DISSERTATION

AT

UNITED HEALTH GROUP

GURGAON HARYANA

(FEB 28 – MAY 15, 2014)

Analysis of Change management training at go-live HMIS Implementation

In General Hospital Panchkula, Haryana

By

Devraj Singh Solanki

Under The Guidance

Dr. Anandhi Ramachandran

Post Graduate Diploma in Hospital and Health Management

2013-2015

International Institute of Health Management Research
New Delhi

TO WHOMSOEVER IT MAY CONCERN

This is to certify that Devraj Singh student of Post Graduate Diploma in Hospital and Health Management (PGDHM) from International Institute of Health Management Research, New Delhi has undergone internship training at United Health Group from 28/2/15 to 15/5/15

The Candidate has successfully carried out the study designated to him during internship training and his approach to the study has been sincere, scientific and analytical.

The Internship is in fulfillment of the course requirements.

I wish him all success in all his future endeavors.

Dr. A.K. Agarwal
Dean, Academics and Student Affairs
IIHMR, New Delhi

Dr. AnandhiRamachandran
IIHMR, New Delhi

Certificate of Approval

The following dissertation titled **"Haryana HMIS Implementation"** at **"United Health Group** is hereby approved as a certified study in management carried out and presented in a manner satisfactorily 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
Anandhi Ramachandran	
Manav Chaudhary	

Certificate from Dissertation Advisory Committee

This is to certify that **Mr. Devraj Singh Solanki,** a graduate student of the **Post- Graduate Diploma in Health and Hospital Management** has worked under our guidance and supervision. He/ She is submitting this dissertation titled " Haryana HMIS Implementation" at "United Health Group" 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.

Dr. Anandhi Ramachandran,
Associate Professor,

IIHMR, New Delhi

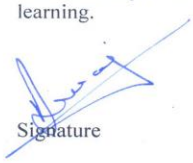
Mr. Syed Mubashshir Tirmizi,
Project Manager,

United Health Group

INTERNATIONAL INSTITUTE OF HEALTH MANAGEMENT RESEARCH, NEW DELHI

CERTIFICATE BY SCHOLAR

This is to certify that the dissertation titled Haryana HMIS Implementation in General Hospital and submitted by (Name) Devraj Singh Solanki Enrollment No. PG/13/016 under the supervision of Dr. AnandhiRamachandranfor award of Postgraduate Diploma in Hospital and Health Management of the Institute carried out during the period from 28th Jan. 2015 to 30th Apr. 2015 embodies my original work and has not formed the basis for the award of any degree, diploma associate ship, fellowship, titles in this or any other Institute or other similar institution of higher learning.



Signature

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FEEDBACK FORM

Name of the Student: Mr. Devraj Singh Solanki

Dissertation Organization: United Health Group

Area of Dissertation: Implementation of HMIS in General Hospital in Panchkula –Haryana.

Attendance: 100%

Objectives achieved: Mr. Devraj Singh Solanki is now familiar with Hospital Management Information System Implementation. Additionally, he also knows about the incident and change management process followed by during the course of HMIS Implementation.

Strengths: Mr. Devraj Singh Solanki has perform exceptionally well during his internship period. He is quick lerner and has strong analytical skills, he quickly picked up hospital management information system implementation process and configuration. In addition, he is a good team player – he has helped in organizing monthly team events.

Suggestions for Improvement: Mr. Devraj Singh Solanki should try and improve his business communication skills as it will be and integral part of his daily work in future .

Date:
Place:

Akhil Sheokand

Mr. Akhil Sheokand
Training Head
United Health Group

To Whom It May Concern

This is to certify that Mr. Devraj Singh Solanki was on fixed term internship from 28/2/15 to 15/5/15. He has successfully completed his internship in Haryana HMIS Implementation.

We wish you the very best in your future endeavor.

Yours truly,

Mr. Syed Mubashshir Tirmizi
Project Manager
United Health Group

Index

Introduction

A “HOSPITAL MANAGEMENT INFORMATION SYSTEM” is a computerized management system. This management system has been developed to form whole management system including Employees, Doctors, Nurses and Patients Bills. The proposed system will keep track of Employees, Doctors, Patients, Accounts and generation of reports regarding the patient status. This project has GUI based software that will help in storing, updating and retrieving the information through various users – friendly Role based modules.

Hospital are the essential part of our lives, providing best medical facilities to people suffering from various ailments, which may be due to change in climatic conditions, increased work-load, emotional trauma stress etc. It is necessary for the hospitals to keep track of its day-to-day activities & records of its patients, doctors, nurses, ward boys and other staff personals that keep the hospital running smoothly & successfully.

But keeping track of all the activities and their records on paper is very cumbersome and error prone. It also is very inefficient and a time-consuming process Observing the continuous increase in population and number of people visiting the hospital. Recording and maintaining all these records is highly unreliable, inefficient and error-prone. It is also not economically & technically feasible to maintain these records on paper.

Thus keeping the working of the manual system as the basis of our project. We have developed an automated version of the manual system, named as “Hospital Management System”.
The main aim of our project is to provide a paper-less hospital up to 90%. It also aims at providing low-cost reliable automation of the existing systems. The system also provides excellent security of data at every level of user-system interaction and also provides robust & reliable storage and backup facilities.

The project “Hospital management system” is aimed to develop to maintain the day –to-day state of admission/discharge of patients, list of doctors, reports generation, and etc. It is designed to achieve the following objectives:

1. To computerize all details regarding patient details & hospital details.
2. Scheduling the appointment of patient with doctors to make it convenient for both.
3. Scheduling the services of specialized doctors and emergency properly so that facilities provided by hospital are fully utilized in effective and efficient manner.
4. If the medical store issues medicines to patients, it should reduce the stock status of the medical store and vice-versa.
5. It should be able to handle the test reports of patients conducted in the pathology lab of the hospital.
6. The inventory should be updated automatically whenever a transaction is made.
7. The information of the patients should be kept up to date and there record should be kept in the system for historical purposes.

Problem Statement

Since HOSPITAL is associated with the lives of common people and their day-to-day routines so I decided to work on HMIS Implementation project.

The manual handling of the record is time consuming and highly prone to error. The purpose of this project is to automate or make online, the process of day-to-day activities like Room activities, Registration, Admission of New Patient, Discharge of Patient, Assign a Doctor, and finally compute the bill etc.

1. HIS in Haryana is still in the first phase of its implementation. GH Panchkula early system implementation phase is very critical. During this phase, there are many changes occurred when a new system is introduced such as HIS, there will be changes in the way of the medical staff performing their tasks. Thus, bad management during the changes can cause users' resistance towards the new system implemented. Besides, we also found that the level of resistance towards new system implementation was quite high as they were familiar with manual practices. We found that medical staffs, especially doctors negatively acted in response to new technology introduced, medical staffs tend to resist and look at the new system as a threat that could affect their work and potential.
2. Some Medical and Paramedical staff not interested to use HMIS system.

Scope of the Project

Healthcare aspect is vital in daily lives where most people nowadays prefer to find a hospital that offers better healthcare services. People's demands for good-quality services provided by hospitals drive these organizations to improve their services by adopting Information System (IS). In the context of hospital environment, the adoption of IS is quite tremendous since many hospitals are able to increase their services to high quality level for competing with other healthcare entities. IS adoption has been increasing from year to year in India. Many healthcare entities are found to improve their hospital services by managing the quality of services delivered. Nevertheless, adoption of IS in many local hospitals in Haryana is still at an early stage. Therefore, this research helps to explain more about IS, consequently, able to give some understanding of its operations as well as its implementation and also give the understanding about how manage the change in Hospital and work process through the HMIS and make system adaptable for end user in the hospital and how make them confident about work on system.

Review of Literature

HOSPITAL INFORMATION SYSTEM (HIS) IMPLEMENTATION IN A PUBLIC HOSPITAL: A CASE STUDY FROM MALAYSIA

Hospital and IS Hospitals around the world have widely utilized IS for over 30 years. IS for many hospitals in US and UK have been automated since the emergence of IBM systems. For example, US government has made the adoption of the electronic medical records as mandatory to all healthcare providers by 2014 (RAND Health 2005). Besides that, the emergence of the technology evident the adoption of the systems has taken place across hospitals in most countries like USA (Smith and Swineheart 2001; Trimmer et al. 2002; Ovretveit et al. 2007; Meinert and Peterson 2009; Caccia-Bava et al. 2009; Lee and Meuter 2010), England (Procter and Brown 1997), Egypt and Jordan (Zineldin 2006; Hammad et al. 2010), Scotland (Walsh et al. 2010) and New Zealand (Lowe 1999). At the beginning of IS implementation, it focused only on improving efficiencies in accounting function such as billing and financial reporting (Trimmer et al. 2002). Far East Journal of Psychology and Business Vol. 8 No. 3 Sep 2012 3 However, as the need to manage and integrate clinical, financial and operational information grows and evolves, HIS gives many benefits such as it could provide the best possible support of patient care and administration by electronic data processing (Ammenwerth, Kaiser, Wilhelmy and Hofer 2003). Realizing these benefits, MOH pioneered HIS project in hospitals around Malaysia, including Terengganu, Pahang and Sarawak. The adopted HIS is the systems that can help the selected hospitals to become the benchmark of modern, automated hospitals and realize the goals of becoming a model "e-hospital" in Malaysia. Hospital Information System (HIS) Hospitals are information-intensive organizations and pay a great attention on information management and processing, which have to be carried out using appropriate IS. HIS is a computer-based system designed to assist the management of the administrative and medical information within a hospital (Trimmer et al. 2002). It helps to improve operational efficiency, care quality and more informed decision making. According to N.ghosh (2010), the systems give comfortable access to patient data. The increasing customers' expectations and regulatory requirements also lead to the need for clinical information and administrative tools that can be immediately accessible. It has been further stated by Lee and Meuter (2010), that efficiency is achieved through the use of the system that allows users to obtain patient critical information as soon as it is needed. Furthermore, by improving operation efficiency, the application of the systems could also reduce the costs (Spathis and Ananiadis 2005). As supported by Hegji et al. (2007) serving patients with quality of care would be worth for better return in the future. Additionally, by providing accurate and reliable information, the use of the system could enhance decision making (Spathis and Ananiadis 2005).

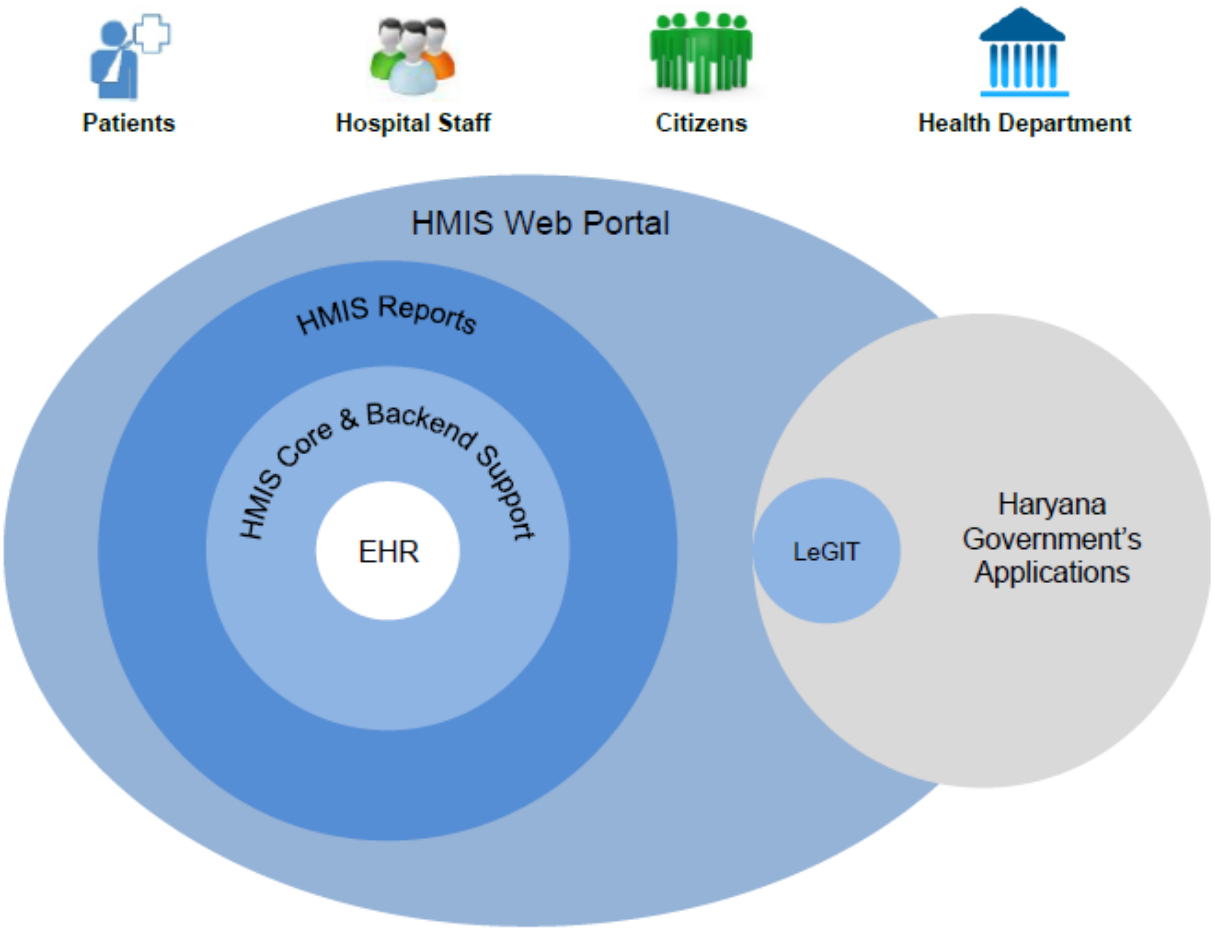
It is also noted in the study conducted by Ashcroft (1998) found that users in healthcare services had clearly perceived the significant impact of the system on their decision making. Despite its widely accepted benefits, HIS adoption is still at a slow pace in certain countries due to lack of computer skills and training (Meinert and Peterson 2009). The inability of individual user to facilitate their knowledge in the systems application has caused significant barriers to wider adoption of HIS. This is argued by Caldeira and Dhillon (2010) by listing 17 facilitating competencies in delivering IS benefits, which is among all are, ability to ensure user application knowledge and provide ongoing IS training.

Users acceptance towards the system

The role of IS has led to many changes, and it creates more opportunities for those who adopt and utilize it. Even though IS seems to provide many benefits, the increase of rate in its adoption is influenced significantly by its users (Stefanou and Revanoglou 2006). Therefore, users' acceptance towards the systems is an important aspect. Since IS is usually adopted as a result of environmental changes, economic pressure, competition and organizational change, thus many unable to manage it appropriately in order to get the best output from it. Some rather prefer to stick to manual systems because of several factors such as strong resistance to adapt, effect on job practices, as well as training and skills. According to Aggelidis and Chatzoglou (2008), perceived usefulness and ease of use are two fundamental factors in evaluating technology acceptance by users. Basically, users are more open to a new system when they become familiar with the function and could witness benefits from it (Stefanou and Revanoglou 2006). It is further noted that the system should provide more managerial involvement in the implementation, facilitate research needs, act as a protection against future complaints, and as the measurement of professional hierarchy (Darr et al. 2003).

Background of the Project

The HMIS will is required to be centrally deployed out of a datacenter. It will be accessed from various types of hospitals (e.g. District Hospitals, Sub District Hospitals, PHCs and CHCs through secure web access for various purposes by patients, hospital staff, citizens and health department. The solution will provide end-to-end workflow for hospital information system catering to healthcare service, as well as Infrastructure and administrative services. At a high level, the complete solution can be viewed as being composed of concentric rings. Each outer ring builds on the functionality provided by the inner rings.



The following are the rings that make up the complete solution.

1. **EHR:** The Patient EHR (Electronic Health Record) is at the core of the solution. It will be accessible across all the facilities of the state. The patient will be identified by a unique UHID across all facilities.

2. **HMIS Core Application and the Backend Support Functions**: It will be accessed across all facilities using a web browser. This will provide a unified platform for coordinating the resources and workflows across all the facilities. The patient will be at the core of these modules. The health information recorded at various touch points during the patient's visits at the hospital will be collated into the EHR.

3. **Reports**: This layer presents the specified list of MIS Reports that are built on top of the data that is gathered by the enclosed HIS System.

4. **Haryana Government's Applications:** These are existing systems such as SRDB, IdM, Birth and Death, Referral Transport System, etc. or future systems such as SSDG, State Portal, etc. The HIS application communicates with these applications using the LeGIT interface framework, provided by Haryana.

The important applications to interface with are SRDB and IdM. SRDB is a citizen's database which will need to be queried to load Patient's demographic information. IdM is the single point of authenticating a user for HMIS.

5. **HIS Web Portal:** The Web Portal displays static information as well as dynamic information from the HIS Application, the MIS Reports and selected reports/documents from Haryana's existing and future applications.

Executive Summary

Hospital Information System; HIS is comprehensive, integrated information systems designed to manage the medical, administrative, financial and legal aspects of a hospital and its service processing. Traditional approaches encompass paper-based information processing us well as resident work position and mobile data acquisition and presentation.

ADVANTAGES OF HOSPITAL INFORMATION SYSTEM

- HIS is based on the exemplar of a centralized information system designed for quick delivery of operational and administrative information.
- The administration can actively use HIS for monitoring and controlling the quality of patient care.
- Helps in providing improved clinical outcomes and better diagnosis and care to the patients.
- The administrative and supply chain modules improve productivity and efficiency, driving down costs and waste.
- Assesses the performance of the medical staff; in keeping track on how hospita1's resources are being put to use.
- Gathering data for short term and long term decisions
- Prompt and reliable information storage, querying and retrieval
- A data ware house of such records can be utilized for statistical requirements and for research.

Activity allocation (Pert Chart in Appendix):

A PERT chart is a project management tool used to schedule, organize, and coordinate tasks within a project. PERT stands for Program Evaluation Review Technique, a methodology developed by the U.S. Navy in the 1950s to manage the Polaris submarine missile program. A similar methodology, the Critical Path Method (CPM) was developed for project management in the private sector at about the same time.

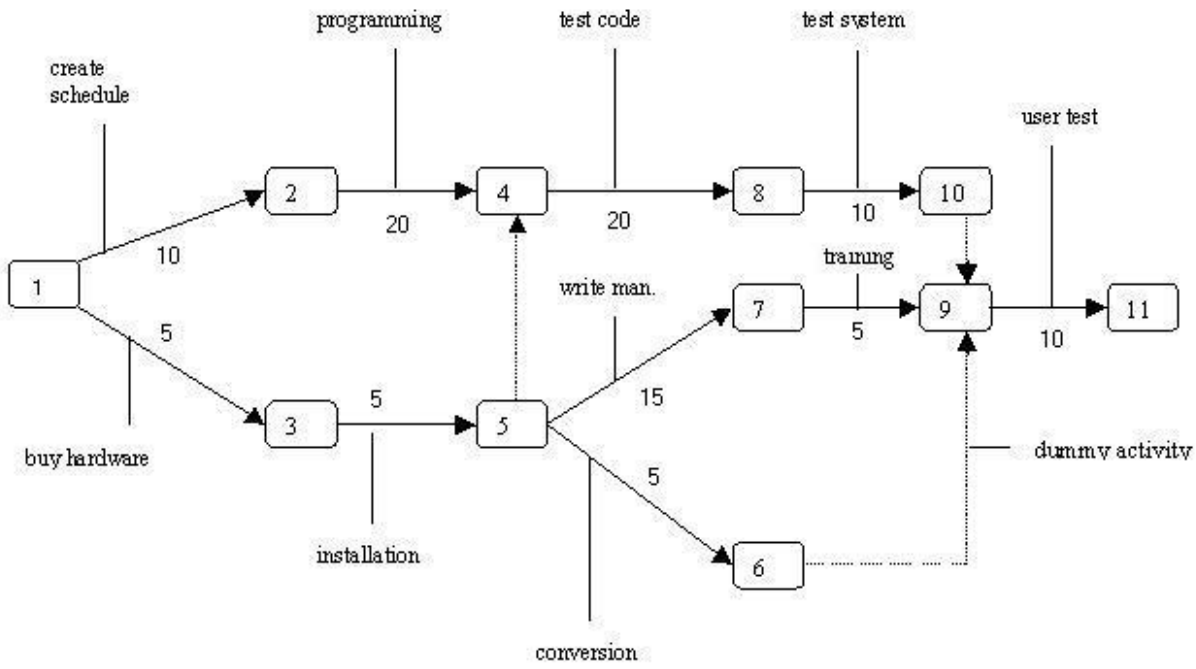


Fig. 1:
PERT Chart

* Numbered rectangles are nodes and represent events or milestones.
* Directional arrows represent dependent tasks that must be completed sequentially.
* Diverging arrow directions (e.g. 1-2 & 1-3) indicate possibly concurrent tasks
* Dotted lines indicate dependent tasks that do not require resources.

A PERT chart presents a graphic illustration of a project as a network diagram consisting of numbered nodes (either circles or rectangles) representing events, or milestones in the project linked by labelled vectors (directional lines) representing tasks in the project. The direction of the arrows on the lines indicates the sequence of tasks. In the diagram, for example, the tasks between nodes 1, 2, 4, 8, and 10 must be completed in sequence. These are called dependent or serial tasks. The tasks between nodes 1 and 2, and nodes 1 and 3 are not dependent on the completion of one

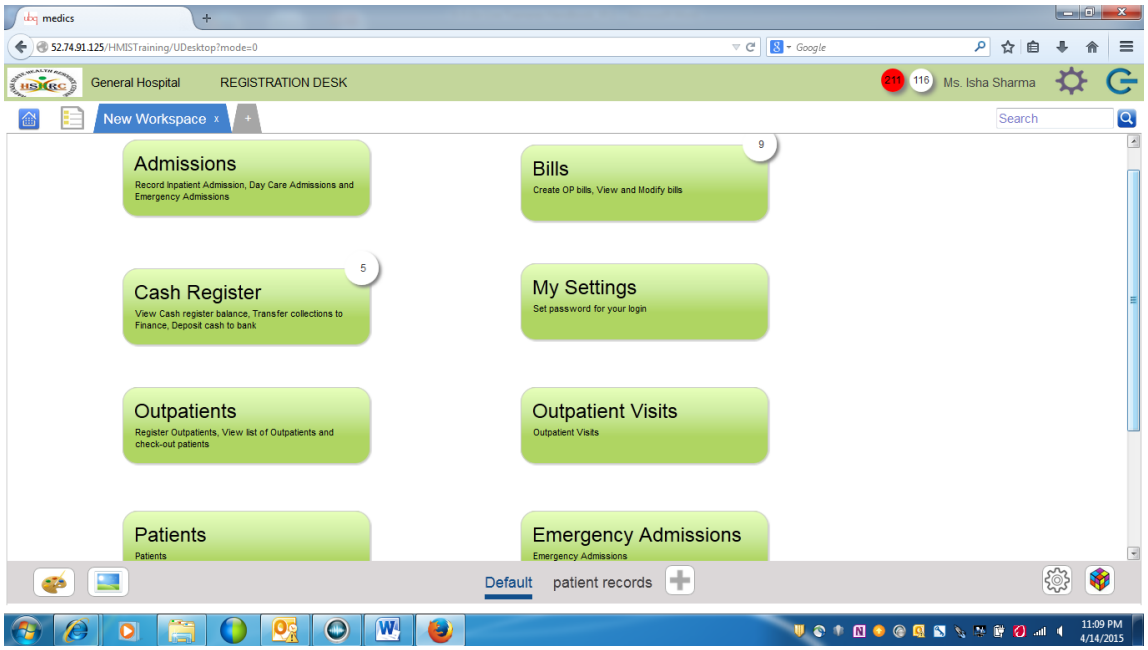
to start the other and can be undertaken simultaneously. These tasks are called parallel or concurrent tasks. Tasks that must be completed in sequence but that don't require resources or completion time are considered to have event dependency. These are represented by dotted lines with arrows and are called dummy activities. For example, the dashed arrow linking nodes 6 and 9 indicates that the system files must be converted before the user test can take place, but that the resources and time required to prepare for the user test (writing the user manual and user training) are on another path. Numbers on the opposite sides of the vectors indicate the time allotted for the task.

1. Log In

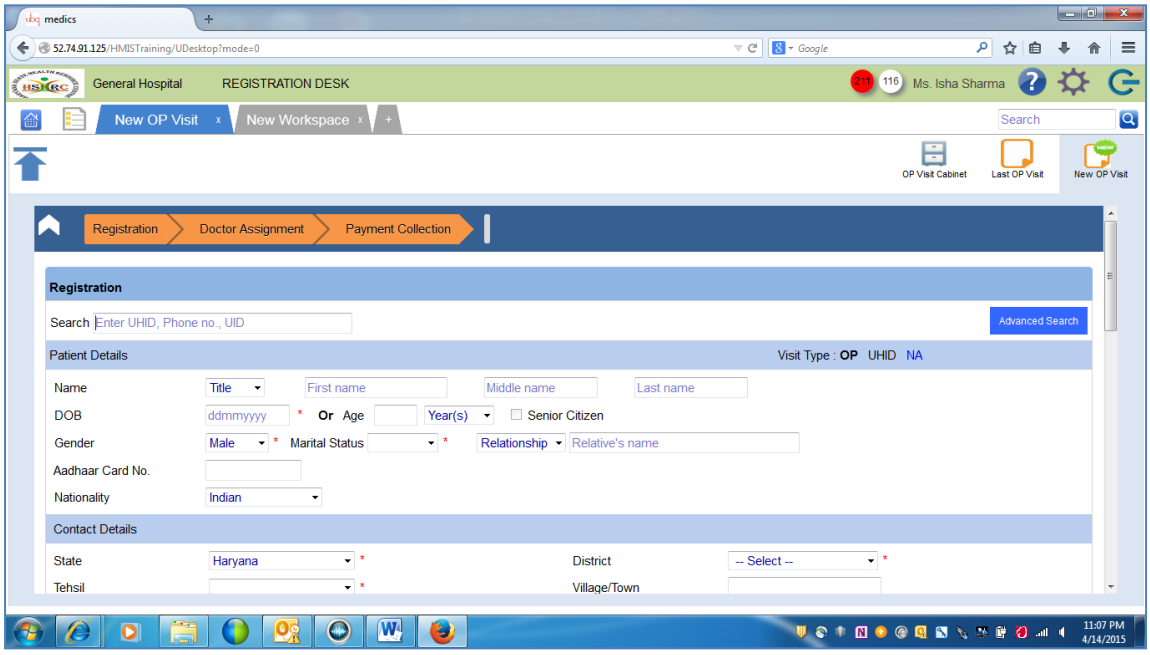
- **Browse http://52.74.91.125/HMISTraining/Login**
- **Select your location**
- **Enter User Name & Password**
- **Select Sign In**

2. Registration

2.1. Registering a New Patient

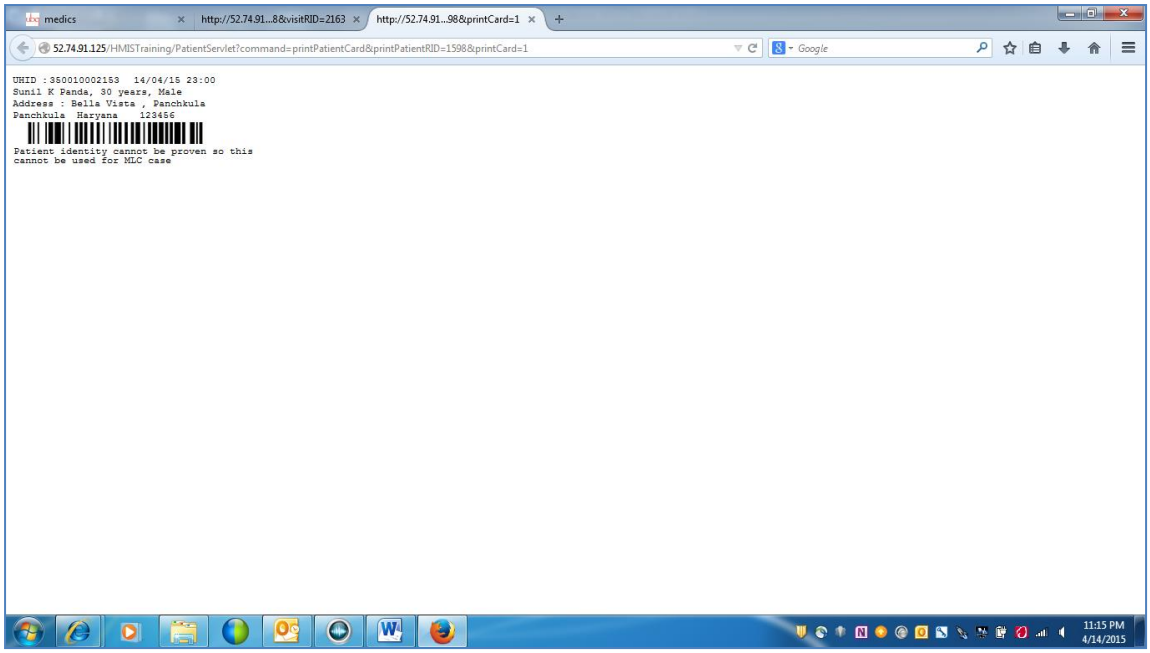


- **Open a New Workspace**
- **Select Outpatient Visit**



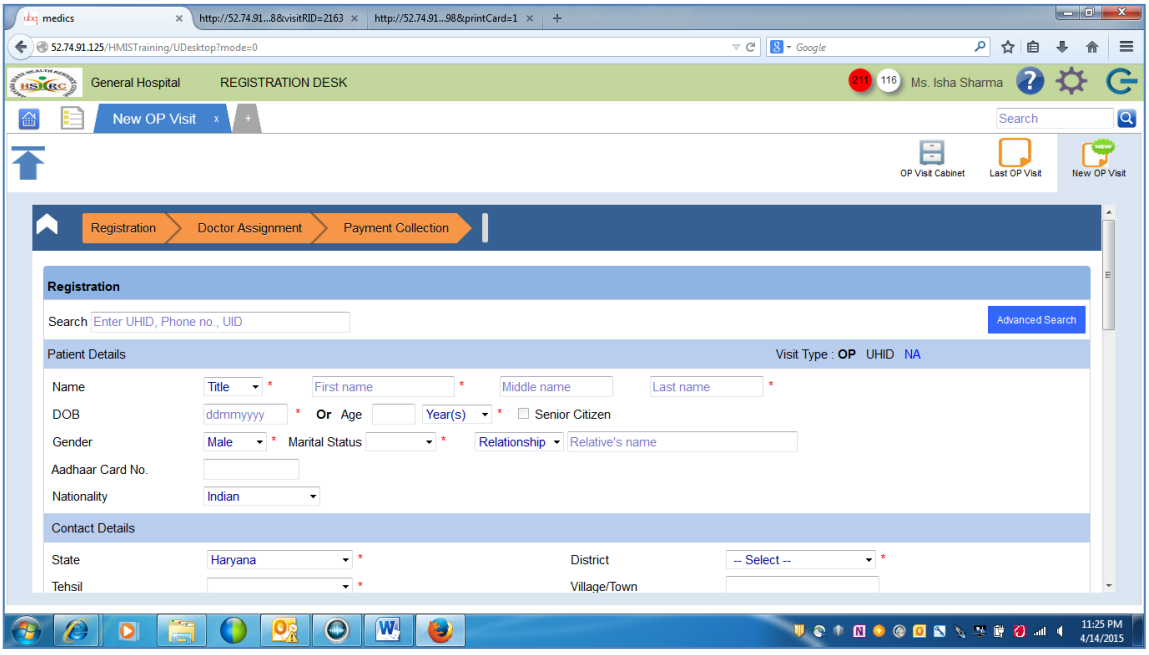
- **Select New OP Visit**
- **Enter mandatory data for the sections - Patient Details, Contac Details, Patient Classifications, Doctor Assignment and Payment Collections**
- **Select Save**

- **Patient UHID and Token for doctor consulation get auto generated**

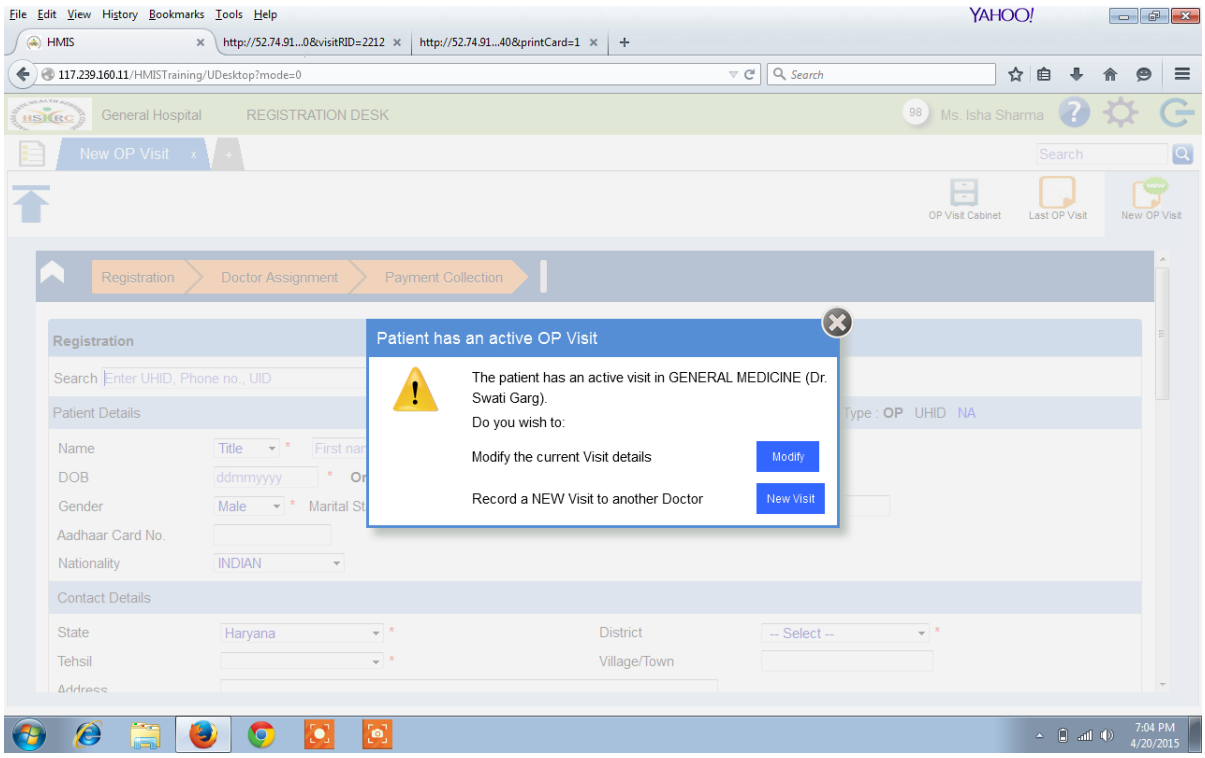


- **Print UHID label**
- **Print Token for doctor consultation**

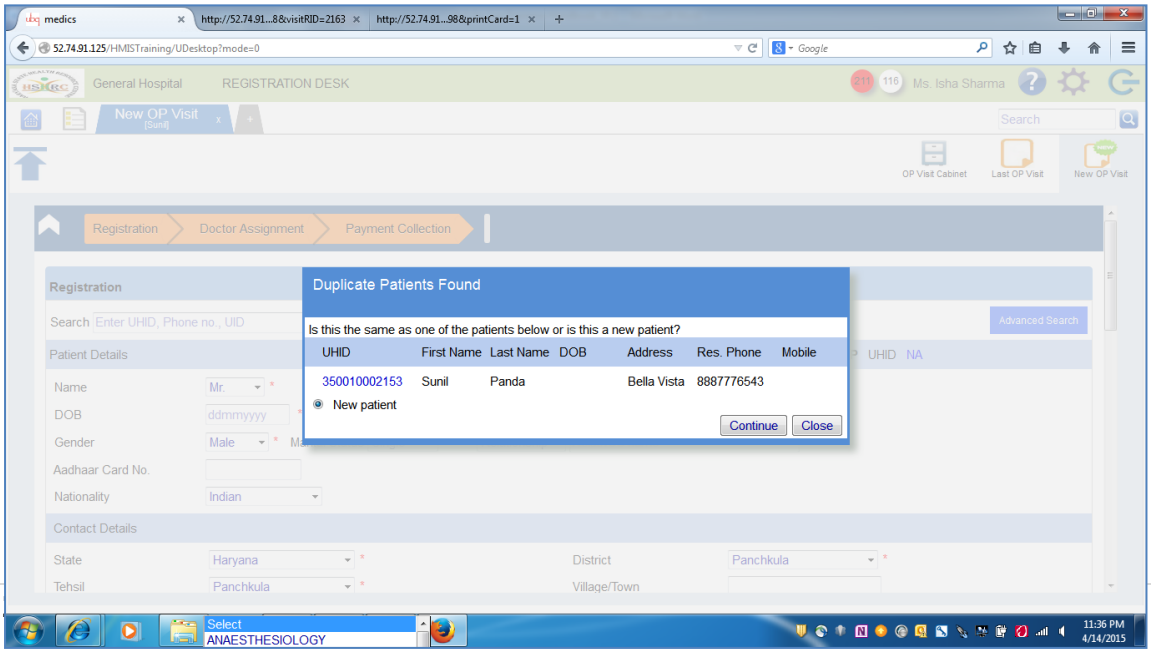
2.2. Revisit of an Existing Patient



- **Search existing patient by his/her UHID or through various options provided in advanced search option**
-



- **Select from the options – Modify or create New visit**
- **Modify - Update patient details and save**
- **Create Revisit – System dispalys the earlier Speciality and Doctor by default. Change specialty and Doctor as desired**
- **Save**
- **Token number auto generated for the revisit**
- **Print token number**

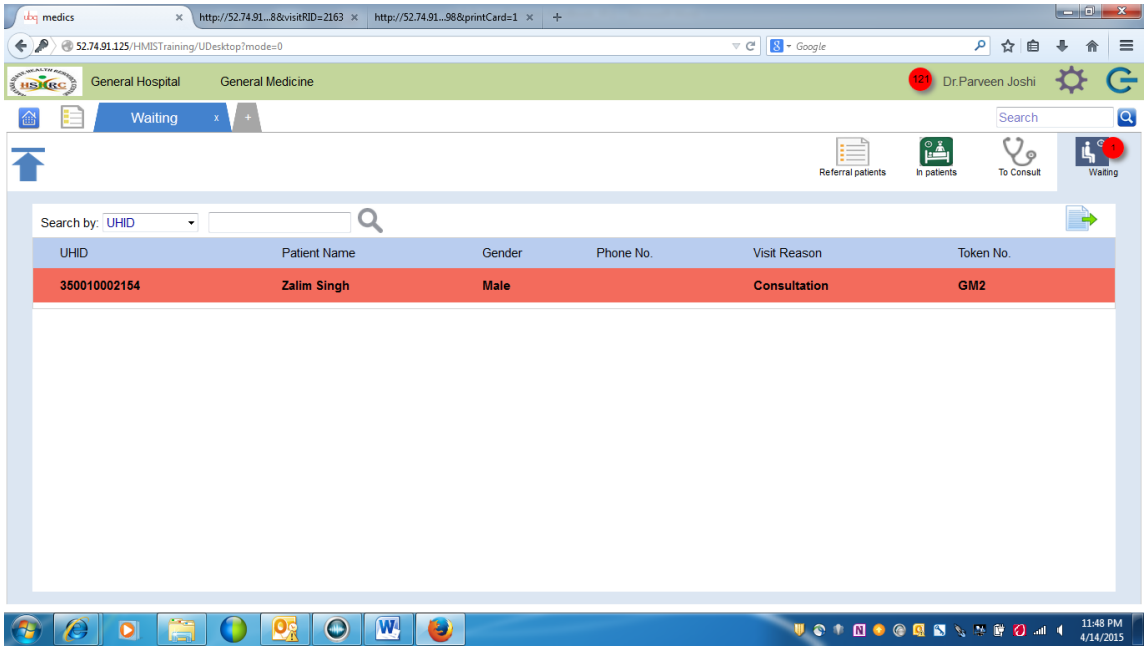


2.3. Check for Duplication

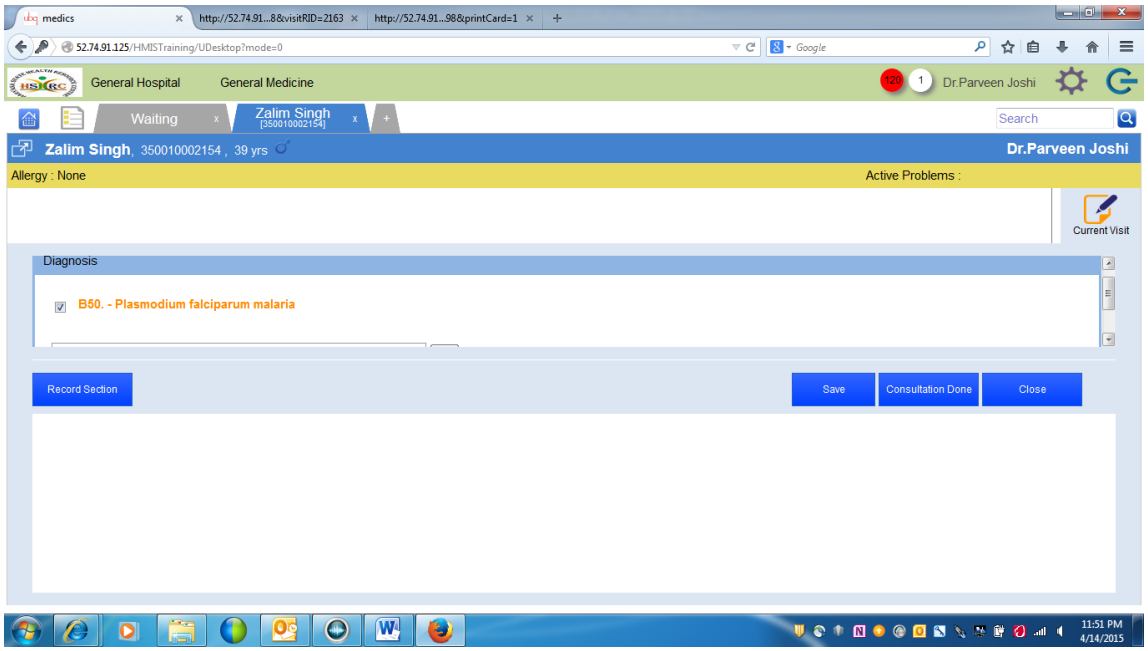
- **System provides a pop up when similar data like Name, Mobile number enteed as a New OP visit**
- **Verify if patient is a new case or a case of revisit**
- **Select continue in case of new patient**
- **Select UHID link in case patient existence is verified**
- **Save**
- **Token number auto generated**
- **Print token number**

3. Doctor (Partial EMR)

3.1. Consult and Record Diagnosis

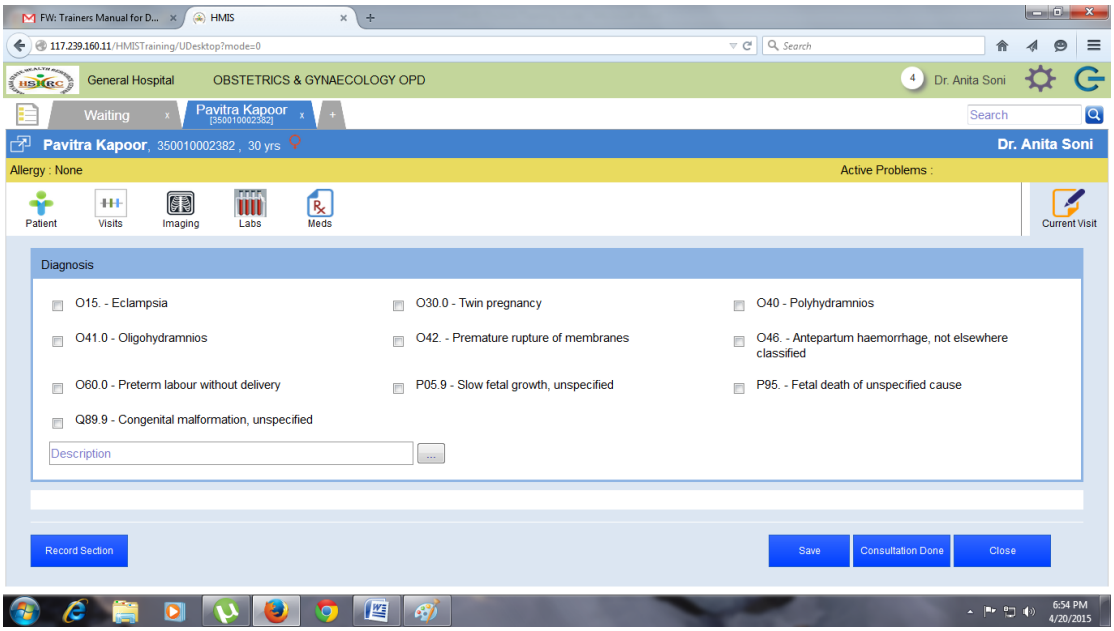


- **Select waiting**
- **Select a patient from the list**
- **Select start consultaion**



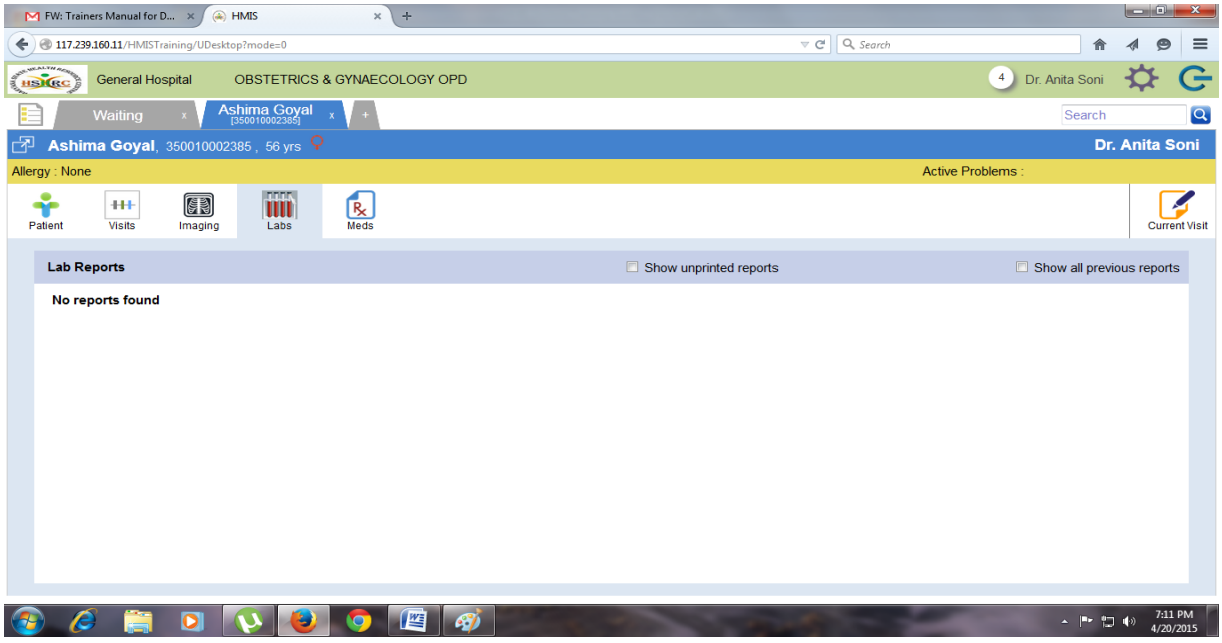
- **Enter Diagnosis**
- **Save**
- **Select Consultation Done**

After starting consultation screen will come as following:-



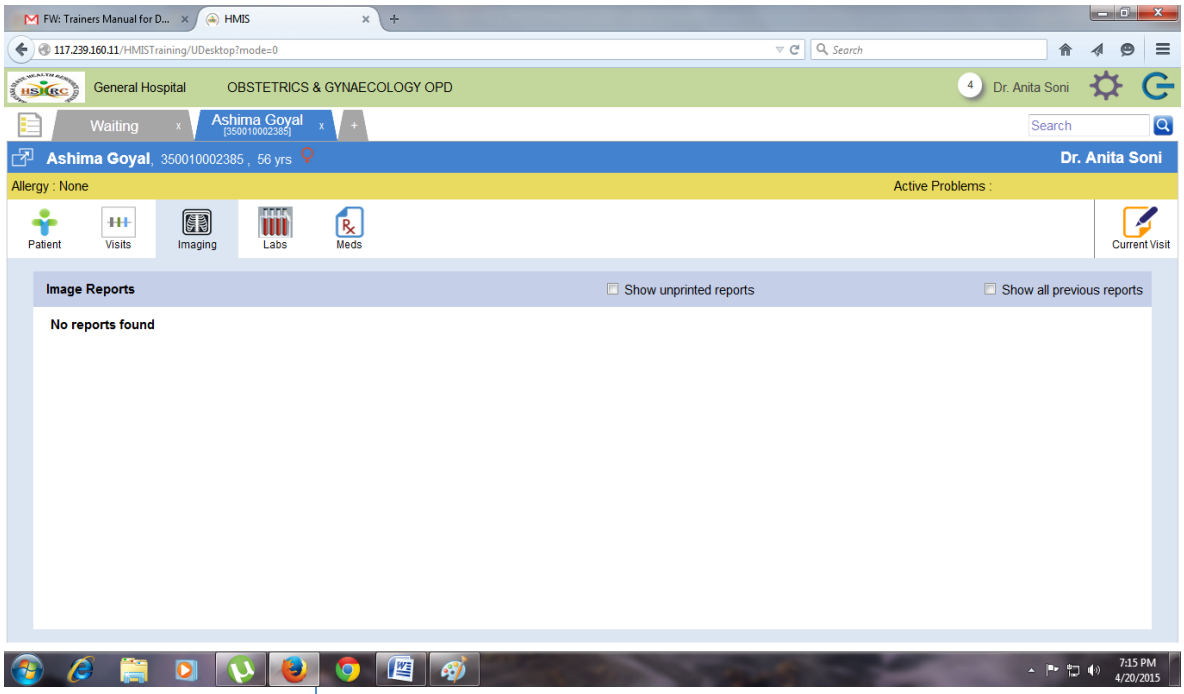
3.2. View Laboratory Reports:- Click .

4. Click .The following screen is displayed



Field	Description
Show unprinted reports	Displays all unprinted reports.
Show all previous reports	Displays all previous reports
Print	Allows you to print the report
Preview	Allows you to preview the Lab report.

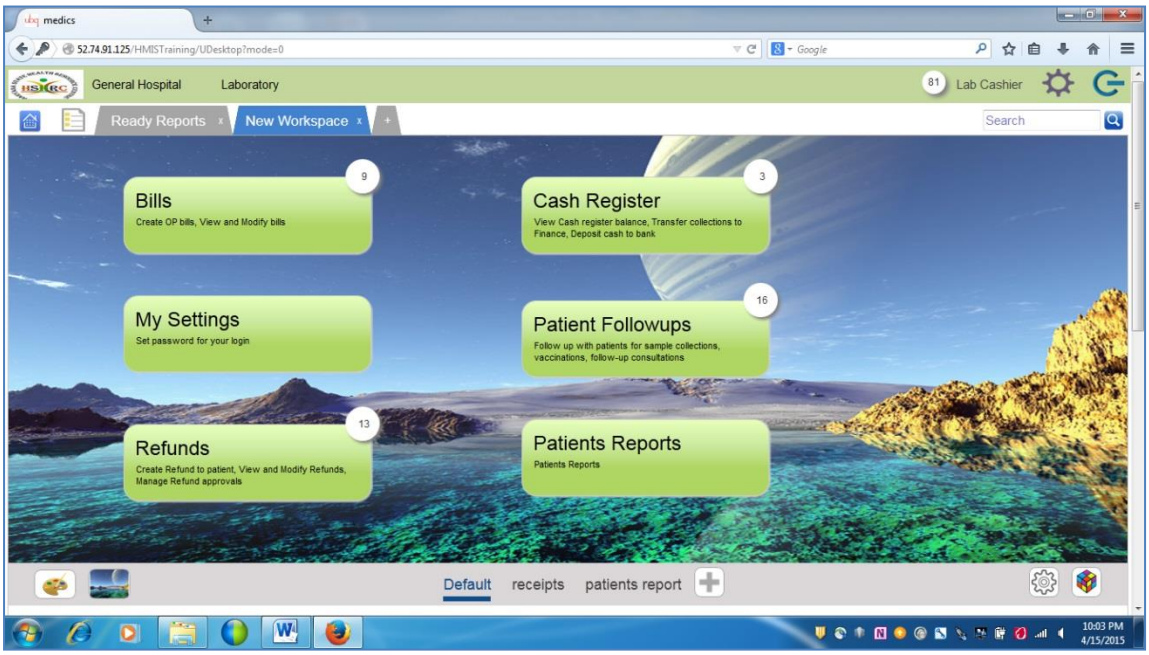
4.1. View Radiology Images/Reports:- Click



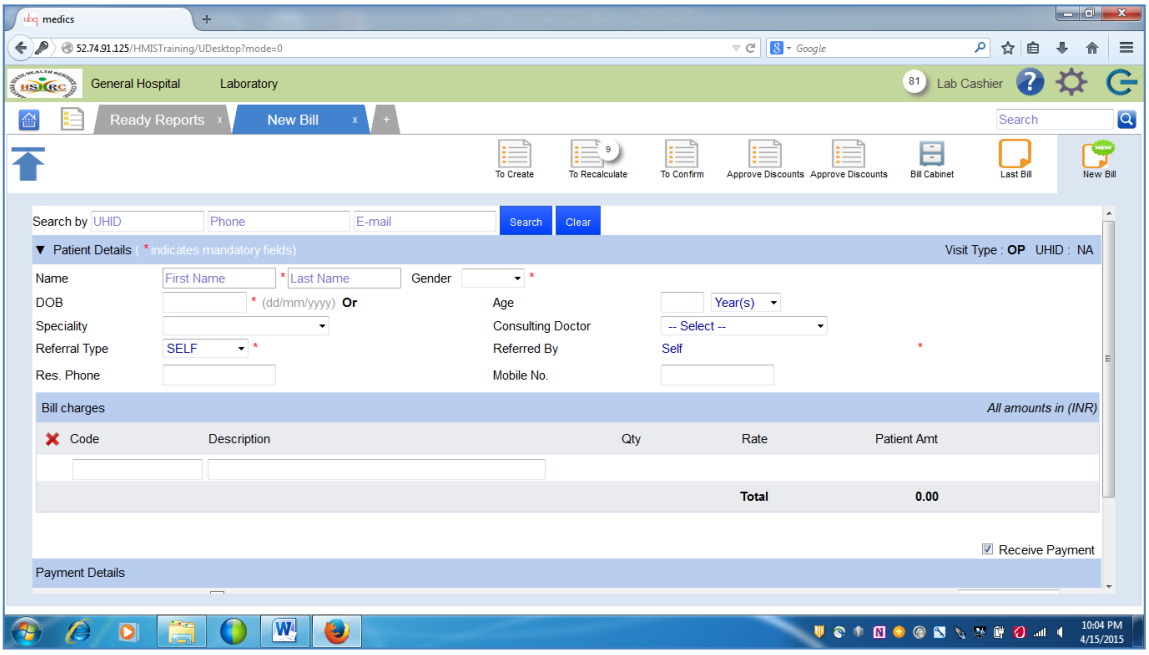
Field	Description
Show unprinted reports	Displays all unprinted reports.
Show all previous reports	Displays all previous reports
Print	Allows you to print the report
Preview	Allows you to preview the Lab report.

5. Laboratory

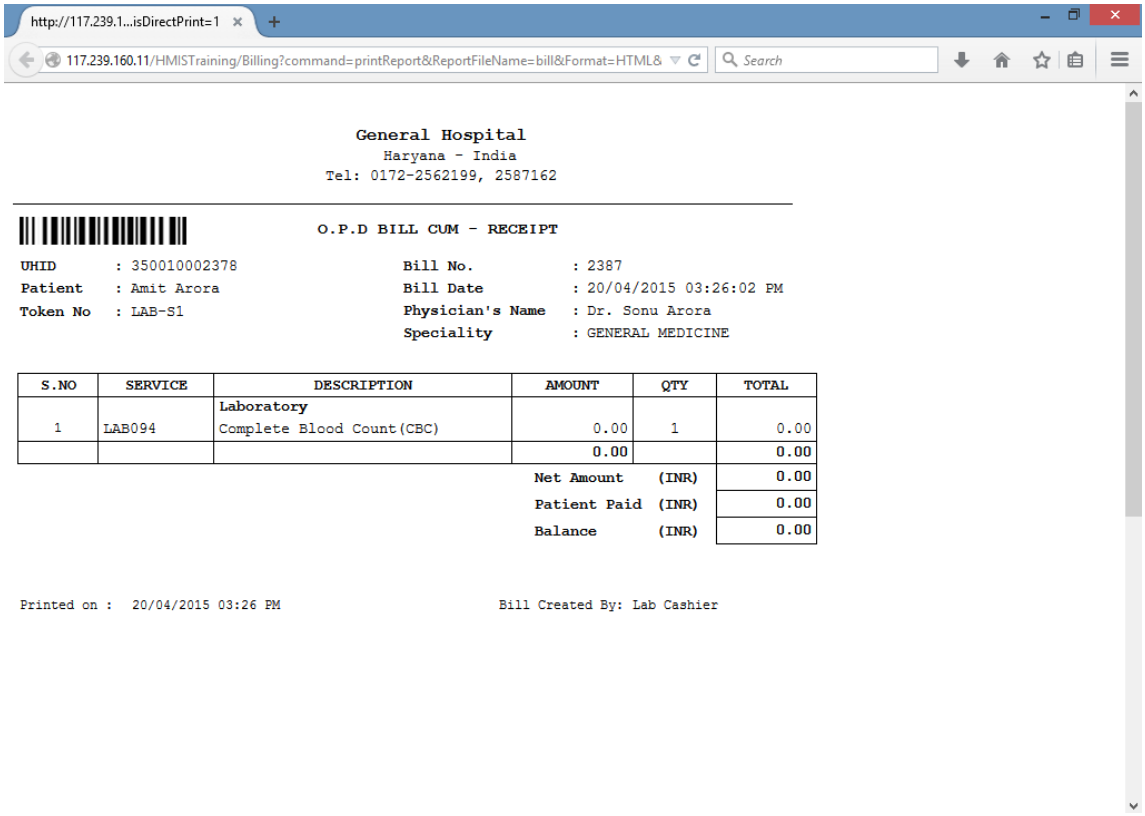
5.1. Place Lab Orders



- **Select Bills**



- **Select New Bill**
- **Enter prescribed Tests**
- **Select Confirm**
- **Bill with Token number gets printed automatically**



General Hospital
Haryana - India
Tel: 0172-2562199, 2587162

O.P.D BILL CUM - RECEIPT

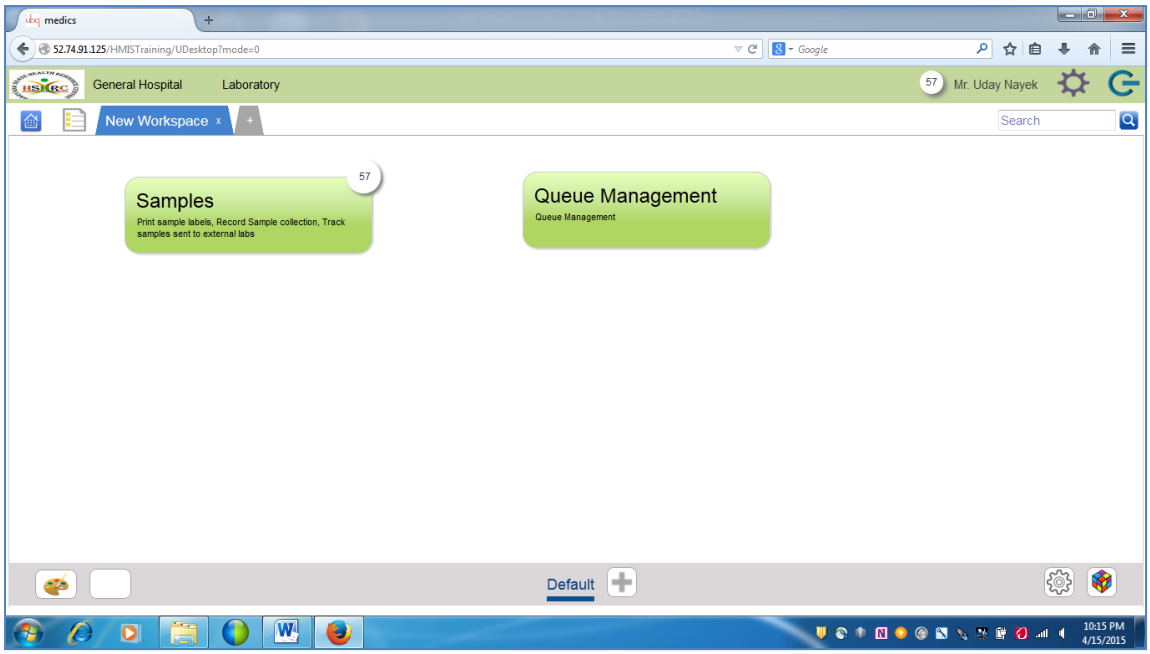
UHID	: 350010002378	**Bill No.**	: 2387
Patient	: Amit Arora	**Bill Date**	: 20/04/2015 03:26:02 PM
Token No	: LAB-S1	**Physician's Name**	: Dr. Sonu Arora
		Speciality	: GENERAL MEDICINE

S.NO	SERVICE	DESCRIPTION	AMOUNT	QTY	TOTAL
		Laboratory			
1	LAB094	Complete Blood Count(CBC)	0.00	1	0.00
			0.00		**0.00**
				Net Amount (INR)	**0.00**
				Patient Paid (INR)	**0.00**
				Balance (INR)	**0.00**

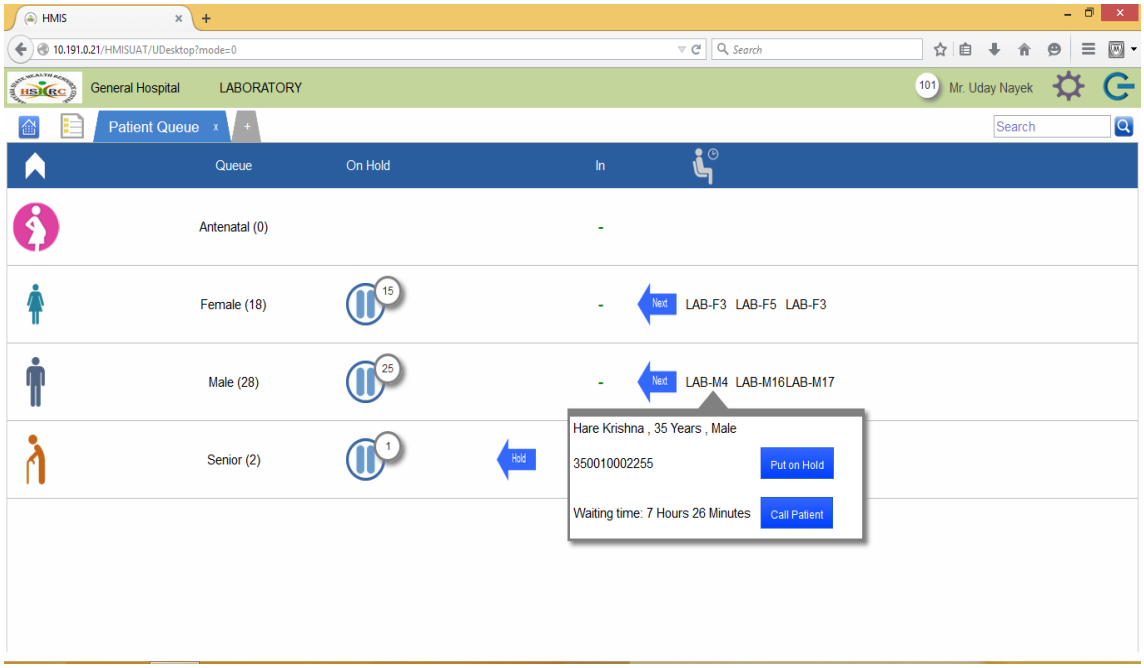
Printed on : 20/04/2015 03:26 PM

Bill Created By: Lab Cashier

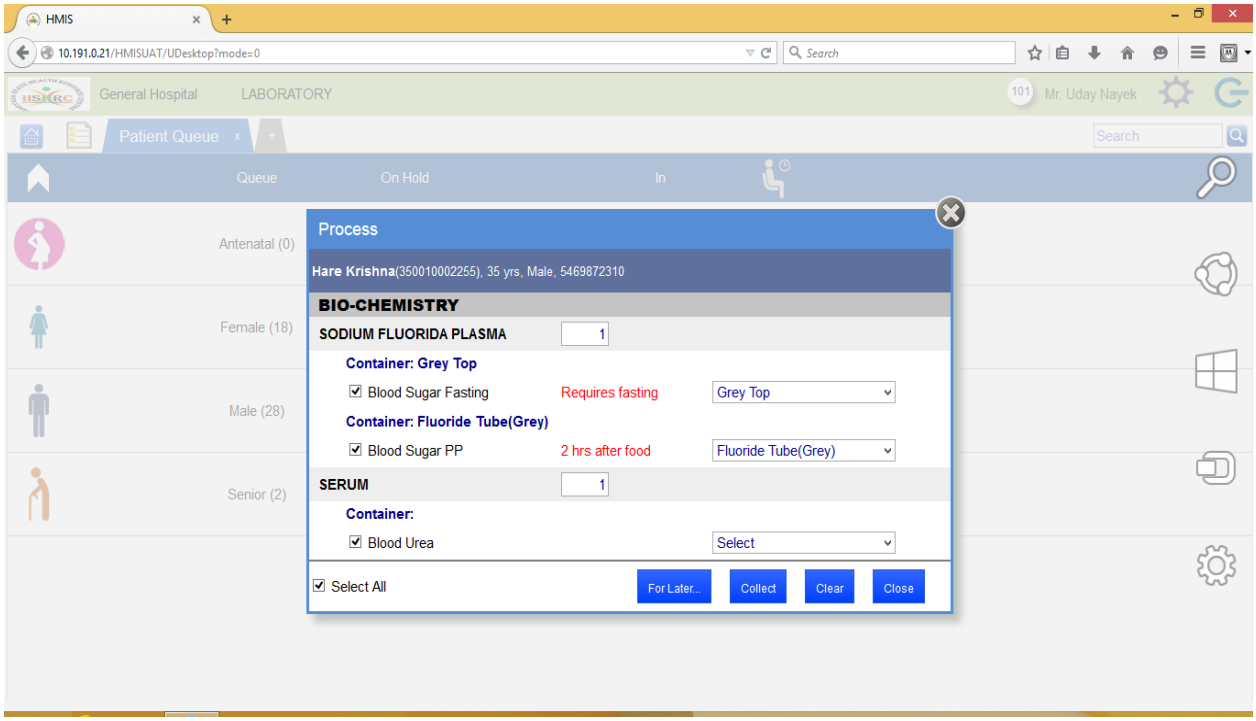
5.2. Collect and Send Sample



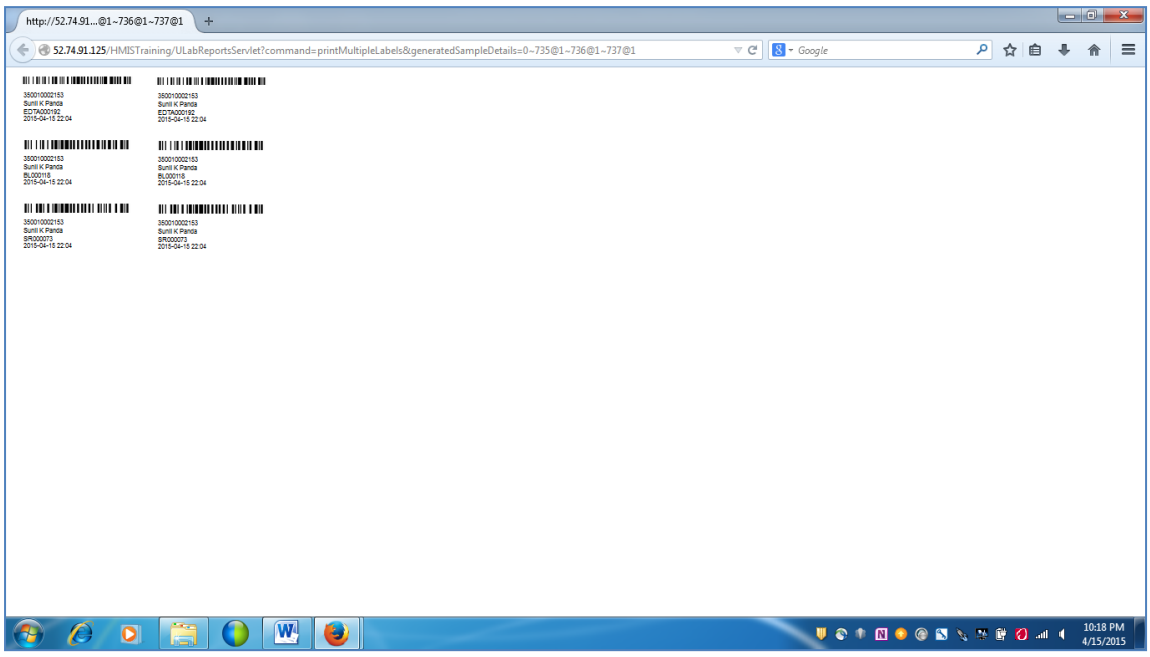
- **Select Queue Management**



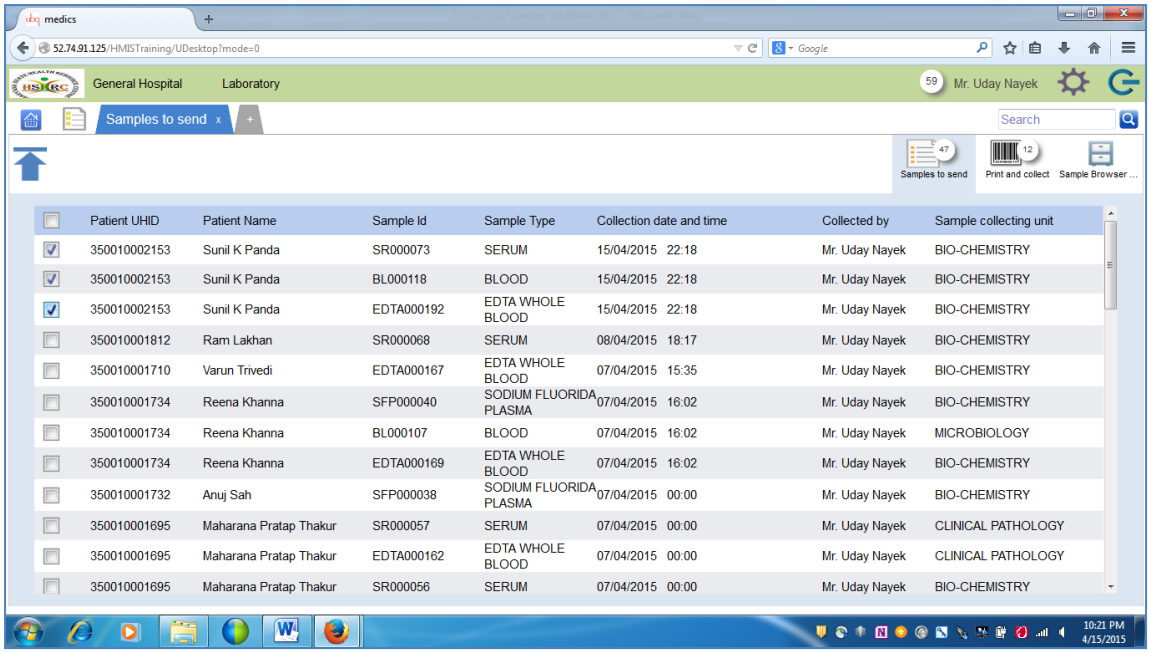
- **Select the token number.**
- **Select Call Patient**
- **Select Process.**



- **Select "Select All"**
- **Select collect**
- **Sample ID labels printed automatically**

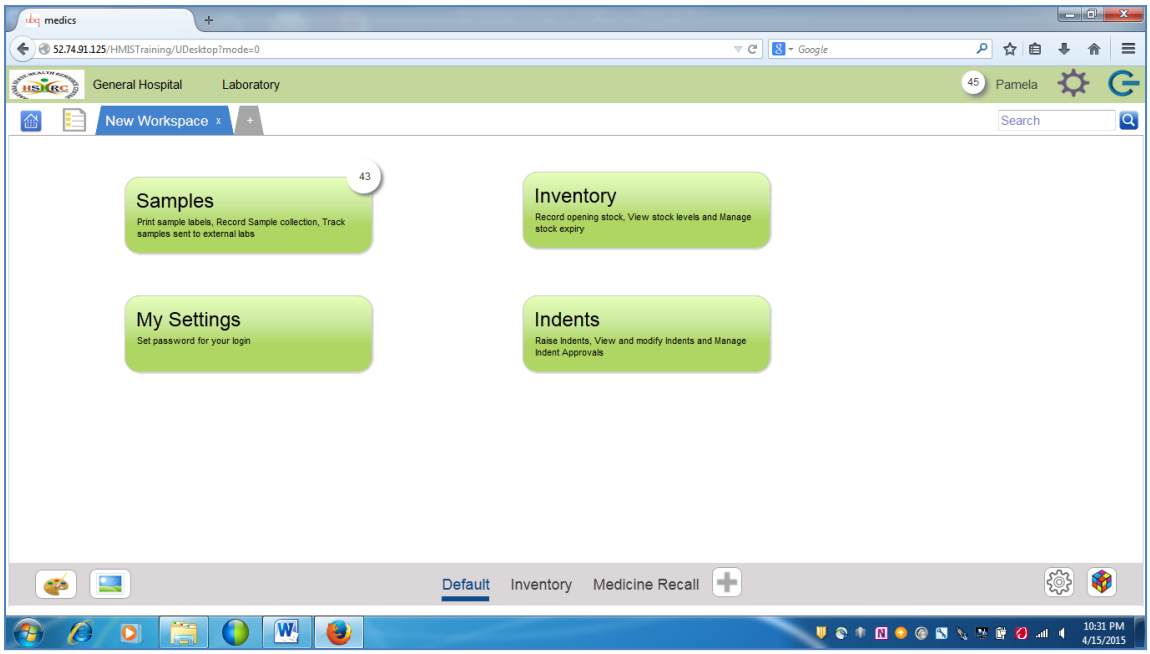


- **Stick labels to respective vaacutainers**

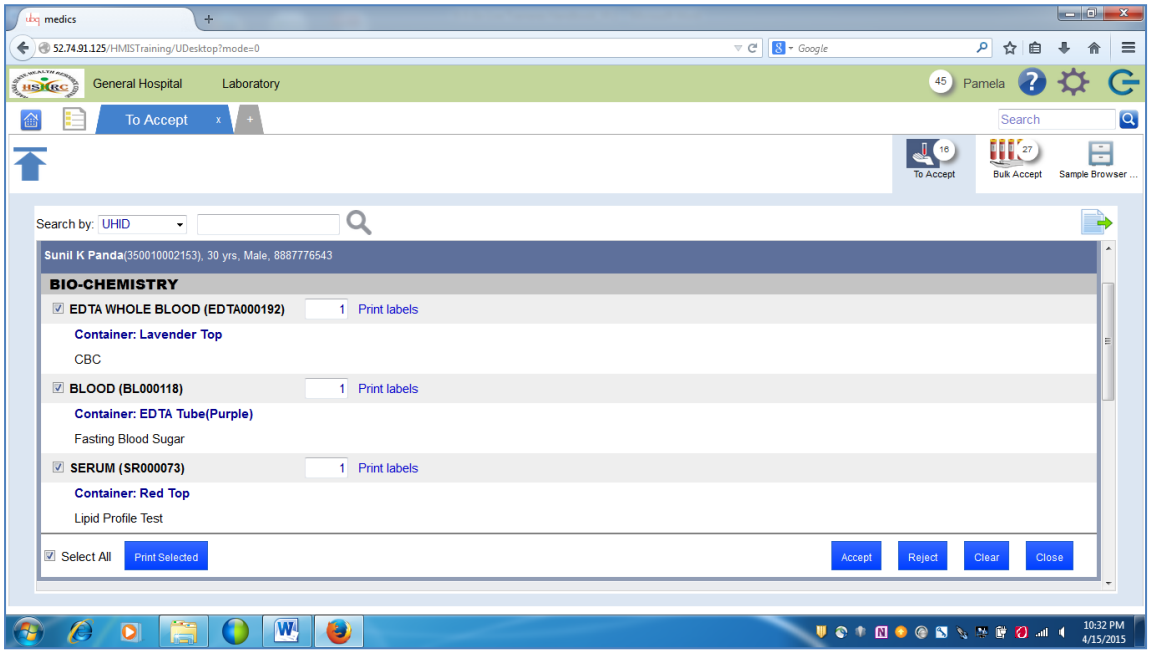


- **Select Samples to send**
- **Select checkboxes for samples of a patient to be sent**
- **Select Mark as Sent**

5.3. Accept Sample

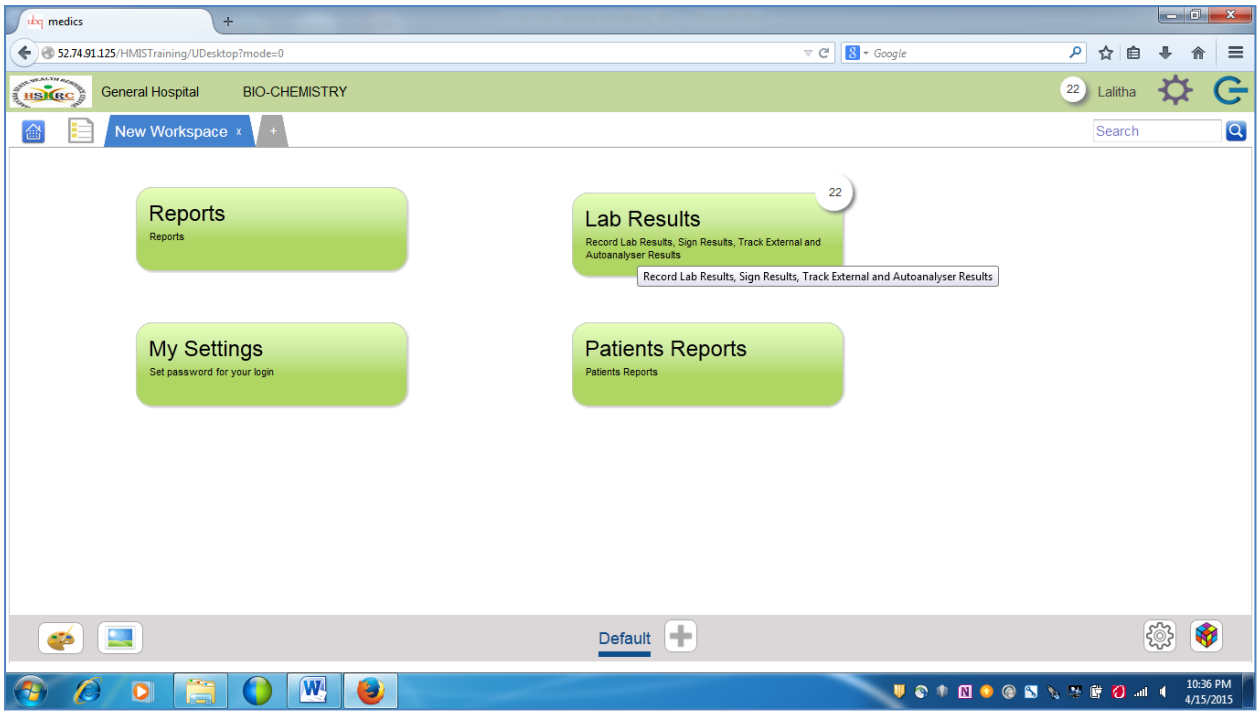


- **Select samples**
- **Select To Accept**
- **Select desired patient name from the list**

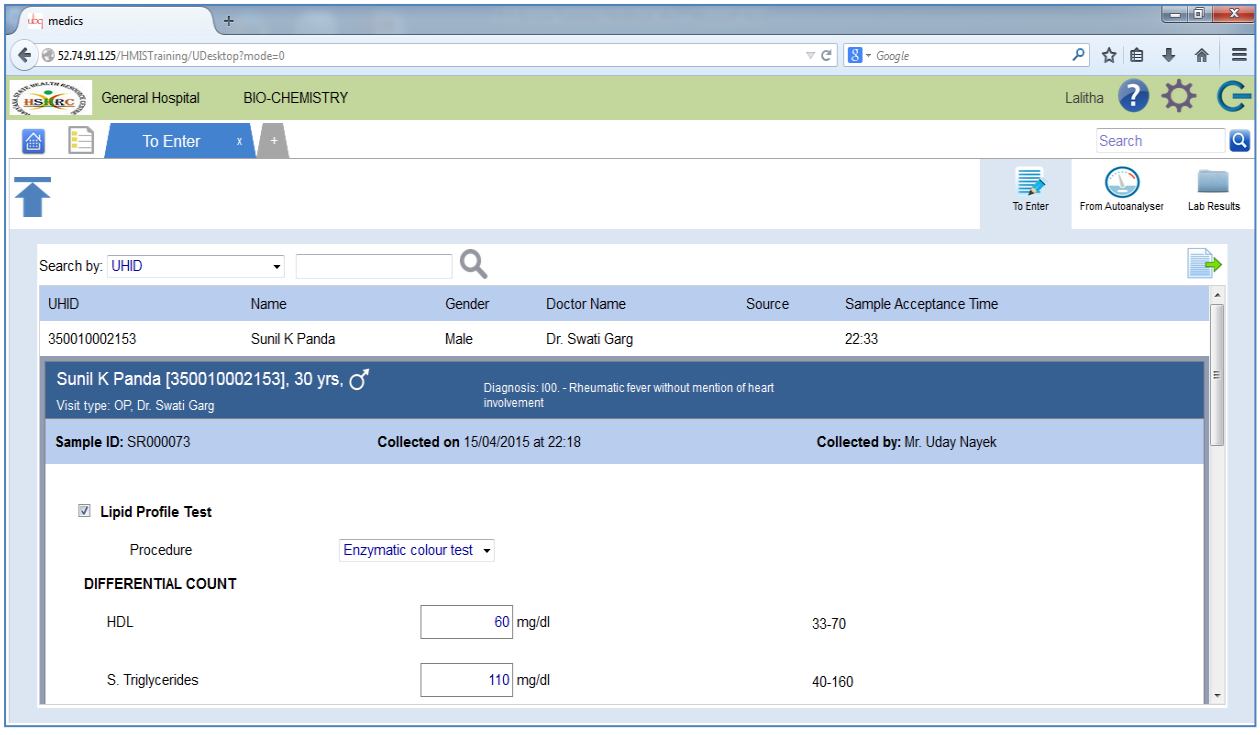


- **Select samples to be accepted with help of check boxes**
- **Select Accept**

5.4. Process Sample and Result Entry



- **Select Lab Results**

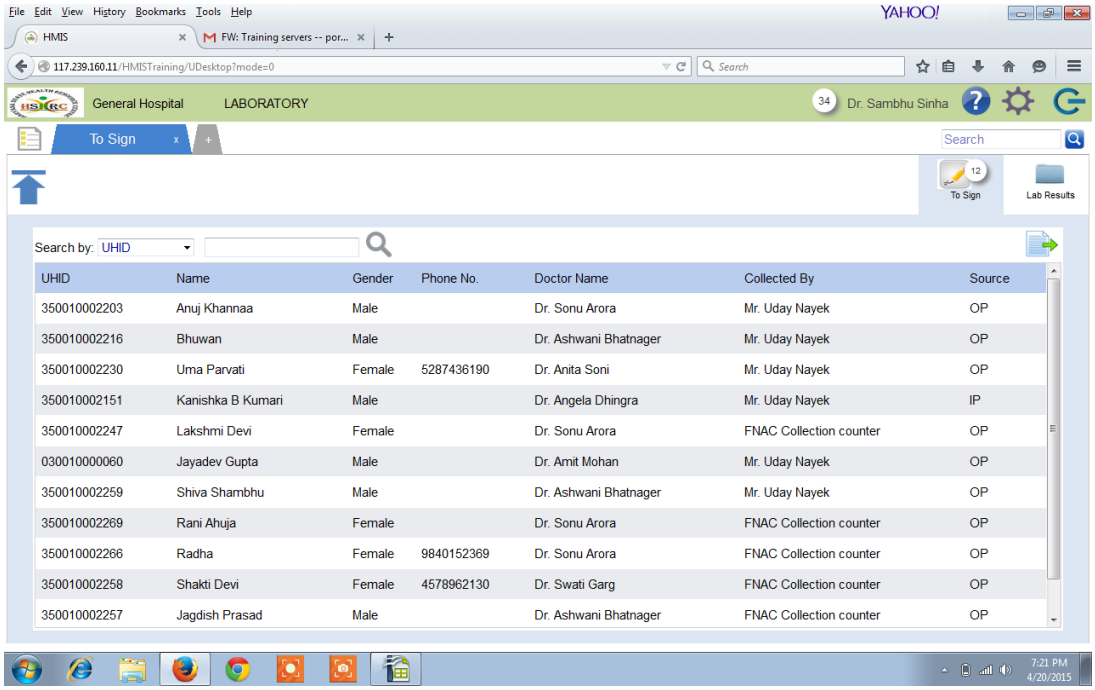


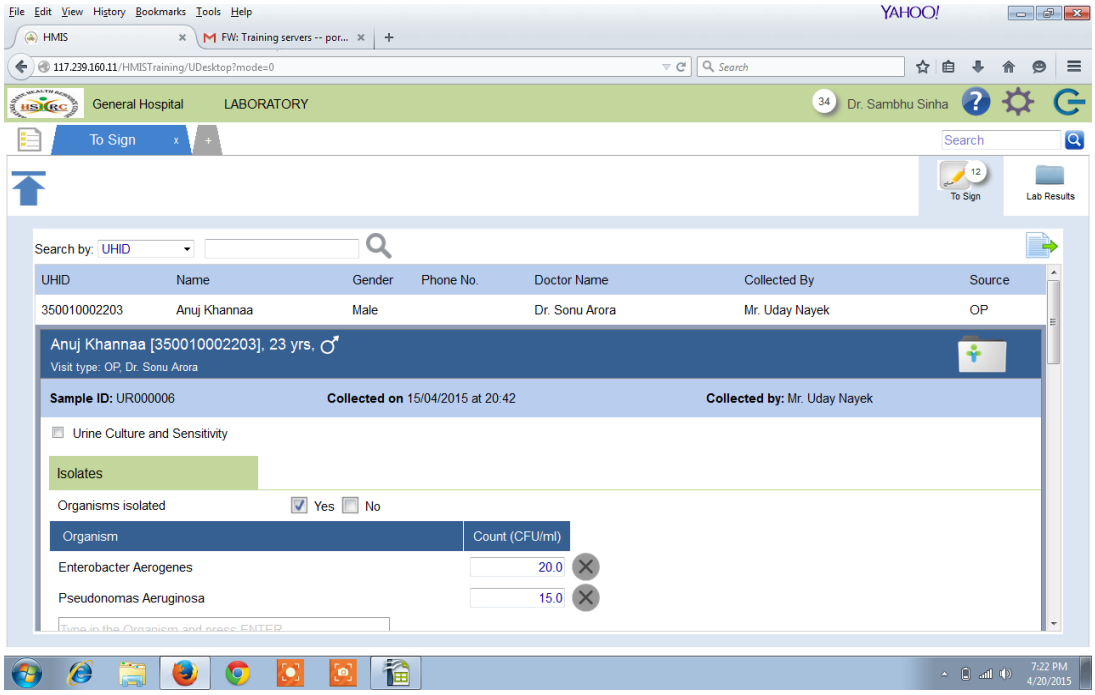
- **Select To Enter**
- **Select Desired Patient**
- **Enter the test results based on findings**
- **Select Save**

5.5. Result Verification

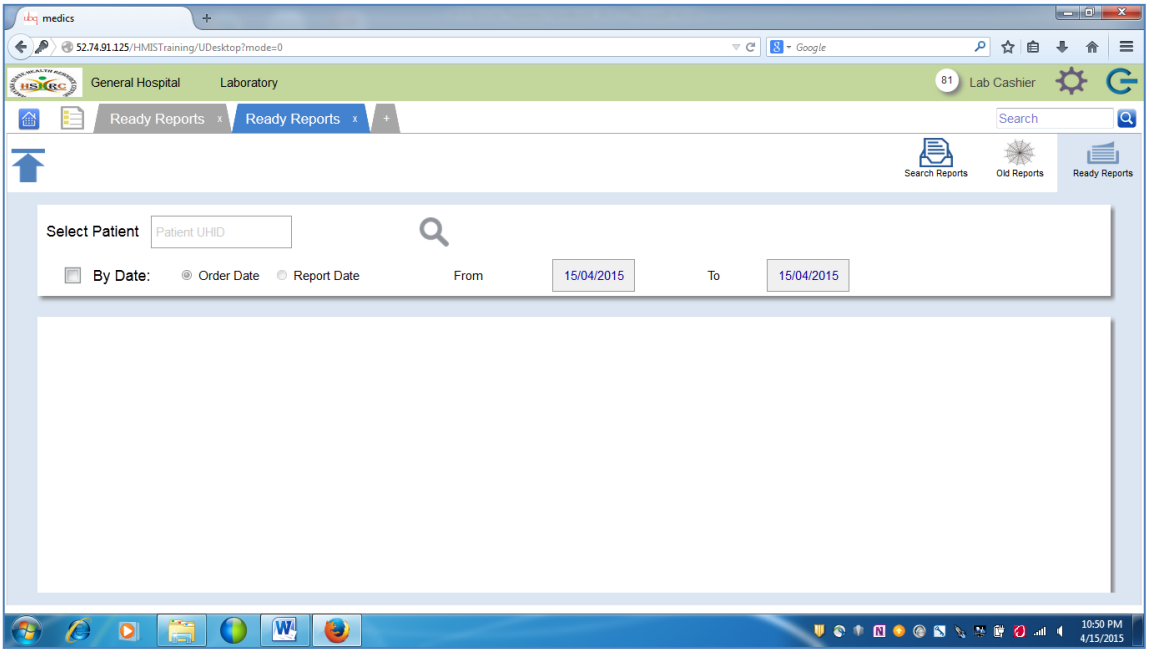
- **Select Lab Results**

- **Select To Sign**
- **Select Desired Patient**
- **Verify the Test results and Sign**





- **Report is made available for view and print for Lab Front Desk and Doctors**



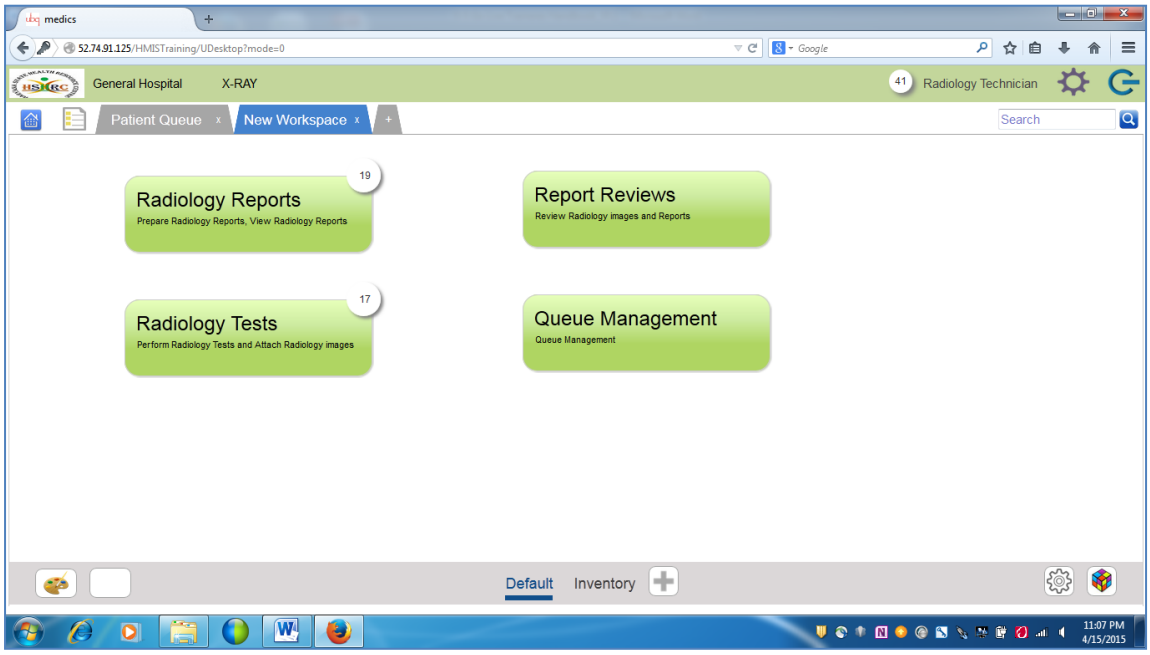
6. Radiology

6.1. Place Radiology Orders

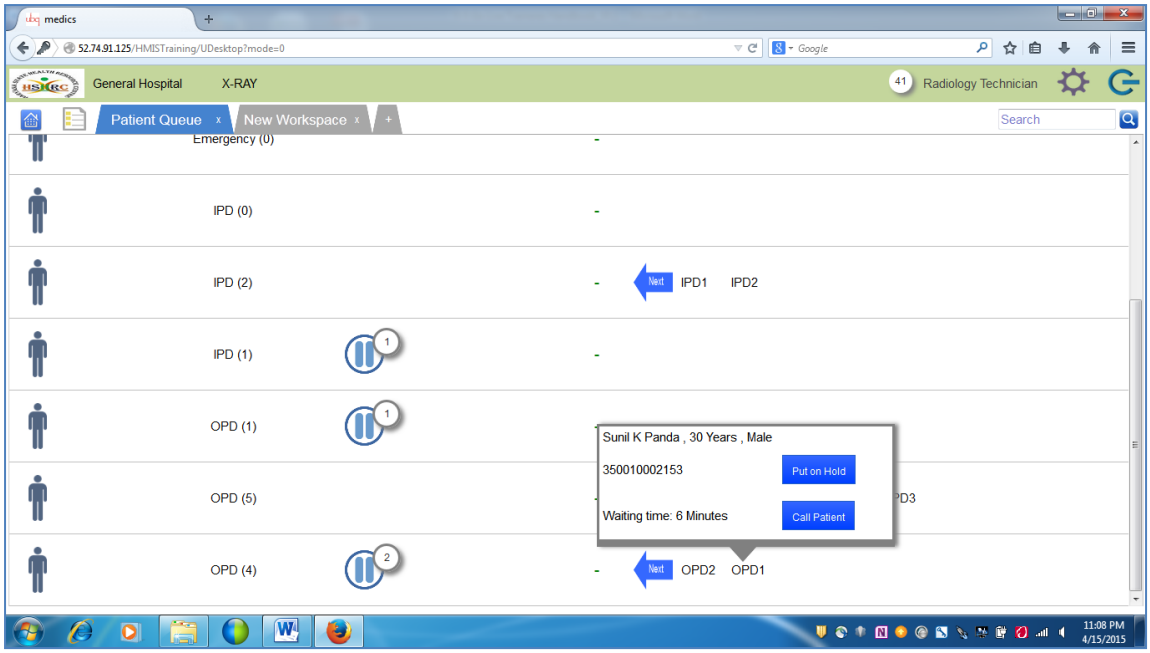
- **Select New Bill**
- **Enter prescribed Tests**
- **Select Confirm**
- **Bill with Token number gets printed automatically**

6.2. Queue Management and Execute

- **Select Queue Management**

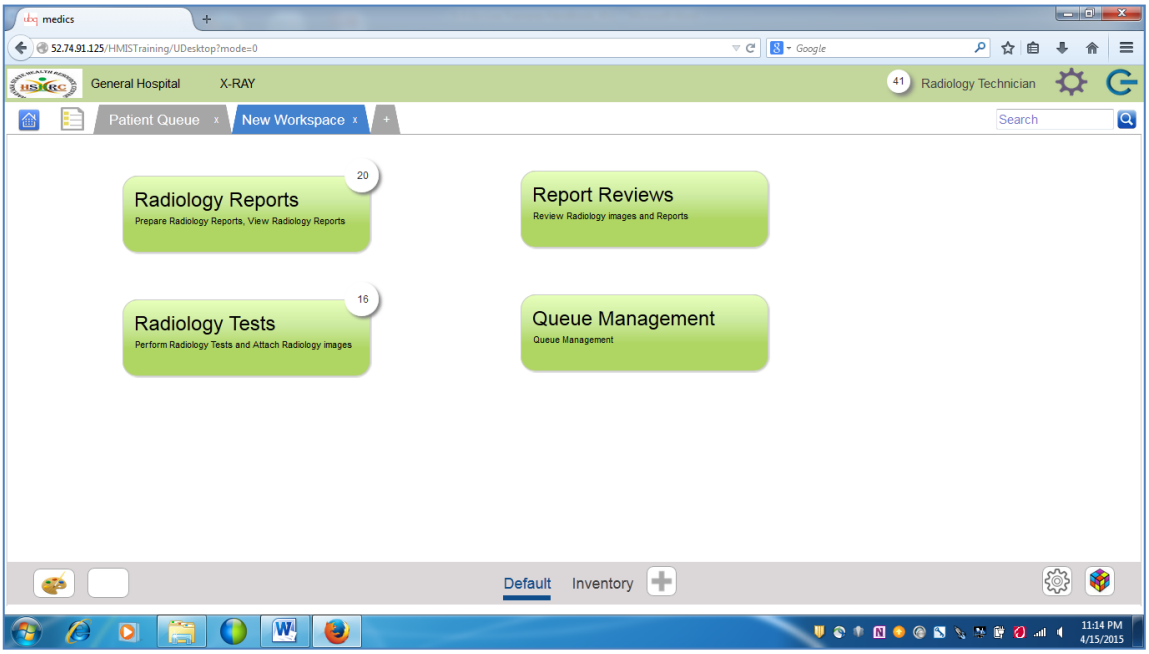


- **Select Token Number**
- **Select Call Patient**

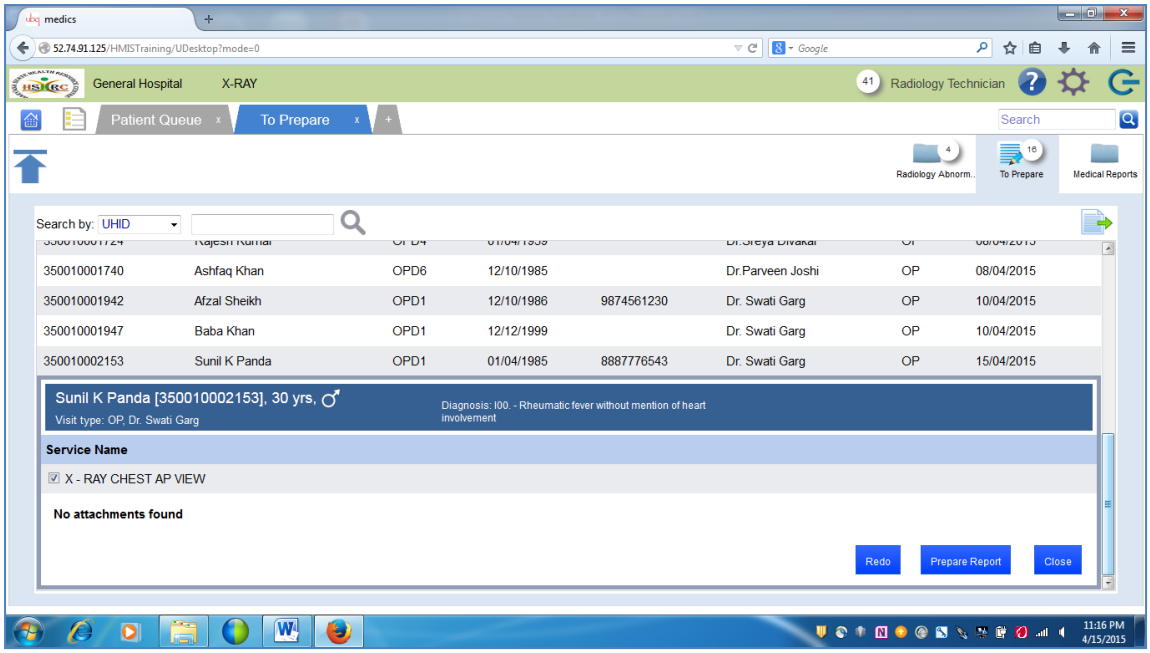


- **Select Patient Arrived**
- **Select Process**
- **Select Executing**

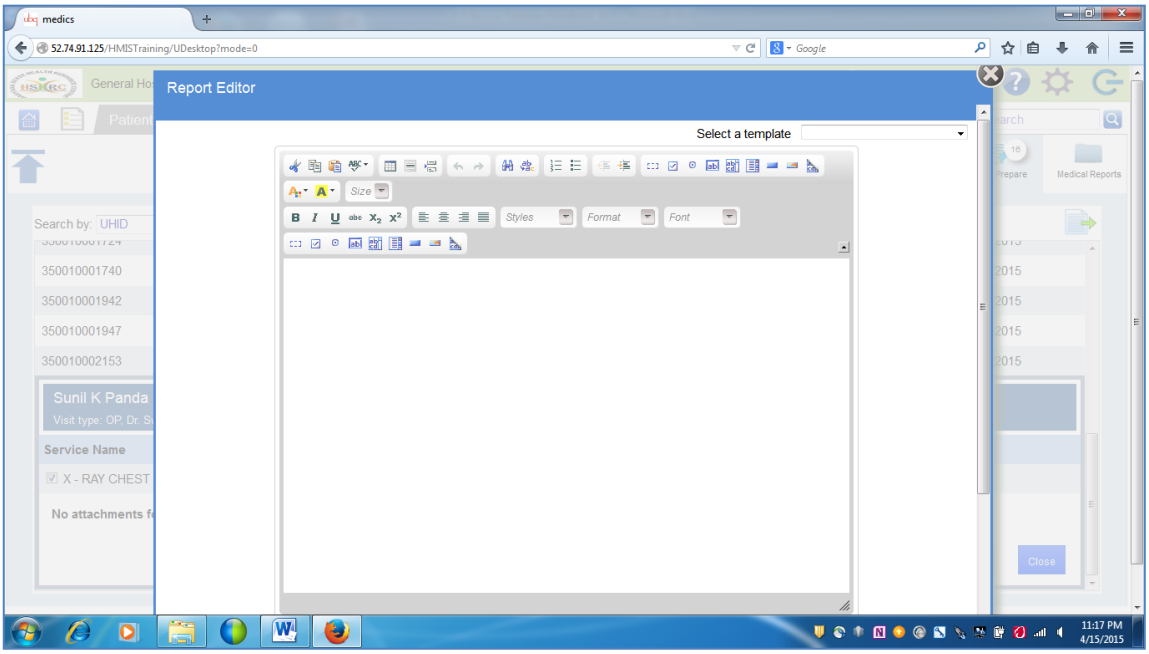
6.3. Prepare Reports



- **Select Radiology reports**
- **Select To Prepare**
- **Select desired patient**
- **Select Prepare report**

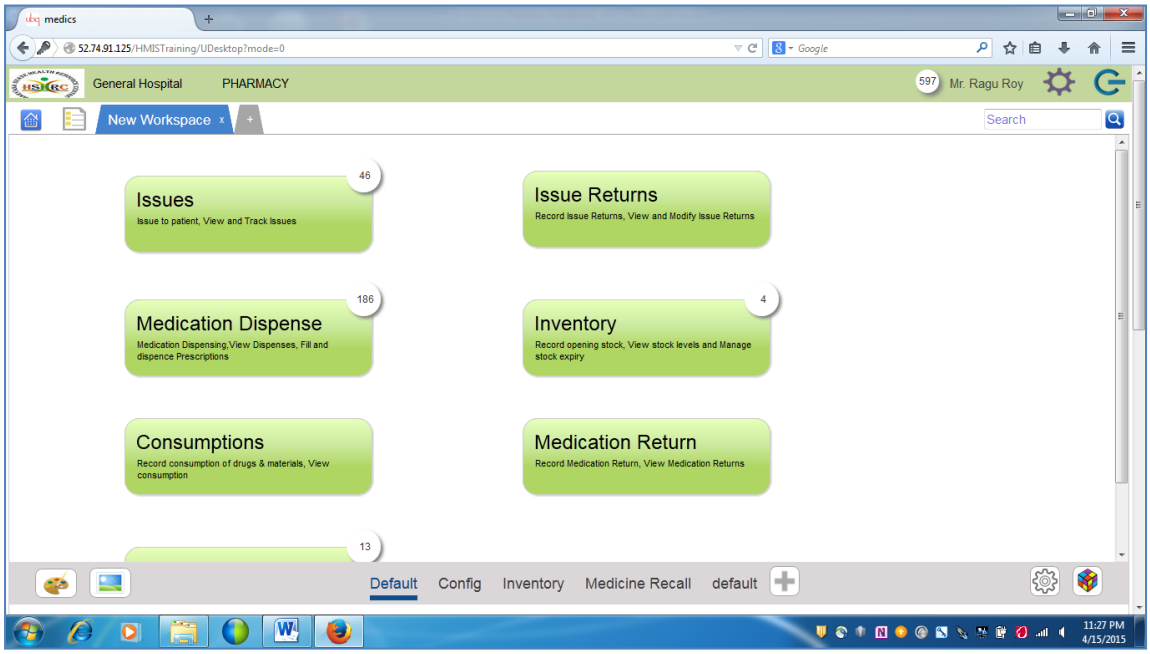


- **Select a desired template**
- **Enter obserbvations**
- **Select Save**
- **Report gets printed automatically on Save**

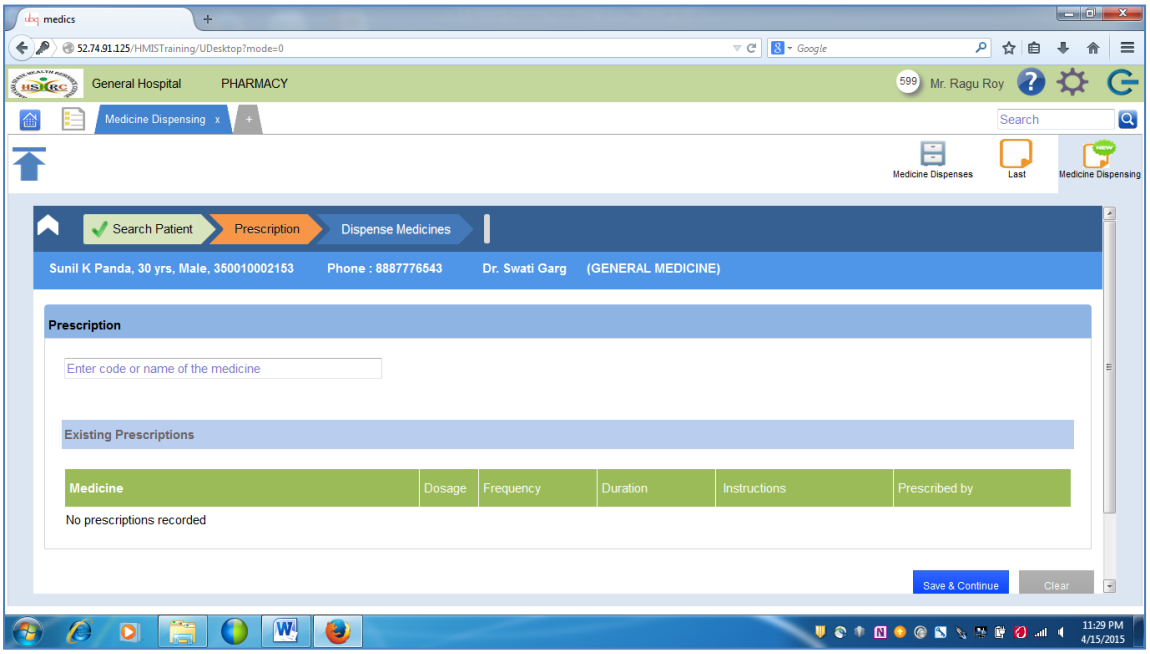


7. Pharmacy

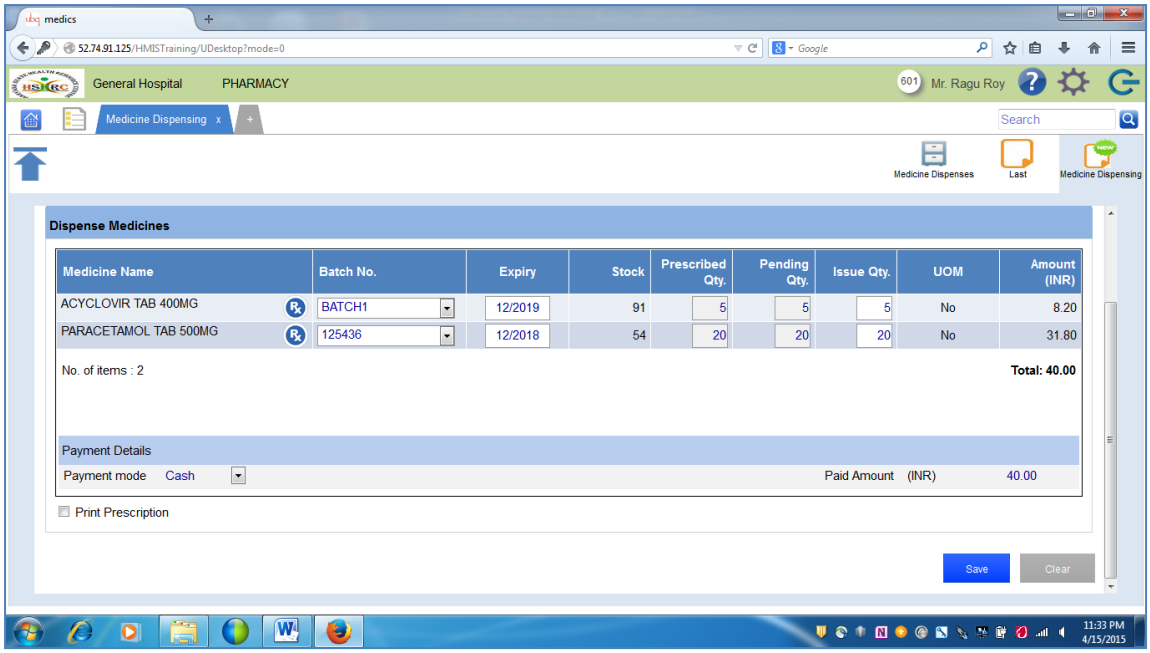
7.1. OP Pharmacy Prescription Entry and Dispensing



- **Select Medication Dispense**



- **Select Medicine Dispensing**
- **Search patient**
- **Enter prescribed medicines and dosage and frequency**
- **Select Save and Continue**

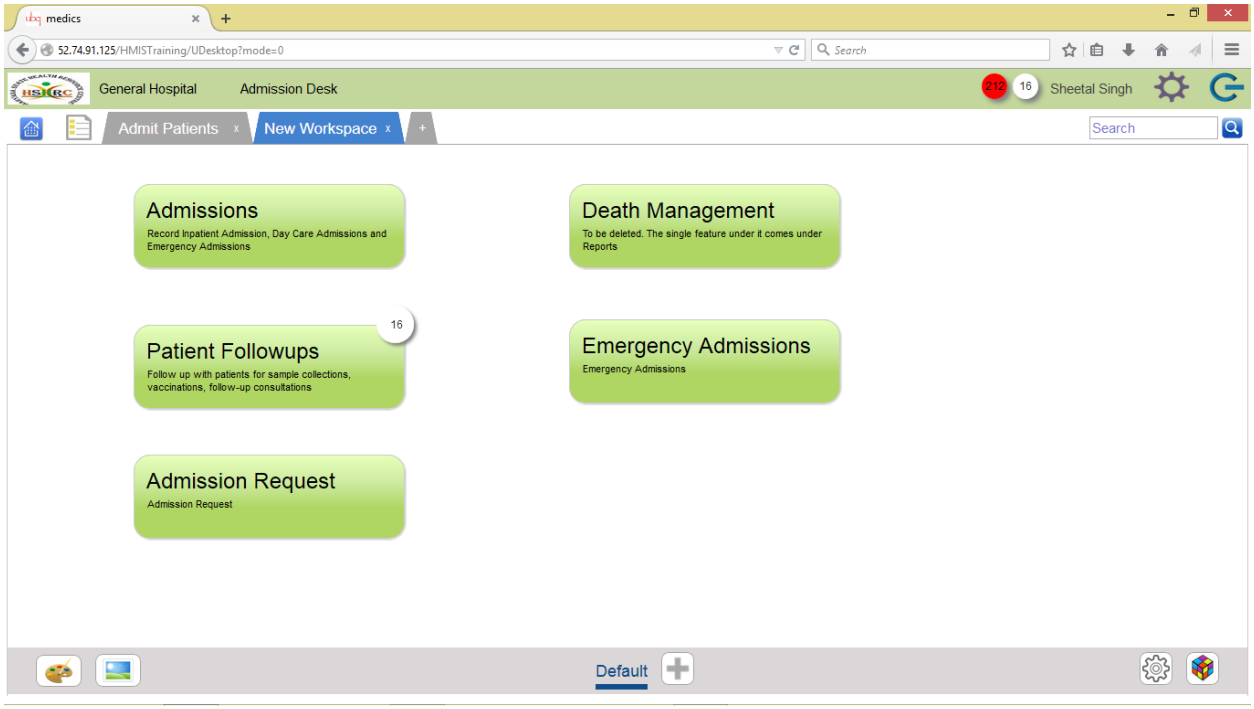


- **Select Print Prescription**
- **Select Save**
- **Bill gets printed automatically**

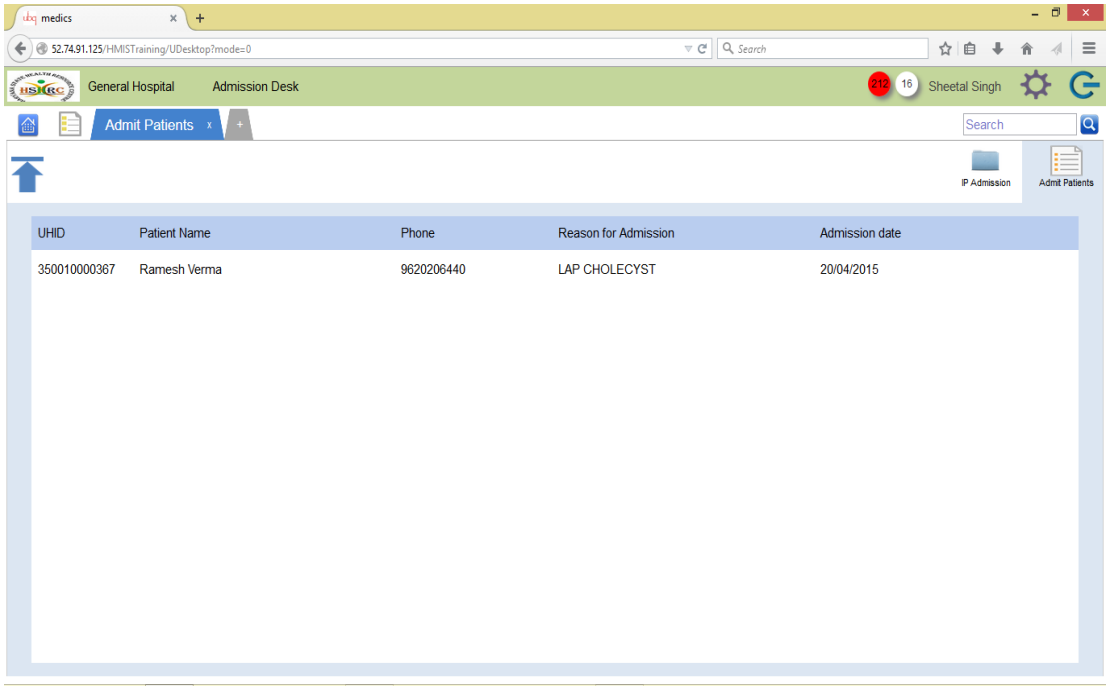
8. Admission & Discharge

8.1. Direct Admissions

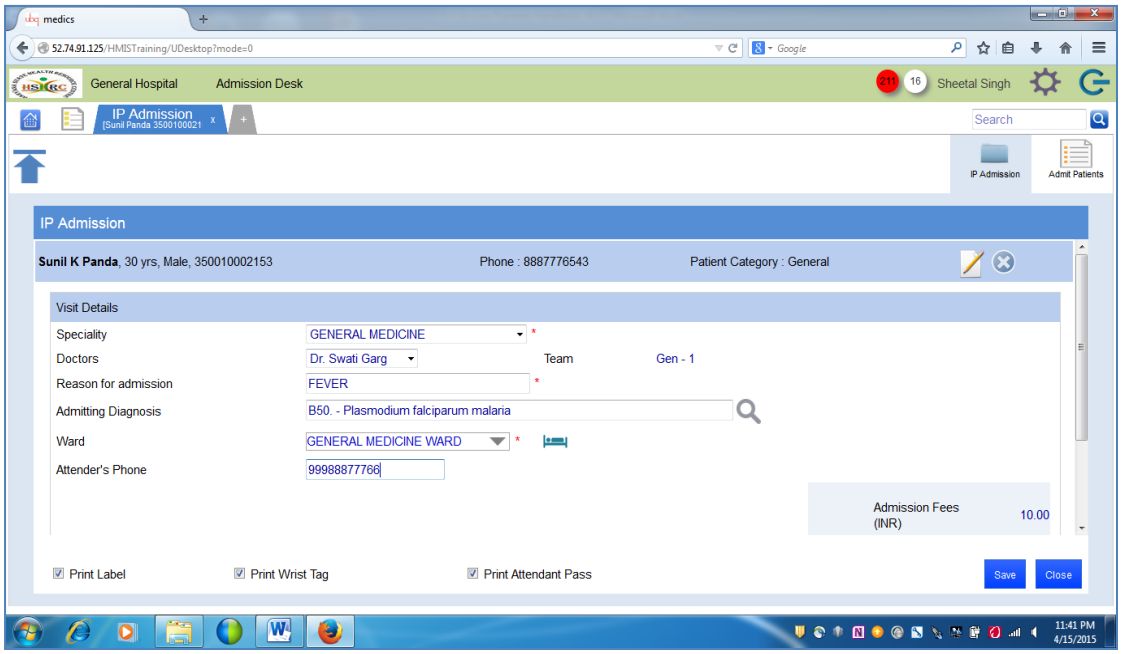
- **Select Amissions Tab**



- **Search the desired patient with UHID or with other criteria in advanced search options**

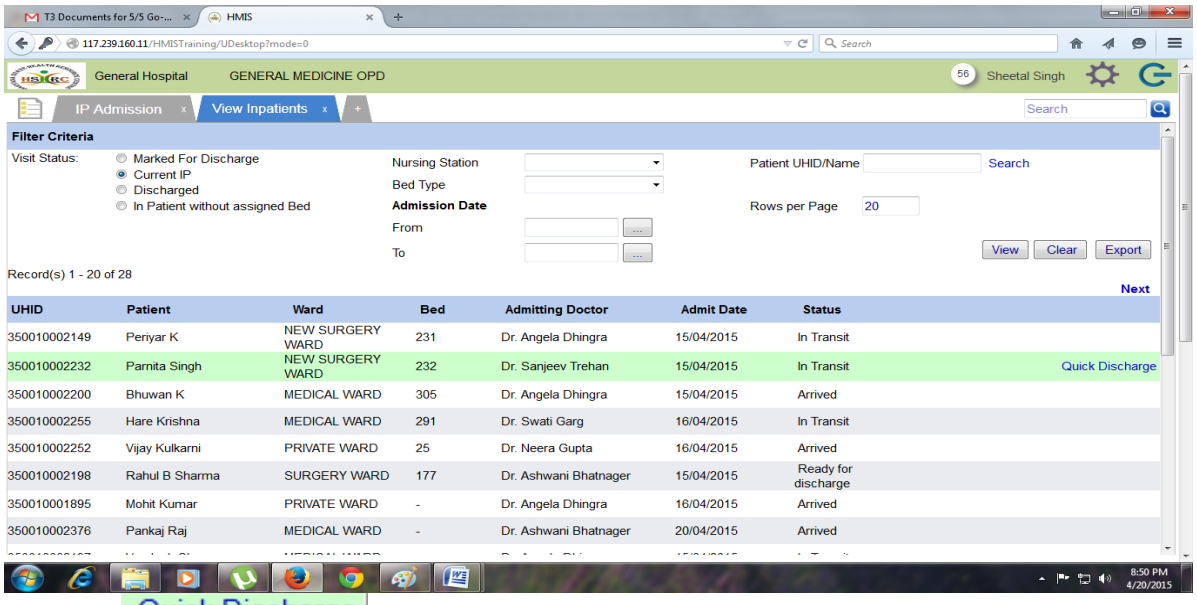


- **Check cash collected**
- **Select check boxes for Print label, Print Wrist Tag and Print Attendant Pass**

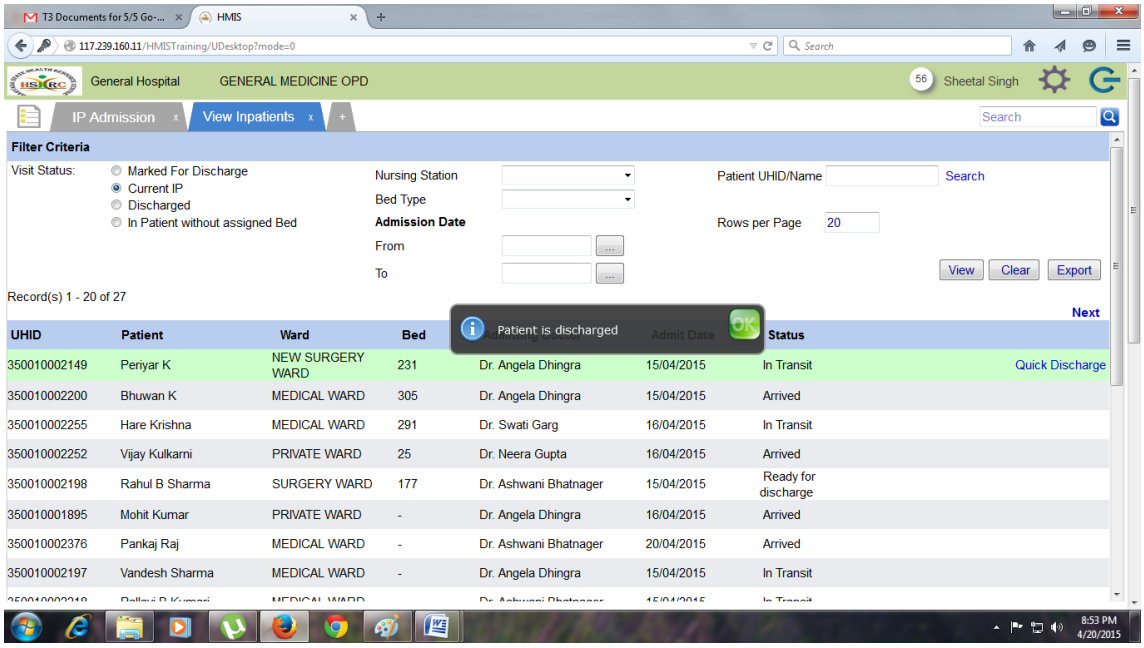


8.2. Quick Discharge:-

Click on the patient details/search the patient,the patient detail get highlighted and the option of **"quick discharge"** comes up there.



Click on Quick Discharge The screen will come as following:-


T3 Documents for 5/5 Go-...
HMIS
117.239.160.11/HMISTraining/UDesktop?mode=0
Search
General Hospital
GENERAL MEDICINE OPD
56
Sheetal Singh
IP Admission
View Inpatients
Search
Filter Criteria
Visit Status:
Marked For Discharge
Current IP
Discharged
In Patient without assigned Bed
Nursing Station
Bed Type
Admission Date
From
To
Patient UHID/Name
Search
Rows per Page
20
View
Clear
Export
Record(s) 1 - 20 of 27
Next
Patient is discharged
OK
UHID
Patient
Ward
Bed
Admit Date
Status
350010002149
Periyar K
NEW SURGERY WARD
231
Dr. Angela Dhingra
15/04/2015
In Transit
Quick Discharge
350010002200
Bhuwan K
MEDICAL WARD
305
Dr. Angela Dhingra
15/04/2015
Arrived
350010002255
Hare Krishna
MEDICAL WARD
291
Dr. Swati Garg
16/04/2015
In Transit
350010002252
Vijay Kulkarni
PRIVATE WARD
25
Dr. Neera Gupta
16/04/2015
Arrived
350010002198
Rahul B Sharma
SURGERY WARD
177
Dr. Ashwani Bhatnager
15/04/2015
Ready for discharge
350010001895
Mohit Kumar
PRIVATE WARD
-
Dr. Angela Dhingra
16/04/2015
Arrived
350010002376
Pankaj Raj
MEDICAL WARD
-
Dr. Ashwani Bhatnager
20/04/2015
Arrived
350010002197
Vandesh Sharma
MEDICAL WARD
-
Dr. Angela Dhingra
15/04/2015
In Transit
8:53 PM
4/20/2015

TRAINING SESSION/ CAPACITY BUILDING FOR THE END USER

The most important part of implementing HlS is to train the end users in using the modules.The end users in GH basically comprises of nurses, laboratory technician, Pharmacist, Paramedical staff and other clinical staff. There are 60 staff nurses in GH. In that interview were conducted on 20 nurses and 6 pharmacist, 3 store staff. It was essentially taken into Consideration to plan training in a proper and feasible manner to ensure satisfactory result.

(a) TRAINING OBJECTIVE

Training is required in order to prepare the end users to be compatible and comfortable in using the product developed in the most effective way so that it is accessible by the staff in the full fledged way. Important issues can be discovered to help improve the overall acceptance of the system and usability. It involves delivering learning in regard to product usage and management depending upon the need of different kinds of users.

(b) IDENTIFICATION AND ASSESSMENT OF TRAINING NEEDS

- **Identify and document the skills required for each job description.**
- **Address overall current skill specific training issues.**
- **Perform a gap analysis to determine where training is needed**
- **Identify people who have high potential and provide them specialized training opportunities.**
- **Ensure that resources are allocated and timelines are decided**

(c) BASIC REQUIRMENTS

All GH staff that needs to be trained for different modules should have-

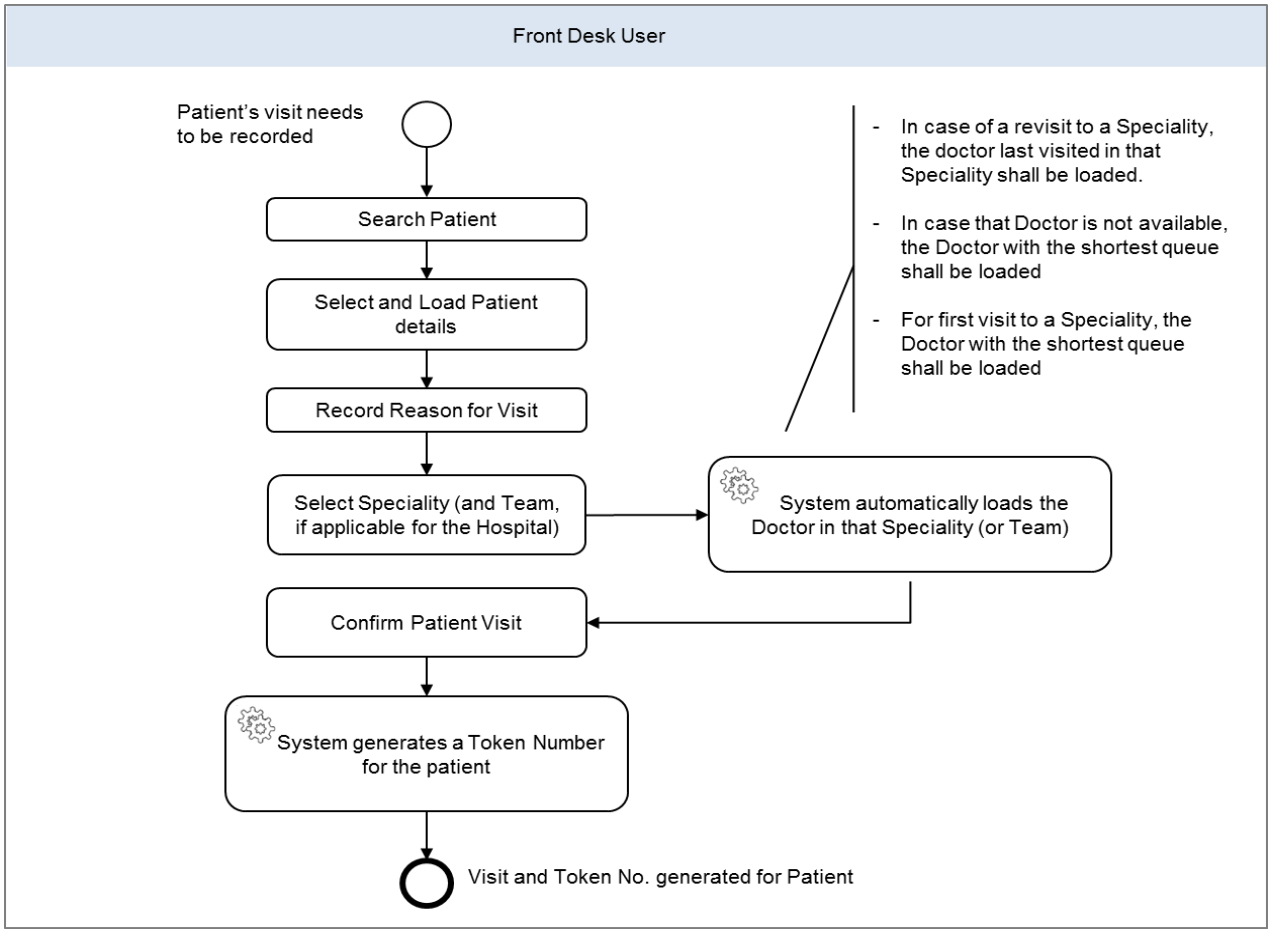
- **Basic computing skills**
- **Working knowledge of English language**
- **Approval from GH administration for this training**
- **To get the information of shift timings of all the users according to that training sessions should be designed.**
- **Training practices for both the clinical and nonclinical staff were planned out**
- **Training programme documentation was review to provide training in a standard format**
- **The organization reviewed and commented on the training format and necessary changes were made.**

PLAN OF TRAINING

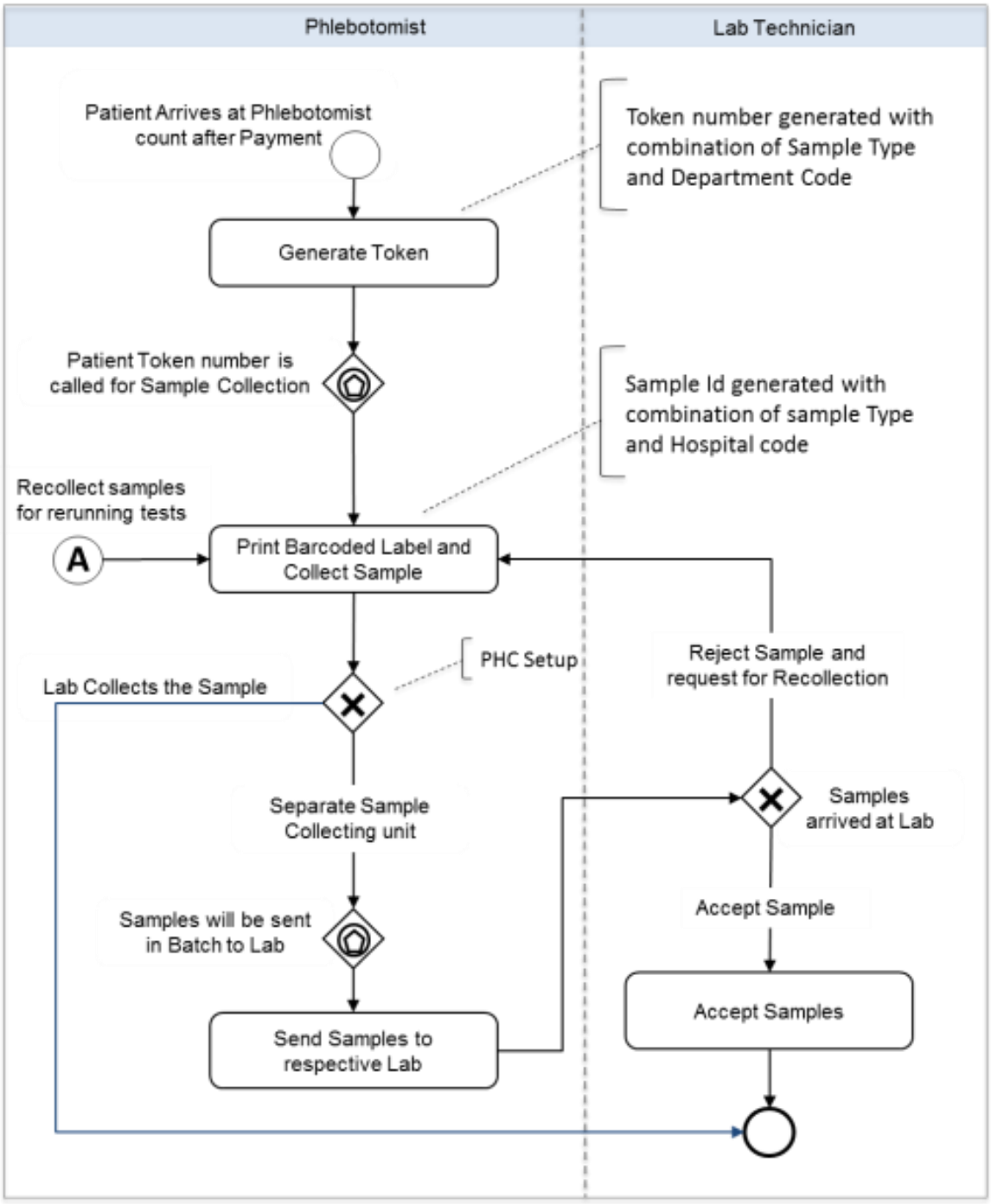
	A	B	C	D	E	F
1		Room 1 (2nd Floor besides SNCU ward)				Resources
2	Batches with Timings	1.1 (9:00 a.m. - 11:00 a.m.)	1.2 (11:00 p.m. - 1:00 p.m.)	1.3 (1:30 p.m. - 3:30 p.m.)	1.4 (3:30 p.m. - 5:30 p.m.)	
3	Week 1 (21 Apr - 25 Apr)	ADT (Admission Staff all)	Radiology with PACS (Radiographers and Radiologist 6-7)	Registration + ADT (FO Computer Operators 5)	Registration + ADT (FO Computer Operators 5)	Dr. Ankit, Amit, Sunil, Afshin, Dherya
4	Week 2 (27 Apr - 1 May)	Emergency Registration (ER Nurses 5)	Radiology with PACS (Radiographers and Radiologist 6-7)	Registration + ADT (FO Computer Operators 5)	Radiology with PACS (Radiographers and Radiologist 6-7)	Dr. Ankit, Amit, Sunil, Afshin, Dherya
5						
6						
7		Room 2 (5th Floor PMO Office)				Resources
8	Batches with Timings	2.1 (9:00 a.m. - 11:00 a.m.)	2.2 (11:00 p.m. - 1:00 p.m.)	2.3 (1:30 p.m. - 3:30 p.m.)	2.4 (3:30 p.m. - 5:30 p.m.)	
9	Week 1 (21 Apr - 25 Apr)	Laboratory (Lab Technicians, Pathologist and Microbiologist 6-7)	Laboratory (Lab Technicians, Pathologist and Microbiologist 6-7)	Buffer	OPD Pharmacy (Dispencing and Indenting) (Phamacist 6-7)	Pankaj, Aman, Sandeep, Ruchi, Mudita
10	Week 2 (27 Apr - 1 May)	Buffer	Laboratory (Lab Technicians, Pathologist and Microbiologist 6-7)	Laboratory (Lab Technicians, Pathologist and Microbiologist 6-7)	Laboratory (Lab Technicians, Pathologist and Microbiologist 6-7)	Pankaj, Aman, Sandeep, Ruchi, Mudita
11						
12		Room 3 (4th Floor besides MRD)			Resources	
13	Batches with Timings	3.1 (8:00 a.m. - 10:00 a.m.)	3.2 (10:00 a.m. - 12:00 p.m.)	3.3 (12:00 p.m. - 2:00 p.m.)		
14	Week 1 (21 Apr - 25 Apr)	OPD Pharmacy (Dispencing and Indenting) (Phamacist 6-7)	OPD Pharmacy (Dispencing and Indenting) (Phamacist 6-7)	OPD Pharmacy (Dispencing and Indenting) (Phamacist 6-7)	Devender, Dr. Nitin, Devraj, Deepti	
15	Week 2 (27 Apr - 1 May)	Buffer	Buffer	Buffer		
16						
17						
18		Room 3 (OPD Doctors + LR Nurses) (4th Floor besides MRD)		Resources		
19	Batches with Timings	3.4 (2:00 p.m. - 4:00 p.m.)	3.5 (4:00 p.m. - 6:00 p.m.)			
20	21 Apr - 22 Apr	LR Registration	OPD Doctors	Dr. Shivani, Dr. Arshpreet, Dr. Nidhi, Manohar, Sapna, Shivang		
21	23 Apr - 24 Apr	LR Registration	OPD Doctors	Dr. Shivani, Dr. Arshpreet, Dr. Nidhi, Manohar, Sapna, Shivang		
22	27 Apr - 28 Apr	OPD Doctors	OPD Doctors	Dr. Shivani, Dr. Arshpreet, Dr. Nidhi, Manohar, Sapna, Shivang		
23	29 Apr - 30 Apr	OPD Doctors	OPD Doctors	Dr. Shivani, Dr. Arshpreet, Dr. Nidhi, Manohar, Sapna, Shivang		
24	1 May - 2 May	Buffer	Buffer			

Flow Chart

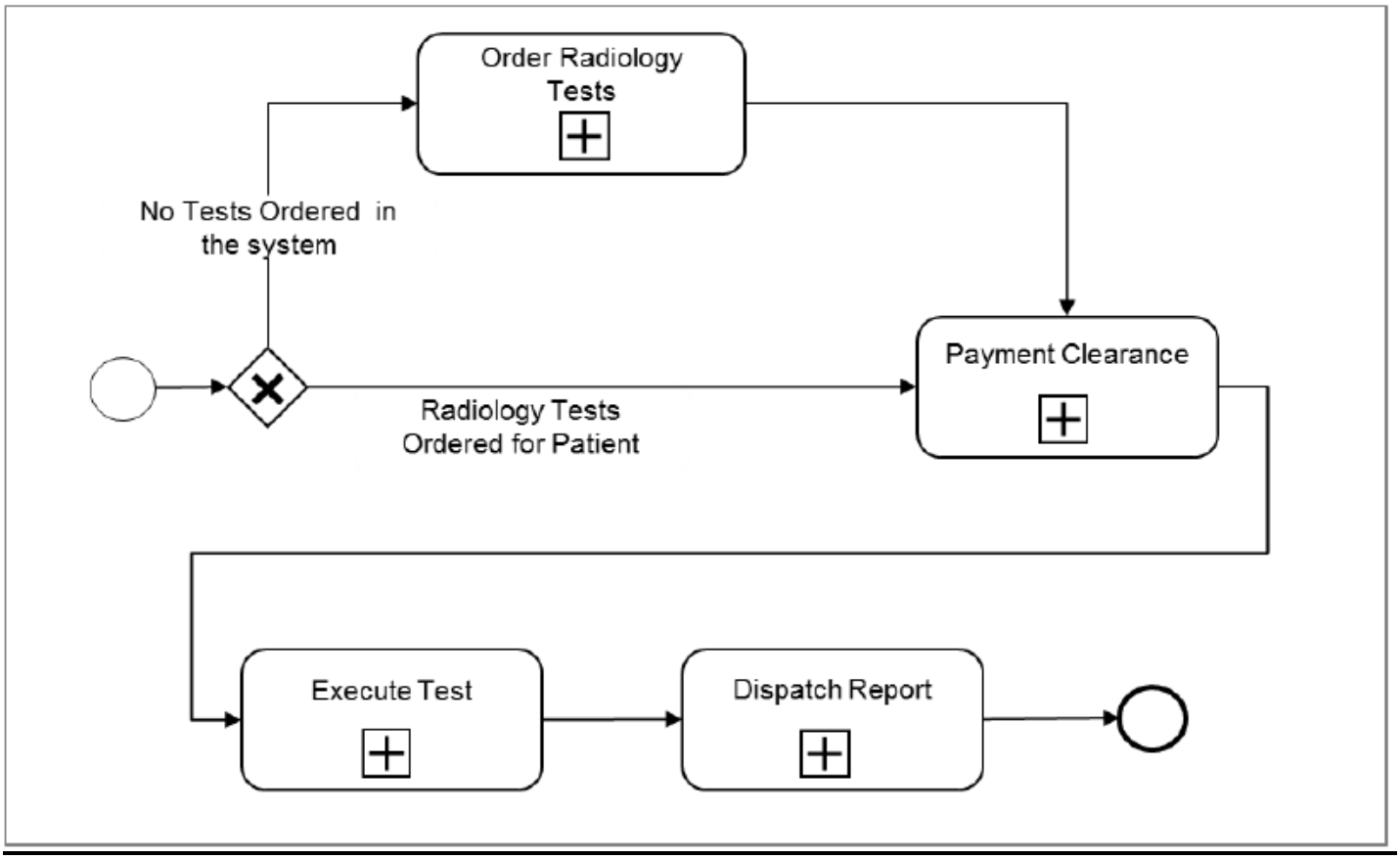
REGISTRATION FLOWCHART



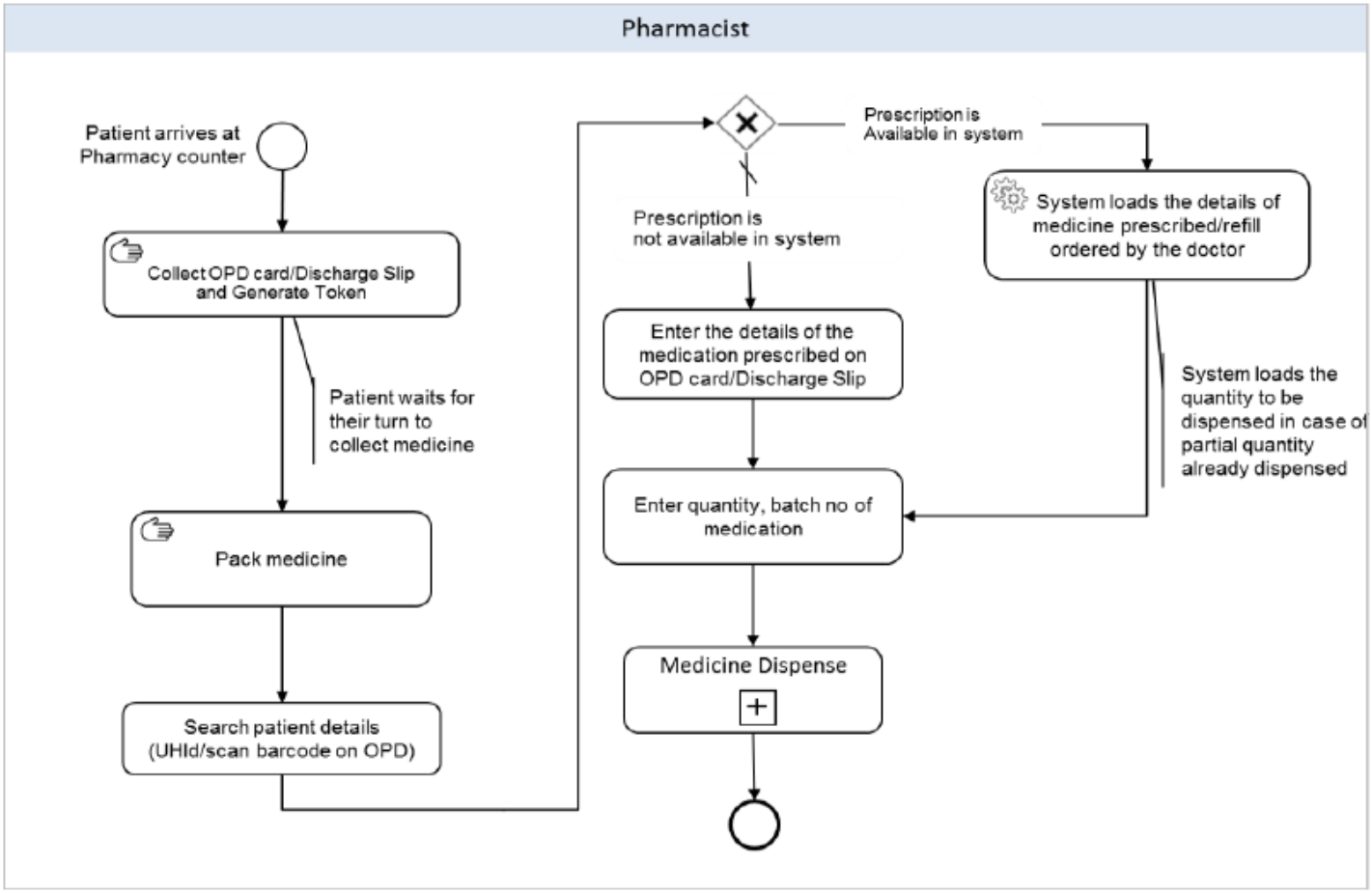
LABORATORY FLOWCHART



RADIOLOGY FLOWCHART



PHARMACY FLOWCHART



Objective

1. **To access the current knowledge of hospital staff about computer.**
2. **Good training should be provided to the Medical or Paramedical staff.**

Methodology

I have taken two groups for end User training as part of change management group A and group B and for the study the involvement of Team A and Team B in change process training, Study the impact of training on end users they trained by Skilled or semiskilled teams.

Study type:

Comparative study was conducted in the departments of General Hospital, Panchkula. The method employed in this study was sample survey. The samples were drawn through the technique of simple random sampling. The sample of interest of this study is users of IS and people involved in the system developed process. I have chosen these respondents because they have basic knowledge of computer.

Study Setting:

General Hospital Panchkula, Haryana.

Sample size:

The sample size undertaking for this study was 100 staff member from hospital. The sample was divided into two groups of each. Out of 50 staff members 20 are staff nurse, 5 from lab, 7 pharmacist, 5 doctors, 3 from main store and 10 front desk users.

Study Tool:

Data were generated directly from the respondents through the questions.

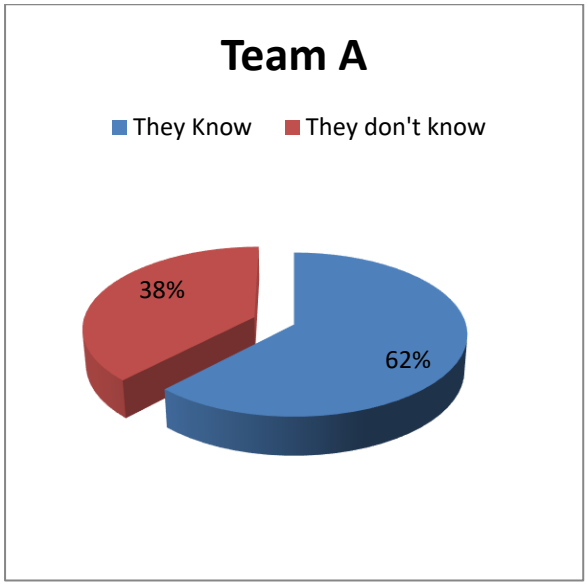
Analysis technique:

Analysis done through MS Excel for calculation.

Observation

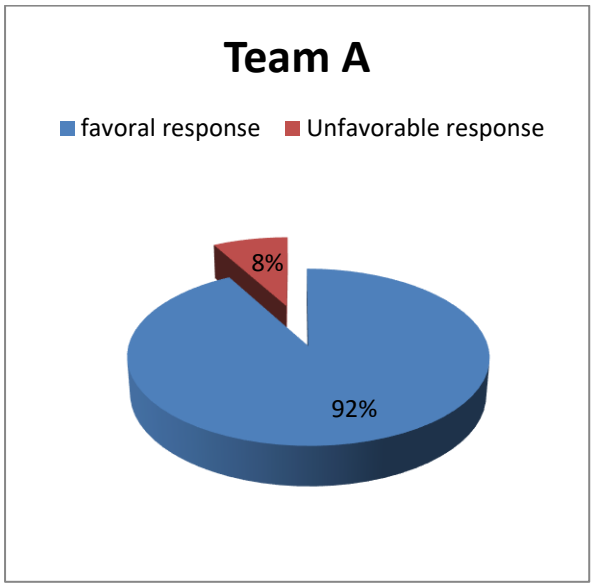
Findings done through the questioners, Questionnaires asked after go-live to the end user.

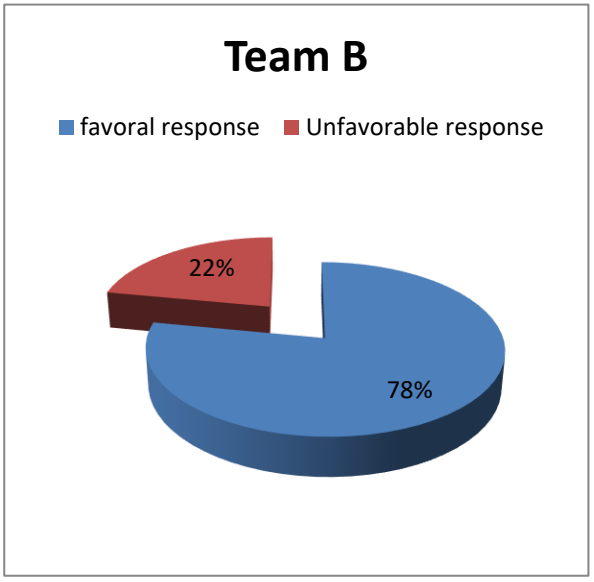
1. Do you know what is HMIS?



End user they trained by team A result is 62% which is 12% more then End user trained trained by team B and team B 50% positive result.

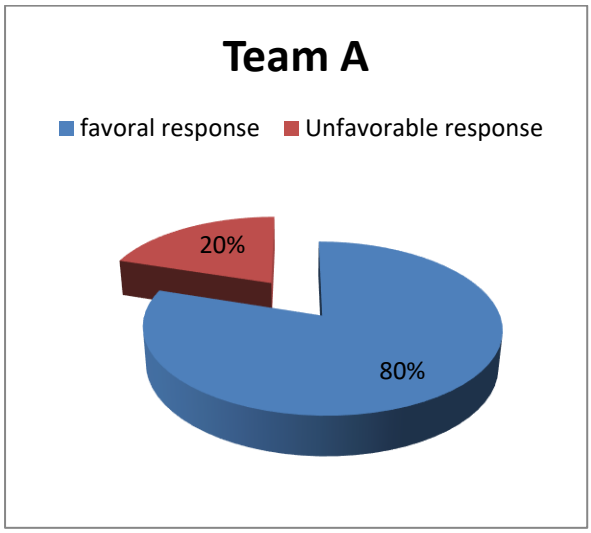
2. Do you understand how the new system will impact your daily work**?**

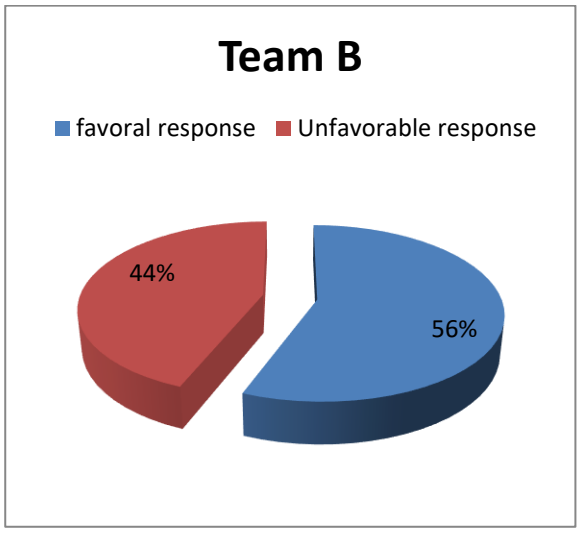




92% end users know how HMIS implementation impact there daily work they trained by team A and give them go-live support that is more then end users trained by team B, team A more productive 14% then team B productivity.

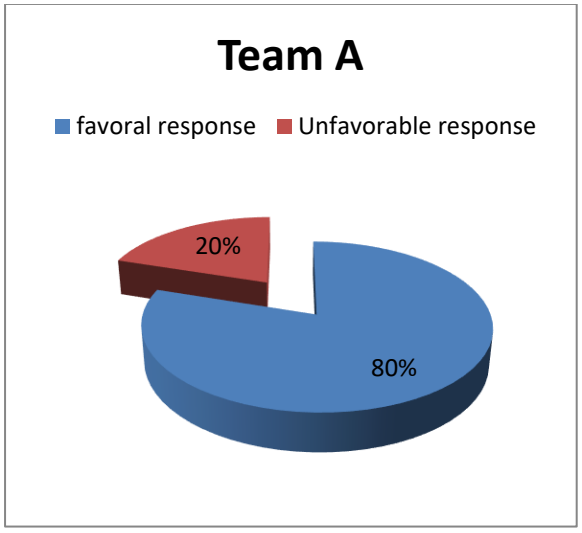
3. I have the skills and knowledge to effectively complete my tasks following the Go-live.

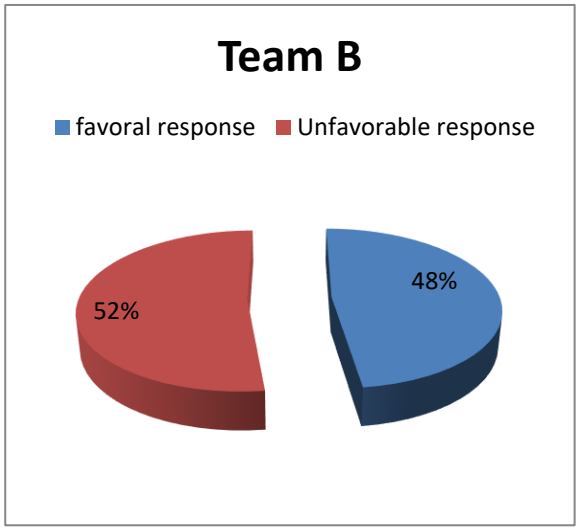




80% end users are confident they have been trained by team A and only 56% end users confident they have been trained by team B, difference of performance of team A and team B is 24%.

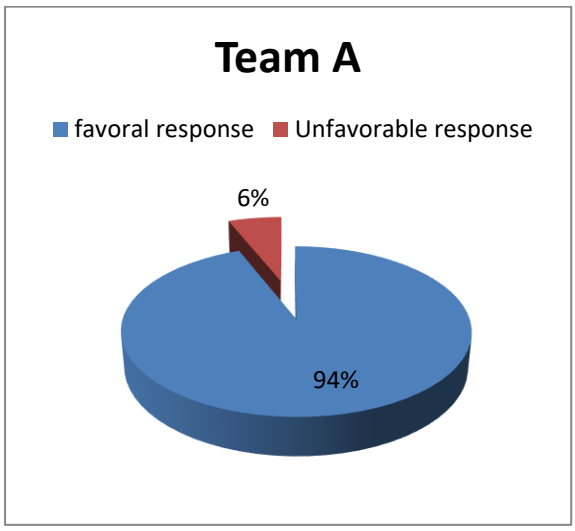
4. I feel ready to go live with the new system**.**

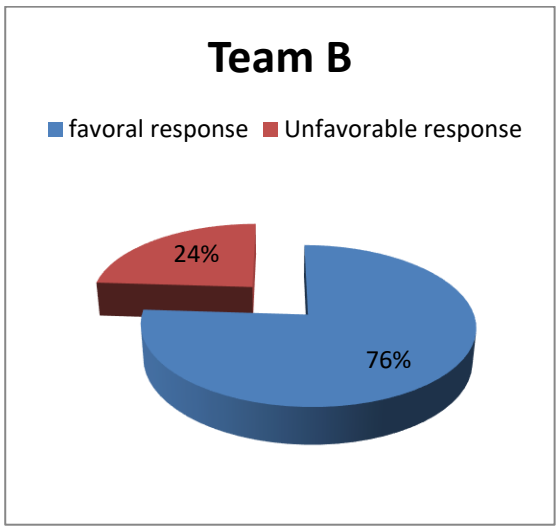




80% end users ready to use HMIS system of team A and team B's end users not ready to use more then 50% .

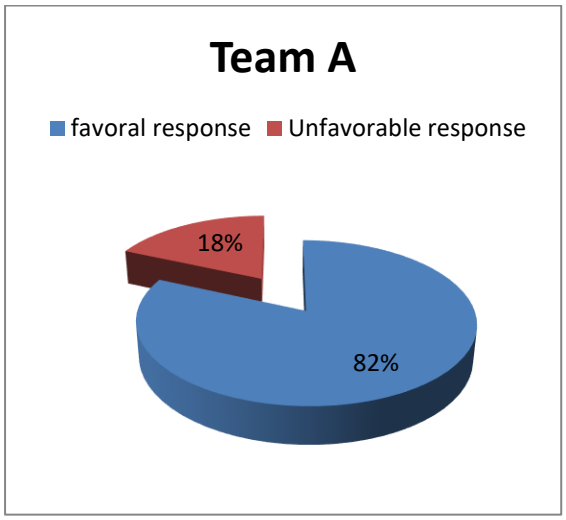
5. I feel that the new system will work for me.

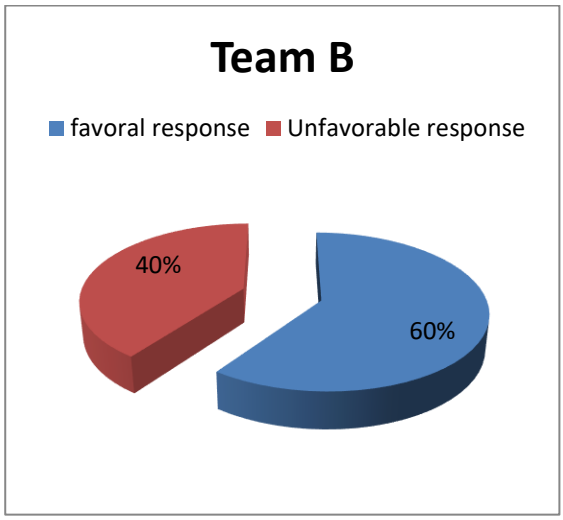




94% users agree that system will work for them of team A and only 67% users agree that system will work for them, difference is 18%.

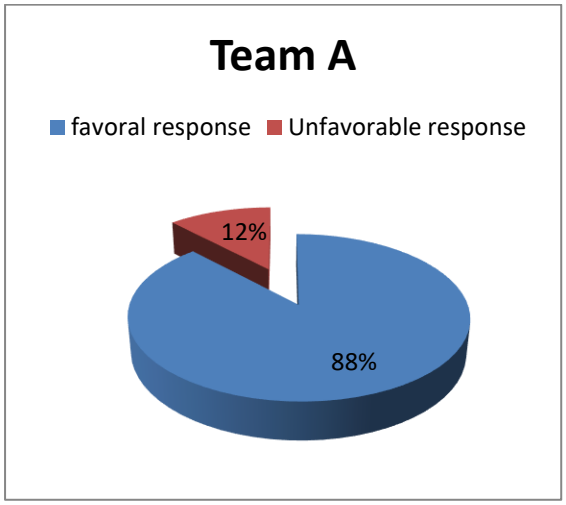
6. I have sufficient information about the project.

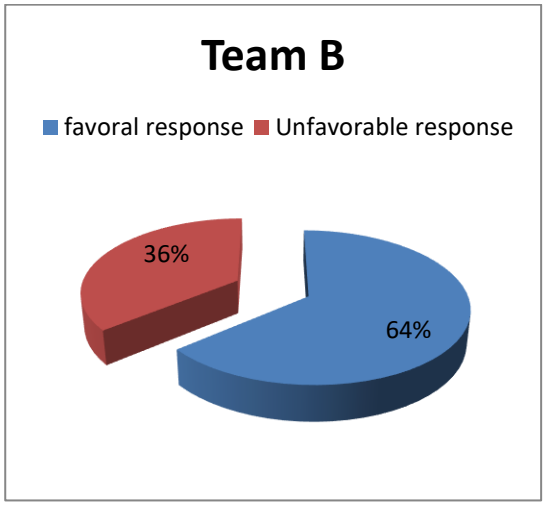




82% users know about the project of Haryana HMIS they trained by A and 60% users know the project.

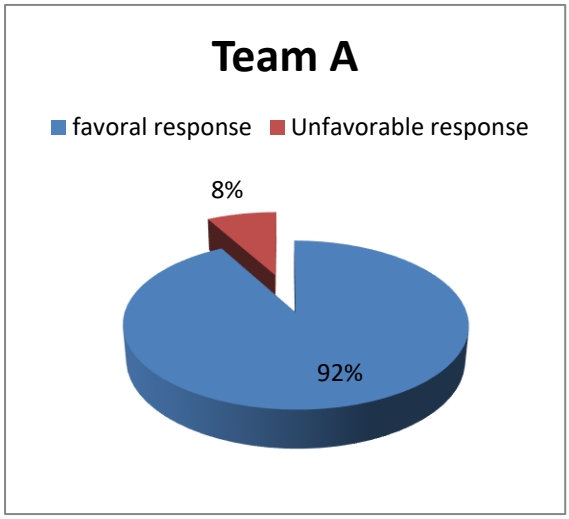
7. My work becomes easy through the system.

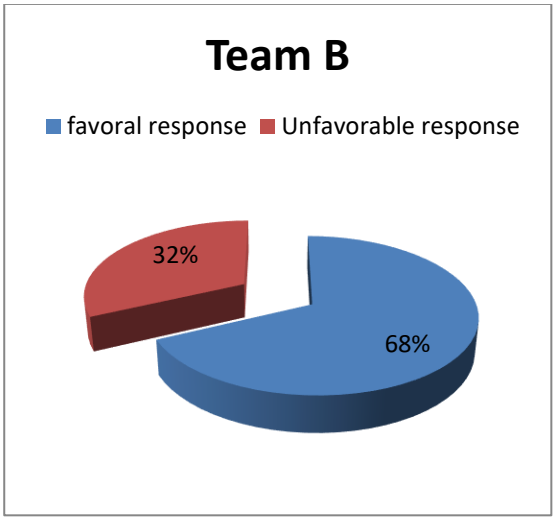




88% users accept becomes easy their work through the system they trained by team A and 64% users trained by team accept that system will easy their work.

8. System easy to understand.

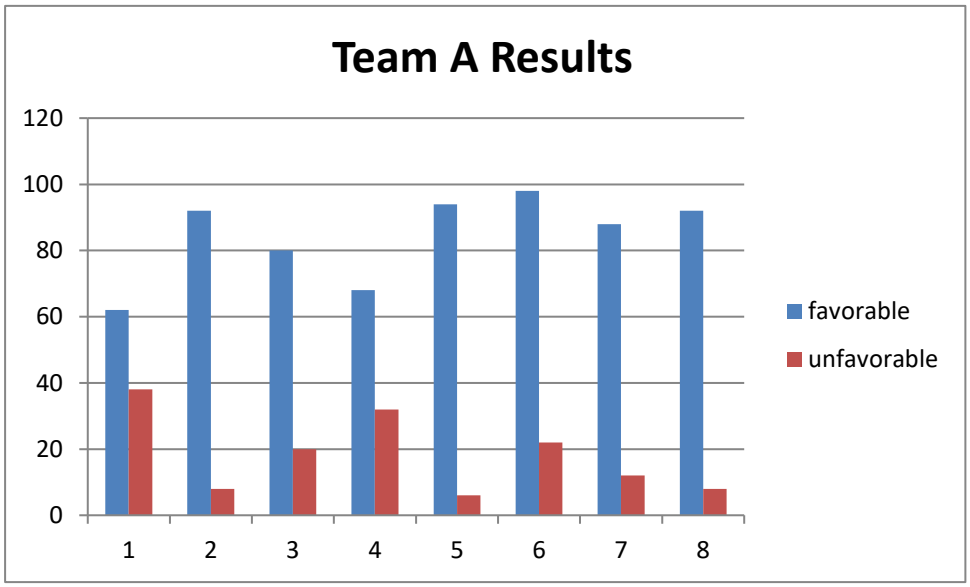




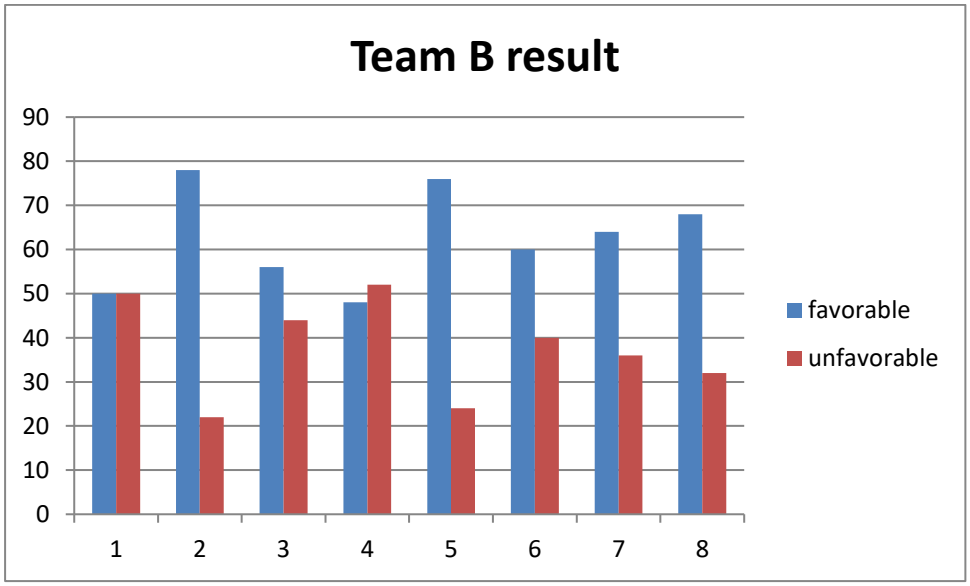
End user trained by team A said that system easy to understand an another site only 64% end users agree that system easy to understand the difference is 24% in both results.

Findings of Team A and Team B:

Team A performance shown in the figure. They have overall good results for change from the end users and meet their expectation to make system adaptable to the end user.



Team B Performance shown in figure. they have overall average result for change from end uses and they didn't get good results from the end users to use the systems and make them understand the change and make them understand to use the systems.



T-Test

Favorable response of Team A	Favorable response of Team B
31	25
46	39
40	28
34	24
47	38
49	30
44	32
46	34

Data Summary			
	A	**B**	**Total**
n	8	8	16
∑X	337	250	587
$\sum X^2$	14495	8030	22525
Mean	42.125	31.25	36.6875

$$t = \frac{\overline{X}_1 - \overline{X}_2}{\sqrt{\left(\frac{(N_1 - 1)s_1^2 + (N_2 - 1)s_2^2}{N_1 + N_2 - 2}\right)\left(\frac{1}{N_1} + \frac{1}{N_2}\right)}}$$

Mean $_A$ - Mean $_B$	t	df

10.875	+3.58	14

***t*(14) = +3.58, *p*>0.05**

t-Test Assuming Unequal Sample Variances
[Applicable only to independent samples.]

$Mean_a$—$Mean_b$	t	df
10.875	3.58	13.66

The obtained value of 3.58 exceeds the cutoff of 3.326 shown on the table at the 0.002 level. Therefore, $p > .05$. In a report the result is shown as $t(14) = +3.58$, $p > .05$.
Associated with the *t-ratio*, indicates the direction of the difference between the means (Group A had a higher mean than Group B).

Discussion

During the planning phase of the project, Team A demonstrated strong executive support and involvement in the project as a whole, and specifically the change management activities. Teams executive closely partnered with the change management team, discussing various change management ideas and concepts; tailoring tools and activities to better meet the needs of the team; and consistently participating in change management events and activities.

Another clear example of this executive's support was there willingness to champion dress rehearsal activities. She conducted a careful review of the planned activities to ensure they were appropriate for each area, and required participation for all end users. The simulations depended on various roles working together to complete real-life tasks, and required a significant time investment. Some locations temporarily closed during dress rehearsals to ensure staff had adequate time and attention to devote to practicing and mastering the new skills required for the implementation. Feedback from Team A leader specified the Change Network and dress rehearsals were keys to the successful Go-live for their team. They increased end user engagement and helped keep end users informed by spreading key project messages. She also indicated the peer-to-peer communication was especially helpful in ensuring important messages were received and understood by end users. The visible sponsorship and participation of the executive sponsor enabled success of the activities by ensuring that leaders and end users understood the importance of managing change as well as their role in it.

Team B implemented the new system in parallel During the planning phase, leaders of Team B were involved in the project at a high level, and their degree of sponsorship and support of change management was less visible to end users. Though the leaders agreed to engage in the same change management activities employed with team B, they demonstrated less active support of the activities to the end users. The leaders complied with general requests, such as providing lists of users to participate in activities; however, few leaders reached out to the selected end users to show their support and encouragement, or participated in the various end user engagement meetings to demonstrate sponsorship. Throughout the phases of the project, Team B's end user participation in Change Management activities steadily decreased.

Though leadership from Team A publicly advocated the necessity of dress rehearsals, most areas in Team B failed to engage in the dress rehearsal process.

Conclusion

The primary purpose of this study is identifying the gap in support and training of end user. How get a good level of acceptance and awareness of HIS implementation, the level of acceptance and awareness should be high in hospital staff through skilled and well prepared implementation team they train the medical and paramedical staff. Well trained and prepared team required to make hospital staff understand about the benefits of use the system, while for the behavior aspect of use which influence benefits of use HMIS and change management activities less performed by team B necessary for implementation. Change management activities should be necessary for implementation team and trainers.

Suggestions:

1. Team B didn't explain and aware the hospital staff about the HMIS.

2. Benefits of HMIS should be well explained to the superintendent of hospital and staff of hospital.

3. Implementation team should be pre prepared for training for HIS and should be aware about problems through the dry run.

4. Medical or paramedical staff should be trained on basic computer training before training of HMIS.

5. participation in change management activity must be done for implementation.

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