Information technology challenges and issues in Health and Hospital Sector- critical Evaluation

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Abstract

In India, Health care goes with expansion and gears up to become the best in- class. IT is always complimenting to this growth and change which is very important for development this sector for equitable, accessible, and available quality health care to huge population. But interestingly the adoption of IT or ICT in health is very slow with comparison to other industry, this paper mainly focusing on issues and challenges of Information technology implementation , process and maintenance, and also legal and ethical environment , security and privacy issues related health information system.

Keywords : Healthcare Information , technology, issues, Health IT, Ehealth, HMIS

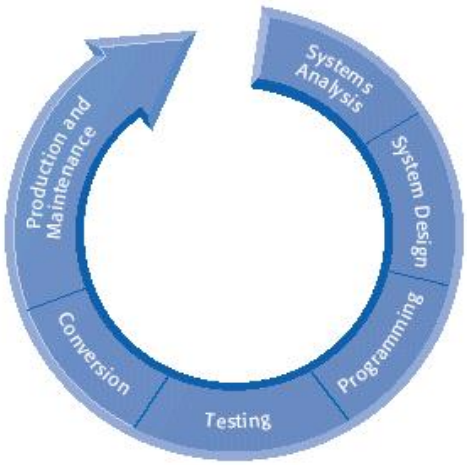
IT Challenges in Health

In India, Health sector also started to accept the changes in the environment as the other industry accepted the changes well in advance, especially in Information Technology. Health care goes with expansion and gears up to become the best in- class. IT is always complimenting is to this growth and change which is very important for development this sector for equitable, accessible, and available quality health care to huge population.

The most of the health sector private players simply using to modernize or automate their business processes for their profitability, not for real health care activities. But the implementation of It requirement slowly started accepted by health care industry and its professionals is remarkable achievement of the health industry , other words, the word electronic or 'e' has slowly started getting the better share of healthcare. If we compare with other countries, we have most trained , experienced and qualified Information Technology professionals available in our country , but still it has got less importance in our country till recently especially in health care organizations and professionals. Even in corporate and private hospitals or HCO (Health Care Organization) the post of Information officer is only a ornamental without any rational decision making power.

In truth, the corporate or government the decision making powers always remains with Chief executive officer or senior Civil servant or Minister, when it comes to actual decision-making like budget of IT Infrastructure, Architecture, IT Investment like software, hardware and networking, somewhere we can notice the intentional or unintentional resistance from the top management. Or other words which will not come as priority. The Reasons may be as lack of finance, political commitment, internal resistance, or customer demand and may be which may not give direct effect in health sector or customer demand etc . we need to revisit and restructure this sector with more powerful and dedicated health care professionals or doctors with IT knowledge for achieve this vision.

Interestingly, it is not the problems with transactional level , it is always with strategic level managers responsibility to take appropriate decision and implement the same, but stuck in the midst of a myriad of decision makers like widening difference in opinion, requirement, specification, and 'ego' of course. In healthcare especially this peculiar problem, wherein, there is no single point or single administration of decision, like IT projects, because of many other reasons like complexicity of this health sector, we require to have countless round of meetings, repeat presentations and some sort of orientation programme from bottom to the top, which gets them somewhere near to project finalization.



Implementation and testing stage is another challenging stage, Until recently, most hospitals would not have hardly invested adequate time or resource in preparing a concrete IT road map for themselves. They would not have much homework done before they go for health information management system or hospital information system. It is often misunderstood by our health professionals that that hospital information system or Information Technology implementation is a stand alone, hands- off activity and vendors should be able to provide solution to each and every problem which they are facing in their set up.

IT is perceived not with a systematic and participatory approach. Almost every doctor, nursing staff , healthcare managers , para medicals, and administrative executive would have their own opinions about the kind of functionality they need or the type of user interface they require. And they will not always add value to the software intelligence. Customization is another challenge which healthcare sector faces. The proper guidance for customization with proper business software intelligence is lacking in healthcare sector because of scarcity of health professionals with IT knowledge and with vision.

IT Prospects in Healthcare Industry –BOOM AND BOTTLENECKS

Full-fledged Information Technology based solution in Health care is possible when professionals can capture and understand the complexicity of algorithm in healthcare/ hospital sector, which is most criticality , confidential of data, intensive and knowledge driven. In India, especially in healthcare IT has been slowest adopters, the percentage of adaptation of Information Technology neither comparable to other industry or any other international standards healthcare. Not only public sector, even in private healthcare sector or voluntary sector industries is way too small compared to global standards. In many of our research journals, studies or research firms and experts have opined that India is the fastest growing healthcare Information Technology market in Asia after China.

What is the Reason?

Always we think that, this is due to lack of fund holding back this healthcare industry for good information system development. The many other reason for such slow market growth for health IT and hospital automation solutions and services. We are more focusing on investment like development and maintaining healthcare infrastructure and facility and their expansion and medical equipment etc, but not merely on real health IT. While the overall healthcare market in India is almost to reach nearly USD 70 this year, the potential for medical equipment market over the same time period is pegged at USD 18 billion, but only at USD 3 billion we are able to projecting on health IT Market. (CII)

We will discuss about are factors affecting this sector or holding back the progress of information development with good information technology infrastructure.

LEGACY LOCK

In Traditional time, hospitals sector and its professionals kept far distance from adoption of developments process of in the information technology into health sector. Health services are often thought it's a relationship and interaction between Patients and doctors, and the procedures carried thereof, with simple paper based information and filling system, along with a general acceptance for the services which is more time consuming process. Doctors in their traditional role will spare more time and would not bother on writing and recording , storing or managing patient data and would only do diagnosis and prescribing. Reason behind is that , Lack of competitive environment. Other reason must be the need for having professional business approach of healthcare institutions. So requirement for integrated information management systems for clinical or business intelligence was neglected in this sector.

Return from Investment is very slow

Healthcare organizations finding difficulty to measure the financial return of IT investments in their organization. In traditional business we need quick returns, and decision makers will not often approve anything which cannot give the input cost is going to be recovered quickly. There is another reason for this is , there was not much focus on concept like 'process excellence', 'customer satisfaction ' or business intelligence' customer relationship in healthcare sector. Other way we can say that outcome from IT in healthcare sector is intangible.

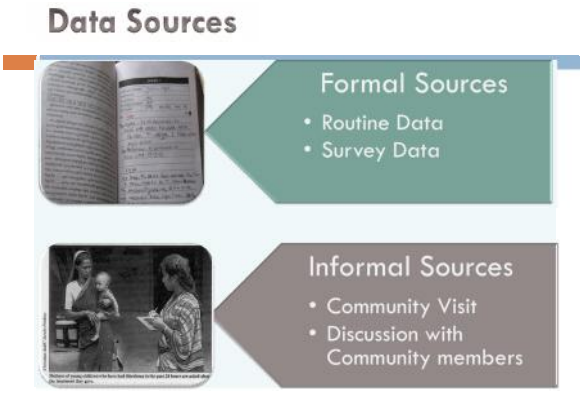
However, Private sector healthcare sector Participation in this industry is made tremendous improvement in this sector. Moving beyond Manuel registration or simple registration of patient services, billing , and accounts , the private sector started to thought about the real utilization or appreciate the fact that automation and intelligent IT systems will make changes in the sector and help them in saving substantial cost in the long run by gaining operational excellence, improving service turn- over time, lowering inventory, and also improve future business potential by gaining goodwill through customer satisfaction and delight.

Complete IT coverage for clinical as well as personal data. Especially wherever the data we are using as personal record (wherever we are disclosing the information with identity of the patient), at present there is neither a direct incentive nor compulsion for the healthcare industry to either automate their operations or transit to electronic form of medical record keeping/reporting (ehealth,2004). Current legal laws will be put on a back bunch for the entire purpose of total electronic environment in public health and hospitals especially for digitalized name based patient documentation. Another reason is that weak cyber laws do not always acknowledge e-records as sufficient and tangible evidence of proof(ehealth 2004). We required to have substantial separate and exclusive laws for health IT.

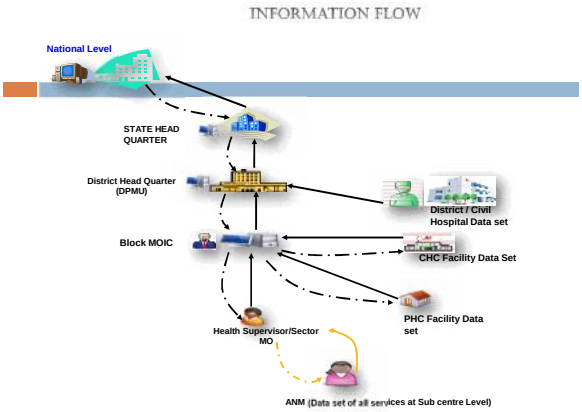
Information Technology selection, implementation, planning process issues in Healthcare organizations

Information Technology and its rapid development and innovation in this field has played a vital role in Other industries for increasing efficiencies. However the healthcare sector, especially hospitals have been lagging behind adoption of information system due to a combination of factors mainly including costs and implementation issues. But in public health sector the training, implementation and customization is the main facing as main challenge.

Even big health care organizations still in india except one or two exceptional cases facilities rely on paper records. Paper records and paper records Which are not difficult to maintain in our set up, but which is very time consuming at the time of retrieving data , making management Information report, for doing multi dimensional analysis and supporting tools, which in turn depend on availability of adequate information technology.



Role of information system in hospitals can be broadly divided in terms of decision support in finance and medical services. And role of the see can be defined in public health for monitoring and evaluation and decision support for public health care activities for National Health Programmes. And in However we are focusing on information systems mainly with respect to clinical solution or electronic health record or name based clinicl solution for public health.



Following Factors are always influencing for finance investment decisions in health / hospital information systems

Availability and inter-operability : Multiple modules are available for different operationalprocess E.g. billing module, pharmacy module, Physician module, OT module, IP module, PACS, etc. in hospital and immunization and different NHPs in public health

Hospitals or any other public health organizations have to evaluate the availability of their specific requirements. Irrespective of a new or existing facility, the IT team has to ensure inter-operability of the modules. The entire

information systems network has to function seamlessly and be able to consolidate data at appropriate levels. E.g. data from admission module has to flow seamlessly into the IP module as well as the billing module. Or in public health the immunization data has to flow seamlessly to RCH programme or into Universal Immunization programme (UIP) and RNTCP clinical as well as administrative data should flow vertically as well as horizontally.

Customization and streamlining the operational process with HealthIT is another major area which has to be looked into. Requirement of Integration of clinical pathways into hospital information systems as well as health information system needs alignment with the operation process and customization, which in turn affects the overall costs. The overall costs in this regard has to take care before implementing this project. There is study that suggests that approximately Rs. 3500 per patient are being wasted for repetitive diagnostic test in healthcare sector. To minimize this huge loss we are required to integrate this solution clinically oriented technology architecture.

Health Programme Integration

On impact of HFA and MDG, we have been changing over gradually from vertical programme to integrated programme as a result thousands of crores we are saving on the account of its advantages, but it comes to HealthIT neither NRHM nor NHSRC like organization has never thought about integrated this entire programme under one umbrella with unique software architecture.

Single platform for Healthcare sector is a myth ?

Despite the growth of computer technology and HealthIT in medicine , most medical records are documented on paper. There are several advantages over existing paper records, the problems with implementation. And unnecessary concerns over their security and confidentiality is the another concern. As different health care organizations or hospitals under the same umbrella often have different processes in operations is the further challenge for the technology and unique hardware and software architecture.

The various contents of the records are maintained in different location in computer based information system or manual format. And because of the confidentiality and security issues they are hesitate to take further initiative for integrating this information in one place. Government or state has to take initiative for creating common platform for all the hospitals as well as entire health care organizations in the country for sharing their information or accessing their information for their patient care and also for cost effectiveness. There are many hospital groups across the country which very small share of Indian healthcare has created a need for sharing data across locations through some model, which is not enough.

The importance of information technology have been recognized by healthcare providers for survival for business continuity and enhancement in hospitals and good outcome and impact analysis and strengthening M & E system for NHP in public health .

Emerging HealthIT with different reasons

More business is coming in through health insurance players than ever before. Medical tourism from western countries is also accelerating healthcare insurance players tying up directly with Indian healthcare providers. Both scenarios will have increasing demand on the Indian providers. They will have to be transparent and technologically complaint free or competent as per the requirements of the insurance companies. Revenue Management

Budget: hospitals are a capital investment and have a long gestation period. This coupled with intense pressure on margins and the high cost associated with adoption of margins and hospital information systems pose a significant hindrance to wide spread implementation of information systems. (Complete information system solution for multi-specialty tertiary care hospitals can cost anywhere in the range of 3-5% of the total capital expenditure.) Today we are focusing on HR, Finance, Admin, Supply chain Management , CRM , ERP (Enterprise Resource Planning), and Less in Clinical Information System(CIS). But we need to focus on DSS and CIS in long term plan.

Enhancement of positive outcomes:

According to a 1999 report by the IOM in Washington DC, there are 44,000 to 98,000 annual deaths in the US 35+billion USD of which half is accounted to preventable medical errors. Indian hospital and healthcare sector does not be significantly reduced with decision support systems like computerized physician order entry (CPOE) and electronic health record with intelligent alert systems. This offers a clear potential for hospital; information systems to align with the top management's commitment to the issue. And huge political commitment required for the same, urgently in Indian healthcare scenario.

Wide gap between hospitals in information Technology planning and process

Information systems help to streamline and increase efficiency of operations. Hence process in a heavy IT environment can be significantly different than those compared to conventional paper based hospitals. This

results in greater flexibility advantage for green field hospitals that have to primarily develop process in alignment with the information systems. However the situation is challenging from brown field hospitals that have to analyse existing process and reengineer them for alignment with information systems. While this on its own sounds innocuous, the challenge lies in the ability of the implementation team to strike a balance regarding issues related to the acceptance of the process change ,by users .

Manpower Training and integrating with Integration with existing information systems:

Existing hospitals have a full manpower compliment that needs to be trained to use new system thus resulting in comparatively higher implementation costs for brown field hospitals.

Another challenge in brown field IT implementation can be attributed to the technical issues related to integration of existing and new information system modules. It is not unlikely to see different vendors having different operating platforms, which leads to higher costs for integration.

IT implementation in healthcare services organizations: Change management:

One of the most significant factors affecting the success of information systems implementation is the effective change management. This is especially more pronounced in brown field hospitals. Successful implementation of Health or Hopsital Management system or computerized based Information systems result in significant change of operational processes. Adding to this the intensive training requirements of the staff lead to a general resistance to change. The ability of the project manager to be able to achieve system acceptance and active participation of the users is crucial to the success of the overall implementation.

General IT skills of healthcare work force: A general trend seen across multiple countries is that inadequate levels of IT training and abilities leads to apprehension and reluctance to accept IT system. However, as observed currently, a significant focus on health information system in educational institution should gradually help to achieve greater acceptance.

Understanding of the long term benefits rather investment cost of information systems

Most of the healthcare decision makers are well aware of the potential benefits of information systems. However in the absence of structured case studies indicating the economic benefits of information systems in India, there is hesitation to invest adequately. Indian healthcare has a few large hospital adopting information system to various levels which can be good source of case study. To showcase the real financial and quality related benefits of information systems. However, most IT marketinging strategies and communication focus on product features rather than the overall long term quality and economic benefits to hospitals and patient care. The story of DHIS like software are also not different in many ways. In hospital management system we are more focused on business processes and economic benefits, on the other side through NHSRC, CBHI and other agencies we also have to focus on patient name based on clinical information system rather than aggregation of data in different level under different health programmes. There is an opportunity for IT vendors/ companies in higher scale, as a community to take up these hospitals and health care programmes along with entire public health as case studies which will help the growth of the health information systems market in India. Here the companies would focus on long term plan in regard to software , technology, hardware and architecture, rather than short term plans.

Conclusion:

When it comes to population and diversity more than 126 crore population of density of 382 people / sq km. 28 states and 7 union territories 642 districts , 5161 towns, 638588 villages with 82.14 % litreacy rate in male and 74 % litreacy level in women. 27.82 % population living in urban area and rest is in 638588 villages. Public sector is largly under state ministry with state list , hence the large formal private sector involved in ambulatory care as well as in-patient services in public health, which is inseparable part of the public health system. The system has very less and limited interaction between public and private sector. The many unlicensed practitioners and drug sellers are the other challenges in the public health care system. But when it comes to accessability , availability and affordability in the rural population , they depend on this system. The point which I made in this paper ,is mainly about the Hitech technological adaptation in private sector or corporate hospitals or HCo’s and collecting data for health programmes at different level in different periods, through information system would not give any benefit for the optimization of Health IT.The National platform for entire health sector with one software architecture is need of the hour. The question is Political Commitment. Who will Bell the Cat??? Politicians? IT Professionals?Doctors , CEo’s …… who ??

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