Research on Systematic Transformation from Manual to Software Technique: An Innovative Tracking IT Tool by Deploying Training Parameters

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Abstract
The Hospital Management Information system includes registration of patients, storing their details into the system, and also computerized billing in the pharmacy, Labs, Radiology and hospital management. The software has the facility to give a unique Medical Record (MR) No for every patient and stores the details of every patient and the staff automatically. It includes a search facility to know the current status of each room. User can search availability of a doctor and the details of a patient using the Medical Record (MR) No. The Hospital Management System can be entered using unique Medical Record (MR) number. It is accessible either by receptionist or hospital administration. Only they can add data into the database as per authorized role in the system. The data can be retrieved easily. The interface is very user-friendly. The data are well protected for personal use and makes the data processing very fast. Hospital Management Information System is powerful, flexible, and easy to use and is designed and developed to deliver real conceivable benefits to hospitals. Hospital Management Information System is designed for multispecialty hospitals, to cover a wide range of hospital administration and management processes. It is an integrated end-to-end 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. Hospital Management Information System is a software product suite designed to improve the quality and management of hospital management in the areas of clinical process analysis and activity-based costing. For complete success of HMIS, IT department and all the users must be trained comprehensively to make sure effective quality results. In this research study a detailed HMIS training parameter were compiled to make end user confident for efficient error free tracking of hospital management information system and also for efficient working of Doctors, paramedical staff, Hospital administration and IT department.

Keywords: Healthcare, Hospital Information systems, Hospital Management Information System HMIS, Manual system, Advanced Hospital Management System, Medical Record (MR) No, Data Tracking, Management Information System MIS, Training Parameters, Tickler Administration

I. Introduction

Before computerized Hospital Management Information System came into practice, it was difficult to keep proper records of the daily activities of hospitals, patient information, maintenance schedule of equipment's in the hospital, and how funds are being allocated and used. This resulted in waste of money, time and manpower. Hospital Management Information System is an information management system designed to help manage the various aspects of a hospital (administrative, clinical and financial). It helps in monitoring and controlling the hospital's daily transactions, as well as the hospital's performance. It also helps to address the critical requirements of the hospital. Hospital Management Information System enables access to the right information and automation of complex task via applying different workflows, thereby allowing staff to spend more time caring for patients. Hospital Management Information System is custom built to meet the specific requirements of the medium and large size hospitals across the globe.(Olusanya et al., 2015) Most hospitals face several challenges with Hospital Management Information System because some of them are still using manual processes, while the ones that use the computerized method are also faced with the challenge of adjusting to it. Such problems include

- ➢ High cost of software development, deployment and improvement.
- ➢ Difficulty in migrating from manual processes, because both staff and patients are used to the manual processes and so are unable to speedily cope with the new system.
- ➢ Lack of IT friendly medical personnel is also presenting several challenges.
- ➢ Huge influx of patients visiting government hospitals makes the process of migrating to automated processes highly difficult. They do not have the patience to wait for registration and data entry and often fail to understand the functioning of automated processes.(Dr M H B.,2010,Duhan et al.,2001,Winter et al.,2002)

Management has been defined as the process, comprised of social and technical functions and activities, occurring within organizations for the purpose of accomplishing predetermined objectives through humans and other resources.(Longest et al.,2000) Healthcare quality and patient safety are the common hymn of all primary and secondary health care providers. In hospitals, over the years, a variety of models and schemes for hospital interventions and development have been deployed.(Friesner et al.,2009).Hospital Management System provides the benefits of streamlined operations, enhanced administration & control, superior patient care, strict cost control and improved profitability. There are different modules in the process of Hospital Management Information System. These include:

- ➢ Patient management,
- ➢ Services management,
- ➢ Appointment scheduling,
- ➢ Store management,
- ➢ Pharmacy management**. (**Adebisi et al.,2015,Duhan et al.,2001)

Hospital Information systems are in high demand to handle increasing population needs and also aids the practicing doctors and hospital service and support staff with timely service and precision. There are varied parameters available to assess the performance of services like hospital industry, and the successful implementation and usage of Hospital information system forms a crucial role. Hospital information systems are available in the software market which in most cases needs to be customized and in some cases HMIS needs to be developed as a customized software based on specific hospital requirements (user requirements) and at assessing, identifying the key components. (web report Ijeit.,2015) "Advanced Hospital Management System" includes Registration of patients, storing their details into the system and also computerized billing in the pharmacy, and labs. HMIS provide the facility of a unique id for every patient and stores the details of every patient and the staff automatically. It includes a search facility to know the current Status of each room. User can search availability of a doctor and the details of a patient using the id.(Premkumar et al.,2013,Berg M.,2001) Data can be entered Using a username and password. It is accessible either by an administrator or Receptionist. Only they can add data into the database. The data can be tracked and retrieved easily. The interface is very user-friendly. The data are well protected for personal use and makes the data processing very fast.(T C Veinot et al.,2018) Manual system refers to the system that the hospital functionalities are done manually. That is if a Patient want to consult a doctor he can visit their till his chance called. Outpatients and Inpatient tickets are distributed directly. The main disadvantage is time consuming. (Gunjan.,2016) A few limitations of manual system are: Lack of security of data. Time consuming. Consumes large volume of paper work. Manual work. No direct role for the higher officials. To avoid all these limitations and make the system working more accurately it needs to be computerized. (D Nguyen et al.,2011) The Hospital management system software is user-friendly software.

Healthcare especially in the developed world is characterized by rapidly increasing use of information technology in patient care, increasing documentation, coding and billing, and management. Rise of health information technology worldwide is increasing the efficiency of health service delivery, reducing medical errors, improving quality of care, and providing better information for patients and physicians.(A.Lorch et al.,2007) The overall goal of the HMIS function is to obtain, manage, and use information to improve health care and medical services, performance, governance and management and support processes.(Asabe.,2013,A Spanjers et al.,2001) Healthcare mistakes have serious consequences that can affect ability to carry out social and productive endeavors. Healthcare information systems have changed the healthcare industry drastically over the last decade as well as the last few years. (Abraham et al.,2011, Delone et al.,2003, Haux.,2006)

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II. Material and Research Method

Before Implementation of HMIS a formal presentation was conducted for doctors and hospital Administration to demonstrate the whole Implementation process and get their feedback. Some of the doctors have the mind set not to implement the HMIS and majority of the doctors were in favor of implementing HMIS. A comprehensive well defined Implementation methodology were presented which starts with Computer Assessment Survey / form. The hospital administration and doctors were of the opinion that Computer Assessment Survey will provides better understanding and help them to design better training program and such training is essential for effective implementation of the system.

The participants included house physicians/ internees, medical officers, postgraduate resident trainees, and consultant physicians including Hospital Administration and IT Department. Of the total, a few doctors have had previous experience in the use of HMIS. After training doctors responded correctly when asked to amplify the term "HMIS" to its full form and clinicians believed that the current version of HMIS was satisfactory and required no changes. In our study, there was unprecedented unanimity of thought in physicians with regard to the need for formal training prior to implementation of HMIS for full utilization of its potentials. A majority of our respondents denied being given formal training prior to implementation of HMIS in the hospital, which reflected in poor awareness of certain important features. This important finding of the study implies that the system was not being utilized to its full capacity, and the users were unaware of the various features, attributable to the absence of formal training sessions before. Doctors believe that work-in trainings are also very important, where the clinicians are given demonstrations if ever they face any difficulty. The benefits of HMIS can extend to hospital staff, such as ease of submitting daily attendance and leave requests. Before training sessions some information about organization and end user previous knowledge of IT system and how to implement it is important to collect. These information and training schedule was divided into 13 modules in present research. First module was Computer assessment of end user to insure understanding of HMIS.

III. Modules

The entire research mainly consists of 13 modules, which are

- ➢ Computer Assessment
- ➢ Organization plan
- ➢ System administration
- ➢ Patient Registration System
- ➢ Out Patient Management Systems
- ➢ Wards Management System
- ➢ Laboratory Management System
- ➢ Radiology Management System
- ➢ Physiotherapy Management System
- ➢ OT Management System
- ➢ Payroll Management System
- ➢ Financial Accounting System
- ➢ Inventory Management System

Figure 1: Hospital Management System

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III. 1. Module Name: Computer Skills- User Assessment Form

This module was used to evaluate end user computer skill and awareness

Computer Skills – User Assessment Form

Hospital Name_____

Name:_____Designation:_____

Place of Duty:_____ Nature of Duty_____Dept_____

Basic Qualification_____

Computer Diploma/Certificate (If any)_____

Basic Knowledge of Computer **(Yes / No)**_____
In case of **Yes** please indicate your knowledge level.

Skills	Little Experience	Comfortable	Expert
Turn on and safely Shutdown your computer			
Restart your computer if it becomes locked up			
Open a program using the **Start** menu or double click			
Mouse Control			
Terms: Desktop, icons, menus, window, click, select, drag?			
Use scroll bars and move, resize and close windows			
Use help screens in software programs			
Navigate among folders, create and name folders, delete folders			
Copy or move a file from one folder to another			
Login to the computer by using Ctrl, Alt and Del keys			
Using Windows Task Manager.			
Using Keyboard Functional and other Keys (underscore, F1, F2, F3…, Ctrl, Alt, etc)			

User Signatures_____   HOD Signatures_____

III. II. Module Name: Organization Plan
Organization Plan is a core module of HMIS application. Following modules
Estimated Time lines for Training: The timelines for training would be divided into following 03 days period
Trainer(s): MIS Manager only
Major Training Objectives: Following is one possible list of Organization Planning training Objectives.
1. Organization Plan Overview
2. Defining Plan Rules.
3. ITO Detail
4. Work Centers/ Logical Units

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5. Finalization

Table 1: Organization Plan training module

Sr. #	Feature to trained	Details	Time Required
1.	Organization Plan Overview	1. Explain the overall flow of Organization Plan 2. How it relates to different systems in HMIS	30 mins
2.	Defining Plan Rules	1. Defining Unit Types. 2. Unit Type Maintenance 3. Defining Information Types 4. Defining Units. 5. Allow of Information Type to Different Unit Type 6. Allow of one Unit Type under another Unit Type.	20 mins
3.	ITO Detail	1. ITO Detail for each ITO. 2. Deleting an ITO.	15 mins
4.	Work Centers/ Logical Unit/ Jobs Position	1. Add/Delete Work Center 2. Configure employee in Job position etc	15 mins
5.	Finalization	Complete understanding of Organization Plan	15 mins

III. III. Module Name: System Administration
Estimated Time lines for Training
The timelines for training would be divided into following 02 days period
Trainer(s): MIS Manager only
User: MIS Manager
Major Training Objectives: Following is one possible list of System Administration training Objectives in a logical sequence.

1. System Administration Overview.
2. Menu administration.
3. User Administration.
4. Interface Management.
5. System Messages.
6. Tickler Administration
7. Finalization

Table 2: System Administration training module

Sr. #	Feature to trained	Details	Time Required
1.	System Administration Overview	1. Explain the overall flow of System Administration module. 2. How it relates to different systems in HMIS. 3. Benefits to Gain.	20 mins
2.	Menu administration	1. System Maintenance 2. Path Maintenance 3. Business Function Maintenance 4. Menu Maintenance. 5. Role Maintenance 6. Designation Maintenance	15 mins
3.	User Administration	1. User maintenance 2. User preferences 3. Role Maintenance 4. System Language Maintenance	10 mins
4.	Interface Management	Setting of Visual Attributes.	10 mins
5.	Tickler Administration	1. Notification Entry. 2. Weather Information. 3. News Information. 4. Admin Tape Configuration. 5. User Tape Configuration.	10 mins
6.	Finalization		15 mins

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III. IV. Module Name: Patient Registration System
Estimated Time lines for Training: The timelines for training would be divided into following 02days period
Trainer(s): MIS Manager/ Registration Staff/ User Support Staff
Users: Registration Staff
Major Training Objectives: Following is one possible list of Patient Registration System Training Objectives.
1. Patient Registration Configuration
2. Patient Registration System overview
3. Patient Registration
4. Visit Maintenance
5. Swift Registration

Table 3: Patient Registration System training module

Sr. #	Feature to trained	Details	Time Required
1.	Patient Registration Configuration	1. City List Maintenance 2. District/ Tehsil Maintenance 3. Patient Type Maintenance 4. Rank Maintenance 5. Registration Number Generation rules 6. Services Configuration	20 mins
2.	Patient Registration	Registered different types of patients	15 mins
3.	Visit Maintenance	1. Make visit 2. Visit Cancellation	10 mins
4.	Swift Registration		10 mins

III. V. Module Name: Out Patient Management System
Estimated Time lines for Training: The timelines for training of Outpatient Management System would be divided into following 08days period
Trainer(s): MIS Manager/ Doctors/ User Support Staff
Users: Medical Officers, Specialists, House Job Officers & Other Doctors
Major Training Objectives: Following is one possible list of OPD training Objectives
1. OPD system Overview
2. Patient searching & Lookup
3. Patient Diagnosis
4. Prescription
5. Referrals
6. Histories & Performa's
7. Finalization

III. VI. Module Name: Wards Management System
Estimated Time lines for Training: The timelines for training would be divided into following 07 days period
Trainer(s): MIS Manager/ Wards Staff/Doctors / User Support Staff
Users: Medical Officers, Specialists, House Job Officers & other Doctors
Major Training Objectives: Following is one possible list of WARD training Objectives.
1. WARD system Overview
2. Patient Admission & Allotment of Bed in Ward
3. Patient Diagnosis
4. Medicine Prescription & Dispensation
5. Diet Prescription & Dispensation
6. Vital Signs & In-Take/ Out-put Chart Maintenance
7. Patient History & Performa's
8. Indoor Referrals & Transfers
9. Requisitions
10. Other Ward Activities
11. Patient Discharge & Follow-up Schedule
12. WARD Module Skill Test
13. Finalization

Table 4: Out Patient Management System training module

Sr. #	Feature to trained	Details	Time Required
1.	OPD System Overview	1. Explain the General Features of the OPD module 2. How it relates to other systems in HMIS 3. Benefits to Gain	30 mins
2.	Patient Searching & Lookup	1. Basic Patient Search 2. Re-Routing Concept & execution 3. Locking & Unlocking concept & execution 4. Viewing Patients Previous Data	20 mins
3.	Patient Diagnosis ICD=International code of diagnosis	1. Introduction to ICD 2. ICD grouping & Organization 3. Looking up a diagnosis in ICD 4. Entering and saving a Diagnosis in HMIS 5. View Diagnosis History	45 mins
4.	Prescription	1. Rules Regarding Prescription (What can & can't be prescribed) 2. How to Search for a Medicine/Treatment 3. Prescribing & Saving Prescriptions 4. Changing/Editing a previously given Prescription 5. Viewing & Repeating a Previous Prescriptions 6. Using Templates for Faster	45 mins
5.	Referrals	1. Referring to a Different Location (OPD) 2. Referring to a Senior in the Same OPD 3. Referring to Pathology Lab for Investigations 4. Referring to Radiology Lab 5. Requesting Ward Admissions 6. Referring to Operation Theater for a Procedure/Operation	30mins
6.	Histories & Performa's	1. Recording Misc. Types of Histories e.g. Family History, Drug History etc 2. Introduction to Performa Based History Taking 3. Filling & Saving the History & Findings Performa's 4. Customizing the Performa's according to your own requirements	30 mins
7.	Finalization		20 mins

Table 5: Wards Management System training module

Sr. #	Feature to trained	Details	Time Required
1.	WARD system Overview	1. Explain the General Features of the WARD module 2. How it relates to other systems in HMIS	45 mins
2.	Patient Admission & Allotment of Bed in Ward	1. Possible Gateways through which Patient can admit or referred in ward 2. Bed Allocation & Reservation mechanism 3. Admission Through Ward Master in case of deficiency of bed in ward 4. How to Allot Bed after Ward Admission 5. How to Cancel Patient Ward Allocation	20 mins
3.	Patient Diagnosis	1. Introduction to ICD 2. ICD grouping & Organization 3. Looking up a diagnosis in ICD 4. Entering and saving a Diagnosis in HMIS 5. View Diagnosis History	30 mins
4.	Medicine Prescription & Dispensation	1. Rules Regarding Medicine Prescription (What can & can't be prescribed) 2. How to Search for Medicine/Treatment	45 mins

		3. Prescribing & Saving Prescriptions 4. Prescribing a substitute medicine in case of not available in Main Store 5. Modifying/Editing a current Prescription or previously given Prescription 6. Viewing & Repeating a Previous Prescriptions 7. Medicine Dispensation	
5.	Diet Prescription & Dispensation	1. How to define Diet Type, Timings, Items Combination and day wise scheduling 2. Diet Prescription mechanism with added calories if required, and Diet In-Take Method 3. How to diet dispense according to scheduled menu items & time	20 mins
6.	Vital Signs & In-Take/ Out-put Chart Maintenance	1. Prescription of Vital Signs & In-Take/Out-Put Chart Maintenance Advice 2. How to store Vital Signs & In-Take/Out-Put chart reading 3. Viewing the history chart by statistical or graphical view	20 mins
7.	Patient History & Performa's	1. Recording Misc. Types of Histories E.g. Family History, Drug History etc 2. Introduction to Performa Based History Taking 3. Filling & Saving the History & Findings Performa's 4. Customizing & Printing the Performa's according to your own requirements	30 mins
8.	Indoor Referrals & Transfers	1. Referring & Transferring Different Location (WARD) 2. Referring to Pathology Lab for Investigations 3. Referring to Radiology 4. Referring to Physiotherapy 5. Referring to Dialysis Unit 6. Referring to Operation Theater for a Procedure/Operation	30 mins
9.	Requisitions	1. How to raise Blood Requisition from Ward 2. Blood Collection against raised requisition from Blood Bank 3. Blood Collection/ Rejection Reporting 4. How to raise Medicine Requisition from Main Store 5. Medicine Collection procedure from Main Store & Local Stock Updating	20 mins
10.	Other Ward Activities	1. Physician Round Creation/Cancellation 2. How to change/Allot bed 3. How to Change Attending Physician (Attending, Visiting etc) 4. Writing and saving Delivery Notes and Baby Notes 5. Create Registration of newly born baby 6. Maintaining Patient condition, writing round summary or advise for discharge	30 mins
11.	Patient Discharge & Follow-up Schedule	1. How to issue check-out permission for any patient from by Ward MO/ In-charge 2. Pre-Requisites and Check-out procedure for any patient	30 mins
12.	WARD Module Skill Test	Skill Test of complete ward management system	20 mins

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III. VII. Module Name: Laboratory Management System
Estimated Time lines for Training: The timelines for training would be divided into following 05days period
Trainer(s): MIS Manager/ Laboratory Staff/ Pathologist/ User Support Staff
Users: Laboratory Staff and Pathologist
Major Training Objectives: Following is one possible list of LAB training Objectives.
1. LAB System Overview
2. Manual Lab Visit
3. Specimen Collection
4. Result Entry
5. Verification and Cancellation
6. Procedure for Internal request & Receiving
7. LAB Module Skill Test

Table 6: Lab Management System training module

Sr. #	Feature to trained	Details	Time Required
1.	LAB System Overview	1. Explain the General Features of the LAB module 2. How it relates to other systems in HMIS	45 mins
2.	Manual Lab Visit	1. Patient visit Maintenance 2. Selection of Lab Test 3. Searching Patient	20 mins
3.	Specimen Collection	1. Specimen Collection 2. Searching Patient Test Request	10 mins
4.	Result Entry	1. Department Selection 2. Result Entry 3. Search for Test Requests	10 mins
5.	Verification and Cancellation	1. Department Selection 2. Individual Result Verification 3. Group of Tests Requests Verification 4. Individual Test Cancellation 5. Search for Test Requests	10 mins
6.	Procedure for Internal request & Receiving	Procedure for Internal Request and Receiving	15 mins
7.	Configuration of Tests/ sub tests	1. Add Test 2. Adding max and min values of tests 3. Active/de active tests	30 mins
7.	LAB Module Skill Test	Test of complete module of LAB	1 hour
8.	Finalization		15 mins

III. VIII. Module Name: Radiology Management System
Estimated Time lines for Training: The timelines for Radiology Management System training would be divided into following 05 days period
Trainer(s): MIS Manager/ Radiology Staff/ Radiologist/ User Support Staff
Users: Radiology Technician & Radiologist
Major Training Objectives: Following is one possible list of Radiology training Objectives.
1. Radiology System Overview
2. Manual Lab Visit
3. Specimen Collection
4. Result Entry
5. Verification and Cancellation
6. Procedure for Internal request & Receiving
7. Radiology Module Skill Test
8. Finalization

III. IX. Module Name: Physiotherapy Management System
Estimated Time lines for Training: The timelines for Physiotherapy Management System training would be divided into following 03 days period
Trainer(s): MIS Manager/ Physiotherapy Doctor & Staff/ / User Support Staff

Younus, W. (2019). Research on Systematic Transformation from Manual to Software Technique: An Innovative Tracking IT Tool by Deploying Training Parameters. *Bulletin of Business and Economics,* 8(4), 230-243.

User(s): Physiotherapy Doctor(s) and Physio. Staff

Major Training Objectives: Following is one possible list of PMS training Objectives in a logical sequence

1. Physiotherapy Management System Overview
2. Physiotherapy Treatment Advise
3. Patient Attendance
4. Extension or Changing in Treatment
5. Procedure for Internal request & Receiving
6. PMS Module Skill Test

Table 7: Radiology Management System training module

Sr. #	Feature to trained	Details	Time Required
1.	Radiology System Overview	1. Explain the General Features of the Radiology module 2. How it relates to other systems in HMIS	45 mins
2.	Radiology Configuration	1. Service List 2. Room Configuration 3. Filtered Services	
2.	Radiology Reception	Registered different types of patients	20 mins
3.	Patient Radiology Visit	1. Specimen Collection 2. Searching Patient Test Request	10 mins
4.	X-Ray Performed by Technician.	1. Department Selection 2. Result Entry 3. Search for Test Requests	10 mins
5.	X-Ray/Ultrasound Report	1. Department Selection 2. Individual Result Verification 3. Group of Tests Requests Verification 4. Individual Test Cancellation 5. Search for Test Requests	15 mins
6.	Report Delivery	Procedure for Internal Request and Receiving	15 mins
7.	X-Ray/Ultrasound Performed by Doctor	1. Add Test 2. Adding max and min values of tests 3. Active/de active tests	30 mins
7.	Radiology History	Test of complete module of LAB	1 hour
8.	Ultrasound Examination	Patient Test Request	15 mins
9	Request Status Detail		

Table 8: Physiotherapy Management System training module

Sr. #	Feature to trained	Details	Time Required
1.	Physiotherapy Management System Overview PMS	1. Explain the General Features of the PMS module 2. How it relates to other systems in HMIS	20 mins
2.	Physiotherapy Treatment Advise	1. Referred for Physiotherapy 2. Examination Notes Entry 3. Define duration of treatment, Exercise and Machine	20 mins
3.	Patient Attendance	Attendance of Patient	5 mins
4.	Extension or Changing in Treatment	1. Extension in duration of Treatment 2. Changing in Exercise or Machine	10mins
5.	Procedure for Internal Request and Receiving	1. Procedure for Internal Request and Receiving	2 mins
6.	PMS Module Skill Test	Test for all major functions of Physiotherapy Module	45 mins

III. X. Module Name: OT Management System

Estimated Time lines for Training: The timelines for OT Management System training would be divided into following 03 days period

Trainer(s): MIS Manager/ OT Doctor & Staff/ / User Support Staff
Major Training Objectives: Following is one possible list of OTS training Objectives in a logical sequence
1. OTS System Overview
2. Pre-Requisites of Operation
3. Post Procedure of Operation
4. Procedure for Internal request & Receiving
5. OTS Module Skill Test
6. Finalization

Table 9: OT Management System training module

Sr. #	Feature to trained	Details	Time Required
1.	OT System Overview OTS=Operation theater System	1. Explain the General Features of the OTS module 2. How it relates to other systems in HMIS 3. Benefits to Gain	15 mins
2.	Pre-Requisites of Operation PAA=Pre anesthetic assessment	1. Refferment for P A A 2. Verification of Qty and Sterilization 3. Cancellation of operation 4. Check List Verification	15 mins
3.	Post Procedure of Operation	1. Surgeon Notes 2. Anesthetist Notes 3. Verification of Qty of Equipment used in Operation	10 mins
4.	Procedure for Internal Request and Receiving	Procedure for Internal Request and Receiving	15 mins
5.	Final Skill Test for OT module	Overall training module	30 mins

III. XI. Module Name: Payroll Management System
Estimated Time lines for Training: The timelines for Payroll Management System training would be divided into following 07 days period
Trainer(s): MIS Manager/ Accounts Manager/Accounts Assistant/ / User Support Staff
Users: Accounts Assistant, Accounts Manager
Major Training Objectives: Following is one possible list of payroll training Objectives in a logical sequence
1. Payroll system Overview
2. Allowances and Deductions
3. Payroll Policy
4. Miscellaneous Income and Deduction
5. Payroll Period
6. Taxes
7. Loans
8. Employee Payroll configuration
9. Payroll Query and Reports

III. XII. Module Name: Financial Accounting System
Estimated Time lines for Training: The timelines for Financial Accounting System training would be divided into following 10 days period
Trainer(s): MIS Manager/ Accounts Manager/Accounts Assistant/ / User Support Staff
Users: Accounts Assistant, Accounts Manager
Major Training Objectives: Following is one possible list of GL (general Ledger) /payable/receivable training Objectives
1. Accounts GL/payable/receivable Overview
2. Chart of Accounts Definition.
3. Journal Vouchers.
4. Budget.
5. Customer Definition.
6. Invoices.
7. Payments.
8. Taxes.

Younus, W. (2019*). Research on Systematic Transformation from Manual to Software Technique: An Innovative Tracking IT Tool by Deploying Training Parameters. *Bulletin of Business and Economics,* 8(4), 230-243.

9. Posting to GL.
10. Distribution.
11. Consolidation.

Table 10: Payroll Management System training module

Sr. #	Feature to trained	Details	Time Required
1.	Payroll system Overview	1. Explain the overall flow of payroll 2. How Payroll is Generated. 3. How it relates to different systems in HMIS	20 mins
2.	Allowances and Deduction	1. Fixed allowance and Deduction 2. Calculated allowance and Deduction 3. Tax on Allowances and Deduction	10 mins
3.	Payroll Policy	1. Payroll Policy definition. 2. Allowance and deduction in Payroll Policy 3. Editing payroll Policy	20 mins
4.	Monthly Income and deduction	1. Monthly income and expenses	10 mins
5.	Payroll Period	1. Payroll Year 2. Pay Period in Payroll Year	20 mins
6.	Taxes	1. Tax Brackets 2. Tax exemption Brackets	20 mins
7.	Loans	1. Loans definition 2. Loans deduction Installments 3. Period Exempted from deduction	20 mins
8.	Employee Payroll Configuration	1. Employee payroll Data 2. Employee Taxes 3. Employee Pay change 4. Employee Allowances and Deduction 5. Employee Monthly Expenses 6. Employee Bank Account.	30 mins
9.	Skill Test for Payroll System	Overall Payroll module	45 mins

III. XIII. Module Name: Inventory Management System
Estimated Time lines for Training: The timelines for Inventory Management System training would be divided into following 07 days period
Trainer(s): MIS Manager/ Accounts Manager/Accounts Assistant/ / User Support Staff
Users: Accounts Assistant, Accounts Manager
Major Training Objectives: Following is one possible list of Inventory/Purchasing training Objectives in a logical sequence
1. Inventory/Purchasing system Overview
2. Purchase Orders
3. Receiving
4. Internal Demand/ Indent
5. Work Flow of Indent (Approval process)
6. Issuance from Main Medical Store
7. Retail Issue stores
8. Feeding of Opening Balances
9. Central Medical Stores
10. Central Purchase/Bulk Purchase/Risk Purchase

Younus, W. (2019*).* Research on Systematic Transformation from Manual to Software Technique: An Innovative Tracking IT Tool by Deploying Training Parameters. *Bulletin of Business and Economics,* 8(4), 230-243.

Table 11: Financial Accounting System training module

Sr. #	Feature to trained	Details
1.	Accounts GL/payable/receivable Overview	1. Explain the overall flow of Accounts GL/payable/receivable 2. How it relates to different systems in HMIS
2.	Customer/Vendor definition	1. Customer /vendor Personal Information 2. Customer /vendor accounts
3.	Chart of Account Definition	1. Books of Accounts 2. Accounts Detail 3. Chart of balance
4.	Journal Voucher	1. Journal Batch/Voucher 2. Posting 3. Recursion 4. Year Closing
5.	Budget	1. Defining Budget 2. Revision 3. Posting of Budget
6.	Invoices	1. Invoice batches 1. Invoice 2. Invoices taxes 3. Invoice Payment Schedules
7.	Payments/Receipts	1. Payments/Receipts Batches 2. Payments /Receipts 3. Payments /Receipts Adjustments 4. Payments/Receipts Methods 5. Taxes on Payments/Receipts

Table 12: Inventory/Purchasing System training module

Sr. #	Feature to trained	Details
1.	Inventory/Purchasing system Overview	Explain the overall flow of Inventory/Purchasing system
2.	Purchase Orders	Explain about Purchase Orders
3.	Receiving	Brief on Receiving procedure
4.	Internal Demand/ Indent	Explain the overall Internal Demand/ Indent
5.	Internal Demand/ Indent	Demonstrate Internal Demand/ Indent
6.	Issuance from Main Medical Store	Explain Issuance from Main Medical Store
7.	Retail Issue stores	Explain Retail Issue stores
8	Feeding of Opening Balances	Explain the overall Feeding of Opening Balances
9	Central Medical Stores	Explain Central Medical Stores
10	Central Purchase/Bulk Purchase/Risk Purchase	Explain Central Purchase/Bulk Purchase/Risk Purchase

IV. Conclusion

HMIS (Hospital Management Information System) is a medical informatics solution element that mainly focuses on the hospital administration requirements. The HMIS is a web-based or computer application that takes care of the complete hospital functionalities. The integrated system can be customized and are developed to control all hospital operations like patient details, appointment booking, billing, drug management, Electronic Medical Record, administration, Patient medical history, inventory management, bed management, revenue management and so on. Hospital Management System is essential and mandatory for healthcare establishments like nursing homes, rehabilitation centers, clinics, hospitals, health clinics, dispensaries, and more. Some of the top benefits of implementing an HMIS are role-based access control, data accuracy, revenue management, appointment booking, overall cost reduction, and data security. To insure accuracy of implementation and to minimize error changes training sessions are effective and fruitful for end users. These training sessions must be scheduled ongoing basis including refresher trainings also. Training activity/session should be conducted by IT department. Training manuals should be improvised according to latest standard guidelines. Short training videos clearly demonstrating the functionality of the system should be made and readily available in every system user role.

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