FUNCTIONAL DOCUMENT OF PHASE-WISE IMPLEMENTATION OF HRIS AT STATE-LEVEL

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INTRODUCTION TO HRIS

Human Resource is one of the critical components of any country's health system which incurs huge cost. In Indian public health system, many people are employed under state government and national health programs/mission across public health facilities and are engaged in delivery of health care services or management of the services/programs/facilities. A mature HRIS for HR for Health will ensure a better understanding of the current health workforce picture in India. This understanding would enable decision makers to effectively plan for recruitment, training and retention of health professionals. With routine and accurate HRIS data, it will be instrumental to deploy the right health workers in the right places to meet country's healthcare needs. HRIS could even provide inputs for cost-benefit analysis and make budgeting decisions better.

ADVANTAGES OF USING AN INTEGRATED HRIS

•Advantages for the management in terms of improving the decision-making capability of management, effective cost control, clarity of vision and transparency in its operations and more concentration on the strategic objectives of HR

•Advantages for the Human Resource Department in terms of improving the efficiency of the HR department, reduced dependence on paperwork and manual management of employee data/information, brings standardization in the key processes and reduces redundancy and transforms the HR department into a proactive department

•Advantages for the organization to improve competitiveness by way of improved human resource functioning

•Provides the opportunity for shifting the focus from day to day-operational issues of HR to much more strategic objectives.

•May result in reengineering or restructuring of HRD if required.

CHALLENGES TO BE ADRESSED THROUGH HRIS IMPLIMENTATION:

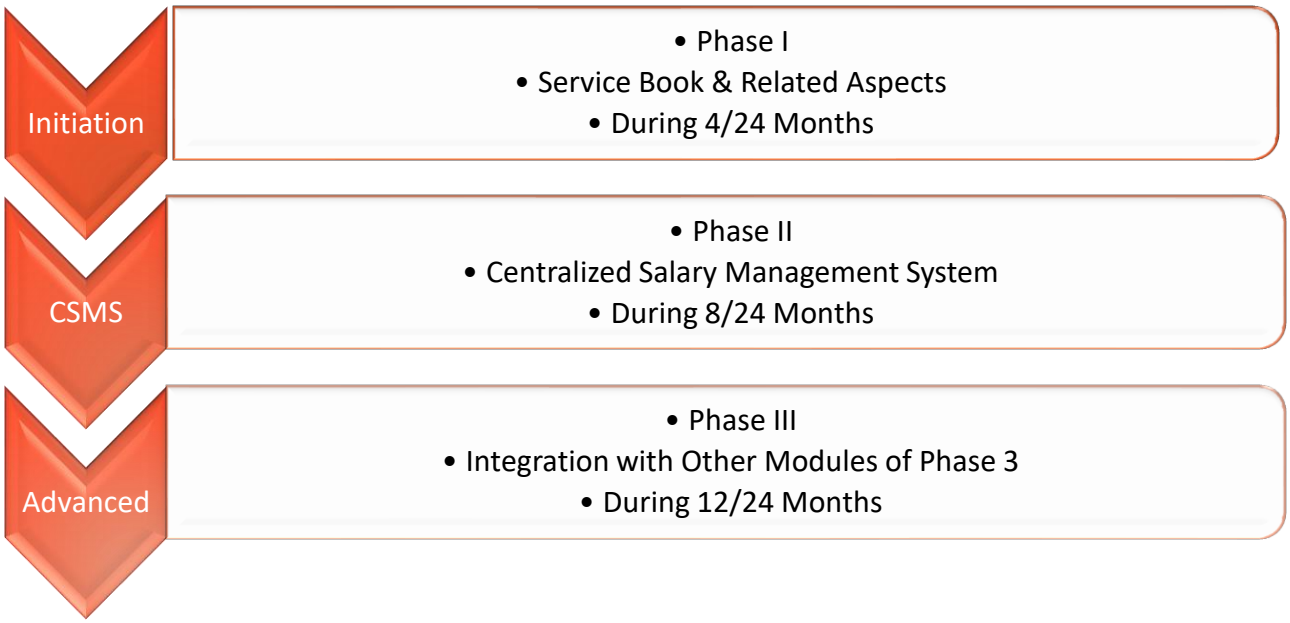
- Government environment is a **complex system due to rules and procedures**, resulting in multiple physical registers.
- Information generation and storage in offices located at different level like integration of DDO office, Treasury and Finance is **loosely coupled.**
- Service Book Available is in **non-standardised format**, at times incomplete and not updated.
- Information available on **requirement basis** only like unavailability of seniority list to which DPC not taking place in time.
- Procedure for viewing service book even for official concerned is difficult.
- **Difficulty in data sharing** with other departments
- Limited scope of **Manpower planning / rational deployment** of staff in manual system thus creating difficulty to maintain the **supply-demand balance** of health workforce in India.
- **No accountability** fixed for Updation.
- Time consuming Manual Work which is difficult and no urge to update Service Book in time.
- Non-availability of authentic data in case of urgency, **Loss of Service Book & Recovery**.
- **Indirect cost** of paper, storage, postal expenses etc.

FUNCTIONAL ORIENTATION OF HRIS

The proposed requirements of the HRIS are based on the fact that the HRIS will help in employee life-cycle management within the state public health system and would help in management of public health workforce more effectively and efficiently to achieve larger health goals.

PHASE-WISE MODULE IMPLEMENTATION STRATEGY

In a period of 24 months, the HRIS implementation can be broadly divided into these 3 major phases of 4, 8 and 12 months respectively as follows:



PHASE-WISE MODULES OF HRIS

Organization Structure	User Credential Module	eProfile (EIS)	Service Records/Book	Leave Management	Travel & Tour Management	Annual Confidential Reports(ACR)
Property & Income Statements(APR)	Pension Management	EPF/GPF Module	Vacancy Position	Awards & Punishments	Posting Details	Grivience Management
Reimburse-ments	GIS Records	Loans & Advances	Payroll Processing	General Provident Funds	Recruitment & Appointments	Employee Self Service Management
Promotion	Departmental Inquiry	Probation & Confirmation	Employee Exit	MIS Reports & Analysis	Attendance Management	Integration with Treasury & IFMS

Phase: 1 2 3

*The colour transition denotes the 3-phase implementation scope

SALIENT FEATURES OF HRIS

- Multilingual Website to Support Local Language
- User / State Specific Content Management
- Workflow & Role Based Operation
- Extensive Online / Offline Validations
- Open API for Data Sharing
- Security Audits
- Customization
- Easy Interface with Other Applications
- Mobile Apps

TECHNOLOGY REQUIREMENT FOR HRIMS

- Web Enabled
- SQL Server / ASP.net / Windows
- Modular Approach with MVC Framework
- Local Language Support
- Scalable

MANAGING SYSTEM PERFORMANCE

- Speed and availability of portal 365*24*7 is most important concern of the performance.
- Application is needed to be tested for large number of concurrent transactions with the help of Simulators.
- Use tools available in database to check dead locks, improving quality & time taken by query execution for speed optimization.
- Speed & performance also linked many factors like non-updation of OS Service packs, use of pirated software, installation of unnecessary software, virus in machine, use of old version of web browser, speed of internet from ISP and type of Internet connection taken.
- Such issues need to be brought to notice of Nodal officer and Master trainers to educate employees.
- Regular update of OS, with proper licensed Anti-Virus to protect the system.
- Avoid using of Pen-drives/CDs etc. from unknown sources. If unavoidable, ensure anti-virus checking of Pen-Drive/CDs.

TROUBLESHOOTING

Many implementation problems may crop up in the beginning and later stage of the system, therefore:

- Define a mechanism wherein the issues are dealt within the least possible time.
- An escalation matrix of reporting errors / issues based upon timelines should be formed.
- Review recurrent type of problems and make available solutions in the form of FAQs.
- Records of problems faced & solved need to be maintained at department level too.
- A help desk is a must to provide solutions to issues raised & assist in holding trainings.
- Carry out Audit of regular audit of complaints received, redressed and kept pending by help desk.
- Deploy full-time technical resources at District HQ during implementation phases to help district level employees and conduct training. Software developers may train Technical Resources.
- Supplement Help Desk at State level once technical Manpower is withdrawn after implementation.

RESPONSIBILITY OF THE STATE GOVT.

- Formation of State level and Department level committees to monitor progress.
- Appointment of Nodal officers in each Department.
- Identification of Master Trainers by Departments & their training through vendor/NIC.
- Master Data provision to the vendor/NIC i.e., designations, pay scales, departments, offices, service cadres etc.
- Providing space to vendor for the training of master trainers.

ROLE OF VENDOR/NIC

- Customisation, Development & Maintenance of the system as per state requirements.
- Imparting Training to Nodal Officer & Master Trainers from each department for easy system implementation
- Roll Out Software Implementation module by module for easy troubleshooting and speedup implementation.
- Preparation of On Boarding Guidelines for the state along with properly planned User acceptance testing (UAT)
- Hand-holding support during implementation of the HRIS

- Preparation and providing of User Manuals for each module.
- Procurement of Servers & System Software and other necessary hardware for development and PC clients for software development.
- Participation in State Level Committees Reviews and department level reviews on need basis.
- Security & Quality Audit through GOI Empanelled Agencies

DEPARTMENTAL GUIDELINES FOR TECHNICAL IMPLEMENTATION

An advanced software training is to be provided to the departmental staff responsible for handling the software. Secure user login and data security protocols are to be provided by the server hosting vendor. Following the below steps will help in the capacity building of the team and required software customization for the state.

HRIS INTEGRATION

Each state using these standard requirements can create their own system while adding some more data elements of their interest. For semantic standardization, all states must create their data set following MDDS (meta data and data standards) data elements. This will enable states to have standard HRH system along with HRH registries at their level. Using these registries and analytical tools states would be able to generate information for all types of human resources employed in public health facilities e.g., Doctors, Nurses, Paramedic staff, Management Staff etc. and conduct varied analysis.

Once the states use these systems, integration of these systems with the national HRHMIS system would be necessary to get a national picture for policy and program purposes. It is important to understand that either policy and program decisions would require data in the form of indicators or in some cases aggregate numbers however individual employee records would be of little use at national level. However, the integration should be designed in such a way where central system receives data on predefined indicators on routine basis and has the facility to access individual records as and when requested. With such an arrangement identity management would be an important issue to address-without which data quality will remain poor and data may not provide desired output. Using unique identifiers across states would help solve these issues.

APPENDIX 1: KEY RECOMMENDED STEPS IN SETTING UP HRIS

Establish HRH Stakeholder Leadership Group

- Promote formation and functioning of a HRH Stakeholder Leadership Group (SLG), including public and vendors, training institutions, professional councils, and development partners
- Define purpose, scope and HRIS priorities through SLG consultations

Assess and Improve Existing System

- Conduct System Requirement Study to guide HRIS strengthening activities
- Develop and finalize data collection tool
- Standardize job titles
- Facility mapping
- Develop data entry update protocol

Developing Software Solutions

- Develop/customize HRIS software to meet needs
- Establish web-based HRIS
- Enter data into the software
- Verify and validate data
- Review and test online system

Use of Data for Decision-Making

- Reports available for analysis and use
- Identify and assign different roles to data users and HRIS managers

Ensuring Sustainability

- Regular Stakeholder Leadership Group meeting
- Continuous information sharing with district and state officials
- Follow-up support by district and state officials
- Build local capacity to manage and customize HRIS software
- Train officials on use of data

APPENDIX 2: GLOBAL PERSPECTIVE FOR HRIS IMPLEMENTATION IN PUBLIC HEALTH

The focus of HRIS research has varied across countries in terms of systems, contexts, and priorities. Most studies from high-income countries have focused on small-scale systems in individual hospital settings, with the key users being internal personnel and managers (clinical/nonclinical), although there are notable exceptions, such as using HRIS for a major health program evaluation in Australia. Moreover, nearly all user satisfaction studies have come from high-income countries. (Tursunbayeva, Aizhan, et al. "Human Resource Information Systems in Health Care: A Systematic Evidence Review." Journal of the American Medical Informatics Association, 2016, doi:10.1093/jamia/ocw141.)

Research from lower-income countries tends to concentrate on open-source HRIS to collect data at the national and regional levels, focusing on healthcare leaders, decision- and policymakers as the primary system users. Most studies, especially those from low-income countries, prioritize operational aspects of HRIS, despite WHO recommending in 2001 that effective HR departments should also undertake managerial or strategic HR activities using HRIS.

Low-resource countries face daunting obstacles to meeting the health care needs of their people. For example, countries in sub-Saharan Africa suffer from 24% of the global disease burden but have only three percent of the global health workforce to provide necessary services. An effective and well-managed health workforce is critical for improving countries' health care outcomes. There is a globally recognized need to improve health systems' productivity, incentives, management, leadership, and performance management. Human Resource Information System (HRIS) for the health workforce can be a big step to meet these needs.

- **Uganda:** In collaboration with USAID/Uganda's Uganda Capacity Program, in 2013, the Ministry of Health (MOH) used HRIS data, along with data from a rural retention study supported by CapacityPlus, to successfully advocate for an investment of $20 million to fund recruitment and deployment of 7,200 health workers. The increased availability and more equitable distribution of health workers has likely contributed to significant increases in selected HIV/AIDS, family planning, and maternal, newborn, and child health (MNCH) indicators. To inform workforce planning, future deployment, and health worker skill levels, the Ministry's Human Resources Development department is using HRIS Train to track almost 30,000 students in preservice education as well as an expanding number of in-service training records. The Uganda Medical and Dental Practitioners Council used HRIS Qualify to increase relicensure compliance from fewer than 100 to more than 2,300 doctors—providing essential information on qualified medical personnel across the country.
- **Mali:** The Ministry of Public Health piloted HRIS Manage in Sikasso Region, with results showing that urban facilities had disproportionately more midwives than health centres in the rural areas where 63% of the population lives. Taking quick action, regional leaders implemented a rotation system, in which midwives work one week each month in a rural health centre to mentor lower-level auxiliary midwives and provide access to long-acting reversible contraceptive methods, including for postpartum family planning. These services are critically important in a country with a fertility rate of 6.1 births per woman and 26% unmet need for contraceptives (Mali Demographic and Health Survey 2014). Building on the success of the pilot intervention, the ministry completed national rollout of HRIS Manage in 2015. Its HRH Directorate has been using HRIS data to serve a range of needs, including guiding deployment of newly recruited health workers, identifying experienced supervisors for deployment to a new health centre, locating health workers who had fled from the northern regions during the armed conflict in 2012 to offer them grants to return, tracking international commitments, and advocating for more health workers.
- **Nigeria:** The Nursing and Midwifery Council of Nigeria and the Community Health Practitioners Registration Board of Nigeria deployed HRIS Qualify for registration, certification, and licensing. Up-to-date records are now available for more than 250,000 nurses and midwives and an estimated 90,000 community health workers. The Federal MOH is using the data to inform deployment decisions to provide care in the most underserved areas, identify duplicate health worker records, provide and track education and training, and for budget planning.

APPENDIX 3: DETAILED FUNCTIONAL REQUIREMENT

1) Recording employee details

a) The system shall help in documentation of longitudinal employment records for each employee in electronic format. The system should be able to uniquely identify each employee by their unique IDs and shall record following attributes for each employee.

i) Identity details- Name, Father/Mother/Husband Name, Gender, DOB, Age, Marital Status, Caste, Category (SC/ST/OBC/G/Handicapped, others), Religion, Address (local/ permanent), Contact details (Phone/ Mobile/ Email ID).

ii) Qualification details- Qualification Level (Graduation, Post-Graduation, Doctorate, Specialization, Diploma etc.), Qualification Type (BSc Nursing, MBBS, BDS, B. Pharma etc.) Mode of Education (Regular, Correspondence, Part time etc.), Academic Institution- (Name, Type, Affiliated University/Board), Foreign Qualification etc. Date of Enrolment and Date of Passing for each qualification, passing result type (marks, grades, division etc.), passing result values.

iii) Rewards- The system should allow documentation of awards, recognitions, publications, patents, memberships, authorships etc. for each employee.

iv) Skills- The system should allow documentation of skill set for each employee based on their qualification, training, job history and short-term course certifications (Language Proficiency, Writing skills, Leadership Skills, clinical skills)

v) Pervious employment details – The system should allow historical employment recording for each employee. This should include agency/ department name, period of engagement, designation and role.

vi) Current Employment details- The system should enable documentation of current employment details such as Job Advertisement Number/Selection Order number, Position ID, Designation (Medical Officer, Data Entry Operator, Staff Nurse etc.), Job Class (I/II/III/IV), Employment Cadre (Public Health, Medical Service, Medical Education, Technician, Management etc.), Employee ID, Employment Type (Permanent, Contractual, Promotion Casual etc.), Date of Joining, Place of Joining, Name of Joining Department, Joining Facility Identification Number, Joining Office Name, Employment Status (Under Probation, Training, Confirmed etc.), Reporting Unit, and Drawing and Disbursing Officer for the employee concerned .

b) The system should also document date of retirement, contract completion, resignation/ discontinuation and reasons for discontinuations.

c) The system should enable identification of department/ office/ facility from where employee service book/contract record will be updated/ managed.

2) Training & Skill Building

a) The system should enable enrolment of employee(s) for a training program.

b) The system should allow documentation of employee training details such as Training Program Name (SBA, LSAS, HMIS, Tally etc.), Training Category (Induction, Skill-based, Knowledge-based, Leadership etc.) Training Type (on-job, classroom, field training etc.), Training Period, Training Institution Name, Training Sponsoring Department/ Authority and Training Program Outcome (completed, partially completed, not attended, etc.)

c) System should allow generation/ printing of historical training record for each employee.

d) The system should allow HR Manager/ Training Officer to create/ add training programs into the system.

e) The system should allow creation of training schedules, define duration, start and end date, location, training institute details, maximum intake capacity and trainer details for each training program.

f) The system should allow documentation of training centre(s) their name, address, facility ID and contact details.

g) The system should allow search and selection of eligible trainees and trainers based on the training criteria for each training program and should allow assigning training program(s) to the employees.

h) The system should be able to generate/print training schedule/list for selected period.

i) The employee using their credentials can also choose and submit participation request for training program of their interest.

j) Post training the trainees/trainers should be able to submit their feedback and the training outcomes (certified/ not attended/ partially complete) can be updated in their service records. The employees can access training feedback from system using their credentials.

k) The system should be able to record and tag each employee with certain skills based on the training they have undergone which can be used for tracking employees.

l) System should be able to generate individual employee training history and training details for each facility and aggregate training data at various levels of organization unit hierarchy.
m) The system should be able to set training target for each training program and be able to generate achievement reports.
n) The system should allow documentation of CME sessions attended by each employee and the details of each session- time, topics, frequency.
o) Using the system the HR manager can add CME sessions, can identify participants on specific criteria, allocate CME programs and generate/print CME schedule for a period.

3) Transfers and Posting

a) The system should allow documentation of transfer and posting details for each employee till the time they are employed in the system.
b) The system should be able to document Date of Transfer Order, Transfer Order Number, Place of Transfer, Date of Relieving, Date of Joining, Transfer Reason, Transfer Order Status (joined, not joined etc.), Transfer Order Requesting Authority Details, and Transfer Order Approving Authority Details.
c) The system should be able to accept transfer requests from employee/supervisor, be able to generate transfer orders approved by appropriate authority. The system should allow printing of transfer requests, approvals, disapprovals and transfer orders.
d) The system should be able to document change in the workstation (facility) due to any reason (attachment/deputation) other than transfer. The system should also allow for entry of reason for the change, period (dates of change in workplace), requesting authority details and approving authority details.
e) The system should be able to generate previous posting report for each employee in the organization.
f) The system should be able to generate transfer report for all positions across facilities.
g) The system should be able to generate specific reports such as transfer from urban to rural areas, from urban to hard/difficult areas and vice-versa. This facility should be available for all positions, cadres, employees etc.

4) Salary & Compensation Management

a) Regular Employment: The system should allow calculation of salary (basic pay, fixed allowance, variables, incentives, increments, arrear etc.) for individual employees based on their pay scale and grade pay for regular employees and as per the organization pay norms for the contractual employees.
b) The system should also calculate deductibles (GPF/EPF/TDS etc.) and deduct them from source.
c) The system should allow generation of salary slips for each employee.
d) The system should be able to document salary sources for each employee.
e) The system should be able to calculate annual increments, incentives, allowances, benefits based on pay revisions and performance assessment.
f) The system should be able to generate overall salary cost for each level of aggregation for all employees and for various categories of employees.

5) Leave Management

a) The system should be able to document leave request from employees. This should include leave period (from-to dates), leave type (EL/CL etc.), and leave reason.
b) The supervisor or the approving authority should be able to approve/reject leave, document reason and generate leave approval/ rejection order from the system.
c) The system should be able to generate/print leave record of an employee and leave record for all employees for a facility.
d) The leave status can be accessed by the employee using their credentials.

6) Administration

a) Departmental Proceeding: The system should allow the supervisors and managers to file proceeding details for each employee (financial irregularities, absence from duty, criminal offence etc.) in their employment records.
b) Monthly Activity Planning: The system should allow users to document their monthly activity plan under various activity heads (field tours, training, supervisory visits, clinic etc.)

c) Grievance recording: The system should allow employees to record their grievances online which can be accessed and addressed by concerned officer.

7) Performance Appraisal

a) Regular Employees: System should enable submission of ACR and other annual performance reports for each employee.
b) Contractual Employees: The system should help program managers for documentation performance assessment details of each employee in the system and the outcome of the performance appraisal (extension, termination, promotion, training etc.)
c) The employees should be able to access and generate their performance assessment report using their credentials.

8) Position Management

a) The system should allow HR manager/Administrator to create Job(s)/ Job categories (Regular, Contractual, Casual etc.)/ Cadres (Public Health, Medical, Technician etc.) and set salary structure (grades scale etc.) for each Job. For each Job a set of positions can be created which can be further classified as sanctioned, approved etc.
b) Each position should be identified by an ID and should have other details such as the department/ program under which position is created, facility and location where the position is created.
c) For each job position the system should enable documentation of creation date and the end date (in case the position is contractual).
d) The HR manager should be able to classify each position as vacant, closed or discontinued.
e) For each position the HR Manager should be able to assign supervisor(s).
f) The HR manager should be able to link job position with the employee records for which the employee is being recruited.
g) The system should be able to generate organizational chart for each facility where total, vacant and filled vacancies can be identified.
h) The HR Manager should be able to generate vacancy list across facilities/departments/programs/jobs/job categories/cadres.
i) The system should be able to identify future vacancies based on the due retirements/ contract completion.
j) The system should be able to generate alerts and reminders for critical vacant positions.
k) The system should help in generating seniority list for promotion, assigning administration roles etc.
l) The system should be able to generate historical employment report for each employee to know their service history across positions/departments/programs.
m) The system should be able to generate vacancies reports for underserved areas.

9) User Role and Role Based Access

a) The system should allow creation of role-based user accounts where each user can be assigned a specific role and their access to the system is limited as per the role. There must be flexibility for creation of various sets of users and for defining their roles.
b) Under this primarily System Administrator, State/District HR Manager, Supervisor, Data entry operator, employee should be created. However, there should be scope to create more user roles in the system.

10) Standard Facility Master

a) The System should have Facility master where each facility can be identified using their unique ID. It should be synchronized with the HMIS/DHIS-2
b) The facility master should follow the organization hierarchy as being practiced in routine i.e., state-district-block-CHC-PHC-SC.
c) The system should be able to record facility attributes i.e.- address, facility type, population covered, access and region indicators (difficult to access, tribal etc.).
d) There system should be able to upgrade facility level, change hierarchy and update the facility position in the hierarchy.

e) The system should be able to aggregate data at all levels of hierarchies e.g., Medical Officer and Staff Nurse data can be aggregated at state, district, block, CHC and PHC level.
f) When employee records are created the system must register an employee with reference to a facility.

11) Reports

a) The System should be able to generate dynamic report for each data element for which data entry is done.
b) The system should give flexibility to the users to select and choose data elements, time and facility to generate their own reports.
c) The system should allow for report aggregation at all levels of organization unit hierarchy. The system should also be able to aggregate employee data for any time for which data has been entered.
d) The system should allow multi-dimensional analytics (drill-down, drill-up etc.). The system should have OLAP to support analytics function.
e) The reports should be available in three forms- name-wise employee records, aggregated number reports and indicator-based reports (percentage, proportion and ratios). The system should give flexibility to the users to define their own indicators by choosing numerator and denominators and generate reports on specific indicators.
f) The system should have dashboard function for greater visualization and allow users to generate various graph and charts using dashboard. The system should provide flexibility to the users to choose their own graph and chart types.
g) The system should have some basic predefined reports e.g., Population-based workforce availability report, facility-wise workforce availability and vacancy report, Training status report, absenteeism report, transfer report, attrition report etc.
h) The system should allow users to export data for their analysis and use.

12) System functions

a) The system should allow search of employee records and data using various combinations.
b) The system should allow for editing of employee records and other details by appropriate users.
c) System should allow verification of data entered in the system.
d) System should have methods of data authentication and validation.
e) The system should have functions to know data entry and quality status in the system.