

Floundering healthcare systems in India

With the inadequacy of conventional methods to meet the needs of the community, the need of the hour is out-of-the-box thinking and innovation

The healthcare industry today is in a state of transition the world over. In developing countries the issues are primarily related to lack of access to quality healthcare for large sections of the population. In the West, there is a major crisis of financing the high-technology care that is available and of staffing the infrastructure that has been created. Regardless of location, the crisis is real and needs solutions. Conventional approaches to healthcare have clearly not met the needs of the community. In an environment such as this there is a need for out-of-the-box thinking and innovation in all forms.



Fundamentally speaking, as medicine evolves in its breadth and scope it is no longer possible for a single physician to be able to diagnose accurately and appropriately treat every known medical condition. Therefore a II-tiered approach has evolved, in which a General Practitioner (GP) acts as a gatekeeper who diagnoses and treats the majority of common conditions and refers those patients with more complex and unusual conditions to a specialist. Even in the highly specialised Western world, there is a growing realisation of the importance of the role of the internist or GP in treating a majority of common conditions, while at the same time having the clinical acumen to be able to if not diagnose, at least detect and refer the rare or complex entity to the appropriate specialist, ie in the process of triage. This II-tiered approach itself represents a significant innovation in the practice of medicine in that it renders healthcare delivery more efficient and appropriate. The subject of innovation in healthcare systems may be discussed along the following different lines, service delivery, education, pricing and technology.

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a) Service Delivery Innovation

Telemedicine: Telemedicine is an example of innovation in which technology can be used to bridge the gap between the patient in the rural/semiurban environment and the specialist doctor who is typically in the city. Examples of this are the telemedicine projects run by the Apollo group in rural districts of Andhra Pradesh and the CISCO RXDX partnership, which is delivering high quality healthcare to the people of Raichur district. The benefits of this model lie in being able to bring the same level of healthcare to a rural as to an urban population.

Specialised Telemedicine: Telemedicine can be applied to virtually every medical speciality. Teleradiology is a very successful model in which radiologic images can be transmitted to distant locations for interpretation. Today, over 80 per cent of hospitals in the US use teleradiology in some form and the practice is growing in Europe and Asia. The process can be used to facilitate early diagnosis by immediate interpretation of X-rays,

ultrasound, CT, MRI scans in the emergency/casualty setting in remote areas where radiologists are unavailable. It can also be used to bring images of complex or rare medical conditions to the appropriate specialist for ensuring more accurate diagnosis. Other branches of medicine where telemedicine has been effective include cardiology, pathology, ophthalmology, dermatology and intensive care.

On another level, personalised telemedicine can be used to deliver care within urban models. The Internet has a number of sites allowing free and ready access to medical information, blogs, support groups for medical issues and even online physician consultations. Sites such as WebMD permit the community to achieve a much higher level of awareness and understanding of their own medical conditions and those of their family, to ask their physicians the appropriate questions and make the appropriate healthcare choices and decisions after weighing the information available.

Prehospital Care: Today in India, there is a massive shortage of hospital beds (with a world average of 3.96 hospital beds per 1000 people, India stands just a little over 0.7 hospital beds per 1000). As a result our hospitals are overcrowded beyond capacity and long waiting periods in the Outpatient centres and Casualty Departments are the norm. An innovative approach to this issue comes in the form of a free standing Emergency Department, geared specifically to provide prehospital care of acute conditions, with transfer to a hospital if the issue is of a serious or critical nature requiring emergency surgery or admission. In the US, such acute care centres are an established and rapidly growing entity.

Day care surgery is based on the concept that the majority of routine surgical procedures can be performed without major hospitalisation. In the UK up to 40 per cent cost savings have been shown to accrue by this model. Similarly, boutique obstetrical services are being delivered by groups such as The Cradle (high-end deliveries) and Lifespring (low-cost deliveries). These have desegregated the process of childbirth and removed them from the hospital setting, thereby reducing the pressure on hospital beds

Another aspect is of delivering care where needed – tier II cities. While 70 per cent of India lives in semi-urban and rural areas, 80 per cent of India's healthcare facilities are located in urban/metro areas. Given this markedly skewed distribution of hospitals between the metros and the tier II/III cities, there is a need for more hospitals in smaller towns. An example is the Vaatsalya group that is addressing this gap by building and managing hospitals/clinics in semi-urban and rural areas and bringing healthcare services where it is needed most.

Another model is of the PPP, which is a service delivery innovation allowing the government to tap into private resources in situations where it is unable to individually address the needs of the community. In the state of Bihar, the operations of radiology centres at district hospitals and PHCs have been outsourced to a private provider and other states are following suit. Several other successful PPP projects have allowed the government and private providers to combine their strengths and deliver higher quality care to the public.

Pricing Innovations

Most of these relate to schemes that focus on the 'Bottom of the Pyramid' model given visibility by the late CK Prahlad.



Microinsurance is an excellent like, Arogyashree scheme in Andhra Pradesh. The scheme runs in partnership with a private sector insurance company. The state pays an insurance premium of Rs 210 per household per annum and each household can claim health expenses in relation to certain critical diseases (such as heart and cancer treatment, neurosurgery, renal diseases, etc) up to Rs two lakh for procedures and medical expenses. While the health insurance company is responsible for claim processing and maintaining the database, the medical claim is approved by government doctors. The scheme currently covers over 85 per cent of the households in the State. A similar scheme in Karnataka is Yashaswini which covers families of poor farmers at a minimal premium of Rs 10 a month, for even major cardiac surgeries.

Grassroots Innovations: At the grassroots level, many innovative initiatives exist for the delivery of low-cost health care. For example, Jan Swasthya Sahyog (JSS) is a non-profit, registered society founded by a group of health professionals committed to developing a low-cost and effective health programme that provides both preventive and curative services in the tribal and rural areas of Bilaspur district of Chhattisgarh. Low cost healthcare delivery innovations such as this have the potential to impact the lives of thousands of Indians in rural areas.

Technology Innovation

Low cost coils and stents: Indigenously produced stents developed by the Care Foundation, are an innovative means of lowering the cost of cardiology care, given the high cost of internationally manufactured stents, rendering them unaffordable for the majority of Indians. These stents use indigenously produced medical grade materials such as stainless steel and are internationally certified.

Medical Devices: Companies such as Bangalore's Medived Innovations are developing an array of indigenously manufactured devices such as pacemakers, pacing leads, analysers and other accessories at low cost for the Indian market, by leveraging their capabilities in design, engineering and electronics of these precision devices in India's silicon valley.

Diagnostic tools: Recently developed innovative diagnostic tests such as 64-slice coronary CT and virtual colonoscopy allow us to detect heart disease and colon cancer earlier and noninvasively, at a stage when they can be treated more effectively, thereby decreasing morbidity and mortality, improving quality of life and in parallel decreasing costs of treatment and hospitalisation. Digital mammography and computer assisted detection both increase diagnostic accuracy for early detection of breast cancer and therefore have great impact on women's health worldwide.

Software as a Service: As the global thrust for digitisation of medical records continues across the globe, healthcare information systems increase in parallel complexity and in cost. The deployment of enterprise solutions is an option for large institutions, but is typically not cost effective for small and medium healthcare facilities. Technologies such as RIS and PACS which electronically store radiologic images and their reports are both essential features of radiology departments, but are both costly tools. In this regard a major innovation today exists in the form of cloud computing allowing for the databases to be archived remotely and accessed (and paid for) on the basis of a mouse click, without incurring high up-front infrastructure costs.

Integration tools and standards: In an era where there is an abundance of software in the healthcare space, innovative standards such as HL7 and DICOM create a platform that

allows all systems to communicate with each other, reducing duplication of data, cost and in some cases, reducing radiation dose to the patient.

Appropriateness determination applications: One of the many causes of spiralling healthcare costs is the inappropriate ordering of diagnostic tests by physicians, either due to lack of awareness or fear of litigation. In either case, the use of software tools that check appropriateness of such orders, such as currently being pioneered at the Massachusetts General Hospital in Boston, MA, can make significant impact on reducing healthcare costs. Put simply, these applications obligate the doctor ordering a test to confirm that the patient on whom the test is being ordered genuinely meets the criteria for undergoing the test.

Home healthcare monitors: These allow for patients with chronic illnesses to be discharged from hospital earlier and monitored from the comfort of their homes, thereby reducing the pressure on hospital beds as well as simultaneously decreasing healthcare costs.

Summing up, a number of innovations exist today that can make healthcare delivery more efficient and reduce costs. And yet, only the tip of the proverbial iceberg has been visualised. The need of the hour is for many more innovative thinkers and investigators, as well as entrepreneurs with an understanding of the healthcare space willing to take risks and back such untested concepts. Such synergies have the potential to transform healthcare as we know it and to propel us into the next decade with a substantially more robust healthcare system and a healthier, happier population.

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