ICT, eHealth & Managing Healthcare -
Exploring the Issues & Challenges in
Indian Railway Medical Services Network

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Abstract

This paper attempts to detail the evolution of a system synergy for more than 3 decades where the health services researchers; clinicians and others have been investigating the use of advanced information and communications technologies (ICT) to improve Indian health care. At the core of all these efforts lies a successful system synergy or a marriage between medicine and ICT and combination of innovative and mainstream technologies. The system is being developed in the context of the medical standards and practices in India, addressing issues, challenges and problems specific to Indian health care scenario where its 1 billion populations are predominantly rural and distributed in distant geographical locations. The health and medical facilities presently available in the non-urban parts of the country is inadequate and there are wide disparities in terms of health care infrastructure, facility, manpower and funds between rural and urban communities, and between different states and even districts within states. This calls for innovative methods of utilization of science and technology for the benefit of our society and ICT and medicine assumes a greater significance to revolutionise the health care system in India.

Keywords:
ICT, eHealth, Telemedicine, HIMS, IRMS

1. Introduction

Continual changes in the Indian healthcare scenario now dictates the viability of a hospital but some hospital still resist and even fear change. The Indian Railway Medical Services (IRMS) understood the need for switching over to a computer based Hospital Information Management System (HIMS) way back in 1990 when this new HIMS facility was conceptualized to create environment conducive for comprehensive computer coverage of most of the hospital functions. With the help from the Centre for Railway Information System (CRIS) it initiated a pilot project at the Southern Railway and subsequently in South Eastern Railway, Kolkata, Northern Railway, New Delhi and Central Railway, Mumbai. After a decade it reveals that the system failed to cope up with the rapid strides of changing ICT world. Reviewing planning failures that prohibited getting the desired results under the current changing scenario and overcoming these obstacles with the current growth of the Information and Communication Technologies (ICT) and offer a practical solution was the basis of this study.
2. Objectives

1. To understand the key health issues in the current perspective and synergy of ICT, Medical Science & Technology in an upcoming horizon.
2. To understand the ICT capability and core competence of the Indian Railways Medical Services (IRMS).
3. To understand the difficulty that is being faced in current perspective and the viable challenges, issues, opportunities in the current perspective and to understand the possible drivers of the future and catalysts for growth in Indian Railway healthcare scenario.

3. Methodology

This is a mixed study both quantitative and qualitative with the sole aim to understand and add value to the existing services if any and the methodology obtained are

1. Collection and compilation of primary data on HIMS centre to be made available through surveys and structure questionnaire keeping in mind the four essential processes that can foster lasting change within an organization:
2. Collection and compilation of secondary data of the HIMS centre available from the files, registers etc.
3. Semiformal interviews with the experts, staff and administration, repeated brainstorming over the issue.
4. Review of literature & Internet surfing.

4. Indian Healthcare - An Overview

Constitution of India dictates that healthcare provision to ill person is a state responsibility but various reasons inherent in our socio-economic milieu inhibits this ideal and the growth expected in the Indian health care delivery system. As a result it has failed to grow and develop as neither to our expectation nor to the needs of the people of India. A large number of people had to spend from their pocket towards own and family health care of the individual. The "out of pocket" expenses on health have been estimated to the extent of 83% of total expenditure on health. This is probably the highest expenditure on health care in the world and has been identified as one of the main reasons for remaining the below poverty line (BPL) due to the inherent ‘double trouble’ i.e. health care expenses on one hand and being away from the daily wages during the ailment.

Present healthcare spending: India spends about 86,000 crores in health care i.e. 5.2% of its GDP where Government share is meager 0.9%. The other contributors are from Employers (15%), Private Insurance (2%) and from direct out of pocket spending (83%). Out of 17,200 crores of the Government spending the distribution of expenditure in Primary Care is 2064 Crores (12%) and vertical Health Programmes get 4472 Crores (26%) but in Secondary and in Tertiary Care it is whopping 10664 Crores (62%). With this health expenditure for 5 decades, we could create 128 tertiary Medical College Hospitals, 5600 district hospitals, 2400 Community Centers, 23000 Primary Centers and 132000 sub centers. Now the emphasis is more on

1. Acute to chronic illness and life style diseases.
2. Curative to preventive and restorative to comprehensive medicine.
3. Inpatients care to outpatient care, daycare and home care.
4. Isolation function to area wise function or regional function
5. Individual to community orientation.

Indian Health Sector few facts:

1. India today has more than 1 billion population and there is finite limit of elasticity in providing health care in terms of infrastructure, facility, the manpower and the funds.

2. Wide disparities still persist between different income groups, between rural and urban communities, and between different states and even districts within States where the population is predominantly rural and distributed in distant geographical locations apart from the high-density urban areas.

3. Epidemiological transition is viewed in the form of population growth pattern with increasing awareness and expectation of the patient from the health providers.

4. To provide the basic minimum health care has been one of the priorities of the Health administration all along but high cost of curative health care and lack of investment for health care in rural areas is creating inadequate, inequitable distribution of medical facilities in rural and inaccessible areas.

5. Problem of retaining doctors in rural areas and the specialist doctors cannot be retained at rural areas as they will be professionally isolated and become obsolete and even monetary incentives also cannot prevent it. A recent survey by the Indian Medical Society revealed the facts that 75% of qualified consulting doctors practice in urban centers and 23% in semi urban areas and only 2% from rural areas whereas majority of the patients come from rural areas. The number of Neurosurgeons in Chennai city alone far exceeds those in the entire North Eastern Region.

5. Synergy of ICT & Medical Science

In India, the growth of ICT in last 15 years has been in leaps and bounds. Medical Science & Technology has also viewed a significant growth in the last decade. The arena of globalisation and consumerism catalysed a marriage between the parallel growths. The resultant synergy helped upwardly mobile success and a growing phenomenon is viewed in the current and in the upcoming horizon where this bondage between ICT and Medical Sciences is inseparable.

The Government (both State and Central), The Railways and the Municipalities in India are by far the largest healthcare providers in the country and I think they are all currently asking a very similar questions. Management of many hospitals is seriously introspecting that what phase they are currently in and what needs to be done to have a level playing field. Other Hospitals still give the ICT and HIMS lower priority that it deserves. The above scenario describes what is generally happening today in the Indian healthcare industry. In spite of the presence of top class professionals in the form of doctors and IT people this sector was considered an unorganised sector in recent past. With the corporate sector getting into the act and opening up of insurance sector can stimulate and streamline the healthcare scenario. It is already perceived in India that there is a paradigm shift in Healthcare reality where the market concept is bringing in more consumer friendly atmosphere. The key factor for survival now will be based on the following parameter:

- Competitive healthcare strategies in a 24x7 atmosphere.
- Consumer friendly care.
- Service quality not quantity.
- Speed with which the same is provided.

Section 6: Healthcare Networks
- Satisfaction of the customer.
- Web based e-Health adaptability and
- Healthcare professionals need to switch from traditional framework and
- Provide more patient involvement in the decision-making.
- Bring in transparency in the operational procedures.

6. IRMS-an Overview

Indian Railways the ‘Lifeline of the Nation’:
- 62023 route kilometers.
- 44000 coaching vehicles, 7700 locomotives and 0.216 million wagons.
- 6850 block stations.
- 43 workshops and production units.
- 52 crores spent on staff/day.
- 99 cr. revenue expenditure/day.
- 1.511 million work force and 7.12 million beneficiaries.

The IRMS is now one of the biggest comprehensive multidisciplinary multispeciality health care delivery providers in India and caters to the medical need of its 7.12 million beneficiaries through its three-tier system spread in 124 hospitals and 591 Health Units with 13758 beds, 2552 doctors and 52088 paramedical staff. The service outcome is an annual load of 30.3 million OPD cases, 36797 admissions and over 32329 major operations.

<table>
<thead>
<tr>
<th>Category</th>
<th>Number in million</th>
<th>No. of Dependants</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serving employees</td>
<td>1.51</td>
<td>4</td>
<td>6.04 million.</td>
</tr>
<tr>
<td>RELHS</td>
<td>0.29</td>
<td>3</td>
<td>0.87 million.</td>
</tr>
<tr>
<td>RECHS</td>
<td>0.09</td>
<td>2</td>
<td>0.18 million.</td>
</tr>
<tr>
<td>Non Railway case</td>
<td>0.03</td>
<td>1</td>
<td>0.03 million.</td>
</tr>
<tr>
<td>Total beneficiaries</td>
<td>1.92</td>
<td></td>
<td>7.12 million.</td>
</tr>
</tbody>
</table>

Table 1 - IRMS beneficiary categories.

<table>
<thead>
<tr>
<th>FY</th>
<th>Ordinary working expenses</th>
<th>Expenditure on medical treatment</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000-01</td>
<td>34142 crores</td>
<td>439 crores</td>
<td>1.28%</td>
</tr>
<tr>
<td>2001-02</td>
<td>36164 crores</td>
<td>459 crores</td>
<td>1.26%</td>
</tr>
<tr>
<td>2002-03</td>
<td>38967 crores</td>
<td>493 crores</td>
<td>1.26%</td>
</tr>
<tr>
<td>2003-04</td>
<td>39783 crores</td>
<td>532 crores</td>
<td>1.33%</td>
</tr>
</tbody>
</table>

Table 2 - Health expenditure distribution in IRMS.

<table>
<thead>
<tr>
<th>FY</th>
<th>IRMS Expenditure</th>
<th>Beneficiary</th>
<th>Exp/Person/INR</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000-01</td>
<td>439 crores</td>
<td>6.93 million</td>
<td>633.47</td>
</tr>
<tr>
<td>2001-02</td>
<td>459 crores</td>
<td>6.98 million</td>
<td>657.59</td>
</tr>
<tr>
<td>2002-03</td>
<td>493 crores</td>
<td>7.03 million</td>
<td>701.28</td>
</tr>
<tr>
<td>2003-04</td>
<td>532 crores</td>
<td>7.12 million</td>
<td>747.19</td>
</tr>
</tbody>
</table>
# Table 4 - Comparative Health Indices in IRMS - Heath Indices in IRMS

<table>
<thead>
<tr>
<th></th>
<th>India</th>
<th>Kerala</th>
<th>Sri Lanka</th>
<th>IRMS</th>
</tr>
</thead>
<tbody>
<tr>
<td>IMR/1000/year</td>
<td>68</td>
<td>14.0</td>
<td>15.4</td>
<td>13.76</td>
</tr>
<tr>
<td>MMR/lakh/year</td>
<td>407</td>
<td>87.0</td>
<td>59.6</td>
<td>27.0</td>
</tr>
<tr>
<td>CBR/1000/year</td>
<td>26.1</td>
<td>18.2</td>
<td>17.3</td>
<td>9.82</td>
</tr>
<tr>
<td>CDR/1000/MYP</td>
<td>8.70</td>
<td>3.12</td>
<td>5.70</td>
<td>1.35</td>
</tr>
</tbody>
</table>

## 7. Difficulties Faced in Current Perspective

The private healthcare market in India with its estimated growth potential to double by 2010 is now in a state of dizziness. Growing public awareness, rapid technological advances, likely impact of global health insurance players, growing concept on hospital accreditations and corporatisation of Indian Healthcare is rapidly altering the patterns of healthcare. Profits have now become the key in hospitals function just like any other service industry and the thrust on profits promises to revolutionise healthcare delivery like never before. Never before has hospital administration assumed so much importance in the private healthcare sector.

## 8. Drivers of Change in IRMS Health Care

- Rise of sophisticated consumers in a 24x7 society with growing public awareness, increasing expectations, increasing public and social accountability courtesy ICT age.
- Presence of big players in the arena due to liberalised policies of the Government creating lack of level playing ground for genuine competition and changing boundaries between hospital and home care with increased emphasis on cost containment.

Today we have the most difficult customer to serve, where expectation are high, situation is tense, services under constant scrutiny. The journey from chaos to clarity has begun with professional healthcare management and a marked change in hospital management has been noticed with the shift from empirical to professional administration and now the hospital administration is no longer a monopoly of doctors who shuttled between clinical care and administration, or who settled down for administration after two decades of experience. In India now the hospital administration is a full-time vocation handled by professional managers.

## 9. Catalyst for the Growth

1. Incentives for investment for the improvement in infrastructure like sanitation, potable water supply and education.
2. Health Care Quality Standards are a must and can be laid down by the Government or by the Industry or a combination of both. This will give credibility to the public for usage.
3. Health Insurance can be the biggest driver for Healthcare in India, which now covers only 4 million lives as compared to 80% coverage In USA.
4. Telemedicine is one of the biggest factors to open up and can make a lot of difference in bringing quality health care to rural India.
5. Corporate hospitals have started medical tourism in India has taken the lead.
10. Conclusions

Indian Healthcare in general and Indian Railways Medical Services in particular is viewing a silent yet paradigm shift. While equity of access and quality care are the benchmarks of good hospital administration, in India both of them comes at a price. In our country quality of cure is available to the consumer who can pay, and hence there is some over-use of services in the private sector. While most of the administrative changes occurring had given a thrust to healthcare industry, there needs to some changes in over-use of services. Perhaps the opening up of insurance would do the trick. In relation to above IRMS is providing outstanding health care delivery system to its serving employees and family members at extremely low cost. The scope of treatment is comprehensive health care delivery comprising of curative care in primary, secondary, tertiary level and in some super specialties. In addition the preventive, promotive and rehabilitative health care is also getting the due care. The service provided is also. IRMS is now gearing up to take this challenge for the future to provide quality heath care more effectively and efficiently with the increasing use of ICT.

11. References


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