APPENDIX-A

PREQUALIFICATION QUESTIONNAIRE

PREQUALIFICATION QUESTIONNAIRE (FOR FUNCTIONAL REQUIREMENT) TO BE FILLED UP BY BIDDERS FOR THE SUPPLY, INSTALLATION, COMMISSIONING & MAINTENANCE OF HOSPITAL MANAGEMENT INFORMATION SYSTEM (HMIS)

System Requirements Worksheets

The information requested in this part of the document has been designed so that the vendors can provide answers by placing the following codes to the right of each requirement description. Additional information that the vendor believes is necessary or helpful, can be included as an attachment that refers to the full identification of the requirement.

Code	Meaning
Y	Yes. The proposed package can perform the function completely without modifications or the requirement is met completely by the off-the-shelf package.
P	Package cannot perform the function completely now but enhancements are planned to perform this function and are targeted for commercial release on the date (in YYMMDD format). Enhancements planned but for which no release date is set will not qualify for a "P" answer.
M	Package must be modified to perform this function and the modification can be delivered as part of the solution. Such modifications will be treated as custom modifications and will not form part of the package upgrade plan.
N	No. Package cannot perform this function and neither an enhancement is planned nor a modification is proposed.

Respond to the requirements listed below by completing the designated columns in the Table provided on the accompanying diskette. Your proposal must also include a hardcopy of the completed table. Each printed page of the hardcopy must be initialed by the Supplier.

The HMIS shall provide the following functions. The Contractor Shall supply cross-references to the Contractor's documentation, where these functions are described, and test scripts to aid verification of this functionality.

Requirements	Code (Y,P, M or N)	Comments
1. Medical Record Number (MRN)		
1.1 Ability to provide a method to identify possible duplicate registration.		
1.2 Ability to update each current patient episode including: • date of admission • date of discharge • date and time of visit • visit no. • final diagnosis • Patient disposal (i.e. sick leave, light duties, fitness for normal duties etc.) • procedures carried out • medication prescribed • new special conditions.		
1.3 Ability to render the MRN entries as 'non-current' after a hospital-defined length of inactivity, death, or when the patient concerned is no longer an entitled person. Should have the ability to retain all these entries, permanently.		
1.4 Ability to set up MRN records on the one database for: • Inpatients • Outpatients • Casualty patient • Potential patients (new employees) • External referrals.		
1.5 Ability to display summary episode history by patient whether outpatient, inpatient or casualty including key dates and consultant.		
1.6 Ability to store summary patient data on-line for 7 years and off-line indefinitely after patient has ceased to attend hospital. Ability to re-load off-line data and make it on-line again.		
1.7 Ability to flag patients for Drug allergies, Hepatitis infection, Hazardous previous episodes, University staff.		
1.8 Ability to maintain/contain demographic as well as visit information within the MRN.		
1.9 Facility to merge entitlement numbers e.g. employee changing from one hospital to another		

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Requirements	Code (Y,P, M or N)	Comments
1.10 Facility to generate registration forms & labels.		
1.11 Facility to accommodate Health Card Number.		
1.12 User definable search criteria.		
1.13 Ability to provide MRN search facility for all inpatients. MRN window screen shot should be able to provide as much details as possible at a glance. Full name Health Card number Picture (Scanned Health Card copy) Date of birth Age Sex Employer company Visit history dates (Details of admission, disposal, duration of stay in hospital (inpatients), Consultant Physician, Discharge diagnosis (ICD 10 coding), Procedure performed (e.g. Surgeries any). Entitlement for treatment. Pending appointment should flash. Drug allergy / hazard warning should flash.		
2. Registration and Booking		
2.1 Ability to book operating theatre by Surgeons/Operating Room Nurse in charge. An exclusive Operating Room Scheduling product would be welcome.		
2.2 Ability to maintain bed lists by department and ward.		
2.3 Ability to analyze admissions by doctor or specialty.		
2.4. Ability to track Case notes (i.e. patient files) in all departments of the hospital. Provision of Bar coding tracking system for the patient files should be implemented. At all levels of patient transactions bar coded reader of patient files is the permanent solution to lost files and missing files avoiding frustration to patients and physicians.		
2.5 Ability to inform (electronically or hard copy) medical records about the incoming outpatients so that case notes can be retrieved for the doctor.		

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Requirements	Code (Y,P, M or N)	Comments
2.6 Ability to enter and update doctor's appointment schedules and Treating doctor's duty roster, as required.		
3. Pre-Admission		
3.1 Facility to allow beds to be taken out and brought back into service, either individually, by department or by ward.		
3.2 Ability to provide a bed list enquiry which identifies beds that are occupied, vacant or ready for occupation. Ability to analyze the information by: • consultant • department • ward • Alphabetical patient-location. Patient census screen should be able to give details of department, consultant, location and duration of stay. New admission should not be allowed in full status at each ward level.		
3.3 Ability to provide a bed list enquiry which identifies beds that are occupied, vacant or ready for occupation. Ability to analyze the information by: • consultant • department • ward • Alphabetical patient-location. Patient census screen should be able to give details of department, consultant, location and duration of stay. New admission should not be allowed in full status at each ward level.		
4. Admissions		
4.1 Ability for the nurse to allocate bed. Admission capability to be available at central reception desk through the central Scheduling Processor. The bed allocation function to be available with the Nurses management module.		
4.2 Ability to maintain admission orders.		
4.3 Ability to identify VIP patients and restrict access of information on those patients.		
4.4 Ability to request the retrieval of hard copy medical records.		

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Requirements	Code (Y,P, M or N)	Comments
4.5 Ability to admit a new-born using the mother's identification number and the mother's admission information.		
5. Transfers and Discharges		
5.1 Ability to enter, update or cancel pending and final discharge.		
5.2 Ability to print or display the transfer request list, impending transfers, completed transfers, pending discharges by ward and by room and notices of completed discharges.		
5.3 Ability to send transfer and discharge notices to specific locations automatically.		
5.4 Ability to identify the reason for the transfer request through free text or sets of codes entry.		
5.5 Ability to report all transfers by cause at the end of each day.		
5.6 Ability to automatically update the bed status information on notice of transfer completion or discharge.		
5.7 Ability to distinguish transfer within nursing wards from transfers between nursing wards and print the various notices and work sheets accordingly.		
5.8 Ability to maintain patient days by service, regardless of transfers. (For example a patient in medicine for two days and surgery for two days should be reported as such and not as four days in surgery).		
5.9 Ability to allow the entry of transfer requests by nursing ward personnel.		
5.10 The system should provide the following functionality for "Discharge planning". • Nursing plan • Begins at admission • Multi-disciplinary • Post-discharge documentation • discharge plan forms Identifies referrals		
5.11 Ability to update immediately all patient files with new patient location information.		
5.12 Ability to balance census daily.		
5.13 Ability to check discharges for physician authorization. System should be able to generate Discharge summary report after a free form input by the Physician with complete details. Automatic		

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notification to other service departments of the discharge status.		
5.14 Ability to display and print notices of completed discharges. Facility to enter any discharge cancellation and immediately update all files.		
5.15 Ability to make advanced discharge notices available for display and printing on demand by authorized users.		
6. Order Communication		
6.1 Ability to enter orders, with time and date stamp, communicate, display, unlimited free text comments regarding the order, print and result reporting to authorize users and departments throughout the system.		
6.2 Ability to re-display the order for review as part of the order entry process.		
6.3 Ability to i) generate a unique identification number for different departments and labs ii) allow entry of this unique number.		
6.4 Ability to • identify the order, the user with location who entered the order, condition and details of specimens received (e.g. type of sample and order date) • identify the clinician making the order.		
6.5 Ability to present orders in a variety of formats including: • elected words or phrases in standard medical terminology for compilation of orders. • categorize order by service department. • edit orders for completeness. • require orders for patients to be reviewed certified as correct prior to systems acceptance transmittal i.e. reconfirmation. • automatically print or display orders in appropriate department after certification, at: • order entry time • the time indicated for filling the order		
6.6 Ability to allow enquiries on orders/ requests history for current inpatient episode.		

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6.7 Ability to inquire on order/request status by • Department • Patient Entitlement number • Doctor Name, time and test type • Date.		
6.8 Ability to: • Assign unique request number to the request • Identify requester on each request • Allow a request to be made on behalf of a consultant / specialist / clinician • Identify individual entering the request/order. • Ability to make order without navigating through multiple screens. • The Order request form should get pre filled with as much as possible with demographics of the patient details, default to Physician who signed on the system, No other Physician code be allowed to enter even if the signed one is different from the ordering one.		
6.9 Ability to maintain users authorized to make requests.		
6.10 Ability to cancel orders/requests not yet processed and automatically to communicate cancelled requests to appropriate departments.		
6.11 Ability to allow more than one request at a time to be entered for an individual patient without receiving the patient's ID and generate individual requisitions from multiple requests.		
6.12 Ability to enable commonly requested items or services to be entered quickly. Ability to make user required Order management templates. These templates should include : ▪ Routine orders (Expandable according to User) ▪ Admission orders and Physician's favorites These templates should involve and include all service departments .(One template could contain orders from laboratory, Radiology, Physiotherapy)		
6.13 Ability to enable unlimited free text entry to accompany orders/requests.		

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6.14 Ability to allow prioritization of requests: • Urgent/Emergency • Routine • Timed • and print requisitions immediately for urgent and emergency requests.		
6.15 Ability to identify incompatible requests and alert when special handling is required. (Checking for food-drug interactions, food-procedure interactions, allergies-drugs, duplicate orders, procedure-procedure (conflict checking), drug-drug interactions, drug-laboratory results).		
6.16 Ability to distinguish between an inpatient and outpatient request priority.		
6.17 Ability to treat certain requests always as urgent.		
6.18 Print requisitions for specific departments: • Immediately • At specified times.		
6.19 Ability to maintain all requests on-line until purged in accordance with procedures.		
6.20 Facility to print/display all outstanding requests for a patient or department with their status indicators.		
6.21 Facility to print/display instructions automatically for patient preparations for specified tests/procedures.		
6.22 Ability to allow override facilities on standard instructions.		
6.23 Ability to require justification for overriding of normal procedures, and provide daily print out of all such requests by requester and location.		
6.24 Ability to produce specimen labels on request.		
6.25 Facility to print test requests at point of entry on demand.		
6.26 Ability for requests to be combined into user-defined request sets and allow their entry.		
6.27 Ability to select routine requests from table or through Bar coding.		
6.28 Ability to provide duplicate request/order checking. (i.e. Duplicate order checking with parameters by time period and specific test/exam/drug).		
6.29 Facility to produce a collection schedule for specimens.		
6.30 Facility to enter and store requests for indefinite period of time before transmission to appropriate		

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department.		
6.31 Facility to generate request statistics by: • Specialty • Consultant • Ward • Department • Test Type • Time • Priority • Diagnosis • Sex/Age/Nationality • Combination of above		
6.32 Facility to generate report on: • Types of tests requested and frequency • Analysis of time between request and result • Analysis of request times by type, ward.		
6.33 Ability to define any orderable procedure, for any orderable item, process or procedure, to eliminate all pre-printed or hand-written order forms and requisitions		
6.34 Ability to place orders for all departments in a single screen, from any location in the hospital, based on the authorization allowing a physician's orders that covers multiple departments/wards to be used for source of entry without change. The information sought based on each department's specific needs, so that orders from different departments ask for different information at the time of order.		
6.35 Ability to : • Customize order “sets” by physician, service, location, or procedure and include groups of procedures from multiple departments. • Modify the orders according to patient needs. (i.e. unlimited number of hospital-defined order sets/standing orders with ability to mix Laboratory, Radiology orders etc.)		
6.36 Ability to store physician's electronic signature in the database and append to orders/results in case of any modification.		

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6.37 Facility for an order to be screened for departmental review/signature so that requests by physicians requiring the department's approval are placed in a queue for the department's co-signature, before the request can be processed (i.e. a radiologist's signature required for selected radiology examinations).		
6.38 Facility for the computer system user to access, add and update patient diagnoses and allergies during the order entry function.		
6.39 Ability to print bar code: • collection labels with the specific information on specimen volume and collection container to be used. • isolation Labels with list specimen collection and handling precautions.		
6.40 Ability to notify the physician and nurse in case of an order requiring physician signature and nursing review is modified or canceled.		
Results Reporting (Order Communication)		
6.41 Ability to maintain a directory of diagnostic codes for results reporting.		
6.42 Ability to display results (on-line) at ward level and at other terminals for authorise users.		
6.43 Ability to inquire on the release report status e.g. • Pending • Partial • Complete.		
6.44 Ability to route results automatically to all the location.		
6.45 Facility to make on-line corrections to reports.		
6.46 Ability to maintain results on-line for the entire patient's stay or duration of episode.		
6.47 Facility to allow immediate reporting of urgent or emergency results.		
6.48 Ability to indicate normal ranges for tests and flag abnormal results. ▪ Ability to create cumulative reports as defined by user (weekly). ▪ Ability to create bar graphs for comparison purposes during the process of patient treatment.		
6.49 Facility to display complete test results for short reports.		

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6.50 Facility to reprint results on request.		
6.51 Ability to hold results for verification before reporting.		
6.52 Ability to print results in multiple locations.		
Facility to print/display results by consultant/Physician.		
6.54 Ability to restrict result enquiry and result updating to authorized users.		
6.55 Facility to provide the option to specify the type/range of result inquiries, including: • All tests on a patient • All tests in the last 24 hours for a patient		
6.56 Ability to enter/capture results by: • Avoiding the re-keying (re-input) of the patient data • Interfacing with testing apparatus • Other facilities to expedite entry		
6.57 Ability to automatically alert when result is ready.		
6.58 Facility to transmit textual results (e.g. assessments from Occupational Therapy).		
6.59 Facility for a centralised generation of hard copy of results for distribution to requesters not on the system.		
6.60 Ability to report on results not checked by a consultant on the ward.		
6.61 Facility to generate test statistics by: • Speciality • Consultant • Ward • Department • Test type • Time.		
6.62 Facility to produce laboratory flow sheets for ICU nurses/doctors		
6.63 Facility to record and report by specified units.		
6.64 Facility to print all test results for an episode of care on patient discharge.		
6.65 Facility to update the order/request status automatically upon entry of results.		
6.66 Facility to allow entry of preliminary results followed by update and subsequent printing of results immediately at the patient's location.		

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6.67 Facility to print/display all results for a patient from a particular date forward.		
6.68 Ability to retrieve information and data stored in the instrument when HIS is back online		
6.69 Ability to warn through user based rules in case an error occurred in test sampling.		
6.70 Facility to define normal values against sex and different age range so that system highlights and warn against abnormal values during results reporting		
7. Census		
7.1 Ability to hold and manipulate census data through a report writer. The census data items to be stored are, but not limited to:- • patient name and number • religion • type of service provided • location • admission data • treating doctor • type of bed • casualty data • at ward and service level the ability to hold data on admissions, discharges, transfers and partial days, bed assignments, ...		
7.2 Ability to produce census reports at differing levels of detail and by different services. At a total hospital level the availability of analysis by: • patient name and number • location - primarily by ward • doctor • religion • service		
7.3 Ability for the census to reflect and provide reports on: • pending transfers, • pending discharges • temporary bed assignments. • A monthly statistical report on admissions, casualty admissions, patient movements, type of beds. • Bed utilization statistics per unit, services. 7.4 Ability to provide an online Outpatient census ticker		

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8. Management Statistics / Reporting & Decision Making		
8.1 Ability to maintain statistics on the following main categories of hospital activities: • outpatients and inpatients • physiotherapy • pathology • dental clinic and laboratory • preventive medicine (Vaccinations etc.) • wards • births and deaths • specialized care units(i.e. ICU-Intensive Care Unit, CCU – Coronary Care Unit, NSICU – Neonatal Surgery ICU, NICU – Neonatal ICU Unit) • operating theatre • treatment room • physical examinations (pre-employment) • deliveries • bed occupancy (by ward and across the hospital) • radiology • doctors' case load • emergency room • endoscopy • E.C.G.		
8.2 The system should provide the following functionality for "Management reporting & decision-making". • Medication list summary • Vital signs - correlation • On-line laboratory results reporting • Trend plotting • Operational reporting • Management reporting • QA/QI (quality) reporting • Nursing audit • Nursing quality assurance support • Cost tracking & reporting • Shift reporting • On-line inquiry into designated files/fields • Patient variance detail • Performing department variances • Physician patient census		

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• Case manager patient census • Support quality indicator reporting for TQM • Summary management reports • Managed care reports • Physician reports • Customized reports • Clinical decision support capability • User-defined shift reports • Work list items • Documentation • Significant events identified & Flagged		
8.3 Facility to display and validate reports before printing.		
8.4 Facility to present statistical reports in GUI format.		
8.5 Facility to route printing statistical reports to different locations within the hospital or through interfaces with IMS BHU main systems.		
8.6 Facility to produce a listing of patients for pre-clinic tests / X ray.		
8.7 Ability to provide attendance reports, including details of: ▪ The session held; patients who attend / failed to attend / cancelled at short notice. ▪ Number of session by consultant / Specialty. ▪ Average length of session by Consultant / Specialty. ▪ Consultants within Specialty ▪ New / recall visits by consultant / specialty. ▪ Average patient attendance per consultant / specialty. ▪ List of new patients who attended without being scheduled and without referral source. Lists of unscheduled recall by consultant. • Number of patients by referral source, number of urgent cases by referral source and consultant.		
9. Hospital Stores (Materials Management)		
9.1 Ability to support a re-order level control system with comprehensive reordering facilities.		
9.2 Ability to maintain associated unit cost and standard cost for all materials to allow the		

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calculation of consumption costs by user.		
9.3 Ability to provide the following reports : minimum stock levels reached, by item: • this year's usage • last year's usage for the same period • Year before usage for the same period • stock on hand • stock on order • expiry date • monthly report for each item: • usage this year to date by month • usage last year to date by month for same period (for drugs only) • stock on hand • stock on order • last receipt date and issuing by user code		
9.4 Ability to withdraw quantities supplied to users by priority of expiry date.		
Stock Control (Hospital Stores)		
9.5 Ability to maintain record of stocks held in the various locations throughout the hospital.		
9.6 Ability to maintain record of stock costs.		
9.7 Facility to produce a list of stock items showing details such as current stock levels etc.		
9.8 Ability to update stock levels as soon as any goods are received or issued.		
9.9 Ability to define units of measure which allows logical quantities of an inventory item to be associated with specific transaction types. For example, purchasing and receiving transactions use the same type of unit of measure, whereas, stock transfers use another type of unit of measure.		
9.10 Ability to provide the flexibility to define three discrete types of units of measure: an issue unit of measure, a stock unit of measure, and a purchase unit of measure.		
9.11 Ability to handle user-defined purchase order formats and templates for easy operations.		
9.12 Ability to generate purchase order numbers by the system or manually.		
9.13 Ability to cancel any item that is on order.		

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Requirements	Code (Y,P, M or N)	Comments
9.14 Ability to record, with a single keystroke, all of the items received on a purchase order.		
9.15 Ability to generate a worksheet providing a list of items to be received for a purchase order. (This worksheet to be used to record data manually about the items to be received from the supplier).		
9.16 Ability to process transactions such as stock returns including credits.		
9.17 Ability to support physical count of inventory.		
9.18 Ability to track and provide status of orders in the system from various hospital departments.		
9.19 Facility for stock adjustment used to reconcile inventory stock amounts. Ability to process a stock adjustment to account for spoilage, waste, missing inventory stock, or any other user defined reason. Ability to reconcile differences between physical counts and the recorded amounts of inventory items		
10 Scheduling / Appointments (Reception)		
10.1 Facility for on-line appointment scheduling.		
10.2 Facility for on-line access of previously scheduled appointments.		
10.3 Facility for authorized users to maintain procedure tables that govern the scheduling process.		
10.4 Ability to allow user definable appointment time slots.		
10.5 Facility to allow users to specify rules that the scheduling system will utilize to determine the "suggested" schedule. (An example of the types of rules needed would be to allow the user to reserve a specific room in the morning for a specific procedure, such as for a VIP).		
10.6 Facility to allow the authorized users to bypass the scheduling process for a procedure that is normally scheduled (such as for an emergency or a walk-in patient).		
10.7 Facility to allow patients to be scheduled without having a patient identification number (i.e. before they are registered).		
10.8 Ability to select the first available date, time and room to schedule an examination/consultation based on the parameters selected by the user.		
10.9 Ability to allow the user to select a date, time and room if desired for the manual scheduling.		

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10.10 Ability to allow scheduling a patient for multiple exams without exiting the scheduling screen or re-entering patient demographic information.		
10.11 Ability to allow a patient's examination time to be rescheduled without having to re-key patient demographic or exam information.		
10.12 Ability to maintain the examination and preparation instructions for display/print at scheduling time.		
10.13 Ability to allow users to define the number of exams that can be performed during a specified time period and warn of over booking situations.		
10.14 Ability to support a free text scheduling rule that would display automatically when a certain procedure is ordered.		
10.15 Ability to select next available time and room given a specific date.		
10.16 Ability for the scheduling system to allow the user to define interactions or conflicts between procedures and use those definitions to automatically detect and warn of conflicting procedures being scheduled for a patient.		
10.17 Ability to allow the selection of alternative rooms and/or times without exiting the scheduling screen.		
10.18 Ability to provide a free form comments area for miscellaneous scheduling comments, such as patient condition etc.		
10.19 Ability for the rooms to be closed and reopened for portions of the day, including closure on future dates for preventive maintenance or any reason.		
10.20 Ability to allow authorized staff to force a booking contrary to the usual rules in force.		
10.21 Ability to produce case note pulling list for clinics.		
10.22 Facility for authorized users to view the status of any clinic session running on a particular day.		
10.23 Ability to allow tailoring of booking rules for each consultant/clinic and record circumstances for forced bookings, displaying them on the screen.		
10.24 Facility to print a reminder note for patients at a user defined time period prior to the appointment and Suppress issue of appointment letters for patients who have died (deceased).		
10.25 Ability to support user-defined time increments (i.e. 5 minutes, 15 minutes, etc.).		

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10.26 Facility to print appointment schedules: on a scheduled basis on demand basis by date by procedure by department or section.		
10.27 Facility to allow printing of preliminary schedules for each area/consultant, the day prior to the examinations.		
10.28 Facility to print scheduling reports, in either batch mode or on demand and department schedule by exam and/or room.		
10.29 Ability to maintain/inquire booking/attendance history, episode of care, extra screen capability.		
10.30 Ability to print appointment reminders on demand, including scheduled ancillary department services with associated instructions.		
10.31 System should be completely integrated with the billing system with the flexibility in settlement type.		
10.32 System should allow indicating gender associated with clinic / specialty and warn against any mismatch during appointment issue / visit registration.		
10.33 System should provide facility to capture referral source information.		
10.34 The system should facilitate a convenient queue system for walk in cases needing immediate appointments		
10.35 Rescheduling of a particular facility should be possible by authorized users. The systems must warn if there are any appointments during the period.		
10:36 Ability to prevent appointments from being booked on Public Holidays or Clinicians leave.		
10:37 Ability to allow discharge inpatients and Emergency department patients to be registered automatically for outpatient appointments where appropriate.		
10:38 Facility to produce a new appointment card.		
10:39 Ability to maintain clinic schedule details, e.g., effective dates, consultant in charge.		
10:40 Ability to cancel a clinic session.		
10:41 Ability to schedule clinics at regular intervals e.g. First Thursday of each month.		

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11. Case Note Tracking/		
11.1 Ability to inquire on full history, locate and track the movement of patient file and documents around the hospital.		
11.2 Ability to allow case notes to be checked out by location, cause and doctor code etc.		
11.3 Facility to provide a mechanism for indicating whether patient notes have been stored on other media e.g. microfilm or imaging system.		
11.4 Ability to accept a range of different locations, e.g.: Doctors' consultation rooms/room number. Wards/ward code. Medical Board Committee/Doctor requested code. Casualty clinics/doctor requester code. Physical examination. Social worker. R & D Supervisors (names should be entered). Statistics and Coding. Record Department.		
11.5 Ability to use bar code labels and bar code reader for identification of case notes.		
11.6 Ability to allow authorized users in other modules such as registration and booking, scheduling and appointment and nursing to update the record tracking system during emergencies or disasters.		
11.7 Ability to allow authorized users to sign out patient medical records (case notes) other than the normal registration or admission procedures. For example, sign out case notes for studies or administrative purposes.		
11.8 Ability to record date and time of the transactions.		
11.9 Facility to build in time periods for case notes to be with clinicians, or other groups before being reported as overdue for return to medical records.		
11.10 Ability to maintain full audit trail of case note usage.		
11.11 Ability to update the record tracking system by signing out (checking out) all the case notes (bulk movement) ready to be allocated to Consultation Rooms / Clinics / Wards		

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Requirements	Code (Y,P, M or N)	Comments
including reason for movement.		
11.12 Ability to update and alert medical record system or EMR of patients who have been admitted and have appointments.		
12. Electronic Medical Record (EMR)		
12.1 Facility to capture and manage episodic and longitudinal electronic health record information. This includes; ▪ Check information captured and providing time stamp, information source and audit trails. ▪ Permitting efficient data entry of all orders and documentation by authorized physicians ▪ Supporting electronic signature. ▪ Differentiating between patient historical data versus episodic data.		
12.2 Facility to provide secure, reliable, real-time access to patient health record information.		
12.3 Ability to provide tools including access audit trails, to ensure patient information confidentiality and security.		
12.4 Facilitate the functionality as physicians' primary information source during patients' encounters. This includes: Patient problem list, patient history and physical exam, allergies, immunizations, medication dispensed and administered, orders, diagnostic results and images, and most recent vital signs, progress, nursing notes.		
12.5 Ability to provide work of planning and delivering evidence-based care to single and groups of patients. This includes: Support of physicians orders Support of care plans, and disease management Provides tools as patients' lists, task lists, and task completion. Decision support tools to guide medication administration (right patient, right drug, right dose, right time, right route)		
12.6 Ability to provide basic decision support tools such as order sets, treatment plans, and rules based documentation templates as well as complex tools such as care paths and rules-based promoting		

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Requirements	Code (Y,P, M or N)	Comments
12.7 Captures data used for continuous quality improvement, utilization review, risk management, resource planning, and performance management. This includes: Support of reports to evaluate processes and outcome of care. Support of reporting regarding compliance with care and process standards. Capturing patient health data needed to identify intensity of service for resource allocation		
12.8 Ability to produce the following reports: Daily list of all new outpatients registered. Daily list of all outpatients. Details of episodes.		
13. Pathology Laboratory		
General Functions (Pathology)		
13.1 Ability to interface with Patient Administration System for appropriate patient data relevant to the tests being undertaken, such as sex, age, weight and any drug profile available.		
13.2 Ability to identify the patient location for sample collection, and to warn if any current regime of drugs or food would influence the ordered tests.		
13.3 Ability to print labels for sample collection, and provide a collection schedule and route.		
13.4 Ability to report a "normal range" result alongside the sample result, and allow the pathologist to add free-form comments on the report at the time of authorising the report.		
13.5 Ability to provide information relating to the work performed to produce the test result which will include the number of times a test or procedure was performed, dilution factors and repeat results for each individual test.		
13.6 Ability to hold information on each request that will permit the identification of the episode of care that is relevant to the request.		
13.7 Ability to store and display specimen turn around times.		
13.8 Ability to provide help facilities, to provide a teaching environment, both on basic technical procedures and also on diagnostic criteria.		

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Requirements	Code (Y,P, M or N)	Comments
13.9 Facility for the system administrator to configure the software and define the facilities required for each sub-department so that each sub-department has ready access to the facilities most often required without cluttered screens or many keystrokes.		
13.10 Ability to provide configuration facilities, at the sub-department level, to allow the user to determine which data items will be displayed on screens used for display of information.		
13.11 Ability to provide facilities for the user to define the validation criteria used for data input fields.		
13.12 Facility for the user to define and amend rules to compute additional data, request additional tests, hold for further analysis. (These rules may be numeric calculations, conditional statements or a combination of both).		
13.13 Ability to allow the entry of additional comments in coded or free text form at test; test group, sample, request and patient levels.		
13.14 Ability to support functions to produce user defined labels which may or may not incorporate stored data items.		
13.15 Facilities for on-line access display and print for patient registrations, admissions, discharges, casualty department episodes and for the MRN; and allow updating of patient information.		
13.16 Facility to develop user defined order sets by laboratory department and test and to merge related patient care information, such as medication.		
13.17 Ability to cancel or modify tests with feedback to the requester and to notify on-line that a duplicate order has been received.		
13.18 Ability to permit the selection and classification of organisms into genus and species and into further user-defined categories for subsequent epidemiological analysis.		
13.19 Ability to include full ante-natal requests with patient recall facilities.		
13.20 Ability to transmit and receive messages from nursing and ancillary departments regarding: specimen type time specimen collected special drawing instructions patient precautions patient condition		

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13.21 Ability to provide three levels of clinical validation of laboratory tests and allow only authorized users to either (1) perform, (2) result or (3) verify tests. The software should enforce an additional review and verification step by Clinical Staff.		
13.22 Ability to provide following procedures in order to reduce the amount of paperwork necessary for specimen processing: bar coded collection lists allowing rapid input of patient and specimen data onto the system specimen Log In eliminating the need for laboratory "daybooks" on-line specimen tracking and audit trails work lists available on-line Microbiology Work Cards on-line On-line result verification Chart distribution which eliminates the production of unnecessary duplicate charts Patient clinical information storage (Medical abstracting) on-line Management reports accessible on-line		
13.23 Facility to chart lab results from different lab sections on the same chart. e.g. Chemistry results and Histology report all on one page. Cumulative charts should be produced for patients who have frequent visits to the hospital so that all lab results from all their visits are available on one chart. Ability to allow users to design chart content and layout to suit their particular needs.		
13.24 Ability to support manual lab processes such as the manual differential procedure and allow the user to set up screen templates, customised for that user, which facilitate rapid input of results as the specimen is being examined.		
13.25 Ability to automate management processes such as International Classification of Disease Coding, ad-hoc management reports, workload and productivity reports, exception management, and quality assurance reports.		
13.26 Ability to allow the user quick access to various functions without having to scroll through several menus. Whilst using a particular function, the ability to branch to another function and return to the same position when finished. Ability to transfer data between function using the branch feature.		

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13.27 Ability to provide automatic on-line patient history inquiries and perform automatic data checking.		
13.28 Ability to provide facilities for the monitoring of temperature control on the fridges with user definable warning and danger levels.		
13.29 Ability to support automatic logging of sensitive data changes / selected data production.		
13.30 The system should offer the following products to support the laboratory: bar coding report writing software		
13.31 Ability to print or display user-defined patient care information on cumulative results reports including special precautions, medication information, and diagnostic data.		
13.32 Facility to change any values held in code tables with immediate effect on the system.		
13.33 Ability to provide ad-hoc data enquiry facilities for user defined database enquiries based on a standard query language.		
13.34 Ability to recognise and hold patient-related data at the patient, request, specimen and test or diagnosis levels.		
13.35 Ability to support multiple samples within one request either when the samples are for one department or when they span multiple departments.		
13.36 Ability to support the combining of tests into user-defined groups.		
13.37 Ability to support the same test appearing in multiple test groups, all requested for the same sample with only one occurrence of the test and associated results on the database.		
13.38 Ability to provide details of events that are positively recorded against each sample.		
14.39 Ability to provide details of the data held as user accessible code tables e.g. test codes or ward codes. AND details of any coded data that is not accessible for change by the user and details of any limitations on user access to the code tables.		
13.39 Ability to provide facilities to allocate costs, workload, source of request, specialty and place of execution of test to each laboratory procedure performed.		

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Requirements	Code (Y,P, M or N)	Comments
13.40 Facility for the user to define and amend default values for each data attribute at sub-department level.		
13.41 Ability to hold data items that relate to the sample and may be specific to individual tests, e.g. urine volume, in a way that will not be accounted for as test results and will not be counted in workload totals, account generation etc.		
13.42 Ability to allow the user to define workload factors and costs to each test.		
13.43 Ability for the user to redefine units or ranges for a test without the user having to redefine a test code. (The units or range applicable at the time of analysis should always be displayed or printed for the test).		
13.44 Ability to permit definitions of tests to be made without concern over their organisation into groups or sets. (And the software should not impose any limitations on the definition of tests).		
13.45 Ability for the user to alter the order of tests within a group, delete tests and add tests to a group without, having to rename the group, alter any existing database patient records or reconfigure the software.		
13.46 Ability to make provision for the same test being performed on different sample types, each of which may have different ranges, units, costs and workload factors.		
13.47 Allow the user to define the analysers used in the system associated with the respective test results, irrespective of whether they are directly connected.		
13.48 Ability to enable the relevant workload factors to be attributed to particular tests being performed on particular analysers. Ability to relate the workload factors to each test performed on the analyser.		
13.49 Ability to allow for the ordering of Lab. requests from ward based terminals.		
13.50 Capability to produce collection lists sorted by ward with sample details, patient preparation details and pre-printed sample identification details.		
13.51 Ability to log-in specimens using bar codes.		

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13.52 Ability to have an audit trail to ensure that collected specimens are delivered to the laboratory.		
13.53 Capability of printing eye-readable and bar code labels after request ordering.		
13.54 Capability of positive patient identification at the time of result entry.		
13.55 Capability of supporting the following result types:- Numeric results Coded comments Text (supported by a word processing facility when necessary) Titres Calculated results Interpretations.		
13.56 Facility to allow for input of results by:- Individual accession number Batch of accession numbers for a single test electronic worksheet.		
13.57 Facility to check each result against user pre-defined ranges based on age and sex, and to compare any current results against previous results (delta checking).		
13.58 Ability to display previous results during result entry.		
13.59 Ability to flag results corrected after authorisation and requires a different security than result entry.		
13.60 Ability to support default responses for quick entry of negative results.		
13.61 Ability to allow for immediate and automatic authorisation of results during Primary level authorisation.		
13.62 Ability to incorporate result validation based on:- Numerical range checks e.g. reference ranges. Range checks for age and sex of patient.		
Reporting (Pathology)		
13.63 Ability to produce interim and cumulative reports in batch and on demand.		
13.64 Ability to support user-defined report formats of the work done on a sample either manually or automatically at pre-defined times.		

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13.65 Ability to provide facilities for the user to choose criteria for printing reports. These should include selected laboratory accession numbers, wards, urgent requests, sets, tests and specimen type.		
13.66 Ability to provide facilities for producing a report on the basis of one sample per report.		
13.67 Ability to provide facilities for reporting multiple samples with single or multiple tests for the same patient on one report.		
13.68 Ability to provide facilities for producing user configurable formats for cumulative reports. Ability for users to be able to choose any combination of tests where the current results are printed along with previous results for the same tests for the patient.		
13.69 Ability to provide details of the facilities which will allow the user to be able to modify report formats and creates new formats.		
13.70 Ability to provide facilities to allow a single report or a batch of reports to be reprinted within a user defined time.		
13.71 Ability to provide facilities to allow the user to define and amend report formats at discipline and sub-department level, with multiple formats being possible.		
13.72 Facility for the user to define the rules under which each report format will be used. (These rules may include or exclude specific tests, clinical states of the patient or specific report destinations).		
13.73 Ability to provide facilities to allow the user to define the order in which reports are to be printed.		
13.74 Ability to provide facilities to allow the user to assign reporting priorities to a location or groups of locations.		
13.75 Ability to allow the user to suppress result data on the final report. (This should be available as a manual exercise on a sample by sample basis and also as a rule based automatic process with the user able to define and amend the rules. Any suppressed data should still be available for analyses or review).		
13.76 Ability to allow the user to request repeat copies of complete report runs using user-defined criteria.		
13.77 Facility to allow simultaneous report print runs in different disciplines or on different sites.		

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13.78 Facilities to support user defined reporting groups for tests, sets or profiles.		
13.79 Facilities to indicate on the report, information concerning the dispatch of other reports on the same patient to any other destinations (not duplicates).		
13.80 Ability to allow suitable identification on the report, where reports are duplicated or repeated.		
13.81 Facilitate results reporting to patient locations and provide word processing facilities for reporting of textual results. Provide for the transmission of short textual results to user-defined terminal locations. (Textual results include interim results, special instructions on patient treatment, messages, pathology summaries, sensitivity analysis).		
13.82 Ability to print cumulative summary reports on demand at patient locations and print or display URGENT results at user-defined locations.		
13.83 Ability to allow repeat generation of report runs up to a minimum of 2 working days (e.g. runs generated on Friday repeated on Monday). (For repeat runs of reports the user should be able to define a complete or part run on user-defined parameters).		
13.84 Ability to allow simple generation and printing of epidemiological information e.g. drug usage, antibiotic susceptibility, control of infection data, outbreak data, positivity rates and surveillance data.		
13.85 Ability to suppress any report on any patient.		
13.86 Ability to allow creation of reports on all data.		
13.87 Ability to provide information on the availability of reporting by use of electronic mail.		
Specimen/Test Entry (Pathology)		
13.88 Ability to provide automatic flagging for high risk specimens, displaying a status of 'confirmed' or 'awaiting result'. Ability to store this information on the scratch pad.		
13.89 Facilities to record miscellaneous information appertaining to the request e.g. wrong samples, incomplete labeling of samples, clotted samples.		

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13.90 Facilities to request multiple reports for different locations.		
13.91 Facilities for requesting tests to be performed on the samples.		
13.92 Ability to support the entry of a dilution factor.		
13.93 Ability to display Patient demographics during result entry.		
13.94 Specialised facilities to record the results of organism identification.		
13.95 Facilities for the recording of antibiotic sensitivities which may include numeric or qualitative values and audit data for control values.		
13.96 Ability for the user to define and amend antibiotic panels to include tabular reporting e.g. antibiotics, serology and virus tissue culture. Ability for the columns to have user definable headers such as specimen dates or organism identity.		
13.97 Facilities to record the work performed in the identification of an organism.		
13.98 Facilities to process paired sera samples where a new sample is analysed along with one or more stored sample(s) which may have been previously analysed.		
13.99 Ability to support a search of the database for previous specimens from the same patient on the work list. (This facility is important in Virology where two or more specimens are tested in parallel).		
13.100 Ability to allow entered results to be referred prior to authorisation.		
13.101 Facility to allow the user to indicate that the results for a test will need telephoning.		
13.102 Facilities for recording and scheduling requests for blood and blood products allowing entry of both diagnosis and reason for request.		
Worksheet Production (Pathology)		
13.103 Facilities to produce user-defined and automatic production of worksheets. Also, the ability to produce worksheets automatically triggered by system date and time.		
13.104 Facilities to allow the user to choose tests and quality control samples to appear on the worksheet in a user defined order.		

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13.105 Facilities to allow the user to define selection criteria for the samples which will appear on the worksheet.		
13.106 Facilities to view and edit the worksheets both pre- and post-entry of results.		
13.107 Ability on the worksheets to accept manual or analyser input of results.		
13.108 Facilities to reprint the whole or part of a worksheet.		
13.109 Facilities to export worksheets to analyzers.		
13.110 Facilities to ensure that the laboratory staff are notified of requests for blood and blood products, taking into account the time required for preparation or cross-matching, to ensure that the commodity is available for the ward at the date and time stipulated.		
On-Line input of Data from Analyzers (Pathology)		
13.111 Facilities for on-line capture of both result and control data from automated analyzers.		
13.112 Ability to have interface with the laboratory instruments		
13.113 Facilities for uni- or bi-directional interfacing with automated analysers which support this feature. Would the software be able to download patient demographic data and test requests to the analyser and receive result and control data from the analyser.		
13.114 Facilities should be provided to permit the user to add analysers. (The supplier should state whether all necessary technical information will be made available).		
13.115 The supplier should indicate the expected costs of linking additional analysers using the 'standard interface' where the linking is performed by the user and/or the supplier.		
Manual Input of Data (Pathology)		
13.116 Facilities for manual input of the results of tests and any information appertaining to these results by various methods.		
13.117 Facilities for amending or deleting result data whether it was manually input or automatically captured from automated analysers.		

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13.118 Facilities for screen based result entry with the full display devoted to each sample.		
13.119 Facilities for result entry on successive samples. (This could be a list-based facility where input fields for a user-selected set or test group are displayed on screen).		
13.120 Ability for the user to scroll backwards and forwards through the available data on screen.		
13.121 Facility to 'batch' enter results where a block of samples will all be assigned the same result without having to individually enter the data for every sample.		
13.122 Ability to allow the user to enter result data which corresponds to the defined format of a worksheet.		
13.123 Ability to allow the user to enter all results for different test groupings (sets).		
13.124 Facilities to record results of repeat testing. Ability for this information to be reflected in any costing or statistics.		
13.125 While entering results for a test the ability to view other completed tests on the same laboratory number e.g. view thyroid stimulating hormone results whilst entering thyroxine results.		
13.126 Facilities to allow the recalculation of blood count indices following input of a manually revised figure.		
13.127 Specialised facilities for differential white cell counts performed manually, with the software recording the individual cell types seen and making any necessary amendments for nucleated red cells.		
13.128 Ability to allow the user to configure the keyboard/keypad for the cell types required and allows multiple configurations.		
13.129 Ability to provide specialised facilities for the input of results from bone-marrow investigations.		
13.130 Ability to retain original normal ranges for the relevant previous results, when normal ranges are modified.		
Work Lists (Pathology Lab)		
13.131 Facilities to produce a list of outstanding work.		

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13.132 Facilities to allow the user to select which category of outstanding work will be displayed		
13.133 Facilities to produce a list of outstanding work by set/test/group of sets or tests, location, clinician or processing group.		
13.134 Facilities to delete entries from the outstanding work list.		
13.135 Ability to provide information on any facilities available for generating laboratory request listings.		
Data Amendment (Pathology)		
13.136 Facilities to allow the amendment of data before the final approval of request including patient, specimen, test and result data.		
13.137 Facilities to add or delete (with confirmation) sets/tests generated during request entry.		
Display of Results (Pathology)		
13.138 Facilities to allow the display of results at all stages of request processing.		
Validation and Authorization (Pathology)		
13.139 Facilities for preliminary examination of data directly transferred from an automated analyzer to allow editing and manipulation of data.		
13.140 Facilities for automatically validating test results against user defined criteria and previous results.		
13.141 Ability to provide screen based facilities for user validation of data based on user defined criteria e.g. order of presentation.		
13.142 Facilities for automatically authorizing laboratory data against user defined criteria e.g. range of result parameters or previous results.		
13.143 Ability to provide screen based facilities for user authorization of laboratory data based on user defined criteria.		
13.144 Facilities for the user to define and amend rules which can be used for automated data authorization at sub-department level.		

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13.145 Facilities for the user to define the tests on which delta checking will apply and the limits used.		
13.146 Ability for the authorisation to be performed for individual tests, even though they may have been requested as part of a group of tests.		
13.147 Facilities to allow a relevant comment to be added, if the results were already open.		
13.148 Ability to restrict the facility of altering the authorised status of a test to senior laboratory personnel only.		
13.149 Ability to maintain an audit trail of authorized results that have had their status changed back to unauthorized.		
13.150 Ability to keep an audit trail of who, where and when the results were validated/authorized, including information pertaining to the actions performed.		
13.151 Facility to allow optional display of QC data in the process of validation/authorization.		
13.152 Ability to support combined data entry, validation and authorization steps to minimize manual operations.		
13.153 Facilities for displaying present and historic results for a particular patient during validation and authorization.		
Enquiries (Pathology)		
13.154 Ability to allow the user to interrogate the system for all transactions and processes associated with a single defined or batched blood product.		
13.155 Ability to enquire for a list of patients with current samples for a specified location or requester within selected date ranges.		
13.156 Ability to allow direct access to data through the diagnostic codes.		
13.157 Facilities for the user to select the patient on the basis of a single or combination of any user defined parameters incorporating a date range.		
13.158 Ability to access all data for the patient by quoting any valid patient identifier which is recorded for the patient on the system. (These may include Entitlement Number, location, department/sub department, specimen type/site, registration date range).		

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13.159 Ability to provide enquiry facilities during system caretaking processes e.g. backups.		
13.160 Ability to allow the use of wild cards, and synonyms in queries.		
13.161 Ability to provide ad-hoc data enquiry facilities for any user defined database enquiries. Facility for the user to perform the following on the data produced from ad-hoc enquiries: manipulate perform calculations produce graphical displays format produce a hard copy printout store as an ASCII file.		
13.162 Ability to display all current and previous specimen result details in tabular format wherever possible. Facility to request the display of any earlier result data and the ability to order further tests for all suitable specimens.		
13.163 Ability to print copies of all enquiries instantly.		
13.164 Facilities for selectively suppressing antibiotic sensitivities on external displays.		
13.165 Ability to provide selection and search facilities to allow user specified rules e.g. search for Haemophiles should also yield Haemophilus influenza, Haemophilus Para influenza etc.		
13.166 Ability to allow prioritization of ad-hoc enquiries e.g. background, immediate and overnight.		
Ward Based Enquiries (Applies to all inpatient wards, outpatient clinics, consultants, or any other clinical user of the laboratory service who has access to the hospital network).		
13.167 Ability to restrict access to authorized data.		
13.168 Ability to provide information on the current status of the request i.e. received by the laboratory, in process of analysis etc.		
13.169 Ability to define the data items which will be available and additionally suppress data from display on ward enquiries.		
13.170 During the ward enquiry facility the system performance for the laboratory users of the software should remain excellent.		
13.171 Ability to produce cumulative result displays on screens used for ward enquiries.		

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13.172 The software should be capable of collating all data for a request, which may include analyses from several laboratories, so that all results can be displayed on one screen, irrespective of the laboratory(s) which performed the analyses.		
13.173 Ability to allow read only access to the code tables which define the normal levels or age/sex related ranges.		
13174 Ability to provide a consultant (requester) based view of the data, irrespective of the ward where the patient is currently based.		
13.175 Ability to display or report patient results from specified locations, tests or logical groups within a defined date range.		
Quality Control (Pathology)		
13.176 Facilities for recording the Quality Control data produced as samples are analyzed and Facilities for monitoring the Quality of test results based on the Quality Control samples and other data.		
13.177 Facilities for the user to define the Quality Control criteria used on the system.		
13.178 Ability to provide facilities for reporting the QC results either on screen or as a hard copy printout.		
13.179 Ability to provide suitable statistical analysis of the QC data with a minimum of means, deviation index, standard deviation and coefficient of variation.		
13.180 Ability to support delta checking of patient data. Ability for its implementation on any test performed on the system irrespective of whether the test is analysed by manual or automated means.		
13.181 Ability to support Quality Control validation, including delta checking, without degrading system performance.		
13.182 Facilities for the user to amend the quality control checks that will be performed on each test result at the sub-department level.		
13.183 Facilities to display, print quality control results.		
13.184 Ability to restrict amendment or deletion of QC data to authorized senior personnel.		
13.185 Facilities to display QC results in graphical form.		

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13.186 Ability to allow QC results to be entered without the user having to designate laboratory accession numbers to the QC samples.		
13.187 Facilities to allow cumulative reports of QC samples.		
13.188 Facilities to allow the input of expected QC values both before and after sample testing.		
13.189 Ability to allow the correlation of cytological diagnosis with histological diagnosis, at specimen type, patient or sample level.		
Statistics (Pathology)		
13.190 Facilities to compile workload statistics based on any user defined parameters.		
13.191 Facilities for extracting data on the basis of numbers of tests performed, samples received, requests received, with the option of a breakdown by area, unit, hospital, speciality (multiple specialties), clinician and location.		
13.192 Ability to produce statistical reports for any time period.		
13.193 Ability to provide the user with the option to display or print statistical reports. Ability to store any such report as an ASCII file.		
13.194 Ability to allow the user to select statistical data and download it to a PC in a suitable format.		
13.195 The system should have provision for defining critical factors to allow the management to analyze the performance based on multiple user-definable criteria.		
13.196 Ability for multi-patient account access simultaneously		
13.197 Tracking tool for blood unit inventory with printed report for the Blood bank on monthly basis		
13.198 Pop up patient history window or alert whenever false blood group entered for tested patient.		
13.199 Alert system for doctors of certain panic results.		
13.200 Tool to calculate each component (a component is part of a lab test) alone for statistical studies.		
13.201 System should allow technologist to enter a free text result attached to system results.		

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13.202 Friendly and flexible Lab test building especially for Microbiology.		
14. Radiology		
Registration, Booking, Appointments and PACS Management (Radiology)		
14.1 Ability to access selected user defined fields from Patient Administration sub system.		
14.2 Ability to receive and transmit relevant orders from/to the order communication system.		
14.3 Ability to allocate an episode number on each patient attendance.		
14.4 Ability to forward scheduling patient procedures, and for inpatients, be able to advise this schedule to the wards together with any required instructions for pre-preparation.		
14.5 Ability in the patient scheduling system to schedule appointments for multiple facilities performing the same or similar examinations.		
14.6 Ability to provide an on-line calendar to assist the scheduler in booking future appointments.		
14.7 Ability to automatically display an indicator of the past history of allergies, diagnosis, and any patient condition. Ability to display or print on labels the exact allergies and diagnoses.		
14.8 Ability to prevent cancellations and credits and simplify the order entry process by allowing an order to be placed by a common or lay term such as CXR for PA (Postero-Anterior) & LAT (Lateral) Chest Examinations, with the system accepting the CXR in the order conversation and converting it to the correct name upon notification to Radiology. Other examples for shortened entry are: Abdomen - ABD Lumbar Spine - LSPN Cervical Spine - CSPN Sinuses - SIN Skull - SKU or SXR etc.		
14.9 Ability to attach unlimited free text to any order, for special information that must be passed to all personnel in the department both on-line and printed on the requisition.		
14.10 Ability to allow multiple orders to be placed for any department or section in one conversation i.e. multiple orders can be placed for Laboratory, Radiology, Pulmonary etc.		

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Requirements	Code (Y,P, M or N)	Comments
without leaving the order screen.		
14.11 Ability to provide a patient tracking monitor displaying name, exams ordered, room location, enter time and depart time for all patients in the patient tracking system.		
14.12 Ability to make patient appointments for single and multiple diagnostic exams in 1 or multiple rooms.		
14.13 Facility to print standard appointment letters in English in accordance to patient language or by free selection by the user.		
14.14 Facility to print prep instructions for patients in English in accordance to patient language or by free selection by the user. .		
14.15 Facility to block book Diagnostic rooms for equipment maintenance, Radiologist/Radiographer Leave etc.		
14.16 Ability to support on line enquiry into all examinations scheduled for a given day by resource.		
14.17 Ability to summarize all patients scheduled for examination on the following day on a daily scheduling and room by room report. Ability to generate patient labels, address labels, transportation cards. Ability to include bar-codes with the labels.		
14.18 Ability to schedule examinations in the appropriate clinical sequence with overwrite capability.		
14.19 Ability to maintain an on-line schedule for each procedure room which contains: patient name procedure physician equipment scheduled date and time estimated procedure time remarks and comments referral source.		
14.20 Ability to issue notifications regarding cancellations and automatically update schedules to reflect the cancellations.		
14.21 Ability to check online active orders and requests processed viewing patient hospital number, name, exam, ordering physician, clinic and total number for each category by selected time or date.		

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Requirements	Code (Y,P, M or N)	Comments
14.22 Ability to block generating orders against one modality or more from group or specialty or singles (physician).		
14.23 Ability to check-in the appointments along with the orders and automatically check-out when patient exam data completed.		
14.24 Ability to view any related reports at different department such as Lab, Physiotherapy and ECG when needed		
14.25 Ability to access patient medical electronic file (Radiologist).		
Results Reporting (Radiology)		
14.26 Ability to provide the Radiologists with the facility to view the number of immediate and overdue reports to be signed out and allow these reports to be signed out electronically.		
14.27 Ability to allow the use of Radiologists and exam specific speed phrases and normal report templates (industry standard diagnostic statements / codes) to be selected and modified as necessary by the transcriptionist during transcription.		
14.28 Ability for the unchecked result reports to be held awaiting approval by a suitably qualified radiologist and allow the on-line review of reports on the display terminal.		
14.29 Facility for the automatic generation (on demand) of hard copy reports on both unchecked and unreported/reported examinations.		
14.30 Ability to run print outs and reports at preset times.		
14.31 Ability to allow for 'Hot' and 'Cold' results reporting, with subsequent enquiry/modification of reports.		
14.32 Ability to allow an infinite number of episodes and reports to be accessible for each DID (Diagnostic Imaging Department) number.		
14.33 Facility to view previous reports while generating current results and facility to view previous reports while enquiring on current report.		
14.34 Facility for on-line access and scrolling of previous reports.		
14.35 Ability to facilitate the entry, storage and routing of procedure results linked back to the original order.		

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Requirements	Code (Y,P, M or N)	Comments
14.36 Ability to provide for controlled access to reports for physicians within the hospital.		
14.37 Ability to automatic purging of reports based on hospital defined parameters.		
14.38 Facility to print reports in radiology department, nursing stations or at remote sites as specified by the hospital.		
14.39 Ability to, ensure that once report has been approved by the radiologist, and if changed afterwards, indicate that report has been changed. Facility for adding an addendum to the report.		
14.40 Ability to transcribe the reports by using voice recognition system.		
14.41 Ability to highlight, under line, bolding and specific ward or sentence selected by the user.		
14.42 Ability to alert the ordering physician for any selected report as urgent or abnormal.		
14.43 Ability to use online while transcribing medical dictionary for spell check or reference.		
PACS (Radiology)		
14.44 Ability for all the image storage to be on-line.		
14.45 Ability to automatically display warning when the storage space is above 70% used		
14.46 Ability to support the current American College of Radiologists		
14.47 Ability to provide for the maintenance of the storage system without loss of data or time.		
14.48 Ability to provide purge, archive and move lists by user-defined criteria.		
14.49 Ability to track films at the following levels: Master Folder Subfolders Procedure incl. C.T., DSA (Digital Subtraction Angiography) Reported status Unreported status.		
14.50 Picture Archiving Communicating System (PACS) should be implemented and connected to all Radiology modalities		
14.51 PACS should be integrated with the HIS where films and reports are easily accessed and previous images/ reports should be available for any references		
14.52 Ability to view radiographic images at wards, ER, clinics, with or without reports.		

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Requirements	Code (Y,P, M or N)	Comments
14.53 Ability to view primary and final reports for urgent cases at ER and any selected area		
14.54 Ordering Physicians have the ability to refer any unreported images to radiologist requesting urgent report.		
14.55 Ability to view the same image in deferent areas such as wards, clinic Etc.		
14.56 Ability to print high quality diagnostic images in hard copy or to be saved on CD.		
14.57 Ability to send these images via internet or remote connection such as outside hospital clinic along with reports.		
Resource Scheduling (Radiology)		
14.58 Ability to facilitate the preparation and retention of optimal schedules for equipment, radiologists and technicians, through effective resource and constraint tracking.		
14.59 Ability to interact with the patient appointment module when scheduling departmental resources.		
14.60 Ability to co-ordinate procedure room schedule with radiographer and radiologist schedule.		
C.T. (Radiology)		
14.61 Ability to record the utilization of C.T. resources.		
14.62 Ability to record anesthesia, sedation, trauma and biopsy.		
14.63 Ability to record primary and secondary reconstruction.		
14.67 Ability to link to scheduling and appointment module.		
14.68 Ability to link to management reporting module.		
Radiographer Input (Radiology)		
14.69 Ability to record examination completed details prior to results reporting.		
14.70 Facility to amend the number and type of examinations recorded at Registration and Booking.		
14.71 Ability to: Record the total number of films used Record the film size used Record the number of films spoiled and reason.		

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Requirements	Code (Y,P, M or N)	Comments
14.72 Ability to record the contrast medium used.		
14.73 The facility to automatically book-out unreported films.		
14.74 Ability to link to Film File Management.		
Statistics and Ad-hoc Reporting/Management Reporting (Radiology)		
14.75 Ability to generate standard statistics by the user on department activity levels and usage for analysis.		
14.76 A user-friendly report writer facility to generate ad-hoc user defined reports on-line and hard copy.		
14.77 Ability to provide access to the following reports in an on-line mode, printed format and download to package software: • Reports with radiology procedures/cost associated • Facility to calculate costs by Diagnostic Imaging procedure • Staffing analysis • Reject/repeat analysis by technician • Department service usage data • Patient load (max dose per patient per given length of time) reports.		
14.78 The system should provide a facility to generate work sheet lists for proper allocation for the technicians within the section. The system should also be able to identify and generate list according to various equipment. The layout of work lists should be user-definable. Each work list should carry a unique assertion number and should be identifiable within the appropriate specimen.		
14.79 Ability to customize set as required any lay out reports by radiology HIS coordinator or (representative).		
14.80 Ability to generate and print graph for order number, appointment per selected period or patient and exam in accordance to user requirement.		
15. Pharmacy		
Clinical Features		

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Requirements	Code (Y,P, M or N)	Comments
15.1 Ability to automatically detect drug interactions with severity filter and Cross-check prescription details against known patient details, drug interaction details, dosage and frequency standards and any other relevant clinical information both while the prescription is being entered by the clinician and during dispensing in the pharmacy.		
15.2 Ability to warn on the patients hyper-sensitivities to drugs class, cross-sensitivity and ingredients check		
15.3 Ability to detect food – drug interactions		
15.4 Ability to detect Lab-drug interactions		
15.5 Ability to detect drug – disease interactions		
15.6 Ability to perform therapeutic duplication check (Checking and Warning)		
15.7 Ability to display on-line incompatibility conflicts for patients		
15.8 Ability to suspend order processing if drug interaction occurs.		
15.9 Ability to support override control (and audit trail) by authorized user		
15.10 Ability to perform extensive dose – range check.		
15.11 Support varying dosage scheduling methods (e.g. q6h, qid)		
15.12 Ability to perform documentations and clinical interventions		
15.13 Ability to capture and document all clinical pharmacy interventions at both order level and specific patient level to include such information as discharge consults, diabetic teaching and dosage change recommendations		
15.14 Ability to perform Target Drug Monitoring (Drug use Evaluation)		
15.15 Ability to support Pharmacokinetic dosing based on renal and hepatic functions		
15.16 Ability to integrate with lab data with interactive clinical checks at order entry levels (e.g. Creatinine clearance data at order entry)		
15.17 Ability to display on-line, real time laboratory data during pharmacy order entry which is specific to the individual patient conditions or the medication the patient is receiving. (Example: a warfarin order automatically pulls in the latest clotting time from the lab.)		

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Requirements	Code (Y,P, M or N)	Comments
15.18 Ability to display the hospital infection control department's antibiogram on the pharmacy order entry screen during pharmacy order entry.		
15.19 Ability to print a clinical worksheet which lists all clinical events which meet user-defined criteria for clinical follow up and allow the pharmacist to document clinical activities in the system.		
15.20 Ability to perform drug alerts for restricted drugs.		
15.21 Ability to include identified allergies for the patient on their file.		
15.22 Ability to record patient reactions to drugs. To include adverse drug reactions and drug interactions. Ability to code reactions to drugs or enter as free text.		
15.23 Maintain patient demographic data including height and weight		
15.24 Display child (under 1 year) patient's age in months in on-line inquiry screen		
Formulary/ Drug Information Data Base		
15.25 Ability to provide easy access to the drug formulary/catalogue.		
15.26 Ability to maintain a drug/formulary directory to include the brand name, generic name, national drug code, dosage form, ingredients for compound drugs, route of administration and dosages and warn of known side effects and drug to drug interaction.		
15.27 Ability to support user modifications in the clinical drug database for such items as severity levels and monographic text.		
15.28 Ability to maintain a list of all drugs, dosage forms, and strengths according to the hospital formulary for on-line enquiry.		
15.29 Ability to list temporary items, such as investigational and non- formulary drugs.		
15.30 Ability for the drug directory to hold the following data: Generic Name. Trade name Drug strength Package size Package cost Supplier Batch # and Expiration date		

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Requirements	Code (Y,P, M or N)	Comments
Unit of issue Formulary drug indicator Therapeutic classification Ability to record EAN (European Alpha Numeric Number) or US (National Drug Code (NDC)) codes and/or bar code information for each drug. Price per bottle/tablet/ampoules Warning labels for that particular drug		
15.31 Ability for the pharmacy department to: • Add drugs • Edit drug details • Suspend drugs • Delete drugs from the formulary/drug catalogue.		
15.32 Ability to record the dosage and interaction details supplied by the manufacturer		
15.33 Ability to utilize commercially available database providing relevant dosage and interaction details to avoid duplication of data entry.		
15.34 Facilitate the maintenance and distribution of information. Allow all medical, nursing and paramedical staff the ability to look up drugs on-line and search the catalogue/formulary for relevant drug information.		
15.35 Ability to categorize the drug catalogue alphabetically or as appropriate.		
15.36 Ability to report on drugs added to the drug catalogue / formulary within a particular date period.		
15.37 Ability to categorize the drugs in accordance with Indian Pharmacopoeia.		
15.38 Ability to search the system for the availability or any drug by using generic name or trade name.		
15.39 Ability to provide drug alternatives.		
15.40 Ability to have on-line update capabilities.		
15.41 Ability to provide immediate access to all medical, nursing and paramedical staff to the recommended list of drugs - the formulary.		
15.42 Ability to provide clinical information and patient education monograph information		
15.43 Ability to provide on-line lookup screen by generic and trade names		
15.44 Maintain drug mnemonics in the formulary.		

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Requirements	Code (Y,P, M or N)	Comments
Order Entry and Medication Administration		
15.45 Ability to enter a prescription quickly and accurately.		
15.46 Ability to maintain history of drug reactions, drug - drug and patient - drug.		
15.47 Ability to support prospective drug utilization review which checks for user definable rules (including patient demographics, lab values, medications, and patient		
15.48 Ability to maintain a record of prescriptions raised for each patient. As a minimum requirement, the following details must be recorded: Generic Drug Name Proprietary Drug Name Dose Frequency Date Administered Time Volume (where appropriate) Consultant Doctor Ward.		
15.49 Ability to maintain a full record of drugs administration history and record the administrator in each case.		
15.50 Ability to include in drug profile things like: pertinent patient data such as diagnosis, allergies, age, sex and weight all drugs ordered for the patient including a strengths, dosages and instructions, regardless of the status with start and stop times additional pertinent information such as the patient's IV regiment and dietetics orders.		
15.51 Allow on-line changes (Suspension or Renewal) to medication orders without having to re-key all orders		
15.52 Ability to support Computerized Prescription Order Entry (CPOE)		
15.53 Ability to produce a full patient prescription, compounding, and administration history to assist with the safe usage of drugs.		
15.54 Ability to include all drugs in the medication history although the drugs may not exist on the hospital drug catalogue. The origins of all drugs will be indicated to users accessing the details (e.g. admission drugs etc.).		

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Requirements	Code (Y,P, M or N)	Comments
15.55 Ability to advise the user when entering a prescription if the prescribed drug is not on the formulary.		
15.56 Ability to avoid duplication of data entry by the use of demographic details already held on the current hospital information system.		
15.57 Ability to manage the canceling / suspending / resuming of orders e.g. as patients go to and return from surgery.		
15.58 Ability to manage complex scheduling for medications.		
15.59 Different infusion volumes and solutions required for particular drugs.		
15.60 Normal dosage to default when placing a prescription.		
15.61 Ability to maintain the patients records file for lifetime		
15.62 Ability to update the Patient's Records file		
15.63 Ability for regular patients with chronic diseases such as diabetes, hypertension, etc., labels should be produced from Medical Records with a "Repeat" specification to print all labels automatically rather than having to enter the same prescription again.(Refill Prescription)		
15.64 Ability to display a combined inpatient-outpatient drug profile and to perform all of the clinical checking against both profiles.		
15.65 Ability to include in drug profile things like: • pertinent patient data such as diagnosis, allergies, age, sex and weight • all drugs ordered for the patient including strengths, dosages and instructions, regardless of the status with start and stop times • additional pertinent information such as the patient's IV regiment and dietetics orders. • a drug profile for both inpatients and out patients • IV admixture profile		
15.66 Facility to update an existing medication on the patients profile.		
15.67 Ability to print or display orders in a pre-specified sequence.		
15.68 Ability to create, print and display IV admixture profiles.		

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Requirements	Code (Y,P, M or N)	Comments
15.69 Ability to generate patient drug profiles upon request, when a patient is discharged, daily and weekly.		
15.70 Ability to produce labels for IV solutions that list the ingredients, specify the flow rate, and include identifying information.		
15.71 Ability to notify clinical service personnel of drugs that will need a renewal order.		
15.72 Ability to perform order verification ,revise and endorsement before processing		
15.73 Ability to support pre- admissions of in-patients and create active medication profiles.		
15.74 Provide option to automatically change patients at time of order entry.		
15.75 Ability to maintain pre-defined standard order sets for quick order entry.		
Reports and Data achieving		
15.76 Ability to generate ad hoc reports which include data from pharmacy, and other departments (Immediate on demand)		
15.77 Ability to generate a discharge summary of all drugs administered to be included in the patient's case notes.		
15.78 Ability to generate usage statistics such as unit doses and IV additives per day.		
15.79 Ability to print the entire outpatients pharmacy dispensing file on demand by an authorized user		
15.80 Ability to perform workload statistics reports		
15.81 Ability to perform Predictive usage reports		
15.82 Ability to perform patient administration reports		
15.83 Ability to perform discrepancy report.		
15.84 Ability to provide costing information for the pharmacy department.		
15.85 Ability to support extensive graphical capabilities and presentations styles		
15.86 Ability to support customized reports		
15.87 Ability to generate Controlled substance reports by location, by clinician and by patient (Narcotics, Psycho tropics, Antibiotics, Steroids etc,)		
15.88 Ability to print incident reports (drug lost , damaged)		
15.89 Print drug pricing report		

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Requirements	Code (Y,P, M or N)	Comments
15.90 Maintain patient prescription data including number of days supply		
15.91 Support retrieval of patient record by partial (e.g. first few letters of) patient file name		
15.92 Use lookup for patient data retrieval when patient name spelling is uncertain		
15.93 Ability to perform data achieving "lifetime or longitudinal patient profile and unlimited order notes.		
15.94 Ability to provide analysis reports on orders, price changes, etc.		
15.95 Ability to print drug utilization report to analyze drug therapy usage trends and cost.		
15.96 Provide option to direct printed reports to screen (for viewing) or "spool" file on disk, and not print to hard copy.		
Security		
15.97 Ability to provide security against unauthorized access or utilization of the system at multiple levels including: • user ID, password and personal question • levels of user authorization		
15.98 provide restrictions of access to specific drugs and to specific ID		
15.99 allow changes in security criteria and parameters by the **specifically authorized user**, as needed		
15.100 provide audit trails of all transactions carried out by the user		
15.101 provide methods of prevention of accidental loss or erasure of data		
15.102 have a redundant system such that profiles and physician orders, at a minimum could be utilized in the event of a system failure.		
15.103 Ability to perform order verification by pharmacists before processing.		
15.104 Provide multi- level security for options within menus – including read and write permission.		
Additional Features "Mandatory"		
15.105 Provide complete turnkey on-site implementation and project management support.		
15.106 The system should be able to support any operating system (including open source)		

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Requirements	Code (Y,P, M or N)	Comments
15.107 Ability to access several screens at once , allowing them to open new one's without closing the current files		
15.108 Ability to branch from within the pharmacy system other hospital departments related software modules and other pharmacy patient inquiries, then return to the branching point without affecting the original order entry conversation.		
15.109 Compliance with the international healthcare standards, namely HL7, DICOM, ICD-10, CPT.		
15.110 Ability to use scrolling features for search		
15.111 Ability to support Computerized Prescription Order Entry (CPOE)		
15.112 System must be 100% web based, giving the ability to use web browser (e.g. Internet Explorer) to access systems functions over Internet or Intranet.		
15.113 Provide keyboard shortcuts (e.g. Ctrl-C, Alt-F) or menu by fast functions for experienced users to quickly execute system functions.		
15.114 Provide on-line help screens to assist users in all applications.		
15.115 Provide ability to download data into spreadsheet etc.		
15.116 Provide data management design that supports integration and sharing of data among all applications.		
15.117 Provide sufficient back-up and recovery features to assure minimal data loss due to system failure, power outage, etc.		
15.118 Support interface to bar code readers. Also should be accessible from PDA, tablet PC and other wireless devices.		
15.119 Support touch screen technology for initiating system functions by touching screen with finger.		
15.120 System must be vendor neutral, no vendor lock-in allowed, and therefore should be vendor agnostic.		
15.121 To provide future software releases and updates to all applications as part of regular software maintenance fees.		
15.122 Provide commitment to support HL7 (Health Level 7) healthcare industry system integration standards.		

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16. Central Sterilizing Store Department (CSSD)		
16.1 Ability to send and receive orders to/from hospital stores for any stock item.		
17. Dentistry		
17.1 Instant access to Patient's records, Medical history, Appointment profile, Appointment preferences and Clinical records. Full screen for all dentists to give the first available appointment.		
17.2 Facility of creating a waiting list for patient's (orthodontic treatment, crown and bridge patients) to be operated from a receptionist's perspective as well as a surgeon's.		
17.3 Tracking patient through the practice. Tracking each stage of their treatment.		
17.4 Clinical, PERIODONTIC, ENDODONTIC, Surgical, PROSTODONTIC and ORTHODONTIC charting with fully Comprehensive records that are Easy to view, clear graphical images, On-screen functions to ease note taking,		
17.5 Automatically compile base line charts, treatment plans, Print treatment plans with alternatives and Print personalized information sheets. The Clinical charting should give Full treatment history along with individual tooth history and notes allow the practitioner to assess treatment options and keep the patient informed.		
17.6 Direct internal communication between dentists, reception and dental laboratory to organize appointments for prosthetics, crown & Bridge, Chrome Cobalt and orthodontics appliances. Prints a laboratory form with all patient details and teeth replacement, shade, notes, type of metal/date and appointments (special tray, metal trial, bite, trial, porcelain trial and fitting)		
17.7 Digital imaging with total dental digital imaging from intra-oral cameras and digital x-ray.		

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Requirements	Code (Y,P, M or N)	Comments
17.8 Patient education complete library of 3D-animated dental treatments and high quality images. Video-style computer animation provides demonstration of dental conditions and techniques.		
17.9 Visual representation of the dental chart. Change the color of fillings, restore teeth via bridges and implants, orientate the mouth into any position and then capture the image on to the patients estimate or treatment proposal.		
17.10 Contain standard and customizable codes / color for procedures		
17.11 Reports daily, weekly monthly and annually statistics. Enables the user to build complex report. All reports can be exported to Microsoft Word.		
17.12 Infectious diseases: should give sort of clear distinguish alert for contagious diseases (transmitted, infectious diseases) on the patient records		
18. Nursing Services including CME (continuous medical education)		
Admission, Discharge & Transfer (Nursing Services)		
18.1 Ability to access Patient Administration system for user defined data items.		
18.2 Ability to link in with the order communications.		
18.3 Ability to include notification of patient's pending arrival including any admission tests to be performed, the treatment proposed and the condition of the patient, including the initial diagnosis. (For surgery, the theatre schedule must be notified, together with any preparation required).		
18.4 Ability to record admissions, discharge and transfers at the wards to update the bed census, confirm location of the patient and to notify ancillary departments such as dietary.		

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Requirements	Code (Y,P, M or N)	Comments
Quality Improvement (Nursing Services)		
18.5 Furnish Statistical Information with graphing for the manpower in nursing, for example (Age, Gender, On duty, off duty, Expiration of nursing staff license, date of engagement Type of nursing degree "BSNc, Diploma" etc.).		
18.6 Statistic of total hours that the nurse has spent with the patient, with procedures been made containing the nursing and medical diagnosis of the patient.		
18.7 Provide diagnostic control on reducing operational errors and minimize incident (needle stick injury, drug error etc.)		
Infection Control		
18.8 Ability to record extra clinical details against a patient record for infection control purpose like (HEP: A, B, C, HIV and other infectious diseases.		
18.9 An alert function which indicate the patient name and the location in wards and units with the type of infection discovered from the pathological lab samples example as (Blood, urine .etc)		
18.10 Ability to access user defined patient data from Patient Administration data items.		
18.11 Ability to receive automatic notification of certain specific hospital defined organisms growing from culture.		
18.12 Facilities to access patient clinical data (CBC, CRP etc) date of operation, TPN curve. etc.		
18.13 Ability to access date of admission and discharge of selective Patients.		
18.14 Ability to generate monthly reports, with restricted user access by user defined parameters for: • postoperative wound infection • infection by site, nursing ward etc. • summary of specific infections. • Monthly admission per wards and units • Monthly discharge per wards and units.		

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Requirements	Code (Y,P, M or N)	Comments
18.15 Allow Infection Control staff to access information from specific ancillary departments, e.g.: • laboratory-infection by site, by organism • pharmacy-antibiotic usage • generate reports in graphic form • receive information on patients in isolation, with room number, type of isolation, type of infection etc.		
18.16 Ability to gather statistics according to international standards for infection control.		
Bed Management (Nursing Services)		
18.17 Ability to provide on-line access to: Bed usage by wards In-patient population and one weeks previous discharges ward/bed count, ward census, Bookings		
18.18 Ability to print bed utilization per ward, consultant and specialty Daily Monthly		
18.19 Ability to report bed days by Ward Consultant Specialty Diagnosis/classification		
18.20 Ability to maintain/update room and bed master files on-line by: Ward Room number Bed location number/bed type Extra beds/Less beds Other Consultant and other user defined parameters. Ability to maintain ward-bed relationships: Add bed to ward Close bed/ward Change specialty associated with bed and consequently change complement of specialty in the ward - allow for more than one specialty per ward. Maintain flexible bed parameters: Place public patient in private bed and vice versa other user defined parameters.		

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Requirements	Code (Y,P, M or N)	Comments
18.21 Ability to analyze ward or room occupants by sex, service, diagnosis, age, isolation.		
Education and Informatics Management (Nursing Services)		
18.22 Ability to use staff evaluation test: Placement test, Online examination, automated grading etc.		
18.23 Ability to prepare nurses for different areas of practice by using an automated familiarization program		
18.24 Ability to manage personnel development plan integrated with the manpower and rostering of all nursing staff i.e. training courses attended, type of course, etc.		
19. Surgery		
19.1 Ability to provide theatre schedules, with data captured during the registration process. (Facilities must exist for the maintenance and cancellation of these appointments. Some of the data items for each operation could be described as follows: patient number, patient name, ward, doctor, date and time of operation, duration of operation (estimated), operation, surgeon, anesthetist)		
19.2 Ability to produce and issue comprehensive Operation theater list (schedule) one day ahead to the wards, ICU, theatre staff, attending doctors and anesthetists containing all details, patient demographics, location, operating surgeon, procedure to be done, anesthetist name and type of anesthesia		
19.3 Ability to provide a facility to display or print the full forward theatre schedule at any time to facilitate pre-operation testing including the anesthetist examination and supplies scheduling.		
19.4 Ability to identify past operations and to provide monthly or ad-hoc statistics (e.g. operation codes etc.) on theatre utilization and surgeon activity.		
19.5 Ability to create database for surgeon's favorite instruments list. Operation Theater module should include a database accessible by all surgeons containing list of instruments and special features required for each surgical		

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Requirements	Code (Y,P, M or N)	Comments
procedure.		
20. Dietary		
20.1 Built-in Diet Planning Functions		
21. Casualty / ER		
21.1 Ability to access the MRN and initiate a CPF if the patient requires inpatient treatment or to initiate an admission for a pre-registered patient such as a maternity patient.		
21.2 Facility to initiate a "shortened" admissions/registration for treatment where patients may not have or may not be able to provide identification. And ability to complete the process later.		
21.3 Ability to record diagnosis when available.		
21.4 Ability to automatically print a notice in medical records for the retrieval of the patients' case notes.		
21.5 Allow entry of final diagnosis upon discharge from the Casualty Department.		
22. Physiotherapy		
22.1 To have a special clinical data capturing templates for physiotherapy.		
22.2 Ability to generate all kinds of statistical reports by number of patients, number of services rendered, treating physiotherapist, modality of treatment, referring physician, referring specialty, diagnosis.		
22.3 Ability to generate all statistical reports for any given period of time (days, weeks, months, years….)		
22.4 Ability to track patient visits for any given period of time.		
22.5 Ability to display all the clinical templates based on the specialty as part of the patient's EMR data.		
22.6 Ability to schedule patient for Physical Therapy visits with ability to override. The schedule can be tailored according to resources available (physiotherapist, treatment rooms, equipment .etc.) and can be easily modified according to different circumstances (Manpower, equipment maintenance …etc.)		
22.7 Ability to accommodate daily changes to all schedules.		

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22.8 Ability to customize reports to establish benchmarking for the department and physiotherapist.		
22.9 Ability to generate streamlined reports including discharge summaries, progress reports, and patient care plans.		
22.10 The ability to have electronic physiotherapy charts (or notes) to enable the physiotherapist to document an intervention via an intuitive table–driven knowledgebase which automatically produces a legible , typeset electronically –secure document.		
22.11 Ability to produce accurate and complete clinical Documentation.		
22.12 Ability to afford a web-based interactive training program.		
22.13 Ability to create a database of information relating to the physical condition of patients falling into various user-defined specialty groupings. (This data to be used for assessment purposes and as a basis for Quality Assurance and research).		
22.14 Ability to record and analyze costs for budgeting purposes of equipment or consumables (e.g. lumber support, knee support, etc.).		
22.15 Ability to have a Physiotherapy exercise database that allows the user to create individualized, professional exercise therapy handouts.		
23. Obstetrics		
23.1 Ability to access MRN, to display patients' episodes.		
23.2 Ability to provide a method of identifying "high risk" mothers according to user defined rules.		
23.3 Ability to provide full functionality of scheduling appointments.		
23.4 Ability to provide facilities for the on-line capture of clinically important data at all stages of pregnancy.		
23.5 Ability to record age in various units e.g. days and months.		
23.6 Ability to provide the necessary documentation for birth notification and Indian Government statutory returns.		
23.7 Ability to record details on mother and baby's post delivery health status (up to 10 days post delivery).		

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23.8 Ability to manage re-admissions by continuing with information collected from the previous episode.		
23.9 Ability to link mother and baby records.		
23.10 Ability to transfer patient to Post natal ward.		
23.11 Ability to review the obstetric history of the patients.		
23.12 Ability to provide a method of managing the admission of the child to a NICU unit.		
23.13 Ability to produce following reports as minimum: Birth notification forms List of ante natal bookings Lists of expected deliveries Daily bed status Standard reports relating to - demographic details, obstetric history, pregnancy complications and obstetric interventions.		
23.14 Ability to provide a method of managing admission for labor and delivery.		
24. Anesthesiology and Intensive Care		
24.1 Ability to provide on-line enquiry access for anesthetists to data in other modules, e.g. : Laboratory for test results Medical Records Materials Management.		
24.2 Ability to provide Anesthesia and Intensive Care request scheduling for : Pre-operative assessment scheduling Anesthesiology consultation requests Intensive consultation requests		
24.3 Ability to enter patient-related data from anesthesia performed for further statistical analysis and report generation as defined by the user.		
24.4 Ability to provide access to all systems to be under strict security password control.		
24.5 Ability to link to IBM compatible PCs for downloading and analysis of data.		
(Intensive Care Services)		
24.6 Ability to receive physician orders from any area within the hospital.		

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24.7 Ability to maintain and output statistics in user defined format for user defined time periods covering the types of service rendered to patients.		
24.8 Ability to interface with existing and future blood gas analysers for the purposes of automated results reporting.		
24.9 Ability to provide on-line enquiry access to data resident in other appropriate parts of the sub-systems, e.g. : Laboratory for test results Medical Records Pharmacy Specialty Clinics.		
24.10 Ability to generate user-defined patient activity reports (on-screen or printed) for the purposes of procedure scheduling.		
24.11 Ability to generate reports to serve as staff work schedules, formatable per patient location.		
24.12 Ability to provide on-line access to hospital stores for order transmission and enquiries.		
Patient Monitoring in ICU:		
24.13 Facility to acquire physiological data (blood pressure reading, temperature etc.) frequently or continuously.		
24.14 Facility to communicate and link patient data from different sources such as laboratory and radiology modules.		
24.15 Facility to integrate data from multiple resources.		
24.16 Facility to provide clinical alerts and advice based on multiple data sources.		
24.17 Facility to facilitate a decision making tool that physicians may use in planning the care of critically ill patient.		
24.18 Facility to analyze the outcomes of ICU care items of clinical effectiveness and cost effectiveness.		
24.19 Facility to generate reports to summarize 24 hours of patient's status data.		
24.20 Facility to automatically alert physician to critical laboratory and blood gas results as well as complex physiological conditions by detailed alphanumeric pager messages.		

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24.21 Facility to acquire and maintain bedside point of care laboratory testing this includes: Blood analysis module and sample cartage inside physiological monitor Store results of at least 20 tests including for example. PH, Pos PCO2, HCO3, electrolytes, glucose, ionized calcium, hemoglobin, hematocrit.		
24.22 Ability to store and display on bedside monitor and sores on database for comparison with previous results.		
24.23 Facility to automatically update other modules and systems such as the laboratory system, Intensive Care Monitoring systems and EMR maintaining the integrity of patient's data.		
25. Ophthalmology		
25.1 Ability to cover all requirements mentioned under clinical services.		
25.2 Ability to enter specialist diagnosis evaluation on to patient's electronic record.		
26. Quality Control		
26.1 Ability to produce upon discharge an abstract which would include final diagnosis, procedures and a complete history of the patient's utilization review activity without duplicate entries.		
26.2 Ability to generate utilization review reports required by the Ministry of Health India and IMS BHU management.		
26.3 Ability to input QA screening criteria and output patient profile reports which identify substandard care.		
26.4 Ability to input data and generate case mix reports by patient and by department.		
26.5 Ability to highlight any patterns of staff illness from a specific department of IMS BHU etc.		
26.6 Ability to track costs, enabling hospital to use information for future planning.		
26.7 Ability to provide the following functionality for case management:- Critical path scheduling DRG based standard pathways Diagnosis based standard pathways Problem based standard pathways Automatic linking of DRG to pathways Variance reporting against critical pathways		

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Add/change/delete critical pathways (Physician specific, DRG specific, Nursing unit specific) Performance measurement		
26.8 Ability to support quality assurance reports for Pathology such as:- Normal results listing Abnormal results listing 10% normal review listing.		
26.9 Ability to provide Quality Control management reports such as: • Hospital incidence report • Hospital standard measurements • Inpatient/Outpatient satisfaction report based on points survey.		
27. Interfaces		
27.1 Ideally the hospital system should be able to accept patient data on-line and update the skeleton employee records to establish entitlement for treatment.		
27.2 Ability to provide interface support for:- Laboratory Hospital Stores Staffing and scheduling Diagnostic imaging Radiology Transcription Medical records		
27.3 Facility to host web based application		
27.4 Facility to interface with mobile devices like handheld PCs		

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