## 4.2. Detailed Functional Requirements for the eHMS

**4.2.1 Patient Care Management**

| Section | User/Functional Requirements | | | Priority |
| --- | --- | --- | --- | --- |
| 1.0 | GENERAL | | |  |
| 1.1 | The system should handle all the admission, transfer and discharge operations for the hospital. It should allow for a complete registration for a patient, or a quick registration for rapid registration at the Ambulatory & Emergency Department. | | | Must |
| 1.2 | System should generate a sequential Medical Record Number (MRN) for each new patient registration. | | | Must |
| 1.3 | MRN should be unique for each patient, and to be carried by the patient throughout the life of the hospital. | | | Must |
| 1.4 | System generated sequential Account Number should be generated for each new patient visit. | | | Must |
| 1.5 | Account Number should be unique for each visit, and should be used for all billing purposes. | | | Must |
| 1.6 | The system should have the ability to capture billing and insurance payment details to enable bills to be sent to correct payer. | | | Must |
| 1.7 | The system should have the ability to make certain fields mandatory during the registration process | | | Should |
| 2.0 | ADMISSIONS / REGISTRATIONS (A&E) | | |  |
| 2.1 | All admissions must be performed through a registration function (inpatient, outpatient, A&E). | | | Must |
| 2.2 | The system should have the ability to carry out a quick registration with minimal mandatory registration information process, e.g. for the A&E Department | | | Must |
| 2.3 | System should be able to flash alert to Registration Clerk if patient has any outstanding bills | | | Must |
| 2.4 | The system should have the ability to capture insurance and billing information at admission/registration time. These details will include whether the patient should be billed or not, Guarantee Letter information, Third Party Payer/ Insurance information etc. | | | Must |
| 2.5 | If billing is applicable, the system should automatically determine the consultation charges applicable based on the billing rules, to determine the applicable charge, and to enable the charges to be collected prior to the consultation. | | | Must |
| 3.0 | NEW BORN ADMISSIONS | | |  |
| 3.1 | Newborn admissions must be based on mother-baby link, ie admission details to be based on mother’s admission record. | | | Should |
| 4.0 | BED BOARD MANAGEMENT | | |  |
| 4.1 | Online, real time bed availability status by Ward / Department hospital wide | | | Should |
| 4.2 | Ability to search for beds by ward | | | Must |
| 4.3 | Ability to search for beds by bed class, within the ward | | | Must |
| 4.4 | Ability to search for beds by bed class, throughout the hospital facility | | | Must |
| 4.5 | Ability to create dummy beds which can be used for admission when all beds in ward are occupied, but pending discharges. These beds are not to be included in the census count. | | | Should |
| 5.0 | TRANSFERS | | |  |
| 5.1 | Can be effected between beds in the same ward or between wards | | |  |
| 5.2 | System to chronologically sequence each transfer and keep track of patient’s movement history. | | | Must |
| 6.0 | DISCHARGES | | |  |
| 6.1 | Ability for system to check that all formalities have been completed and to trigger warnings otherwise. | | | Must |
| 6.2 | If a patient has to be billed (ie a patient without a Guarantee Letter), the system will check that a Discharge Bill has been generated, otherwise the discharge is not to be effected. | | | Must |
| 7.0 | MASTER CODES | | |  |
| 7.1 | The system must have a provision to set Master Codes | | | Must |
| 7.2 | The sex of the patients to be admitted into the ward has to be coded, and the system will validate this during the admission process. | | | Must |
| 7.3 | Rooms within Wards : all rooms within the ward will be codified | | | Should |
| 7.4 | Beds for Wards : all beds within the ward will be codified, according to bed class | | | Should |
| 7.5 | Type of Ward : specifies classification of ward | | | Must |
| 7.6 | Bed Class : specifies classification of beds, and should be used to set up entitlements | | | Should |
| 7.7 | Admission Type : specifies the nature of admission | | | Must |
| 7.8 | Transfer Type : specifies the nature of transfer | | | Must |
| 8.0 | QUERIES & REPORTS | | |  |
| 8.2 | Bed Occupation Inquiry: Ability to display on-line, the status of each bed in any ward, with details of patient occupying the bed. | | | Should |
| 8.2 | Hospital Bed Status Inquiry: Ability to display on-line, the total bed complement within the hospital with details of the number of beds occupied and free in each ward. | | | Must |
| 8.3 | Patient Movement History : Ability to display on-line the details of patient Admission Discharge and Transfer for each patient | | | Must |
| 8.4 | Inpatient lists : Reports of all inpatients in all wards, sorted by ward, by admission date, by admitting doctor, by patient name, by sex etc. | | | Must |
| 8.5 | List of Admissions : Reports on all patients admitted, with full admission details, sorted by Admission Date, Ward, Admitting Doctor | | | Must |
| 8.6 | Admission Discharge and Transfer statistics such as Admissions by admission types, Admissions by medical specialty, Transfers by transfer type, Discharges by discharge type | | | Should |
| 9.0 | BED CHARGES | | |  |
| 9.1 | Calculation of bed charges based on number of days stayed | | | Must |
| 9.2 | Calculation of bed charges based on financial class of patient | | | Should |
| 9.3 | Calculation of bed charges based on bed type | | | Should |
| 9.4 | Automatic calculation of bed charge if the bed is occupied for more than a pre-defined number of days | | | Should |
|  | |  |

**4.2.2 Laboratory**

| Section | Functional Description | Priority |
| --- | --- | --- |
| 1.0 | GENERAL |  |
| 1.1 | The system will be used in the AP Section of the Main Laboratory, serving the needs of the Inpatients, Outpatients, Emergency Departments, and Operating Theaters. | Must |
| 2.0 | Charging |  |
| 2.1 | To create a charge in the patient’s bill for any procedure that is carried out. | Must |
| 2.2 | There should be flexibility to determine at which point the patient will be charged for the procedure. For example, for Test A, the patient could be charged at the point the test is ordered, while he could be charged only when the procedure has been reported for Test B, or when the procedure has been completed for Test C. | Should |
| 2.3 | There will be an option for a supervisor to reverse a charge if required. | Must |
| 3.0 | Queries and Reports |  |
| 3.1 | Inquiries by  Patient name or MRN, Accession number, Physician, Source (ward / clinic / department), Test  Charges collected department wise lab wise. | Must |
| 3.2 | There must be an option for supervisor to reverse a charge if required | Must |

**Order Management**

| Section | Functional Description | Priority |
| --- | --- | --- |
| 1.0 | GENERAL |  |
| 1.1 | The Order Management application addresses the order entry, order review and/or validation, It is envisioned that orders can be placed for any ancillary department by any user in the hospital, depending on the security level assigned to him | Must |
| 2.0 | Order Entry |  |
| 2.1 | The order entry process can be decentralized, ie an order can be placed from any PC within the hospital. | Must |
| 2.2 | The system will be able to handle the following order types : single order, multi-departmental orders. | Should |
| 2.3 | Users should be able to place any type of order, clinical or non-clinical, from one application. | Must |
| 2.4 | Each order type must have its own set of pre-determined data fields. | Must |
| 2.5 | There is an option to identify the urgency of an order. | Should |
| 2.6 | There is an option to cancel or Modify an order if it has not been processed yet. | Should |
| 3.0 | Order Processing |  |
| 3.1 | The status of any order will be updated automatically, real-time, by the system to enable users to have an online review of the status of any order for any patient. | Must |
| 4.0 | Order Inquiry |  |
| 4.1 | Users can review the status of any order online from anywhere within the hospital. | Should |
| 4.2 | Users restricted to viewing information only on those patients in their assigned locations. | Must |
| 6.0 | Charging |  |
| 6.1 | The system creates a charge in the patient’s bill for any procedure that is carried out. | Must |
| 6.2 | There will be flexibility to determine at which point the patient will be charged for the procedure. For example, for Test A, the patient could be charged at the point the test is ordered, while he could be charged only when the procedure has been reported for Test B, or when the procedure has been completed for Test C. | Must |
| 7.0 | Queries and Reports |  |
| 7.1 | On‑line status inquiry of requests | Must |
| 7.2 | On‑line charges inquiry | must |

**Operation Theatre Management**

| Section | Functional Description | Priority |
| --- | --- | --- |
| 1.0 | GENERAL |  |
| 1.1 | The Operating Theatre (OT) Management application will provide all functions required for charging of the Operating Theatres of the hospitals. | Must |
| 2.0 | Charging |  |
| 2.1 | There will be an option for users to charge by exception. | Must |
| 2.2 | The system automatically creates a charge in the patient’s bill for any procedure that is carried out. | Should |
| 2.3 | There will be an option for a supervisor to reverse a charge if required. | should |
|  |  |  |
| 3.0 | Queries and Reports |  |
| 3.1 | Exception Reports for the following: |  |
| 3.1.1 | Surgeries not yet Charged | Must |
| 3.1.2 | Surgeries completed but charging not done. | Must |

**4.2.3 Billing Business Process**

For the Patient Billing process should provide functionalities related to billing the patient for all the services taken by him in the hospital. The patient should be billed according to business rules of the hospital, which are maintained and validated from this module.The following table describes the functionalities in broad terms that are required of the billing process.

| Section | Functional Description | Priority |
| --- | --- | --- |
| 1.0 | GENERAL |  |
| 1.1 | The system must provide the hospital with a comprehensive facility to track all charges for a patient from the point of registration to the stage of discharge / completion of a visit. | Must |
| 1.2 | The billing process must be flexible so that it can be done for inpatients at pre‑defined periods or at end of the episode, while for outpatients it can be done at each service point (either at the point the order is placed or at the point it is completed), or at the end of the visit. | Must |
| 1.3 | This system must be fully integrated system so that billing transactions can be automatically posted to the patient’s account from the laboratory, radiology, operation theatres, pharmacy, wards/clinics and so on. | Must |
| 1.4 | Patient Billing must also be integrated with Accounts Receivable for managing credit patients. | Must |
| 1.5 | The benefits envisaged through the implementation of an integrated or tightly interfaced Patient Billing System include  Automatic, real-time build-up of patient's service charge profile.  Billing can be done at short notice  Instantaneous availability of patient‑dues, various service charges etc.  Enables analysis of the hospital's income through various services.  Saves the Accounts department a lot of time and effort that would otherwise be spent on tracking patient charges.  Facilitates effective control and monitoring of receivables. | Must |
|  |  |  |
| 2.0 | Billing Groups |  |
| 2.1 | The system must be able to classify patients into various Billing Groups in order to group patients into various paying categories. | Must |
| 2.2 | The system must be able to capture various paying categories including but not limited to non-paying / individuals paying cash / individuals with credit facility / sponsored patients (sponsored by insurance company, employer etc.) with credit facility. | Must |
|  |  |  |
| 3.0 | Billing Classes |  |
| 3.1 | System must be able to allow users to define various classes of service rendered in user-defined terms as say, first class single bed / first class double bed/ second class bed / ordinary class bed / etc | Must |
| 3.2 | Billing classes will be determined and entered into the system at registration time. | Must |
|  |  |  |
| 4.0 | Bed Charges |  |
| 4.1 | The system should provide flexibility in defining bed charges depending on the type of ward / room / bed | Should |
| 4.2 | If the patient occupies beds of differing classes on the same day, the bed, which has the higher daily bed charge, will be selected for billing. | Should |
|  |  |  |
| 5.0 | Bills |  |
| 5.1 | System must have flexibility to print inpatient bills periodically for all inpatients or individually at the end of the inpatient episode. | Must |
| 5.2 | The system must have flexibility to print interim bills for inpatients | Must |
| 5.3 | The system must have flexibility to print outpatient bills at each service point, at the point that the service is provided or consolidated at the end of the outpatient visit. | Must |
| 5.4 | The system must be able to automatically calculate all relevant government service taxes and add it to the bill. | Must |
|  |  |  |
| 6.0 | Cashiering Functions |  |
| 6.1 | There must be provision to identify the Cashier Counter during cashier operations to ensure accountability of all transactions processed. This will also record the cashier identifications such as his user id, which is unique within the system. | Must |
| 6.2 | The system must have facility to process various kinds of receipts, for example,  Collection against a bill  Collection against an account receivable for patients with credit facility  Collection of a deposit  Collection of a pre-payment  etc. | Must |
| 6.3 | The system must have facility to process various kinds of refunds, for example,  Refund against a bill  Refund of a deposit  etc. | Must |
| 6.4 | Ability to print receipts / refund documents on pre-printed stationery in on-line mode or batch mode | Must |
| 6.5 | All receipts and refund documents must be customizable by the users | Must |
| 6.6 | System must support various types of receipt printing based on visit type, for example, a different receipt is required for an emergency visit as compared to an Outpatient visit or Inpatient visit. | Must |
| 6.7 | Receipts must have system generated sequential numbers, the format of which will be user-defined. | Must |
|  |  |  |
| 7.0 | Queries and Reports |  |
| 7.1 | Inquiry on Patient Details | Must |
| 7.2 | Inquiry on Patient Charge Profile | Must |
| 7.3 | Inquiry on account status | Must |
| 7.4 | List of Receipts | Must |
| 7.5 | List of Third Party Payer Bills, to be printed on a pre-defined schedule | Must |
| 7.6 | List of discharges to reconcile with bills | Must |
| 7.7 | Inpatient bills in detail as well as summary | Must |
| 7.8 | Inquiry on patient financial details by  Patient name  Account number | Must |
| 7.9 | Inquiry on any transactions recorded In an account | Must |
| 7.10 | Inquiry in patient’s current charges and outstanding status | Must |
| 7.11 | Top up reports for patients whose current charges have exceeded the deposit paid | Must |

**4.2.4 Pharmacy and Inventory Business Process**

| Section | User/Functional Requirements | Priority |
| --- | --- | --- |
|  | STOCK CONTROL |  |
| 1.1 | The pharmacist may set the stock levels required by the hospital to maintain one or more pharmacy outlets within the hospital. | Must |
| 1.2 | The stocks can be replenished by a process or manually triggered by the person responsible. | Must |
| 1.3 | Automatically generate reorder documents for the procurement of new stock. | Must |
| 1.4 | The system will also facilitate manual entry of requisitions from the various wards/clinics/departments in the hospital. | Must |
| 1.5 | Expiry and non-expiry items must be supported. For expiry items stock is maintained at batch level with expiry date for each batch; and any store transaction must identify the batches being processed as part of the transaction. | Must |
| 1.6 | Facility to maintain preparation details and constituent items for manufacturing items. Manufacturing receipts use this information to receive the prepared item into stock and reduce stock from the constituents that have been used. Plus minus variation limits can be set on usage of constituents. | Must |
| 1.7 | Facility to record transfers between main stores, sub stores and despising points. | Must |
| 1.8 | Stock balance must be updated immediately on confirming a transaction (receipt of stock into inventory, returns to vendors, dispensing to patients) to reflect true on-hand status at any time. | Must |
| 1.9 | Automatic validation and warning on expiry of items. | Must |
| 1.10 | Provision to remove expired items from active stock to be replaced or destroyed. | Must |
| 1.11 | Provision for recording physical stock check figures and generating variance reports and automatic adjustments. There must be a facility to use hand held devices for stock checks where inventory information can be downloaded to the device at the start of the stock take, and then uploaded back into the main system at the end of the day. | Must |
| 1.12 | Mandatory entry of reason in adjustments for audit purposes. | Must |
| 1.13 | Stock transactions effect on financial accounts need to be reflected in the General Ledger based on the accounting linkages. | Must |
| 1.14 | Provision to close each accounting month after all transactions have been recorded for that month. | Must |
| 1.15 | Outgoing medicines and prescriptions are automatically deducted from its stock list. | Must |
| 1.16 | For each item-store combination, the minimum/maximum quantities and re-order quantities are maintained depending on the policies and procedures adopted for replenishment of stock at the sub-stores and non-stock stores. | Must |
| 1.17 | As the inventory levels reach reorder points, the system will automatically generate purchase orders for reordering by comparing the stock-on-hand with the reorder level. The orders must be reconciled upon delivery. | Must |
|  |  |  |
| 2.0 | MEDICATION ORDERS |  |
| 2.1 | Medication orders can be entered for inpatients who are identified by their financial numbers so that medications can be connected to each term of stay separately. | Must |
| 2.2 | The drug item codes will be easily and quickly retrieved by mnemonic, trade or generic name search. | Must |
| 2.3 | The system will allow order entry in centralized or decentralized locations throughout the hospital, by various categories of staff such as physicians, nurses, clerks or technicians. | Must |
| 2.4 | Pharmacist verification, if required, will be quickly and efficiently entered or modified for conditional medication orders. Clinical alert warnings may be delayed until the pharmacist verification step or may appear during non-pharmacist order entry. In all cases, clinical warnings, including user actions, must be recorded for action and review at a later time. | Must |
| 2.5 | Master Codes – the following Master Codes must be set up within the system : |  |
| 2.5.1 | Drug Forms: Code and description for the various forms in which drugs are Available. | Must |
| 2.5.2 | Route of Administration: Code and description for the different methods in which a drug can be administered, e.g. Intravenous, Oral. | Must |
| 2.5.3 | Instructions for Administration: Code and description for brief instructions on the method of administering a drug to patients. | Must |
| 2.6 | The system must enable users to enter all medications into the system from the same screen. Medications can be selected by mnemonic, brand name, generic name, therapeutic category, or product codes. | Must |
| 2.7 | Common order entry sets should be defined to further expedite the order entry process by having the most commonly used items pre-selected for activation and the less customary items Available for activation. | Must |
| 2.8 | If there have been medication orders earlier for the same inpatient, then medications issued to the patient must be checked for inclusion of these drugs and warnings issued where appropriate | Must |
| 2.9 | For controlled drugs, a supervisor must authorize the issue before the transaction can be processed. | Must |
| 2.10 | The system must have provision for returns against prescriptions | Must |
| 2.11 | The system must provide support for all medication orders, processing, administration, and dispensing in a paperless environment. | Must |
|  |  |  |
| 3.0 | QUERIES AND REPORTS |  |
| 3.1 | Drug formulary inquiry by code, trade name and generic name. |  |
| 3.2 | Inquiry on drug interactions. | Must |
| 3.3 | Inquiry on patient’s total drug profile (all medications and prescriptions to date). | Must |
| 3.4 | List of inpatient medication orders by patient, ward and doctor. | Must |
| 3.5 | Details listed will include the financial number and MRN of the patient, patient name, prescription number and date, drug code and name, start date for the medication, period, dosage, doctor’s identity, quantity of the drug prescribed and whether the order is a one-time or repeating prescription. | Must |
| 3.6 | List of outpatient prescriptions by patient, clinic and doctor. | Must |
| 3.6.1 | List of Repeating Orders for a given drug store/pharmacy and for a specified range of dates. | Must |
| 3.7 | Controlled drug register | Must |
| 3.8 | List of discontinued drugs | Must |
| 3.9 | Stock status report | Must |
| 3.10 | Stock ledger | Must |
| 3.11 | Stock Analysis reports on fast moving items, slow moving items and non-moving items. | Must |
| 3.12 | Consumption statement by item and by ward/clinic/department. | Must |
| 3.13 | Valuation statements by costing units | Must |
| 3.14 | Expiration list by period | Must |
| 3.15 | Items to be re-ordered | Must |
| 3.16 | Items above maximum stock levels | Must |
| 3.17 | Daily transaction details report | Must |
| 3.18 | On-line stock status inquiry by item for all stores in the hospital and by store for all items in that store. | Must |
| 3.19 | Inquiry on stock transactions for an item. | Must |

| Section | Functional Description | Priority |
| --- | --- | --- |
| 1.0 | GENERAL |  |
| 1.1 | The system must be able to handle on-line data entry | Must |
| 2.0 | VENDOR INFORMATION |  |
| 2.1 | Vendor codes should be alphanumeric. | Should |
| 2.2 | The vendor code should be either system generated or manually entered. | Should |
| 2.3 | A short name, mnemonic or vendor codes will be used to access vendors during transaction entry and enquiries. | Should |
| 2.4 | The system should cater for the following information on the vendor record: |  |
|  | Vendor code, vendor short name, vendor name, vendor address, vendor telephone, vendor facsimile number, vendor contact person, vendor type, optional bank details, optional or user-defined multiple credit terms or contract information, currency details, payment method, credit limit, last date of activity, lead time, history, GL codes for purchases, creditors and cash | Should |
| 2.5 | The system should produce a list of vendors with no activity for a specified period of time. | Should |
| 3.0 | VOUCHER ENTRY |  |
| 3.1 | The system should provide: |  |
|  | invoice register facilities | Must |
|  | certification of invoice values | Must |
| 3.2 | The system should register and certify the invoice at the same time. | Must |
| 3.3 | The system should record to whom invoices have been sent for either approval, GL coding or adjustment. | Must |
| 3.4 | The system should allow for the following fields in the transaction record:  vendor code, vendor reference invoice number, transaction reference for internal use, invoice type, terms, invoice date, invoice receipt date, posting date, due date, period, gross amount, discount, net amount, optional quantity , optional unit price , transaction currency, currency rates, payment method e.g. cheque, bank details, order number and link to order details e.g.. item code, type, order quantity, GL code, hold information - before updating GL, status code - delivered or not, flag prepaid for items | Must |
| 3.5 | The system must check for duplicate vendor invoice numbers. | Must |
| 3.6 | There is no limit to the number of lines per invoice. | Should |
| 3.7 | General ledger code distributions should be entered on:  purchase orders, vendor record, individual lines on an invoice | Must |
| 3.8 | General ledger distribution codes should be validated online in the AP and invalid transactions rejected. | Must |
| 3.9 | The system must check that the total recorded against the distribution lines equals the total invoice sum. | Must |
| 3.10 | The system should be able to handle discounts as either a percentage or an amount. | Should |
| 3.11 | The system should automatically post a discount to the correct general ledger account for discounts. | Should |
| 3.12 | It should be possible for a group of invoices to be authorized for payment together. | Should |
| 3.13 | Matching should be available for both the whole invoice and line by line | Should |
| 3.14 | It should be possible to process and authorize a goods received note. | Should |
| 315 | A credit note can be matched with parts of one invoice | Should |
| 3.16 | Amount transactions entered on-line can be posted at the end of the day or period. | Should |
| 3.17 | Posting should update the accounts payable, general ledger | Should |
| 4.0 | PROCESSING OPTIONS |  |
| 4.1 | The system should allow processing of more than one accounting period typically previous and future periods. | Should |
| 4.2 | The system should handle accruals with automatic reversal in the next period. | Should |
| 4.3 | The system accept open item accounting. | Should |
| 4.4 | It should be possible to search using:  supplier name, supplier short name, invoice number, invoice reference, purchase order number, cheque number, transaction date | Should |
| 5.0 | PAYMENTS |  |
| 5.1 | It should be possible to process manual cheques and they should appear on the cheque register. | Should |
| 5.2 | It should be possible to pay more than one cheque for a vendor. | Should |
| 5.3 | It should be possible to stop payment of a specific invoice temporarily. | Should |
| 5.4 | It should be possible to make a payment during the same processing cycle that the invoice was entered. | Should |
| 5.5 | It should be possible to pay invoices as specified without regard to the payment scheduled date. | Should |
| 5.6 | The system should allow for part payments to be made. | Should |
| 5.7 | It should be possible for individual items to be paid on the next payment date to be listed in advance of the cheque processing cycle. | Should |
| 5.8 | Duplicate payments should be identified. | Should |
| 5.9 | Individual general ledger codes should be specified for each bank account. | Should |
| 5.10 | The system should be able to handle advance payments. | Should |
| 5.11 | The interface with the general ledger should allow the cheque number reference to be passed into the general ledger to assist with bank reconciliations. | Should |
| 5.12 | If a posted payment is voided, the GL posting should automatically be reversed. | Should |
| 5.0 | PURCHASE ORDER PROCESSING |  |
| 6.1 | The system should facilitate matching, of purchase orders, receiving reports and vendor invoices. | Should |
| 6.2 | Matching should be available for both the whole invoice and manual matching. | Should |
| 6.3 | The system should produce exception reports of unmatched invoices. | Should |
| 7.0 | INTERFACES |  |
| 7.1 | The user should have the option to post to the general ledger:  at the detail level and summary level by voucher | Should |
| 7.2 | The general ledger should be posted at the same time as the accounts payable subsidiary ledger is posted. | Should |
| 7.3 | The system should support interfaces to other systems including:  purchasing, receiving, general ledger, stock control | Should |
| 8.0 | VENDOR PURCHASE ANALYSIS (REPORTS) |  |
| 8.1 | There should be a report summarising purchase and payment history by vendor. | Should |
| 8.2 | There should be a report listing open items and paid items. | Should |
| 8.3 | The system should print vendor statements. | Should |
| 8.4 | The system should produce a vendor ledger listing by vendor number and alphabetically | Should |
| 8.5 | The system should be able to produce an accounts payable invoice/voucher register. | Should |
| 8.6 | The system should produce an aged outstanding balance report by vendor in both detail and summary. | Should |
| 8.9 | Aging bands (e.g.. 30,60, 90 days) should be user-specified. | Should |
| 9.0 | Queries | Should |
| 9.1 | On-line enquiry capabilities should exist to report:  all open invoices per vendor, vendor payments activity  standard terms, vendor purchase activity:  - this period  - previous periods  - previous years  payments matched to specific invoices, transactions with different status indicators | Should |
| 9.2 | The system should perform on-line sorted enquiries whereby all vendor information is presented at the user's option:  in posting date sequence, in voucher number sequence, in due date sequence, in payment status sequence | Should |

**4.2.5 Medical Record Management**

| Section | Functional Description | Priority |
| --- | --- | --- |
| 1.0 | GENERAL |  |
| 1.1 | Superior GUI to make data collection easier for the consulting doctors/transcriptionists | Must |
| 1.2 | Collated and formatted of information on patients, as required | Must |
| 1.3 | Search on patient records by patient names, patient ID, etc. | Must |
| 1.4 | Complete clinical data repository | Must |
| 1.5 | Capturing basic patient demographic details | Must |
| 1.6 | ICD-10 codes for diagnosis and clinical findings | Must |
| 1.7 | Rea time ordering of tests and medications | Must |

**4.2.6 Human Resource Management**

| Section | Functional Description | Priority |
| --- | --- | --- |
| 1.0 | GENERAL |  |
| 1.1 | The system should perform and manage daily attendance entry using biometrics | Must |
| 1.2 | Leave accounting and management | Must |
| 1.3 | Pay slips management | Should |
| 1.4 | Produce payroll reports | Should |
| 1.5 |  |  |

**4.2.7 Management Information System**

| Section | Functional Description | Priority |
| --- | --- | --- |
| 1.0 | GENERAL |  |
| 1.1 | Revenue profile doctor wise | Must |
| 1.2 | Revenue profile department wise | Must |
| 1.3 | Revenue profile procedure / package wise | Must |
| 1.4 | Expense profile doctor wise | Must |
| 1.5 | Expense profile department wise | Must |
| 1.6 | Expense profile procedure / package wise | Must |
| 1.7 | Treatment profile and collection profile | Must |
| 1.8 | Exception report on deviation from set of parameters for Purchase, discounts, collections, credits | Should |
| 1.9 | Patient registration statistics | Must |
| 1.10 | Patient admission statistics by date, ward and consultant | Must |
| 1.11 | Patient discharge statistics by date, ward and consultant | Must |
| 1.12 | Bed occupancy statistics by date and ward, by doctor | Must |
| 1.13 | Outpatient visit statistics by date and clinic | Must |
| 1.14 | Contribution Statement | Must |

**4.2.8 Financial Management**

| Section | Functional Description | Priority |
| --- | --- | --- |
| 1.0 | GENERAL |  |
| 1.1 | All transaction vouchers generated in the system are collated and they are posted on daily basis or online onto the system | Must |
| 1.2 | Cash/Credit/Bank Transaction | Must |
| 1.3 | Daily Cash Book | Must |
| 1.4 | Daily Bank Book | Must |
| 1.5 | Account Receivable Statement with Ageing Analysis | Must |
| 1.6 | Income & Expense profile department wise / Budget wise | Must |
| 1.7 | Supplier Ledger | Must |
| 1.8 | General Ledger | Must |
| 1.9 | Trial Balance | Must |
| 1.10 | P & L | Must |
| 1.11 | Balance Sheet | Must |
| 1.12 | Expenditure Analysis | Must |
| 1.13 | Exception Analysis | Must |

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## 4.3 Non-Functional Requirements for the iHMS

Non-Functional Requirements are those which impact many parts of the system, they may be related to one or many features e.g. How long can the system be down for and how easy should it be to restart it, or if data becomes corrupt how does a user fix it and which users can do so?

Some of the following requirements are negotiable depending on importance and cost.

1. **Usability**

* The system should provide interactive touch screen interfacefor ease and fast access
* The average user learning time must be less than 1 day
* The system should help users to avoid doing mistakes
* The system should provide screen, mouse and keyboard navigation.
* The system should be easy to navigate by using clear words, menus and drop-down lists.
* The system should be accompanied with a user manual.

1. **Access Security**

* All patient data should be encrypted to ensure confidentiality of patient data,
* The system should be able to limit the availability of individual identifiable information only to authorized users at a facility level.
* The system should reveal private information only in compliance with the health information policy
* The system should encrypt transmission of data across open and public networks
* The system should provide strong passwords that contain a minimum of seven (8) alpha/numeric characters for standard user accounts.

1. **Availability**

* The system should be available for 24 hours per day, 365 days per year
* Data upload operations shall be resumable when a connection interruption occurs.
* The system must achieve 99 percent uptime.
* Users should be notified when the system is not available
* The system should cater for 50 concurrent users within the period from 9:00 A.M. to 5:00 P.M. Maximum loading at other periods should be 100 simultaneous users.

1. **Efficiency**

* iHMS will be essential and extensively used system in the hospital and; it is expected that many users/systems will interact heavily with the back-end databases.To make such interactions possible and make them efficient and fast, the design of iHMS (i.e. iHMS architecture) and deployment architecture should be take into consideration of the efficiency.
* The system must process 3000 transactions per minute

1. **Integrity**

* The transaction history should be maintained in the systems for rolling 90-days
* The system should retain partial data from interrupted entry for 15 minutes

1. **Reliability**

* iHMS system should be available 24 hours a day for application users

1. **Scalability**

* The system must be capable of processing the 50concurrent users within a hospital. This number is expected to grow to 100 within three years.
* The system must be able to process 300 transactions per hour
* What magnitude of increase is expected in the following areas:
  1. Users
  2. Transactions
  3. Records