Leveraging Technology for Experiential Care

Rajiv Sikka

Group CIO,
Medanta - The Medicity

Rajiv Sikka is the Group CIO of Medanta hospitals. In a career spanning over three decades, he has the perfect blend of having worked across sectors and multiple functions - initially as a technology solution provider and now leading IT transformation.
In current role as CIO, Rajiv is responsible for group IT functions covering digital transformation initiatives and IT Operations. He formulated a five-year IT roadmap and successfully rolled out multiple standardized initiatives across hospitals. Prior to joining Medanta, Rajiv had worked in Polaris as Senior Vice President for 13 years. As Enterprise Group Head, he was responsible for P&L and has worked extensively in multiple regions across the globe. Rajiv has been featured many times across healthcare informatics forums and publications, and he is a regular panelist/ speaker on digital initiatives in healthcare. He is a member of CII-led National AI Forum. He is also an executive council member of CIOs of India, a 25-year-old forum of IT professionals comprising multiple CIO bodies. He is also on advisory boards of academic institutions and IT companies.

Data and digital technology have the potential to create a vastly superior patient experience and build trust between patients and healthcare providers. This trust in turn enables positive online reviews and word of mouth publicity. Furthermore, satisfied patients are more engaged with their physicians, proactively seek information on their health and care plans leading to better decisions on managing their health.

This generally leads to improved health outcomes and experiences. It is, therefore, not surprising that harnessing and providing medical information to patients play a prominent role in improving clinical outcomes.

There are hundreds of touch-points in a typical patient journey; these are both conventional and digital. The scale of large hospitals makes it more difficult to provide personalized experiences at every touch-point solely through conventional channels. At Medanta, digital channels bridge this gap by enabling a consumer experience even before the patient registers for a consultation. Patients can explore the hospital through a virtual tour on the website, learn more about the doctors and access a wealth of information about their condition. They can also carry out most transactional tasks; these include booking online appointments, paying bills, accessing diagnostic reports and using the telemedicine facility. At Medanta, digital technologies are heavily leveraged and supported by a 24x7 operation control centre.

COVID led to a phenomenal push for digitalization

Digital health technologies have existed for a long time, but their adoption by health care providers has been limited for various reasons such as unproven ROI, lack of access to technical resources and inter-operability. For example, although the Electronic Medical Record (EMR) automates workflows between different healthcare entities such as hospitals, diagnostic units and pharmacies, its adoption has been limited, making the processes inefficient and error prone.

The pandemic has compelled the health care industry to look beyond their regular strategies and has been driving the adoption of technology to offer many creative solutions.

Care away from the hospital:
Persistent infection rates forced patients and doctors to adopt remote consultations. Over the course of a few months, this became the "new normal". Remote monitoring solutions were also implemented relatively quickly for patients isolating at home. With a prolonged pandemic, doctors and patients realized that these technologies were easy to use and often more convenient than a trip to the hospital. This led to its widespread acceptance.

Remote devices:
Electrocardiography (ECG) is a life-saving diagnostic test for cardiac patients. The pandemic made ECG tests at the hospital difficult to perform and generally meant a greater Covid-19 exposure risk. Hospitals introduced an alternate solution in the form of a medical-grade hand-held ECG device. The device monitors the patient's heart parameters within the comfort of a home and is completed in less than a minute. Test results are available to the cardiologists in the hospital almost instantaneously. This has helped considerably in reducing Covid-19 infection rates linked to hospital visits.

These initiatives were enabled by digital technologies. Furthermore, smart phones, Internet penetration and their adoption by patients and care givers are making digital health a core component of care giving.

The pandemic has compelled the health care industry to look beyond their regular strategies

The huge volumes of data is still not being used very actively for treatment.

Overcoming challenges to digital adoption

Although digital adoption has increased in the past five years, it has largely been concentrated within specific functional areas. In India, most care providers face challenges related to cost, privacy, security, lack of integration standards and connectivity.

Cost:
There is currently no dearth of sophisticated technology solutions that can fully support physicians in their goal to improve clinical outcomes. However, the cost of these solutions is often prohibitive considering health care pricing points in India. This makes the adoption of these solutions very demanding.

Privacy:
The potential consequences of digitization on data privacy can be substantial and must be considered carefully before any technological implementation. Specifically, in a digital environment, ownership of

data must be clearly established. Important decisions that must be made include:

- Data ownership - should the data be owned by the patient, hospital, state, central government, or will it be even a sort of collective ownership?
- Data transfer between providers - How will data be transferred between service providers and what governance framework would apply?
- Commercial misuse prevention

With advancements in medical sciences and technology, huge volumes of data are increasingly streamed from wearable devices using IoT into Big Data platforms. This data is still not being used very actively for treatment, but diagnostics and screening processes are increasingly making use of it. There is an increasing need for a regulatory policy framework for collecting such data. This can be done based on the work already done within global best practices such as the General Data Protection Regulation (GDPR) in the EU.

Security:
As in other industries, cyber security threats are real and represent a risk to patient clinical information privacy.

A comprehensive data governance is the backbone of security and directs the implementation of proven technologies accessing and sharing data securely across entities. At a minimum, the following guidelines should be in place:

- Data must be encrypted at rest
- Its access must be authenticated and done with consent
- Audit trails should exist for all access
- Data availability and resiliency must be implemented through technological choices such as distributed storage

Lack of standards for health information exchange:
Data standardization and interoperability are the foundation for connecting the healthcare ecosystem. These are daunting tasks because they require collaboration and agreement across industry players. Nevertheless, significant progress has been achieved through the establishment of several mature standards such as SNOMED, ICD, DRL and DICOM. Furthermore, data exchange standards such as HL7, FHIR and C-CDA are also well-recognized by the healthcare industry.

Poor connectivity:
According to a recent government report, while India has over 350 internet service providers, broadband penetration remains low. This makes the provision of mobile-based healthcare a challenging mission to accomplish. Under the umbrella of the National Digital Communications Policy, the government is planning to provide extensive public Wi-Fi coverage within the next two years. Regulatory bodies such as TRAI are creating models to increase the reach of connectivity by sharing cross-sector infrastructure with utility companies and other organisations. The speed of expansion of the fibre network and the Internet will have an exponentially positive impact on "Health for All" (HEAL) objectives.

The healthcare technology market - challenges and opportunities

The market for health-tech solution providers is still in its early stages in India. With global healthcare solutions being cost prohibitive, a scene of local technology providers and start-ups have emerged in India. They offer Electronic Medical Records (EMR) and Hospital Information Systems (HIS) solutions of differing maturity levels. This has led to a gradual adoption of technology by hospitals and care providers that have increasingly realised the benefits of digitalisation in terms of quality assurance and automation at a minimum.

However, the market in India is extremely fragmented with no clear leader. Hospitals generally feel that their needs are special and demand a high degree of customisation. This has led to the prevalence of custom developed implementations instead of ready-to-deploy products.

Technology investments will eventually improve the quality of care.

In most cases, these customised deployments end in failure because hospitals in India generally do not have the experience and maturity to articulate requirements properly. To be fair, hospitals are more focused on running healthcare services and technology implementations seem more like a distraction.

The biggest challenges in rolling out HIS / EMR solutions in hospitals are speed and cost, which can be much better addressed through standard products. Additionally, the best product players usually also provide best practices and regulatory compliance as part of the product roadmap. These are important benefits that make the market quite promising.

Adoption of digitalization pays in the long run

Technology adoption is often not financially rewarding and creates additional burdens for small private clinics and hospitals because of additional allocation of human and other resources. But larger hospitals and healthcare service providers usually understand that technology investments will eventually improve the quality of care, patient outcomes and reduces medication errors. It pays in the long run.

Regulatory bodies must also understand that digital transformation is critical for laying the foundations to achieving the HEAL objectives, especially within primary healthcare. The government should incentivize early digital adoption for hospitals and other healthcare providers. This approach can be readily noticed around the world in order to bring hospitals on a common platform and increase the speed of digitization. For example, the South Korean government had allocated significant funds to encourage a wider adoption of EMR to improve health information exchange across healthcare providers.

India has a set of unique challenges to tackle. The country is large, heterogeneous, densely populated and its healthcare infrastructure is still in the initial stages. In order to be effective, the digitalisation of healthcare must therefore be customized to these unique requirements. We should therefore look to best practices from similar rollouts in other countries. It is important that government bodies and healthcare providers work in close alignment with industry experts to develop practical models that cover the whole healthcare spectrum, from preventive to tertiary care.