

**Summer Training at
Fortis Escorts Hospital Jaipur
(April 1–May 31, 2014)**

**Co-Relational Study between the Provisional Diagnosis and Findings in
Histopathology and Radiology Department of Hospital**

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**MBA- Hospital & Health Management (MBA-HM)
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**The IIHMR University, Jaipur
2014**

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CERTIFICATE

This is to certify that **Dr. Namita bhat** has undergone her summer training in **Fortis Escorts Jaipur** from **01th April to 31st May, 2014**. The candidate herself carried out all the studies related to her summer training. Her approach to the study has been scientific and analytical. This summer training is in the partial fulfilment of the course requirement recommended for awarding the Post graduate Diploma in Health and Hospital Management.

Topic of study-

Co-relational study between the provisional diagnosis and findings in Histopathology and Radiology department of the hospital.

I wish her success in all her future endeavours.



Col. (Dr.) Ashok Kaushik

Dean (Academics and Student Affairs)

IIHMR, University



Dr. Nutan Jain

Professor

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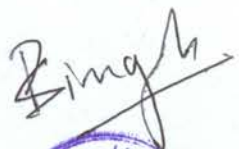
3rd June , 2014

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Dr.Namita Bhat** worked as a **Trainee** with us in the **Dept. of Quality Assurance** from 1st April to 31st May, 2014 .

Her performance during the period in the department was good. She comes across as a willing, sincere and intelligent person who has a strong drive and zeal for learning.

We wish her the best for all her future endeavors.


Authorized Signatory




ACKNOWLEDGEMENT

I express my great sense of gratitude to acknowledge the co-operation and support of **Fortis Escorts Hospital, Jaipur** for giving me this unique privilege of completing my Project by visiting its premises for 60 days and providing me an opportunity to interact with its various personnel.

My institute –**Indian Institute of Health Management Research (IIHMR)**, Jaipur and its Education deserves the foremost appreciation for providing me the opportunity to understand my individual capabilities. Of course, entire faculty at IIHMR had facilitated the endeavor; I also acknowledge the contribution of my college mentor, **Dr Nutan Jain** in completion of the project.

The data collection and my learning would not have been possible without the kind support and help from **Mrs. Nihar Bhatia (Head-Quality and assurance)**, **Miss Ambika Purohit** and **Miss Kirti Hemwat**. I would like to extend my thanks for their kind support and guidance.

My heartfelt gratitude goes to **Mr. Hemraj (MRD department)**

Thanking You

Dr. Namita Bhat

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ABBREVIATIONS USED

- F & B- Food and Beverage
- Ultrasound(USG)
- FEHJ-Fortis Escorts Healthcare Limited
- GE-Gastroenterology
- FD-Facility Director
- MS-Medical Superintendent
- FOS-Fortis Operating System
- QA-Quality assurance
- CTVS-Cardio Thoracic Vascular Surgery
- HOD-Head of the Department
- ENT-Ear Nose Throat
- CSSD-Central Sterile Supply Department
- SICU-Surgical Intensive Care Unit
- NICU-Neonatal Intensive Care Unit
- LDR-Labour and Delivery
- OT- Operation Theatre
- HDU-High Dependency Unit
- MICU-Medical Intensive Care Unit
- CCU- Cardiac Care Unit
- HR-Human Resource
- MRD- Medical Records Department
- IT-Information Technology
- PWD-Patient Welfare Department
- GI-Gastrointestinal
- NGW- Neuro General ward
- OPD-Out patient department
- IPD- In patient department

INTRODUCTION

Summer training is an integral part of **Post Graduate Diploma on Hospital Management** (PGDHM) As a part of curriculum students are required to undergo 2 months training with reputed organization to learn the daily operational management and if possible to help the management study and address some identified issues /problems associated with some specific operational areas. The main purpose of training is to get exposure to the organization and its daily working.

Fortis escorts hospital, a tertiary care hospital, is recognized as centre of excellence for Providing medical care, and research facilities of high order in the field of medical sciences. The hospital is centrally air conditioned having capacity of 300 beds, 210 functional beds State –of –the- art operation theatres and intensive care units. Fortis Escorts hospital Jaipur is growing by examples not only in the field of clinical excellence, training and research but also in the field of management expertise.

Due to these distinguishing features I did my summer training from this hospital, with aim and objective of getting exposure to the functioning of the Institute.

The aim of the training was:

To study the administrative and managerial functioning of Fortis Escorts hospital, Jaipur with special reference to different areas /departments of the Hospital.

The objectives of summer training were:

- To learn the daily operational management of the organization and its various. Departments/areas.
- To learn the salient and critical features about the functioning of the departments /areas.
- To identify issues/ problems associated with some specific departments/areas, if any.
- To undertake the project /special tasks assigned.



FORTIS ESCORTS HOSPITAL PROFILE

Fortis Healthcare is India's fastest growing healthcare chain, with state-of-the-art facilities and an unparalleled commitment to patient care. Fortis Escort Healthcare Limited (FEHL) is

founded on the **vision of becoming an integrated Healthcare Delivery Organization driven by quality, excellence, technology and compassionate care**. FEHL, one of the largest private healthcare companies in India, has one of its hospitals in Jaipur as Fortis Escorts Hospital, Jaipur. (FEHJ) which specializes in cardiac sciences, neurosciences, renal sciences and gastrointestinal diseases. The hospital also provides superior services in mother and childcare, orthopedics and also a complete range of multi-specialty services in all disciplines.

FEHJ has dedicated facilities for comprehensive care of trauma patients and others in need of emergency care which include an **emergency operation theatre and a 10-bedded medical intensive care unit (MICU)**. FEHJ is the first amongst the proposed multi super specialty hospitals to be set up in Rajasthan. FEHJ is **the first hospital in the country to attain NABH Accreditation in minimum stipulated time (Six months) after commencement of operations and was re-accredited on 27th April 2011**. FEHJ is a super-specialty hospital backed by multispecialty.

Super Specialties- Cardiology & Cardiac Surgery, Renal Sciences, Neuro - Sciences, Gastro-Intestinal sciences.

Multi Specialties - Orthopedics & Joint Replacement, Diabetes & Endocrinology, Dermatology, Internal Medicine, Pulmonary, Medicine, Ophthalmology, Dietetics, Physiotherapy and Preventive Health Check, General Surgery, Dental Surgery, Cosmetic & Plastic Surgery, ENT, Gynecology & Obstetrics, Pediatrics& Neonatology.

VISION OF THE HOSPITAL:

"Globally respected healthcare organization recognized for clinical excellence and distinctive patient care"

HISTORY OF FORTIS HOSPITAL-

On August 2, 2007 Fortis Healthcare Ltd, one of the largest private healthcare companies in India, announced a multi-specialty hospital at Jaipur as part of its initiative to expand its

operations in Rajasthan. The then Chief Minister, **Mrs. Vasundhara Raje** inaugurated the Fortis Escorts Hospital Jaipur (FEHJ) in the presence of **Mr. Malvinder Mohan Singh**, Chairman, Fortis Healthcare, **Mr. Shivinder Mohan Singh**, CEO and MD, Fortis Healthcare, besides other dignitaries and company officials.

INFRASTRUCTURE-

The infrastructure facilities of Fortis Escorts Hospital, Jaipur, are par excellence, such as:

C arm with digital subtraction
angiography

Flat panel cath lab

Advanced pathological lab

Mobile X-Ray

64 Slice CT scan

TMT, ECHO, HOLTER recorder and monitor and ECG to help non-invasive cardiac investigations.

500mA image intensifier TV

Digital CR reader

X-Ray.

LOCATION:

The access to the hospital is very easy. The hospital is located on JLN Marg road, Jaipur. The address of the hospital is:

Fortis Escorts Hospital, Jaipur ,Jawaharlal Lal Nehru Marg , Malviya Nagar, Jaipur- 302107

Rajasthan, India

Tel: 91-141-2547000

AREA:

Spread over 6.68 acres with an investment of Rs. 1.10 billion, it has an operational bed facility of 210 beds with an installed bed capacity of 300 beds.

SERVICES PROVIDED:

There is a long exhaustive list of services provided by the hospital comprising of clinical and non-clinical services. Both the services go hand in hand for maintaining the efficacy and efficiency of the organization for the patient and staff welfare.

Clinical Services:

1. Cardiac Surgery
2. CTVS
3. Cardiology
4. Renal Science
5. Nephrology
6. Urology
7. Neurology
8. Neuro -Surgery
9. Gastro Intestinal Diseases
10. Internal Medicine
11. Pulmonology
12. Endocrinology
13. Dermatology

14. Psychiatry
15. General Surgery
16. Plastic Surgery
17. Pediatric Surgery
18. Obstetrics
19. Gynecology
20. Pediatric
21. Neonatology

Non Clinical Services:

1. Housekeeping & Laundry
2. Pharmacy
3. Medical Records
4. Food & beverages
5. Security
6. Central stores
7. Training and development

DEPARTMENTS AT FORTIS HOSPITAL:

The Fortis Hospital comprises of the clinical and non clinical departments. Each department has its own operations. There are presently **34 functional departments** in the hospital comprising of Clinical and Non clinical departments.

CLINICAL DEPARTMENTS:

The goal of clinical departments is to provide medical care and treatment to patients with all types of diseases. The details of various clinical departments are given below:

Operation Theatre

All types of Cardio-thoracic and vascular surgeries are performed here. High Risk surgeries are also performed with Heart Supporting system & advanced Perfusion techniques.

SICU-CTVS and general surgery, CCU and general ward:

SICU services include:

- Invasive Monitoring
- Patient assessment (Physician, nursing, dietary and physiotherapy)
- Personal needs
- Dietary needs
- Bed-side x-ray, physiotherapy
- Transfer to ward
- Patient and family education

CSSD

Provide clean & sterile supplies which help in reduction of Infection & improve the Quality of care.

Infection control:

- To educate staff on biomedical waste segregation and management.
- To review epidemiological surveillance data and identify areas of intervention.
- To identify patients and or staff with communicable/potentially communicable infections and institute appropriate measures in such cases.

Dialysis

Removing waste and excess water from the blood and is used primarily to provide an artificial replacement for lost kidney function in people with renal failure.

Pediatric, NICU

To provide world class tertiary level management of critically sick babies & children specialized services will include Pediatric surgery, Neurosurgery, Physiotherapy & child Psychology.

Labor Delivery Room (LDR)

Outpatient care for patients coming to the OPD and includes- Obstetrics consultation, investigations and referrals and opinions from other departments, if required.

Physiotherapy:

Facilities in Department of Physiotherapy are Electrotherapy, Diagnostic, Mechanical, Manual Mobilization Therapies, Exercise Therapy, Chest Physiotherapy, Gynae /Obstetric, Fitness, Post Operative Cardiac Surgeries, For Neurological Disorders and Geriatrics

Triage, HDU and ICU

They provide intensive nursing care and monitoring. Patients with critical medical problems are treated in this highly focused specialized environment, featuring the best intensive care medical personnel and cardio-pulmonary monitoring equipment available. Procedures performed

Included bronchoscopes, central venous lines, peripherally inserted line, arterial line, pulmonary artery catheter, Temporary pacemakers, Percutaneous tracheotomies, PEG placement and chest tube placement. Triage is the first stage through which the patients pass when coming in emergency, if they show any progressive improvement they may be shifted to HDU and CCU as per the need.

Cath lab

The range of services includes all the elective and emergency procedures across the whole spectrum of Cardiology. CAG`s, PTCAs, BMV`s, Device closures, EP studies, RF ablations, Pacemaker implantations, Peripheral stentings, Rota ablation and many other cardiology procedures are performed in the Cath Lab.

Dietics:

Dieticians provide an array of patient care services, including, nutritional assessment, counseling services, and enteral and parenteral feeding recommendations. The food service section of the department is committed to provide all IPD patients with fresh hygienic food. Menus are planned to take advantage of seasonal foods and changing patient preferences.

Laboratory:

The Department of Lab Medicine offers a comprehensive menu of more than 3000 regular and specialized tests performed through state- of- the- art equipment and based on more than 95 technologies.

NON CLINICAL DEPARTMENT -

1. Engineering
2. Biomedical Engineering
3. Finance
4. Marketing
5. Human Resource
6. House keeping
7. Laundry
8. Pharmacy
9. Medical Records
10. Food & beverages
11. Security

- 12. Central stores
- 13. Quality Assurance
- 14. Research
- 15. Patient Welfare Department
- 16. Information Technology

Key learning in Fortis Hospital

- Performed the time motion study of discharge process, lab related procedures , indenting in pharmacy and in front office.
- Conducted audits for IPD, Pharmacy, Front office, and learnt maintaining of their records.
- Worked on hospital management information system.
- Orientation of quality procedures in patient welfare department, pharmacy, food and beverage department, radiology and in patient wards.
- Working of medical records department and its relevance for the organization.
- Observed mock fire drills.
- Role of counseling in dealing with conflicts between patients and administration.

PROJECT

**CORRELATION BETWEEN PROVISIONAL DIAGNOSIS
AND FINDINGS IN RADIOLOGY AND LAB REPORTS**

INTRODUCTION

The correlation study is one of the quality indicators laid down in the guidelines of NABH, which aims to improve the quality services provided by the hospital and at the same time reduce the unnecessary financial burden of investigations on the patients.

Definition

Correlation study determines whether and to what degree a relationship exists between two or more quantifiable variables.

Types

There are three types of correlations that are identified:

1. **Positive correlation:** Positive correlation between two variables is when an increase in one variable leads to an increase in the other and a decrease in one leads to a decrease in the other. For example, the amount of money that a person possesses might correlate positively with the number of cars he owns.
2. **Negative correlation:** Negative correlation is when an increase in one variable leads to a decrease in another and vice versa. For example, the level of education might correlate negatively with crime. This means if by some way the education level is improved in a country, it can lead to lower crime. Note that this doesn't mean that a lack of education causes crime. It could be, for example, that both lack of education and crime have a common reason: poverty.
3. **No correlation:** Two variables are uncorrelated when a change in one doesn't lead to a change in the other and vice versa. For example, among millionaires, happiness is found to be uncorrelated to money. This means an increase in money doesn't lead to happiness.

A correlation coefficient is usually used during a **co relational study**. It varies between +1 and -1. A value close to +1 indicates a strong positive correlation while a value close to -1

indicates strong negative correlation. A value near zero shows that the variables are uncorrelated.

CLINICAL CORRELATION

Co-relation is usually mentioned after the patient had CT/MRI ,X-ray or an ultrasound. It refers to taking a scan and matching it up the medical history, symptoms etc. This is to aid the diagnosis process. Usually a doctor will say that a clinical co-relation is requested when they see something abnormal on the scan and they want to see if what is on the scan will correlate with certain symptoms that the patient is experiencing which can tell the doctor what type of problem the patient is experiencing.

Clinical diagnosis is the first and foremost step in the treatment schedule of a patient.

Many patients present with various signs and symptoms like headache, low back ache, numbness, tingling sensation etc. Many predictions can be made considering these signs and symptoms .In order to confirm or strengthen the diagnosis, a clinician needs certain

Investigations such as X ray ,blood investigations ,histopathological investigation ,CT,MRI, etc .CT,MRI and histopathology are the most advanced and reliable means for establishing proper diagnosis.

A CT Scan stands for Computed Tomography Scan. It is a medical imaging method that employs tomography. Tomography is the process of generating a two –dimensional image of a slice or section through a 3- DIMENSIONAL tomogram. A CT of Scan uses X-rays to image a wide variety of body structures and internal structures.

Magnetic Resonance Imaging (MRI) is a medical imaging technique used in radiology to visualize internal structures of the body in detail.MRI makes use of the property of nuclear magnetic resonance to image nuclei of atoms inside the body.MRI provides good contrast between the different soft tissues of the body which makes it especially useful in imaging

the brain muscles, the heart and concerns. Unlike CT Scan or traditional X-Rays, MRI does not use ionizing radiation.

Histopathology is the microscopic examination of the biological tissues to observe the appearance of diseased cells in very fine details.

Thereafter, a clinician correlates diagnosis with investigation report and proceeds for treatment plan.' 'Clinical Correlation 'means checking the history and physical symptoms to see if the notable finding has any meaning in the patient's life.

MODE OF DATA COLLECTION

Information regarding the organization ,location ,area, history ,planning, manpower, organizational hierarchy, status and other details were collected from hospitals manual ,authorities and from other sources.

- Various departments/services (clinical, supportive, ancillary administrative) of the institute were identified.
- Training in the identified areas /departments was done by collecting information and data from coordinators, personal observation and by assisting the concerned personnel in the operational management of that area .
- **Data collection** :

Data was collected by reviewing records (computerized as well as manual) and from coordinators. Data collected basically comprises of:

- Input to the department/area i.e. Human resources, Physical Facilities, Inventory, consumables etc.
- Output generated i.e. Number of patients attended, Number of admitted, Number of Investigations done, Number of procedures done. Information

was collected regarding location/layout, equipments used, policies and procedures and other managerial issues.

Additional information was collected, whenever required of that specific department/area.

The findings and the information collected were compiled and a report was prepared

RESEARCH QUESTIONS:

- What are the kinds of losses incurred in prescribing unnecessary tests?
- To what extent the previous recommendations help in overcoming these unnecessary losses on tests?
- What is the most important part of training schedule which should be provided to the employees for increasing the correlation.

OBJECTIVES:

- To study correlation between Lab findings and provisional diagnosis in lab reports and correlation between differential diagnosis and CT/MRI findings.
- To come up with recommendations with further improvement.
- To interpret the collected data from both Histopathology and Radiology.

REVIEW OF LITERATURE

Achieving a high degree of diagnostics accuracy is very important in the practice of Medicine.

Not only does it reflect the professional competency of the practitioners, but it also affects the quality of subsequent patient care. Being able to make accurate diagnosis help to foster good doctor –patient relationships, and to build up rapport needed in subsequent management. Inaccurate diagnosis may lead to poor patient outcome, complaint or even litigation. Lo et al and Li et al both focused on the appropriateness of emergency admissions. Li et al reported diagnoses would give a picture on the existing performance of the emergency department, and also serve as a baseline future reference in continuous quality improved of the commonest.

Acute appendicitis is still one of the commonest causes of acute abdomen with surgical emergency department. Though the surgeons have been confronting the appendicitis since its first described in 1886 by RH Fitts, its diagnosis is still remains a dilemma to almost all of the surgeons, at least some point in their practice. Since observations is not an ideal option once the cause of acute abdomen is due to inflamed appendix it can be followed by various serious complications hindering the morbidity and mortality rate, the surgeons prefer to proceed either to observe the subject until the signs and symptoms make the diagnosis confidently clear or by immediate operation as soon as the diagnosis of the acute appendicitis is made. To overcome with the problem of misdiagnosis resulting to complications like perforation and sepsis and unnecessary surgical intervention as well superior clinical judgments got no alternatives. With objectives of improving the clinical judgments¹

Various clinical scoring systems along with the some computer associated diagnostic tools have also been invented till this date but none of them seem accurate enough to rely on. Nevertheless these tools definitely helped junior surgeons, whose diagnostic accuracy reported to be increased from 58% up to 71%.

Low back pain (lumbago) is a common musculoskeletal complaint that can originate from spinal structures including ligaments, facet joints, the vertebral periosteum, the perivertebral musculature and fascia, blood vessels, the annulus fibrous and spinal nerve root. The pain can be severe enough to cause debilitation. Modern euro imaging techniques such as CT and MRI have improved the diagnosis and detection of the cause of LBP. These are

expensive imaging modalities that are not usually available in several communities .As such physician tend to use radiography at least in the initial assessment of LBP. It is therefore crucial to evaluate patients with LBP and assess for possible relationship between the findings and patients characteristics²

A urine dipstick is usually read before the material is cultured. So, it can be interpreted that the dipstick was read without awareness of the results of the urine culture. However, the culture (reference test) may be interpreted with full awareness of the results of the dipstick. If blinding is not explicitly mentioned, reviewers may choose to score this item as 'don't know' or 'diagnostic test blinded for reference test' (implicitly scoring the reference test as not blinded). Or, the authors may be contacted for clarification.

A survey of the diagnostic literature from 1990 through 1993 in a number of peer-reviewed journals, showed that only a minority of the studies satisfied methodological standards. There is some evidence that inadequate methods may have an impact on the reported accuracy of a diagnostic test: Lijmerscreened diagnostic meta-analyses published in 1996 and 1997, and showed that the diagnostic accuracy of a test was overestimated in studies³

- 1) With a case-control design.
- 2) Using different reference tests for positive and negative results of the index test.
- 3) Accepting results of observers that were un blinded to the index test results when performing the reference test.
- 4) That did not describe diagnostic criteria for the index test.
- 5) Where participants were inadequately described.

STUDY DESIGN AND METHODS

Study design- The study is cross sectional and analytic in nature.

Location of study-Fortis escorts hospital Jaipur

Study subjects-

All patients undergoing **CT/MRI** and **lab tests** from **august 2013 to march 2014**

Study duration- 60 days (from 1st April to 31st May 2014)

Sampling method

Random Sampling

Sample size- CASES TAKEN FROM 1ST AUGUST 2013 TO 31ST MARCH 2014

IN HISTOPATHOLOGY

IN RADIOLOGY

TOTAL NO. OF CASES= 1589

TOTAL NO. OF CASES= 3707

20% OF 1589 = 317

9% OF 3707 = 334

**NO. OF CASES PER MONTH
= 39**

**NO. OF CASES PER MONTH
PER MONTH = 40**

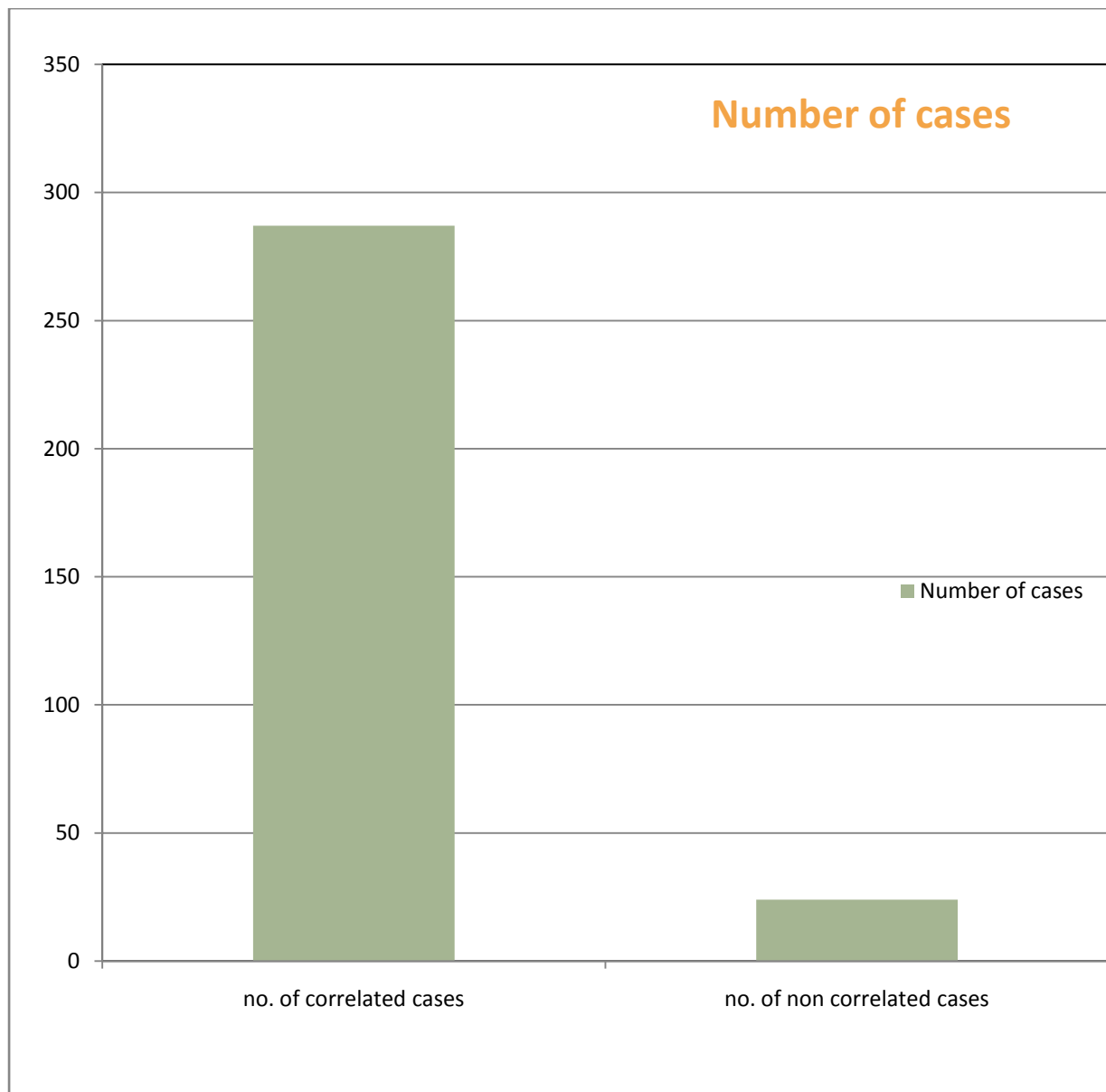
DATA INTERPRETATION

CO-RELATIONAL STUDY IN HISTOPATHOLOGY

CASES TAKEN FROM 1ST AUGUST 2013 TO 31ST MARCH 2014

Table: % of co-related cases in histopathology

Total no. of cases (For 8 months)	1589
20% of 1589	317
No. of cases taken Per month	39
No. of cases with Co relational coefficient (1)	287
No. of cases with Co relational coefficient (0)	24
Percentage of correlated cases	92.3
Percentage of non-correlated cases	7.7



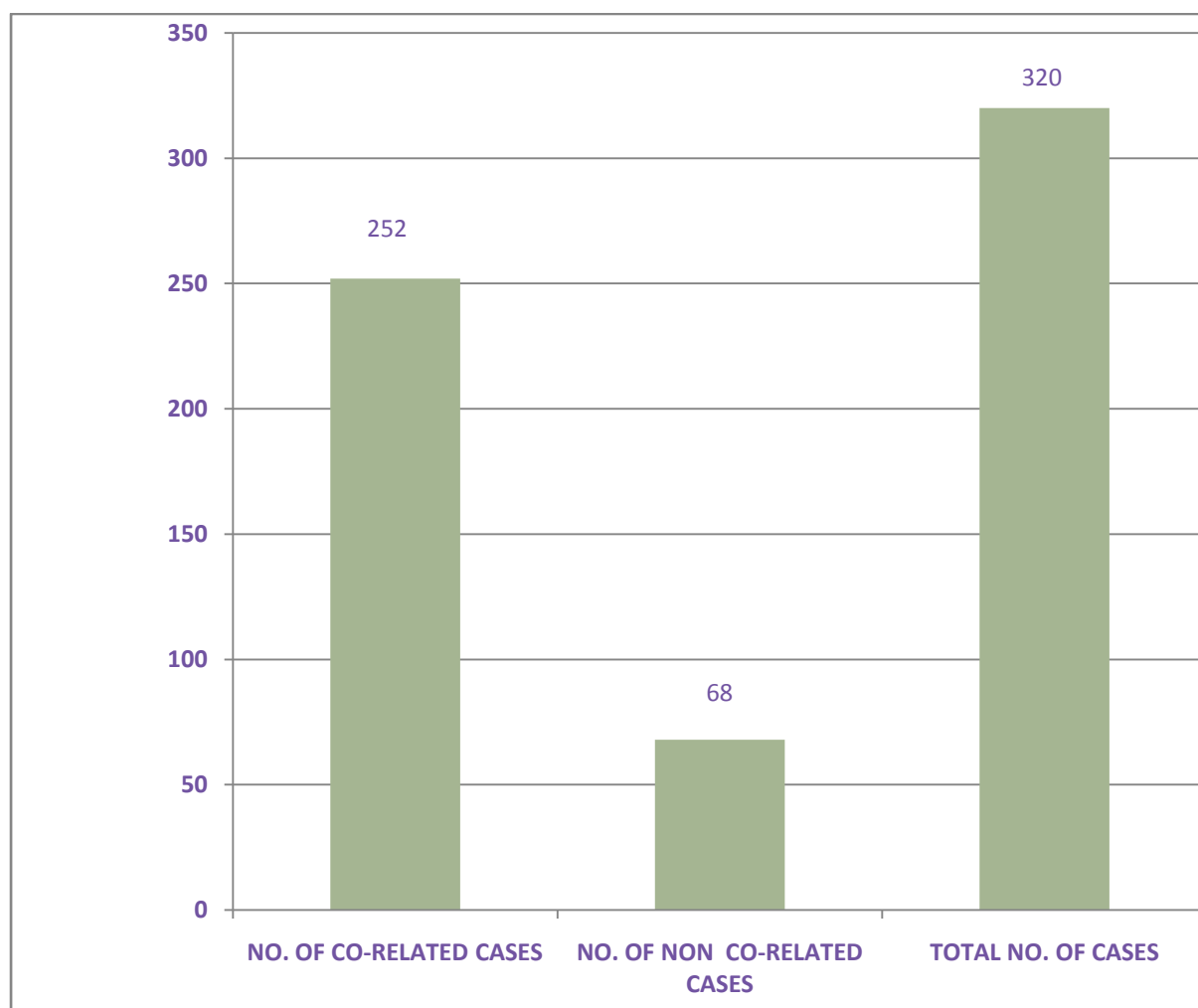
CO-RELATIONAL STUDY IN RADIOLOGY

Cases taken from 1st august 2013 to 31st march 2014

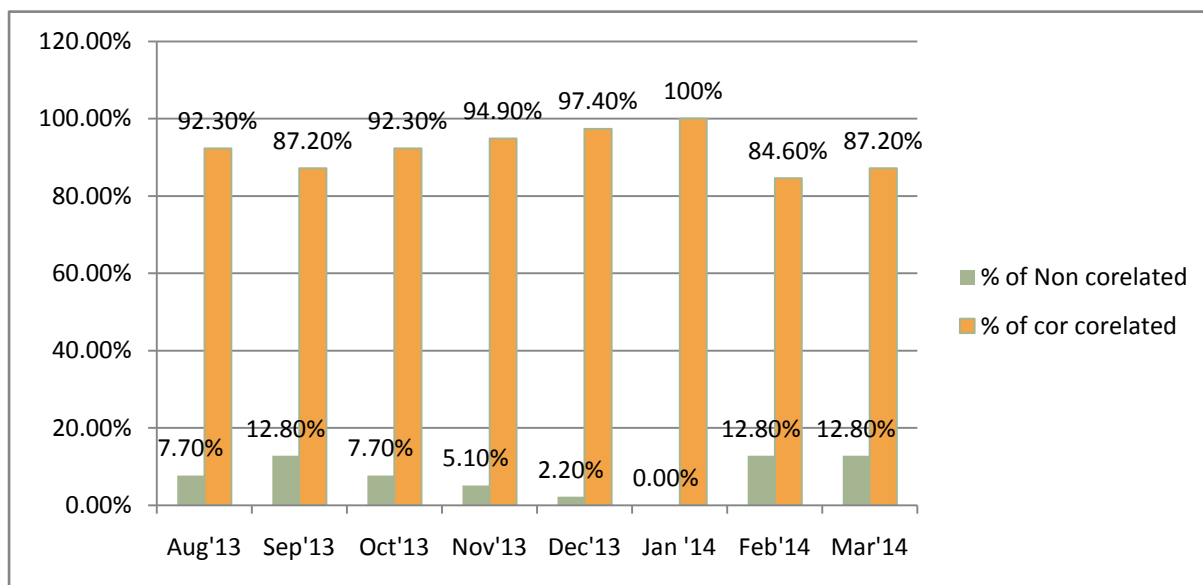
Table- % of correlated cases in radiology

Total no. of cases for 8 months	3707
No. of cases taken per month	40
No. of cases with co-relational coefficient (1)	252
No. of cases with co-relational coefficient (0)	68
Percentage of co-related cases	78.75
Percentage of non co-related cases	21.25

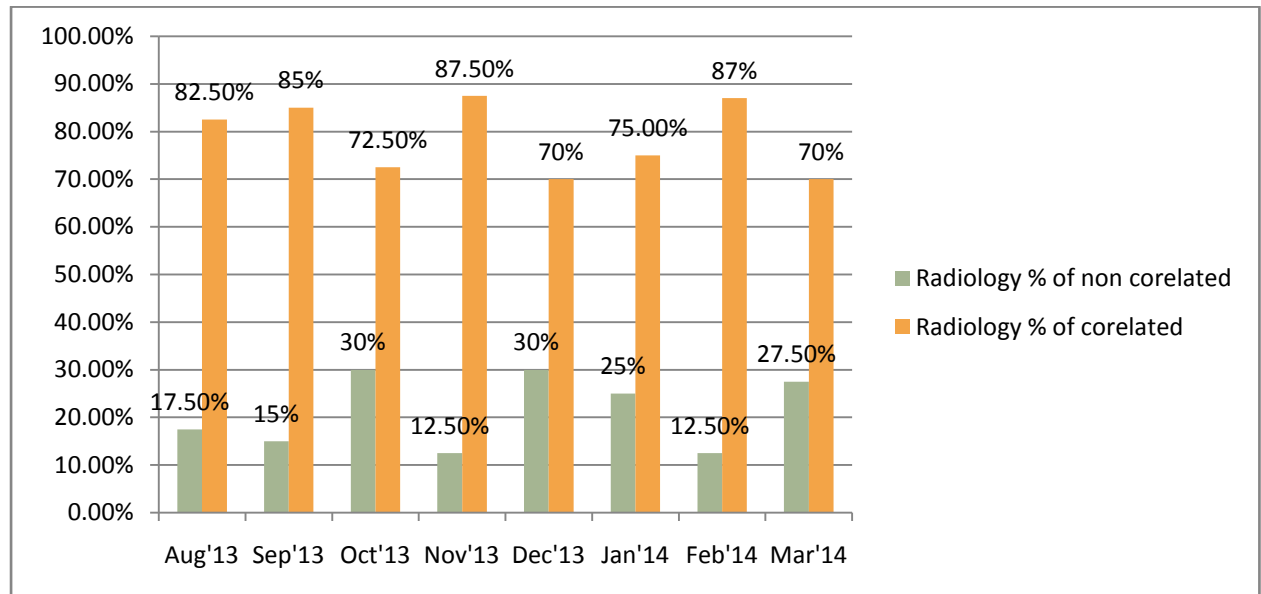
NO. OF CASES IN RADIOLOGY



MONTH WISE DISTRBUION OF CORELATED AND NON CORELATED CASES IN HISTOLOGY



MONTH WISE DISTRIBUTION OF CORELATED AND NON CO-RELATED CASES IN RADIOLOGY



CHALLENGES-

- In some of the files the history sheet is not completely filled by the junior residents.
- In some of the files there is no history sheet of patient enclosed.
- In some files at the site of the provisional diagnosis nothing is written over .
- In some cases the final diagnosis is written at in place of the provisional diagnosis.
- In some cases no specific diagnosis is made .
- In case of RTA no specific diagnosis is made.
- The writing of the doctor is not readable in certain cases.
- In some diseases like MAS most cases were sent for the lab investigations.

RECOMMENDATIONS-

1. The junior doctors should be trained well for filling the history sheets of the patients correctly.
2. Every file of the patient should be checked for the proper documentation of all the required records.
3. A proper and specific provisional diagnosis of the disease should be made before sending the patient for any lab or radiological investigation.
4. The physical examination sheet like the history sheet should be typed rather than hand written to make it readable.
5. A more detailed physical examination of the patient should be done so that CT/MRI is ordered only when required.

Conclusion:

With the ever increasing burden of many diseases and their resultant high mortality rates, accurate diagnosis needs to be established. This study aims to find out correlation between PROVISIONAL diagnosis and the lab results and correlation between physician findings and CT/MRI findings.

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