“Evaluation of accounting and effectiveness of hospital information systems used in Multi specialty Hospital”

A dissertation submitted in partial fulfillment of the requirements
For the award of

Post-Graduate Diploma in Health and Hospital Management

By

Dr. Amrita Singh

International Institute of Health Management Research
New Delhi -110075

MAY, 2013

"Evaluation of accounting and effectiveness of hospital information systems used in Multi specialty Hospital"

A Dissertation Summary Report for

Post Graduate Diploma in Health and Hospital Management

By

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Roll No.PG/11/010

Under the guidance of

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Product Delivery Manager

Invest 2 Care

Chennai

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IIHMR

Delhi

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New Delhi -110075

MAY, 2013

Invest2Care Technologies Private Limited

Certificate of Internship Completion

Date: 25th April 2013.

TO WHOM IT MAY CONCERN

This is to certify that **Dr. Amrita Singh** has successfully completed her 3 months internship in our organization from January 21, 2013 to April 20, 2013. During this intern he has worked on **System Analysis** under the guidance of me and my team at **Invest2Care Technologies Pvt Ltd**

We wish her good luck for his future assignments.

(Signature)

NIRANJAN KUMAR (Name)

CEO, Invest2Care Technologies Pvt. Ltd, Designation

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Certificate from Dissertation Advisory Committee

This is to certify that **Dr. Amrita Singh**, a graduate student of the **Post- Graduate Diploma in Health and Hospital Management**, has worked under our guidance and supervision. She is submitting this dissertation titled **"The assessment of the effectiveness of hospital information system (HIS) in a multi specialty hospital"** in partial fulfillment of the requirements for the award of the **Post Graduate Diploma in Health and Hospital Management.**

This dissertation has the requisite standard and to the best of our knowledge no part of it has been reproduced from any other dissertation, monograph, report or book.

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Address Kilpauk
Chennai-10

Date 22 May 2013.

Certificate of Approval

The following dissertation titled **"The assessment of the effectiveness of hospital information system (HIS) in a multi specialty hospital"** is hereby approved as a certified study in management carried out and presented in a manner satisfactory to warrant its acceptance as a prerequisite for the award of **Post- Graduate Diploma in Health and Hospital Management** for which it has been submitted. It is understood that by this approval the undersigned do not necessarily endorse or approve any statement made, opinion expressed or conclusion drawn therein but approve the dissertation only for the purpose it is submitted.

Dissertation Examination Committee for evaluation of dissertation

Name:	Signature:
AVANISH KR. SINGH	
I. Bhattacharya	

FEEDBACK FORM

Name of the Student:	**Dr Amritha Singh**
Dissertation Organization:	Invest2Care Technologies Private Limited, Chennai
Area of Dissertation:	Issue Analysis of Operational Hospital Information System, Back Office Support System & Data Mining and Reporting Application in a Multi Specialty Hospital
Attendance:	Regular
Objectives achieved:	Satisfactory
Deliverables:	Report on analyzing the existing IT System and Infrastructure . Propose options to move ahead to resolve the issues.
Strengths:	Good Communication
Suggestions for Improvement:	Commitment and Focus

Athilakshmi

Signature of the Officer-in-Charge/ Organization Mentor (Dissertation)

Date: 25th April 2013
Place: Chennai

ABSTRACT

The rapid advance of information technology in health settings has accentuated the importance of addressing the shortcomings of current health information system practices. Hospital Information Systems (HIS) play a significant role in providing quality healthcare services. However, HIS lag behind their industrial counterparts in providing quality (i.e., timely, accurate, complete) information and have been the target of many criticisms for alleged shortcomings. The aim of this research is to evaluate for HIS to assist in providing quality healthcare service. To this end, questionnaires were designed to assess the level of satisfaction of different HIS users. Sample size of 65 was personally interviewed for this study.

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PART I

INTERNSHIP REPORT

SUMMER PLACEMENT IN

HINDUSTAN PETROLEUM CORPORATION LIMITED

NEW DELHI

Name of the Organization: Hindustan Petroleum Corporation Limited

Address : HPCL, POL-Terminal,
NH-8, Tikri Kalan,
New Delhi-41
&
HPCL , SHAKURBASTI INSTALATION

Duration of Training : APRIL 4th 2012 – JUNE 5th 2012.

Name of Project : EVALUATION OF EMPLOYEE HEALTH MANAGEMENT SYSTEM

Department : TIKRI KALAN & SHAKURBASTI TERMINAL

Training Manager : SHRI KAMAL KUMAR

The Organization

HPCL is a Fortune 500 company having about 20% marketing share in India and a strong marketing infrastructure throughout the country, company is one of the major integrated oil refining and marketing companies in India. It is a Mega Public Sector Undertaking (PSU) with Navaratna status.

Organization Profile

HPCL is a Fortune 500 company, with an annual turnover of Rs. 169011 Crores and sales/income from operations of Rs 188130 Crores (US $36.975 Billions) during FY **2011-12**, having about 20% Marketing share in India and a strong marketing infrastructure.

Consistent excellent performance has been made possible by highly motivated workforce of over 11,360 employees working all over India at its various refining and marketing locations.

I have taken up two marketing location to study the effectiveness of health management system in HPCL & submitting my offering for improvement in the system.

I have taken up two marketing location to study the effectiveness of employee health management system in HPCL & offering improvement in system.

1. Tikrikalan Terminal
2. Shakurbasti Terminal

Tikri Kalan terminal is under construction whereas the Shakurbasti Terminal is an operative terminal. There are more than 100 permanent employees working in these locations.

Study Objectives

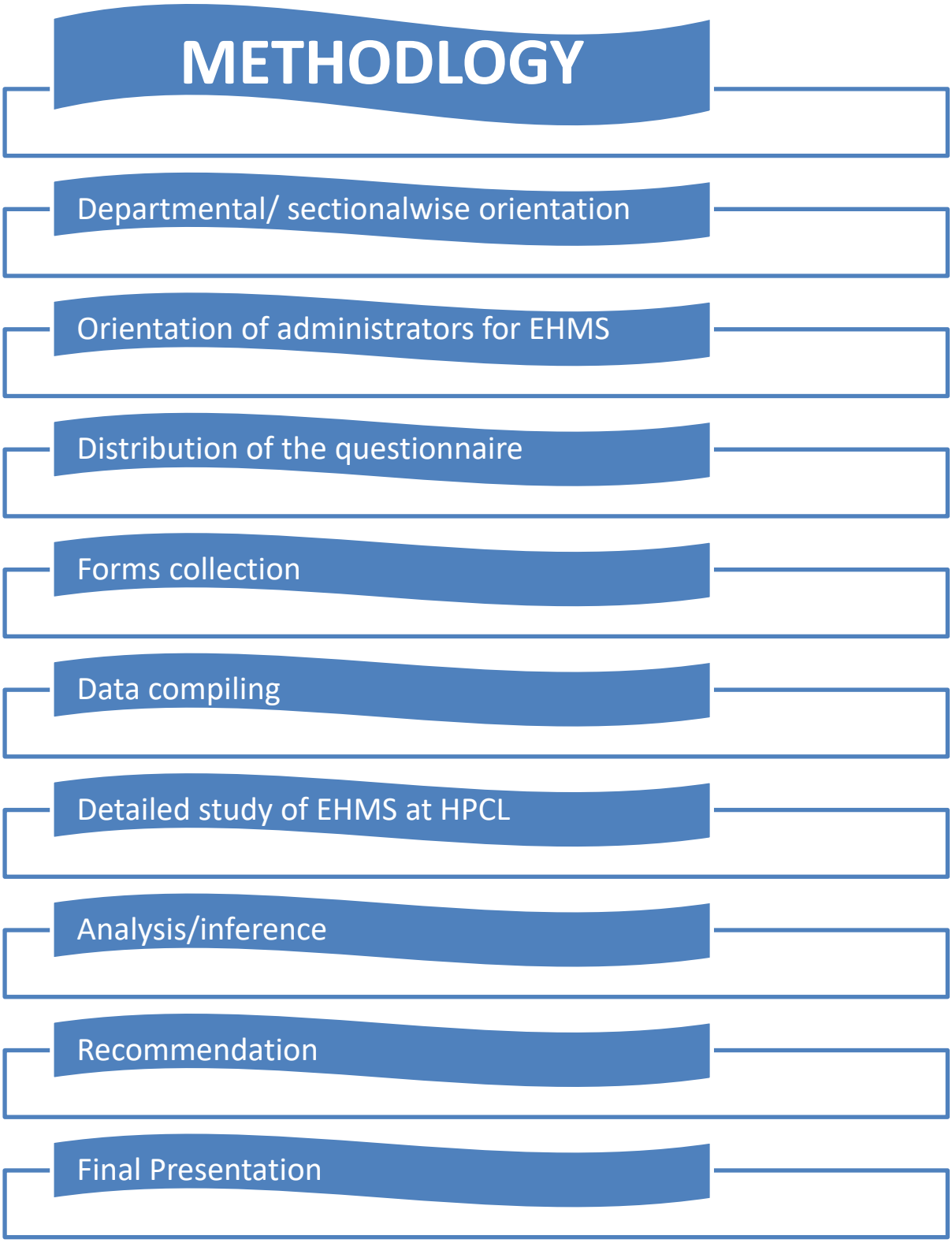
- ➔ Evaluation of execution of EHMS in HPCL
- ➔ Ascertaining employee awareness of EHMS in HPCL
- ➔ Creating orientation of employees towards effective EHMS in HPCL

Rationale

This study fundamentally aims to examine the EHMS in HPCL at two locations where the system had been already implemented. This study also includes company medical policies and benefits, health promotion, wellness and fitness programs & industrial safety.

Also, the understanding and sustainability of an integrated health system is as well included in the study. If employees aren't aware of their employers' programs and how to participate, health behaviours won't change. This is a traditional problem with how employee health and wellness has historically been done.

METHODOLOGY



REFLECTIVE LEARNING

The learning that I extracted from the experience not only enriched me in terms of providing knowledge as to how an established public sector organization runs but also gave me insights into my own self, imparting priceless lessons of patience, dedication and importance of good behavioural communication.

PART II

DISSERTATION REPORT

The Organization

Invest2Care is a fast growing organization committed to see what we implemented really solves the key CHALLENGES of our clients.

We follow up and stay with the customer till we see THE MEANINGFUL USE of the implemented solution. Invest2care has been in the forefront of DESIGNING PRODUCTS for the Indian as well as global market. Invest2care is able to introduce sufficient flexibility in its product design to take care of all possible eventualities. Invest2care has positioned itself to provide a broad range of IT project services - systems development, legacy migration and consulting services.

The Company ensures innovative solutions and a delivery aimed at generating client delight. We will take away our CLIENT'S OPERATIONAL head ache that comes across during the delivery, implementation and post training too. We help our clients in handling the CHANGE MANAGEMENT issues (if anyone in your organization is hesitant to move to newer solution or technology we have ways and means to convince them and start using the solution). We will GROW with you!

Various divisions are:

1. LIFE2CARE
2. LEARN2CARE
3. EVENT2CARE
4. PATIENT2CARE

1. LIFE2CARE:

Life2Care is Hospital Information System (HIS) is designed to meet all the information needs within a hospital. 'LIFE2CARE' is a Hospital Management Solution for Multi-Specialty Hospital to cover a wide range of hospital administration and management

processes. This is an integrated end-to-end Hospital Management System that provides relevant information across the hospital to support effective decision making for patient care, hospital administration and critical financial accounting in a seamless flow.

2. LEARN2CARE:

Learn2Care Division of Invest2Care in collaboration with Leading and recognized organization, set up Centre of Excellence for Cloud Computing with the intention of developing Cloud Computing skills to meet the Globe demand for Cloud computing skills. Despite the growing adoption of information technology (IT) there are still barriers to its optimal use, one of them being shortage of trained resources who understand the business as well as IT. To bridge this gap between supply & demand of trained resources Learn2Care has launched short term courses in the field of **IT for Cloud Essential Professionals**.

3. EVENT2CARE:

HEALTHEX INTERNATIONAL 2013 is the 4th edition in succession. Since its inception, the show has been growing with Indian medical and healthcare industry. The Indian healthcare sector is also on a fast growth track and is poised to reach US$ 280 billion by the year 2020. HEALTHEX INTERNATIONAL 2013 will provide the vision for the future to Indian medical industry with international exhibitors from various countries bringing the advanced technologies & products, sharing the latest information.

REALIZE IT 2013 is a three days workshop primarily focusing on role of Health IT in enabling Universal Healthcare in India by 2020. Key goals of Universal Healthcare are to achieve through the creation of the integrated national health System:

- Ensure the reach and quality of health services to all in India;
- Reduce the financial burden of health care on individuals; and
- Empower people to take care of their health and hold the health-care system accountable.

4. PATIENT2CARE:

Patient2Care enables patient management process automated using Next Generation technology solutions for AFFORDABLE & User friendly integrated patient management solutions is the role of Patient2Care. Demonstrable ROI is the key in the success of HIT solutions globally especially in India. We at Invest2Care truly understand this. Patient is the Centre of Gravity of Health Ecology. Whether it is Cloud, Touch Screen Kiosk, Palm Vein based biometric sensor we adopt any proven technology - technique to bring in meaningful automation in healthcare industry. Any innovation should be focusing on the patient as the primary stakeholder.

Patient2care MANTRA: Affordability, Availability, Accessibility, Accountability, Acceptability & Accommodation..!!

MULTI SPECIALTY HOSPITAL

Multi specialty hospital is a 675-bed multi-speciality state-of-the-art Hospital in India. It provides comprehensive Healthcare services in India, and has acquired the status of a premier medical institution. It is the only hospital in the private sector that has maintained nearly 100% bed occupancy due to its reputation of providing the highest level of medical services to patients from Delhi and neighbouring states.

The hospital was founded initially in 1921 at Lahore by Sir Ganga Ram (1851-1927), a civil engineer and leading philanthropist of his times. After the partition in 1947, the present hospital was established in New Delhi on a plot of land approximately11 acres. The foundation was laid in April 1951 by the then Prime Minister of India Shri Jawahar Lal Nehru and inaugurated by him on 13 April 1954.

Multi specialty hospital in India continues to maintain its charitable character in accordance with to the wishes of its founder. Funds generated from the hospital services are partially utilised for providing free health care to the poor and needy patients. All development activities of the hospital are financed from internal resources, with no financial assistance provided by the government or other external agencies.

The Multi specialty hospital is committed to make available 20% beds of total strength for admission of indigenous and financially weaker section of the society. On these beds all facilities (boarding, lodging, investigations, medicine and operative procedures are free.

In addition to that we are running regular OPDs for all disciplines where patients are seen free of charge. 40% of all the investigations are the OPD patients are free of charge. These facilities are provided strictly on a first come, first serve.

INTRODUCTION

Hospital Information System can be defined as a massive, integrated system that supports the comprehensive information requirements of hospitals, including patient, clinical, ancillary and financial management. Hospitals are extremely complex institutions with large departments and units coordinate care for patients. Hospitals are becoming more reliant on the ability of hospital information system (HIS) to assist in the diagnosis, management and education for better and improved services and practices. HIS customers expect the HIS department to assist them with a myriad of tasks, such as hardware and software selection, installation, problem resolution, integration with other networks, system modifications or development, education, conversion of data to information meaningful for decision making, etc.

Hospital information system applications have contributed to better health service management and delivery of care by creating an environment conducive to increased access and quality of patient care and by supporting the knowledge base required for clinical and administrative decision making. There has been a major paradigm shift in healthcare information processing, corresponding to changes in the goals of the organization. The traditional emphasis on data has now given way to emphasis on information.

Hospital Information System (HIS) has evolved as an integration system of order entry systems, an administrative system, and departmental subsystems within a hospital. It has become more and more necessary for every health care staff in a hospital to use a computer terminal at almost every day's works. Under this circumstances, HIS is expected to provide the staffs with various, world-wide information for decision making and better communication environment which can be used just on the computer terminals for everyday's works. A HIS is a comprehensive and integrated information system designed to store, manipulate, and retrieve information of the administrative and clinical aspects.

Multi specialty hospital has three HIS namely:

- Prodigious
- Trakcare
- Speedmining

PURPOSE

The assessment of the effectiveness of hospital information system (HIS) at Multi specialty hospital (SGRH)

SCOPE

The study enables to understand the employee's opinion towards the current running version of HIS. The study has been conducted in order to find out the strength and weakness of the existing system along with the issues involved within the system & its analysis.

PROBLEM STATEMENT

This study aimed at identifying and evaluation of accounting and effectiveness of hospital information systems used in Multi specialty hospital.

OBJECTIVE

General objective:

To study the current HIS by taking inputs from users and analysis of the issues present in the HIS of Multi specialty hospital.

Specific objective:

- ⇒ To study the existing Hospital Information System
- ⇒ To find out the strength and weakness of the existing system
- ⇒ Issues analysis present within the system

REVIEW OF LITERATURE

Methods to Evaluate Health information Systems in Healthcare Settings:

Although information technology (IT)-based applications in healthcare have existed for more than three decades, methods to evaluate outputs and outcomes of the use of IT-based systems in medical informatics is still a challenge for decision makers, as well as to those who want to measure the effects of ICT in healthcare settings. The aim of this paper is to review published articles in the area evaluations of IT-based systems in order to gain knowledge about methodologies used and findings obtained from the evaluation of IT-based systems applied in healthcare settings. The literature review includes studies of IT-based systems between 2003 and 2005. The findings show that economic and organizational aspects dominate evaluation studies in this area. However, the results focus mostly on positive outputs such as user satisfaction, financial benefits and improved organizational work. This review shows that there is no standard framework for evaluation effects and outputs of implementation and use of IT in the healthcare setting and that until today no studies explore the impact of IT on the healthcare system' productivity and effectiveness.

The Benefits OF Health Information Technology: A Review Of The Recent Literature Shows Predominantly Positive Results:

An unprecedented federal effort is under way to boost the adoption of electronic health records and spur innovation in health care delivery. We reviewed the recent literature on health information technology to determine its effect on outcomes, including quality, efficiency, and provider satisfaction. We found that 92 percent of the recent articles on health information technology reached conclusions that were positive overall. We also found that the benefits of the technology are beginning to emerge in smaller practices and organizations, as well as in large organizations that were early adopters. However, dissatisfaction with electronic health records among some providers remains a problem and a barrier to achieving the potential of health information technology. These realities highlight the need for studies that document the challenging aspects of implementing health information technology more specifically and how these challenges might be addressed.

Hospital Information Systems in Nigeria:

This literature review was developed to examine empirically the factors hindering adoption of hospital information systems in Nigeria. The study was focused on the perceived paucity of health information technology policy in Nigeria and the causes of poor implementation of hospital information systems in the country. The findings of the literature review highlighted hindrances to the adoption of hospital information systems to include; the high cost of full implementation of a hospital information system, inadequate human capital, corruption, and problems associated with poor infrastructure in Nigeria. The recommendations were that, the Nigerian government needs to provide stable electricity, basic communication infrastructures, and Internet access to boost private initiatives in the adoption of health information technology across the country.

METHODOLOGY

A qualitative research with a descriptive study has been conducted for the evaluation of the hospital information system at Multi specialty hospital. The methods used in the study were:

i. Observational method
ii. Survey method

Descriptive research is also called Statistical Research. The main goal of this type of research is to describe the data and characteristics about what is being studied. The idea behind this type of research is to study frequencies, averages, and other statistical calculations. Although this research is highly accurate, it does not gather the causes behind a situation. Descriptive research is mainly done when a researcher wants to gain a better understanding of a topic. A descriptive study is one in which information is collected without changing the environment (i.e., nothing is manipulated). Sometimes these are referred to as " co relational " or " observational " studies.

Descriptive studies can involve a one-time interaction with groups of people (cross-sectional study) or a study might follow individuals over time (longitudinal study). Descriptive studies, in which the researcher interacts with the participant, may involve surveys or interviews to collect the necessary information. Descriptive studies in which the researcher does not interact with the participant include observational studies of people in an environment and studies involving data collection using existing records (e.g., medical record review). Descriptive research is the exploration of the existing certain phenomena. The details of the facts won't be known. The existing phenomena's facts are not known to the persons.

Observational research (or field research) is a social research technique that involves the direct observation of phenomena in their natural setting. Observational research involves observing something without changing it or any variables involved. You will just record what you 'observe' without interfering with it in such a way that the outcome may change. If one or more variables are changed, this is 'causal' research or experimental research.

It can provide quantitative or qualitative data. Observation can be a tricky method as it involves interpretation based on your recorded observations. Generally, there are three types of observational research:

- ✓ **Covert observational research** - The researchers do not identify themselves. Either they mix in with the subjects undetected, or they observe from a distance.
- ✓ **Overt observational research** - The researchers identify themselves as researchers and explain the purpose of their observations.
- ✓ **Researcher Participation** - The researcher participates in what they are observing so as to get a finer appreciation of the phenomena.

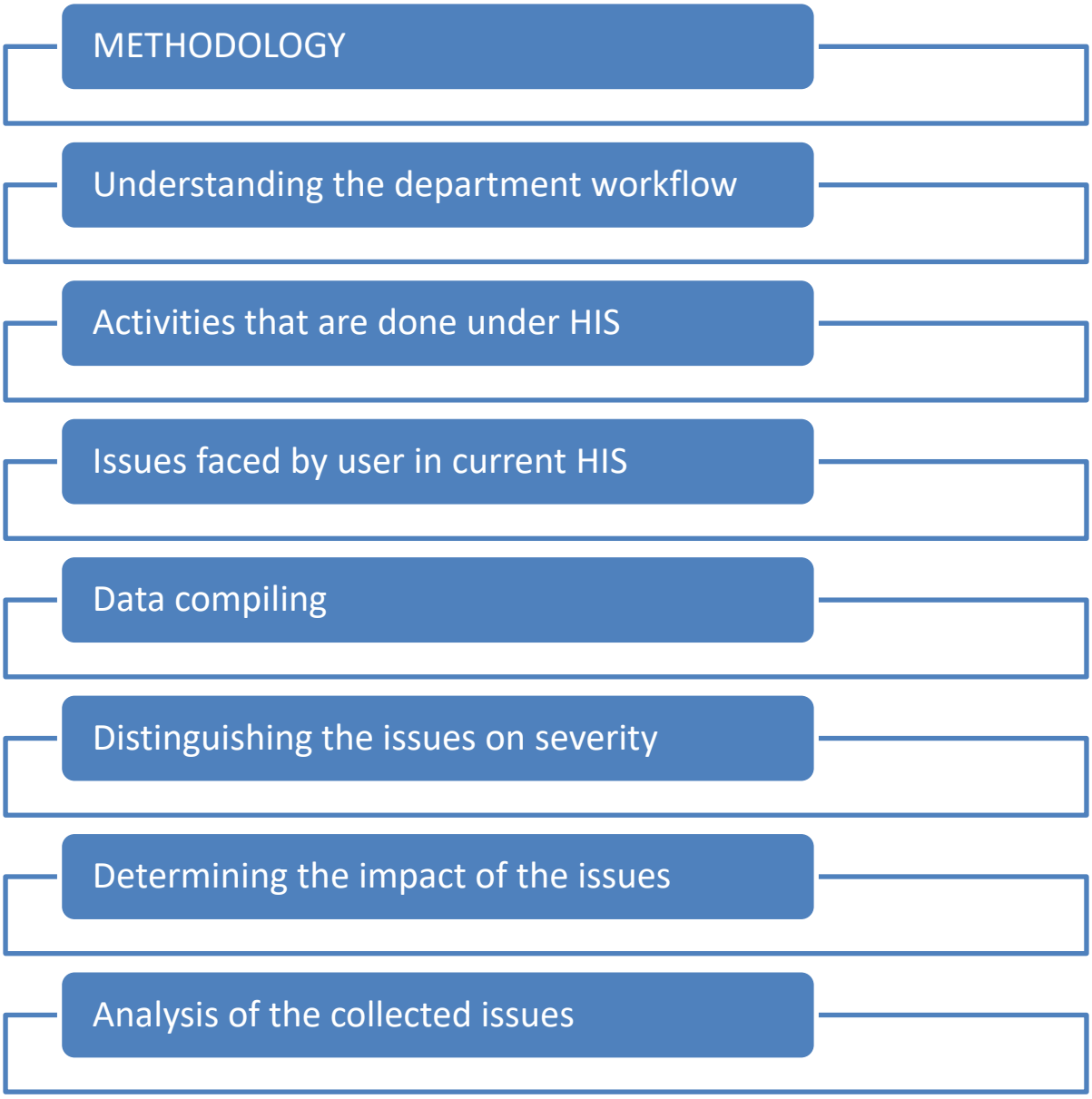
In this study researcher participation of observation was done.

Survey research is often used to assess thoughts, opinions, and feelings. Survey research can be specific and limited, or it can have more global, widespread goals. The Survey method is the technique of gathering data by asking questions to people who are thought to have desired information.

As compared to other methods (direct observation, experimentation) survey yield a broader range of information. Surveys are effective to produce information on socio-economic characteristics, attitudes, opinions, motives etc and to gather information for planning product features, advertising media, sales promotion, channels of distribution and other marketing variables. Questioning is usually faster and cheaper that Observation. Questions are simple to administer.

The variability of results is reduced. It is relatively simple to analyze, quote and interrelate the data obtained by survey method. But, Symantec difficulties are there - it is difficult, if not impossible, to state a given question in such a way that it will mean exactly same thing to each respondent. Similarly two different wordings of the same question will frequently produce quite different results. Careful control of data gathering by employing specially trained investigators who will observe carefully report on subtle reactions of persons interviewed.

In this study, personal interview was conducted. Personal interviews are conducted by an associate of the researcher. These interviews have more flexibility than a paper survey, because, for instance, the interviewer can skip irrelevant questions, and both the interviewer and respondent can ask for clarification. The interviewer can also control the order of the questions if that is important. There also tends to be a higher response rate than with mail surveys because people are less likely to say no to a person than to throw away a paper. However, meeting and interviewing all participants in person is both expensive and time consuming.


METHODOLOGY
Understanding the department workflow
Activities that are done under HIS
Issues faced by user in current HIS
Data compiling
Distinguishing the issues on severity
Determining the impact of the issues
Analysis of the collected issues

In total nine departments were visited and observed.

1. Admission department
2. OT department
3. Heart Centre
4. Dialysis department
5. Emergency
6. Discharge cell
7. Nursing and ordering department
8. Billing
9. General OPD

Categorization of the impact was done on five point liquired scale.

Five points were:

i. Critical
ii. High
iii. Medium
iv. Low
v. Wishlist

Cognitive skills of the interviewer were used to derive the responses.

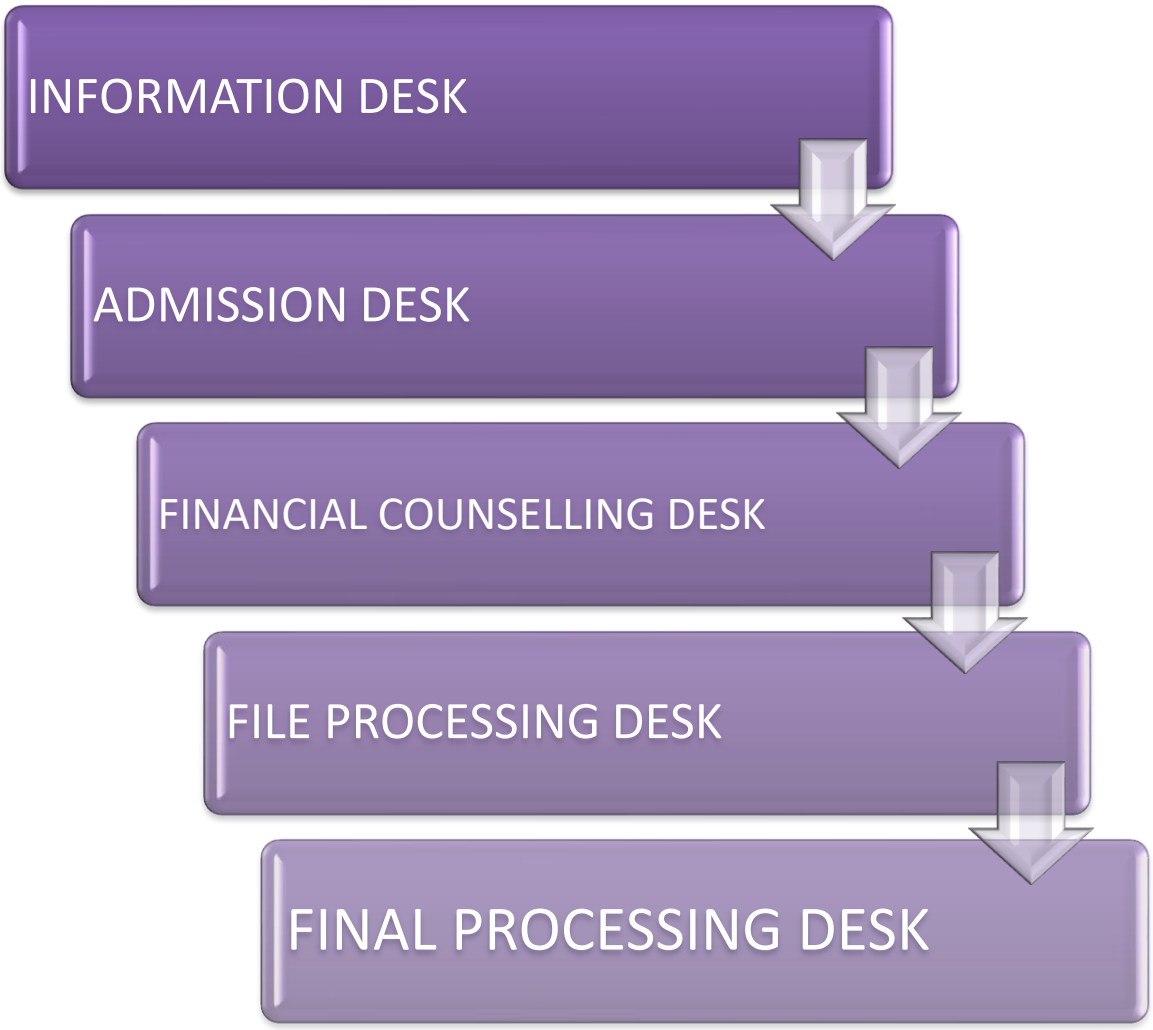
DEPARTMENT ANALYSIS

ADMISSON DEPARTMENT

SYSTEM FLOW OF ADMISSION DEPARTMENT

Admission department has five desks. They are:

i. Information desk
ii. Admission desk
iii. Financial Counselling desk
iv. File Processing desk
v. Final Processing desk



- Information Desk

  - At this desk, information regarding Doctors is given.
  - Bed allotment status is involved here.
  - Information regarding General OPD timings, timing of the Doctors, intercom number of Doctors is provided here.

- Admission Desk

  - There are three ways to get admission into the hospital:
    - Casualty
    - General OPD
    - Private OPD
  - In admission, private OPD and casualty admissions are done.
  - Filling and paper work is done here.
  - Files are generated here in HIS.
  - Unique code is given to the patient entry.

- Financial Counselling Desk

  - Room allotment discussion is done here with the patient.
  - Charges of the individual rooms are discussed.
  - If the patient is not willing to take the room, then the patient is sent to the admission desk again.
  - In shifting of the patient from one room to other, patient is asked to come to the financial counselling desk.

- File Processing Desk

    - After patient confirms the room, patient's file is sent to the file processing desk.
    - Entry into HIS is done here.
    - Room number is allotted here.

- Final Processing Desk

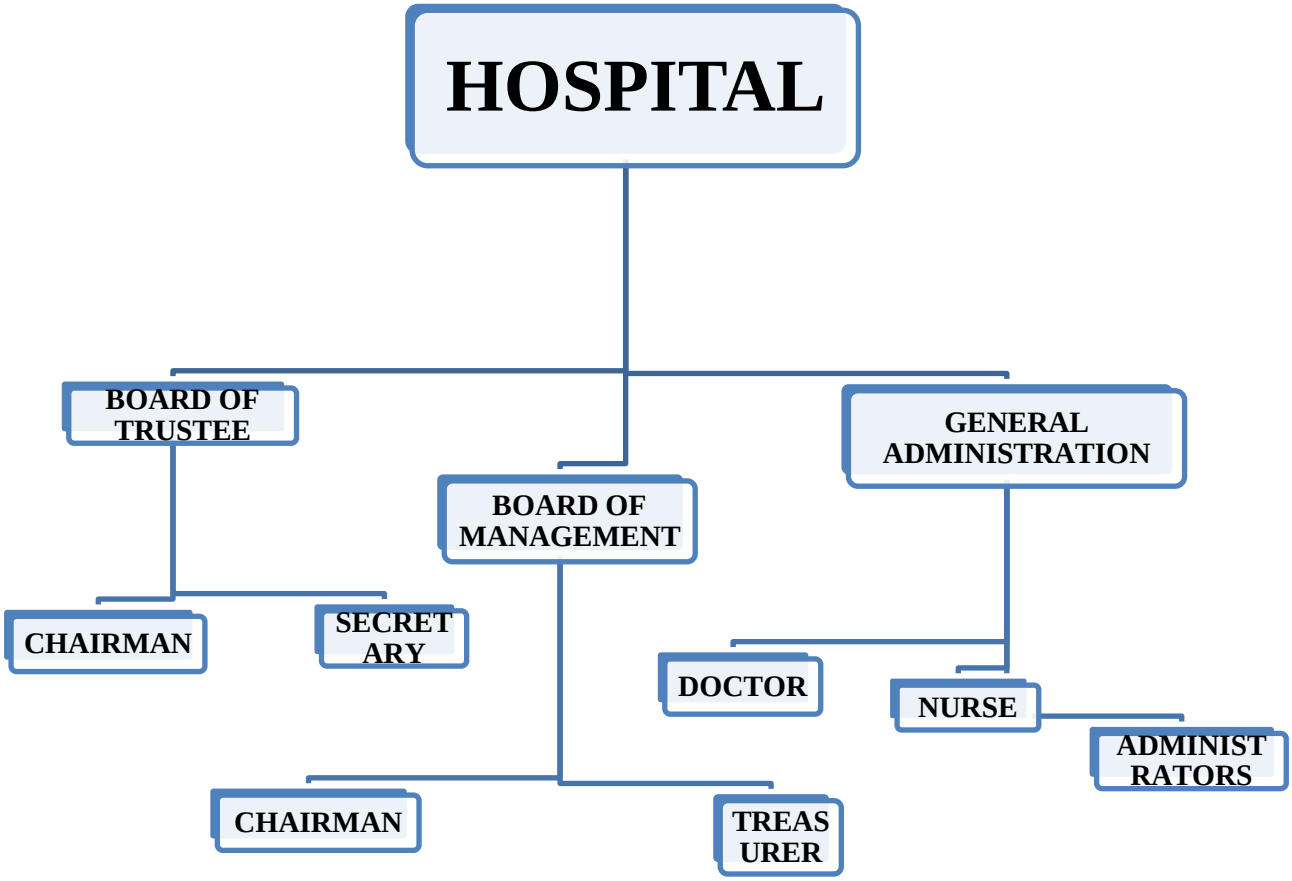
    - Cross verification of patient details is done here.

SAMPLE SIZE

HIS customers can be identified as internal or external. Internal customers are Doctors, Nurses, Laboratory technologists, Pharmacists, Quality department, and others within healthcare facilities that interact with the essential processes. External customers are: Patients, Patients' families, Insurance Providers, Suppliers, Health Services Researchers, etc. This research study focuses on internal HIS users (or customers) only.

For the base line study, the sample size was 65 and random simple sampling was done. The assessment of HIS was done on the issues given on the basis of severity of the issues.

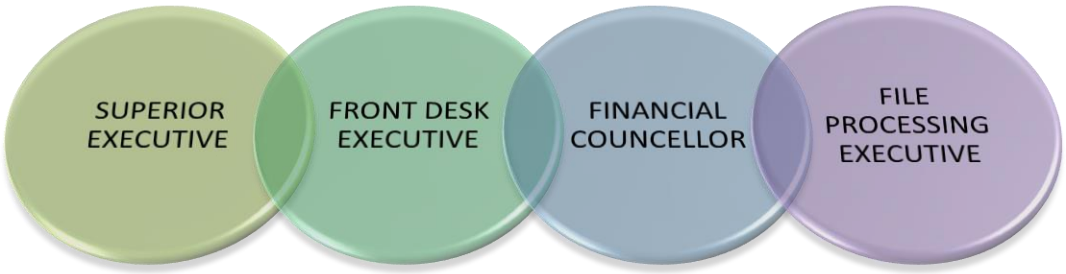
DEMOGRAPHY


HOSPITAL
BOARD OF TRUSTEE
BOARD OF MANAGEMENT
GENERAL ADMINISTRATION
CHAIRMAN
SECRET ARY
DOCTOR
NURSE
ADMINIST RATORS
CHAIRMAN
TREAS URER

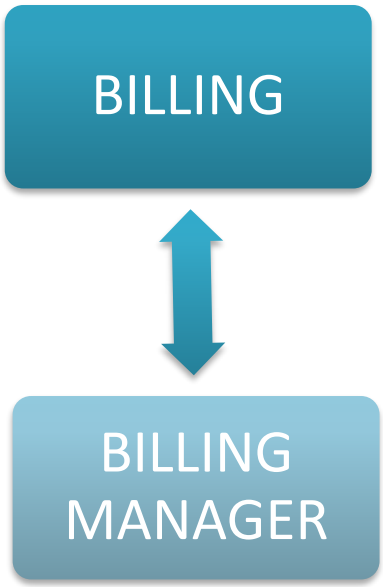
S.NO.	PRODUCT NAME	IMPLEMENTOR NAME	MAINTAINED BY
1.	TRAKCARE	INTERSYSTEM	MTACH
2.	PRODIGIOUS	MTACH	MTACH

DEPARTMENT AND POSITION/DESIGNATION OF INTERVIWEE

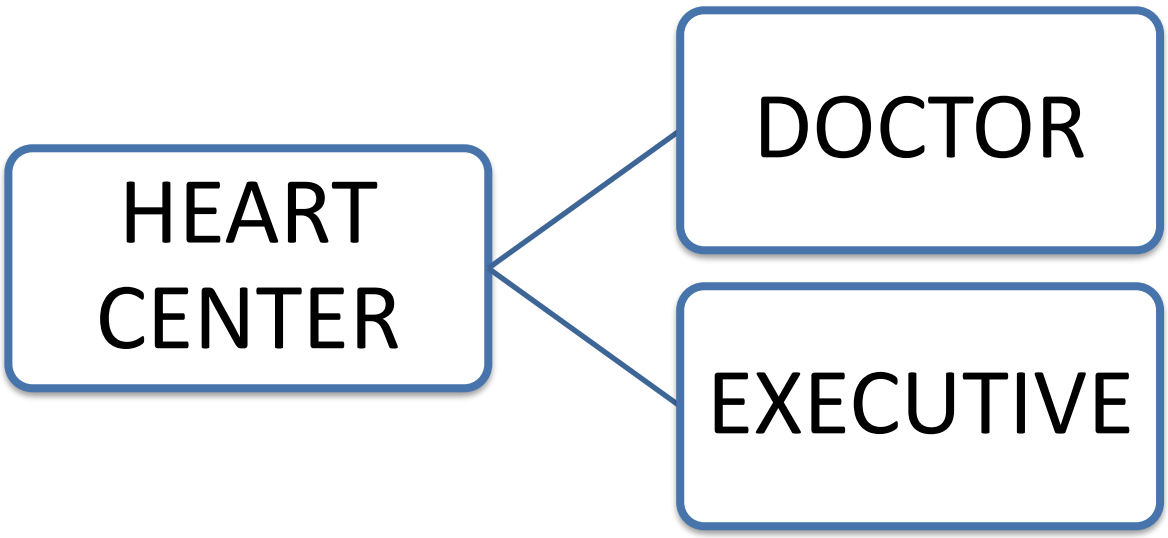
1. ADMISSION



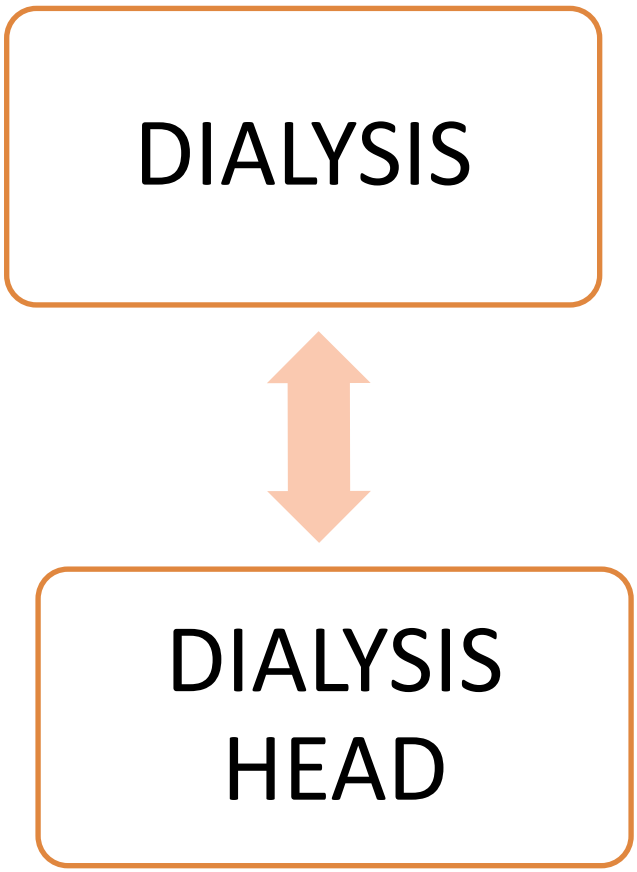
2. BILLING



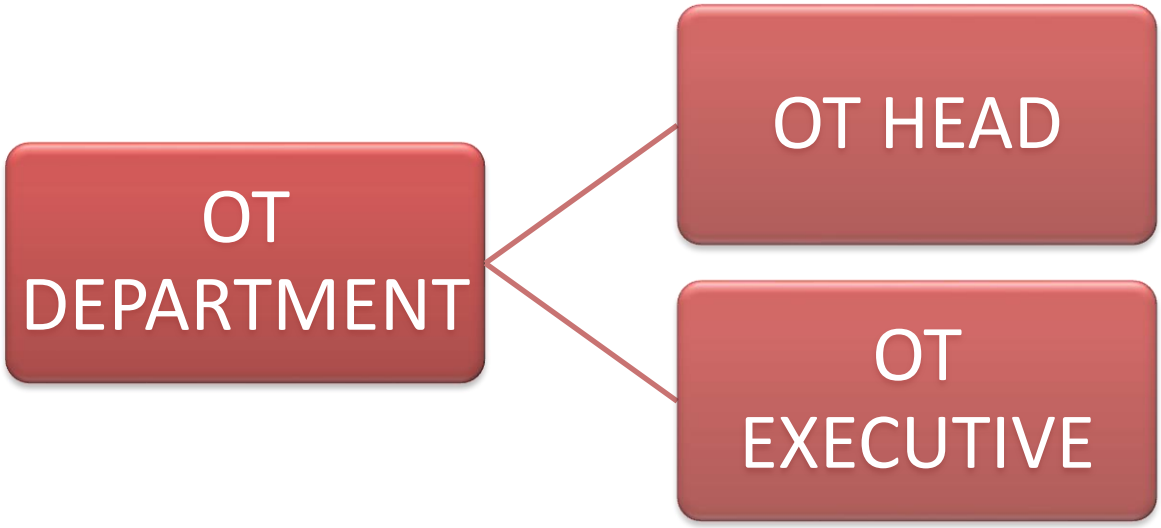
3. HEART CENTER



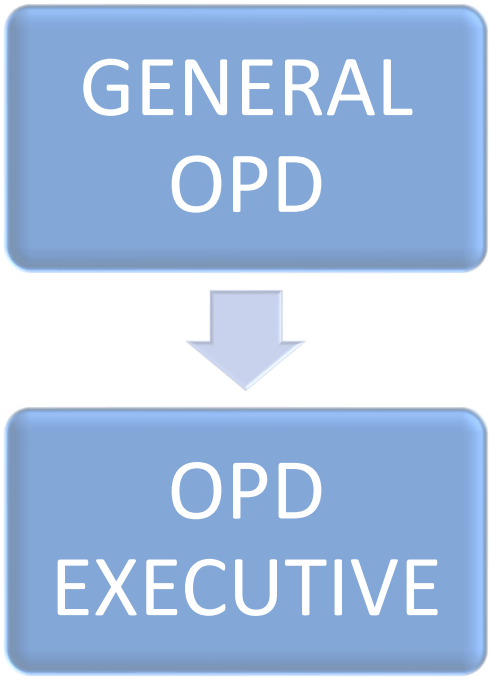
4. DIALYSIS



5. OT DEPARTMENT

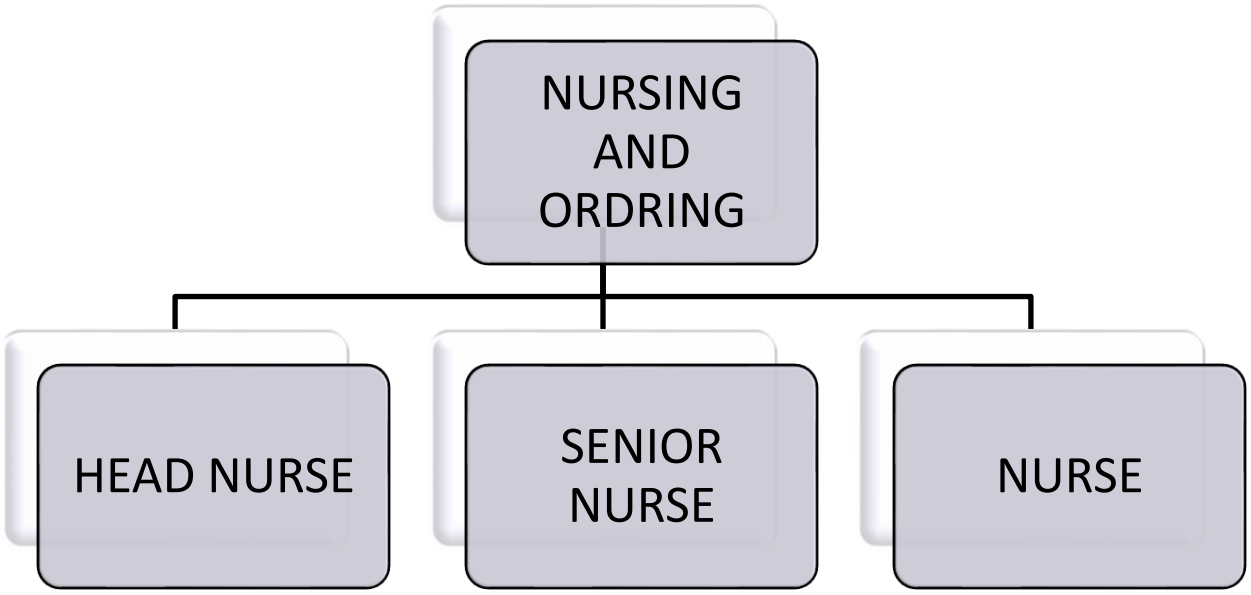


6. GENERAL OPD

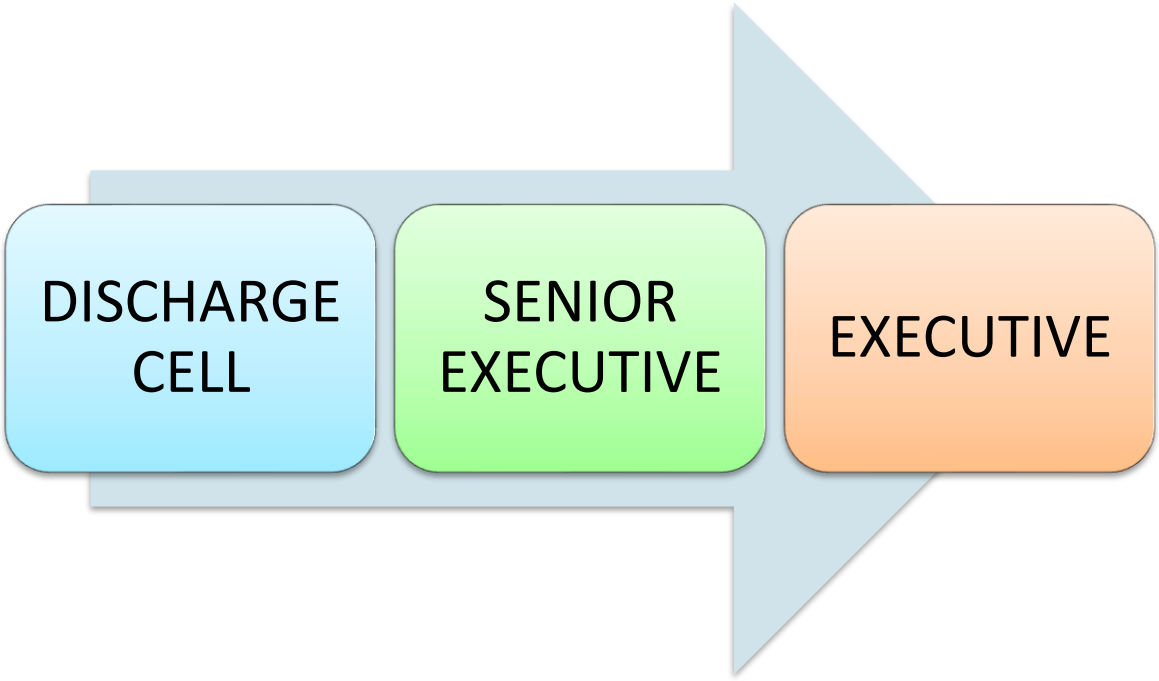


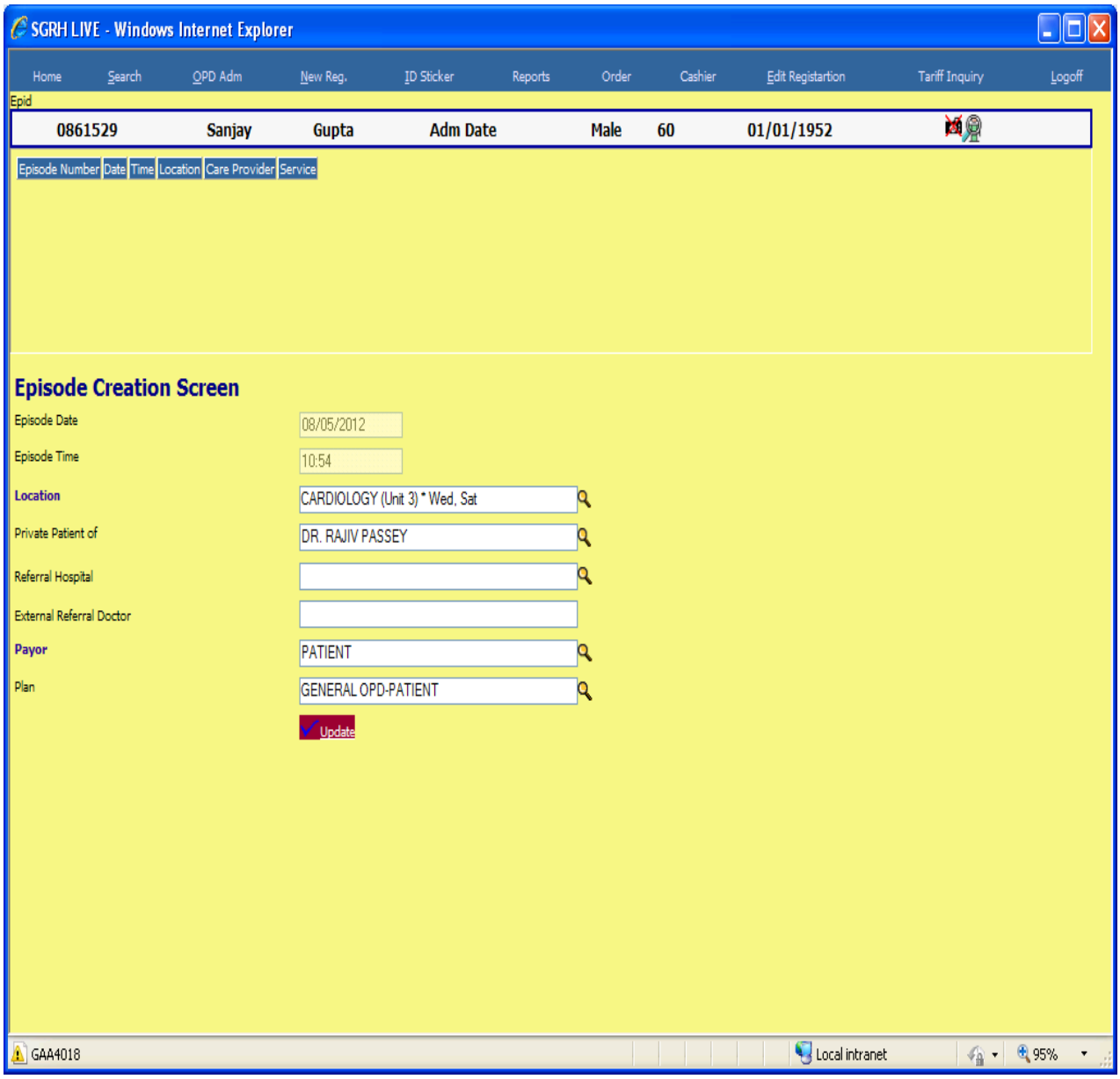
7. EMERGENCY

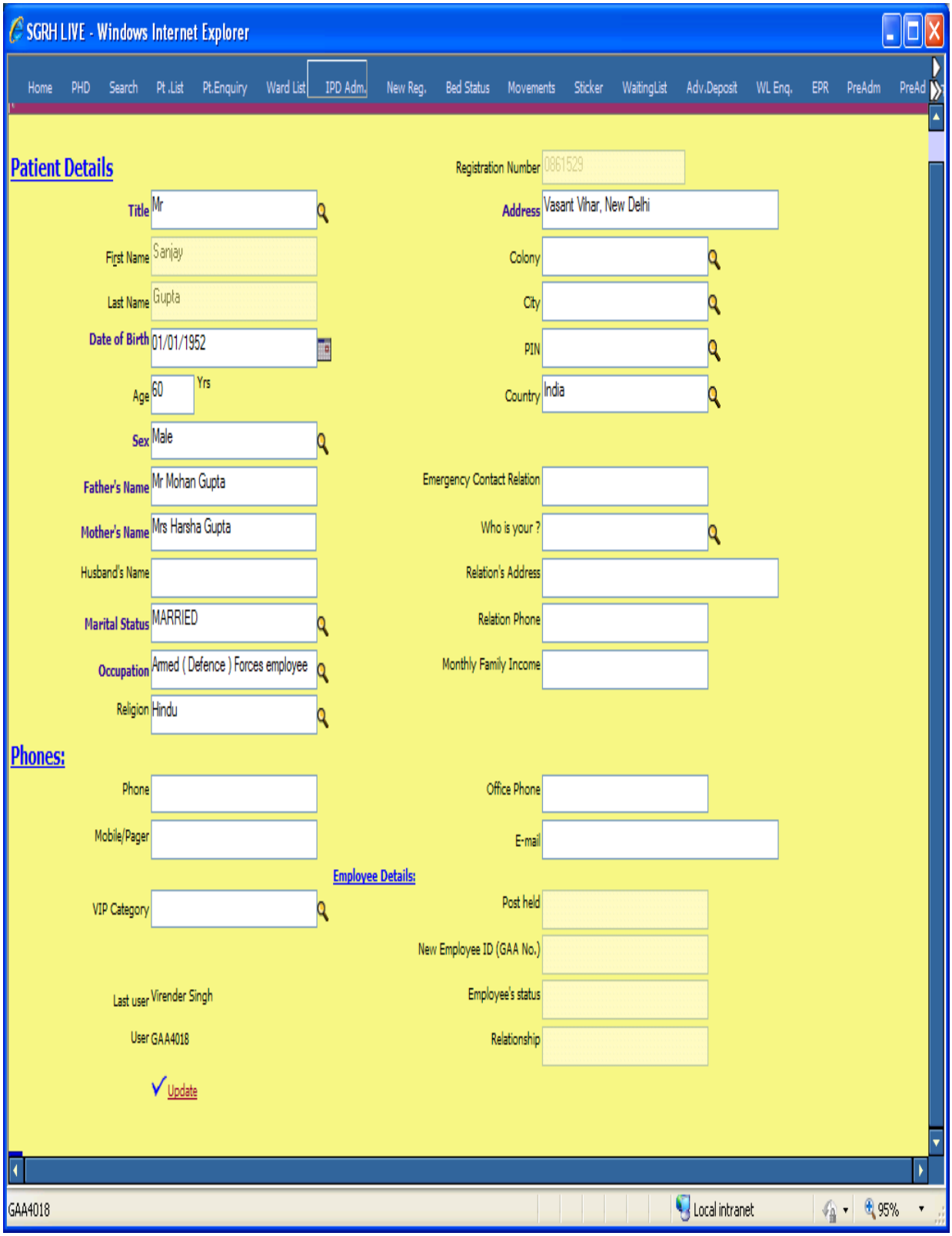
8. NURSING AND ORDERING

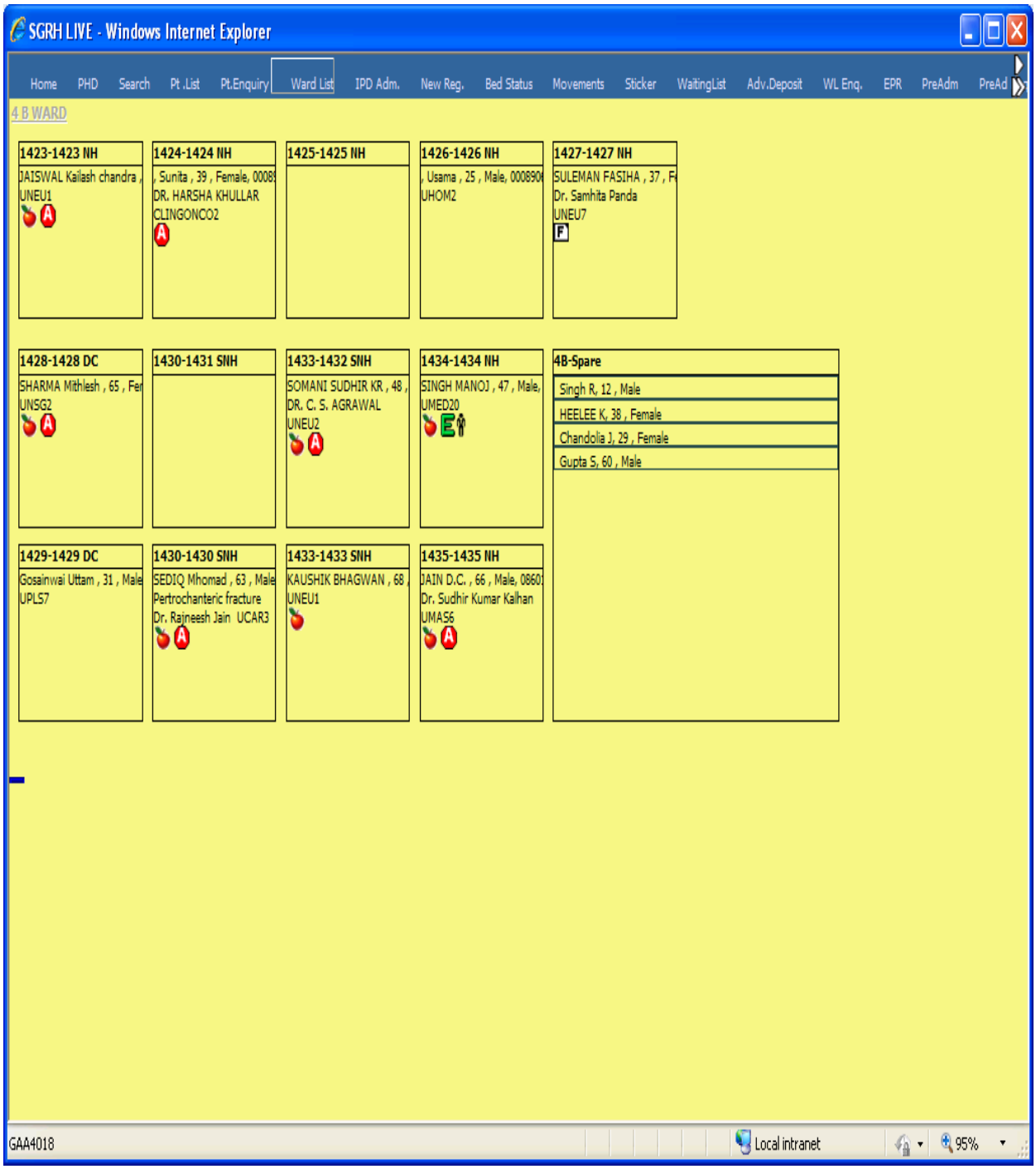


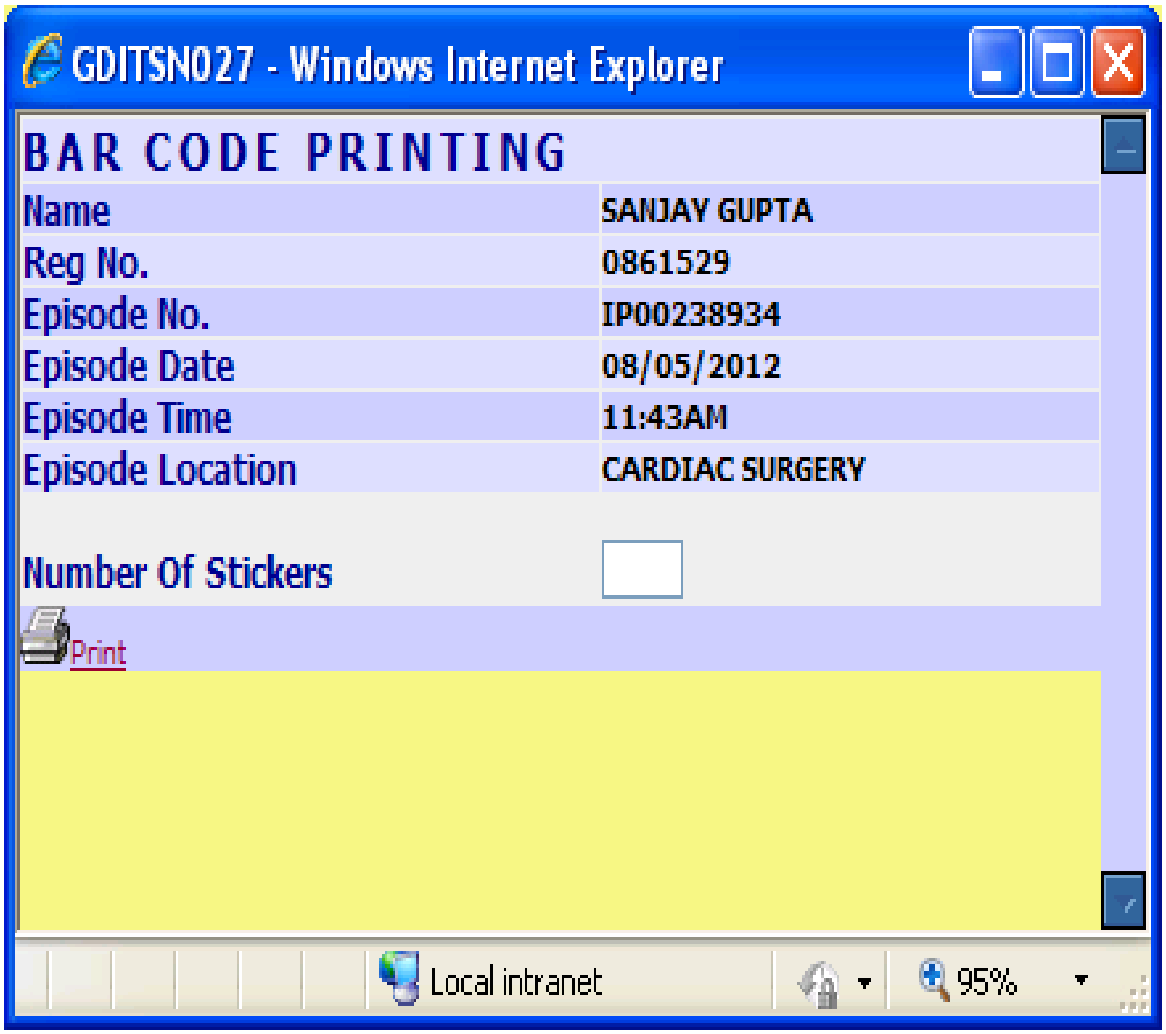
9. DISCHARGE CELL




SGRH LIVE - Windows Internet Explorer
Home
Search
OPD Adm
New Reg.
ID Sticker
Reports
Order
Cashier
Edit Registartion
Tariff Inquiry
Logoff
Epid
0861529
Sanjay
Gupta
Adm Date
Male
60
01/01/1952
Episode Number
Date
Time
Location
Care Provider
Service
Episode Creation Screen
Episode Date
08/05/2012
Episode Time
10:54
Location
CARDIOLOGY (Unit 3) * Wed, Sat
Private Patient of
DR. RAJIV PASSEY
Referral Hospital
External Referral Doctor
Payor
PATIENT
Plan
GENERAL OPD-PATIENT
Update
GAA4018
Local intranet
95%


SGRH LIVE - Windows Internet Explorer
Home PHD Search Pt .List Pt.Enquiry Ward List IPD Adm. New Reg. Bed Status Movements Sticker WaitingList Adv.Deposit WL Enq. EPR PreAdm PreAd
Patient Details
Registration Number 0861529
Title Mr
Address Vasant Vihar, New Delhi
First Name Sanjay
Colony
Last Name Gupta
City
Date of Birth 01/01/1952
PIN
Age 60 Yrs
Country India
Sex Male
Father's Name Mr Mohan Gupta
Emergency Contact Relation
Mother's Name Mrs Harsha Gupta
Who is your ?
Husband's Name
Relation's Address
Marital Status MARRIED
Relation Phone
Occupation Armed (Defence) Forces employee
Monthly Family Income
Religion Hindu
Phones:
Phone
Office Phone
Mobile/Pager
E-mail
Employee Details:
VIP Category
Post held
New Employee ID (GAA No.)
Last user Virender Singh
Employee's status
User GAA4018
Relationship
Update
GAA4018
Local intranet
95%


SGRH LIVE - Windows Internet Explorer
Home
PHD
Search
Pt .List
Pt.Enquiry
Ward List
IPD Adm.
New Reg.
Bed Status
Movements
Sticker
WaitingList
Adv.Deposit
WL Enq.
EPR
PreAdm
PreAd
4 B WARD
1423-1423 NH
JAISWAL Kailash chandra ,
UNEU1
1424-1424 NH
, Sunita , 39 , Female, 0008
DR. HARSHA KHULLAR
CLINGONCO2
1425-1425 NH
1426-1426 NH
, Usama , 25 , Male, 000890
UHOM2
1427-1427 NH
SULEMAN FASIHA , 37 , F
Dr. Samhita Panda
UNEU7
1428-1428 DC
SHARMA Mithlesh , 65 , Fe
UNSG2
1430-1431 SNH
1433-1432 SNH
SOMANI SUDHIR KR , 48 ,
DR. C. S. AGRAWAL
UNEU2
1434-1434 NH
SINGH MANOJ , 47 , Male,
UMED20
4B-Spare
Singh R, 12 , Male
HEELEE K, 38 , Female
Chandolia J, 29 , Female
Gupta S, 60 , Male
1429-1429 DC
Gosainwai Uttam , 31 , Male
UPLS7
1430-1430 SNH
SEDIQ Mhomad , 63 , Male
Pertrochanteric fracture
Dr. Rajneesh Jain UCAR3
1433-1433 SNH
KAUSHIK BHAGWAN , 68 ,
UNEU1
1435-1435 NH
JAIN D.C. , 66 , Male, 0860
Dr. Sudhir Kumar Kalhan
UMAS6
GAA4018
Local intranet
95%


GDITSN027 - Windows Internet Explorer
BAR CODE PRINTING
Name
SANJAY GUPTA
Reg No.
0861529
Episode No.
IP00238934
Episode Date
08/05/2012
Episode Time
11:43AM
Episode Location
CARDIAC SURGERY
Number Of Stickers
Print
Local intranet
95%

FINDINGS

A. DESCRIPTIVE STATISTICS

After a qualitative data had been collected, next step was to analyse the data.

The data had been categorized on the basis of priority. There were five sections under priority, they are:

- Critical
- High
- Medium
- Low
- Wish list

These priorities were user defined and hence categorized on the response given by the user.

- Critical:

  It retards the current procedure and needs immediate solution.

- High:

  It slows the ongoing procedure and needs immediate solution.

- Medium:

  It slows down the process and requires a solution.

- Low:

  It keeps down the process and can be looked after.

- Wish list:

  This can be stated as the requirement or a wish of an employee which he/she wants to get added in the HIS.

ADMISSION DEPARTMENT

In admissions, following were the issues observed.

I. Critical

a. Corporate Patient Billing- When the corporate patient admission is made, the billing is not suppose to be made by the patient but when the patient gets discharged and asked for the payment the company name is not visible for the first time in the billing section but when it is rechecked in the admission department, it appears as correctly entered

b. Printing barcodes for admission-Presently the system is getting down/hanged in every 5 mins due which there is delay in the print out of the bar-coded unique registration number

II. High

a. HIS login: While the user is working on the HIS the webpage expires and the user have to re-login again for the continuation of the process

b. SMS alert- At present there is no confirmation for the bed allotment by SMS are being sent to the patient as the password of the SMS pack has been expired

c. Booking and Bed Allotment- Booking of bed is not done in HIS due to "There is an issue with the carry-forwarding the patient bed booking number also. Suppose in total 10 patients are booked and 5 patients got the bed, then the next day new patient booking along with last day 10 patients booking is shown"

d. Speed- Speed of the HIS is slow which delays the procedure

III. Medium

a. Consultant enquiry: When a patient comes for an enquiry, a search is performed on the consultant page to retrieve the consultant dairy, on that consultant page there is overlapping of information with one element of information which covers a part of another of the information of the same page (content overlapping)

b. Consultant enquiry: When a patient comes for an enquiry and search is performed on the doctor's dairy based on the patient enquiry, number of working days on which the Doctor is available is not visible on the Doctor's page

c. HIS login- When the user is working on the HIS, the system is very slow and causes trouble in the login process

d. Room plan entry- The room plan is fixed for every room, but the room plan of the bed allotted is not picked up automatically, even while shifting the patient from one room to the other the room, plan is not picked up automatically by the HIS

e. Leave entry approval- While entering the leave status of the employees in the system, the approval for an employee takes place in two step and it is done manually by the employee

f. Stock acknowledgement- The acknowledgement done in the status of stocks and inventories within the system takes place in two process

IV. Low

a. HIS login- Sometimes when the user try to login the HIS system with their respective GAA number, the user could not get login with their GAA number in the system

BILLING DEPARTMENT

Following were the issues observed

I. Critical

a. Final Bill- When the patient is admitted to the hospital and the stay of the patient is for a longer duration then many bills are generated there is a mismatch among the bills difficulty in the re-calculation of the bill as there are many bills generated and

HEART CENTER

Following were the issues observed

I. Medium

a. Speed- Speed of the HIS is slow which delays the procedure

OT DEPARTMENT

Following were the issues observed

I. High

a. Alerts- There are no alerts for the products which are nearly to be expired or likely to be expired

II. Medium

a. Stock Consumption Entry- Quantity of item consumed by the OT needs to be mentioned in the HIS, but when sent to the main billing section for the final billing, the quantity of item consumed number then varies

b. Speed- Speed of the HIS is slow which delays the procedure

III. Wish list

a. User interface- Font size of the content on the page should be bigger

DIALYSIS DEPARTMENT

Following were the issues observed

I. Medium

a. Licence- Whenever an user has to enter for the leave in the system, the system shows that there is a limited access of the license

NURSING AND ORDERING DEPARTMENT

Following were the issues observed

I. Medium

a. Speed- Speed of the HIS is slow which delays the procedure

b. Barcode printing- When an order is placed for lab investigation, the printed barcode numbers are not clear

II. Low

a. HIS login- Sometimes when the user try to login the HIS system with their respective GAA number, the user could not get login with their GAA number in the system

EMERGENCY DEPARTMENT

Following were the issues observed

I. Critical

a. Calls in night time- When an emergency patient comes in the emergency department in the night time, there are moments when IT department staff is not available to take the calls

II. High

a. System- One system in the emergency department is not working and even after the complaint is being launched, no action has been taken

III. Medium

a. Speed- Speed of the HIS is slow which delays the procedure

b. HIS- While working on the system, the system gets hanged in every 10 minutes in between the ongoing procedure

DISCHRGE CELL DEPARTMENT

Following were the issues observed

I. Critical

a. Discharge summary saving- After preparing a discharge summary when the summary is prepared and is asked for saving the summary, server down error occurs on a daily basis

II. High

a. HIS licence- Whenever the server gets up and the user have to re-login again, the system shows that HIS licence is exceeded

III. Medium

a. Licence- Whenever an user has to enter for the leave in the system, the system shows that there is a limited access of the license

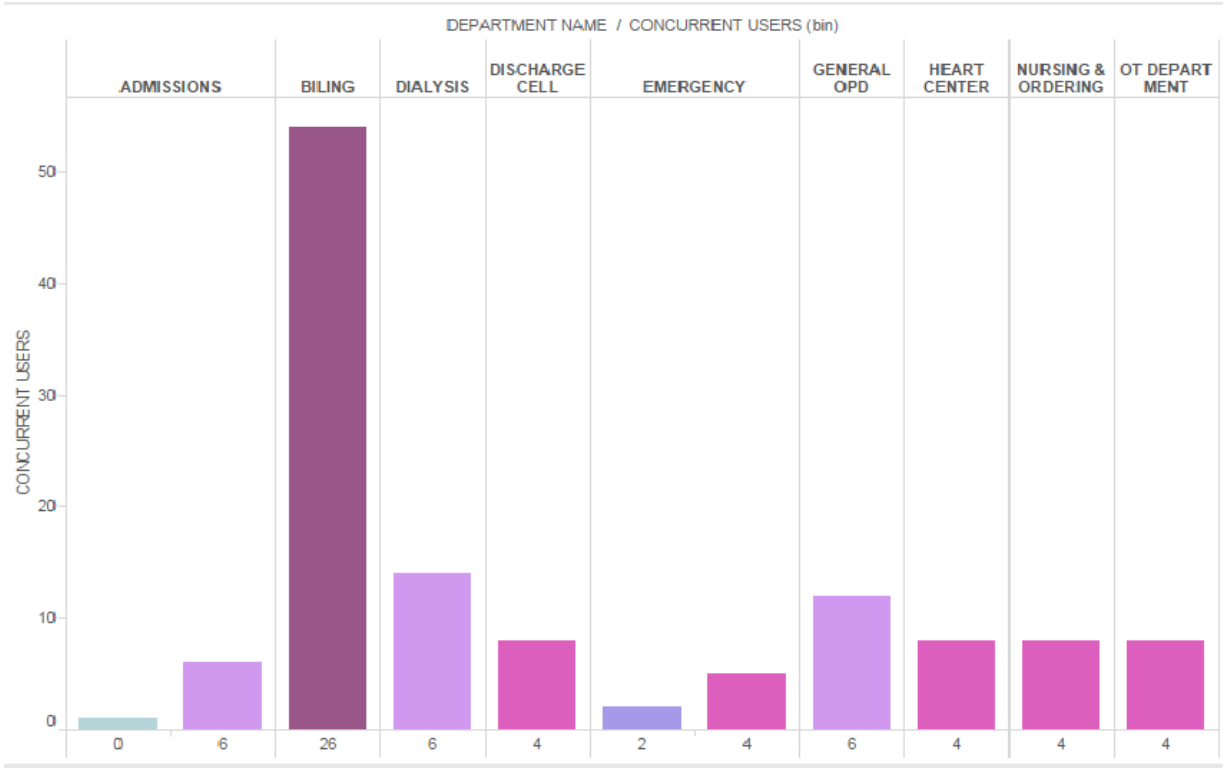
IV. Wishlist

a. Formatting the content- While preparing the discharge summary, the content cannot be made bold or underlined i.e. highlighting of the text cann't be done, so word features are required for better presentation of the discharge summary

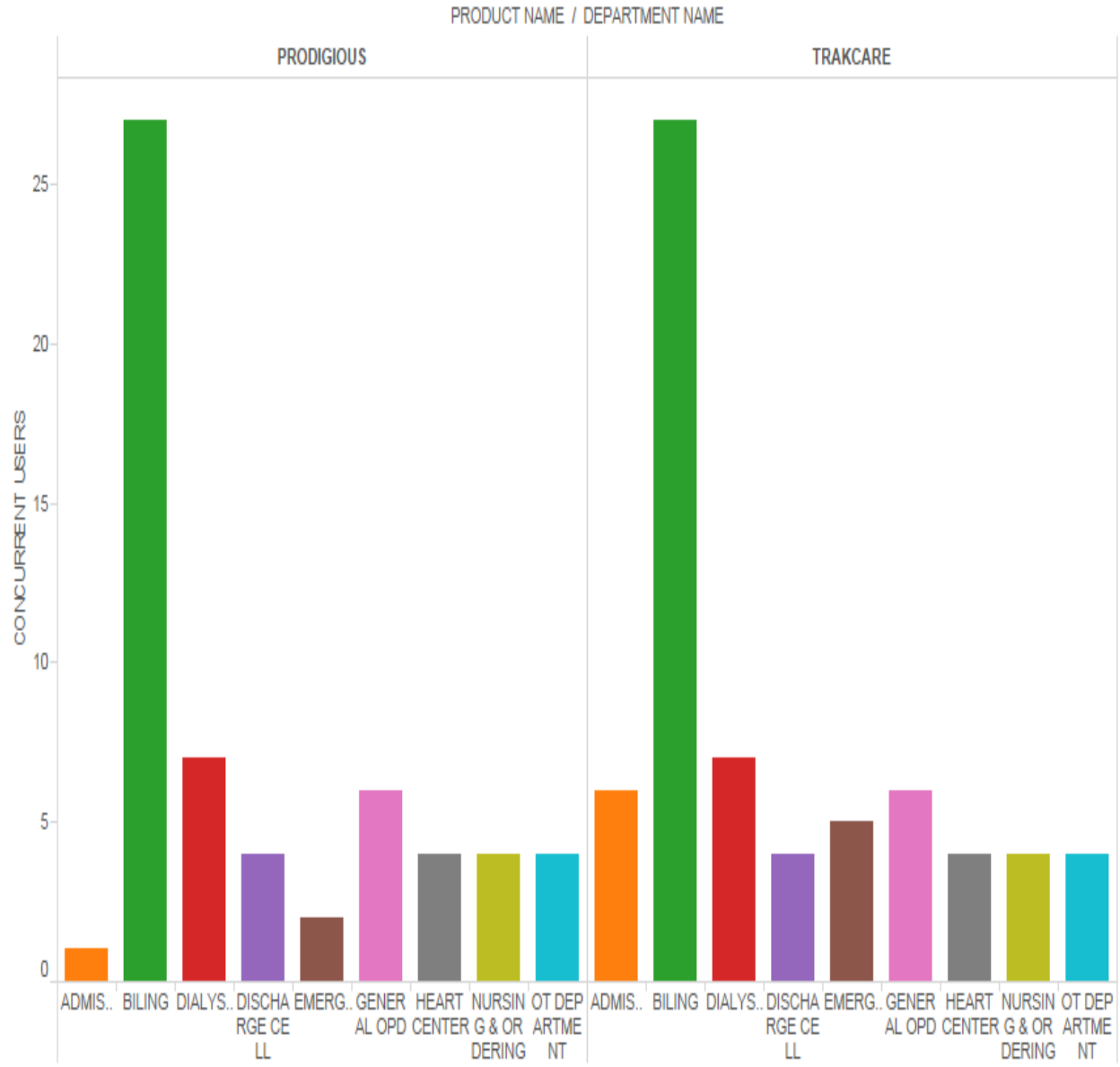
B. INFERENTIAL STATISTICS

Data gathered was not normally distributed for all type of inferential analysis.

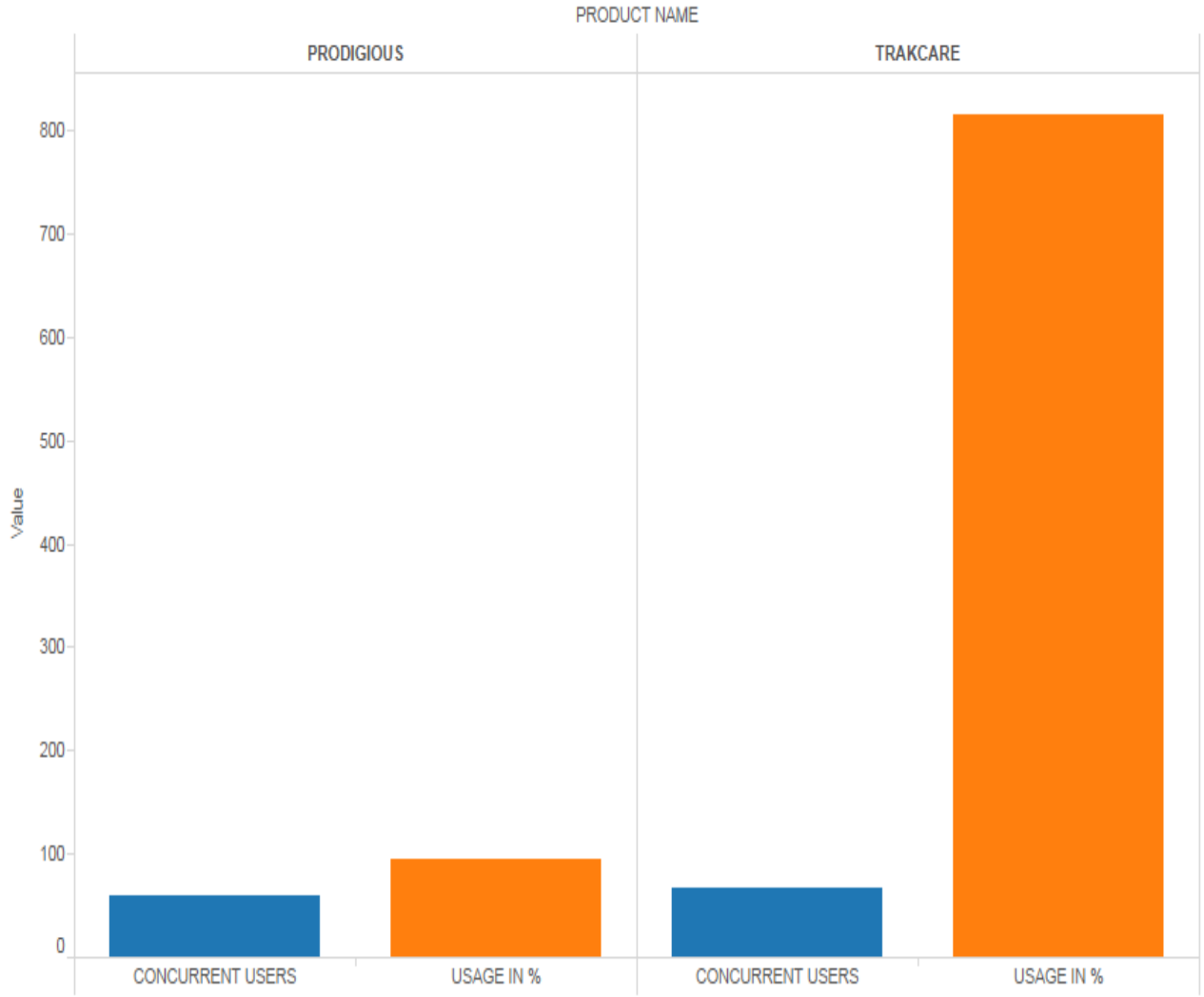
1. Department name and concurrent users



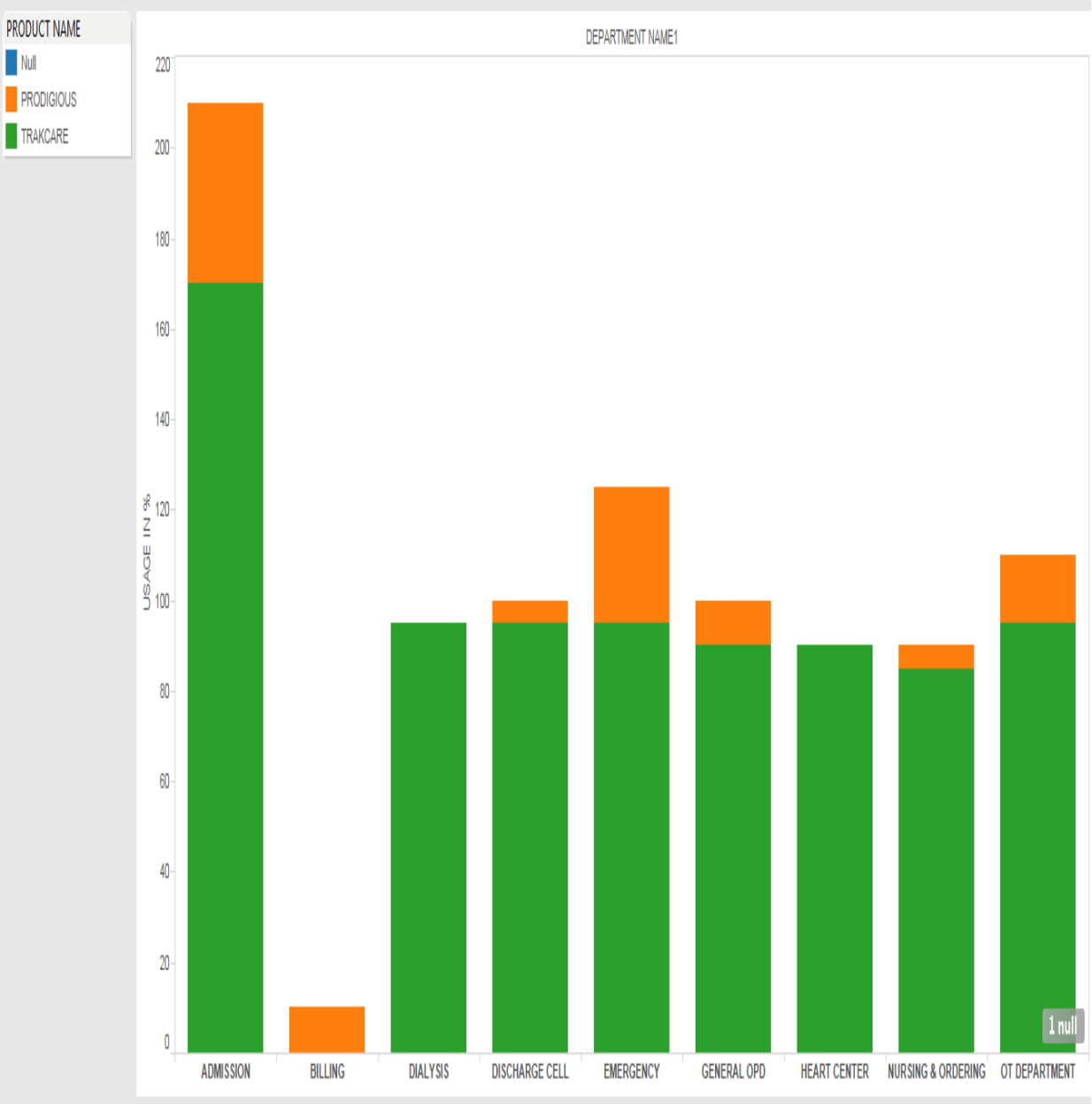
2. Department name alon with the product name



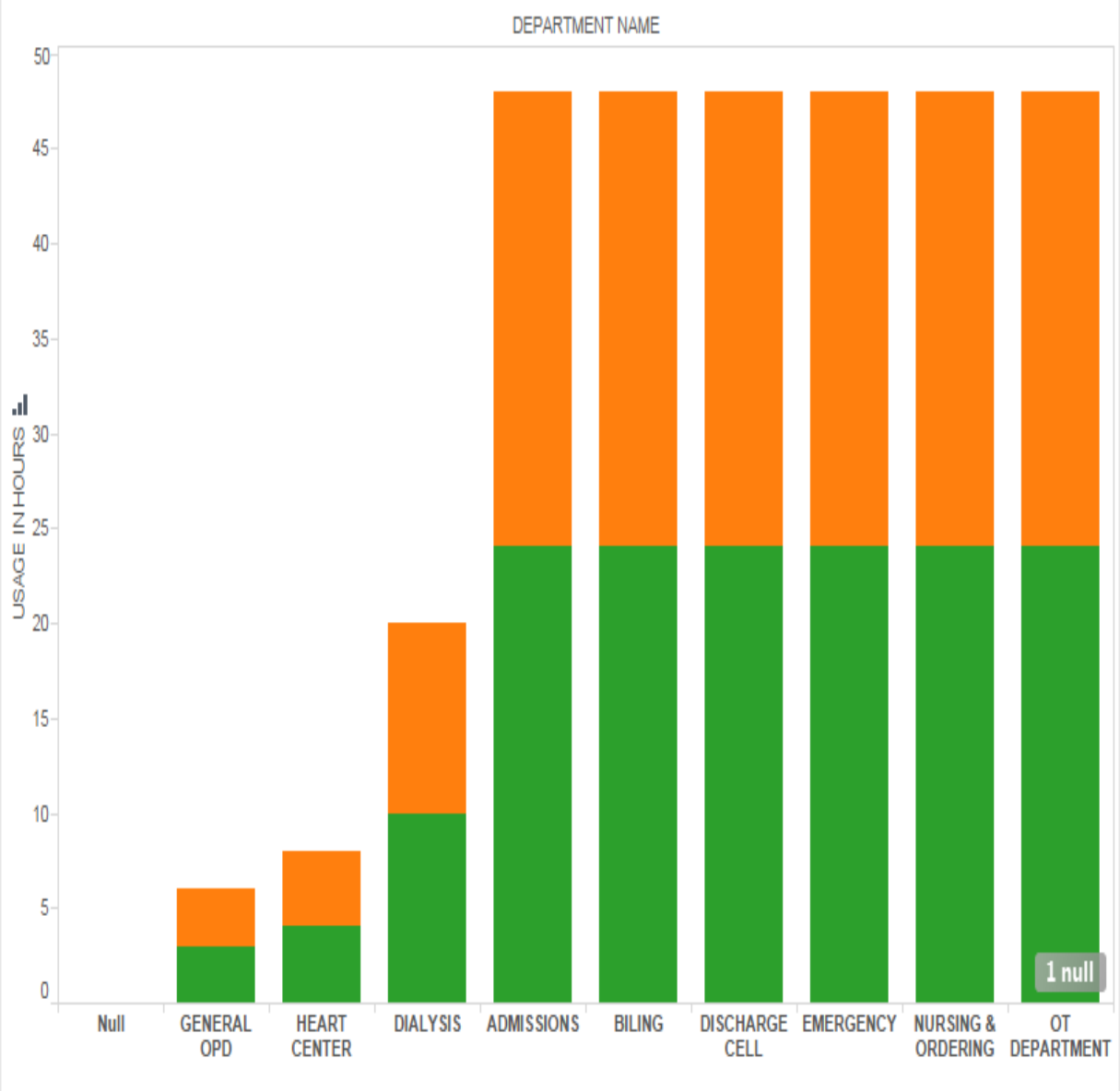
3. Concurrent users with product name usage



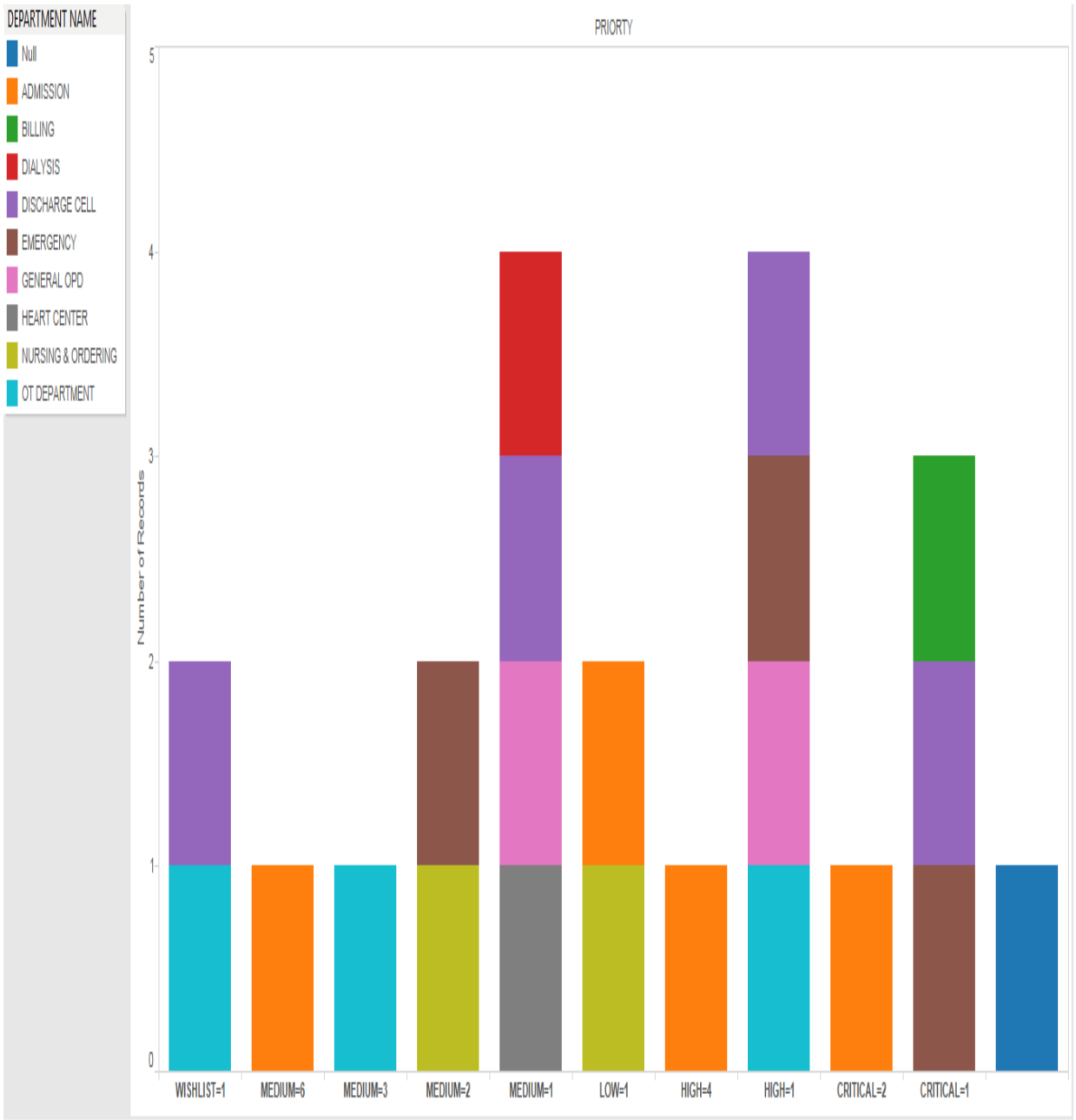
4. Department name with product name and usage in percentage



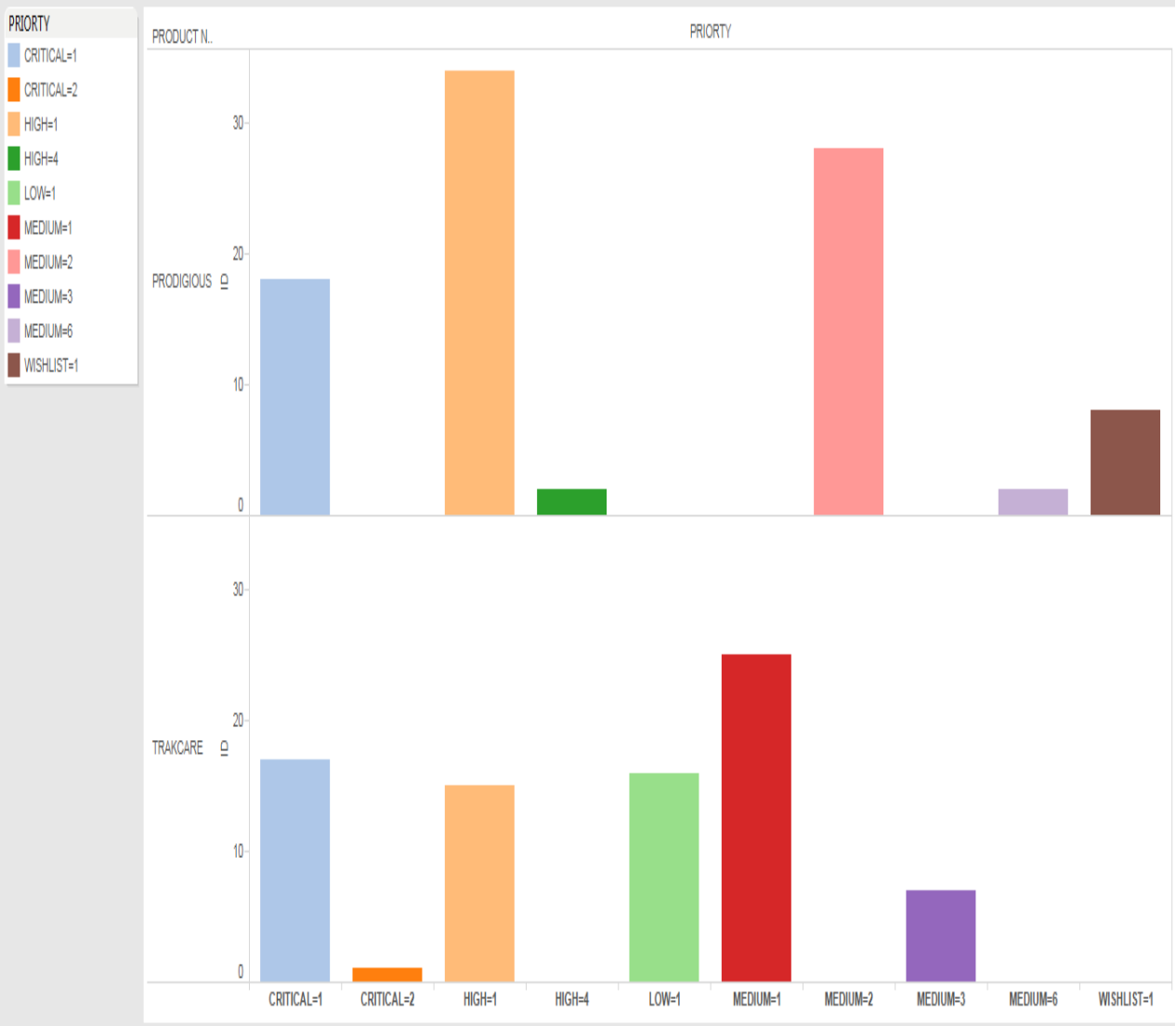
5. Product name with department name and usage in hours



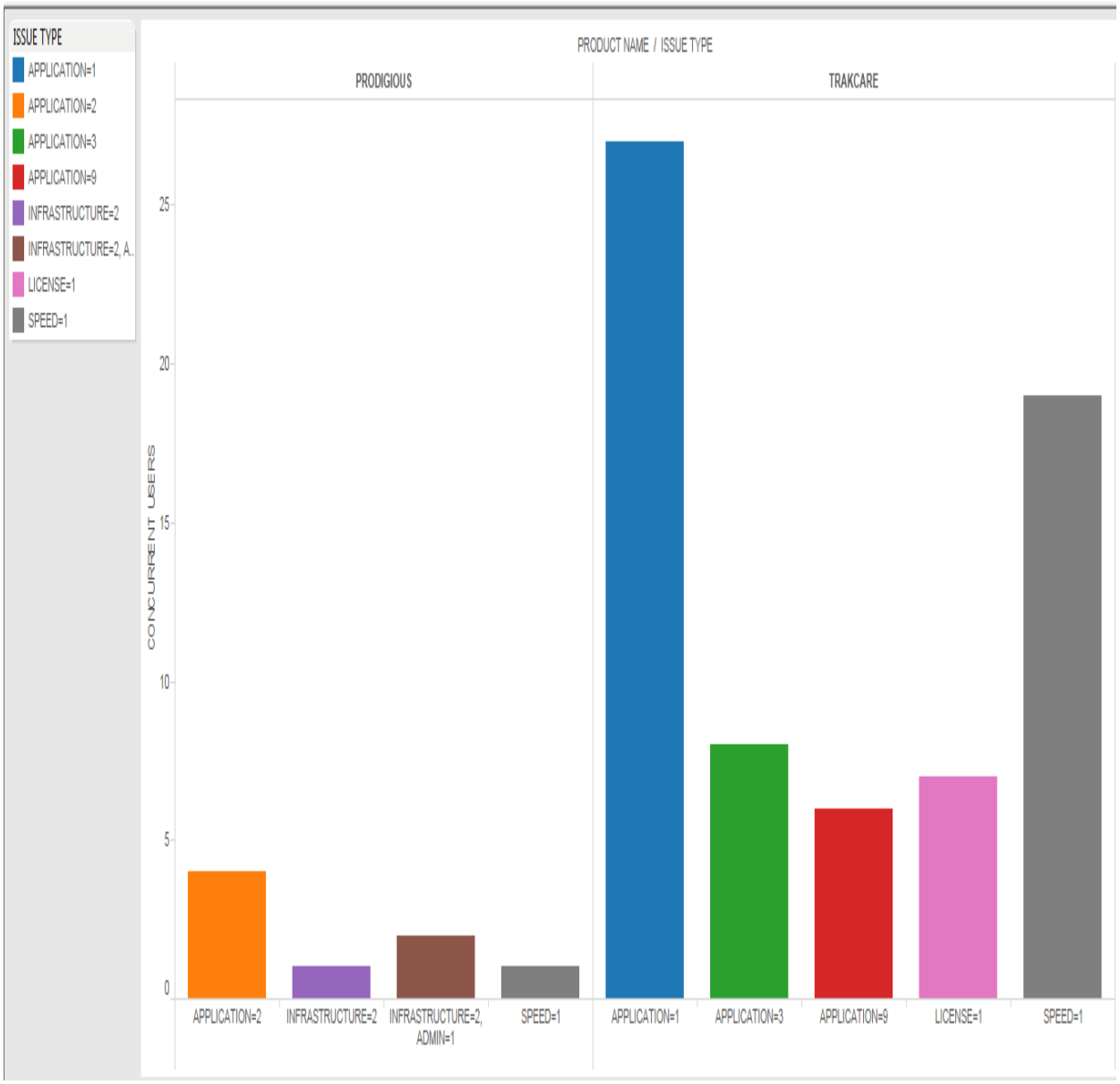
6. Priority basis in various departments



7. Priority distinguished with the product name



8. Product name with issue types



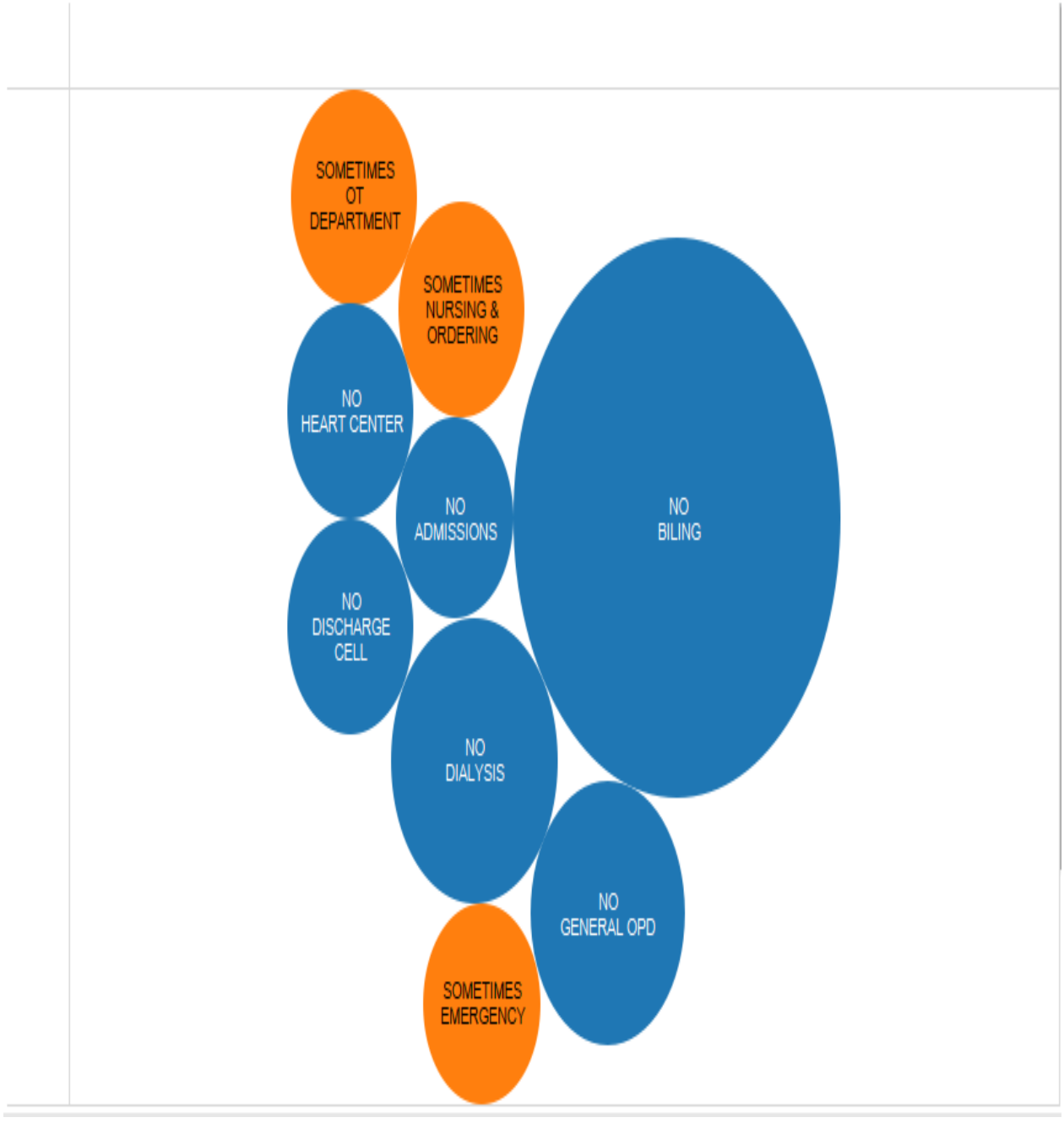
9. Speed issues

10. Training issues with department

`

11. Training issues with the product

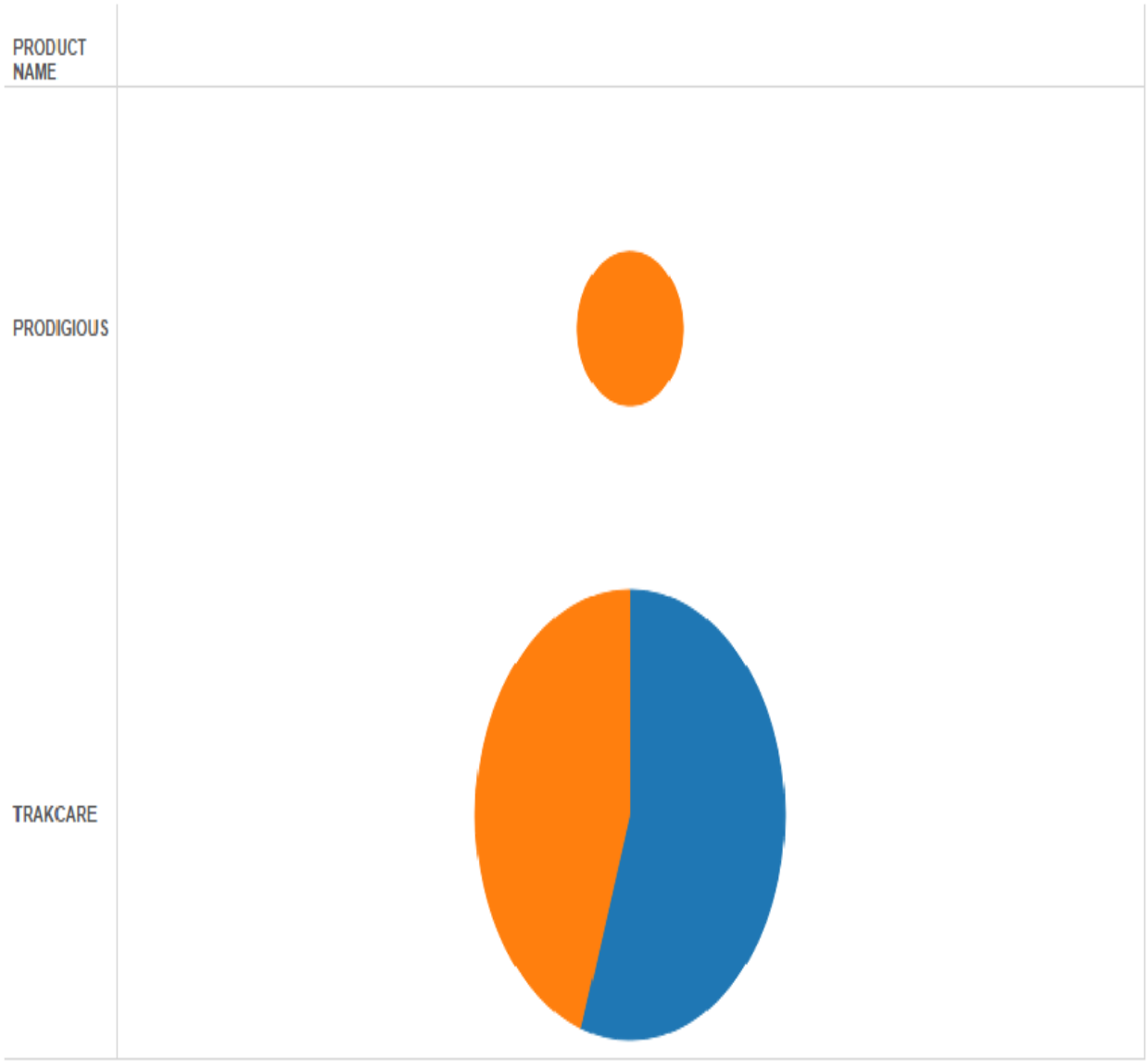
12. Communication issues with department



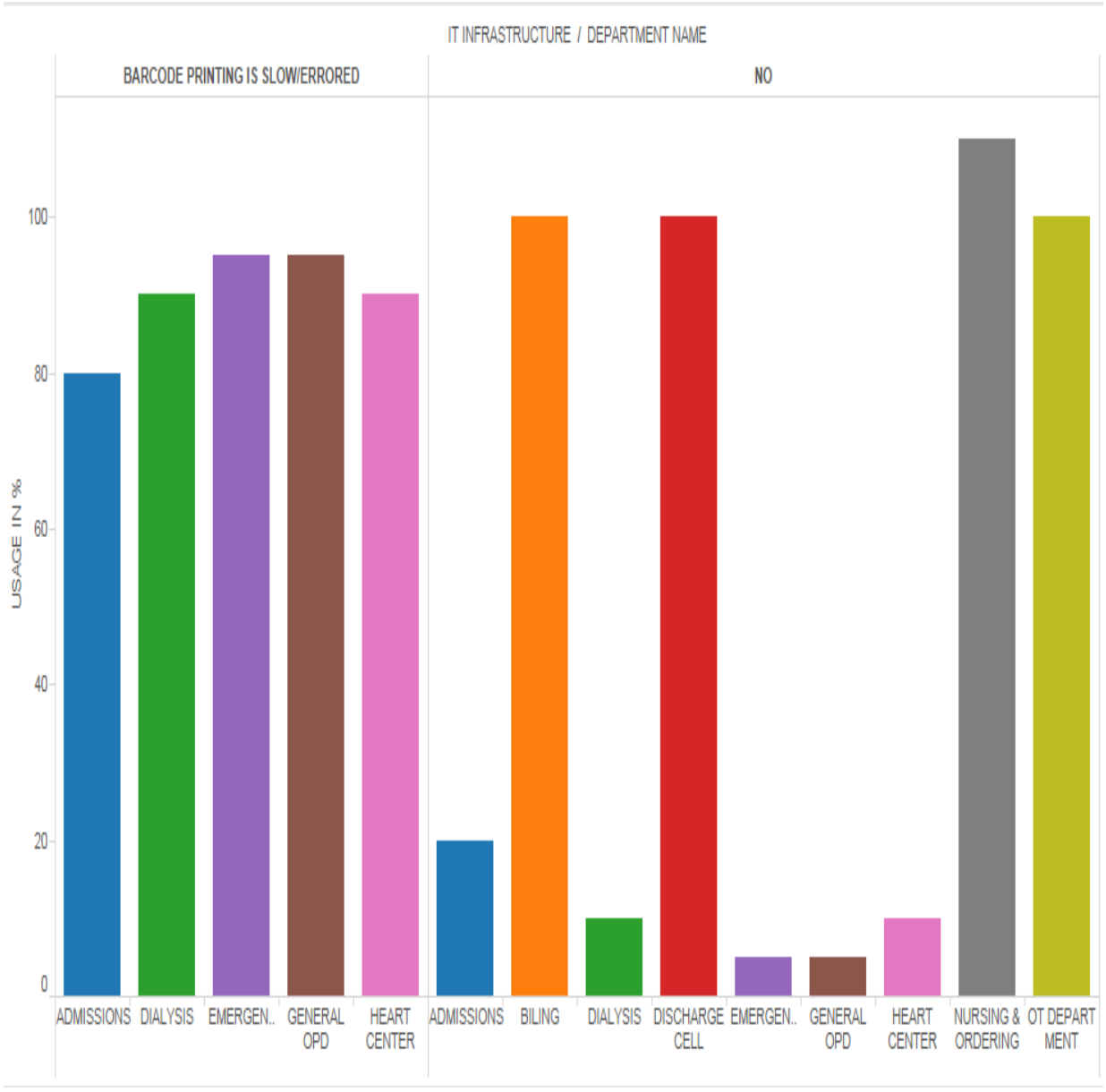
13. Communication issues with product

		COMMUNICATION	
PRODUCT N..	DEPARTMEN..	NO	SOMETIMES
PRODIGIOUS	ADMISSIONS	0	
	BILING	0	
	DIALYSIS	0	
	DISCHARGE CELL	0	
	EMERGENCY		0
	GENERAL OPD	0	
	HEART CENTER	0	
	NURSING & ORDERING		0
	OT DEPARTMENT		0
TRAKCARE	ADMISSIONS	0	
	BILING	0	
	DIALYSIS	0	
	DISCHARGE CELL	0	
	EMERGENCY		0
	GENERAL OPD	0	
	HEART CENTER	0	
	NURSING & ORDERING		0
	OT DEPARTMENT		0

14. IT infrastructure issues with product name



15. IT issues with department name



16. License issue

		LICENSE	
DEPARTMEN..	PRODUCT N..	NO	YES
ADMISSIONS	PRODIGIOUS		●
	TRAKCARE	●	
BILING	PRODIGIOUS	●	
	TRAKCARE	●	
DIALYSIS	PRODIGIOUS		●
	TRAKCARE	●	
DISCHARGE CELL	PRODIGIOUS	●	
	TRAKCARE	●	
EMERGENCY	PRODIGIOUS		●
	TRAKCARE	●	
GENERAL OPD	PRODIGIOUS	●	
	TRAKCARE	●	
HEART CENTER	PRODIGIOUS	●	
	TRAKCARE	●	
NURSING & ORDERING	PRODIGIOUS		●
	TRAKCARE	●	
OT DEPARTMENT	PRODIGIOUS		●
	TRAKCARE	●	

Analysis

- Possibility of misleading or confusing information leading to difficulty in retrieval of information
- Coinciding days with the other Doctor's days can be misleading and can create confusion in giving appointments to the patients
- It retards the admission procedure as the user has to wait for the webpage to reload again
- As there is no on time access the process is put on halt
- Due to slow speed of HIS the ongoing procedure gets postponed
- Due to this the bill is directly sent to the patient which creates unnecessary chaos between the admission and the billing department
- Doing the approval in two steps may get tedious and consumes an element of time
- As there is a mismatch among the bills there is a possibility of that patient may get charged for those materials or facilities which he has not used or vice-versa
- If the quantity does not match among the departments, then double verification is to be done which consumes an amount of time
- With no alerts in the system, there is manual procedure done for the verification of expiry date, which in turn gets tiresome and tedious work to be done by the employee
- With issues like this, the user may have trouble in recovering the data of the patient or data of any other patient may get interchanged
- Having a limited license limit may delay the procedure for filling the leave form and it may give an improper information regarding the employee's leave status

RECOMMENDATION

⇒ Prodigious is a product with lots of bugs in it.

⇒ Intersystem is known for its world-class product regarding hospital information system.

⇒ More number of license issues can be done to reduce the license issues.

⇒ Prodigious can be upgraded to the newer version.

LIMITATIONS

i. Time limit of the project was very limited

ii. Guest login id was not provided

iii. Few doctors were interviewed.

CONCLUSION

From admission to diagnostic and medical support services, the modern healthcare centre relies on wide range of software applications. Proper implementation of HIS modules will definitely leads to improved quality of patient care, communication, productivity and reduced costs, chances of error. Hospitals must therefore be prepared to offer medical services tailored to patients needs. It is also essential for the hospital management to conduct the assessment of HIS regularly by internal customers for incorporating custom technologies innovation and design to satisfy the external customer demands through seamless integration of HIS across all the department of the hospital.

Unstructured questionnaire

Sl No	Questions Asked
1	Name of the department
2	Number of Users
3	Key (Power) Users
4	Number of concurrent Users
5	Product usage (Name)
6	Product usage (Hours)
7	IT Infrastructure Issues
8	License Issues
9	Training Issues
10	Speed Issues
11	Suggestions if any
12	Communication Issues

REFFERNCES

WWW.GOOGLE.COM

www.wikipedia.com

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http://www.managementstudyguide.com/survey_method.htm

http://content.healthaffairs.org/content/31/11/2368.abstract?sid=f9547bbc-818a-424a-98f6-1e239abb36da

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