THE FIRST DIGITAL REVOLUTION IN HEALTH CARE

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ABSTRACT

Building strong Institutions is one of the major objectives of Good Governance. The Digital India initiative represents a landmark in ushering in the First Digital Revolution in Health Care at AIIMS. The successful implementation of the AIIMS e-Hospital Project and the AIIMS OPD Transformation Project, transformed AIIMS to India's first fully digital public hospital. In 16 months of implementation since the launch in July 2015, the AIIMS e-Hospital project has had the largest footprint of Digital India projects. The creation of a patient friendly hospital has benefitted 35 lac patients till date, reducing wait times at the Hospital by nearly 6 hours, brought transparency to OPD appointments; created digital medical records and represents a sustainable and replicable model for hundreds of India's Hospitals.

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1. **AIIMS** - the very name invokes images of crowds, a sea of humanity that is present at the hospital doors, waiting from 3 in the morning, to rush for expert medical consultation as soon as the Rajkumari Amrit Kaur Out Patient Department (OPD) doors are opened at 8.30 am. With an average of 10,000 OPD patients/day, 35 lac OPD patients per annum, 55 Departments, 640 faculty, 2000 resident doctors and 5100 Nurses, AIIMS represents India's behemoth in tertiary care super specialty hospitals. While the Institute led by highly driven professionals works with clock work precision, the overwhelming patient loads have proved impossibly challenging for a manual system and required significant systemic changes in terms of improved digital practices and process re-engineering, as millions of India's population seeks medical care at the Nation's apex Medical Sciences University.

2. **JANUARY 2015 - AIIMS – UIDAI - DeiTY COLLABORATION:** The first step in the Digital AIIMS project was the creation of an effective linkage between AIIMS, Unique Identification Authority of India (UIDAI) and the Department of Electronics and Information Technology (DeiTY). A unique health identification number for every patient visiting AIIMS was generated on an Aadhar platform. The patient could log into the AIIMS OPD Appointment System (ORS.gov.in) and submit a request for an appointment online using his Aadhar number. The verification of the demographic details of the Patient was based on the one-time password for the patient being transmitted to the mobile phone number of the patient registered in the Aadhar data base. The Unique Health Identification Number gave every Patient visiting AIIMS a Digital Identity. The Patient could use the UHID for his entire lifetime and every consultation visit was documented by the system.

3. The next significant step in the Digital AIIMS project was the strengthening of the AIIMS-DeiTY-NIC collaboration. The e-Hospital project proceeding at a modest pace, suddenly gained significant momentum with the launch of Digital India Initiative. There was a new urgency in DeiTY and NIC for expeditious development of the software so that the Online Registration System could be established. This was followed by the collaboration between AIIMS and Pay Gov for creation of a payment portal.

4. The e-Hospital project necessitated transparency in OPD appointments. AIIMS always encouraged walk-in patients and also had several follow-up patients coming for consultation. The streamlining of the new OPD cases began with 15 percent of the total new OPD appointments being given for online registration. The

out-patient appointments of each of the Departments of AIIMS was placed online and every consultation room in the OPD was allotted a fixed number of OPD patients identified by name.

5. **APRIL 2015: AIIMS – TCS COLLABORATION:** The AIIMS-TCS collaboration for the AIIMS OPD Transformation Project was conceptualized as a Corporate Social Responsibility Project. For several weeks the TCS officials merely observed the systems and processes of AIIMS OPD areas. It was only after several months of conceptualization, discussions, capacity building, consensus building and software development did the TCS prescribe a model of AIIMS OPD transformation. The approach was to facilitate faster registration, to dissipate

crowds with larger patient waiting areas, introduction of new signages, introduction of screening at the entry point, introduction of patient care coordinators at the registration/ consultation areas and the rather unique exit OPD counters for all follow-up patients. Today, the AIIMS-TCS collaboration has provided India with a role model for transforming the OPD services at all major Central and State Government Hospitals.

6. **A NEW PATIENT REGISTRATION CENTER FOR AIIMS:** The TCS model of AIIMS OPD Transformation envisaged construction of a Patient Registration Center, with 50 Registration Counters each one equipped with a computer terminal loaded with e-Hospital software. The Patient Registration Center was constructed and operationalized in a record time of 6 months. Nursing Informatics Specialists were deployed for implementation of the Registration processes to oversee the work of Data Entry Operators. The registration time was a mere 40 seconds for all new appointments with UHID numbers generated from the online registration system. Fast Track Queues were created where the patients who had already

registered themselves under the online registration system could get their OPD cards and move quickly to the Patient Waiting Areas. Patient Care Coordinators were deployed to ensure that Patients understood clearly where to visit during the entire process. The whole approach was one of empathy and efficiency. The successful operationalization of the Patient Registration Center meant that the waiting time in the Hospital had come down by nearly 6 hours per patient. The 3 am serpentine lines were no longer there. They were replaced by a more orderly queue system that commenced at 8 am and reached the OPD consultation rooms by 9 am.

7. AIIMS attracts 10,000 patients per day but the patient waiting areas had only 2500 seating capacity. This meant that patients rushed to consultation areas without any wait time in a comfortable environment. The TCS model envisaged creation of seating spaces for an additional 3500 patients. Air conditioned Patient Waiting Halls were developed where the patients could comfortably wait for their turn to visit the OPD Consultation rooms.

8. The TCS model was implemented in the Medicine and Pediatric OPD areas on a pilot scale in December 2015. The Clinicians would commence work at 9 am. Patients would reach the clinician's rooms in an orderly manner. All multiple registration counters in these Departments were discontinued. The successful implementation encouraged AIIMS to introduce the model in all the 5 floors of the Rajkumari Amrit Kaur OPD covering all 55 Departments.

9. The most innovative feature in digitization process was the introduction of EXIT OPD Counters by computer Facility, AIIMS. Patients who were recommended for advanced Laboratory Tests, Radio-Diagnosis, Virology and Pathology Tests as also follow-up appointments, all of which could be scheduled from the EXIT OPD Counters. The Patient thus had a very orderly journey from the point of entry to the Hospital to the point of exit. Even the VIP Patients including senior IAS officers willingly went through the entire OPD Transformation Process and found the entire experience quite expeditious and satisfying.

10. **DEVELOPMENT OF SPECIALISED CADRES:** Patient Friendly Hospitals are every Medical Institution's dream. AIIMS transformed itself into a patient friendly hospital by its willingness to adopt the modern day digital practices and create specialized cadres who enabled rapid scaling up of the new technology. The Nursing Informatics Specialists provided the linkage between the Clinical Departments and the OPD appointments. Nurses with an aptitude for technology were deployed to coordinate between the Departments, OPD, Wards and the software professionals. The Patient Care Coordinators touched every patient entering the OPD with their empathy. They were the friends and guides who ensured patients followed the established protocols. They were also deployed to assist with the E-Kiosks to enable literate and tech savvy patients

with appointments. The Data Entry Operators were deployed at Patient Registration Center and the EXIT OPD Counters. They were trained to handle cash collections simultaneously. Security Personnel were trained in Queue Management systems with a considerable degree of patience. A team of Hospital Administrators coordinated with TCS Officials in guiding change management and effective supervision.

11. **AIIMS – INDIA'S FIRST FULLY DIGITAL PUBLIC HOSPITAL:** Hitherto, the implementation of the e-Hospital project had not been orderly. For AIIMS to be a fully Digital Hospital, each of the e-Hospital modules needed

to implemented in an orderly manner to create a comprehensively digital hospital. By June 2016, the e-Hospital module implementation in AIIMS was completed. The NIC took a big step forward in completing the AIIMS e-Hospital Project. NIC Teams from Tripura worked with each of the Departments in AIIMS in a prescribed time frame to transform AIIMS as India's first fully digital public hospital. The modules comprised of Blood Bank module, Billing Module, In-Patient Department comprising admission and bed to bed management, Laboratory Module integrating 55 laboratories, Establishment of nearly 200 Kiosks with Net Banking Facilities for ease of payments, Laundry Module for monitoring the central laundry operations, Store management for inventory purposes, Dietary Module for preparation of electronic diet charts for in-patients, and RIS-PACS (Radiology Imaging System – Picture Archiving Communications System) for exchange of radiology data.

12. **THE TITANIC IS SAVED:** The transformation of AIIMS to a patient friendly hospital under the Digital India Initiative can be compared to "Saving the Titanic". Under the Digital India Initiative, a core team of officials collaborated cordially and constructively over a long period of time to make the First Digital Revolution in Health Care possible. There was severe resistance from Patients, Doctors, Support Staff and Security Personnel during the course of the AIIMS OPD Transformation Project. As the success story unfolds benefitting 35 lac patients, in 12 months' time, the hours and hours of effort in the service of the Institute and the Nation are adequately rewarded. The Prime Minister launched the Online Registration System as part of the Digital India Initiatives in July 2015. Following a year of successful implementation wherein the project benefitted 35 lac patients, the Prime Minister mentioned the successful implementation of the AIIMS e-Hospital Project from the ramparts of Red Fort in his Independence Day Address on August 15, 2016. The AIIMS OPD Transformation Project has enthused several State Governments. AIIMS has been mandated to conduct on-boarding workshops for replication across all 12 Central Government Hospitals.

13. **The AIIMS Transformation Project represents India's First Digital Revolution in Health Care. It's a remarkable success story.**

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The views expressed in the Article are his personal.