

**Management assisted by computers :
Reservation, Admission, Registration and Discharge Module**

Objective: The program is intended to enable financial manager & controllers to spend more productive time and resources in planning for their operations and implementation more strategically, than on routine record keeping and procedural compliance – All the conclusion of this program participants will be able to :

- Use computers to perform financial forecasting activities faster and more effectively.
- Use compute to perform financial modeling and planning so as to facilitate timely – decision making.
- Use and apply relevant computer based financial management packages applicable at their workplace cost effectively.

Contents

- Scope and environment of financial management.
- Computer assisted financial analysis, modeling, budgeting, cash flow analysis, asset valuation, capital investment
- Planning and developing financial information systems
- Survey of financial software packages
- Applications of computer networks and interest
- Database systems and e-commerce applications.

Target group

- The program is targeted at middle level managers, financial accountants, controllers and internal auditors of business organisations. Prior exposure to information technology is necessary.

- The ADT module helps the user to create a complete record at all patients including their personal and medical details.

The patient can make an appointment with the hospital, yet registered with specific details and get a unique patient ID no. (once assigned, remains a permanent reference no for the patient) and unique visit ID no. for the patient (changes with each visit of the patient).

After routine registration details have been entered in the system, patients socio demographic profile like patients name, patients ID no. visit ID no. age and sex are displayed on the title at every screen.

APT facilitated bed reservation, admission and transfer, subject to availability and other factors like routine discharge, house keeping etc. specific to defined reference criteria.

- i) Admission scheduling
- ii) Bed allocation
- iii) Revisit scheduling
- iv) Service ordering
- v) Viewing of stay informations for a patient.

Transfer

- i) Ability to transfer patients between beds, wards and nursing stations.
- ii) Transfer of consulting physicians to a patient

Discharges

- i) Discharge of patient and discharge summary edition.

Hospital Management System Module Admission, Registration and Discharge

ADT: The ADT module deals primarily with patient appointment, registration, admission, discharge and transfer.

Patient registration

- i) Provides access to all patient registration procedures – normal, revisits and emergency.
- ii) Patient identification no.
- iii) Patient demographic details
- iv) Assigning of physicians to a patient
- v) OP visit / appointment scheduling.

Admission

- i) Includes scheduled and emergency admission and patient inquires
- ii) Enter and update admissions and demographic data into the system.

Continuation of Hospital Management System Module

- The billing module deals with hospital services and associated billing charges
- It includes billing of outpatients and inpatients for registration, services, heel occupancy, pharmacy, material if cures, blood bank, operation theatre, diet ambulance among others.
- Financial clearances required at various stages for availing hospital services / facilities and also to handled by the billing module.

- Billing module, helps hospital to manage corporate, insurance and hospital insurance accounts, and the patients in each category subject to contract specifications.

Blood bank

- Blood bank module helps uses in managing blood inventory blood, order donor / receiver information, recording blood test results and testing and cross matching of blood units in the hospital blood bank

Operation Theatre (OT)

- The OT module allows the user to process and monitor OT data and services.
- This module processes schedulable and non-schedulable orders and provides the functionality of the substores module
- The user can process the service schedules carried out in various OT points.
- The OT module also monitor the consumption of pharmacy / material items and maintains pre and post operation notes.
- In addition OT supports, recording of anaesthesia notes, OT checklist, ward check list etc.

Consultation

- The module allows the user to view details of a patients such as the actual examination of the patients by the doctor, regarding of history, and findings of physical examination.
- Using the clinical documentation feature integrated with this module, doctors can process and report clinical record and treatments details.
- The consulting doctor can make a request for admission for an outpatient using this module.

Medical Records Index Module

Medical records constitute a vital component of hospital health care.

This is essential as it provides an effective means of communication about the patient care within and between hospital.

Definition: Medical record is a clinical, scientific administrative and legal document where sufficient data about patient care is recorded.

Main uses of Medical Records

- i) **Use of Medical Records and Patient:** It serves to document the study of patient and various activities undertaken – if serves to prevent omission on unnecessary repetition of diagnostic procedures and treatment – if provides continuity of the treatment for future illness – It also serves as evidence in Medical legal cases, (in case any dispute arise between patient and hospital).

- ii) **Medical Records and doctors:** It provides an assurance of quality, quantity and adequacy of the various diagnostic and therapeutic measures – To communicate between attending doctors and other health care professionals providing care to patients for continuing care of patient – for research of specific diseases and treatment – and for collection of health statistics.

Patients Identification

Correct patients ID enables hospital staff – to find a particular patients record whenever they come to the health care facility – to link patients previous admission or outpatient attendance to the current admission (using medical record number of part) – to find the correct medical record of patients when there are more than one patient with the same name – it would also enable like MRO, to monitor their performance re-train if required.

MRO – Medical Records Officer

He is responsible for – i) to assist in determination of system and procedures – ii) to service and modify the existing system – and procedures in order to improve quality of services – iii) to maintain the medical records as per the accepted system indexing – iv) to develop and maintain a good filing system – to assist medical staff and medical records committee in its activity – to check medical records for deficiencies and to get them rectified.

Procedure for Records

Outpatient: Different types of records are maintained in different hospitals and there is no uniformity in pattern. The outpatient record is initiated when the patient reports to the hospital reception.

- i) An index card of $x^{\text{th}} \times 5^{\text{th}}$ size prepared showing patient's name, age, sex, OP number, address, date and clinical service to which patient is referred to this card is kept in the active box – The card will be filed in alphabetical order after the clinical record of the patient is returned to records division.
- ii) At the same time outpatient clinical report form will be prepared. This may be in the form of $5^{\text{th}} \times 8^{\text{th}}$ card or a folder or file with sheets inside.
- iii) The patient is issued an OP card showing his personal data and OP number, which has to be produced at reception counter, so that his record can be retrieved and sent to relevant clinical unit.

Patient Records

The Inpatient (IP) records originate when the patient is advised for admission after examination in OP – the record is initiated by the admissions officer of the hospital whose office will be located in OP block – under serial number system the patient is given different number on each admission and the old files brought out and filed together with new / current file – The admitting office, being a part of medical records – division always keeps assembled sets of blank clinical records form for use.

There are 6 simple slips in medical record Index module

1. Separate the record
2. Break each tab of medical records into following subsections.

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- i) Progress notes
 - ii) Nursing notes
 - iii) X-rays, MRIs and other radiology reports
 - iv) Lab results and reports
 - v) Referrals and prescriptions
3. Put the records in chronological order with the most recent top.
 4. Prepare a table of contents for the medical records index
 5. Scan and save complete copy of the organized medical reports on your computer.

Personnel Registration Module

Personnel Registration Module deals with pay calculation, printing of salary slip, salary certificate, PF statements, gratuity statements and provide a monthly analysis – It deals with maintenance of employee biodata, attendance / overtime details – It also reports on absenteeism, leave, encasements etc – The personnel and payroll department is also responsible for employee related details like appointing staff, maintaining the employee database, fixing allowance and deductions, leave sanctions, loan, termination process, maintenance details tenancy contracts and reliable registration.

EMPLOYEE REGISTRATION MODULE

Employee Record

- Adding New Employees
- Finding Employee Information
- Editing an employee record
- Deleting an employee record

This module receives and process information about the employees. It contains the basic information about the employees like attendance, salary, leave summary and all details of loans and reports.

Overtime Register

It is used to mark the number of overtime hours of an employee worked. It can be adjusted any time, if the employee is absence.

List of Employees

In this the employee list will be in alphabetical order. It displays – name – qualification – father's name – basic salary – address – date of birth – age – designation – sex – date of joining.

Daywise attendance of Employees

It is used to mark the daywise attendance of the employee – select attendance register – mark – legend button is used here – used to mark shortly like P for present and A for absent – It all are present select mark all present button – save it.

Employee Registration Module

ESI Report: ESI is employee state insurance. It is a contribution of both employee and employer – ESI reports are calculated for selected periods – In the report a list of employees with information such as total number of days, days worked, salary, ESI of employee, employee contributions, daily wages.

Employee Provident Fund Reports (EPF) : EPF report is employee provident fund report – In EPF report we can see a list of employees with information such as Designation, EPF of employee, employer contribution, daily wages.

ESI & EPF Payment: ESI & EPF payment can be done for a financial year on monthly basis – It contains following informations such as month, employees ESI, EPF, voucher number etc.

PATIENT CARE MODULE

- 1. Patient master index:** It is an electronic medical database that hold information on every patient registered at a health care centre.
- 2. Patient Encounter System:** It is a computerized system designed to help address these challenges relating to rising healthcare costs – This easy to use comprehensive program helps streamline administrative tasks, more coding accuracy, improve practice profitability and gives more time to forms on providing quality patient care.

3. **Medical Record Management:** It is a systematic documentation of a patient's medical history and care. Medical Records management system site is an effort from a small group of IT specialists to build an online health records for the doctors. In objective of the service is the main goal of the website so the doctors can add, edit or delete their records with few clicks in few records. This online service helps the doctors to reach their records from anywhere at anytime with total confidentiality of the records and data.
4. **Doctor Tracking System:** It consists of sensors and keypads around a medical facility that are used to keep track of the location of doctors, nurses and other staff members - These systems have IT features that allow facilities to make better and faster decision such as when a patient should be revisited a when to clean up room and have tracking integrated with enterprise systems so that doctors room visits can in correlated with patient billing other potential numbers of this technology to track medicine dispensing and to better improve the workflow around a medical facility.
5. **Patient Queue Management:** It enable managers to efficiently organize staff and resources so that patients receive the right care at the right time – The solution manages the flow of patients and their associated information from check into check out covering stages such as calling a patient in the waiting room, tracking a patient's status and provision of information about the entire visit including treatment and waiting times.
6. **Data Management and Reporting:** Responsible for performance monitoring and timing – Delivering administrative information effectively and efficiently.
7. **Doctor Tracking System:** Consists of sensors and keypads around a medical facility that are used to keep track of the location of doctors, nurses and other staff members. As doctors and nurses move about they would press a button to inform the system about their location so that they could be located at a moment notice – Display panels in the rooms would inform a doctor as to the queue of room for him or her to visit so that or the would not have to take the extra time to return to the clerical station. Also the display panels would keep alerting doctors to emergency, highly urgent or expiring timer vibration. These systems have IT features that allow facilities to make better and faster decisions when a patient should be revisited or when to clean up a room and have a tracking created which is integrated with their enterprise systems so that doctors' room visits can be correlated with patient billing.
8. **ICU Management:** It is a domain specific modular based unit management unit which delivers operational efficiencies as well as meeting ICU's strategic needs to drive research based improvement - The system is a proprietary software and hardware solution. In relation to software the system provides a platform for ICU's to manage clinical, administrative and non staff activities in relation to hardware, the solution collects,

standardize and concentrate data from multiple medical devices (pumps, monitors, ventilators etc.) and feeds those information to the software for display and analysis.

- 9. Operation Theatre Management:** It focuses on maximizing operational efficiency at the facility i.e. to maximize the number of surgical cases that can be done on a given day while minimizing the required resources and related costs – It also deals with long term decision making to ensure i) patient safety, ii) provide surgeons with appropriate access to the OR so that patients can have operations in a timely manner – iii) Decrease patient delays – iv) Enhance satisfaction among patients, staff and physicians.
- 10. Bed Management:** It is the allocation and provision of beds, especially in a hospital where beds in specialist wards are a scarce resource. Because hospital beds are economically scarce, resources, true is naturally present to more high occupancy rates and therefore a minimal buffer of empty beds. Bed management systems are developed by software development companies specializing in the health sector to technical health care standard such as HL7, ICD-10 and DMD. A bed request and management system redesigned to help hospital staff deliver high levels of care to patients by providing real time information to bed managers.

Continuation

Patient Care Module: The patient care module is a self contained, in-room bathroom that can be easily located in close proximate to the bed. Available in a nearly unlimited color selection, the module offers a contemporary, aesthetically pleasing design to complement the décor of any patient care environment

Compact and Self-Contained: The module, which includes a concealed flushing chief, paper holder an utensil washing arm, is less costly them a traditional bathroom.

Easy installation: The module installs easily using standard plumbing components, and can be relocated to meet charging needs. The availability of standard components helps reduce maintenance tasks related to leaks or operational problems.

Retractable Water Closet Cover: The cover conceals the standard water closet when not in use.

Build in utensil washing arm: This built in feature allows for convenient and easily cleaning of bed pans.

High density wood core cabinet: The cabinet is constructed of marine – grade plywood with a high pressure laminate finish it is fitted with a deep, stainless steel sink that has a single – lever handle and swing spout.

Optional Features

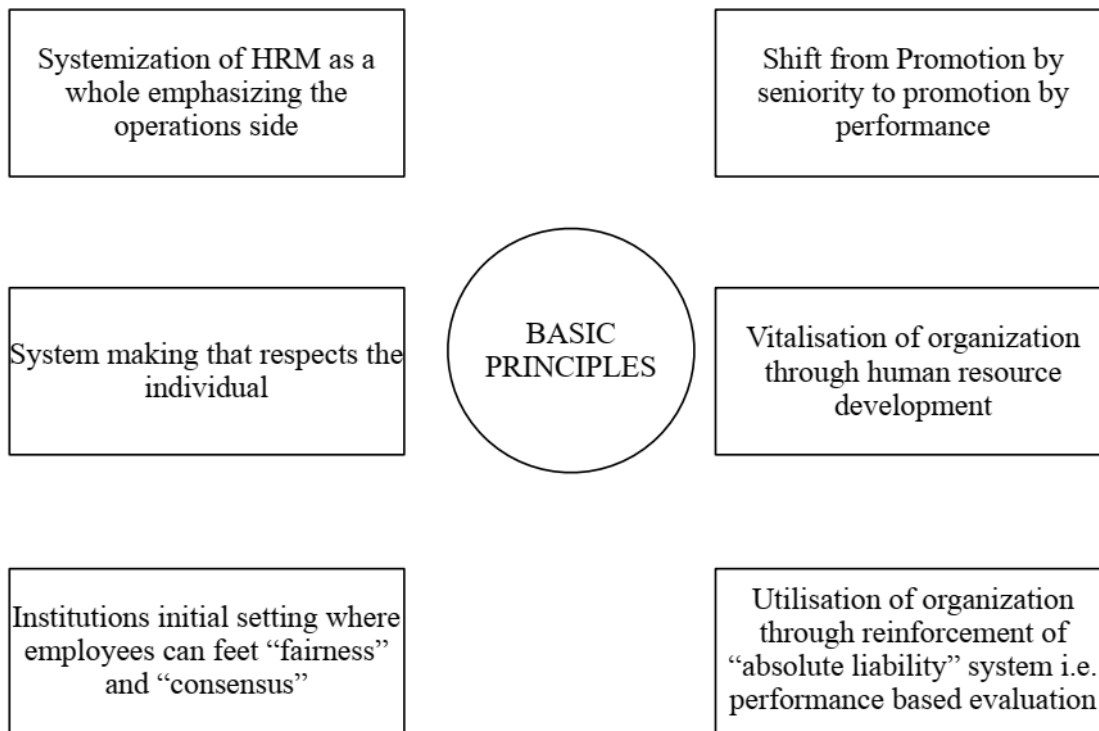
- Foot pedal water controls
- Infra-red water controls
- Floor or wall – mounted water closet
- Squared corners
- Utility connections.

HUMAN RESOURCE MANAGEMENT SYSTEM

It is a strategies and heuristic approach to managing an organization most valued assets there people – It is the intersection between human resources and information technology – The success of any organization depends on the ability to manage a diverse range of talent that can bring innovative ideas, perspective and opinions to their work – HR function consists of tracking existing employee data which traditionally includes personal histories, skills, capabilities, accomplishments and salaries - to reduce the manual work load of administrative activities, specialized, human resource management system was introduced – HR is the management of an organization employees and their details.

Objective: To maximize the return on investment from organizations human capital and minimize financial risk.

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Currently human resource management systems encompasses

- i) Pay rolls
- ii) Work time
- iii) Appraisal performance
- iv) Benefits administration
- v) HR Management information system
- vi) Recruiting
- vii) Training
- viii) Employee self service

Pay roll: Pay roll automates the pay process by gathering data on employee time and attendance, calculating various deductions and taxes and generating periodic pay cheques and employee tax report.

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Work Time: Work produce gathers standardized time and work related efforts – The most advanced modules provides broad flexibility in data collection methods and data analysis features cost analysis and efficiency matrices are the primary functions.

Benefits administration: Aims module provides a system for organizations to administer a track employee participation in benefits program – These typically encompasses insurances compensation, profit sharing and retirement.

HR Management Information System: This module is a component covering many other HR aspects from application to retirement – This system records basic demographic and address data, solution, training and development, capabilities and skill management.

Recruiting : Online recruiting has become one of the primary methods employed.

Training: It provides a system for organizations to administer and track employee training and development efforts – This systems normally called a learning, management systems, if a stand alone product, allows HR to track education, qualification and skills of the employees as well as outlining what training courses, books, CD's web based learning or materials are available to develop which skills.

Employee self service: It allows the employer to query HR related data and performs source HR transactions over the system – employees may query their attendance record from the system without asking the information from the personnel – The module also lets supervisors approve operations theatre from their subordinates through requests the system without overloading the task on HR department.

PHARMACY MODULE

Pharmacy module deals with automation of workflow and administration management process of Pharmacy. The pharmacy module is equipped with bar coding facility, which makes the delivery of medical items to the patients more efficient. This module deals with the activities such as

- Enquiry
- Purchase order
- Online approval
- Supplier information

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- Online request for stock from various substore
- Online stock transfer
- Stock adjustment
- Stock in hand reports
- Destruction of expired items

HOSPITAL PHARMACY

- Pharmacy in the hospitals was started primarily for purchase and formulation of drugs, medicinal preparations, chemicals and reagents.
- Pharmacy is utilized for compounding of medicines when ever necessary.
- The department is responsible for safe storage and service
- The secondary function of the pharmacy is to provide the guidance to the medical and nursing staff.
- It also involved in the pharmaceutical and pharmacological research.
- Pharmacy department should have close and continuous relation with medical and nursing services.
- Pharmacy department should follow established material management methods for purchase storage and issue of medicines.

Staff required: Staff required of pharmacy depends on service provided by the department – There will be one pharmacist for 50-100 beds.

Physical Facilities

- Pharmacy serves both inpatient and out patient.
- It is ideal to locate near the ward.
- It should be accessible to the staff, relatives of the patients admitted to the wards and also to supplier.

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Size: the depends on various factors like size, shape and type of hospital

- The hospital whether encourages rational use of drugs.
- The use of drug is rationalised the size required will be less.

Space: The following are recommended space requirement for a medium sized hospital – Three depending counters and one separate each counter.

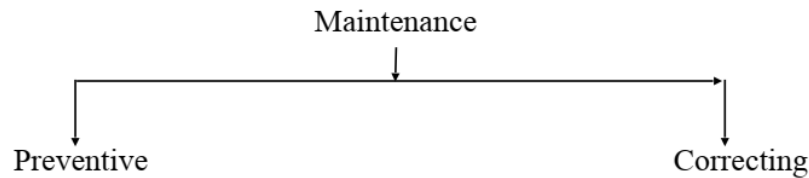
Equipment : Refrigerator for storing vaccines other substances – The refrigerator should be provided with thermometer in order to record the temperature inside.

Working yours: The hospital pharmacy may be kept open 24 hours – two shifted are kept – it is eventual to ensure the availability of largest number of pharmaceutical between 9.00 a.m. and 3 – separate night pharmacy the required during emergency.

Reports : The following reports can be generated as a part of this module – stock reporter on drug and consumable – Report on printing of expired drug list – Report on requisition printing – report on issue slip printing.

Maintenance of equipments and instruments: Maintenance is a periodic activity carried out either on scheduled data or whenever instrument starts deviating from its normal behavior – The quality and efficiency of medical service provided in any hospital depends on proper functioning of equipments and instruments used by doctors and other clinical staff – proper care, maintenance, timely repair is very much important for the maintenance of the instruments – in order for the doctors to monitor and treat abnormal condition of the patients, they would always need instruments, tools, materials to be reused and these reused medical equipments or devices need to be sterilized or cleaned immediately in order to use them again – the instruments used by doctors are exposed to different pathogens coming from the patients to reduce to eliminate the blood or other pathogenic microorganism that often cause cross contamination. So it must be cleaned immediately and must ensure they are delivering accurate information.

General Requirements for Maintenance: Obtaining a copy of the maintenance schedule from the manufacturer – ensuring that maintenance is performed as required – retaining records of maintenance – set up a system for removal and tagging of damaged or defluctive equipments and instruments – Maintenance must be done in proper conditions – Maintenance includes tests, measurements, adjustments and replacement of the parts of the instruments – Subgroups of the maintenance of equipments and instruments



Keep the equipment working or extend the life of the experiment

It is repaired and conducted to get equipment working again

Successful maintenance program includes: Well organized schedule – controlling hazards – defines operational procedure clearly and training of the clinical staffs to handle the equipments.

Different steps for maintaining the equipments instruments

1. **Rinsing:** After surgery a use of the instruments, the instruments are rinsed under warm water.
2. **Cleaning:** The equipments are submerged in a solution of water and neutral pH 7 detergent.
 - a) **Ultrasonic cleaning:** Processed in a cleaner for 5 to 10 min, ultrasonic cleaning solution is used.
 - b) **Automatic washer sterilizer:** Lubrication after last rinse cycle and before sterilization cycle.
 - c) **Manual cleaning:** Most commonly preferable.
3. **After cleaning:** Let them air dry and stored in clean and dry environment.
4. **Auto claving:** Lubrication is done using instrument with lubricant – The instruments are either autoclaved in sets or individually
5. **Cold sterilization:** Most cold sterilization solutions render instruments sterile only after 10 hours of immersion – maintenance of these instruments need to be managed in following ways.
 1. **Work order management:** Maintenance of history records of the instruments.

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2. **Data quality management:** Accuracy of clinical and biomedical engineered data must be maintained – It must establish basic, accurate and maintenance automated records.
3. **Personnel Management:** Biomedical managers should assign staffs for the right job.
4. **Quality assurance:** Identify a supply of a equipment as being defective – Quality of the instruments lessens the risk of patients and also the staffs.
5. **Patient safety:** Important goal of every health care provide is the safety of the patients.
6. **Risk management:** It is to minimize liability of mishaps and accidents and stay compliant with regulatory reporting requirements.
7. **Hospital safety programs:** Safety includes a range of hazards including mishaps, injuries and patient care hazards. The program includes: - Patient safety – environmental care – space utilization committee – equipments review board – infection control