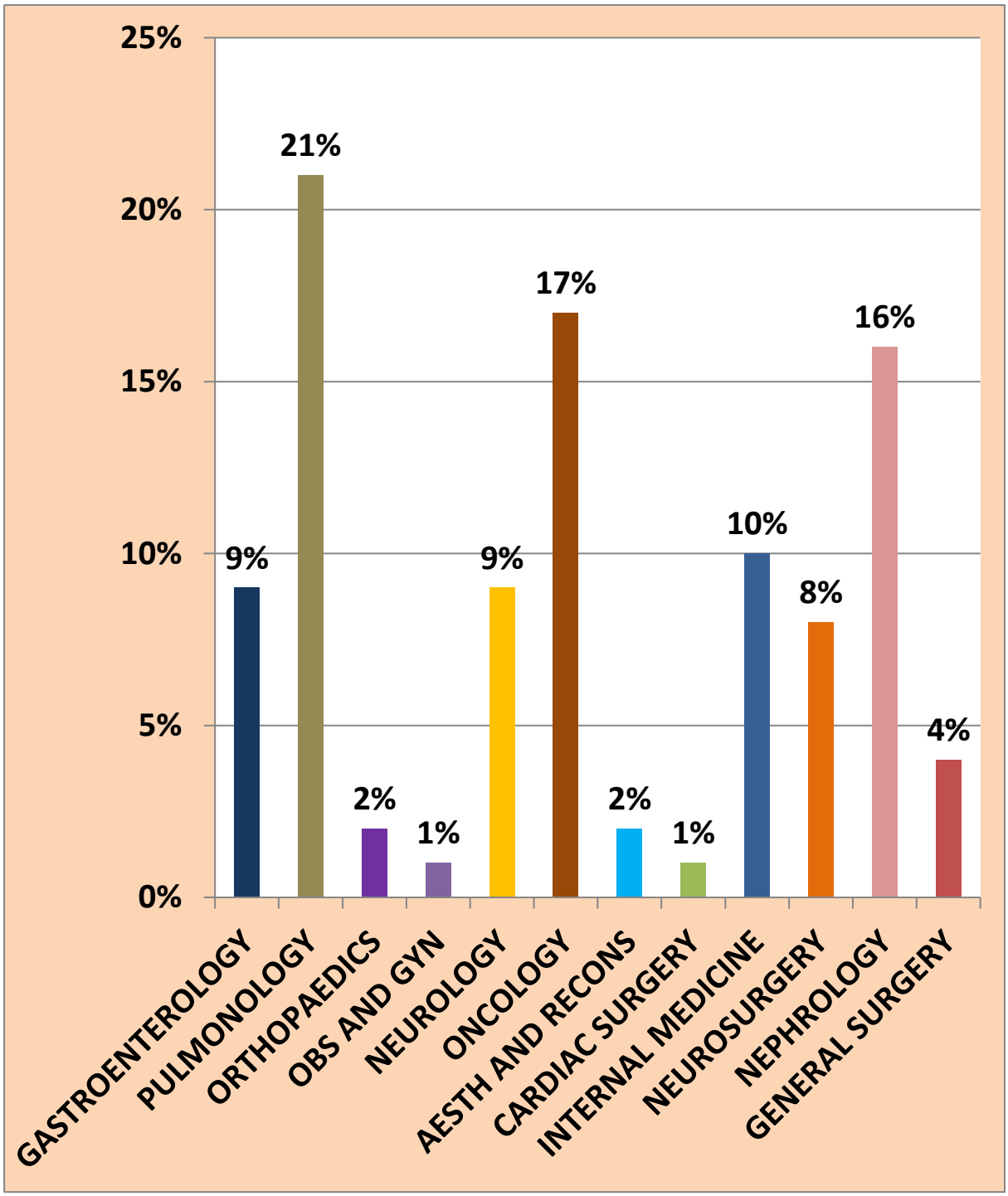
DATA INTERPRETATION AND OBSERVATION –

- DISTRIBUTION OF MALES AND FEMALES –

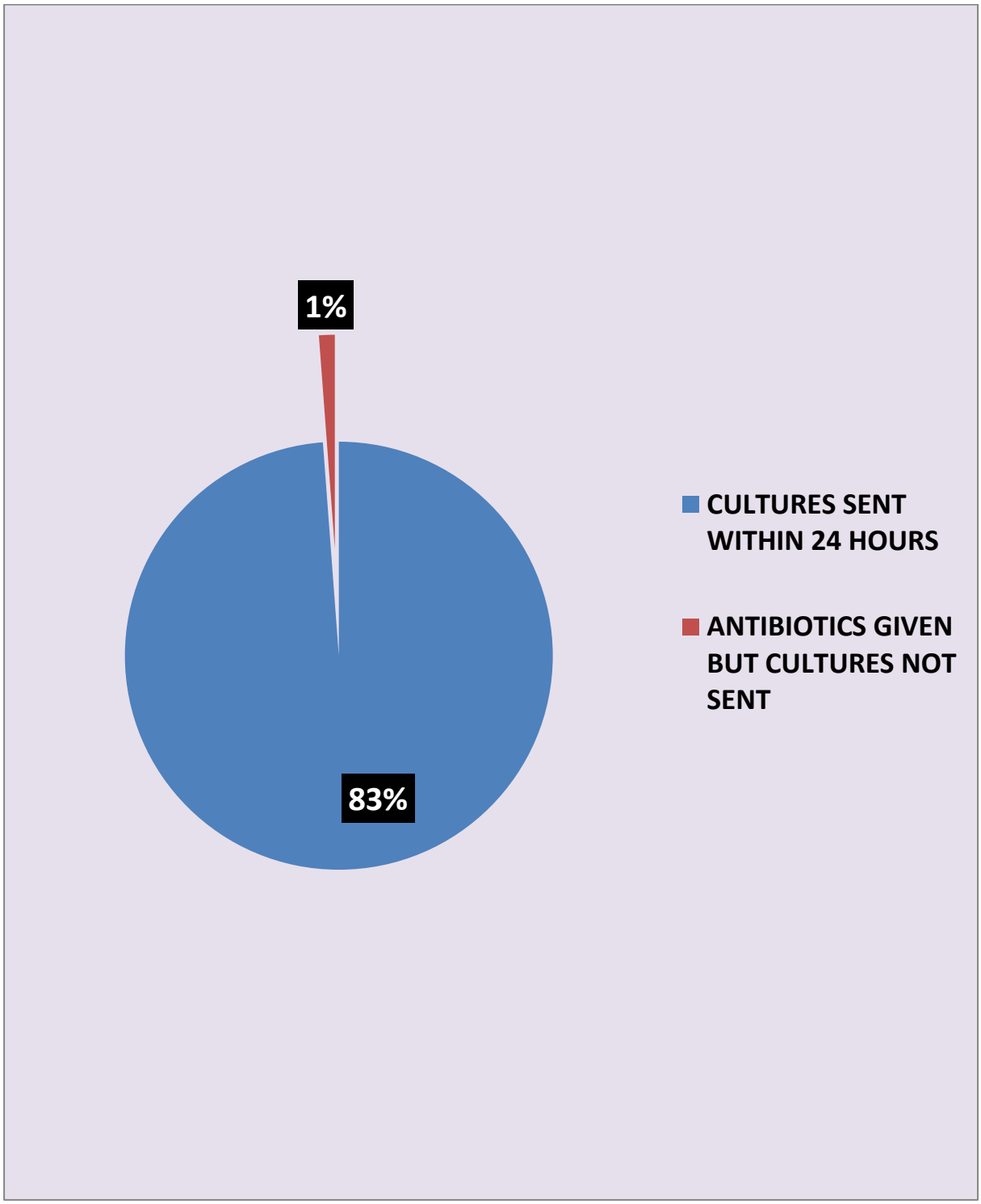
- Measurements consisted of total 100 patients out of which 66 were MALES and 34 were females.



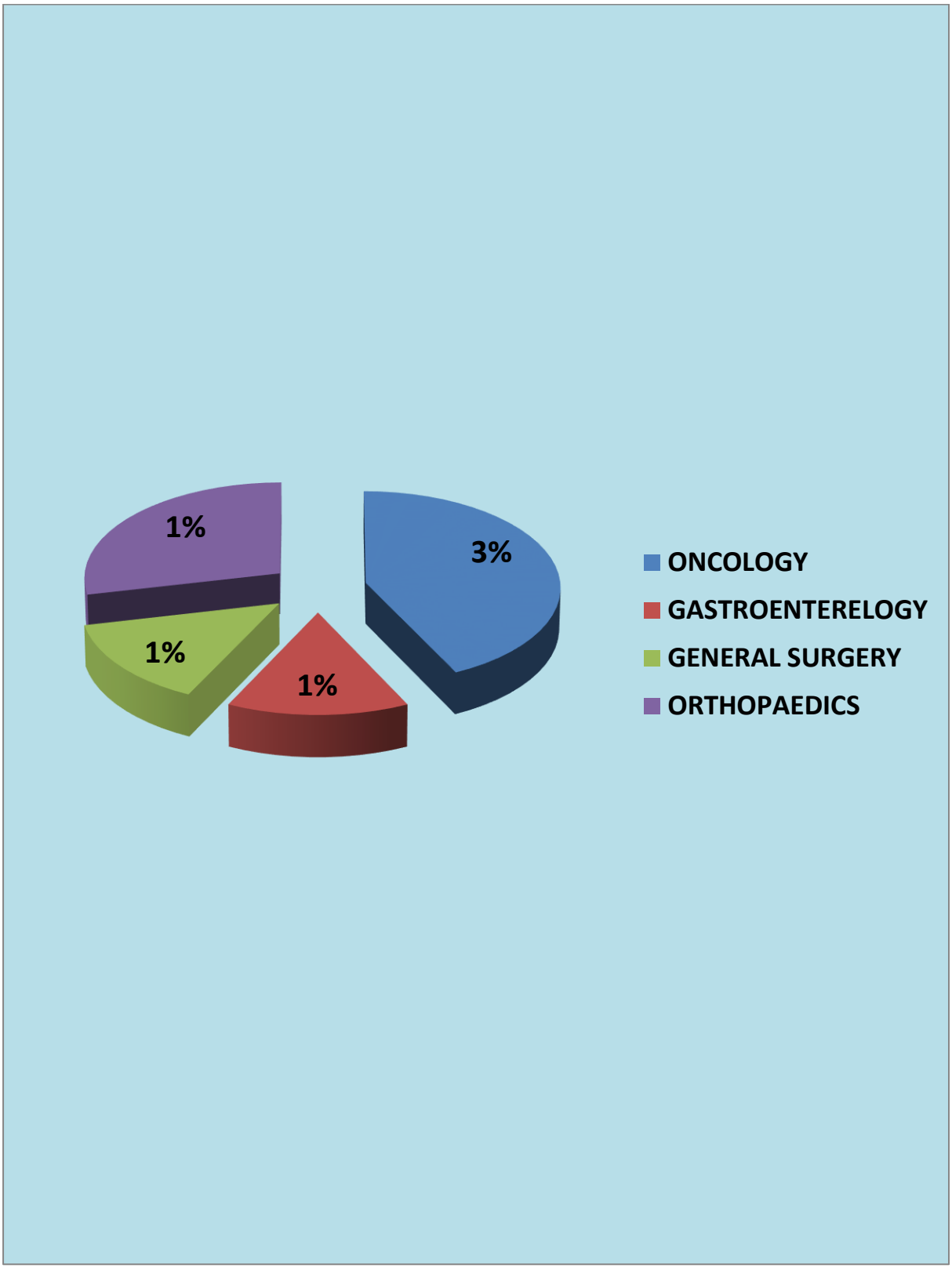
MEASUREMENT OF DISTRIBUTION OF DEPARTMENTS –



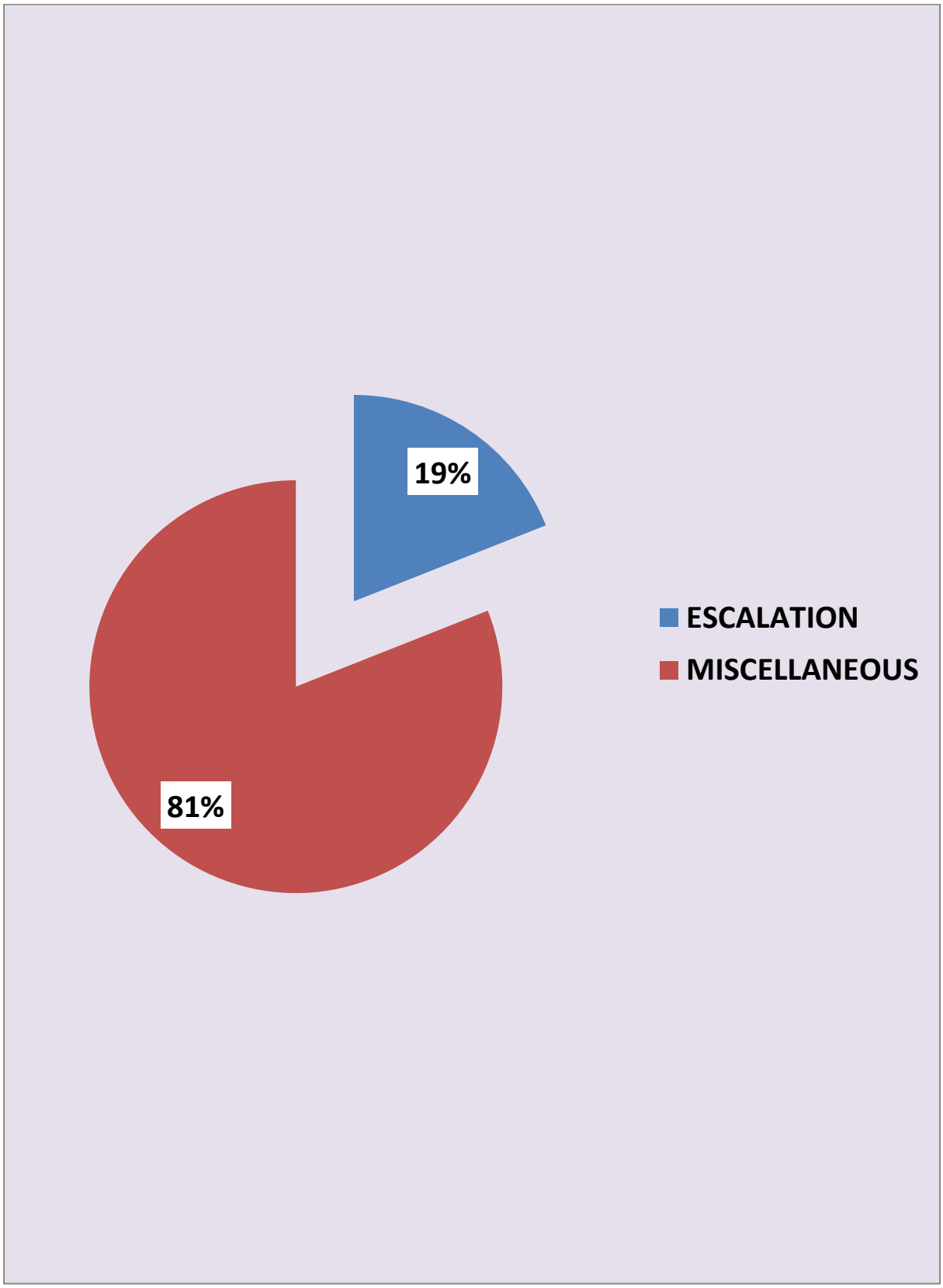
MEASUREMENT OF CASES IN WHICH CULTURE WAS SENT WITHIN 24 HOURS AND CASES IN WHICH ANTIBIOTICS WERE GIVEN BUT CULTURE WAS NOT SENT-



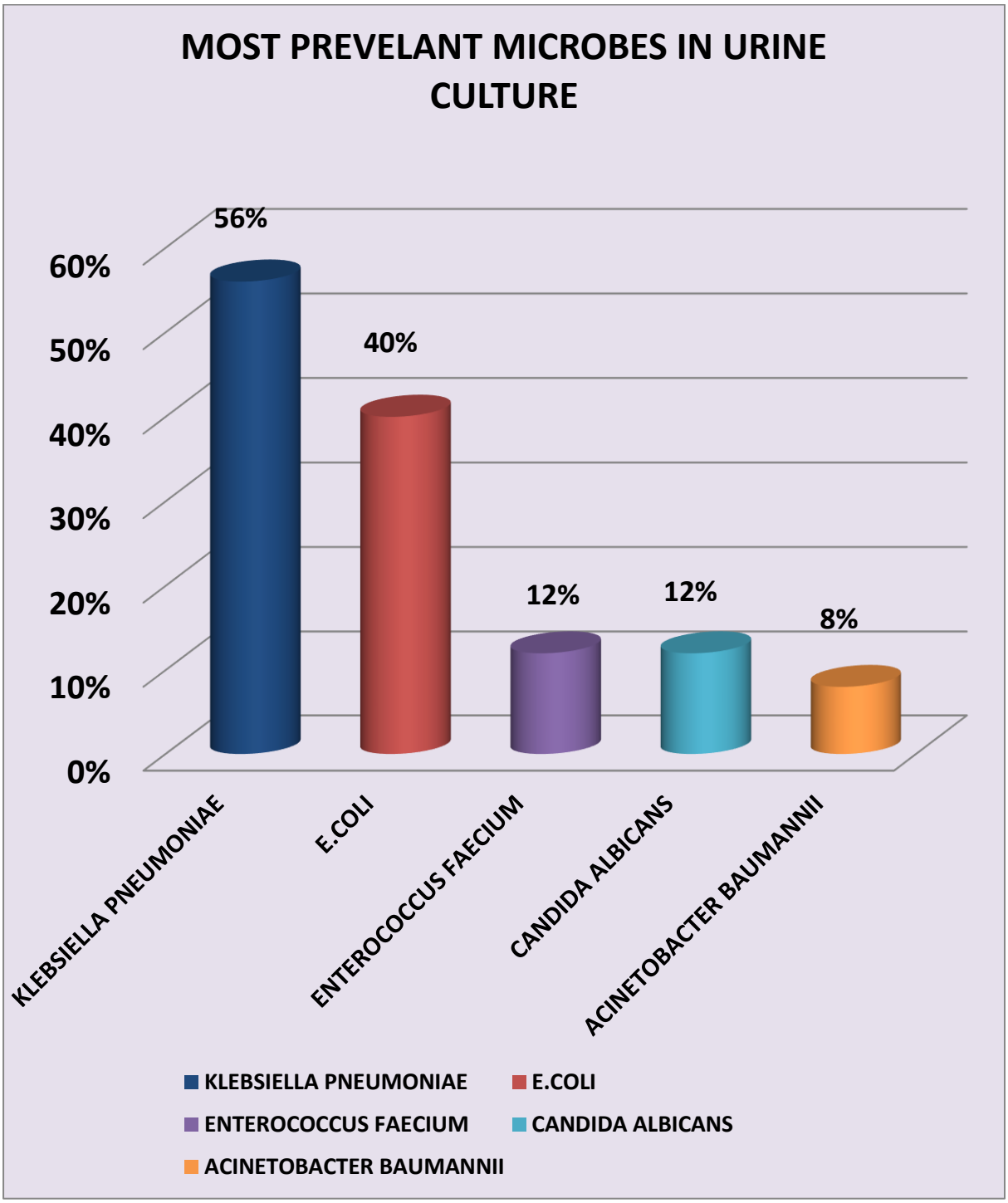
MEASUREMENT OF DEPARTMENTS IN CASES WHERE ANTIBIOTICS WERE GIVEN BUT CULTURE NOT SENT –



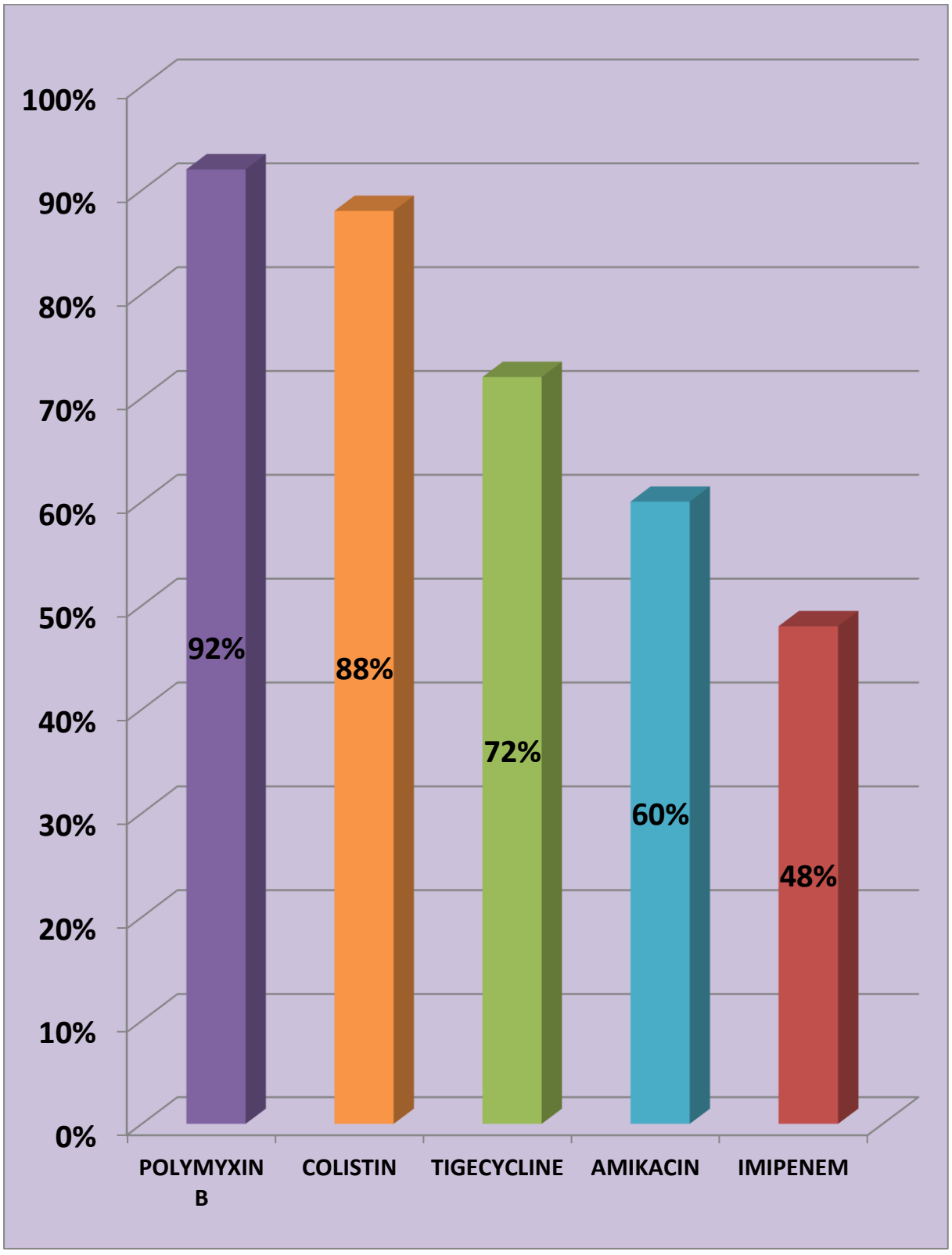
MEASUREMENT OF CASES IN WHICH ESCALATION WAS DONE –

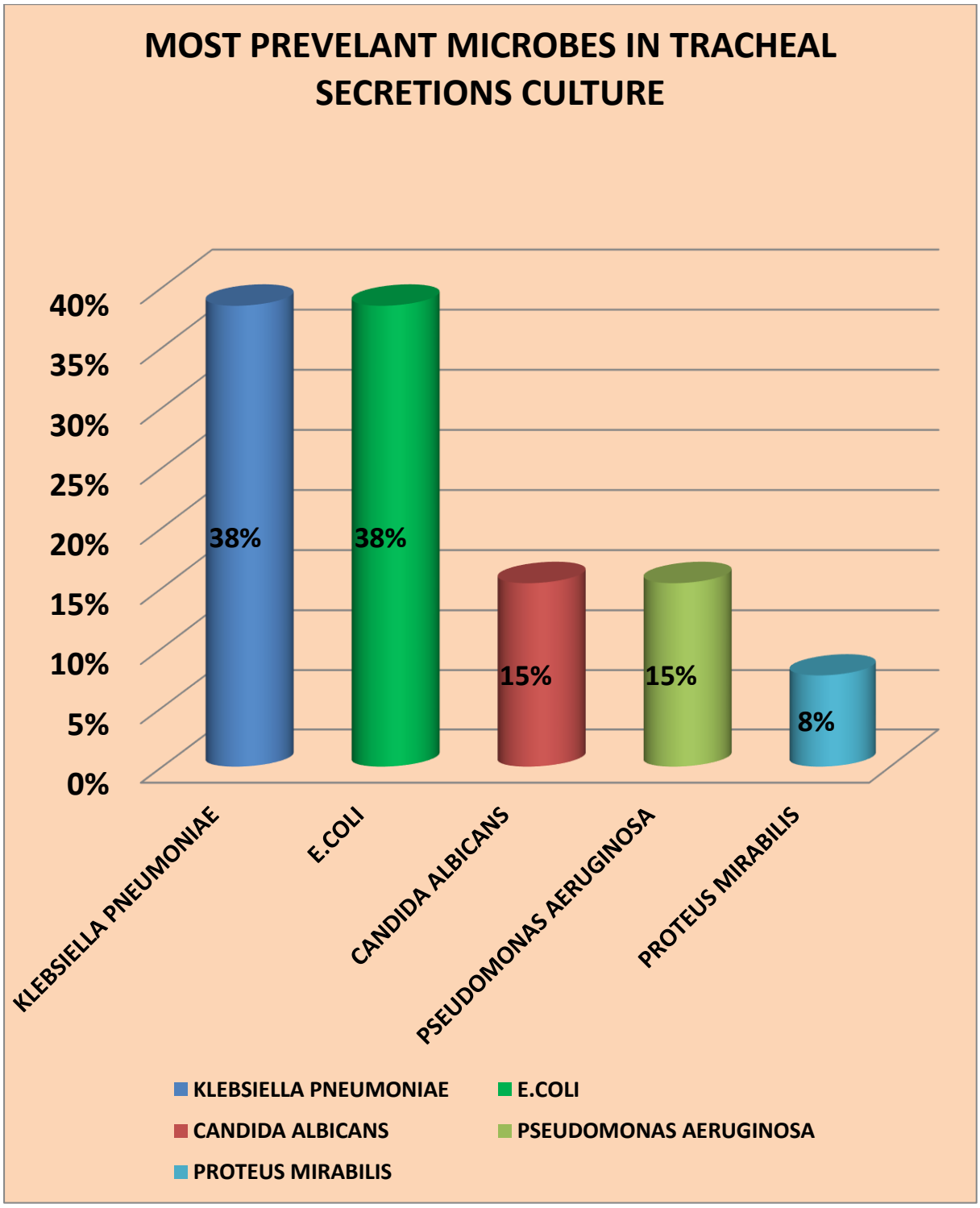


MEASUREMENT OF MOST PREVELANT MICROBES AND ANTIOBIOTICS SENSITIVITY IN EACH –

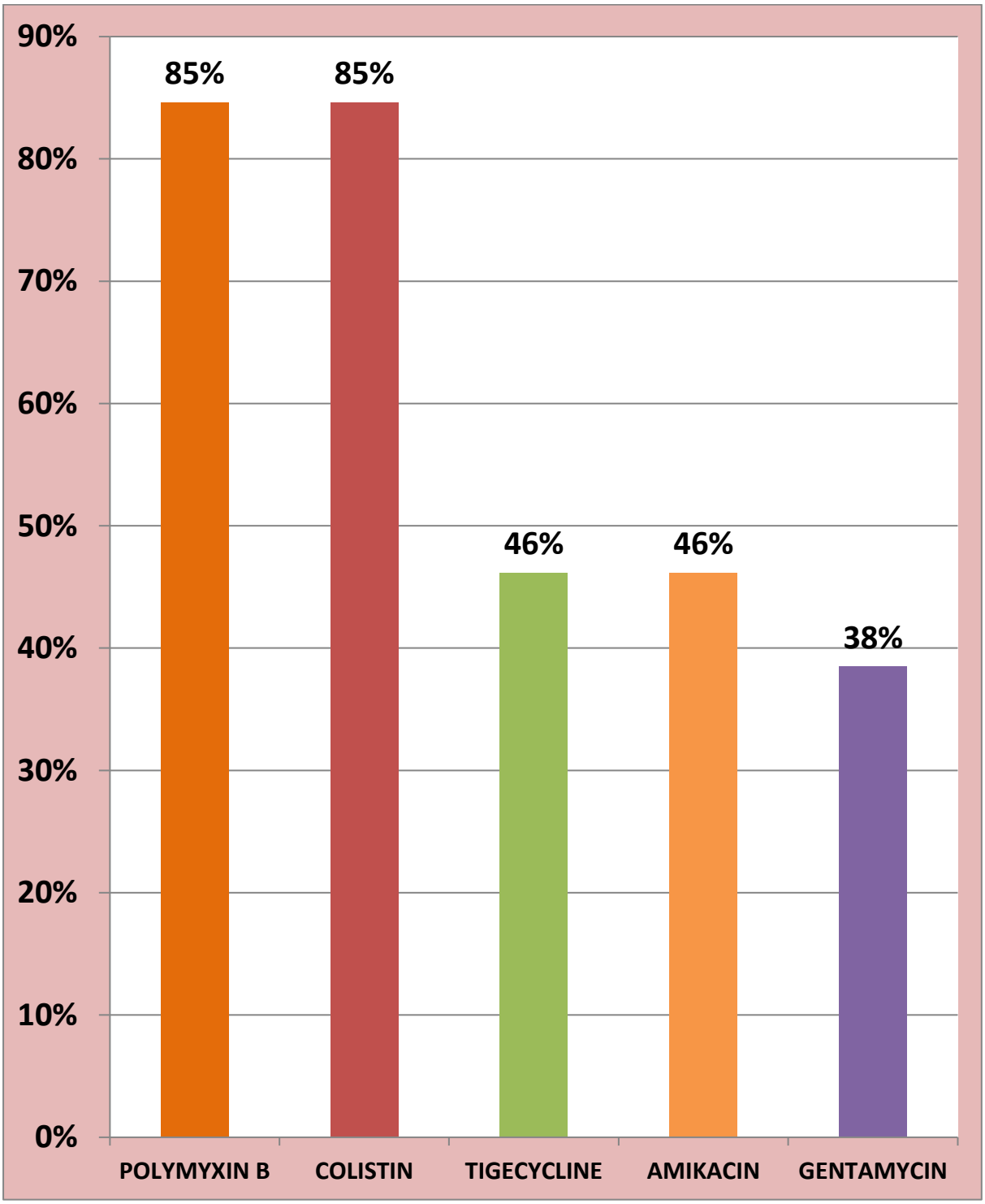


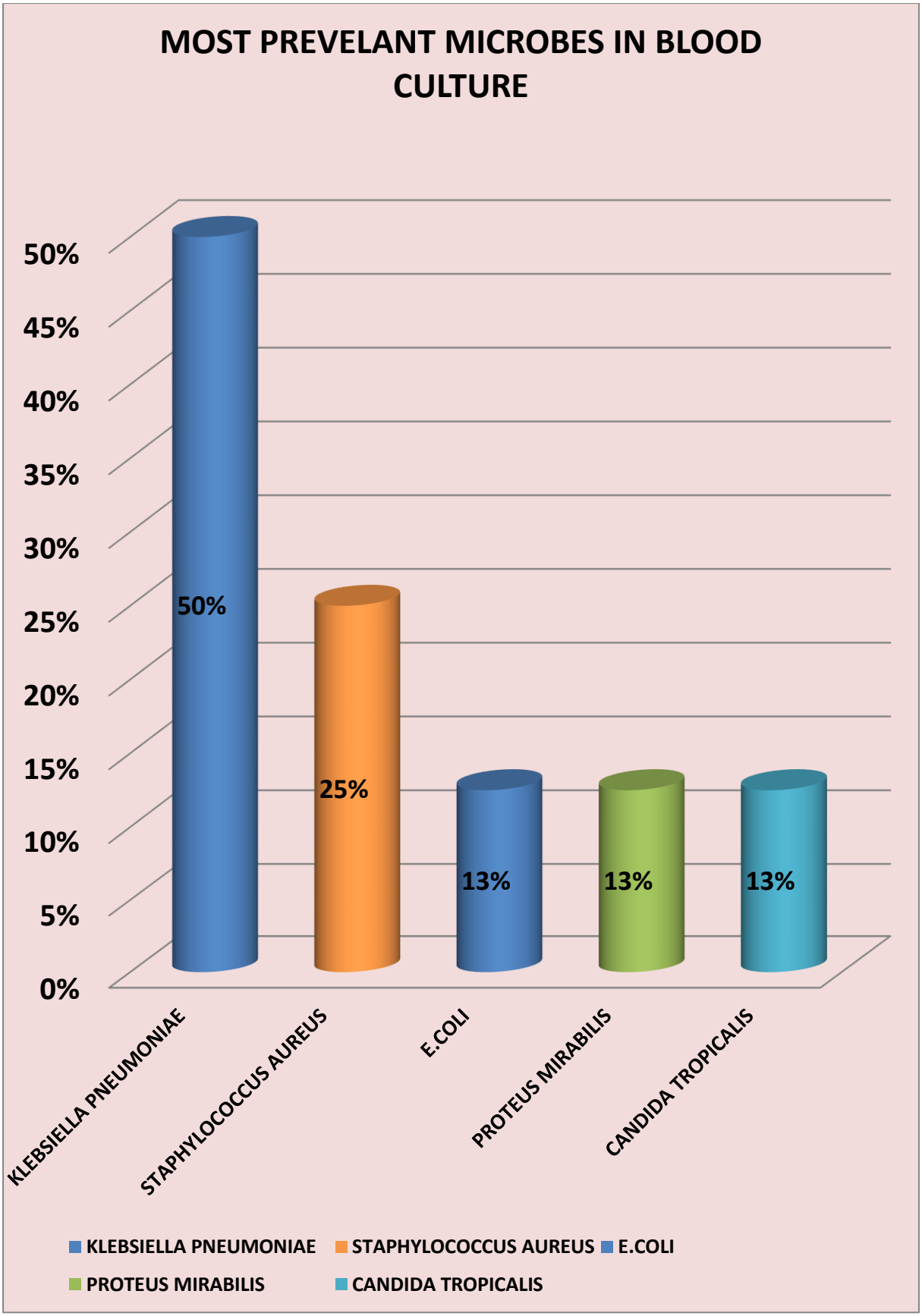
MEASUREMENT OF ANTIBIOTICS SHOWING SENSITIVITY IN URINE CULTURES –



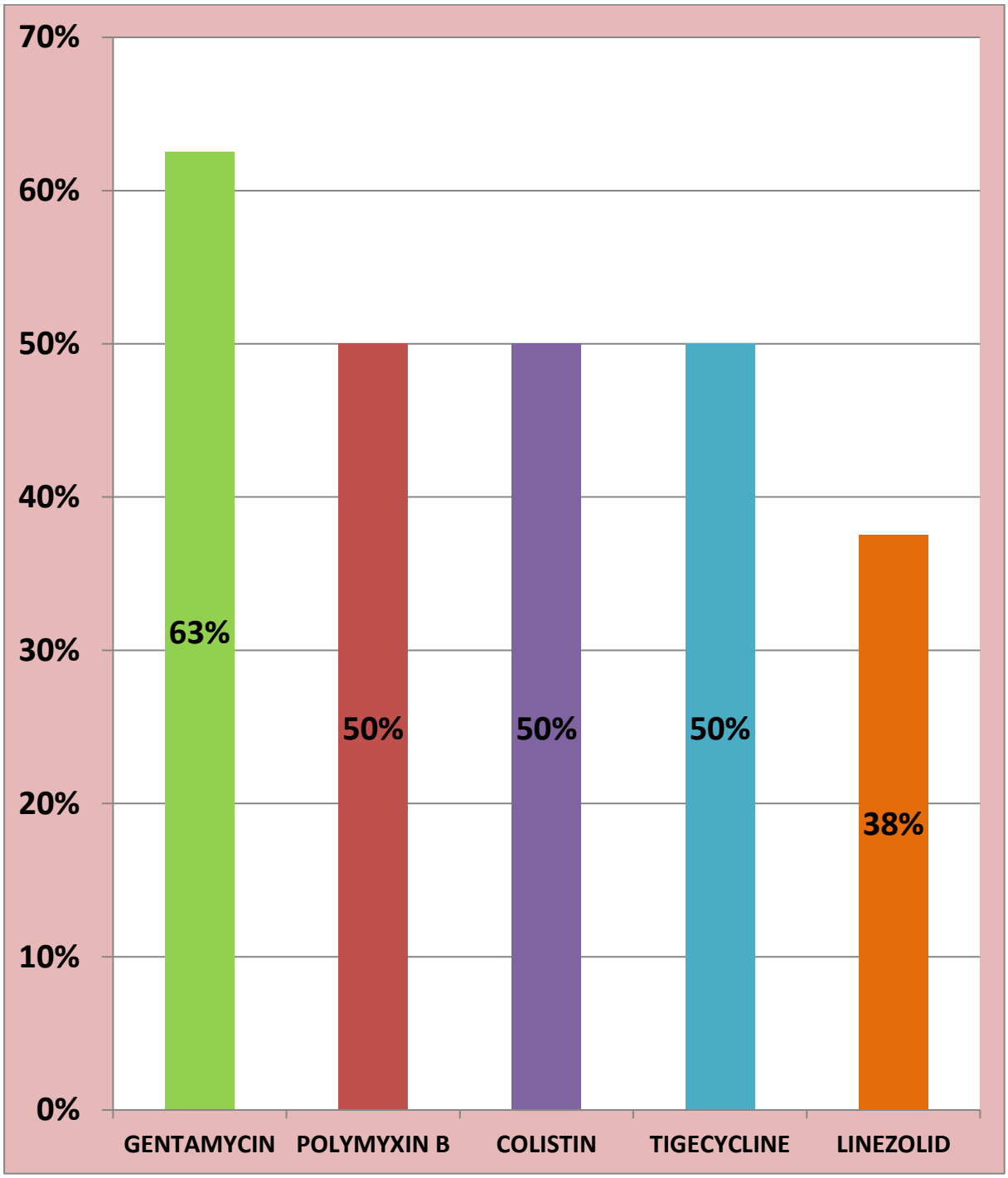

MOST PREVELANT MICROBES IN TRACHEAL SECRETIONS CULTURE
40%
35%
30%
25%
20%
15%
10%
5%
0%
38%
38%
15%
15%
8%
KLEBSIELLA PNEUMONIAE
E.COLI
CANDIDA ALBICANS
PSEUDOMONAS AERUGINOSA
PROTEUS MIRABILIS
KLEBSIELLA PNEUMONIAE
E.COLI
CANDIDA ALBICANS
PSEUDOMONAS AERUGINOSA
PROTEUS MIRABILIS

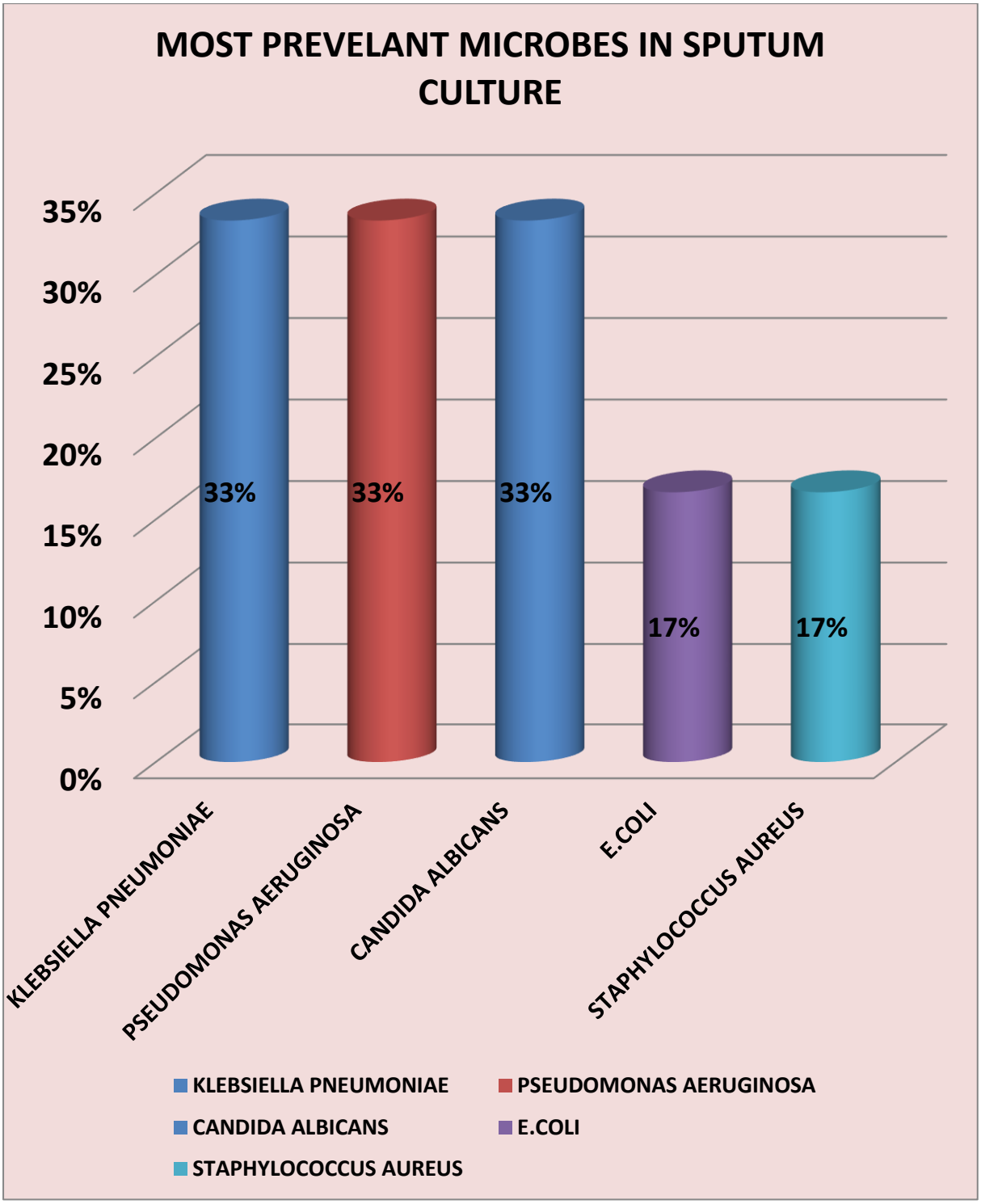
MEASUREMENT OF ANTIBIOTICS SHOWING SENSITIVITY IN TRACHEAL SECRETIONS CULTURES -



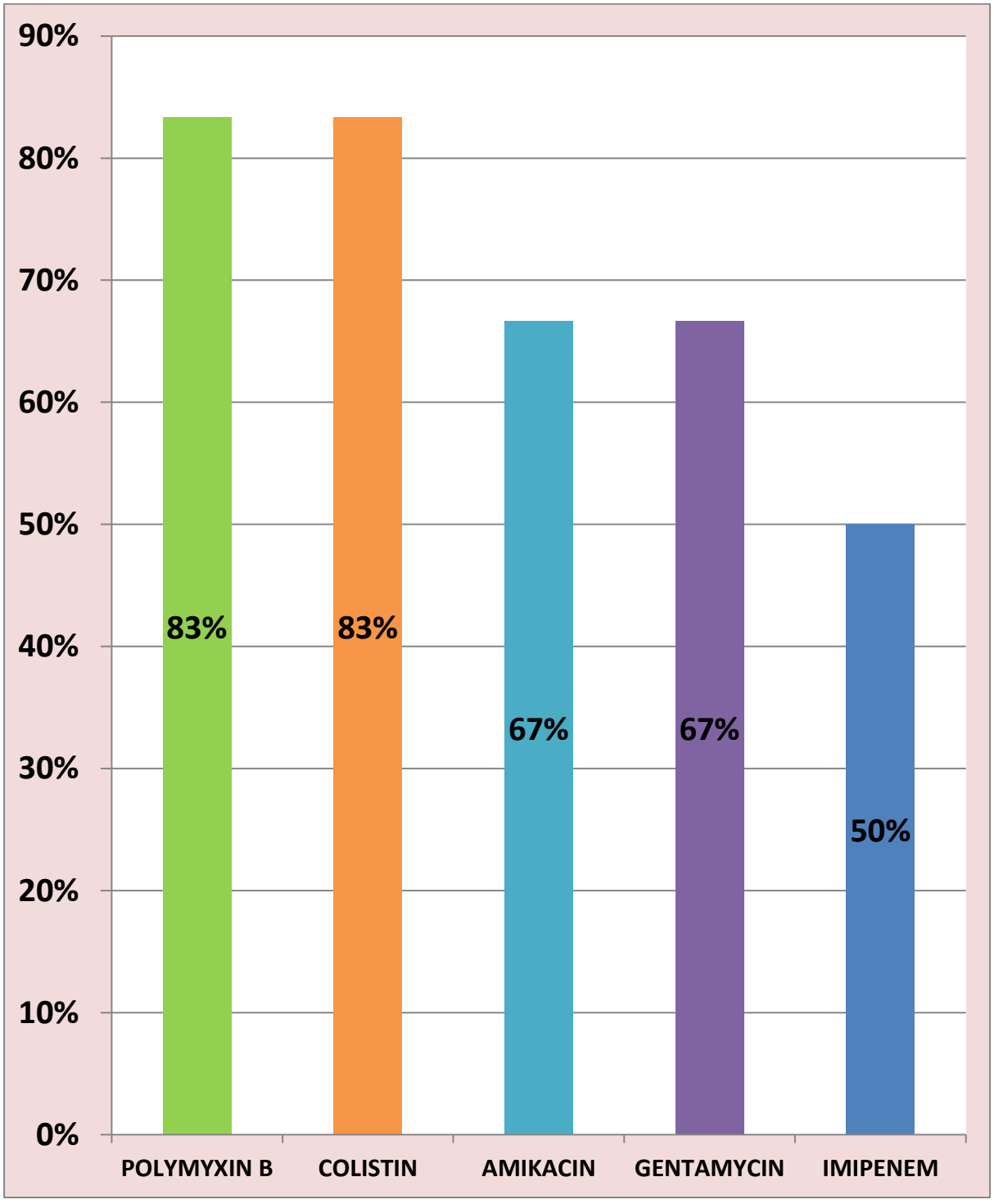

MOST PREVELANT MICROBES IN BLOOD CULTURE
50%
45%
40%
35%
30%
25%
20%
15%
10%
5%
0%
50%
25%
13%
13%
13%
KLEBSIELLA PNEUMONIAE
STAPHYLOCOCCUS AUREUS
E.COLI
PROTEUS MIRABILIS
CANDIDA TROPICALIS
KLEBSIELLA PNEUMONIAE
STAPHYLOCOCCUS AUREUS
E.COLI
PROTEUS MIRABILIS
CANDIDA TROPICALIS

MEASUREMENT OF ANTIBIOTICS SHOWING SENSITIVITY IN BLOOD CULTURES –

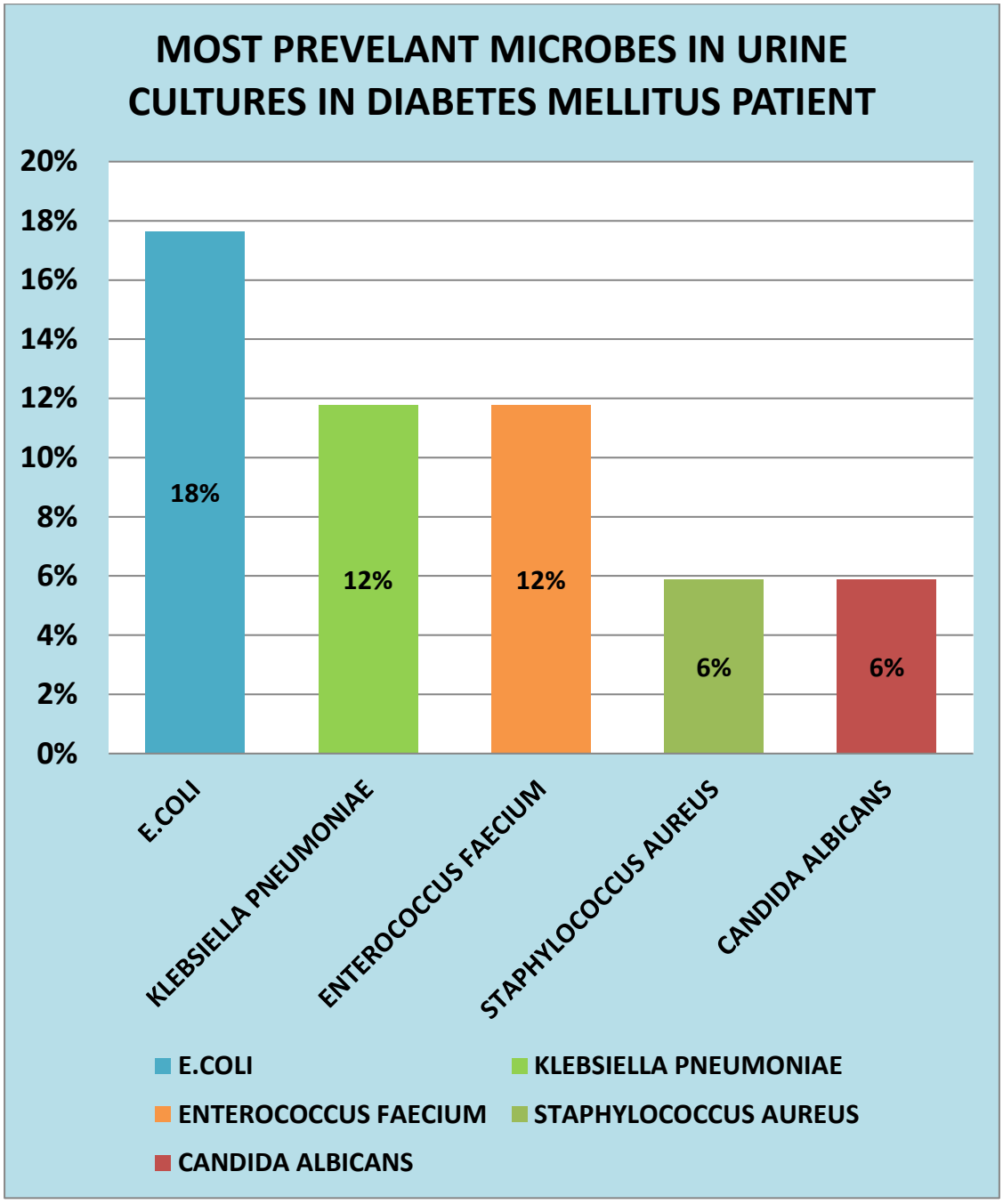


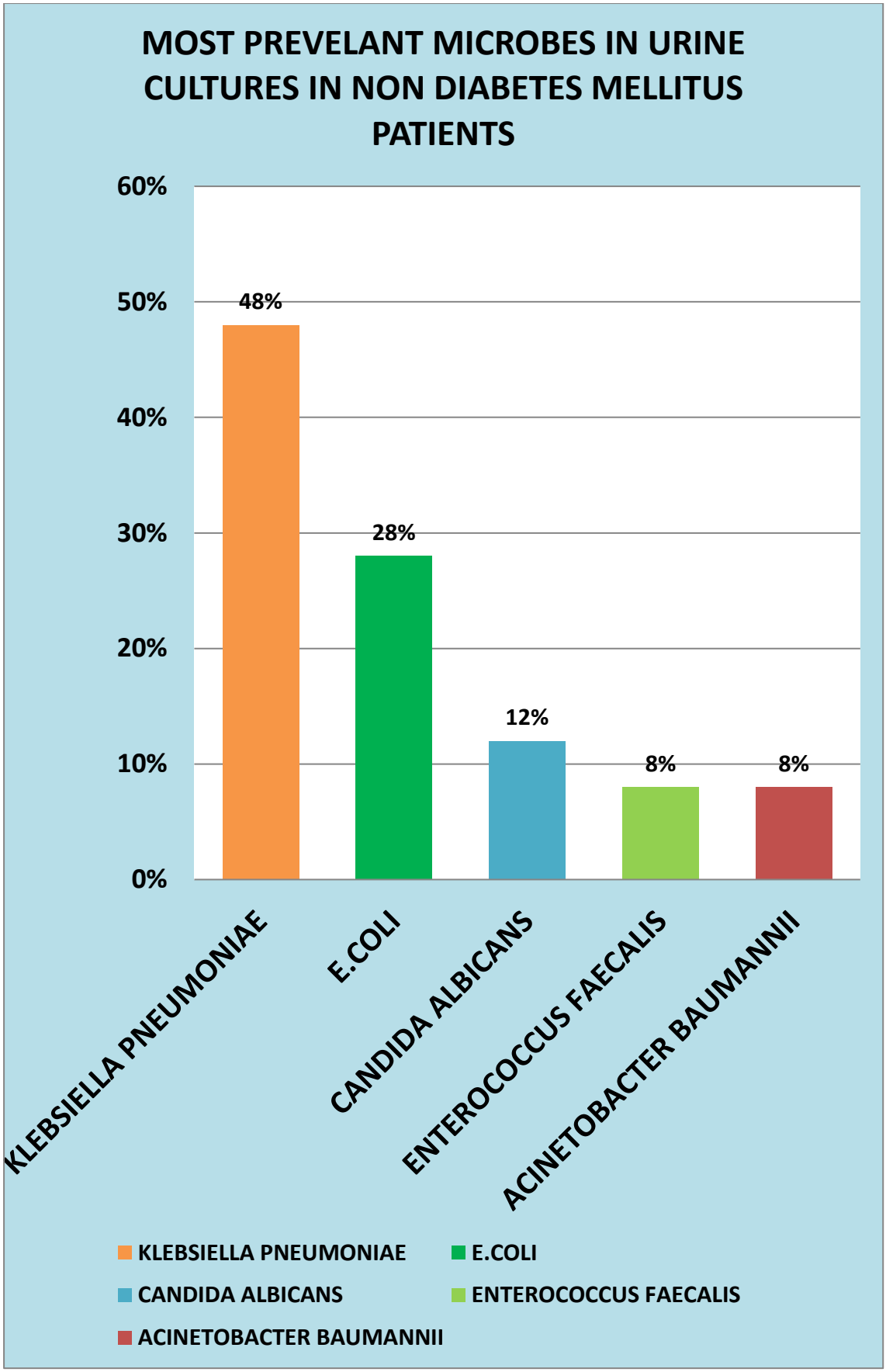

MOST PREVELANT MICROBES IN SPUTUM CULTURE
35%
30%
25%
20%
15%
10%
5%
0%
33%
33%
33%
17%
17%
KLEBSIELLA PNEUMONIAE
PSEUDOMONAS AERUGINOSA
CANDIDA ALBICANS
E.COLI
STAPHYLOCOCCUS AUREUS
KLEBSIELLA PNEUMONIAE
PSEUDOMONAS AERUGINOSA
CANDIDA ALBICANS
E.COLI
STAPHYLOCOCCUS AUREUS

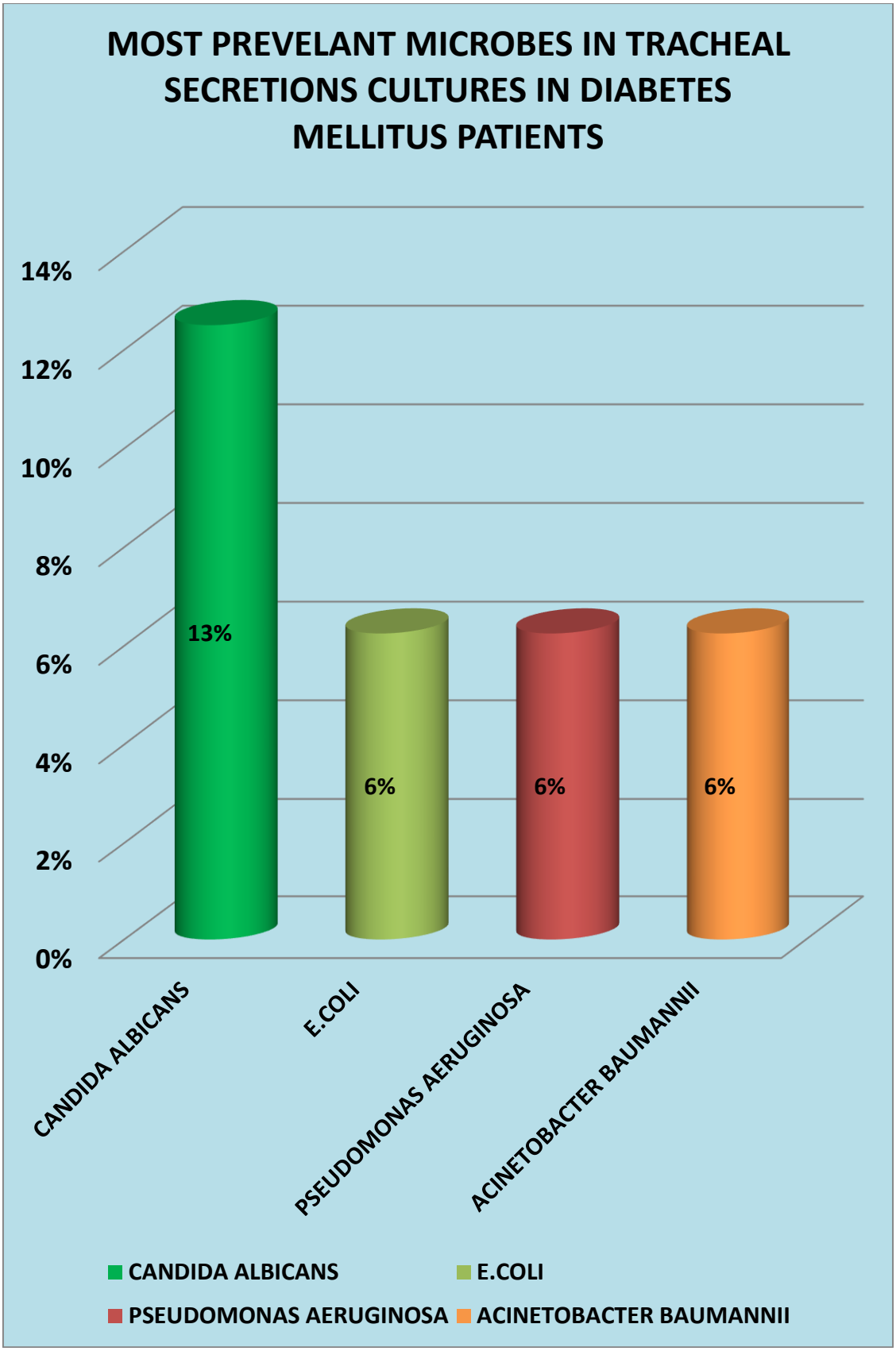
- **MEASUREMENT OF ANTIBIOTICS SHOWING SENSITIVITY IN SPUTUM CULTURES –**

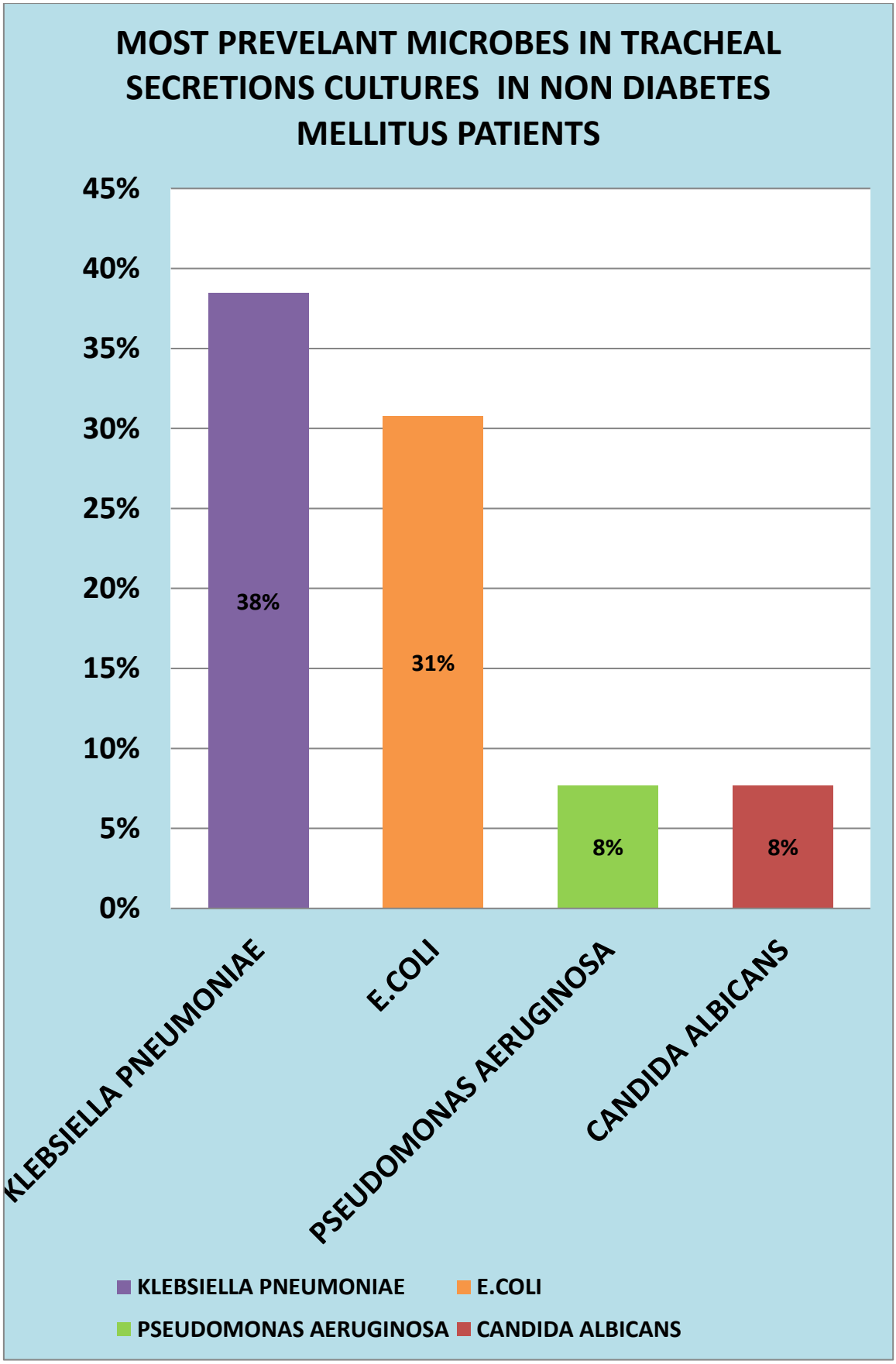


MEASUREMENT OF MOST PREVELANT MICROBES IN DIABETES MELLITUS PATIENTS AND NON-DIABETES MELLITUS PATIENT

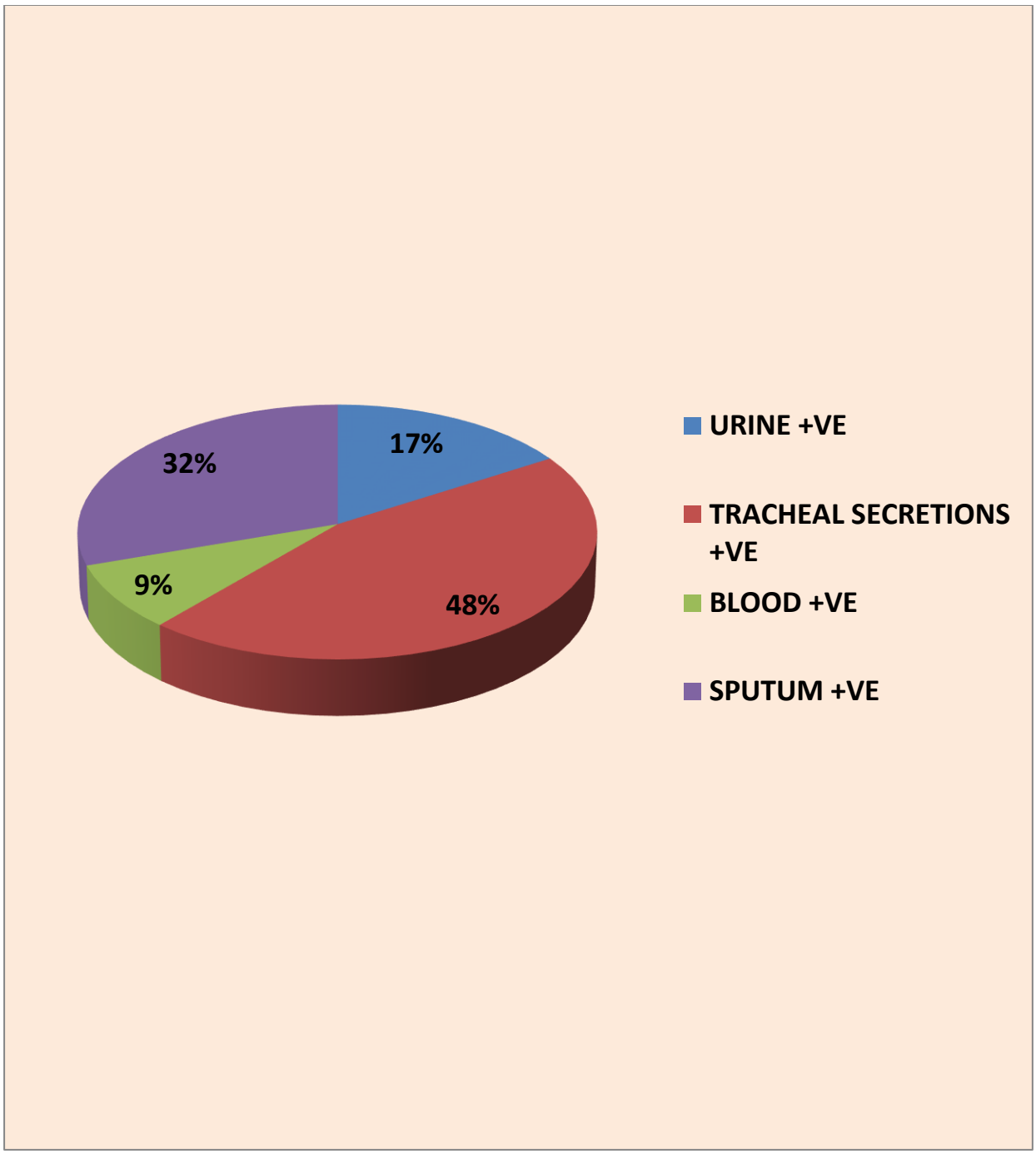



MOST PREVELANT MICROBES IN URINE CULTURES IN NON DIABETES MELLITUS PATIENTS
60%
50%
40%
30%
20%
10%
0%
48%
28%
12%
8%
8%
KLEBSIELLA PNEUMONIAE
E.COLI
CANDIDA ALBICANS
ENTEROCOCCUS FAECALIS
ACINETOBACTER BAUMANNII
KLEBSIELLA PNEUMONIAE
E.COLI
CANDIDA ALBICANS
ENTEROCOCCUS FAECALIS
ACINETOBACTER BAUMANNII

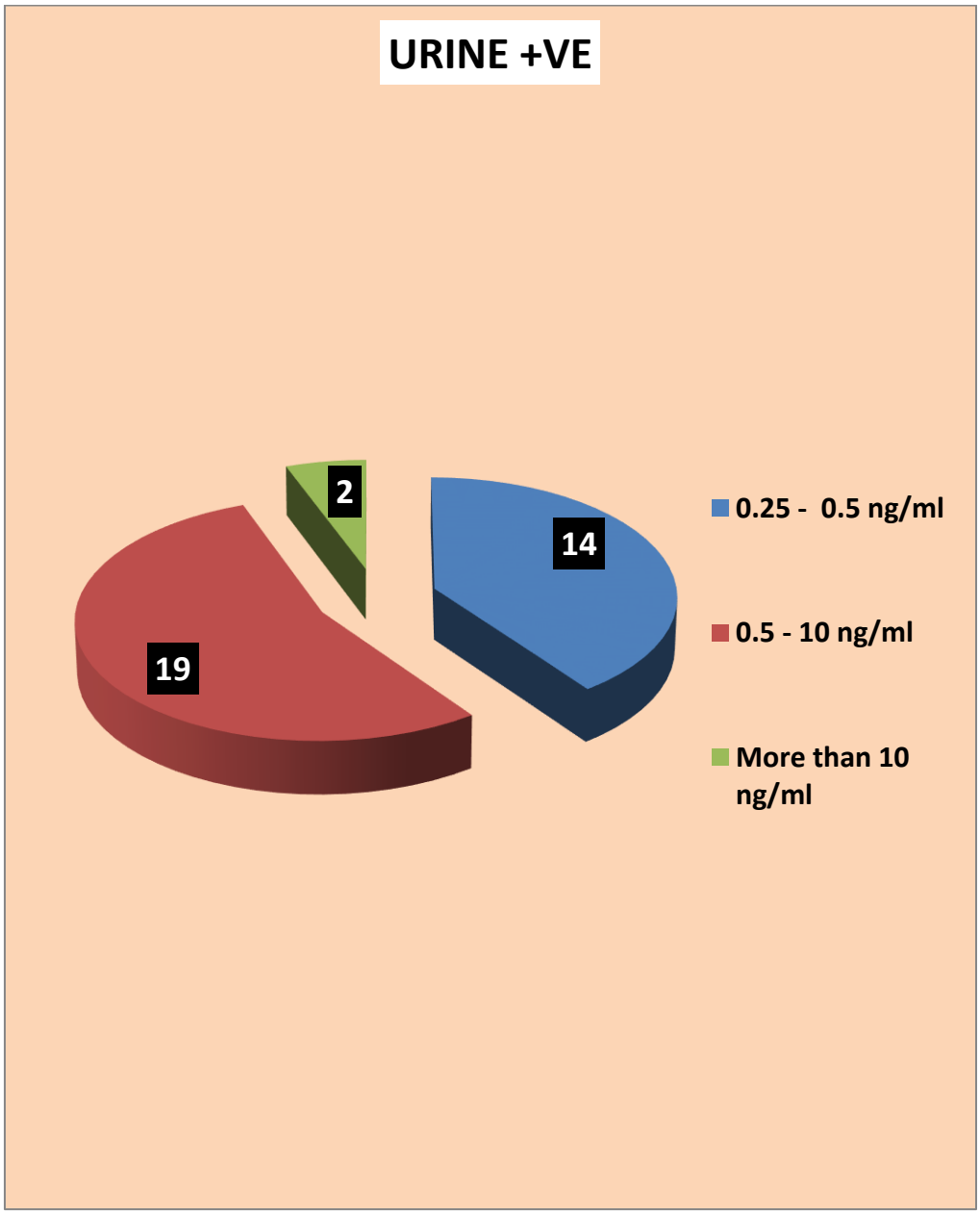

MOST PREVELANT MICROBES IN TRACHEAL SECRETIONS CULTURES IN DIABETES MELLITUS PATIENTS
14%
12%
10%
8%
6%
4%
2%
0%
13%
6%
6%
6%
CANDIDA ALBICANS
E.COLI
PSEUDOMONAS AERUGINOSA
ACINETOBACTER BAUMANNII
CANDIDA ALBICANS
E.COLI
PSEUDOMONAS AERUGINOSA
ACINETOBACTER BAUMANNII

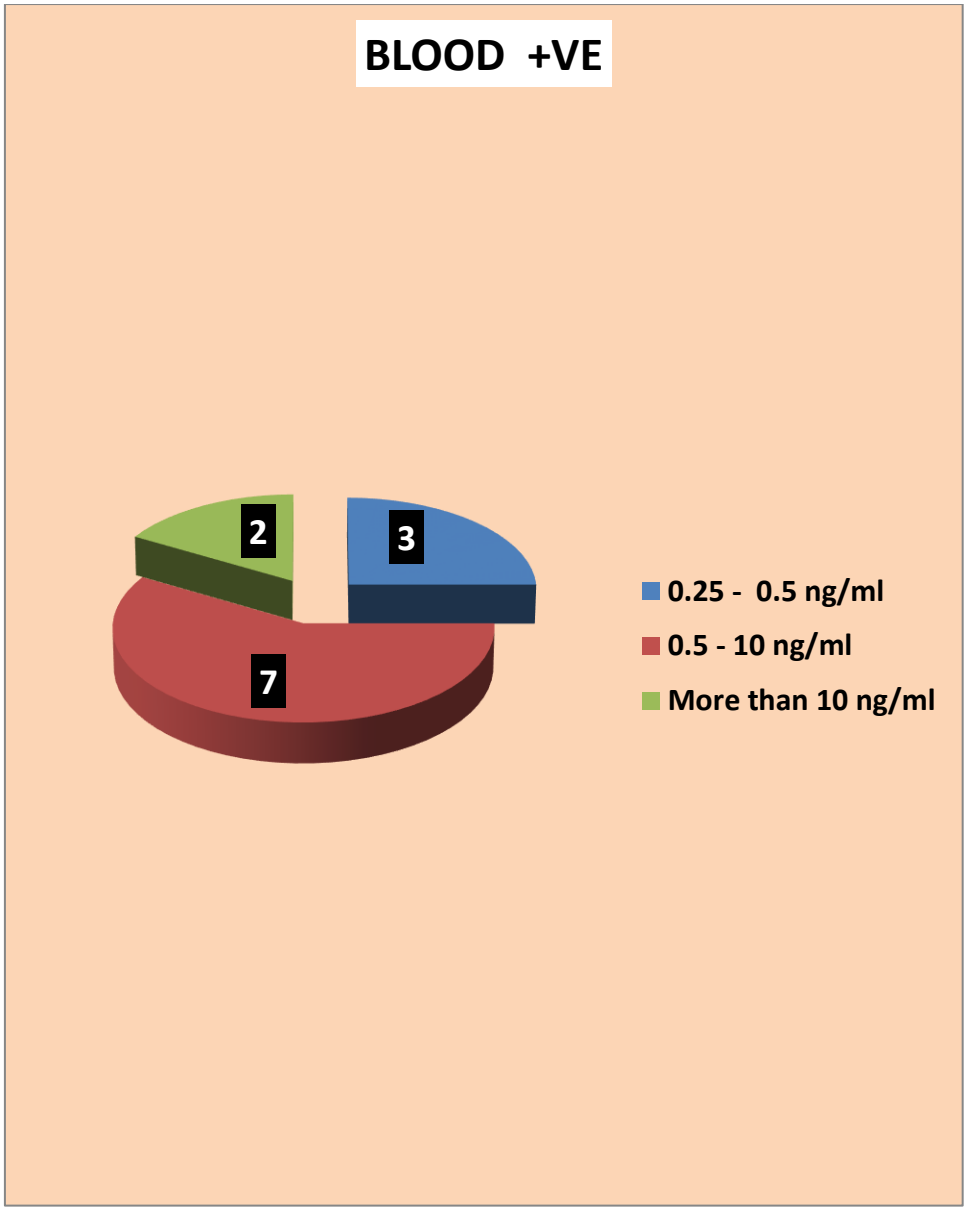

MOST PREVELANT MICROBES IN TRACHEAL SECRETIONS CULTURES IN NON DIABETES MELLITUS PATIENTS
45%
40%
35%
30%
25%
20%
15%
10%
5%
0%
38%
31%
8%
8%
KLEBSIELLA PNEUMONIAE
E.COLI
PSEUDOMONAS AERUGINOSA
CANDIDA ALBICANS
KLEBSIELLA PNEUMONIAE
E.COLI
PSEUDOMONAS AERUGINOSA
CANDIDA ALBICANS

MEASUREMENT OF CASES WITH URINE +VE, SECRETIONS +VE, BLOOD +VE AND SPUTUM +VE CULTURES –

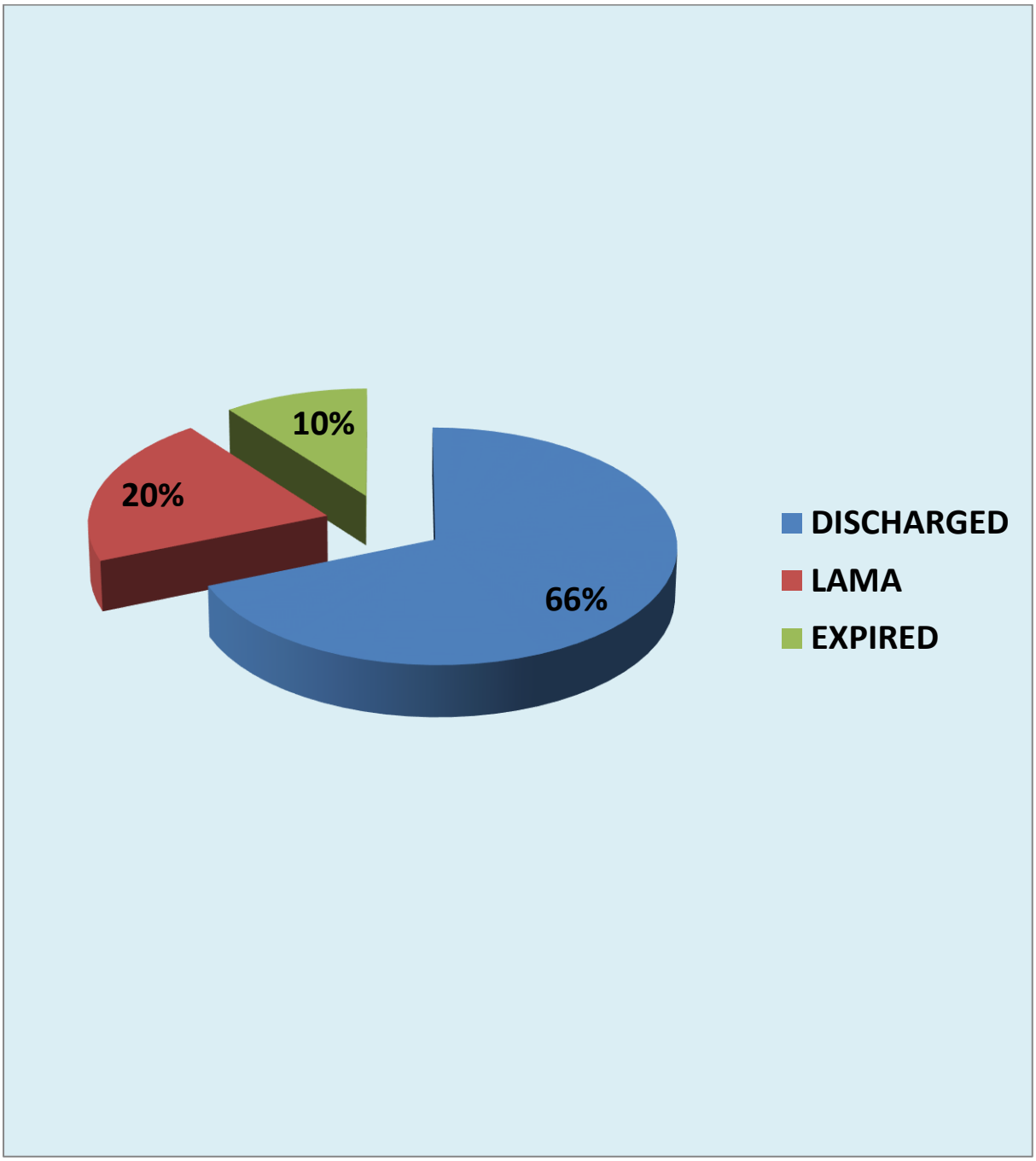


MEASUREMENT OF +VE CULTURES ACCORDING TO PCT RANGES




BLOOD +VE
2
3
7
0.25 - 0.5 ng/ml
0.5 - 10 ng/ml
More than 10 ng/ml

MEASUREMENT OF FINAL PATIENT OUTCOME –



REFERENCES

- Max Super Speciality Hospital Website
- Wikipedia by Google