



CSI Communications

Knowledge Digest for IT Community

Volume No. 41 | Issue No. 12 | March 2018

₹ 50/-

ISSN 0970-647X



SMART HEALTHCARE



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Leveraging the Cloud for Healthcare

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“It is a Cloud Service!” This has been the buzz word around the world for more than a decade. But only in the recent past, organizations are embracing “CLOUD” in its fullest essence. There have been various reasons for the slow adoption of Cloud Technologies in various industries. The first and prime most talked about reason for “not” adopting is a fear around Data Security- a perception that putting critical data on the cloud is opening up an immense amount of liability exposure. However with more transparency, assurance, security and robustness, Cloud hosting (public, private or hybrid) is now commonly used across all kinds of applications in various industries.

The Healthcare industry has also started to adopt Cloud Technologies in all possible aspects as the advantages of having 24/7 outsourced support, disaster recovery, replication, etc. have outweighed any perceived security concerns. As a frontrunner in the Healthcare IT, Amrita Technologies has made significant impact in leveraging the power of the ubiquitous cloud and has ensured benefits to both the Hospital community as well as the Patient Community.



Amrita EMR - connect when you want, however you want -allows multi device, concurrent access

Recently Amrita Technologies introduced two novel concepts in the Healthcare IT. One product is focused

on adoptability and ease of use for Hospitals and healthcare institutions – Amrita HIS Cloud. The second innovation is completely patient centric - Amrita PHR Cloud; empowering each and every individual with his/her electronic medical record when they need it, wherever they need it. It has flipped the concept of the patient record on its head – the patient now becomes the master of his/her own data all throughout his life.

Amrita Technologies’ CEO, Sri. Pradeep Achan commented recently, “With the advent of Cloud adoption in the Healthcare industry, we see a world of opportunities just blossoming. It is creating an environment where solutions built for the cloud can be deployed rapidly- disrupting the traditional way of doing things and providing immense financial and operational benefits to Hospitals Clinicians, and the patient in a great way.”

Amrita HIS Cloud:

Amrita Technologies’ Hospital Information System (HIS) – Amrita HIS, has been one among the most successful Enterprise Grade Fully Integrated Hospital information systems in the Indian Market for more than 15 years. With its domestic and international presence, the top-notch product has achieved all major world class certifications. Amrita has been helping various large tertiary care Hospitals and hospital networks seamlessly run their operations.



Being a pacesetter in Healthcare IT, Amrita Technologies was one of the first HIS product organization who were quick to introduce and offer a state-

of-the-art Amrita HIS Cloud version to their clients. The product architecture is multi-tenant, and multi host capable, and the solution can scale horizontally as user demand increases, i.e, the software is able to handle any expansion as additional hosted hardware is added without any issues. Amrita HIS Cloud is a tailor-made solution which can cater to any Hospital of any size at anywhere in the world .

Case Study | Amrita HIS Cloud at a Tertiary Care Hospital

Overview:

The tertiary care hospital is a highly reputed healthcare facility and has been doing well since its inception in 1999. With its advanced diagnostics facilities, highly acclaimed doctors and most modern modalities in place, the institution has been one of the most preferred hospitals in the state for most patients.

In 2015, the hospital had an OP footfall of nearly 1000 - 1300 per day and occupancy of 1200 beds at any point of the year was at 75-85% occupied. Most of the nearby smaller hospitals and clinics had found the hospital to be a best place for all their referral cases.

The Challenge:

The hospital was serving the entire patient community well. But the management and clinicians and other team members all felt that something wrong about the way their hospital was moving forward and always had a notion that it wasn’t the best way to run it. Even though advancements in terms of medical and diagnostic equipment at the hospital were the state-of-the-art; the entire hospital worked as individual units versus an integrated organization, i.e., all the different departments such as Doctors, Admissions, Pharmacy, Laboratory, etc., were not centered around the patient. As a result, a lot of time was wasted on manual work between departments. Sometimes the situation was getting so worse that; one

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patient's lab results were getting issued to another patient, scheduled surgeries for different patients conflicted in the Operation Theatre, wrong lab orders processed for patients, Doctors had to write prescriptions or order tests on a slip of paper and send it along with patient/nurse to concerned locations in the hospital, etc. Identifying and clearing these issues at the hospital had become usual day-to-day tasks for the core staff which consumed their valuable time and energy unnecessarily.

Also, Doctors and Nurses had their own set of problems as well. Both the care providers during OP consultations / IP treatments of patients had incomplete knowledge of the patient's previous health history / details. Dependency on information in paper, or a monolithic EMR was the only way for them to see the patient's medical condition or current medications, etc – which was always time consuming, and often prone to mistakes.

Solution:

A steering committee was formed in the hospital to identify a solution which is most suitable for this huge tertiary care facility - how to streamline the inter-departmental workflows, how to improved operational transparency, how to improve billings and finally how to track and improve the investment ROI. The committee had several guidelines to follow while selecting the preferred HIS Solution.

The major evaluation criteria laid out were:

- The HIS Solution has to be from an established organization
- Solution has to be a totally an end-to-end solution replacing any existing smaller solutions currently being deployed
- Solution has to be Patient / EMR Centric one
- Solution with least or no customization requirements
- Product which requires lowest spending on infrastructure

The team aggressively evaluated several HIS solutions from different established vendors and shortlisted to major three which they found meeting their criteria. From the identified three, they weighed the solutions based on

the excellent functionalities available as well as lowest initial investment, and zeroed in on Amrita HIS Cloud (AHIS Cloud).

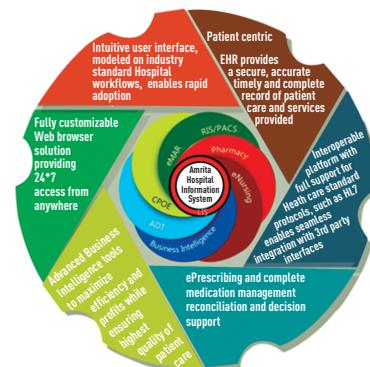
Amrita Technologies were able to complete the implementation of AHIS Cloud as a SaaS model at the Tertiary care facility within a very short timeframe. As the HIS solution was a SaaS based model, the hospital didn't had to spent on expensive hardware infrastructure too – and what was really key, not having to invest in trained IT network type of resources.

The hospital is now able to work with an integrated approach to cater to the needs of their patients, they are able to track their inventory, asset utilization, patient flows extremely effectively. And really focus on healthcare instead of being worried about technology!

Impact:

The Built-in multi-tenancy of AHIS Cloud allowed maximizing efficiency by utilizing shared resources optimally based on scalability requirements, thereby driving down costs accrued.

Now the hospital is able to focus on delivering quality patient care instead of worrying about the hassles they previously had. Now with AHIS Cloud's periodic automatic feature updates, the hospital is receiving the latest features updated without disruption to their service.



Amrita HIS is completely a patient centric system which is a one stop solution for automating all aspects of any hospital of any size

With AHIS Cloud, Doctors are able to have fully personalized dashboards defined by them in order that they may have relevant data available at their fingertips. Doctors and nurses

can not only see the patient's past and present medical information through their hospital computers but also use AHIS Cloud's tablet-based interface for recording patient data and obtaining access to essential information in real-time from anywhere.

Result:

Through the implementation of AHIS Cloud, the Hospital benefitted in several ways.

- Paper usage went down by 60% which resulted in a savings of INR 3.5 lacs a year
- Patient waiting times reduced by 39%
- Power saving of 30%
- Laboratory processing time reduced from 14.5 to under 3 minutes per sample
- Wastage due to Expired drugs eliminated
- OT utilization up by 18%
- Effective inventory management & Vendor rating, quotation tracking
- Bed Occupancy ratio increased 10%
- Several cases of financial fraud eliminated
- Comprehensive Research and Clinical data mine created

Amrita PHR (Personal Health Record)

The Amrita PHR was developed in compliance with Blue Button and HL7 (Health Level 7) international standards. The objective was to do away with bundles of paper EMR documents and actually become a life saving tool in Emergency Situations. It is a secure vault of a person's health data - Blood group, Allergies, Medications, Surgeries, investigations, etc. - a critical tool for everyone ranging from disabled people to children with severe medical issues to all of us.



Access of APHR on Mobile phones makes it a ubiquitous partner for patients

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The most important architectural element of APHR is that is HIS agnostic – can get data from any HIS in a standardized format. The hospital or Clinic does not need to transition their Health IT Infrastructure to utilize this great product.

Case Study | Amrita Personal Health Record

Overview:

The 250 bed Hospital is a well revered healthcare facility near the state's IT Park. The hospital is mostly dedicated in Infertility and Gynecology & Obstetrics along with other departments such as Orthopedics, Cardiology, etc. The healthcare facility started its operations way back in 2003 as a 75 bedded facility. Since inception, the hospital grew its reputation as well as grew in bed size.

Hospital management has a very clear vision of being a No.1 preferred Hospital in the state for all their patients. Hence, they are very active in various outreach programs and conduct a lot of camps.

Challenge:

The Hospital wanted to be unique as well as position themselves as a highly transparent and patient friendly organization. Also, as the hospital is extremely active in conducting medical camps, they wanted to give a unique experience to those patients as well. As the management is highly appreciative of embracing technology, they started looking out for newer trends in Healthcare IT to incorporate in their hospital activities for the benefits of their patients.

Solution:

In the exploration phase of novel and unique Healthcare IT solutions, the General Manager-IT and team of

the Hospital came across the Amrita Personal Health Record (APHR) Cloud application from Amrita Technologies.

The Hospital found that with APHR Cloud, they can empower all their patients to be the owners of their Health Records which in turn will increase their transparency to their patients. Furthermore, Amrita PHR Cloud allows their patient community to access the medical records and vital documents anytime from anywhere. Also, found that during emergency / golden hour, doctors are able to access most critical information such as medical history, recent lab reports, allergies and prescriptions over the cloud when the patients are not in a position to communicate the same.

In addition, post to the consultation at the Hospital, as well as, for camp patients, when lab tests are certified; the needful Clinical details of the patients will get updated in the APHR Cloud automatically.

For the Hospital, one of the most unique aspects of the APHR Cloud is that it can communicate and fetch EMR data of patients immaterial of the HIS solutions being used at the Hospital.

Result:

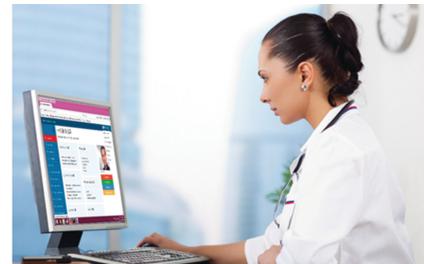
After the implementation of the APHR Cloud, there have been several positive impacts for both Hospital as well as their Patients.

Benefits for the hospital:

- Better recognition and brand value among the patient community for the hospital
- Is able to leverage the existing EMR for the patients' benefit
- Helped to be more Eco-Friendly by lowering paper usage for reports
- Improved reach and response for all the camps and out-reach

programs

- Helped in playing a vital role in hospital's marketing activities
- Resulted in happier patients



Doctors are able to access medical records of the patients through APHR

Benefits for the Patients:

- Ubiquitous cloud partner with various vital details capable of helping / life saving during any emergency
- Time saved - Real-time update of patient records when results/reports are approved by Hospital
- Doesn't have to carry bundles of medical records any more for consultations



Senior patients are able to get all their medical details at their fingertips

- Able to securely share medical data to other clinicians/family doctors for second opinions
- No dependency on any particular hospital for medical information

About the Authors



Sumeet Bahl has extensive experience with Healthcare IT industry nationally and internationally. He manages all the strategy and marketing related activities in India as well as the USA for Amrita Technologies. Also, he has profound experience in online and mobile eCommerce platforms, CRM platforms, customer acquisition and retention strategy (including optimization and personalization), customer data management, etc. He has led eCommerce and Marketing groups in various Fortune 500 organizations including American Airlines and Symantec Corporation. Sumeet has an MBA from the University of Maryland at College Park, a B.E. from Delhi Inst. of Tech. and hold the PMP and CFA certifications.



Abhay Ramesh, is handling all the Pre-Sales and Sales activities of Amrita Technologies across India. He has sound knowledge on Hospital Information Systems, Business Intelligence, Educational Management System, E-Learning, etc. Abhay has great experience in Key Account Management and is active in maintaining Public Relations. He has an MBA in Marketing and Systems from Amrita University, Coimbatore and has graduation in B-Tech from Calicut University.