Gap Analysis of the existing hospital management information system and designing requirements for the new information management system

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Guide –
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Introduction -

HIMS means putting all systems and hospital-wide resources both electronic and manual that deal with handling and storage of information / data of hospital on computers that are linked to each other and accessible from all authorized nodes.

The HIMS may control organizations, which is Hospital in these case, official documentations, financial situation reports, personal data, utilities and stock amounts, also keeps in secure place patients information, patients medical history, prescriptions, operations and laboratory test results

Rationale -

If all the processes in the hospital can be done through the system, it will reduce errors and increase efficiency. System is the best way of monitoring all the process flows as it can be controlled with an authority matrix. Performing a gap analysis and finding solutions for the same will help better utilization of the system and improve hospital performance.

Review of Literature -

- Praveen Kumar A, Gomez L.A (2006) conducted a study of the hospital management information system (HMIS) of medical records department.
- Nauright L.P, Simpson Nell(1994) conducted a study on Benefits of hospital information systems in front line hospital staff from six hospitals
- Premkumar Balraman, Kalpana Kosalram conducted a study - E hospital management and the changing trends in the information management system.

SWOT analysis -

Strengths

The current system has all the modules

Well integrated with finance module

The current system is already on web

Weakness

No centralized database

Lack of dashboards

User interface isn’t user friendly

Opportunity

Centralized database

Use of portable devices

Mobile applications

Threats

Over dependence on windows licences

Cyber security

Technology obsolescence

Network connectivity

Methodology -

Research Question –

Is the current HMIS capable of meeting the current and future IT requirements of Sahyadri Hospitals.

Objectives –

1. To identify the gaps in current system

2. To suggest system requirements specifications for the new system

3. Improve work efficiency and fiscal control, eliminate the chances of any pilferage

Research Design

Study type – Descriptive cross sectional study

Area of study- Study will be conducted in Sahyadri hospital Nagar road

Data Collection method - Data will be collected from the end users of present HMIS (Executives, Doctors, administrators.), through focused group discussions, informal discussions.

Exclusion criteria - End users who don't use HMIS

Sample Size – All end users.

Tools and Techniques -

The technique used to collect data was Focused group discussion (FGD) and informal discussions. It was done in phases. Initially module wise focused group discussions were conducted in different units (different hospitals of the group). In the second phase focused group discussions were conducted with the hods of all the units (module wise). The entire data was collated and the same was discussed with the new vendor to finalize the requirements.

Results and findings –

1. IPM

Sr. No.	Issue/ Change Request	Discussion
1	Can not identify VIP patients	This is required to identify VIP patients immediately.
2	Can not capture the admission type	Currently SHL is not able to do analysis whether the admission is Walk in/ Emergency/ Planned.
3	Admission SMS to be sent to joint care doctor not sent	As the patient is under care of two or more doctors
4	Can not upload documents	Scanned documents need to be stored.
5	Ward wise Prescription time not mapped	To better monitor the TAT times
6	Admission visit not captured	For analysis
7	No search option in IPM	Nurses require this menu to search particular patients with their location
8	In case of High Risk Drugs, Check By & Verified by to be captured in system.	If any high risk item is precsribed by nurse then NABH insists that it has to be approved by house doctor before showing it the pharmacy for dispensing

2. FDTM -

Sr. No.	Issue/ Change Request	Discussion
1	Mobile number entry	For the hospital to send text messages to patients for follow up , and other promotional events
2	Consultation charges calculation is manual	In SHL, the are multiple services for OP consultation. Based on consultant & duration between last consultation & on going consultation, billing user decides which service to be charged.
3	Adjustment/ Concession Reasons for OPD patients	When ever a concession is given the reason has to be mapped
4	OPD Utilization Report	Currently SHL is generating this report manually.
5	No alert when amount exceeds the specified amount for that schedule	Tata Motors has sponsor paid schedule. For OP visits if bill amount is less than INR. 500/- then bill will be paid by patient else it will be paid by Tata Motors only. In such case if user will get alert while creating bill then user will change the pay category & will create the bill.
6	Patient Source not captured	Currently there is no provision to analyze the source of the patient.
7	Appointment Scheduling	This is required to avoid appointment scheduling of same doctor for same time at different division/ location.
8	SMS for Refund	SHL wants to send SMS to the patient as soon as refund is made in the name of patient. This will help to reduce malpractices.
9	Emergency charges for multiple services	SHL charges emergency charge on certain service. Currently HMIS allows to calculate emergency charges but on individual service.

3. OT management -

Sr. No.	Issue/ Change Request	Discussion
1	OT Booked Vs. Actual Variance	There is an issue in existing report
2	Clinical details to be captured	At present everything is on paper
3	Surgery register - records search by surgery department	Hampers analysis
4	Scrub nurse who has attended the surgery doesn't get captured	To better know the utilization of scrub nurses
5	Ability to book OT from the consulting module	Will help consultants book for their surgeries

4. Radiology -

Sr. No.	Issue/ Change Request	Discussion
1	Bullet point in impression	Today doctors puts the bullet in word and then paste in HTML page.
2	Impression to be printed in bold.	to highlight the impression
3	Tables of Doppler report	Tables are not coming properly in the report
4	Image Annotation facility	System to allow put image in the report 'always on second page'.Then allow annotation before print.
5	Investigation Request entered in Consulting is'nt displayed	It will help the patient as the patient doesn't have to carry any chit with him, plus will facilitate the department in planning all the appointment.

5. IP Billing-

Sr. No.	Issue/ Change Request	Discussion
1	No Inter Division transfers	As many times patient is transferred from one unit to other
2	Manual calculation of discounts on admin charges	The system calculates discount on net charges , still insurance companies want to see the discount
3	Ward difference calculation	ward difference is calculated manually
4	Cant uncheck the disallowance flag	Sometimes disallowance of services/ items get changed patient to patient, policy to policy.
5	Calculation of Co-Payment	Currently there is provision to calculate Co-Payment but services/ items on which co-payment to be calculated has to be selected manually.
6	SMS to be sent for provisional bill (Access Control)	SHL billing team wants to send SMS to patient once the provisional bill is ready. So no need to call patient again & again
7	Item charging based on cost price	For certain low paying schemes the package calculation should be on cost price (RGJAY)
8	Adjustment/ Concession	Reduce doctor payment in % when a doctor offers discount to patients
9	Emergency Charges	At present the emergency charges are calculated manualy which leads to revenue leakage.
20	Surgery Rate Calculation	When multiple surgeries are performed at the same time
11	Annexure Print - Date wise print for specific date	For long stay patient, date wise annexure will be helpful & will save the papers

6. Masters-

Sr. No.	Issue/ Change Request	Discussion
1	Different codes for masters at different hospitals	As the masters arent same across there is duplication of items, which hampers inventory control and effective implementation of formulary
3	New fields to be added in Consultant Master	At present we have to maintain files and at the time of audit have to go through each file to make sure all the documents are present, this will ensure the completion of document sets
4	Consultants certificates & registrations scanning & uploading with their records.	To complete the database
5	Can not copy Disallowed items from one to another schedule	To avoid manual work
6	Schedule Master - Items on Cost price	To facilitate billing and contribution analysis for specific schemes

Conclusion -

Upon identifying the gaps the need for an upgrade was realized since there were too many deficiencies in the current system. It was also realised during the study that the system hadn't evolved with the organization. Since the structure of the organization is complex it was decided to ask the same vendor to redesign the system.

Recommendations -

Post the module wise gap analysis, we came up with the following recommendations to overcome the gaps.

1. In patient management (IPM)

- VIP patients should be marked with a different colour
- Admission type should be displayed
- Visit Number of admission against that registration number should be displayed
- Text message to be sent to joint care consultant
- Facility to print Cover letter with the name of the insurance company
- Attach scanned documents to the patients

2. Front desk and treasury management (FDTM) -

- 10 digit mobile number to be mandatory
- Consultant charges to be put through the system
- Emergency charge calculation should be done through the system
- How did the patient get to know about the hospital should be captured

3. Radiology -

- Impression to be printed in bold
- Consultants should be able to put the radiology requisitions through the consulting module

4. OT management -

- OT booked vs cancelled report directly through the system
- The scrub nurse for the operation should be mapped

3. IP billing -

- Since it's a group of hospitals , there should be provision to transfer the patient to other unit with the same registration number
- Auto calculation of ward charge difference
- Discount calculation on admin charges
- SMS on provisional bill
- Auto calculation of co-payment
- Package calculation on cost prices
- Selective annexure printing

THANK YOU