Saving lives can never be business-as-usual. It doesn't matter whether you are a life-guard in a desolate beach country or running one of the most renowned hospitals in the world.

And that's because you are constantly challenging time—the only thread that hangs between life and death. That's something Sangita Reddy, executive director-Operations, Apollo Hospitals Group, has realized. "The biggest challenge with operations in healthcare is to get things done in as less time as possible, and maintain a high degree of quality and efficiency," she says.

The only way to achieve that is to turn to IT. That's why Reddy has been striving to infuse technology into the fabric of the Apollo group. Be it creating a Unique Hospital Identification initiative to help patients across the country have a single instance of their health records, or helping patients track their health on mobiles, or ensuring patients' test results reach doctors in the least possible time by leveraging the power of the Internet of Things.

In this interview, Reddy shares how IT is changing the way hospitals are run and making the business of saving lives more predictable.

IT's Healing Touch

Sangita Reddy, Executive Director, Operations, Apollo Hospitals Group, says that in an industry where every passing minute could change a life, IT is lending a hand by improving response times; reducing human error, and saving costs.

BY DEBARATI ROY

CIO: Apollo's Unique Hospital Identification (UHID) initiative sounds interesting. What's it about?

SANGITA: UHID is an acknowledgement of the fact that everyone needs to have a single instance of health record throughout their lifetime. This ensures that irrespective of a patient's geographical location or his hospital, doctors have a detailed view of the patient's medical history and ensure that diagnosis is timely and well-informed.

With the new UHID initiative, when a patient walks in to any of our facilities, we can pull out his medical history. This means patients no longer need to carry documents, thereby significantly reducing the time taken to start the treatment.

We also realized that the algorithm, for UHID—although developed for the Apollo Group—can be used across the country and we are ready to donate the algorithm for use in the public domain. To fulfill that vision, I had requested the UIDAI team, headed by Nandan Nilekani, to see if there's a way to connect UHID numbers to a person's UIDAI. This initiative could open a whole new world of possibilities for hospitals across India to provide timely care to patients.

With the government providing support like maintaining a master record of all registered hospitals and deciding on a common numbering system, hospitals across the country could then share information in a secure manner. This creation of a state-wide health information exchange platform has already been introduced in many of the more developed economies and India should start making a move towards it too.

How is technology helping ease information flow between the Apollo Group's hospitals, doctors, and patients?

>> IT is the foundation on which this entire concept has been built. Today, we are not just limited to keeping the EHR (Electronic Health Records) within our hospitals for our record-keeping but are also providing patients access to their records anytime, anywhere, with an initiative called PRISM, which is our patient health record (PHR).

The moment patients register with any of the Apollo facilities, they are given access to their PRISM account which is a personal summary of their health record that they view even from their mobile phones. They can also use it as a tool to track and monitor their health. For instance, a diabetic can upload his details frequently and receive alerts and expert advice on whether his blood sugar levels are high or low and what he can do to improve the condition. Currently, we have over two million records under PRISM hosted on our private cloud. The EHR is also integrated to various wearable medical devices.

That's interesting. How else are you using newer technologies like mobility?

>> Mobiles and the proliferation of smartphones has come as a boon for the healthcare industry. It is estimated that by 2020 the m-health market in India would grow to touch a billion dollars.

At Apollo, we are viewing this new wave of engaging with patients from two perspectives. One is making our current customer-centric applications mobile-ready. The versatility of an Android platform has made a lot of things possible. Both our PRISM and E-doc applications—an app that allows patients to book appointments—are already mobile-ready. The best part is that this application is an SMS-based system that can work on any Android-based mobile platform and one doesn't even require a smartphone. Apollo has an intrinsic understanding of the m-health space, and we are using it extensively internally to enhance cost effectiveness, improving information flow within the group, and improving doctor-patient connectivity.

The second objective is to constantly launch new initiatives and create a Mobile Health System that increases agility, productivity, and response time of our doctors and our support staff. Doctors can access radiology and CT scan reports even on the move via tablets or mobile phones and provide suggestions to the care teams. They can help patients in need without being physically present. Patients, on the other hand, can monitor their symptoms and receive lifestyle, diet, and educational support through Apollo's diabetes programme SUGAR. Diabetics can SMS their blood sugar count

> **"Being in an industry where every minute and every mistake can have huge negative consequences. Only IT can help us manage this colossal system."**

through the system to a clinician and they receive a reply explaining the numbers and what they should do.

How does IT help you deal with everyday challenges of running a hospital?

» Being in an industry where every minute and every mistake can cost a life, is not easy. And managing 54 hospitals—spread across nine countries—makes it a lot harder. The biggest challenge with operations in healthcare is to reduce the margin of errors caused due to manual processes, get things done in as less time as possible, and maintain a high degree of quality. But one good thing about Apollo is the fact that only technology can help us manage and monitor this colossal system.

We have been early adopters of some innovative concepts that marked our dedication to quality and providing timely healthcare. For example, we realized that most of our labs are located in the basement of our hospitals. By the time a patient's test results reach a doctor, lots of crucial minutes are lost.

So, a couple of years ago, we rolled out an initiative to link the glucometers in the labs to the mobile and pager systems of our ward attendants. In a machine-to-machine communication system, the lab analyzer messages the HIS about abnormal rise or fall in a patient's blood sugar count, the HIS messages the Telephone Control System (TCS) and the TCS then sends an SMS/mail alert to the medical staff tending to that particular patient.

Another thing we are trying to do is to leverage what is nowadays being termed as the Internet of Things. We are connecting most of our medical equipment to our information systems so that all devices can be connected to the larger network. These networks, in turn, are connected to a monitoring station.

A recent initiative under this is to create an e-ICU system where all of our ICUs are connected and a team of experts can monitor patients 24/7, irrespective of the location. Today, we can dynamically track and monitor whether a patient has been waiting at any Apollo facility for more than half an hour.

All of these initiatives are steps in our journey to make hospital operations free of manual intervention and quicken response times in a cost-effective manner.

What role does technology play in helping Apollo sustain uniform quality of healthcare?

» Apollo Center of Excellence (ACE) is our biggest platform for quality control enabled by IT. We have singled out 25 parameters for quality based on international best practices and that has been captured under ACE. ACE monitors multiple aspects across all our facilities and generates reports that help management track the clinical quality from success rates of operations to inventories. It also allows us to track the reason behind the problem and intervene in time to make amendments.

The Apollo Group is currently the only hospital group in India that has been awarded an HIMSS Level 6 certification. It is one of the highest acknowledgement of quality in the healthcare industry. Less than 20 percent of the hospitals in the world today are HIMSS level 6 certified.

How can advanced IT become a competitive differentiator for healthcare service providers?

» Undoubtedly, it makes a significant difference. One of the biggest competitive differentiators in the healthcare industry is the trust that patients put in you with their lives. All our recent initiatives like UHID, mobility and PHR are global best practices based on an ideology called patient centricity. Earlier, healthcare was more of a transactional system where a single doctor attended and diagnosed a patient and the patient was at the receiving end.

Today, doctors are transforming from an individual doctor responsible for a patient, to a specialist group of 'care teams' that constitutes medical professionals with varying expertise. This team aims at fixing a single problem and, at the same time, monitoring the complete health of the patient. Patients are no longer at the receiving end but at the center of all our operations. All of this has definitely increased the amount of trust our patients put in our endeavor to provide them quality, and low-cost healthcare. IT is helping us achieve that.

With 115 telemedicine units, the Apollo Group is also one of India's leading telemedicine providers. What is the biggest deterrent to its adoption in India?

» Telemedicine is a very bandwidth intensive medium. From transferring image heavy data like medical report scans to doctors sitting at some other location, to video conferencing, all these processes are extremely bandwidth heavy. One of the primary things that is hindering the adoption of telemedicine is the limited bandwidth and connectivity in India. The situation has improved in the past couple of years but there are still places in the boondocks where connectivity is either absent or is extremely patchy and expensive. And that defies the whole point of a telemedicine initiative because it is these extremely rural places that don't have sufficient healthcare centers and could use telemedicine. But I am hoping that newer technologies like 4G hold some promise and will change things for the better. CIO

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