

STUDY AND ANALYSIS OF THE PROBLEM AREAS IN ASSET TRACKING OF EQUIPMENTS OF BIO-MEDICAL ENGINEERING DEPARTMENT

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About The Hospital:

Fortis Memorial Research Institute (FMRI), Gurgaon is a flagship unit of Fortis Healthcare Limited which is a leading, pan Asia-Pacific, integrated healthcare delivery provider. The healthcare verticals of the company span diagnostics, primary care, day care specialty and hospitals, with an asset base in 11 countries.

Vision : To be the ultimate healthcare destination - "Mecca of Medicine"

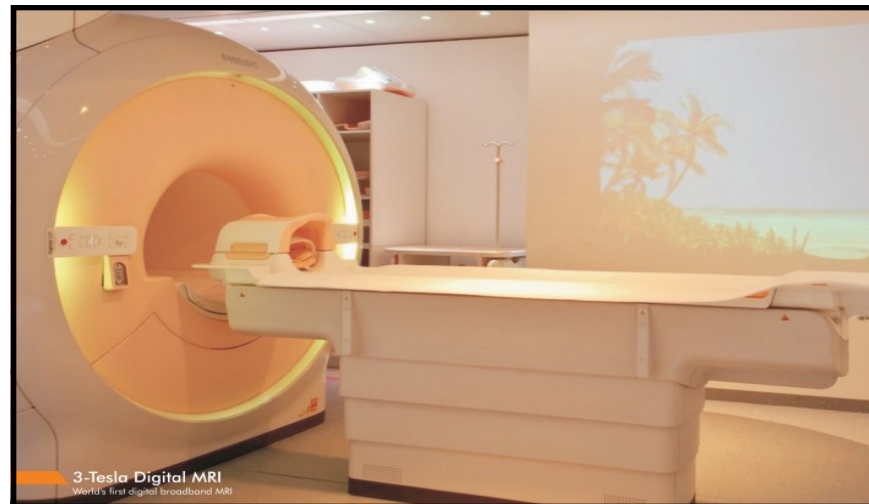
Mission: To provide quaternary care to the community in a compassionate, dignified and distinctive manner.

Moto: The Best is least we can do.

Beds: 288 with facility to achieve 1000 beds.

Features:

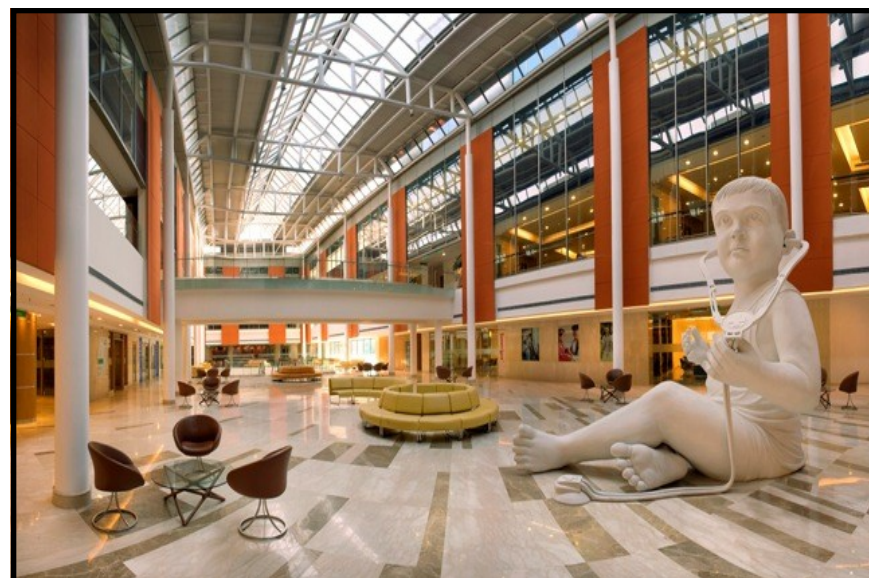
- 1) Worlds first digital broadband 3 Tesla MRI Machine.
- 2) 256 slice brilliance iCT Scanner.
- 3) BiPlane Cardiac Cath Lab.
- 4) India's first see through glass lab.
- 5) A state of the art entrance Lobby.
- 6) Facility to promote medical Tourism.
- 7) India's first stem cell lab in a hospital.
- 8) Advanced patient management system allowing both side real time audio visual communication.
- 9) Pioneers in Robotic surgery in India.



-3 Tesla Digital MRI-



-See Through Glass Laboratory-



-Boulevard-



-256 Slice Brilliance iCT Scanner-

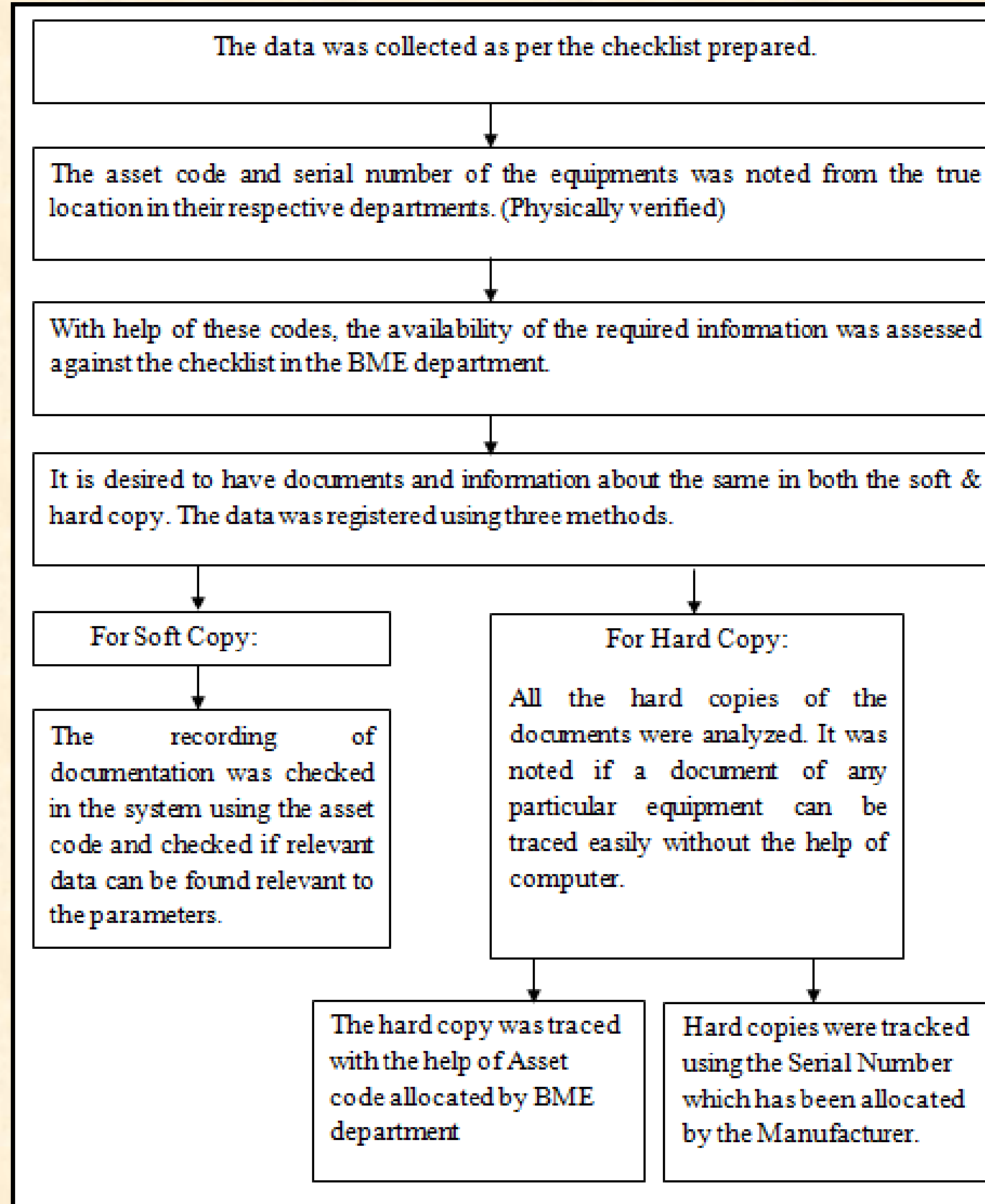
Objective:

To study the efficiency of asset tracking system of BME Department.

Identification of the problem areas in asset tracking of equipments.

Recommend cost effective modifications and improvements in system.

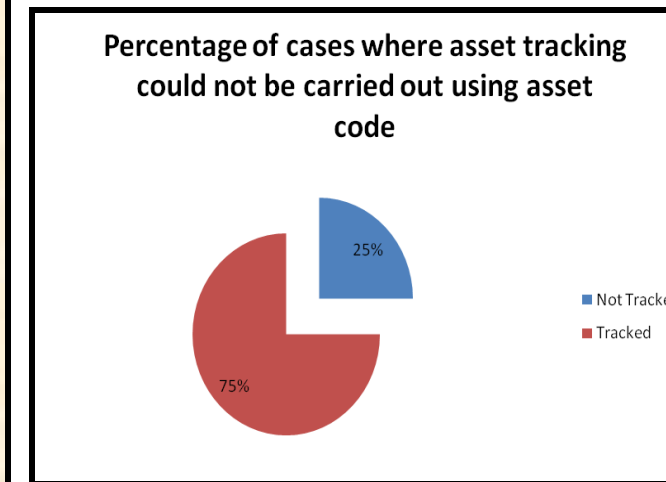
Research Methodology



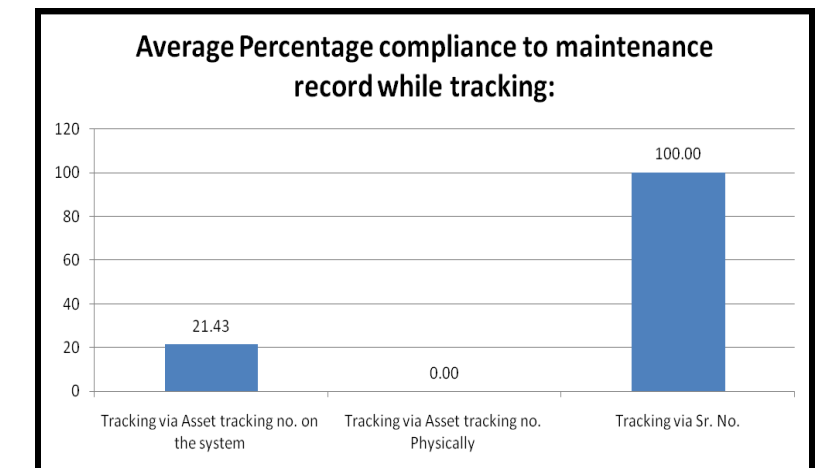
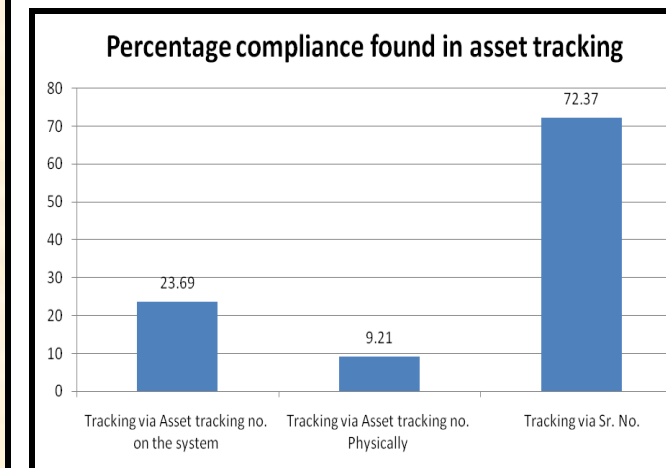
Checklist Variables:

Product
Location Of the Equipment
Description of the Product
Life of the Product
Relating to Harmful Radiations
Operational Status
Active/standby/Repair
Maintenance
How is it maintained/calibrated/AMC
Expenditure done on the equipment
List of all maintenance carried on the machine till date
Name of the personal who carried out the maintenance
Documents listing damages to the machine
Documents listing the upcoming maintenance and future checks
The number of parts replaced.
Documents
Documents required before purchase of equipments (Board members signatures, MOM.)
Documents of shifting of machine, with appropriate reason
Purchase Invoice
Delivery Note
Gate pass
Information of the Vendor
Name & particulars of the vendor
Certification (eg NABL) of the vendor
Date of Installation
Inventory
document stating Inventory of parts of the equipment
Quantity of spare parts in the inventory

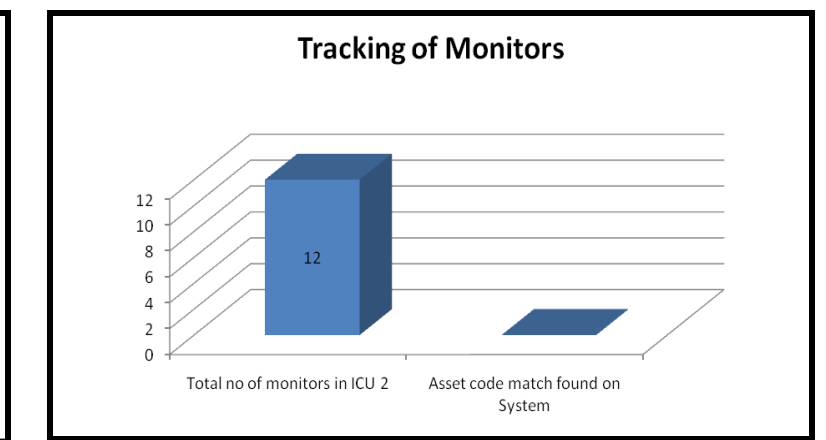
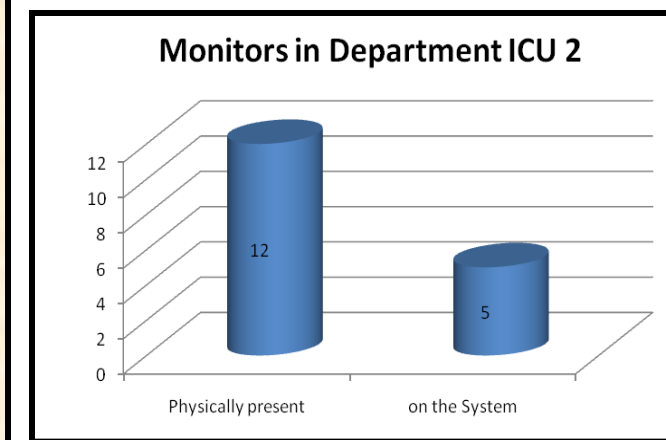
Analysis:



Serial No.	Equipment Name	Reason of Not Tracking
1	Monitors	Asset code not matching with the System
2	ECG	Asset code not found on the Equipment



-Cohort Study-



Gaps Observed:

- 1) The asset codes are only available in the system. Serial number needs to be known so as to find the hard copy of the documents.
- 2) All the equipments are not registered in the system. Thus tracking the asset using the asset code becomes impossible for these particular equipments.
- 3) It is observed that the asset tracking code is not put or by accident has been peeled off from few of the equipments.
- 4) Searching for documents of particular equipment presents a problem as the documents are not arranged according to their Asset number.
- 5) The gate pass does not bear any serial number or other tracking number which can be traced. Instead, a separate register is maintained which bears the product serial number against the gate pass. This proves duplication of work.
- 6) The list is not updated regularly. Even if the warranty is expired, the system continues to shows it as under Warranty.

Recommendations:

- 1) Conducting audits for all the instruments and making sure that each equipment bear its asset tracking code which were not present earlier.
- 2) According to the present condition entries on the system needs to be revised & updated judiciously.
- 3) A separate excel sheet should be made for each of the equipments which would include all the existing entries as well as the dates of previous preventive maintenance, any parts replaced on the equipment and gate pass serial number, if the equipment was sent out of facility for maintenance.
- 4) The master copy needs to be modified and should include the last maintenance carried out on the equipment.
- 5) All the documents must bear the relevant equipments asset code and filed equipment wise so as to track them with ease.
- 6) The maintenance data and the downtime should be in reference to the asset code; thus making the asset code as widely used as possible and uniformity is maintained.

Study design: Descriptive cross sectional study.

Study Area: Biomedical Department , FMRI.

Sample Size: 8 equipments.

Sampling Criteria: Samples were randomly drawn from a list of equipments present in the hospital with different level of criticality to the hospital. The criticality level has been decided by the BME department based on their role in saving lives.

Criticality A- 3 equipments (CT scan, MRI, ICT Spine)

Criticality B- 3 equipments (EMG, ECG, Pulse Oximeter)

Criticality C- 2 equipments (PH Meter, Monitors)

The **cohort Study** undertaken was from randomly selected Department (ICU2) and equipment under observation was one with most number of units present. (Multiparameter Monitor).